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### A CAUSALITY ANALYSIS OF TOURISM REVENUES AND ECONOMIC GROWTH ON SELECTED MEDITERRANEAN COUNTRIES\*

*This study explores the direction of causality between tourism revenues and economic growth in the selected Mediterranean countries for the period 1995–2011. For this purpose, as the research methods the panel causality tests under the cross-section dependency analysis have been applied. According to the econometrics analysis, no causality for France, Italy and Turkey cases was found. A bi-directional causality for Greece and a unidirectional causality from tourism revenues to economic growth for the Spain case have been established. We conclude that the result of a bi-directional causality may play the key role for the Greece development under its current economic crisis. The tourist-led growth hypothesis is valid for Spain and promotes its economic growth. On the other hand, the non-causality result is amazing for France, Italy and Turkey, thus deserving further attention and research.*

*Keywords:* tourism revenues; economic growth; panel causality; Mediterranean countries.

*JEL classification:* F43, L83, C23.

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### АНАЛІЗ ЗАЛЕЖНОСТЕЙ МІЖ ПРИБУТКАМИ ВІД ТУРИЗМУ ТА ЕКОНОМІЧНИМ ЗРОСТАННЯМ НА ПРИКЛАДІ ОКРЕМИХ СЕРЕДЗЕМНОМОРСЬКИХ КРАЇН

*У статті проведено аналіз взаємозалежності між прибутками від галузі туризму та загальним економічним зростанням на прикладі кількох середземноморських країн протягом 1995–2011 років. Для досліджених панельних даних застосовано методи економетричного аналізу, який виявив відсутність будь-якої причинної залежності для Франції, Італії та Туреччини. Взаємна залежність спостерігається у випадку Греції, щодо Іспанії – одностороння залежність (від прибутків від туризму до економічного зростання). Двостороння залежність у випадку Греції свідчить про те, що даній країні необхідно саме туризму приділити значну увагу на шляху виходу з поточної кризи. Для Іспанії знайшла своє підтвердження гіпотеза про економічне зростання, що визначається саме фактором туризму, і це допомагає цій країні розвиватися й надалі. Результати Франції, Італії та Туреччини (повна відсутність взаємозв'язку між прибутками від туризму та економічним зростанням) можна вважати доволі несподіваними та такими, що вимагають подальших досліджень.*

*Ключові слова:* прибуток від туризму; економічне зростання; причинно-наслідковий зв'язок між панельними даними; середземноморські країни.

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### АНАЛІЗ ЗАВИСИМОСТЕЙ МЕЖДУ ПРИБЫЛЯМИ ОТ ТУРИЗМА И ЭКОНОМИЧЕСКИМ РОСТОМ НА ПРИМЕРЕ РЯДА СРЕДИЗЕМНОМОРСКИХ СТРАН

*В статье проведён анализ взаимозависимости между прибылями от отрасли туризма и общим экономическим ростом на примере ряда средиземноморских стран в течение 1995–2011 годов. К исследуемым панельным данным применены методы эконометриче-*

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ского анализа, который выявил отсутствие причинной зависимости для Франции, Италии и Турции. Взаимная зависимость наблюдается в случае Греции, для Испании – односторонняя зависимость (от прибылей туризма к экономическому росту). Двусторонняя зависимость в случае Греции свидетельствует о том, что данной стране необходимо именно туризму уделить значительное внимание в процессе выхода из кризиса. Для Испании находит своё подтверждение гипотеза об экономическом росте, определённом фактором туризма, что значительно помогает стране развиваться далее. Результаты Франции, Италии и Турции (полное отсутствие взаимосвязи между прибылями от туризма и экономическим ростом) можно считать довольно неожиданными и требующими дальнейших исследований.

**Ключевые слова:** прибыль от туризма; экономический рост; причинно-следственная связь между панельными данными; средиземноморские страны.

**Introduction.** Tourism is a socioeconomic field starting with a decision on how to use economic investment, consumption, employment, exports and public revenues. Tourism has been initially originated from people's curiosity and desire to roam and see different places, and especially in the 1950s it developed rapidly over long distances spreading to a much wider audience. Nowadays, tourism, which has become the monetary and social phenomenon, has important international economic and political consequences and often impacts countries' economic relations.

Tourism today has become a largely invested and developing sector. Tourism is considered as one of the most important set of services enabling a country achieve economic, social, and cultural areas. Therefore, developed and developing countries with a tourism potential and having international tourism activities aim to both accelerate economic growth and spread revenue in order to raise prosperity. Countries determine tourism-led growth strategies to provide more foreign exchange, employment and national income by the export of services. The increase in employment and the expansion of the tax base result in a significant increase in state's revenues. Increasing tax revenues with increasing investments by the central and local governments help country's development. Tourism revenues are accepted in national income and create a multiplier effect in the economy; the resulting multiplier effect makes a positive impact on the economy and is supported by many sectors.

Incorporating tourism service sector is undoubtedly effort-intensified industry. Where there is insufficient capital, but enough labor, like in developing countries, such as Turkey, the growth of tourism is seen as an opportunity to increase country's national income. As labor-intensive countries rely on the growth of tourism sector increasing exports of services and by the inflow of foreign currency to the country; on one hand, it is increasing employment levels and national income on the other (Yamak, Tanriover and Guney, 2012).

Tourism activities show the important development of the world economy growth. In many countries, tourism constitutes an important share of GDP. In addition, international foreign exchange earnings from tourism are helping the current account deficit of the country. Tourism contributes to income distribution from rich to poorer countries, from developed and less developed to developing ones causes. Thus, tourism helps regional development and reduces regional economic disparities. National/international investments to this sector will have positive effect in a comparatively short period of time, thus helping the lagging regions to progress (Bahar and Bozkurt, 2010).

Human beings began to travel more due to increased levels of civilization, the rise in living standards and the reduction in working hours. This increased tourism travel trends, tourism became geographically spread over a wider area and has become a global phenomenon. Today, this movement as a large-scale and multidimensional social event involves about 12.5% of world's population (Alaeddinoglu and Can, 2007).

Soon after the First World War, the years between 1918 and 1920 are considered the beginning of modern tourism. During this period, tourism has become a huge sector including hotels, motels, transportation and roads, beaches, entertainment and sports facilities, accommodation facilities and all related infrastructure. Later, technological advances, improvements in living standards, globalization has brought freedom to travel, participate in tourism activities and has led to the rapid increase in the number of tourists. Thereby, tourism has become one of the fastest developing sectors of the world. Indeed, world tourism between 1980 and 1990 period increased by 60% and the period between 1990 and 2000 showed an increase of 52%. Being 280 mln in 1980, the number of tourists reached already 698 mln in 2000. This figure reached 903 mln in 2007, to 922 mln in 2008, but declined to 880 mln in 2009. While the number of participants in tourism was 940 mln in 2010, the number of participants reached 1087 mln in 2013 (UNWTO, 2014). As seen from the figures, although the tourism industry grows rapidly, it faced fall-short because of terrorism or economic crises in some periods; but in general the growth trend in tourism has continued. As an indication of this, the World Tourism Organization has estimated that 1600 mln tourists will join tourism activities in 2020 and the economic consequences of this would be 2 trln USD. From this perspective, new development in tourism is expected in the coming period, it will be one of the fastest growing industries.

Regarding tourism activities worldwide, Europe in terms of international tourism destinations is the most intense one. Out of the world tourism activity, European destination got the share of 58% in 1990; this rate decreased to 53% in 2011. Despite these figures, the region is the destination with the highest mobility for years. Distribution of international tourism mobility worldwide by regions is shown in Table 1.

Table 1. Regional distribution of international tourism worldwide

Regions	Number of tourists, mln							
	1990	1995	2000	2005	2010	2011	2012	2013
Europe	261.1	304.0	388.2	448.9	484.8	516.0	534.4	563.4
Asia Pacific	55.8	82.0	110.1	153.5	204.9	218.5	233.5	248.1
America	92.8	109.1	128.2	133.3	150.6	155.9	162.7	167.9
Middle East	9.6	13.7	24.1	36.3	58.2	54.3	51.7	51.6
Africa	14.7	18.7	26.2	34.8	49.9	49.7	52.9	55.8
Total (World)	<b>434.0</b>	<b>527.5</b>	<b>676.8</b>	<b>806.8</b>	<b>948.4</b>	<b>994.4</b>	<b>1035.2</b>	<b>1086.8</b>
Mediterranean region	145.5	158.3	219.1	195.4	283.7	289.7	292.1	306.3
Mediterranean region share (%) in tourism mobility	33.5	30.0	32.4	24.2	29.9	29.1	28.2	28.2
Mediterranean region share (%) in European destinations	55.7	52.1	56.4	43.5	58.5	56.1	54.7	54.4

Source: UNWTO, Tourism Highlights 2014 Edition.

The countries in the Mediterranean region including the ones located in Europe obtained the largest share of the world tourism in terms of maximum concentration as well as tourism maximum earning income: France, Spain, Italy, Turkey and Greece. Table 2 shows the top 5 countries in the Mediterranean area experiencing the maximum concentration of tourism and related to tourism activity and tourism revenues.

The largest share of tourism in the Mediterranean region belongs to the Northwestern Mediterranean region (66.66%); which is ranked first in the world, France is seen steadily continuing to be on the first place, having 2011 79.5 mln tourists. Ranked second in the world tourism is Spain with 60.7 mln tourists in 2013. The third one is Italy with 47.7 mln tourists in 2013. There are two strong competitors in the Northeast Mediterranean – Turkey and Greece. As of 2000, the average annual number of tourists to Turkey has been the first in this region (20.27 mln in 2005 and with an increase of 16.2%). As of 2011, out of 55.68 mln tourists traveling to the northeastern Mediterranean region, 29.34 mln preferred Turkey. Analyzing the increase in the number of tourists over the year, the highest growth rate belong to Turkey after the year 2005. The share of the Northeast Mediterranean region in the Mediterranean basin reached 10% in 1990 and 20% in 2011. Distribution of the top 5 countries' tourism mobilities and incomes are shown in Table 2.

*Table 2. Top 5 Mediterranean countries' tourism mobilities and incomes*

Country	Number of tourists, mln				Country	Tourism incomes, bln USD			
	2000	2005	2010	2011		2000	2005	2010	2011
France	77.19	76	77.14	79.50	France	38.53	51.69	56.28	65.17
Spain	47.89	55.55	52.67	56.69	Spain	32.66	53.07	59.04	67.54
Italy	41.18	36.51	43.62	46.11	Italy	28.71	38.37	40.06	45.37
Turkey	9.58	20.27	27.00	29.34	Turkey	7.64	19.72	24.78	28.06
Greece	13.09	14.27	15.00	16.42	Greece	9.26	13.45	12.58	14.98
Top Five Total	<b>188.93</b>	<b>202.6</b>	<b>215.43</b>	<b>228.06</b>	Total	<b>116.79</b>	<b>176.31</b>	<b>192.75</b>	<b>221.12</b>
Mediterranean Region Total	<b>232.27</b>	<b>238.80</b>	<b>256.80</b>	<b>274.21</b>					
Top Five Share, %	<b>81.34</b>	<b>84.84</b>	<b>83.89</b>	<b>83.17</b>					

Source: UNWTO, Tourism Highlights 2012 Edition.

Between the countries in the Mediterranean region, the largest share of the world tourism income falls on France and Spain. According to the data on the year 2011, Spain with 67.5 bln USD share of the world tourism revenues got the first place among the countries of the Mediterranean region. Next rank after Spain goes to France with 65 bln USD, then goes Italy with 45 bln USD and then Turkey with 28 bln USD in tourism revenues. Of the Mediterranean region countries, when compared to the year 2000, the highest increase in tourism revenues belongs to Turkey. Indeed, Turkey's tourism revenue in 2000 by 7.6 bln USD has reached 28 bln USD with the increase of 207% in the last 11 years. The second highest increase in tourism revenues is observed for Spain with the rate of 106%; France (69%), Greece and Italy (58%) follow respectively.

In this study for the Mediterranean region we analyze the causal relationship between tourism revenue and economic growth with the annual panel data covering

the years between 1995 and 2011. For this purpose, in the first part of the study we present the numerical data related to the countries and the place, the importance of tourism of these countries in the world and in the region is analyzed. The significance of the used sample is mentioned. In the second part econometrics analysis, the data and methods used in the study are described, and the findings as a result of the econometrics analyses are presented. The study resumes with the part containing the overall assessment.

**Literature review.** It has long been recognized that what is actually the relationship between tourism revenues and economic growth. According to previous studies, there are 4 results regarding the nature of causality between tourism revenues and economic growth. First, tourism revenues directly cause economic growth if there is a unidirectional causality from tourism revenue to economic growth (Balaguer and Cantavella-Jorda, 2002; Eugenio-Martin, Morales and Scarpa, 2004; Gunduz and Hatemi, 2005). This result is known as "the tourist-led growth hypothesis". Second, economic growth directly causes tourism revenues. In this case, we find a unidirectional causality from economic growth to tourism revenue (Narayan, 2004; Oh, 2005). Third, there is a bidirectional causality between tourism and economic growth (Dritsakis, 2004; Durberry, 2004; Ongan and Demiroz, 2005; Kim, Chen and Jang, 2006; Lee and Chen 2008; Lee and Chang, 2008). Fourth, the non-causality, that is no relationship between tourism revenues and economic growth (Yavuz, 2006; Lee and Chang, 2008; Katircioglu, 2009; Ozturk and Acaravci, 2009). The summary of literature on tourism revenue and economic growth is presented in Table 3.

Therefore we have to recognize the inconsistency between the results of the studies. Differences in results may occur due to different shares of tourism in GDP, the causality between economy and tourism could differ from one country to another, econometrics estimation method could differ from panel to time series etc., different time periode (Oh, 2005; Kim et al., 2006; Yavuz, 2006; Chou, 2013).

#### Methods and findings.

**1. Data and testing cross-sectional dependency.** In this study, for the period between 1995 and 2011, GDP income and the tourism revenues data on France, Spain, Italy, Turkey and Greece are used. Data was obtained from the World Bank's "World Development Indicators" (WDI) database. The data are analyzed taking into consideration the logarithm of GDP and tourism revenues. Empirical studies show several causality directions between tourism revenue and economic growth (Lee and Chang 2008; Holzner, 2011<sup>3</sup>; Chou, 2013). This suggests that the relationships between tourism revenue and economic growth may differ due to cross-sectional dependency and panels heterogeneity. Thus, we first test for cross-sectional dependency, and then we test for heterogeneity across countries. For this purpose, Breusch and Pagan (BP, 1980) lay out a Lagrange multiplier test statistics:

$$CD_{LM1} \equiv T \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij}^2, \quad (1)$$

where  $\hat{\rho}_{ij}^2$  is the estimated correlation coefficients, null hypothesis of no cross-sectional dependency are being tested. However, this test is not always applicable, thus N. Pesaran (2004) developed another statistics.

<sup>3</sup> for panel data analysis.

Table 3. Summary of literature review on tourism revenues and economic growth

Authors (Year)	Countries	Period	Method	Result
Balaguer and Cantavella-Jorda (2002)	Spain	1975–1997	VECM/Causality	Tourism affects economic growth
Dritsakis (2004)	Greece	1960–2000	Causality	Bidirectional causality
Durbarry (2004)	Mauritius	1952–1999	VECM/Causality	Bidirectional causality
Eugenio-Martin et al.	21 Latin American countries	1985–1998	Arellano-Bond GMM	Tourism affects economic growth
Narayan (2004)	Fiji	1970–2000	VECM	Economic growth affects tourism
Gunduz and Hatemi (2005)	Turkey	1963–2002	Causality	Tourism affects economic growth
Oh (2005)	South Korea	1975–2001	VAR	Economic growth affects tourism
Onganand Demiroz (2005)	Turkey	1980q1–2004q2	Causality	Bidirectional causality
Kim et al. (2006)	Taiwan	1971:m1–2003:m7	Causality	Bidirectional causality
Yavuz (2006)	Turkey	1992:q1–2004:q4	Causality	Non-causality
Lee and Chen (2008)	Taiwan	1959–2003	Causality	Bidirectional causality
Lee and Chang (2008)	OECD and non-OECD countries	1990–2002	Panel VECM/Causality	Tourism affects economic growth in the OECD countries, bidirectional causality in non-OECD countries
Katircioglu (2009)	Turkey	1960–2006	Causality	Non-causality
Ozturk and Acaravci (2009)	Turkey	1987–2007	VECM/Causality	Non-causality

**Note:** Abbreviations are defined as follows; VECM – vector error correction model, GMM – generalized method of moments, m – monthly, q – quarterly.

$$CD_{LM1} \equiv \left( \frac{1}{N(N-1)} \right)^{1/2} \sum_{i=1}^{N-1} \sum_{j=i+1}^N (\hat{\rho}_{ij}^2). \quad (2)$$

This final sample bias was corrected by Pesaran, Ullah and Yamagata (PUY, 2008). Pesaran et al. (2008) proposed a Lagrange multiplier (*LM*) test for error cross-section independence, in the case of panel models with strictly exogenous regressors and normal errors. *LM* test statistic are provided for the purpose of bias adjustments. It is shown that the centring of the *LM* statistic is correct for fixed *T* and *N*.

$$LM_{adj} \equiv \sqrt{\frac{2}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^N \frac{(T-k)\hat{\rho}_{ij}^2 - \mu_{Tij}}{v_{Tij}}. \quad (3)$$

Determining whether panel homogeneous or heterogeneous is also important within the panel analysis. In many empirical studies, it is assumed that panel data models are homogeneous. Such an assumption is not able to capture country-specific characteristics (Nazlioglu, Lebe and Kayhan, 2011). Pesaran and Yamagata (2008) proposed a test for homogeneity.

$$\hat{\Delta} \equiv \sqrt{N} \frac{N^{-1} \tilde{S} - k}{\sqrt{2k}}, \tag{4}$$

where  $\tilde{S}$  is estimated by Swamy, who based his test of slope homogeneity on the dispersion of individual slope estimates from a suitable pooled estimator, where bias adjusted versions of  $\hat{\Delta}$  is

$$\hat{\Delta}_{adj} \equiv \sqrt{N} \left( \frac{N^{-1} \tilde{S} - E(\tilde{Z}_{IT})}{\sqrt{VAR \tilde{Z}_{IT}}} \right). \tag{5}$$

In statistics,  $\tilde{Z}_{IT}$  shows independently distributed random variables across  $i$  with finite means and variances.

We need to test cross-sectional dependency and homogeneity. The results for the cross-sectional dependency and the homogeneity tests are reported in Table 4.

Table 4. Cross-sectional dependency and homogeneity assumptions test

Cross-section dependency tests	Constant				Constant and Trend			
	lnGDP		lnTOUR		lnGDP		lnTOUR	
	Statistics	p-value	Statistics	p-value	Statistics	p-value	Statistics	p-value
CD <sub>LM1</sub> (BP, 1980)	48.099	0.000	19.648	0.033	44.680	0.000	20.201	0.027
CD <sub>LM2</sub> (Pesaran, 2004)	8.519	0.000	2.157	0.015	7.755	0.000	2.281	0.011
LM <sub>adj</sub> (PUY, 2008)	20.719	0.000	1.298	0.097	18.564	0.000	1.316	0.094
<b>Homogeneity tests:</b>	Statistics	p-value						
$\hat{\Delta}$	4.736	0.000						
$\hat{\Delta}_{adj}$	5.188	0.000						

Table 3 shows there is the cross-sectional dependency in the panels of countries. It means that if a shock exists in one country, it can be transmitted to others. The homogeneity test rejects the null hypothesis of homogeneity. This finding simply implies that the parameters are heterogeneous.

**2. Panel causality test under the cross-section dependency analysis.** Ordinary Granger panel causality analysis is biased under the heterogonous and cross-sectional dependence restriction. Konya (2006) developed a new panel data approach which is based on SUR systems and Wald tests with country specific bootstrap critical values. This system can be presented as follows:

$$y_{1,t} = \alpha_{1,1} + \sum_{i=1}^{lmy_1} \beta_{1,1,i} y_{1,t-i} + \sum_{i=1}^{lmx_1} \delta_{1,1,i} x_{1,t-i} + \varepsilon_{1,1,t}; \tag{6}$$

$$y_{2,t} = \alpha_{1,2} + \sum_{i=1}^{lmy_1} \beta_{1,2,i} y_{2,t-i} + \sum_{i=1}^{lmx_1} \delta_{1,2,i} x_{2,t-i} + \varepsilon_{1,2,t}; \tag{7}$$

$$y_{N,t} = \alpha_{1,N} + \sum_{i=1}^{lmy_1} \beta_{1,N,i} y_{N,t-i} + \sum_{i=1}^{lmx_1} \delta_{1,N,i} x_{N,t-i} + \varepsilon_{1,N,t} \tag{8}$$

and

$$X_{1,t} = \alpha_{2,1} + \sum_{i=1}^{lmy_2} \beta_{2,1,i} Y_{1,t-i} + \sum_{i=1}^{lmx_2} \delta_{2,1,i} X_{1,t-i} + \varepsilon_{2,1,t}; \quad (9)$$

$$X_{2,t} = \alpha_{2,2} + \sum_{i=1}^{lmy_2} \beta_{2,2,i} Y_{2,t-i} + \sum_{i=1}^{lmx_2} \delta_{2,2,i} X_{2,t-i} + \varepsilon_{2,2,t}; \quad (10)$$

$$X_{N,t} = \alpha_{2,N} + \sum_{i=1}^{lmy_2} \beta_{2,N,i} Y_{N,t-i} + \sum_{i=1}^{lmx_2} \delta_{2,N,i} X_{N,t-i} + \varepsilon_{2,N,t}. \quad (11)$$

At the systems equations,  $Y$  denotes the economic growth and  $X$  denotes tourism revenues,  $N$  is the number of the members of panel ( $j = 1, \dots, N$ ),  $t$  is the time period ( $t = 1, \dots, T$ ),  $l$  is the lag length. The results from panel causality under the cross-section dependency analysis are reported in Table 5.

Table 5. Panel causality test under the cross-section dependency

Countries	Ho: ln GDP does not cause ln TOUR				Ho: ln TOUR does not cause ln GDP			
	Stat.	Bootstrap values			Stat.	Bootstrap values		
		10%	5%	1%		10%	5%	1%
Greece	18.781043**	6.85200	12.16976	35.91244	17.781607***	4.55581	6.85867	13.74821
France	0.95725508	4.95474	7.32675	13.89576	6.0049330	6.25843	9.66883	20.75507
Italy	0.61025750	5.83883	8.58726	16.10459	0.21712872	5.43106	8.38981	18.10997
Spain	0.33939200	6.27725	9.22464	17.90876	12.837555**	8.12318	11.52687	19.62435
Turkey	3.1676227	5.29744	7.88724	15.12872	0.76165052	6.41475	10.29254	24.01548

Note: 10000 bootstrap replications were made. \*\*\* Indicates significance at the 1% level. \*\* Indicates significance at the 5% level of significance. \* Indicates significance at the 10%.

Panel causality test results show a bidirectional causality only for Greece at the 1% level of significance. On the other hand, there is a unidirectional causality from tourism revenues to economic growth for Spain at the 5% level. For the remaining countries the null hypothesis can be rejected, there is no causality.

**3. Policy implications.** We have 5 key implications from our results. First, we have found a bidirectional causality between tourism revenues and economic growth for Greece case (Dritsakis, 2004). This result suggests that tourism revenues and economic growth are mutually influence each other. This result also implies that tourism development can help to overcoming the current Greek economic problems. Second, tourism revenues brings about economic growth in the Spain case (Balaguer and Cantavella-Jorda, 2002), this confirms the results show a unidirectional causality from tourism revenues to economic growth. This implication is that tourism revenues play a very crucial role in economic growth. By the way, negative tourism shocks (appreciation of euro, high inflation, civil disorder, economics crisis etc.) may depress economic growth.

Third, the results show that there is neutrality between tourism revenues and economic growth in France, Italy and Turkey. According to this result, tourism revenue and economic growth are not sensitive to each other. In addition, in developed countries, such as France and Italy, economy does not depend on tourism revenues only, these countries have huge GDP. For Turkey (Yavuz, 2006; Katircioglu, 2009;



Ozturk and Acaravci, 2009<sup>4</sup>), tourism revenue may have little effect on economic growth. This could be currency affect (lower local currency), inconsistency of tourism revenues in 12 months, lack of tourism diversification etc.

Fourth, we find a cross-country heterogeneity in the panels, implying that each country develops its own tourism policy. Thus the Greece case is different from the one in France etc. Fifth and the most interesting policy implications that we find strong evidence for the existence of cross-section dependence among these countries. These countries are highly integrated (especially, 4 of these 5 countries under the EU). This means that if a shock exists in one country, it is easily transmitted to other.

**Conclusion.** Tourism is now treated in international services and it is a major source of income for many countries. It contributes to national income growth and countries development. Considered as an important source of income, tourism is of great importance as it provides countries with foreign exchange earnings and contributes to budget deficit financing. As tourism has positive effects on country's economy, the relationship between tourism and economic growth was studied a lot in recent years. But this study finds somewhat different causality results.

The main objective of this study is to investigate the direction of causality between tourism revenues and economic growth in selected Mediterranean countries. According to our econometric analysis, no causality between tourism revenues and economic growth has been found for France, Italy and Turkey cases. There is a bidirectional causal relationship between tourism revenues and economic growth in Greece case, and there is a unidirectional causality from tourism revenues to economic growth in the Spain case. Thereby, we conclude that a bidirectional causality may play the key role for Greece development in overcoming its economic crisis. The tourist-led growth hypothesis is valid for Spain as it promotes its economic growth. On the other hand, the result of non-causality is amazing for France, Italy and Turkey. Notwithstanding, this issue still deserves further attention.

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