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THE RELATIONSHIP BETWEEN TOURISM AND ECONOMIC GROWTH IN THE SCOPE OF ECONOMIC FREEDOM AND FREEDOM OF INVESTMENT

Emrullah METE [1]

Logistics Management, Görele School of Applied Sciences, Giresun University, Turkey
ORCID: 0000-0003-2240-9248

ABSTRACT

Tourism is one of the sectors to which countries have recently given importance as a means of ensuring economic growth, and the relationship between the two has been the subject of many study in economic literature within the framework of four hypotheses; being tourism-oriented growth, feedback, protection, and neutrality. In the present study, the relationship between tourism and economic growth is investigated for Mediterranean countries in the 2006–2019 period. A Dumitrescu-Hurlin Panel Causality Analysis was carried out in the study in which economic growth, tourism revenues, economic freedom, and investment freedom data were used as variables. The analysis was carried out both across the panel and on the basis of countries. Panel analysis results showed that tourism revenues are the cause of economic growth, which confirms the tourism-oriented growth hypothesis. That said, the causality relationship between economic growth, tourism revenues, and economic freedom cannot be determined based on the panel-wide results, as the results differ from country to country. Finally, a two-way causality between economic growth and freedom of investment, and a one-way causality from tourism revenues to freedom of investment has been identified.

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INTRODUCTION

One of the most important targets for countries in the international platform is economic growth. Theories developed related to economic growth have sought to identify the determinants of growth through the assertion of various instruments. Since the 1980s, instruments such as R&D activity,

[1] Address correspondence to Emrullah Mete (PhD), Görele School of Applied Sciences, Logistics Management, Giresun University, Turkey. E-mail: mtemrullah@gmail.com

technological development, information, qualified labor force, and human capital have been accepted as determining factors in economic growth, and at the same time, these factors also determine the level of development of countries (Akyol & Mete, 2021). Countries that attain new products and production methods with the said factors achieve superiority over other countries, securing economic development, and counties can be divided into groups on the international platform in this regard, as developed, developing, and underdeveloped.

Developing countries cannot gain a competitive advantage due to the lack of sufficient technological development, and thus remain devoid of adequate market share in the international markets. Countries that cannot export quality products with added value, that is, high-technology products, at sufficient levels become increasingly more dependent on developed countries for their technologies, and this insufficient export of quality products and increase in technology imports lead to a foreign trade deficit, and thus a current account deficit. The export and import of services are important in keeping the current account at a positive level, and one of the most important resources of countries through which they can keep their service export account at a positive level is tourism revenues. Tourism revenues contribute to increasing foreign exchange revenues for developed countries while improving the current account of developing countries.

The geopolitical and geographical location of countries, together with their natural beauties and cultural legacies, create the potential for tourism revenue. If the tourism sector is revived to make use of the existing potential, the sector can make various connections with other industries and make a positive contribution to economic development (Fahimi et al., 2018). Aside from providing inflows of currency, the tourism sector also revives other sectors of the economy, both directly and indirectly, such as accommodation and retail, restaurants, travel agencies, insurance agencies, food, and health. As a services industry, tourism drives technology and innovation according to its needs and is thus accepted to encourage physical and human capital accumulation, and in turn, to make a positive contribution to the process of economic growth (Brida et al., 2020). The development of the tourism sector encourages other investments, such as for the construction of highways, airports and buildings, and the associated transportation and sewer system infrastructure (Şengönül et al., 2018). Such conditions support the development level of a country. By acting as a catalyst in the public and private sectors, the tourism sector has a broad range, and also makes a significant contribution to employment.

When tourism's impact on the economy is investigated it can be seen to have connections to infrastructure investments in the public dimension and almost all industries in the private sector dimension, and this diversity of production and investment channels leads to an increase in employment. While the relationship between tourism and economic growth has been studied for different groups of countries and periods in economic literature, there is a lack of consistency in literature charting the relationship between tourism development and economic growth, which is studied within the framework of four different hypotheses in literature, being the growth or Tourism-led Growth (TLEG), conservation, bi-directional causality and neutrality hypotheses (Tuğcu, 2014).

According to the TLEG hypothesis, the development of tourism revives economic growth, and the increase in tourist arrivals and/or tourism revenues leads to further economic growth. This hypothesis suggests that investments in the tourism sector increase the income of the existing workforce, while at the same time creating new jobs inside and outside the sector, triggering economic growth. The hypothesis implies further that since tourism is a significant building block of the general economy, any decrease in tourism activity could lead to economic recession, and so countries must use tourism to improve their economies.

The conservation hypothesis suggests that economic growth stimulates the development of tourism, with growth in the general economy increasing the demand for tourism, while any decrease in economic activity lowers the demand for tourism significantly. Accordingly, the increase in revenues brought about by investments in other sectors would create new jobs, and thus lead to an increase in tourism demand.

The bi-directional causality hypothesis asserts that economic growth and tourism are strongly interconnected and can serve as complementary, with any general growth in a national economy encouraging the development of tourism, and vice versa. The bi-directional causality hypothesis argues that capital investments in other industries in an economy pave the way for the development of tourism, while investments in tourism encourage growth in the general economy.

Finally, the neutrality hypothesis claims that no relationships exist between the development of tourism and economic growth. According to this hypothesis, as tourism is not a significant component of general economic activity, policies to develop tourism or the provision of incentives

to encourage tourism investments would not affect economic growth (Doğru & Bulut, 2018).

If tourism is to develop and contribute to economic development, certain factors must exist in the country in question, and one such factor, economic freedom, is the focus of the present study. In general, economic freedom refers to the ability to perform all economic activities including, primarily, production, investment, and consumption, without governmental intervention (Ceatano & Calerio, 2009; Tunçsiper & Biçen, 2014; Şahin, 2018). The Index of Economic Freedom (IEF) published by The Heritage Foundation determines the level of economic freedom of a country based on 12 social, political, and economic parameters.[2] Each parameter is scored on a scale of 0–100 according to its specific criteria, and the average is calculated to give the IEF. A higher score indicates a higher level of freedom (Miller et al., 2021). The level of economic freedom level can determine the number of tourists that arrive and the level of tourism-focused investments realized by a country.

The level of economic freedom can determine the number of tourists that visit and the level of tourism-focused investments made in a country. Tourists perceive countries with low levels of freedom as problematic for tourism, and travel anxiety may lead them to cancel their trip or to opt for other destinations. A low level of economic freedom may also have a negative effect on tourist experiences, creating a negative impression about the country (Akar & Özcan, 2020). Regarding the issue of tourism-focused investment growth, economic freedom would motivate not only local but also international investments, and when considered from this perspective, economic freedom would provide the opportunity to make effective use of resources; ensure the fulfillment of legal obligations, such as intellectual property rights and judicial independence; enable the application of stable macroeconomic policies; and encourage the enactment of business, credit and labor regulations that would ensure the regular processing of international procedures and commerce, thus contributing to an increase in investments (Anwar & Mughal, 2012; Şahin, 2018).

Freedom of investment, as a category of economic freedom, is the indicator of international capital movement in some way. Direct investments are portfolio investments that account for a significant proportion of the international movements of capital, prioritizing the

[2] Property Rights, Government Integrity, Judicial Effectiveness, Tax Burden, Government Spending, Fiscal Health, Business Freedom, Labor Freedom, Monetary Freedom, Trade Freedom, Freedom of investment, Financial Freedom

suitability of the country to be invested in the conditions of a liberal economy. Negative factors such as different rules applied to investments by locals and foreigners, restrictions on profit transfers, and speculative activities in the financial and economic markets obstruct capital movements. In this regard, the investment freedom, the attitude of the country towards capital movements, the property rules and regulations, the investment restrictions applied in some sectors, and such instruments as controls on foreign exchange and the financial markets must be studied and calculated, as any unfavorable conditions in the said instruments decreases the freedom of investment index score, with a negative effect on all other investments, starting with tourism-focused investments. Economic freedom is broader in scope due to its social, political and legal dimensions, all of which influence tourist numbers, and consequently, tourism revenues. Freedom of investment, with its narrow scope, may affect all of the investments that can be made in a country.

In the present study, the relationship between economic freedom, investment freedom, and tourism and economic growth in 16 countries bordering the Mediterranean Sea is investigated for the 2006–2019 period, making use of a panel data analysis approach. The study's contribution to literature is in its contribution to the low number of studies to date identified in a review of literature on the relationship between labor, economic freedom, and tourism and economic growth. Freedom of investment, being the level of international mobility of capital, is also taken into account in the present study considering its contribution to increasing economic growth by supporting all investments, starting with tourism-focused investments. After the introduction of the study, the second section presents a review of the literature, while the third section introduces the adopted dataset approach. The fourth section presents an analysis of the results, while the study is concluded in the fifth and final section with the results and an evaluation of the study findings.

LITERATURE REVIEW

The body of literature on tourism revenues and economic growth is still under comprehensive review for various countries and/or regions, making use of diverse empirical methods, due to the significant global increase in travel and tourism in recent years. In previous studies, the nexus between tourism and economic growth is analyzed based on four different hypotheses, as described in the introduction, which increases the interest in the subject.

In their study testing the TLEG hypothesis, Balaguer and Cantavella-Jorda (2002) carried out an analysis of Spain for the 1975–1997 period employing a co-integration analysis approach and found tourism to have a positive effect on growth in the period in question. Oh (2005) studied the relationship between economic growth and tourism in South Korea in the 1975–2001 period, employing a co-integration and causality analysis approach, and identified a causative relationship between economic growth and tourism. For their study of the relationship between economic growth and tourism in Turkey in the 1992–2006 period, Kızılgöl and Erbaykal (2008) carried out a causality analysis and identified a unidirectional causality from economic growth to tourism revenues. Samimi et al. (2011) assessed the relationship between tourism revenues and economic growth for 20 developing countries for the 1995–2009 period, carried out a P-VAR and causality analysis, and identified a long-term positive relationship between tourism and economic growth, as well as a bidirectional causative relationship.

In Chou's (2013) study of 10 transition economies for the 1988–2011 period assessing the relationship between tourism and economic growth, a panel causality test revealed no causality for Bulgaria Romania, and Slovenia; TLEG in Cyprus, Latvia, and Slovakia; bidirectional causality in Estonia and Hungary; and causality from growth to tourism in the Czech Republic and Poland. In his causality analysis of the relationship between tourism and economic growth in Mediterranean countries for the 1995–2010 period, Aslan (2013) reported the TLEG hypothesis to be relevant. For his study of the relationship between economic growth and tourism, Tuğcu (2014) assessed 21 countries bordering the Mediterranean from the Asian (4 countries), European (12 countries), and African (5 countries) continents in 1998–2011 period. Panel causality analysis was applied in the study and it was assessed in the framework of hypotheses, and it was concluded that there was no causality between tourism and economic growth in three of the Asian countries and all of the African countries, supporting the neutrality hypothesis, while in the European countries a causality relationship was established between tourism and economic growth in all but four of the studied European countries.

In the study of Malaysia by Tang and Tan (2015) for the 1991–2014 period, co-integration and causality analyses were conducted to test the TLEG hypothesis, from which it was determined that tourism and economic growth were co-integrated and that a unidirectional causality from tourism to economic growth existed. Yalçınkaya and Karabulut (2017) studied the impact of tourism revenues on economic growth in Turkey separately for

the 1965–2016 and 1980–2016 periods. They concluded that tourism revenues had a positive impact on economic growth, with a greater impact noted in the 1980–2016 period. Furthermore, a causality analysis revealed no causality in the 1965–2016 period, but a bidirectional causality between tourism revenues and economic growth in the 1980–2016 period.

De Vita and Kyaw (2017) assessed the relationship between tourism and economic growth in 129 countries around the world for the 1995–2011 period, employing a generalized moment method that demonstrated that specialization in the tourism sector had decreasing returns in economic growth, especially in countries that had completed their financial development. Shahzad et al. (2017) studied the 10 countries that attract the highest number of tourists in the 1990–2015 period to test the validity of the TLEG hypothesis. The results of the analysis, for which a quantile-quantile regression model was applied, revealed a positive relationship between tourism and economic growth in all 10 countries, although the relationship was weaker for Germany and China.

Şahin (2018) studied the relationship between economic freedom and direct capital investments in the BRICS countries, applying a causality analysis for the 1995–2014 period, and identified causality from economic freedom to invest only in Turkey, with no causality relationship established for the other countries. Fahimi et al. (2018) studied the relationship between tourism, human capital, and economic growth in the 1995–2015 period for 10 small countries using a panel causality analysis, and reported identifying TLEG, tourism-led development of human capital, and human capital development-led growth. In their study, Doğru and Bulut (2018) assessed the relationship between tourism development and economic growth with panel causality analysis for two European countries based on 1996–2014 data, the results of which indicated the existence of bi-directional causality between increased tourism revenues and economic growth and revealed that the development of tourism and economic growth mutually revive each other.

Zortuk and Yıldız (2018) studied the relationship between economic growth and tourism in the E7 countries, and the results of their asymmetric causality analysis applied for the 1995–2016 period demonstrated the existence of a causal relationship between the two variables. Gövdeli (2018a) studied the relationship between economic freedom, tourism, and economic growth in his study of BRICS countries. Based on the results of a causality analysis conducted covering the 1995–2016 period, identified the existence of causality between economic freedom, tourism revenues, and

economic growth. Gövdeli (2018b) studied the relationship between tourism, exports, and economic growth for Turkey in the 1963–2015 period, and it was determined from the results of co-integration and causality analyses that the three factors are co-integrated, that is, they liaise in the long term, although no causal relationship was found between tourism and economic growth. Altıner (2019) studied the relationship between tourism and economic growth for Turkey in the 1969-2018 period, applying an ARDL approach that revealed the existence of both a short- and long-term relationship between tourism and economic growth.

Pata (2020) studied the relationship between tourism revenues and the development of the tourism, industrial and service sectors in Turkey, applying a co-integration and causality analysis to data covering the 1963–2017 period. The author determined that for Turkey, the TLEG hypothesis was valid for the agriculture and service sectors. Akar and Özcan (2020) studied the relationship between economic freedom and tourism in 32 OECD-member countries in the 1996–2017 period, the results of which showed that economic freedom had a significant effect on the number of tourists, while a causality analysis identified a bidirectional causality between economic freedom and the number of tourists.

Among the studies in literature, Balaguer and Cantavella-Jorda (2002), Aslan (2013), Tang and Tan (2015), Fahimi et al. (2018), and Pata (2020) all confirm the TLEG hypothesis; Zortuk and Yıldız (2018), Doğru and Bulut (2018), Yalçınkaya and Karabulut (2017) and Samimi et al. (2011) all confirm the feedback hypothesis; Oh (2005), and Kızılgöl and Erbaykal (2008) confirm the conservation hypothesis; and Gövdeli (2018) confirms the neutrality hypothesis.

DATASET AND METHODOLOGY

In this study of the relationship between tourism revenue, economic growth, economic freedom, and investment freedom, the data of 16 countries bordering the Mediterranean Sea[3] for the 2006–2019 period were used. UNWTO, from where the tourism data used in the analysis were obtained, keeps data only from 2006, which limits the scope of the analysis. Furthermore, as the data of all Mediterranean countries were irregular, only 16 countries were included in the analysis. Generally, three variables are used in literature to measure the impact of tourism on economic growth

[3] Spain, France, Italy, Slovenia, Croatia, Albania, Turkey, Cyprus, Israel, Lebanon, Egypt, Greece, Malta, Tunisia, Algeria and Morocco

and other economic indicators, being tourism revenues, tourism expenditures, and the number of arriving tourists. These three variables cannot be used in the same model as they are highly correlated, leading to problems of multicollinearity. The economic growth variable was included in the model as it represents the revenue dimension of the tourism economy in terms of value (fixed 2010 US$), while the tourism revenues variable was included in the model due to its direct impact on economic growth (Shahzad et al. 2017; Balaguer & Cantavella-Jorda 2002; Fahimi et al. 2018; Tuğcu 2014; Doğru & Bulut 2018). The variables used in the study and subjected to a panel data analysis are presented in Table 1, along with explanations of the variables.

Table 1. *Dataset*

Variable Code	Variable	Explanation	Source
LGDP	GDP	Constant US$ 2010	WDI
LTOUR	Tourism Revenues	Current US$	UNWTO
ECFREE	Economic Freedom	Index value	The Heritage Foundation
INFREE	Investment Freedom	Index value	The Heritage Foundation

Table 2 presents a summary of the descriptive statistics of every variable used. Each variable is based on 224 observations. For LGDP, LTOUR, ECFREE, and INFREE, the average values for the variables are 11.161, 9.804, 61.596, and 63.147 respectively. The standard deviations of the variables vary between 0.661 and 15.648.

Table 2. *Descriptive Statistics*

Variables	Obs	Mean	Std. Dev.	Min.	Max.
LGDP	224	11.161	0.746	9.900	12.473
LTOUR	224	9.804	0.661	8	10.912
ECFREE	224	61.596	5.498	44.7	73.3
INFREE	224	63.147	15.648	20	85

Table 3 presents the correlation matrix of the variables. The relationship between the economic growth variable, and the tourism revenues and freedom of investment variables are positive, while the relationship between economic growth and economic freedom is negative.

Table 3. *Correlation Matrix*

	LGDP	LTOUR	ECFREE	INFREE
LGDP	1			
LTOUR	0.7340	1		
ECFREE	-0.0326	0.2491	1	
INFREE	0.1557	0.4318	0.6665	1

The model established to identify the relationship between economic freedom, investment freedom, tourism and economic growth with a natural logarithm of variables is as follows:

$$LGDP_{it} = \beta_0 + \beta_1 LTOUR_{it} + \beta_2 ECFREE_{it} + \beta_3 INFREE_{it} + \varepsilon_{it} \quad (1)$$

Subindices at variables, *i* represents countries, *t* represents time, and ε represents the error term. Whether the variable sets are static or not is important for the reliability of results due to the false regression problem. In the panel data analysis, static data sets were tested using unit root tests, separated as first and second generation. Which of the first- and second-generation unit root tests were to be used was determined by an inter-unit correlation (cross-sectional dependency) test. Cross-sectional dependency was determined from a Breusch and Pagan (1980) LM test and Pesaran's (2004) test. Whether the unit dimension (N) was larger or smaller than the time dimension (T) determines which test is to be used. The most appropriate test in the event of N>T is Pesaran's (2004) test. The Pesaran (2004) CD test is as follows:

$$CD = \left(\frac{2T}{N(N-1)}\right)\sum_{i=1}^{N-1}\sum_{j=i+1}^{N-1}(\hat{p}_{ij} - 1) \sim N(0,1) \quad (2)$$

After the determination of cross-sectional dependency, the stationarity of the series is tested with a suitable unit root test. For the analysis, a second-generation unit root test, defined as a co-integrated augmented Dickey-Fuller (CADF) test, as developed by Pesaran (2007), was used due to the existence of cross-sectional dependency. The CADF test statistic is used to produce an augmented version of the Im Pesaran and Shin (IPS) statistic and the cross-sectional augmented version of the IPS test. The CIPS statistic is as follows:

$$CIPS = N^{-1}\sum_{i=1}^{N} CADF_i \quad (3)$$

t value of the Pesaran CADF unit root test that is tested by Pesaran (2007) to be valid when N>T and N<T is as follows:

$$t_1(N,T) = \frac{\Delta Y_i' \bar{M}_w Y_{i-1}}{\hat{\sigma}(Y_{i-1}' \bar{M}_w Y_{i-1})^{1/2}} \quad (4)$$

For series in a stationary state after the unit root test has been determined and applied based on the results of a cross-sectional dependency test, a panel causality analysis can be carried out. To determine which causality analysis should be applied, however, it must first be identified whether the constant and slope parameters are homogenous or

heterogeneous. An appropriate causality analysis would be determined based on homogeneity. Pesaran and Yamagata (2008) determined that if the case unit dimension is larger than the time dimension, a Delta test is most appropriate for the determination of homogeneity. The Pesaran and Yamagata' (2008) delta test statistic is as follows:

$$\hat{\Delta}= \sqrt{N}\frac{N^{-1}S-k}{\sqrt{2k}} \quad (5)$$

$$\hat{\Delta}_{adj}= \sqrt{N}\frac{N^{-1}S-E(\tilde{Z}_{it})}{\sqrt{Var(\tilde{Z}_{it})}} \quad (6)$$

As the series have cross-sectional dependency, are stationary and have heterogeneous slope parameters, a Dumitrescu and Hurlin (2012) panel causality analysis may be preferred as the most suitable causality analysis approach. A Dumitrescu and Hurlin (2012) panel causality analysis is also preferred for giving different statistics for N>T and N<T situations. Accordingly, the Wald statistic, found by dividing the means of each cross-sectional unit by itself, the ($Z_{N,T}^{HNC}$) statistic with asymptotic distribution used in N <T situations, and the (Z_{N}^{HNC}) statistic with semi-asymptotic distribution used in T<N situations are as follows:

$$W_{N,T}^{Hnc} = \frac{1}{N}\sum_{i=1}^{N} W_{i,T} \quad (7)$$

$$Z_{N}^{HNC} = \frac{\sqrt{N\left[W_{N,T}^{HNC} - N^{-1}\sum_{i=1}^{N} E(W_{i,T})\right]}}{\sqrt{N^{-1}\sum_{i=1}^{N} Var(W_{i,T})}} \quad (8)$$

$$Z_{N,T}^{HNC} = \sqrt{\frac{N}{2K}\left(W_{N,T}^{HNC} - K\right)} \quad (9)$$

The hypotheses suggested in this study according to tests and analyses that are theoretically explained are as follows:

Hypothesis 1 (H1): Increases in tourism revenues increase economic growth.

Hypothesis 2 (H2): Positive developments in economic freedom increase economic growth.

Hypothesis 3 (H3): Positive developments in economic freedom increase tourism revenues.

Hypothesis 4 (H4): Positive developments in freedom of investment increase economic growth.

Hypothesis 5 (H5): Positive developments in freedom of investment increase tourism revenues.

ANALYSIS RESULTS

In the first stage of the analysis, the existence of cross-section dependence was tested with a Pesaran (2004) CD test, the results of which are presented in Table 4.

Table 4. *Test Results of Cross-Sectional Dependence*

Variables	CD Test	Coefficient	P value
LGDP			
LTOUR	3.83	0.094	0.000*
ECFREE			
INFREE			

*indicates a 1% level of significance.

According to results presented in Table 2, interunit correlation, that is, cross-section dependence, was determined for the whole model, with a Correlation coefficient of 0.09. After the cross-section dependence was determined, cross-section augmented Im Pesaran and Shin (CIPS) panel unit root tests were selected from among the second-generation unit root tests for the determination of stationarity, the results of which are presented in Table 5.

Table 5. *Unit Root Test Results*

				Level values		
Variables	t-bar	cv10	cv5	cv1	Z[t-bar]	P value
LGDP	-1.660	-2.110	-2.220	-2.450	0.182	0.572
LTOUR	-1.155	-2.110	-2.220	-2.450	2.035	0.979
ECFREE	-1.330	-2.110	-2.220	-2.450	1.395	0.918
INFREE	-2.126	-2.110	-2.220	-2.450	-1.527	0.063***
				Values of difference		
LGDP	-2.485	-2.110	-2.220	-2.450	-2.844	0.002*
LTOUR	-2.466	-2.110	-2.220	-2.450	-2.776	0.003*
ECFREE	-2.871	-2.110	-2.220	-2.450	-4.262	0.000*
INFREE	-2.549	-2.110	-2.220	-2.450	-3.079	0.001*

Note 1: *, *** indicate 1% and 10% levels of significance, respectively.
Note 2: Only constant and lags (1) are considered.

Based on results presented in Table 5, in level values, the absolute t-bar values of all variables other than the (INFREE) variable were smaller

than the cv10, cv5, and cv1 critical values, which led to the determination that they were not stationary, and the probability value of the Z[t-bar] statistic was also determined to be non-stationary. The absolute value of the INFREE variable was higher than the cv10 critical value and was thus stationary at level. When the values of different variables were considered, it was noted that the absolute values of all valuables were higher than the cv10, cv5, and cv1 critical values, while the probability value of the Z[t-bar] statistic suggested that the series was stationary. After the series was made stationary, the Delta test suggested by Pesaran and Yamagata (2008) in N>T cases was conducted to test the homogeneity of the constant and slope parameters. The results of the test are given in Table 6.

Table 6. *Results of Homogeneity Test*

Delta Test	**Statistic**	**P value**
$\widehat{\Delta}$	8.731	0.000*
$\widehat{\Delta}_{adj}$	10.890	0.000*

* indicates 1% level of significance.

According to statistical results given in Table 6, the constant and slope parameters were determined to be heterogeneous. Constraints of existence of cross-sectional dependence, stationarity of series and heterogeneous slope and constant parameters enable the application of a Dumitrescu and Hurlin (2012) panel causality analysis, the results of which are given in Table 7.

Table 7. *Results of Dumitrescu and Hurlin (2012) panel causality analysis (Results from General Panel)*

			W-Stat	Z-bar Stat	Prob	Causality
dLGDP	≠>	dLTOUR	1.7486	-0.9633	0.3354	No
dLTOUR	=>	dLGDP	2.4457**	2.0175	0.0436	Yes
dLGDP	≠>	dECFREE	3.3548	0.2731	0.7848	No
dECFREE	≠>	dLGDP	3.5732	0.4413	0.6590	No
dLGDP	=>	INFREE	5.8193*	7.8847	0.0000	Yes
INFREE	=>	dLGDP	6.1537**	2.4277	0.0152	Yes
dLTOUR	=>	INFREE	2.6389**	2.3535	0.0186	Yes
INFREE	≠>	dLTOUR	2.5282	-0.3632	0.7165	No
dLTOUR	≠>	dECFREE	1.3198	0.0593	0.9527	No
dECFREE	≠>	dLTOUR	1.9809	-0.7845	0.4327	No

*, ** indicate 1% and 5% levels of significance, respectively.

It was determined from the results of the analysis presented in Table 7 that tourism revenues (LTOUR) are a cause of economic growth (LGDP); that a bi-directional causality exists between investment freedom (INFREE) and economic growth (LGDP), that is, they are mutually dependent; that

tourism revenues (LTOUR) are the cause of investment freedom (INFREE). An analysis of the results of the panel validates the H1 and H4 hypotheses suggested in this study. The country-specific causality relationship results identified in the general panel are presented in Table 8.

Table 8. *Causality Results of Tourism Revenue-Economic Growth According to Units*

	LTOUR => LGDP		**LGDP => LTOUR**
	W-Stat	**Hypothesis**	**W-Stat**
Spain	1.20	Neutrality	0.23
France	8.32**	Tourism-Led Growth	0.34
Italy	2.98	Neutrality	0.31
Slovenia	0.95	Neutrality	0.54
Croatia	1.57	Conservation	7.41***
Albania	2.21	Neutrality	2.75
Turkey	4.14***	Tourism-Led Growth	0.13
Cyprus	3.52***	Tourism-Led Growth	0.01
Israel	3.15	Neutrality	0.84
Lebanon	6.33**	Tourism-Led Growth	1.02
Egypt	0.55	Neutrality	1.19
Greece	0.68	Neutrality	5.95
Malta	1.18	Neutrality	2.68
Tunisia	0.10	Neutrality	2.61
Algeria	0.09	Neutrality	0.01
Morocco	2.09	Neutrality	1.89

*, **, and *** indicate 1%, 5% and 10% levels of significance, respectively.

According to the results presented in Table 8;

- The countries in which tourism revenues were the cause of economic growth were France, Turkey, Cyprus, and Lebanon. In these countries, the TLEG hypothesis and the H1 hypothesis were validated.
- In Croatia, economic growth was determined to be the cause of tourism revenues, and thus the conservation hypothesis was deemed valid.
- In other countries, no relationship was identified between economic growth and tourism revenues, thus the neutrality hypothesis was valid.

The unit-specific causality relationships between economic freedom, investment freedom, tourism revenues, and economic growth are presented in Table 9. According to results presented in Table 9,

- In France, Italy, Slovenia, Croatia, Cyprus, and Greece, economic growth was determined to be the cause of investment freedom,
- In Italy, Croatia, and Malta, investment freedom was determined to be the cause of economic growth, and the H4 hypothesis was thus valid,

- In Slovenia, Croatia, Greece, Malta, and Morocco, tourisms revenues were determined as the cause of investment freedom, and the H5 hypothesis was thus valid,
- In Croatia and Lebanon, investment freedom was determined to be the cause of tourism revenues, and the H5 hypothesis was thus valid,
- Only in Turkey was economic growth the cause of economic freedom,
- In Lebanon and Tunisia, economic freedom was determined to be the cause of economic growth, and the H2 hypothesis was thus valid,
- In Cyprus and Israel, tourism revenues were determined to be the cause of economic freedom,
- In no country was economic freedom determined to be the cause of tourism revenues.

Table 9. *Causality Results of Economic Freedom-Investment Freedom-Economic Growth by Units*

	LGGDP => INFREE W-Stat	**INFREE => LGDP** W-Stat	**LTOUR => INFREE** W-Stat	**INFREE => LTOUR** W-Stat	**LGDP => ECFREE** W-Stat	**ECFREE => LGDP** W-Stat	**LTOUR => ECFREE** W-Stat	**ECFREE ≠> LTOUR** W-Stat
Spain	0.17	6.56	0.01	4.95	0.11	1.09	0.18	3.24
France	7.92**	6.87	0.65	4.07	0.57	5.89	0.01	0.57
Italy	27.00*	34.92*	1.57	1.35	2.80	0.38	0.46	4.74
Slovenia	11.25*	5.92	3.77***	0.36	1.25	0.06	2.46	0.05
Croatia	29.70*	11.68**	6.61**	7.26***	5.56	1.83	0.71	2.32
Albania	0.01	4.77	1.57	0.93	5.02	0.18	0.98	2.66
Turkey	0.50	0.95	0.81	0.26	18.98*	1.40	1.19	0.29
Cyprus	4.36***	0.25	0.04	4.04	2.42	4.11	4.14***	2.07
Israel	1.65	5.54	1.03	0.71	0.43	0.76	3.23***	3.19
Lebanon	0.90	5.00	0.81	11.90**	2.80	19.72*	0.14	2.43
Egypt	0.26	0.12	0.52	0.09	2.87	1.79	2.96	2.29
Greece	6.31**	3.16	9.44**	2.03	2.91	4.39	0.22	1.51
Malta	1.03	6.93***	10.35*	0.80	4.37	1.04	2.00	2.91
Tunisia	0.16	2.74	0.16	0.69	1.54	7.97***	0.09	0.82
Algeria	0.77	0.16	0.03	0.37	1.36	0.86	1.85	0.88
Morocco	1.06	2.83	4.79***	0.57	0.62	5.63	0.42	1.67

*, **, and *** indicate 1%, 5% and 10% levels of significance, respectively.

CONCLUSIONS

The existence of a relationship between tourism and economic growth, and the statistical direction of this relationship have kept economic literature quite busy in recent years. Addressing this issue, a number of hypotheses have been developed related to the effect of tourism on economic growth, the influence of economic growth on tourism, the mutual interdependence

of tourism and economic growth, and the lack of any statistical relationship between the two, and have been termed the TLEG, conservation, bi-directional causality and neutrality hypotheses. The results of this empirical research covering specific periods and countries are based on these four hypotheses.

In the present study, the relationship between tourism revenues, economic growth, economic freedom, and investment freedom was investigated using a panel causality analysis method, involving the study of countries bordering the Mediterranean Sea for the 2006–2019 period. The causality analysis was made both in panel general and on a country basis. Based on the results of the causality analysis between tourism revenues and economic growth in panel general, it was determined that tourism revenues were the cause of economic growth, and thus the TLEG hypothesis was deemed valid. The results of the analysis on a country basis validate the TLEG hypothesis for France, Turkey, Cyprus, and Lebanon, while in Croatia, economic growth was determined to be the cause of tourism revenues, and thus the conservation hypothesis was deemed valid.

The causality relationships between economic freedom and investment freedom, and tourism revenues and economic growth were noted both in panel general and on the basis of countries. An analysis of the results in panel general reveals that no causal relationship exists between economic growth and economic freedom, that bi-directional causality exists between economic growth and investment freedom, that no causal relationship exists between tourism revenues and economic freedom, and lastly, that tourism revenues are the cause of investment freedom. The finding that economic growth and increased tourism revenues lead to an increase in freedom of investment can be attributed to the opening of countries to international markets through increased exports and imports, resulting from the said increases in revenues and consequent intensification of mutual economic relationships. The long-term effect of international capital mobility, on the other hand, can be seen in foreign direct investments. It can thus be argued that freedom of investment, developing as a result of its suitability to the conditions of the liberal economy of the financial and real markets, will increase foreign direct investment, and thus spur economic growth.

The results of the country-based analysis revealed freedom of investment in Italy, Croatia, and Malta to be a driver of economic growth, and further, that freedom of investment was the cause of freedom of investment in Croatia and Lebanon, while in Lebanon and Tunisia,

economic freedom was found to be the cause of economic growth. Such results demonstrate that the increasing freedoms in the said countries linked to the establishment of liberal economic conditions served to improve tourism revenues, leading thus to economic growth. Lastly, according to the results of the analysis, only in Turkey was economic growth determined to be the cause of economic freedom. Increases in production and yields support an increase in the international markets, leading to increased compatibility with the global markets.

The finding in the present study that tourism revenues lead to economic growth concur with those of all studies validating the TLEG hypothesis, while Balaguer and Cantavella-Jorda (2002), Oh (2005), Tuğcu (2014), and Tang and Tan (2015) at literature section of the study correspond to study results. On the other hand, while previous studies have identified a causal relationship between economic freedom, tourism and economic growth, as detailed in the literature review (Gövdeli, 2018; Akar & Özcan, 2020; Şahin, 2018), in the present study no causal relationship was established in panel general between economic freedom, economic growth, and tourism revenues, while in contrast, a country-based analysis revealed a causal relationship in some countries.

Lastly, the overall results of the analysis conducted at panel suggest that when tourism revenues are considered as being the cause of economic growth, the country in question should divert its efforts to support and promote tourism, being a sector that encourages investments in infrastructure and sectoral competition, while also creating employment and acting as a catalyst for the activation of other sectors. Furthermore, public spending on tourism must be increased, while branding and marketing campaigns must be supported. It should be noted that regulations that increase economic freedom and freedom of investment are important for policymakers, and so the rules and regulations related to property, the limitations placed on investments in certain sectors, and the controls applied to foreign exchange and the financial markets must be adjusted to suit the conditions of a liberal economy, as this would ensure an increase in investments to the country, beginning with the tourism sector.

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