Özer, M., Küçüksakarya, S. / Journal of Yasar University, 2021, 16/63, 1535-1550

The Relationship Between Economic Activity, Tourism Expenditures and Real Exchange Rate in 9 Most Visited OECD Countries

En Çok Ziyaret Edilen 9 OECD Üyesi Ülkede İktisadi Faaliyet, Turizm Harcamaları ve Reel Döviz Kuru İlişkisi

Mustafa ÖZER, Anadolu University, Eskişehir, Turkey, muozer@anadolu.edu.tr

Orcid No: 0000-0001-9852-8441

Sevilay KÜÇÜKSAKARYA, Anadolu University, Eskişehir, Turkey, satlama@anadolu.edu.tr

Orcid No: 0000-0002-4224-6100

Öz: Bu çalışmada iktisadi faaliyetler, turizm harcamaları ve reel döviz kuru arasındaki dinamik ilişkiler 2005-2019 dönemine ait en çok ziyaret edilen 9 OECD üyesi ülkeye ait yıllık panel veri kullanılarak analiz edilmiştir. Bu amaçla önce serilerin bütünleşme dereceleri daha sonra da aralarında eşbütünleşme olup olmadığı araştırılmıştır. Westerlund hata düzeltme temelli panel eşbütünleşme testi değişkenler arasında eşbütünleşme ilişkisi olduğunu göstermiştir. Bu nedenle analiz panel VECM ile yapılmıştır. Analiz sonuçları reel döviz kuru ile turizm harcamalarından reel GDP'ye doğru hem kısa dönem hem de uzun dönemde Granger nedensellik olduğunu göstermektedir. Ayrıca reel döviz kurundan da turizm harcamalarına doğru kısa dönemde bir nedensellik vardır. Çalışmanın sonuçları turizm harcamaları ile reel kur bağımlı değişken olduğunda değişkenler arasında bir uzun dönem nedensellik göstermemektedir. Nihayet ne reel kur , ne de reel GDP'den turizm harcamalarına doğru herhangi bir nedensellik bulunamamıştır. Çalışmanın bulguları, bu ülkelerde turizmin büyümeye katkısını sürdürebilmesi için desteklenmesi gerektiğini ve bu ülkelerin hem turizmi hem de iktisadi faaliyet düzeyini artırmak için dış rekabet düzeyini korumaları gerektiğini göstermektedir.

Anahtar Kelimeler: Turizm, Reel GSYİH, Reel Döviz Kuru, Panel VECM, Panel Birim Kök, Panel Eşbütünleşme.

JEL Sınıflandırması: L83, Z32, C23, F31, O47

Abstract: This study analyzes the dynamic relations between economic activity, tourism expenditures, and real exchange rate in 9 most visited OECD countries using annual panel data for 2005-2019. To examine the dynamic relations, we first carried out the panel unit root tests to determine the degree of the integration of the variables. And then, using the Westerlund error-correction-based panel cointegration test, we found evidence of the existence of long-run relationships among variables. Therefore, we estimated a panel VECM model to obtain evidence of the causal relationship between the variables. According to the major finding of the studies, there is unidirectional causality from the real effective exchange rate and tourism expenditures to real GDP. Also, real exchange rate granger causes tourism expenditures in the short run. Test results also provide evidence that both real effective exchange rate and tourism expenditures granger cause to real GDP in the long run. However, there is no evidence of long-run granger causality when real effective exchange rate and tourism expenditures are dependent variables. The results of the study imply that to create sustainable growth in the sample countries, they should increase the tourism sector's contribution to GDP, and the countries also should maintain their external competitiveness.

Keywords: Tourism, Real GDP, Real Exchange Rate, Panel VECM, Panel Unit Roots, Panel Cointegration

JEL Classification: L83, Z32, C23, F31, O47

1. Introduction

The tourism is a key sector for countries' development and economic stability with different developmental levels by being sources of foreign exchange earnings, contributing to an increase in employment directly and indirectly and increasing the nation's economic growth. The importance of the sector has been increasing in recent years and because of intense globalization. Therefore, tourism sector's development in many countries can be considered

Makale Geçmişi / Article History
Başvuru Tarihi / Date of Application : 14 Haziran / June 2021
Kabul Tarihi / Acceptance Date : 23 Haziran / June 2021

one of the engines of economic growth. Also, the industries increasing importance is seen as a sign of improving the regional inequalities within the nations. According to International Tourism Highlights 2019 published by the World Tourism Organization, tourism is the world's third-largest exporting sector following chemicals and fuels, and ahead of automotive products and food tourism in 2018 (UNWTO, 2019).

In OECD countries, the number of international tourist arrivals has reached 1.407 million in 2018, which is an increase of six percent compared to the previous year. Total tourism revenues increased by 4.4 to reach 1.480 billion dollars. This increase is higher than the global GDP growth in the previous eight years. Passenger transportation is worth $250 billion (OECD, 2020).

Tourism exports account for 7% of global trade in goods and services, or $1.7 trillion. The most popular destinations in 2019 were France, Spain, the USA, and China. International tourist arrivals exceeded 1.5 billion globally for the first time in 2019, representing an annual increase of 3.8% (UNWTO, 2020). Hosting some of the world's top tourism destinations, OECD countries welcomed more than half (56.9%) of international arrivals in 2018, and growth in tourist arrivals to OECD countries outperformed OECD countries' arrivals (OECD, 2020). While the picture for tourism in the short term is mixed mainly due to an uncertain economic outlook and external shocks such as health crises and extreme weather events, tourism is expected to continue to grow in the long term.

To design appropriate tourism policies and strategies, policymakers, government officials, and sector participants should have country-specific and cross-country evidence on the relationship between the tourism sector and overall economic activity within countries. Also, they need empirical evidence of how the countries' external competitiveness will play a key role in the connection between the overall economic activity and tourism sector and its different effects on both variables.

For this purpose, we analyze the dynamic interactions between overall economic activity measured by real GDP, external competitiveness proxied by real effective exchange rate index, and tourism sector represented by tourism expenditure in this study. Our study contributes to existing empirical literature by providing empirical evidences to these interactions for the world's leading tourist destinations countries. Also, our study is one of the pioneer studies that analyze the relationship between tourism and economic activity for OECD countries by using tourism expenditure as a proxy of tourism.

According to the findings of our study there is a both short-term and long-term causal relationship between economic activity and tourism sector and external competitiveness of the

countries in the sample. Particularly the panel VECM granger causality test results indicate that in the long run both real effective exchange rate index and tourism expenditures cause real GDP. Short-run causality test results prove that tourism expenditures and real effective exchange rate indexes cause real GDP. Also, short-run causality test results support the idea that the country's external competitiveness will affect the tourism sector. Based on these results, to increase the tourism sector's importance, the government should adopt policies developing the infrastructure and other tourism-related activities. They also improve the external competitiveness of the country.

The organization of the paper is as follows. Section 2 presents some latest data about tourism in sample countries. Section 3 reviews the existing literature. Section 4 explains the data and empirical strategies used in the study. Section 5 presents and discusses the empirical results. Section 6 concludes.

2. Developments in Tourism Sector in the Sample Countries

According to OECD's Tourism Trend and Policies (2020) report, which uses the estimates of Austrian Tourism Satellite Account (TSA), contribution of tourism sector to the direct value added, excluding business trips to the Austrian economy in 2018 is EUR 25 billion, which is 6.5% of GDP. Also, some 244 000 full time job equals to directly connected to tourism linked industries in 2017 for Austria, which contributes to 6.4% of overall employment. The portion of the travel exports in total service exports is 30.9% in 2018.

Tourism plays an essential role in the French economy. Traditional tourism sectors such as accommodation and food services account for approximately 6% of GDP, but tourism also acts as an engine of growth for many other sectors. Total internal tourism consumption, which links tourism related spending both by non-residents and residents, shows over 7% of total GDP, with two-thirds of the total impact of tourism is accounted for by French residents. Direct tourism employment accounts for 1.4 million jobs and over 2 million when considering indirect jobs. Tourism contributes positively to the balance of payments, with the tourism balance typically contributing between EUR 14 - 17 billion annually. It accounted for 22.2% of total service exports of travel exports in 2018.

Tourism in Germany is a constantly growing sector. The Tourism Satellite Account shows the sector directly generated over EUR 105 billion in the German economy, which is 3.9% of total gross value added (GVA) in 2015. It is estimated that the indirect effect of creating additional EUR 76.1 billion. 6.8% of total employment is directly related to the sector, equating

to more than 2.9 million employees. Travel exports accounted for 12.5% of total service exports in 2018.

In 2017, tourism GDP accounted for 2.0% of total GDP and 9.6% of total employment, or 6.5 million employees in Japan. Recent growth in the tourism sector in Japan has been very significant, with international arrivals increasing from 28.7 million in 2017 to 31.2 million in 2018, up 8.7%, and another record high for the sixth consecutive year. Revenues from international tourists rose 18% from JPY 3.8 trillion to JPY 4.5 trillion between 2016 and 2018. Travel exports accounted for 21.8% of total service exports in 2018. To put this growth into perspective, there were 6.2 million international arrivals in 2011, and this five-fold increase in visitor numbers makes Japan one of the rapid growing inbound tourism economies in OECD.

Tourism is a major driver of the economic growth in Korea. In 2018, it accounted for 4.7% of GDP and was estimated to support 1.4 million jobs, representing 5.3% of total employment. Travel exports represented 15.5% of total service exports in 2018. International arrivals increased by 15.1% to 15.3 million in 2018. The most prominent visitor flows are from neighboring countries, including China (up 14.9% over 2017) and Japan (up 27.6% over 2017). Together, these two inbound markets generated 50.4% of total international arrivals to Korea.

Tourism is also a major value-added contributor to Mexican GDP. Compared to the contribution to the tourism sector's GDP with the construction, financial services, and mining sectors, the tourism sector is higher than all. It contributed 8.7% of GDP in 2018. Moreover, 6.0% of total employment (over 2.3 million people) directly related to tourism, which is its highest level since 2006. 78.3% of total service exports were represented by travel exports in 2018. In the same year, Mexico’s tourism export earnings were recorded as 215.5 billion. Rather than outbound, which leads to a surplus in balance of payments, 82.5% of tourism consumption was inbound. Compared to 2017 with 2018, inbound tourism consumption grew by 2.8%, which equals a higher growth rate than Mexico's general economy.

Tourism is Turkey’s one of the fastest and most dynamically growing sectors. More than 2.2 million people are directly employed in Turkey tourism sector, equals to 7.7% of total employment in 2018. Tourism is one of the significant export sources of Turkey. Tourism exports are of great importance for Turkey's foreign exchange inflows; 51.9% of total service exports were represented by travel exports in 2018. Total tourism income constitutes 3.8% of GDP of Turkey in 2018.

It is forecasted that an additional 9 million visitors will visit the United Kingdom by 2025. Comparing the tourism sector to the overall UK economy, it has a faster growth rate. According to Tourism Satellite Account estimates of 2017, the sector’s direct gross value-added (GVA)

contribution is approximately GBP 59.7 billion, which is 3.2% of total GVA. In 2015, tourism sector generated 1.6 million jobs. If we consider all kind of jobs in tourism-related industries, the number increase to over 3 million, which is one in ten of all kind jobs. The contribution of travel exports equals to 12.2% in total service exports, in 2018.

The tourism sector in the United States is a critical contributor to the US economy, accounting for approximately 2.9% of gross value added (GVA). In 2018, inbound travel and tourism accounted for 10% of exports. Based on the TSA estimations of 2018, the tourism sector has a portion in production, which equals USD 1.6 trillion in total economic output. Indirect tourism output equals USD 682 billion and direct tourism output equivalent to USD 941 billion ancillary industries. In 2018, the tourism sector became one of the United States' largest employers, directly supporting 5.9 million jobs. 1.2 million of these were supported by tourism and travel-related exports. 26.0% of total service exports were represented by travel exports in 2018.

In 2017, the contribution of tourism to the Russian economy was RUB 3.2 trillion, equivalent to 3.8% of Russian gross value added (GVA), which rose 21.4% from 2016. Five hundred forty thousand five hundred people were employed in the tourism sector in Russia employed in 2017. The number of international visitor arrivals was 24.6 million in 2018, rising 0.7% over 2017. Based on accommodation statistics, 11.5 million overnight visitors were recorded from international markets in 2018, representing a 43% increase compared with the previous year (OECD, 2020).

All these figures show us that there is a need to study tourism sectors in these countries, focusing on different dimensions of the sectors and its' connections with real GDP. Therefore, we carry out this analysis to provide further evidences, which help to adopt better policies to increase the sector's contributions to economies of sample countries.

3. Literature Review

There is a rich literature examining the relationship between economic growth and tourism. These studies use different methods such as panel data, cross-section data and time series econometric techniques, individual countries and country groups.

Numerous studies on the effect of tourism on economic growth for different countries and country groups are available in the literature. When we examine the literature, it can be seen that we can group the studies through supporting hypothesis of their findings, under four different hypotheses, which are suggesting different policies on the relationship between tourism and economic activity.

The most studies in existing literature mainly focused on if growth hypothesis or tourism led growth hypothesis (TLGH) holds. As is well known, tourism led growth hypothesis (TLGH) was derived from another hypothesis called, export led growth hypothesis that supports economic growth can be achieved both by increasing the labour and capital amount and export expansion in the economy (Brida et al. 2016). Although Ghali (1976) was the priory to analyze the relationship of tourism and economic growth, the first study examines TLGH was Balaguer and Cantavela-Jorda (2002). Moreover, Gündüz and Hatemi-J (2005), Novak et al. (2007), Novak and Sahli (2007), Brau et al. (2007), Katırcıoğlu (2010), Cortes-Jimnez and Pulina (2010), Akinboade and Braimoh (2010), Mishra et al. (2011), Tang and Abosedra (2012), Tang and Tan (2013), Brida et al. (2016), Katırcıoğlu (2018) and Gül and Özer (2018) supports this hypothesis in their studies. Conversely, economic growth can also contribute tourism income, Payne and Marvar (2010), Aslan (2014), Mérida and Golpe (2016) support conservation hypothesis. Furthermore, Dritsakis (2004) confirmed feedback hypothesis in his study, Kim et al. (2006), Lee and Chien (2008) also supported the feedback hypothesis while Oh (2005) supported the neutrality hypothesis by finding found no relationship between these variables.

However, econometric analysis of Lanza et al.'s (2003) studies' includes 13 OECD countries, they estimated the long-run relation between the relative price of the tourist bundle, the share of tourism expenditure, real expenditure in total separately for each country through the period of 1977 and 1992, their study was one of the first empirical study using panel data to analyze the relationship between tourism and economic growth. They confirmed unidirectional relations from economic growth to tourism Lee and Chang (2008), Fayissa and et al. (2007), Sequeira and Nunes (2008), Narayan et al. (2010), and Apergis and Payne (2012) are other studies analyze the effects of tourism on economic activity by using panel methods.

There are also studies examining the relationship between real GDP, tourism and real exchange rate such as Balaguer and Cantavela-Jorda (2002), Dritsakis (2004), Gündüz and Hatemi-J (2005), Lee and Chien (2008), Brida et al. (2016), Payne and Marvar (2010), Cortes-Jimnez and Pulina (2010), Gül and Özer (2018). Majority of these studies are country specific time series studies. Also, they mainly use tourism receipts and tourist arrivals as a proxy for tourism sector.

Therefore, it is evident that there is a need to analyze the relationship between real GDP, tourism and real exchange rate through country groups such as OECD and using tourism expenditure as a proxy for tourism sector. This study exactly aims to do this.

4. Data and Empirical Strategy

Since we will use the panel VECM model to investigate the dynamic relationship between RGDP, REX, and ITREXP, we will first define the data used in the study and do some preliminary analysis data presenting pairwise correlations and descriptive statistics. And then, we will briefly explain the empirical strategy used in the study.

4.1. Data and Preliminary Analysis

In this study, we try to analyze the dynamic relationship between reel GDP, reel exchange rate and tourism expenditure. For this purpose, the study uses panel data consisting of nine leading tourist destination countries, including Austria, France, Germany, South Korea, the Russian Federation, United States, Mexico, Japan, and Turkey-based on the World Tourism rankings which are compiled by the World Tourism Organization (UNWTO). We used the rankings based on the amount of tourism expenditure.

To carry out empirical analysis, we used annual data on real GDP (RGDP), real effective exchange rate (REX), and tourism expenditure (ITREXP) throughout 2005 and 2019. All data extracted from World Bank Indicators Database. We used the 2010 based year constant price GDP to measure real GDP and 2010 based year real effective exchange rate index as a proxy for real exchange rate. All econometric analyses are carried out by using the logarithmic values of the variables. Table 1 presents the descriptive statistics of variables.

Table 1. Descriptive Statistics

	RGDP	**REX**	**ITREXP**
Mean	3.80E+12	100.214	4.68E+10
Median	1.65E+12	99.213	3.52E+10
Maximum	1.83E+13	153.593	1.82E+11
Minimum	6.65E+11	69.412	3.52E+09
Std. Dev.	4.59E+12	15.173	4.11E+10
Skewness	2.050	0.999	1.294
Kurtosis	5.939	4.800	3.914
Jarque-Bera	143.212	40.717	42.434
Probability	0.000	0.000	0.000
Observations	135	135	135

Table 1 shows that on average all the real exchange rate index value is closed to its base year value and the tourism expenditure has positive period average value. And none of the variables does have a normal distribution. Table 2 displays the pairwise correlations between variables and their significance.

Table 2. Pairwise Correlations

Variables	**RGDP**	**REX**	**ITREXP**
RGDP	1.00 -----		
REX	0.012 (0.8843)	1.00 -----	
ITREXP	0.828 (0.0000)	0.096 (0.2663)	1.00 -----

There is a positive and significant linear association between the real GDP and tourism expenditure. The pairwise correlations between real GDP and real exchange rate index and tourism expenditures are positive but not significant.

4.2. Empirical Strategy

To examine the dynamic interactions between RGDP, REX and ITREXP, we will use the panel VECM framework. Before estimating the panel VECM, we need to identify the time series properties of the variables such as stationarity and cointegration. But to implement the apricate the panel unit root test we first test the existence of the cross-sectional dependence among the sample countries by using Breusch-Pagan (1980) (Lagrange Multiplier-LM) and Pesaran (2004) (Cross-section Dependence-CD) and Pesaran et al. (2007) (Bias-Adjusted Cross Sectionally Dependence Lagrange Multiplier- CDLM) tests. Based on the cross-sectional dependence tests results, we decide to use second generation panel unit root test of CIPS. We also use the first-generation panel unit root test of IPS to see if the results differ. And after determining the integration degree of the variables, which are all I (1), we carry out two groups of cointegration tests: The Westerlund error-correction-based panel cointegration test which takes into account of cross-sectional dependence and Pedroni and Kao tests ignores the presence of cross sectional dependence. After finding that variables are cointegrated, we estimated a VECM and pursued the short-run, long-run granger causality as well as impulse response and variance decomposition analysis. We can represent our empirical model by the following 3-equation VECM.

$$\Delta RGDP_{it} = \alpha_{1j} + \sum_{k=1}^{p} \theta_{11ik} \Delta RGDP_{it-k} + \sum_{k=0}^{p} \theta_{12ik} \Delta REX_{it-k} + \sum_{k=0}^{p} \theta_{13ik} \Delta ITREXP_{it-k} + \varphi_{1i} ect_{it-1} + u_{1it} \quad (1)$$

$$\Delta REX_{it} = \alpha_{2j} + \sum_{k=1}^{p} \theta_{21ik} \Delta REX_{it-k} + \sum_{k=0}^{p} \theta_{22ik} \Delta RGDP_{it-k} + \sum_{k=0}^{p} \theta_{23ik} \Delta ITREXP_{it-k} + \varphi_{2i} ect_{it-1} + u_{2it} \quad (2)$$

$$\Delta ITREXP_{it} = \alpha_{3j} + \sum_{k=1}^{p} \theta_{31ik} \Delta ITREXP_{it-k} + \sum_{k=0}^{p} \theta_{32ik} \Delta RGDP_{it-k} + \sum_{k=0}^{p} \theta_{33ik} \Delta REX_{it-k} + \varphi_{3i} ect_{it-1} + u_{3it} \quad (3)$$

Where Δ is the first difference operator; k is the optimal lag length determined by the Akaike Information Criterion; i=1,.. N shows the country; t=1,.. T shows the time period; the various α, α, and φ are parameters have to be estimated; u_{it} is serially uncorrelated error term; ect_{it-1} is the one period lagged error correction term derived from the co-integration vector.

5. Empirical Results

We start our empirical analysis testing the presence of cross-sectional dependence among the sample countries. Table 3 presents the results of the cross-sectional dependence tests.

Table 3. The Cross-Sectional Dependence Tests Results

Tests	**LRGDP**	**LITREXP**	**LREX**	**Model RGDP=f(REX, ITREXP)**
CD_{BP}	473.366 (0.0000)	257.570 (0.0000)	178.274 (0.0000)	138.148 (0.0000)
CD_{LM}	51.544 (0.0000)	26.112 (0.0000)	16.767 (0.0000)	12.038 (0.0000)
CD	21.714 (0.0000)	9.2625 (0.0000)	1.823 (0.0682)	2.956 (0.0031)
LM_{adj}	51.222 (0.0000)	25.790 (0.0000)	16.445 (0.0000)	11.716 (0.0000)
Note: Numbers in parenthesis are p-values of the test statistics.				

All test results in the Table 3 indicate that there is a cross-sectional dependence among the sample countries across each variables and real GDP equation. Therefore, we continue our analysis by testing the degree of the integration of each variable using the second-generation panel unit root test of CIPS, which take into account of cross-sectional dependence. And Table 4 displays the results of these tests. Table 4 also includes the results of first-generation panel unit root test of IPS to compare the results.

Table 4. The Panel Unit Root Tests Results

Variables	**IPS**	**CIPS^{+}**	**Result**
LRGDP	-1.595 (0.0553)	-1.429	I(0)
DLRGDP	-4.812* (0.0000)	-2.440	I(1)
LITREXP	-1.613 (0.0533)	-1.278	I(0)
DLITREXP	-3.153* (0.0008)	-3.084	I(1)
LREX	0.266 (0.6052)	-1.890	I(0)
DLREX	-2.247* (0.0123)	-3.518	I(1)
Notes:			

i. Numbers in parenthesis are p-values of the test statistics.
ii.* indicates the significance of the test statistic at 1 percent significance levels.
iii.+ table critical values are - 2.14, -2.25, -2.45 at 1,5 and 10 percent significance levels.

Panel unit root tests results of both showed that all variables in the study are first difference stationary; they are I (1). Since all variables are first difference stationary, we then test the existence of the cointegration among the variables by using the Westerlund error-correction-based panel cointegration test, which uses the cross-sectional dependence and Pedroni and the Kao cointegration tests don't consider the existence of cross-sectional dependence. Table 5 presents the results of all tests.

Table 5. The Cointegration Tests Results

First Generation Cointegraiton Tests			**Second Generation Cointegration Test**			
Model: RGDP=f(REX, ITREXP)						
Pedroni Residual Cointegration Test			**Westerlund Test**			
	Statistic	p-value	Statistic	Value	Z-value	P-value
Panel v-Statistic	9.108*	0.0000	Gt	-3.939	-6.204	0.000
Panel rho-Statistic	1.672	0.9528	Ga	-0.292	4.225	1.000
Panel PP-Statistic	0.165	0.5658	Note: The Westerlund (2007) tests take no cointegration as the null hypothesis. The test regression is with a constant, and a range of lags (1, 1) and leads (1, 1).			
Panel ADF-Statistic	-1.957*	0.0251				
	Statistic	p-value				
Group rho-Statistic	3.144	0.9992				
Group PP-Statistic	1.136	0.8722				
Group ADF-Statistic	-1.314***	0.0944				
Kao Residual Cointegration Test						
ADF t-Stat	-1.324***	0.0927				
*,**,*** represent 1%, 5% and 10% level of significance						

All cointegration tests results provide evidence of the existence of a long-run relationship among the variables. In other words, based on the cointegration tests results, all variables are cointegrated. Therefore, to examine the dynamic relationship among the variables, we estimated a VECM with one lag selected based on the different criteria.

After estimating the VECM, we carry out three analyses. First, we start with carrying out short-run and the long-run granger causality tests. Moreover, Table 6 provides the results of these tests.

Table 6. The Granger Causality Tests Results

	Short-run causality			**Long-run causality**
Variables	LRGDP	LREX	LITREXP	
LRGDP	-	6.278 (0.0122)*	7.441 (0.0064)*	-3.459*
LREX	0.037 (0.8468)	-	1.865 (0.1720)	-0.818
LITREXP	7.46E-07 (0.9993)	7.483 (0.0062)*	-	1.044
*Significant at 1 percent level of significance				

Based on the results in Table 6, there is a unidirectional causality from real effective exchange rate and tourism expenditures to real GDP. In other words, in the short run both real effective exchange rate and tourism expenditures granger cause to real GDP. Also, real exchange rate granger causes to tourism expenditures in the short run. Test results also provides evidences that in the long run both real effective exchange rate and tourism expenditures granger cause to real GDP as well. But there are no evidences of long-run granger causality when real effective exchange rate and tourism expenditures are dependent variable. Since the granger causality test only Show the direction of the causality among the variables, we carry out the impulse response analysis to provide some evidences about the sign of the causality. Figure 1 displays these impulse responses.

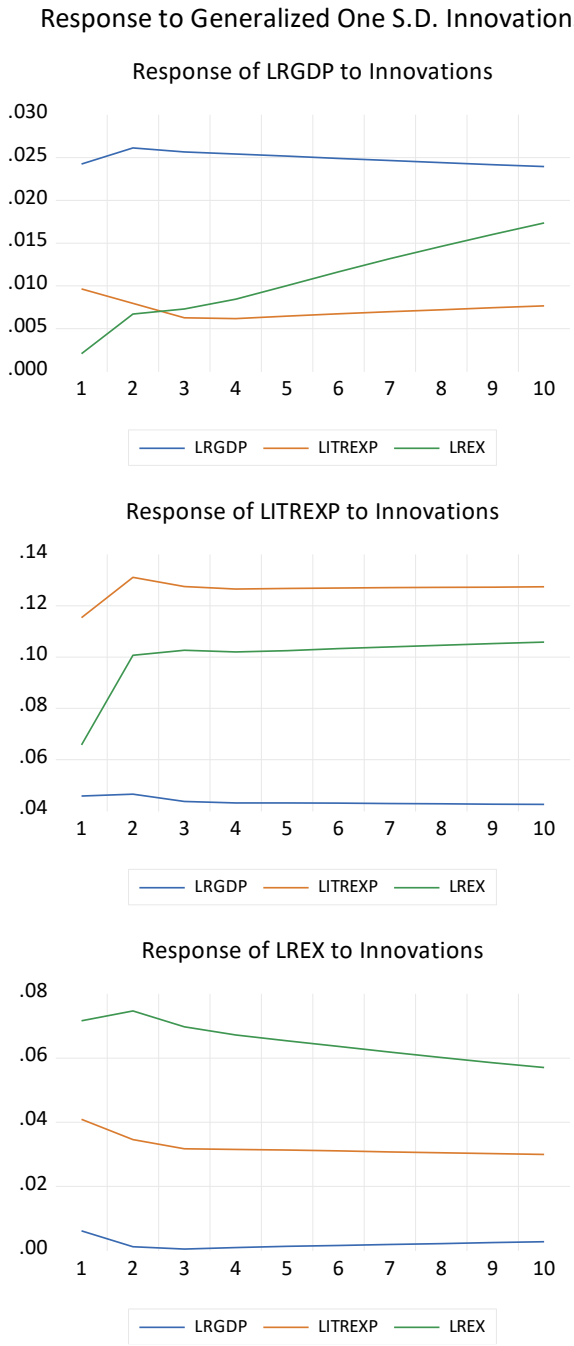

Figure 1. Impulse Responses

Impulse response of the real GDP to both exchange rate and tourism expenditures shocks are positive over ten years, implying that the depreciation of the national currencies represented by an increase in real effective exchange rate index and increase in tourism expenditures will increase the real GDP. To see if the established causalities hold beyond the sample period, we use the results of the variance of decompositions and Figure 2 shows these results.

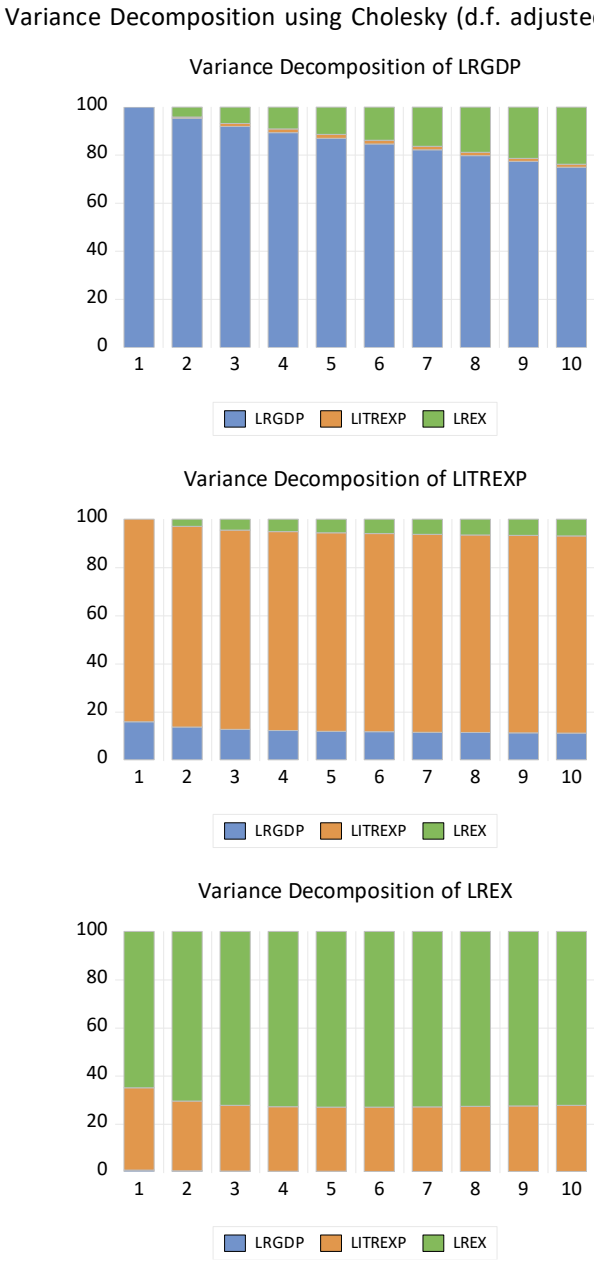

Figure 2. Variance Decompositions

Unfortunately, the variance decompositions do not provide clear evidence that the established granger causalities hold out of the sample period, since most of the variance in the variables explained by themselves.

6. Conclusion

This study examines the causal relationship between real GDP, tourism expenditures, and real exchange rate to provide further evidence on the role of tourism and external competitiveness on overall economic activity. Results of the study provided both short-run and long-run evidences for the existence of the bidirectional causality from tourism expenditures and real exchange rate to real GDP. Therefore, the empirical results of our study support the existence

of the tourism-led-growth hypothesis for the sample countries. Also, real exchange rate granger cause to tourism expenditures in the short run. However, there is no evidence that real GDP and the tourism expenditure granger cause the real exchange rate. Impulse response analysis shows that both exchange rate and tourism expenditures shocks increase the real GDP in sample countries.

According to the results of the study, we can conclude that the policies designing to expand the tourism sector in these countries will contribute to the expansion of their real GDPs. Also, assuring the external competitiveness will have a direct and indirect effect, through its direct effect on the tourism sector, on real GDP in sample countries. Therefore, all sample countries governments should try to expand their tourism sector along with increasing their external competitiveness. This involves commitment and adaptation of the long run tourism and exchange rate policies.

REFERENCES

Akinboade, O. A., & Braimoh, L. A. (2010). International tourism and economic development in South Africa: A Granger causality test. *International Journal of Tourism Research*, *12*(2), 149-163.

Apergis, N., & Payne, J. E. (2012). Tourism and growth in the Caribbean–evidence from a panel error correction model. *Tourism Economics*, *18*(2), 449-456.

Aslan, A. (2014). Tourism development and economic growth in the Mediterranean countries: Evidence from panel Granger causality tests. *Current issues in Tourism*, *17*(4), 363-372.

Balaguer, J., & Cantavella-Jorda, M. (2002). Tourism as a long-run economic growth factor: the Spanish case. *Applied economics*, *34*(7), 877-884.

Breusch, T.S & Pagan, A.R. (1980). The Lagrange Multiplier Test and Its Applications to Model Specification Tests in Econometrics. Review of Economic Studies, 47, 239-53.

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

Brau, R., Lanza, A., & Pigliaru, F. (2007). How fast are small tourism countries growing? Evidence from the data for 1980–2003. Tourism Economics, 13(4), 603-613.

Cortes-Jimenez, I., & Pulina, M. (2010). Inbound tourism and long-run economic growth. *Current Issues in Tourism*, *13*(1), 61-74.

Dritsakis, N. (2004). Tourism as a long-run economic growth factor: an empirical investigation for Greece using causality analysis. *Tourism economics*, *10*(3), 305-316.

Fayissa, B., Nsiah, C., & Tadesse, B. (2011). Research note: Tourism and economic growth in Latin American countries–further empirical evidence. *Tourism Economics*, *17*(6), 1365-1373.

Ghali, M. A. (1976). Tourism and economic growth: an empirical study. *Economic Development and Cultural Change*, *24*(3), 527-538.

Gül, H., & Özer, M. (2018). Frequency domain causality analysis of tourism and economic activity in Turkey. *European Journal of Tourism Research*, *19*, 86-97.

Gündüz, L., & Hatemi-J, A. (2005). Is the tourism-led growth hypothesis valid for Turkey?. *Applied Economics Letters*, *12*(8), 499-504.

Katırcıoğlu, S. T. (2010). International tourism, higher education and economic growth: The case of North Cyprus. *The World Economy*, *33*(12), 1955-1972.

Katırcıoğlu, S., Katırcıoğlu, S., & Altınay, M. (2018). Interactions between tourism and financial sector development: evidence from Turkey. *The Service Industries Journal*, *38*(9-10), 519-542.

Kim, H. J., & Chen, M. H. (2006). Tourism expansion and economic development: The case of Taiwan. *Tourism management*, *27*(5), 925-933.

Lanza, A., Temple, P., & Urga, G. (2003). The implications of tourism specialisation in the long run: an econometric analysis for 13 OECD economies. *Tourism management*, *24*(3), 315-321.

Lee, C. C., & Chang, C. P. (2008). Tourism development and economic growth: A closer look at panels. *Tourism management*, *29*(1), 180-192.

Mérida, A., & Golpe, A. A. (2016). Tourism-led growth revisited for Spain: Causality, business cycles and structural breaks. *International Journal of Tourism Research*, *18*(1), 39-51

Mishra, P. K., Rout, H. B., & Mohapatra, S. S. (2011). Causality between tourism and economic growth: Empirical evidence from India. *European Journal of Social Sciences*, *18*(4), 518-527.

Narayan, P. K., Narayan, S., Prasad, A., & Prasad, B. C. (2010). Tourism and economic growth: a panel data analysis for Pacific Island countries. *Tourism economics*, *16*(1), 169-183.

Nowak, J. J., & Sahli, M. (2007). Coastal tourism and 'Dutch disease'in a small island economy. *Tourism Economics*, *13*(1), 49-65.

Nowak, J. J., Sahli, M., & Cortés-Jiménez, I. (2007). Tourism, capital good imports and economic growth: theory and evidence for Spain. *Tourism Economics*, *13*(4), 515-536.

Tang, C. F., & Abosedra, S. (2014). The impacts of tourism, energy consumption and political instability on economic growth in the MENA countries. *Energy Policy*, *68*, 458-464.

Tang, C. F., & Tan, E. C. (2013). How stable is the tourism-led growth hypothesis in Malaysia? Evidence from disaggregated tourism markets. *Tourism Management*, *37*, 52-57.

OECD (2020), OECD Tourism Trends and Policies 2020, OECD Publishing, Paris, https://doi.org/10.1787/6b47b985-en

Oh, C. O. (2005). The contribution of tourism development to economic growth in the Korean economy. *Tourism management*, *26*(1), 39-44.

Payne, J. E., & Mervar, A. (2010). Research note: The tourism–growth nexus in Croatia. *Tourism Economics*, *16*(4), 1089-1094.

Pesaran, M.H. (2004). General Diagnostic Tests for Cross Section Dependence in Panels, Cambridge Working Papers in Economics, 435.

Pesaran, M.H. (2007). A simple Panel Unit Root Test in the Presence of Cross-section Dependence, J. Appl. Econ., 22 , 265-312

Sequeira, T. N., & Maçãs Nunes, P. (2008). Does tourism influence economic growth? A dynamic panel data approach. *Applied Economics*, *40*(18), 2431-2441.

World Tourism Organization (UNWTO). (2019). International Tourism Highlights 2019, UNWTO Edition. https://www.e-unwto.org/doi/pdf/10.18111/9789284421152, 18.03.2021.

World Tourism Organization (UNWTO). (2020) International Tourism Highlights 2020, UNWTO https://www.e-unwto.org/doi/book/10.18111/9789284422456 , 09.03.2021.