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Does foreign direct investment accelerate tourism and economic growth within Europe?

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ABSTRACT

It is believed that Foreign direct investment (FDI) leads a country's overall development, including tourism development in many countries, but mixed empirical results have been obtained in a long-standing debate. This paper investigates the direct and indirect effects of FDI on the economic growth of seven European Union (EU) countries with remarkable shares of tourism receipts and FDI in their economies. The high level of GDP shares of tourism receipts and FDI in these countries indicates that policy makers consider tourism receipts and FDI as critical factors in accelerating the economic growth. By employing impulse responses function as a complement of Block Exogeneity Wald test, this study proves that it might be wishful thinking. FDI has a negative impact on the economic growth of five of these countries and surprisingly stimulates tourism industry in none of the countries of our sample.

1. Introduction

International tourism has been one of the fast-growing sectors and important source of foreign income in a large number of countries around the world. And its contribution to a country's economy is usually assessed by its impact on the GDP growth. The capacity of an economy to benefit from tourism depends on the availability of (international) capital to invest in infrastructure development especially development of transportation and accommodation services (Proença & Soukiazis, 2008).

Another macroeconomic factor which affects economic growth (directly and indirectly) is FDI inflows. Its direct effect on economy is through providing valuable tangible and intangible assets such as technology and its related physical assets, capital formation and innovation capability (Wang, 2009; Liu, Shu, & Sinclair, 2009). Its indirect effect is through facilitating the acquirement of capital financing and generating positive externalities for different sectors of host country like tourism sector, while introducing new managerial skills in tourism industry and consequently stimulating economic growth by employing a substantial proportion of labor force, increasing government tourism revenues, and financing current account deficit. Therefore, the complex interactions between economic growth, FDI inflows and tourism receipts are of great importance for making consistent economic policies.

Despite a significant body of empirical and theoretical research analyzing these relationships, because of employing inappropriate methods and variables, the empirical evidence more often than not remains ambiguous, and there is still no clear empirical evidence of FDI or international tourism's role in economic growth.

In this context, the main objective of this study is to provide a more informed exploration of relationship between FDI inflows, tourism receipts, and economic growth by using block exogeneity Wald test. This test detects the causal relationship between the variables but cannot explain two important factors: first, the sign of the relationship. It is identified that a variable causes the other variable, but it is not clear whether the effect is positive or negative. Second, how long does it take for these effects to work through the system? Therefore, this study uses the analysis of impulse responses to overcome these two problems and trace out the responsiveness of the dependent variables in the VAR to shocks to each of the variables. Many studies have used cointegration and causality test results to demonstrate the positive effect of tourism receipts or FDI on economic growth (and vice versa), without attention to this fact that these two tests fail to explain the sign (+/−) of the relationships (e.g. Chen and Chiou-Wei, 2009, Oh, 2005, Durbarry, 2004).

Furthermore, the variables used in the literature to study the effect of FDI or tourism sector on the economy of a country are usually 'FDI (current US$)' or 'tourism receipts (current US$)' or 'tourism receipts

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(% of imports)'. By using these variables, many spurious causalities have been reported between FDI, tourism development and economic growth, because these variables cannot be suitable proxies for this purpose. Sometimes, US$-value of tourism receipts or FDI increases in a country, but its GDP share declines simultaneously, because other macroeconomic factors have a higher growth rate and contribute a larger share to the economy.

Therefore, in this study, FDI net inflows (% of GDP) and tourism receipts (% of GDP) are employed to study the effect of their variation on economic growth. Surprisingly, the empirical literature neglects the qualitative nature of the relationship between these three variables almost entirely.

Drawing upon the discussion above, this paper aims to assess whether and, if so, to what extent economic growth responds to the evolution of FDI either directly or via tourism sector. Hence, seven European countries with noticeable shares of FDI inflows and tourism receipts in their economies are selected to check whether their policies regarding attraction of this level of FDI and tourism are welfare-improving or not.

Therefore, this paper contributes to the existing literature in two ways: First, adopting suitable variables as a proxy to account for the economic growth, FDI inflows and tourism development of countries and prevent the misleading results reported by literature. Second, employing two complementary methods to investigate FDI-tourism-economic growth nexus in seven EU countries.

To the best of our knowledge, this study constitutes the first attempt to empirically investigate the role of FDI on economic growth through tourism exports, using Block Exogeneity Wald tests and impulse responses function.

The remainder of this paper is structured as follows. The next section conducts a brief review of literature. Section 3 and 4 give details about variables, data and methodology employed in this study. Section 5 presents and discusses the results of our analysis. Conclusions and policy implications are drawn in the last section.

2. Literature review

2.1. FDI and economic development

There are some theories on the beneficial effect of FDI on economic growth. However, in a long-standing debate, empirical findings have appeared to be mixed.

Feeny, Iamsiraroj and McGillivray (2014), Iamsiraroj and Ulubaşoğlu (2015), Pegkas (2015), Iamsiraroj (2016), and Barrell and Holland (2000) reported a beneficial effect of FDI on the economy. Omri, Nguyen and Rault (2014) also detected a causality between growth and FDI. On the other hand, Temiz and Gökmen (2014) and Damijan, Knell, Majcen and Rojec (2003) didn't identify any positive relationship between these two factors. And Carkovic and Levine (2005) and Easterly (1993) detected the negative impact of FDI on the economy. The details of these studies are reviewed in the following.

Feeny, Iamsiraroj and McGillivray (2014) examined the effect of FDI on economic growth of 209 countries over the period 1971 to 2010. They included an FDI–Pacific interaction term to investigate whether this relationship is different in Pacific countries or not. Their results prove that the effect of FDI on growth is lower in Pacific countries. In the sample of all countries, a 10% increase in FDI (% GDP) leads to 2% increase in growth rate. But this increase is around 0.1% in Pacific countries.

Iamsiraroj and Ulubaşoğlu (2015) used an 'informed' econometric analysis based on details reported in 108 published papers to investigate global FDI–growth nexus in a sample of 140 countries over the period 1970–2009. They confirmed a positive relationship between FDI and economic growth.

FDI inflows may affect economic growth by providing managerial skills and better technologies to the key infrastructures and increase the productivity in the host country. Pegkas (2015) employed FMOLS and DOLS methods to analyzed the impact of FDI on the economic growth of Eurozone countries between 2002 and 2012. His findings show that economic growth is positively affected by FDI.

Iamsiraroj (2016) applied a simultaneous system of equations approach for a cross-section of 124 countries for the period 1971–2010. His results provide the evidence of positive relationship between FDI and growth. The nature of the FDI data undertaken in his study is not clear.

Barrell and Holland (2000) employed a panel data of 11 different manufacturing sectors within Hungary, Czech Republic and Poland to analyze the impact of FDI on them. They provided the evidence that labor productivity has been increased by FDI in most manufacturing sectors.

Omri, Nguyen and Rault (2014) employed dynamic simultaneous-equation panel data models to analyze the causal links between economic growth, FDI and CO2 emissions in a cross-section of 54 countries over the period 1990–2011. They also considered three regional sub-panels in their second analysis: North Africa, Middle East and sub-Saharan Africa, 2- Latin America and the Caribbean, 3- Europe and Central Asia. Their findings indicate a bidirectional causality between FDI inflows and economic growth in their three sub-panels. They used annual data for the GDP (constant 2005 US$) and FDI inflows (constant 2005 US$) which are not appropriate proxies to reflect the macroeconomic situation of a country in these two areas.

Temiz and Gökmen (2014) studied FDI- GDP growth nexus in Turkey by using the Granger causality and Johansen cointegration tests and ordinary least squares (OLS) method. They didn't find any significant relationship between GDP growth and FDI inflows, neither in short-run nor in long-run. They didn't mention what kind of variables ($-value or GDP share) they adopted to represent FDI.

The question that has arisen since import-substitution strategies of the 1960s and 1970s in transition market economies is whether the opening up of most economies to foreign investment has a positive impact on domestic firms or not. More specifically, does growing presence of FDI have a positive effect on improvement of the efficiency of domestic firms in transition economies? FDI is one of the most important channels of technology transfer from developed to developing countries. These channels have been studied by Damijan et al. (2003) by using firm-level data on transition countries including Estonia, Bulgaria and Hungary over the period 1994–1998. Their findings prove that direct foreign linkages are the main channel of technology transfer to local firms, but no positive intra-industry spillover is generated by FDI for domestic firms.

Many studies have focused on firm level panel data to analyze FDI spillovers in different countries. For example, Damijan, Rojec, Majcen and Knell (2013) investigated different channels of technology transfer and FDI spillovers in transition countries including Bulgaria, Croatia and Estonia by using a firm level dataset of more than 90,000 firms. They proved that absorptive capacity and productivity level of individual firms affect both the spillovers from foreign firms as well as direct effects from foreign ownership. If multinational enterprises acquire special benefits (e.g. preferential tax treatments) from host governments, the distortions caused lead to significant adverse effects on growth (Easterly, 1993).

2.2. FDI and tourism development

FDI is one of the routes through which countries can carry out tourism, but it usually causes special concerns and challenges. This section provides a summary of studies on FDI-tourism nexus that are more relevant to our topic.

There has been a growing interest in studying the link between tourism and FDI at individual country level (e.g. Sanford & Dong, 2000; Tang, Selvanathan and Selvanathan, 2007; Selvanathan, Selvanathan, & Viswanathan, 2009) or in a sample of countries (e.g. Craigwell & Moore, 2007; Khoshnevis Yazdi, Nateghian, & Sheikh Rezaie, 2017). This literature proposes some explanations for the relationship between these factors.

Foreign investors can help a country to attract more tourists by improving tourist attractions and transportation and accommodation facilities such as airports and hotels (Craigwell & Moore, 2007; Tang et al., 2007). There is also a direct link between the level of FDI and the number of managers and entrepreneurs who look for investment opportunities as a business tourist in the host countries (Selvanathan et al., 2009). Sanford and Dong (2000) also proved that FDI is positively affected by tourism development.

One of the major indicators of tourism development is international hospitality investment. Kristjánsdóttir (2016) studied how skilled labor force of the headquarters, value added tax level, and market size of the headquarters in home and host country affect FDI in the hospitality industry of Iceland and Norway. His results provide the evidence that the investors who are interested in investing in the local industry are mostly from less-populated countries with high income per capita.

FDI- international tourism nexus in 27 EU countries between 1995 and 2014 has been investigated by Khoshnevis Yazdi et al. (2017). They claimed that there is no causality between FDI and international tourism receipts, although they made some mistakes in their econometric analysis specially in the units of measurement of variables.

2.3. Tourism and economic development

There is no clear consensus regarding the way in which tourism policy analysis should be approached. The contribution of tourism to national economic growth has been widely studied due to the important role that it plays in the balance of payments, employment and production. Among the papers that studied the relationship between tourism development and economy some papers investigated this relationship in a single country and some of them in a sample of countries. Some of these papers confirmed the positive and some of them confirmed the negative effect of tourism on the economy.

Sinclair (1998), Sinclair and Bote Gómez (1996), Gimeno (1988), Ivanov and Webster (2007), and Balaguer and Cantavella-Jorda (2002) studied tourism-economy nexus in Spain, Soukiazis and Proença (2008) examined this nexus in Portugal, and Proença and Soukiazis (2008) and Garcia (2014) analyzed it in both Spain and Portugal. This relationship has been studied by Payne and Mervar (2010) and Mervar and Payne (2007) in the case of Croatia, and by Stanchev, Stancheva and Young (2015) in the case of Bulgaria. And finally, the tourism industry of Estonia has been studied by Cottrell and Cottrell (2015) and Smith (2015).

Tourism is one the critical sectors of the economy in the Baltic States of Lithuania, Latvia and Estonia especially after regaining their independence. A common recent historical background and the geographical proximity of each, make the tourism experience unique in these countries (Cottrell & Cottrell, 2015). Health tourism which includes clinics and hospitals for medical procedures, holistic, spiritual or retreats, spa and wellness hotels and resorts, hot springs and thermal baths has become one of the collaborative trademarks for Estonia (Smith, 2015).

The positive role of tourism sector in economic development has been reported by Hazari and Sgro (2015), Sinclair (1998), Sinclair and Bote Gómez (1996), Proença and Soukiazis (2008), Gimeno (1988), Balaguer and Cantavella-Jorda (2002), Soukiazis and Proença (2008), Roudi, Arasli and Akadiri (2018), Lee and Brahmasrene (2013), and Dritsakis (2012). Akadiri, Akadiri and Alola (2017), Garcia (2014) and Stanchev, Stancheva, and Young (2015) also believe that tourism is an influential factor in economic development. These research papers are reviewed in the following.

A dynamic model developed by Hazari and Sgro (2015) shows a positive effect of tourism demand on a small economy's long-run growth. Actually, the tourism demand leads to a lower saving rate requirement which allows local residents to consume now rather than later.

Spain, an international tourism destination investigated in our study, has an economy with considerable weight of foreign exchange income, and a remarkable share of tourism earnings in its current account. Sinclair (1998) and Sinclair and Bote Gómez (1996) are two of well-documented evidences on the positive effect of inbound tourism on the level of foreign exchange income in the Spanish economy. As a labor-intensive sector, Spanish tourism industry is a fundamental source of employment in Spain (Balaguer & Cantavella-Jorda, 2002). This industry has financed technology and machinery imports needed to stimulate Spain's economic development after ‘the 1959 Stabilization and Liberalization Plan’ (Gimeno, 1988).

Balaguer and Cantavella-Jorda (2002) applied cointegration and Granger causality tests to study the relationship between Spain's economic growth and tourism for the period 1975–1997. They claimed that Spain's economic growth has been positively affected by persistent inbound tourism expansion in the last decades. This claim is not reliable, because cointegration and Granger causality approaches detect the direction of the effect, but they are not able to detect the sign of effect. The detected effect could be either positive or negative.

Proença and Soukiazis (2008) employed an empirical analysis based on conditional convergence approach and panel data techniques to examine the link between tourism and the population's standard of living in Spain, Portugal, Italy and Greece as a tourist destination from 1990 to 2004. Their results pointed out that tourism can be accepted as a strong influential factor in the standard of living in these four Southern European countries.

The importance of tourism as a conditioning factor in the economy of Portugal was examined by Soukiazis and Proença (2008). Based on conditional convergence and endogenous growth theory, they employed accommodation capacity and per-capita income as tourism and economic growth indicators in three different methodologies including system GMM, Fixed Effects Method (LSDV) and Random Effects Method (GLS) over the period 1993–2001. They proved tourism has a positive impact on the economic growth of Portugal and may improve the standards of living significantly.

Roudi, Arasli and Akadiri (2018) confirmed a positive and significant long-run equilibrium relationship between tourism, FDI, energy consumption, and GDP. A long-run equilibrium relationship between carbon emissions and tourism development via energy consumption and real per capita income has been also discovered by Akadiri, Akadiri and Alola (2017) for the case of seven small islands.

An interesting comparison and analysis of evolvement of tourism policies in Portugal and Spain by Garcia (2014) concentrates on differences and similarities in the policies in these two countries. According to his study, the policy makers have tried to promote and improve the external image of their countries. They have changed their strategies to maximize their tourism revenue.

Coastal tourism in Bulgaria is a rapidly growing sector in the economy. Coastal population in Bulgaria has grown substantially as a result of tourism development over the last decade. Apparently, this tourism development is vital for Bulgarian economy, but a degree of priority must logically be given to preserve the coastal environment in order to preserve the economic benefits (Stanchev, Stancheva & Young, 2015).

On the other hand, the negative impact of tourism on the economy has been detected by Milne (1990), Long, Perdue, and Allen (1990), Liu and Var (1986), Hazari and Ng (1993), Dunn and Dunn (2002) and Ivanov and Webster (2007). In addition, suggest that tourism sector is not contributing substantially to economic growth. A detailed review of these studies is provided below.

Actually, associated with the economic advantages of tourism, there are some adverse environmental, socio-cultural and economic impacts extensively reported by Milne (1990), Long, Perdue, and Allen (1990) and Liu and Var (1986). They suggested considering a wide range of social, environmental and economic costs of tourism development. Moreover, most of the tertiary and nondurable goods consumption sector is affected by tourism, because domestic consumption patterns can be changed by international tourism expenditures via so-called demonstration effect which leads to increase in inflation rate. Meanwhile, the negative effect of increase in domestic prices on the country's overall welfare would be more than positive effects of these expenditures on it (Hazari and Ng, 1993). The expansion of tourism industry in some countries is also associated with increase in crime and violence rate and it incurs costs of improving public security and crime control (Dunn and Dunn, 2002).

A growth decomposition methodology has been applied by Ivanov and Webster (2007) to study tourism- economic growth nexus in Spain, Greece and Cyprus. They studied economic growth in two disaggregated parts: growth generated by tourism sector, and growth generated by other sectors. They employed 'Gross Value Added in tourism activities' and 'GDP per capita growth' as a proxy for tourism and economic growth respectively. Their results indicate that these two indicators move in different directions in some time intervals, indicating that tourism industry decreases the growth rate of Spain's economy.

Mervar and Payne (2007) and Payne and Mervar (2010) confirmed the positive impact of economic growth on tourism industry. Mervar and Payne (2007) studied Foreign Tourism Demand for Croatian Destinations by estimating Long-Run Elasticities. They used the quarterly data on the aggregate number of foreign overnight stays in Croatia as a proxy for Foreign tourism demand in an (ARDL) model in the period 1994–2004. Their results reveal that tourism demand is highly elastic and positively affected by GDP of tourist-generating countries.

Tourism revenue is a considerable source of foreign exchange income for Croatia in light of the popularity of Adriatic coastline among international tourists. Payne and Mervar (2010) applied Yamamoto long-run causality test to investigate Tourism- Economic Growth nexus in this country by employing quarterly data between 2000 and 2008. They claim that their results support economic-driven tourism growth hypothesis by detecting a unidirectional causality from real GDP to international tourism receipts. They didn't use any complementary method to find the qualitative nature of this causal relationship.

Lee and Brahmasrene (2013), Tugcu (2014), Dritsakis (2012), Sokhanvar, Aghaei, and Aker (2018a) and Sokhanvar, Çiftçioğlu, and Javid (2018b) studied tourism-economic growth nexus in different samples of countries rather than a single country. A review of these articles is provided in the following.

Lee and Brahmasrene (2013) used the data on CO2 emissions, FDI, economic growth and tourism in fixed-effects models for EU countries between 1988 and 2009. And reported a long-run relationship between these variables. They also proved that FDI, CO2 emissions and tourism have significant positive effect on economic growth.

A panel of European, Asian and African countries with Mediterranean coastline was employed by Tugcu (2014) over the period 1998–2011 to seek evidence to confirm TLEG hypothesis in these regions by using panel Granger causality test. His results prove that in some countries causality goes from the growth rate of economy to tourism, while tourism causes economic growth in some others. These results indicate that the direction of the causality between tourism and economic growth depends on country group and the tourism indicators. Moreover, it is concluded from his results that in the Mediterranean region, European countries seem to be the ones benefitting from tourism as an effective input for economic growth. This is an uncertain conclusion because his research method is not able to identify the sign of the relationship.

The tourism- economic growth nexus in seven Mediterranean countries was also analyzed by Dritsakis (2012) over the period 1980–2007. The results of FMOLS (fully modified ordinary least squares) approach and panel cointegration tests indicate that the GDP of these countries is significantly affected by their tourism receipts.

Sokhanvar, Aghaei, and Aker (2018) implemented a two-stage least squares estimation approach and used an annual panel data for the sample period between 2009 and 2013 on 98 countries to examine the relationships between prosperity sub-indices and international tourism expenditure. Their analysis didn't detect any relationship between Countries' economic performance and tourism expenditures.

The causal relationships between economic development and tourism in emerging market countries was investigated by Sokhanvar, Çiftçioğlu, and Javid (2018). They confirmed the validity of tourism-led growth hypothesis in Brazil and the reverse hypothesis in Peru and India.

A summary of researches reviewed in this section is provided in Appendix 1.

3. Data and variables

The annual data employed in this study include GDP (current US$), International tourism receipts (current US$), GDP growth (annual %) and FDI net inflows (% of GDP) over the period 1995–2014 for selected European economies. The data source is the World Bank datasets.[1] The GDP share of International tourism receipts is obtained by dividing International tourism receipts (current US$) over GDP (current US$).

3.1. List of selected countries

In this study, all of the European countries are ranked first according to GDP share of international tourism receipts (average of 2012–2014) and then according to GDP share of FDI net inflows (average of 2012–2014), and top 10 countries in each list are selected. Seven countries which are common in both lists are finally selected as a sample in this study. These seven countries include Bulgaria, Croatia, Estonia, Hungary, Iceland, Portugal and Spain. Figs. 1 and 2 illustrate top ten European countries with the highest GDP share of international tourism receipts and GDP share of FDI net inflows respectively.

3.2. Unit root test

It's necessary to check the stationarity of the series before running the Block Exogeneity Wald Test, because according to Brooks (2014) it is likely to get spurious results by employing non-stationary data. Therefore, an augmented Dickey–Fuller test is employed and the results (available upon request) indicate that all variables are I(1) which means the first difference of the series are stationary. Hence, the first difference of all variables is employed in our analysis.

4. Methodology

4.1. Block exogeneity tests

Most of empirical studies in econometrics aim at analyzing the relationship between variables by identifying whether a change in one variable can be predicted by a change in the previous values of another variable. Block Exogeneity Wald Test is a method to detect "a

[1] data.worldbank.org

		% of GDP	Billion USD
1	Croatia	16.74%	9.57
2	Estonia	7.29%	1.85
3	Portugal	7.21%	16.17
4	Bulgaria	7.17%	4.30
5	Greece	7.16%	17.20
6	Iceland	7.04%	1.11
7	Slovenia	5.97%	2.86
8	Hungary	5.05%	6.77
9	Austria	4.71%	20.02
10	Spain	4.53%	61.85

Fig. 1. Top ten European countries with the highest International tourism receipts (% of GDP).

		% of GDP	Billion USD
1	Netherlands	26.12%	228.67
2	Ireland	24.29%	59.23
3	Portugal	6.90%	15.32
4	Estonia	6.16%	1.55
5	Hungary	4.86%	6.58
6	Czech Republic	3.98%	8.29
7	Croatia	3.72%	2.12
8	Bulgaria	3.51%	1.95
9	Iceland	3.09%	0.75
10	Spain	2.76%	37.36

Fig. 2. Top ten European countries with the highest FDI net inflows (% of GDP).

chronological ordering of movements of variables". In this paper, it is hypothesized that movements in FDI appear to lead those of 'tourism receipts' and 'the growth rate of economy' and vice versa. Hence, this approach is employed to investigate the variations in these three variables in each country separately.

In this method, a tri-variate Vector Autoregression (VAR) model of the following form is considered:

$$\begin{cases} FDI_t = a_0 + a_1 FDI_{t-1} \ldots + a_l\, FDI_{t-k} + b_1\, EG_{t-1} + \ldots + b_l\, EG_{t-k} + c_1 TR_{t-1} \ldots \\ \qquad + c_l\, TR_{t-k} + \varepsilon_t \\ TR_t = a_0 + a_1 TR_{t-1} \ldots + a_l\, TR_{t-k} + b_1\, EG_{t-1} + \ldots + b_l\, EG_{t-k} + c_1 FDI_{t-1} \ldots \\ \qquad + c_l\, FDI_{t-k} + \varepsilon_t \\ EG_t = a_0 + a_1 EG_{t-1} \ldots + a_l\, EG_{t-k} + b_1\, TR_{t-1} + \ldots + b_l\, TR_{t-k} + c_1 FDI_{t-1} \ldots \\ \qquad + c_l\, FDI_{t-k} + \varepsilon_t \end{cases} \quad (2)$$

t denotes time period and k denotes number of lags included in the VAR system. In order to find the appropriate lag length, Akaike's information criterion (AIC) is employed. This test can detect the relationship between GDP share of international tourism receipts (TR), GDP share of FDI net inflows and economic growth (annual %) (EG).

The null hypothesis of 1st, 2nd and 3rd regression is

- TR and EG do not cause FDI
- EG and FDI do not cause TR
- FDI and TR do not cause EG

respectively. According to Brooks (2014) "the word 'causality' is somewhat of a misnomer, Granger-causality really means only a correlation between the current value of one variable and the past values of others; it does not mean that movements of one variable cause movements of another."

4.2. Impulse responses

Block exogeneity tests cannot answer two questions: According to Brooks (2014) "It cannot not reveal whether changes in the value of a given variable have a positive or negative effect on other variables in the system, or how long it would take for the effect of that variable to work through the system". Therefore, impulse responses function is employed to study the interactions between the shocks to one variable and responsiveness of another variable.

Table 1
Block Exogeneity Wald Tests results.

Country	Dependent variable	FDI		TR		EG	
Bulgaria	Excluded	TR	EG	FDI	EG	FDI	TR
	Chi-sq	1.6824	3.4791	9.6708	15.987	96.984	70.608
	Optimum Lag	3	3	3	3	3	3
	Prob.	0.6408	0.3235	0.0216**	0.0011**	0.000***	0.000***
Croatia	Excluded	TR	EG	FDI	EG	FDI	TR
	Chi-sq	0.3342	1.8425	1.1134	0.0378	0.2467	0.1675
	Optimum Lag	1	1	1	1	1	1
	Prob.	0.5632	0.1746	0.2913	0.8457	0.6194	0.6823
Estonia	Excluded	TR	EG	FDI	EG	FDI	TR
	Chi-sq	1.1424	1.8463	12.863	4.2266	10.728	10.045
	Optimum Lag	3	3	3	3	3	3
	Prob.	0.7668	0.6049	0.0049***	0.2380	0.0133**	0.0182**
Hungary	Excluded	TR	EG	FDI	EG	FDI	TR
	Chi-sq	1.5806	3.4739	0.8749	0.6116	8.0163	0.6261
	Optimum Lag	1	1	1	1	1	1
	Prob.	0.2087	0.0623*	0.3496	0.4342	0.0046***	0.4288
Iceland	Excluded	TR	EG	FDI	EG	FDI	TR
	Chi-sq	1.8292	2.5179	3.0122	6.7612	11.650	3.0804
	Optimum Lag	3	3	3	3	3	3
	Prob.	0.6086	0.4721	0.3897	0.0799*	0.0087***	0.3794
Portugal	Excluded	TR	EG	FDI	EG	FDI	TR
	Chi-sq	1.9515	1.5251	0.0267	0.6530	0.4215	1.5026
	Optimum Lag	1	1	1	1	1	1
	Prob.	0.1624	0.2168	0.8700	0.4190	0.5162	0.2203
Spain	Excluded	TR	EG	FDI	EG	FDI	TR
	Chi-sq	1.1296	0.3042	4.1919	5.3180	31.661	33.317
	Optimum Lag	3	3	3	3	3	3
	Prob.	0.7699	0.9592	0.2415	0.1499	0.000***	0.000***

***, **, * denote statistical significance at 1%, 5%, and 10% levels, respectively.

For each country, one unit of positive shock is applied to FDI and TR series and the responses of TR and EG to separate shocks of the series are estimated and plotted. Based on Doan (1994), the Monte Carlo integration method is used to calculate two standard error bands.

5. Results and discussion

5.1. Block exogeneity tests results

Table 1 illustrates the results of Block Exogeneity Wald tests for our sample of seven European countries. These results, unsurprisingly, show the evidence of lead-lag interactions among the variables in different countries, although, few linkages between the variables are established. Since a tri-variate VAR is estimated for each country, three panels are provided, with one for each dependent variable in the system.

No causality is detected from TR to FDI in any country. Furthermore, there is no causality from EG to FDI in any country except Hungary. The causality from FDI to TR is obtained only in Bulgaria and Estonia. The causality from FDI to EG is found in all of the countries except Croatia and Portugal. And finally, the causality from TR to EG is confirmed in only three countries including Bulgaria, Estonia and Spain. The results in Table 1 for Croatia and Portugal is what made it so unexpectedly interesting because there is no causality between the series in these two countries.

Lee and Chang (2008) believe that sometimes tourism sector incurs adverse economic, ecological and environmental costs on economies like Croatia, Iceland and Portugal that their long coastlines are favorite international tourist destinations. And the link between tourism and economic growth might be broken down due to these costs. Therefore, our finding regarding no causality from tourism receipts to economic growth in spite of great share of tourism in these economies can be the natural outcome of the economic structure.

At this stage we know that economic growth is affected by FDI and tourism receipts in some countries. To analyze the qualitative nature of the causal relationships detected in Table 1, the impulse responses functions are obtained in the next step. These functions can explain how long these impacts require to take place as well.

5.2. Impulse reponses results

The VARs are usually interpreted by using joint tests of restrictions, and impulse responses. A summary of causal effects of FDI on TR and EG in different countries are presented in Tables 2, 3 and 4. These tables also illustrate the responses and 'standard error bands' of EG and TR to unit shocks to FDI.

Considering the signs of responses in the case of Bulgaria, illustrated in Table 2, innovations to FDI always have a negative impact on the TR, since the impact of the shock is negative and doesn't die down until eight years. Increasing TR has a significant negative effect on EG in the

Table 2
Impulse responses and standard error bands for innovations in FDI and TR in Bulgaria.

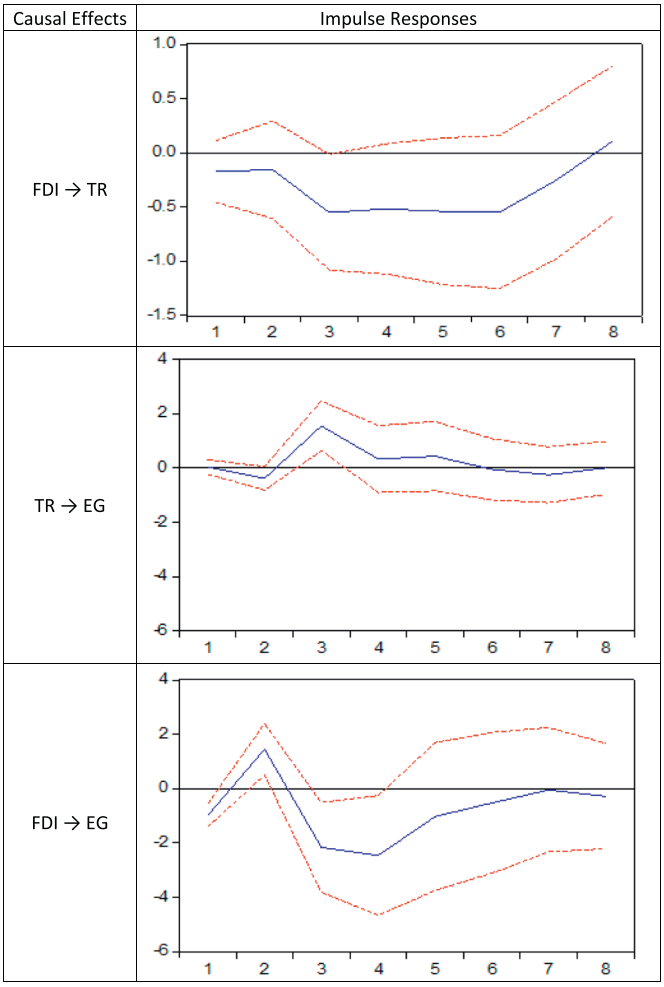


Table 3
Impulse responses and standard error bands for innovations in FDI and TR in Estonia.

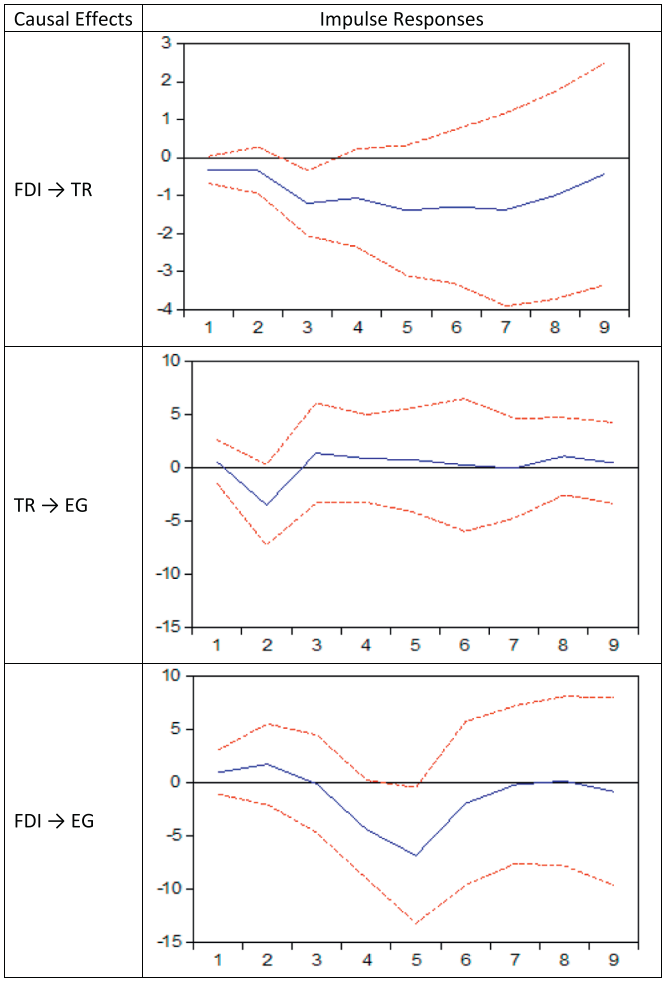
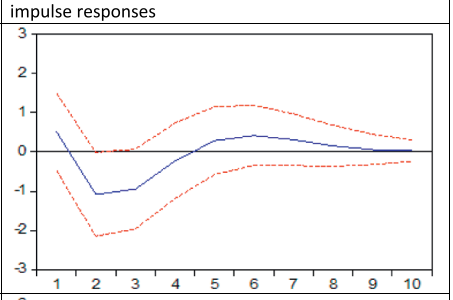
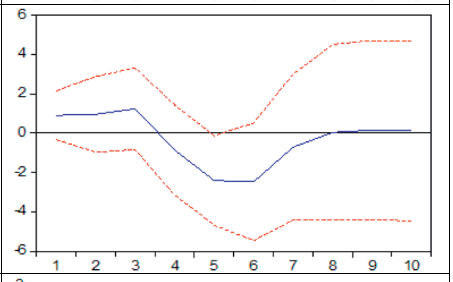
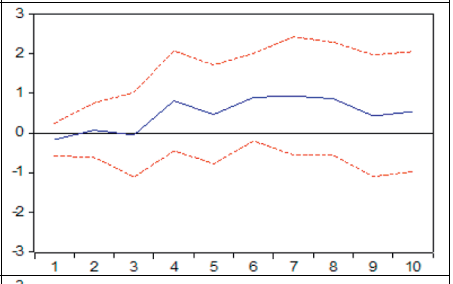
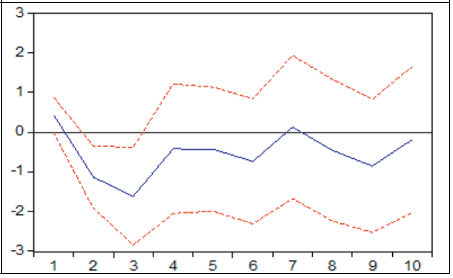


Table 4
Impulse responses and standard error bands for innovations in FDI and TR in Hungary, Iceland and Spain.

country	causal effects	impulse responses
Hungary	FDI → EG	
Iceland	FDI → EG	
Spain	TR → EG	
	FDI → EG	

2nd period, and a significant positive effect in the 3rd period, but beyond that, the shock appears to have worked its way out of the system. It is important to note that, the negative impact in the 2nd period is very smaller than the positive impact in the 3rd period. Increasing FDI has a significant positive impact on EG in the 2nd period, and a significant negative impact in the 3rd and 4th years after the shock.

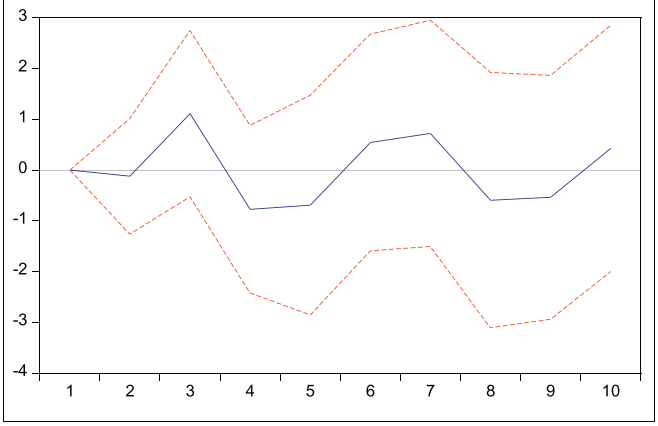
Considering the signs of responses in the case of Estonia, illustrated in Table 3, innovations to FDI in Estonia always have a negative impact on the TR which is significant in the 3rd period, Increasing TR has a negative effect on EG in the 2nd period after the shock, and finally, Increasing FDI has a significant negative impact on EG in the 4th and 5th periods.

Price increase and infrastructure cost could be the real explanation for negative impact of tourism receipts on annual economic growth of Bulgaria and Estonia in the 2nd period. Higher number of international tourism arrivals rises 'government expenditures' and 'demand for goods and services'. Local government needs to improve infrastructures such as airport and roads. In addition, the higher demand for basic goods and services raises the prices and decreases local residents' welfare. On the other hand, in the case of Bulgaria, investments in the other sectors and consequently economic growth can be stimulated by international tourism receipts and related foreign exchange earnings.

Table 5
Block Exogeneity Wald Tests and impulse responses results for Germany.

Dependent variable: EG			
Excluded	Chi-sq	df	Prob.
FDI	5.658715	4	0.2261
TR	10.21500	4	0.0370

Response of EG to 1 standard deviation TR innovation



As we can see in Table 4, in the case of Hungary, the impulse response of EG to a unit shock to FDI is negatively significant in the 2nd and 3rd periods. FDI also has a negative significant impact on EG of Iceland in the 5th period after the shock.

In the case of Spain, an increase in TR has a positive and almost significant effect on EG after six periods. On the other hand, FDI has a significant negative impact on EG in the 2nd and 3rd periods after the shock.

Employment generation and contributions to government revenues could be the real explanation for the positive impact of tourism receipts on the economic growth of Spain. More jobs are created directly through casinos, hotels and restaurants while development of international tourism. Moreover, government revenues are increased by duties on goods and services provided to tourists.

'Market stealing effect' and 'repatriation of profit' have been mentioned as main reasons of negative impact of FDI on domestic economies in the literature (e.g. Schoors & van der Tol, 2001; Konings, 2001). Usually multinational enterprises (MNEs) that invest in the host country are more efficient and more productive than domestic firms. Therefore, they can grab an important part of market share by offering their high-quality products with (sometimes) lower prices. During this process, if domestic firms with minimum productivity leave the market, the industry benefits from higher average productivity which affects social welfare and economic growth positively. But if highly productive domestic firms are also forced to leave the market, local industry suffers from lower competition, meanwhile, unemployment increases and finally economic growth is affected negatively.

The incompatibility of old management methods with new management methods adopted by MNEs causes substantial conflicts,and subsequently increase in investing costs and decrease in production and employment (Melnyk, Kubatko & Pysarenko, 2014). According to Damijan et al. (2003) foreign investment enterprises in Bulgaria and Hungary do not seem to grow faster than domestic firms. In addition, MNEs do not necessarily transfer more complex technology to their subsidiaries. All these could be the simple reasons why FDI inflows have a negative impact on the economic growth in five countries of our sample specially Bulgaria and Hungary.

5.3. Comparison of the results

France, Spain, and Germany are top three EU countries with the highest International tourism receipts (current US$). Their average dollar value of international tourism receipts between 2012 and 2014 is 65.81, 61.85, 55.28 billion USD respectively. The same process of analysis is carried out for France and Germany to compare its results with our main results. No causality is detected in the case of France, and the only causality detected in the case of Germany is a unidirectional causality from tourism to economic growth. The impulse responses method is not able to reveal the sign of the effect of tourism on economic growth. The results are presented in Table 5.

6. Conclusions and policy implications

The main objective of this paper has been to investigate the importance of FDI as a determining factor of economic growth either directly or indirectly (via stimulating tourism sector) for a sample of seven European countries where FDI and tourism receipts are considerable parts of the economy. In attempting to attain this purpose, the Block Exogeneity tests and impulse responses which are believed to be complement of each other have been used. Actually, the main contribution of this study to the existing literature on 'the effect of FDI on tourism and economic growth' is applying impulse responses functions to determine the sign of the relationships (detected by Block Exogeneity tests) between the variables.

The findings of this study are not strongly suggestive of any considerable influences of FDI and international tourism receipts on the variation of the economic growth in Croatia and Portugal. There is, however, some evidence of contemporaneous effects of these two variables on economic growth in Bulgaria, Estonia and Spain.

The impulse responses analysis detects the relationship (and its sign) between international tourism receipts, FDI and economic growth. Our analysis reveals that counting on causality tests in investigating the nexus between these three variables without analyzing 'the sign of the effects' or 'how long these impacts require to take place' is very simplistic and may lead to wrong policy implications and decisions.

According to our findings, international tourism expansion is of great importance for economic growth in Bulgaria and Spain, which can be the evidence of significant role of tourism in improvement of standards of living in these countries. Therefore, economic growth can be stimulated by subsidizing tourism in these countries more than the other countries. Improving tourism offer structure in tourist destinations can enhance the level of tourism receipts in these countries. To attain this goal, Budinoski (2011) recommends governments to start the policy of organizing events like conferences and festivals, advertising of the destination offers, and improving service quality.

In the other countries (Croatia, Hungary, Iceland, Estonia and Portugal) subsidies can be transferred to other sectors with no negative effect on the growth rate of economy.

The high percentage of GDP share of FDI in our sample of countries shows that FDI is at the forefront of economic decisions of policy makers in these countries, as it can accelerate restructuring of enterprises towards creating a dynamic and efficient economy, but our findings prove that this idea is wishful thinking, and FDI could even have a negative impact on economic growth.

Our findings suggest that further share of FDI in the economy may not be a rational policy for the countries of our sample in terms of choosing optimal long-term growth strategy. In other words, negative effect of FDI on GDP growth in most of the countries of our sample implies that engaging in an integration process, trade liberalization and higher FDI may not always be beneficial for the economy of a country.

Appendix A. Appendix 1

The summary of literature on the effect of FDI on the economy.

Author (s)	Publishing Year	Sample	Publisher	Methodology	Sign of the effect	Findings
Barrell and Holland	2000	11 different manufacturing sectors in Poland, Hungary and Czech Republic.	Economics of Transition	non-linear least squares	Positive	In most manufacturing sectors labor productivity levels in increased by FDI
Feeny et al.	2014	140 countries	Economic Modelling	OLS	Positive	The effect of FDI on growth is lower in Pacific countries
Iamsiraroj and Ulubaşoğlu	2015	210 countries	Economic Modelling	an 'informed' econometric analysis	Positive	A positive relationship between economic growth and FDI
Iamsiraroj	2016	124 countries	International Review of Economics & Finance	a simultaneous system of equations	Positive	A positive relationship between economic growth and FDI
Pegkas	2015	Eurozone countries	The Journal of Economic Asymmetries	FMOLS and DOLS methods	Positive	Economic growth is positively affected by FDI.
Omri et al.	2014	54 countries	Economic Modelling	dynamic simultaneous-equation	NA	A bidirectional causality between growth and FDI inflows
Damijan et al.	2003	transition countries	Economic systems		No effect	No positive intra-industry spillover is generated by FDI for domestic firms
Temiz and Gökmen	2014	Turkey	International Business Review	Granger causality, Johansen cointegration and OLS	No effect	No significant relationship between GDP growth and FDI inflows
Easterly	1993	.	World Bank Publications	.	Negative	If multinational enterprises acquire special benefits from host governments, the distortions caused lead to significant adverse effects on growth.
Carkovic and Levine	2005	.	Washington, DC: Institute for International Economics	.	Negative	The exogenous component of FDI does not exert a robust, independent influence on growth.
Damijan et al.	2013	transition countries	Journal of comparative economics	.	NA	Productivity level and absorptive capacity of individual firms affect both the spillovers from foreign firms as well as direct effects from foreign ownership.

The summary of literature on the interactions between FDI and tourism industry.

Author (s)	Publishing Year	Sample	Publisher	Methodology	Sign of the effect	Findings
Khoshnevis Yazdi et al.	2017	27 EU countries	Journal of Policy Research in Tourism	Pooled mean group estimator	No effect	No causal relationship between tourism receipts and FDI
Kristjánsdóttir	2016	Iceland and Norway	Scandinavian Journal of Hospitality and Tourism	OLS	NA	The investors who are interested to invest in the local industry are mostly from less-populated countries with high income per capita.
Selvanathan et al.	2009	India	Working Paper	Granger causality test	Positive	A two-way causality link between FDI and tourist arrivals in India
Tang et al.	2007	China	Tourism Economics	Granger causality test under a VAR framework	Positive	A one-directional causality from FDI to tourism
Craigwell & Moore	2007	Small Island Developing States (SIDS)	*Tourism Analysis*	Panel causality	Positive	A bidirectional causal relationship between FDI and tourism
Sanford & Dong	2000	USA	Tourism Economics	TOBIT methodology	Positive	A positive and significant relationship between tourism and subsequent new FDI

The summary of literature on the interactions between tourism industry and the economy.

Author (s)	Publishing Year	Sample	Publisher	Methodology	Sign of the effect	Findings
Sinclair and Bote Gómez	1996	Spain	Conference paper	.	Positive	The positive effect of inbound tourism on the level of foreign exchange income
Sinclair	1998	Spain	The Journal of Development Studies	Single equation and system of equations models	Positive	The positive effect of inbound tourism on the level of foreign exchange income
Balaguer and Cantavella-Jorda	2002	Spain	Applied economic	Cointegration and Granger causality tests	Positive	Economic growth in Spain has been sensible to persistent inbound tourism expansion in the last decades
Ivanov and Webster	2007	Spain	Tourism Economic	Growth decomposition	Negative	'gross value added in tourism activities' and 'GDP per capita growth' in Spain move in different directions in some time intervals.
Proença and Soukiazis	2008	Spain and Portugal	Tourism Economic	Conditional convergence and panel data techniques	Positive	The impact of tourism can be accepted as a strong influential factor in the standard of living
Garcia	2014	Spain and Portugal	Tourism Management Perspectives	.	NA	The policy makers have changed their strategies to maximize their tourism revenue.
Soukiazis and Proença	2008	Portugal	Portuguese Economic Journal	System GMM, Fixed Effects Method (LSDV) and Random Effects Method (GLS)	Positive	Tourism can improve the standards of living significantly.
Mervar and Payne	2007	Croatia	Tourism Economics	Estimating Long-Run Elasticities in an ARDL model	Positive	Tourism demand is highly elastic and positively affected by GDP of tourist-generating countries.
Payne and Mervar	2010	Croatia	Tourism Economics	Yamamoto long-run causality tests	Positive	A unidirectional causality from real GDP to international tourism receipts.
Stanchev et al.	2015	Bulgaria	Journal of coastal conservation	Assessing the population changes and tourist growth in the coastal zone	Negative	Tourism peak periods often overwhelm local treatment capacity resulting in significant effects on natural resources and natural geosystems.
Cottrell and Cottrell	2015	Estonia	Scandinavian Journal of Hospitality and Tourism	.	NA	The necessity of collaborative efforts to develop a distinctive tourist image for Baltics
Smith	2015	Estonia	Scandinavian Journal of Hospitality and Tourism	Delphi technique or group communication process	Positive	Health tourism has become one of the collaborative trademarks for Estonia
Hazari and Sgro	2015	It's a theoretical study	Tourism, Trade and National Welfare	A Dynamic Model of Trade	Positive	Tourism demand leads to a lower saving rate requirement which allows local residents to consume now rather than later
Akadiri et al.	2017	seven small islands	Current Issues in Tourism	A panel-based multivariate model	Positive	Long-run equilibrium relationship between carbon emissions and tourism development
Roudi et al.	2018	small island developing states (SIDS)	Current Issues in Tourism	Heterogeneous panel autoregressive distributed lag cointegration	Positive	Long-run equilibrium relationship between tourism, FDI, energy consumption, and GDP
Liu and Var	1986	Hawaii	Annals of tourism research	.	Negative	Tourism has cultural and economic advantages but incurs environmental and social costs.
Milne	1990	Small Pacific Island States	New Zealand Journal of Geography	.	Negative	Tourism management methods determines the degree of positive or negative impact of tourism.

Long et al.	1990	residents of 28 rural Colorado communities	Journal of Travel Research	.	Negative	Resident attitudes initially increase in favorability with increasing tourism development, but achieve a threshold level.
Hazari and Ng	1993	.	International Review of Economics and Finance	.	Negative	The negative effect of increase in domestic prices on the country's overall welfare
Dunn and Dunn	2002	Jamaica	Scandinavian Journal of Hospitality and Tourism	Community meetings and in-depth interviews	Negative	Expansion of tourism industry in some countries is associated with increase in crime and violence rate
Etokakpan et al.	2019	Brazil, Russia, China and the US	European journal of tourism research	Panel causality	NA	Tourism sector is not contributing substantially to economic growth.
Dritsakis	2012	seven Mediterranean countries	Tourism Economics	FMOLS and panel cointegration tests	Positive	Tourism receipts have a significant effect on the GDP
Lee and Brahmasrene	2013	EU countries	Tourism management	fixed-effects models	Positive	FDI, CO2 emissions and tourism have significant positive effect on economic growth.
Tugcu	2014	African, Asian and European countries that border the Mediterranean Sea	Tourism Management	Panel Granger causality test	NA	The tourism indicators and country group are determining factors in causal relationship between tourism and economic growth.
Sokhanvar et al.	2018	98 countries	Tourism Review	Two-stage least squares estimation	NA	No relationship between countries' economic performance and tourism expenditures.
Sokhanvar et al.	2018	emerging market countries	Tourism management perspectives	VAR model and Impulse Responses	Country dependent	Confirmation of tourism-led growth hypothesis in Philippines, Mexico and Brazil and a reverse relationship in Peru, Malaysia, Indonesia, India and China.

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