

The Impact of International Tourism on Economic Growth: The Case of Turkey

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Abstract

Tourism sector is playing an important rules on Turkey's economic which has been creating huge benefit to the economy for the last decade, however in recent years tourism sector is fluctuated due to instability in economic overall. The main objective of this paper is to analyze the long run equilibrium relationship between international tourist arrival and its expenditure on economic growth (GDP) in Turkey, using annual time series data from (1985 to 2017). Johansen co-integration and Granger causality tests have been applied to determine association and co-integration among variables, respectively. This study figured that in long run international tourist arrival and its expenditure on economic growth are co-integrated. Results indicate co-integration between economic growths, international tourist arrival and international tourist expenditure, Granger causality test suggest that uni-directional relationship from international tourist arrival and tourist expenditure to economic growth, and also there is a uni-directional causality between international tourist arrivals which is affect tourist expenditure. On the other hand Ganger Causality test shows non-directional causality between GDP to tourist arrival also tourist expenditure, as well non-directional from expenditure to tourist arrival.

Keyword: Economic growth, tourist arrival, tourist expenditure, Johansen co-integration, Granger causality

المخلص

يلعب قطاع السياحة دور مهم على الاقتصاد التركي الذي خلق فائدة كبيرة للاقتصاد على مدى العقد الماضي ، ولكن في السنوات الأخيرة تقلب قطاع السياحة بسبب عدم الاستقرار في الاقتصاد بشكل عام. لذا الهدف الرئيسي من هذه الورقة هو تحليل علاقة التوازن على المدى الطويل بين وصول السياح الدوليين وإنفاقها على النمو الاقتصادي (GDP) في تركيا ، وذلك باستخدام بيانات السلاسل الزمنية السنوية من (1985 إلى 2017). تم تطبيق اختبارات يوهانسن (Johansen) للتكامل المشترك و اختبارات العلاقة السببية Granger لتحديد الارتباط والتكامل المشترك بين المتغيرات ، على التوالي. كشفت هذه الدراسة أنه في المدى الطويل وصول السياح الدوليين وإنفاقها على النمو الاقتصادي هي متكاملة. تشير النتائج إلى تكامل مشترك بين النمو الاقتصادي ووصول السياح الدوليين ونفقات السياحة الدولية ، ويشير اختبار العلاقة السببية Granger إلى أن العلاقة أحادية الاتجاه من الوصول السياحي الدولي والإنفاق السياحي إلى النمو الاقتصادي ، وهناك أيضًا علاقة سببية أحادية الاتجاه بين الوافدين من السياح الدوليين وهو ما يؤثر على الإنفاق السياحي. من ناحية أخرى ، يُظهر اختبار السببية Ganger إلى وجود علاقة سببية غير الاتجاهية بين الناتج المحلي الإجمالي لوصول السياح و أيضا الإنفاق السياحي ، وكذلك اللاتجاهية من الإنفاق لوصول السياح .

Johansen tests do not confirm long-term association between economic growth and international tourism. Thus, unlike the results for Gunduz and Hatemi-J (2005) and Ongan and Demiroz (2005). In the empirical analysis co-integration test between economic growth and tourist arrival and tourist expenditure are applied also this test became so popular. computable general equilibrium model (CGE) which is the large scale numerical model that simulates the core economic interactions in the economy and system analysis modeling (SAM) which is gives an open field to members from the scholarly world and industry to exhibit and provides the latest developments ,experiences ,trends and concerns in demonstrating , detail and examination which has been applied for different countries for example (West and Gamage,2001; Archer and Fletcher, 1996; Albqami, 2004; Archer, 1995; ,Guo, 2002; Oosterhaven and Fan,2006; Heng and Low, 1990;) The result of LEO and SAM models figured out tourism expenditure on economic growth fluctuate for China from 0.71% to 9% for Tanzania also employment which is known by the heart of economic growth fluctuate from 0.71% China to 5.73% for Ireland. The study proceeds as follows. Section 2 literature reviews. Section 3 the data and the methodology and the results are presented. Section 4 contain conclusion.

2. LITERATURE REVIEW

The following review of literature confirms that tourism sector diversity presents problems that go beyond tourist preferences, discuss specific and general solution, and concludes that tourism sector are needed for todays and tomorrows investigation. Previous studies seeking the economic growth effect of tourism around the globe concentrated on multiplier adequacy of tourist expenditure. Frechtling and Horvath (1999), used different analysis and granger causality test to determine the relationship among economic growth and tourist expenditures. Primarily these studies purpose at examining the reliability by tourism led growth hypothesis (TLGH) and for the most part confirm the positive effect of international tourism on GDP (Balaguer and jorda , 2002; Fayissa Nsiah and Tadasse 2009; Oh,2005; Artis, 2009; Cortes-Jimenze, Riera Prunera and Ruiz, 1985).Dristakis (2004), investigate the role of tourism on Greece economic growth for the long period, he used causality test and he figured that there is a strong causality among economic growth and tourism. Katircioglu (2009), investigate the relationship between tourism and economic growth of Cyprus, it figured that all variables has co integrated and they has a long run association between GDP and tourist arrivals, also causality test results showed that individual income growth disturb growth in international tourist arrivals to the island.

On the other hand Chen and Chiouwei (2009), tested the granger causality between tourism and economic growth using (VAR) models for Taiwan and South Korea, they figured out there are a positive correlation between tourism arrivals and economic growth .According to Cortes and Pulina (2006), they tested the (TLGH) for Spain they use granger causality and co-integration tests in order to know if there is a relationship among tourism and economic growth by the bounds and co-integration the outcome revealed that tourism causes economic growth. Although latest investigations in Turkey on international tourism are partial equipoise papers corroborated the significance of the division for earnings the rate of foreign exchange and economic growth. Many studies done in this sector like (Gunduz, 2005) is the TLGH is important for turkey support the TLG and suggesting unidirectional causation among tourism and economic growth in general. Also (Ongan and Demiroz, 2005) they aimed to investigate causality between Turkey's GDP and international tourism they do not found any co-integration between them.

There are motivation and implications for investigation in this area while previous investigation lead that tourism sector are affecting economic growth in different rates caused by either tourist preferences, exchange rates and expenditures among countries.

3. DATA COLLECTION AND METHODOLOGY

3.1 Data Collection

In this study annual time series data are used from 1985 until 2017 which is 33 observations to investigate how the international tourism affects the economic growth over the period. The data included the Turkey economic growth rate (constant 2005\$) is represent GDP which is constant as a dependent variable and tourist arrival (TA) and tourist expenditures (TE) as an independent variables, in this case regard to Turkey the data gathered from sources like State Planning Organization, Economic and Social Statistics, Turkish Statistical Institute, Statistical Indicators and data.worldbank.org.

3.2 Methodology

In this study three different types of test has been used and all of the tests are applied by Eviews10 software program .Firstly unit root test are used in order to be sure whether the data is stationary or non-stationary and Phillips Perron (PP)tests to GDP which is dependent and tourist arrival (TA) and tourist expenditure (TE) independent variables. Second Johansen co-integration test are applied in order to identify whether have a co-integration among variables or variables has long run association. Lastly Granger Causality test were employed to identify if there has a relationship between variable or variables affect each other during the period.

3.3 Empirical Estimation and Analysis Results

3.3.1 Unit Root Test

Phillips Perron (PP) and Augmented Dickey Fuller (ADF) tested in the models to determine the data is stationary or non-stationary, meaning the null hypothesis H_0 variables is not stationary or got unit root and alternative hypothesis stationary, or H_0 is stationary meaning that has not unit root in that case H_0 null hypothesis can be rejected and accept H_1 alternative hypothesis.

Table 1 the result of (ADF) and (PP) Tests as following:

Statistics (Level)	lnGDP	Lag	lnTA	Lag	lnTE	lag
τ_T (ADF)	-2.80	(0)	-2.06	(0)	-2.33	(0)
τ_μ (ADF)	-0.67	(0)	-1.33	(0)	-1.40	(0)
τ (ADF)	5.63	(0)	4.73	(0)	2.83	(0)
τ_T (PP)	-3.20	(2)	-1.91	(4)	-1.76	(1)
τ_μ (PP)	-0.90	(6)	-1.76	(9)	-3.34	(1)
τ (PP)	6.95	(4)	5.03	(1)	3.56	(7)
Statistics	$\Delta \ln GDP$	Lag	$\Delta \ln TA$	Lag	$\Delta \ln TE$	lag
First Difference						
τ_T (ADF)	-6.10*	(0)	-6.47*	(0)	-5.03*	(2)
τ_μ (ADF)	-6.18*	(0)	-6.31*	(0)	-4.16**	(2)
τ (ADF)	-3.51*	(0)	-3.76*	(0)	-4.58*	(0)
τ_T (PP)	-7.28*	(6)	-6.57*	(5)	-4.28*	(30)
τ_μ (PP)	-6.77*	(5)	-6.35*	(2)	-6.50*	(8)
τ (PP)	-3.56*	(3)	-3.82*	(3)	-4.68*	(3)

*, ** and *** define rejection of the H_0 null hypothesis at the 1%, 5% and 10% levels respectively

The result of (ADF) and (PP) tests showed that the data has unit root (non- stationary) in level for trend, trend and intercept, no-trend and no-intercept, however at the first difference both (ADF) and (PP) confirm that the data has not unit root mean that the data is stationary at the first difference for trend, trend and intercept, no-trend and no-intercept

3.3.2 Johansen Co-integration Test

After the data tested by (ADF) and (PP) tests and confirmed that the data are stationary at first difference, then Johansen Co-integration test are applied to determine whether variables move together and have a direct or indirect relationship between variables .Meaning that there should be co-integration among variables or at least one variable should co-integrated . The methodology for Johansen co-integration illustrated below VAR model as following:

$$X_t = \Pi_1 X_{t-1} + \dots + \Pi_K X_{t-K} + \mu + e_t \quad (\text{for } t=1, \dots, T)$$

Where, X_{t-1}, \dots, X_{t-K}

Where:

X_t and X_{t-1}, \dots, X_{t-K} represents the vectors and lagged values of probability variables.

Π_1, \dots, Π_K represent coefficient matrices (number of assumptions that were not auto correlated in term of error).

μ Represent an intercept vector and e_t represent a vector of random errors

Table 2 result of Johansen Test for Co-integration

Hypothesis LNGDP LNE LNM	Trace Statistic	Critical Value		Prob.**	Result H0
		5%	1%		
None **	40.45037	29.68	35.65	0.0105	Rejected
At most 1	10.10827	15.41	20.04	0.4182	No rejected
At most 2	0.650929	3.76	6.65	0.2251	No rejected

Note:

Lags interval (in first differences): 1 to 3

Trace test demonstrate 1 co-integrating at both 5% and 1% levels.

* (**) define rejection of the hypothesis at the 5% and 1% level

Johansen Co-integration test approved that there is one co-integrating at both 5% and 1% levels, the P-value is equal to (0.0105) which is less than 5%, according to the P-value null hypothesis can be rejected and accept alternative hypothesis. Moreover according to the trace statistic and Max-Eigen statistic are all variables are co-integrated and all variables have a long-run association.

3.3.3 Granger Causality Test

After Johansen Co-integration test are done, Granger Causality test is applied in order to be sure whether the variables are related to each other or find out the relationship among variables. However in this stage our data should be stationary before running Granger Causality test. So far, the data are stationary in first difference. The model for date shows below also the result for Granger Causality test shows in table 3

$$\ln \text{GDP}_t = \sum_{i=1}^n \alpha \ln \text{TE}_{t-i} + \sum_{j=1}^n \beta \ln \text{GDP}_{t-j} + U_{1t}$$

$$\ln \text{TE}_t = \sum_{i=1}^n \lambda \ln \text{TE}_{t-i} + \sum_{j=1}^n \delta \ln \text{GDP}_{t-j} + U_{2t}$$

Table 3 result of Granger Causality

Lag levels		Lag 8		Result
Null Hypothesis		F-Stat	P-value	
1	GDP and Tourist arrival (TA)			
	TA Dose cause GDP	2.7186	0.0482	Reject null
	GDP Dose not cause TA	1.7886	0.1915	Do not reject null
2	GPD and Tourist Expenditure (TE)			
	TE dose cause GDP	5.0052	0.0331	Reject null
	GDP Dose not cause TE	3.8722	0.0587	Do not Reject null
3	Tourist arrival (TA) and Expenditure (TE)			
	TE Dose not cause TA	0.1603	0.6918	Do not reject null
	TA Dose cause TE	7.9103	0.0087	Reject null

The criterion for Ganger Causality test is to insure that null hypothesis can be rejected base on F-statistic approach. Whether the P-vale is more than 5% Null hypothesis cannot be rejected rather accept null while alternative hypothesis should be rejected.

The Ganger Causality test result indicate unidirectional causality relationship between tourist arrival (TA) and GDP, and between Tourist Expenditure (TE) and GDP, also unidirectional causality Tourist arrival (TA) and Expenditure (TE). Moreover Ganger Causality test shows non-directional causality between GDP and Tourist arrival (TA), GPD and Tourist Expenditure (TE), also Expenditure (TE) and Tourist arrival (TA).

Conclusion

This study empirically applied the possible long term causality between economic growth, international tourist arrival and international tourist expenditure in Turkey using annual time series from 1980 to 2012. Subsequently Augmented Dickey Fuller (ADF) and Phillips Perron (PP) tests figured that the data are stationary at first difference Johansson co-integration test applied and it shows that the variables have a long run association among economic growth, tourist arrival and tourist expenditure. Moreover granger causality result indicate that unidirectional causality relationship between tourist arrival and tourist Expenditure on GDP, also unidirectional causality between tourist arrival and expenditure. On the other hand Ganger Causality test shows non-directional causality between GDP and tourist arrival also tourist expenditure, as well expenditure and tourist arrival.

Nevertheless, some researchers have found that tourism trend will rise when economic growth develops. However, that trend may fall with passing time regarding the factors; lack of main resources to the tourists which make them to not have a suitable adjustment about the relationship between economic growth and tourist arrival in country. Finally, this result is important for policy makers also academicians in the field and seems that this issue need further investigation and attention even for Turkey because in fact tourist arrival should causes economic growth but in this paper shows that there is not causality among economic growth and tourist arrival.

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