Journal of Global Tourism And Technology Research

ISSN: 2717-6924

https://dergipark.org.tr/en/pub/jgttr

Uluslararası Turizm ve Teknoloji Araştırmaları Dergisi

Araştırma Makalesi – Research Article

Do Tourism Revenues Effects Financial and Real Sector in Turkey?

Türkiye'de Turizm Gelirleri Finans ve Reel Sektörü Etkiler mi?

Niyazi BERK[1], Dina ÇAKMUR YILDIRTAN[2], Nadira SEYIDOVA[3]*

ARTICLE INFO

Background:
Received: *6.8.2021*
Accepted:7.10.2021

Keywords:
Tourism Revenues,
Causality,
Cointegration,
Industrial Growth.

A B S T R A C T

For emerging markets such as Turkey, the current account deficit is one of the important fragility indicators. For this reason, tourism revenues have great importance to reduce the current account deficit in fragile markets such as Turkey. For tourism revenues to increase, together with the location of the country the exchange rate in terms of local currency should be worthless against foreign currency. In other words, low exchange rate and geographical location increase tourism revenues. This study examines the relationship between the tourism sector, finance sector and real sector. For this purpose, total travel revenues, average travel expenditures per person, total travel expenses, CPI-based real effective exchange rate, PPI based real effective exchange rate, BIST100 closing index (BIST100) and manufacturing industry capacity utilization rate variables were analyzed. The variables included in the analysis cover the period 2007-2018 with monthly frequency. The main feature that distinguishes this study from other studies is to analyze the relationship between tourism revenues and macroeconomic variables, and to investigate the relationship between the stock market index and tourism revenues.

MAKALE BİLGİSİ
Makale Geçmişi:
Başvuru tarihi: 6.8.2021
Kabul tarihi: 7.10.2021

Anahtar Kelimeler:
Turizm Gelirleri,
Nedensellik,
Eşbütünleşme,
Endüstriyel Büyüme.

ÖZET

Türkiye gibi gelişmekte olan piyasalar için cari açık önemli kırılganlık göstergelerinden biri olarak karşımıza çıkmaktadır. Bu sebeple Türkiye gibi kırılgan piyasalarda cari açık miktarının düşürülebilmesi için turizm gelirleri büyük önem arz etmektedir. Turizm gelirlerinin artabilmesi için ülkenin bulunduğu konumla birlikte döviz kurunun yerel para cinsinden yabancı paraya karşı değersiz olması gerekmektedir. Bir diğer deyişle düşük kur ve coğrafi konum turizm gelirlerini artırmaktadır. Bu çalışma, turizm sektörü, finans sektörü ve reel sektör arasındaki ilişkiyi incelemektedir. Bu amaçla toplam seyahat gelirleri, kişi başı ortalama seyahat giderleri, toplam seyahat harcamaları, TÜFE bazlı reel efektif döviz kuru, ÜFE bazlı reel efektif döviz kuru, BIST100 kapanış endeksi ve imalat sanayi kapasite kullanım oranı değişkenleri analiz edilmiştir. Analize dahil edilen değişkenler aylık frekans ile 2007-2018 dönemini kapsamaktadır. Bu çalışmayı diğer çalışmalardan ayıran temel özellik turizm gelirlerinin makroekonomik değişkenler ile olan ilişkisini analiz etmekle birlikte borsa endeksi ile turizm gelirlerinin de ilişkisini araştırmaktadır.

* *Corresponding author*
[1]Prof.Dr., İktisadi , İdari ve Sosyal Bilimler Fakültesi, Finans Bölümü, nya.berk@gmail.com ORCİD: 0000-0003-2165-7610
[2]Prof. Dr. Marmara Üniversitesi, Bankacılık ve Sigortacılık Yüksekokulu, Sermaye Piyasası Bölümü, dinacakmur@yahoo.com.tr ORCİD: 0000-0002-9838-5986
[3]Dr. nadire.seyidova1990@gmail.com ORCİD: 0000-0002-2375-8426

Makale Künyesi: Berk, N., Çakmur Yıldırtan, D. ve Nadira Seyıdova, N. (2021). Do Tourism Revenues Effects Financial and Real Sector in Turkey?. *Journal of Global Tourism And Technology Research*, 2 (2): 116-130.

Introduction

Tourism is considered the driving force of economic development in developing countries. Like other sectors that export goods and services, it means a source of foreign exchange revenue that contributes to the economy. The increase in tourism revenues increases the necessity of producing goods and services, investments, production, and taxes. The contribution of tourism is limited to improving the national income and plays an essential role in decreasing the balance of payments deficit with the foreign exchange income it provides. It also contributes to the increase in employment since it is a labor-intensive sector. However, it should be noted that large-scale international hotels with horizontal and vertical integration provide relatively higher performance compared to local firms thanks to their better management, rational operation methods, and modern technical equipment.

Development in the tourism industry also impacts other sectors and supports the development of the infrastructure. Because of these characteristics, tourism is continuously supervised and evaluated by developing countries' decision-makers as an activity that should be planned, organized, and coordinated by the public administration. Because of the relationship between tourism and other sectors, the need for significant investments and the development of the private sector in developing countries due to insufficient resources require state support. With the incentive mechanism, there has been a substantial increase in room capacity, and qualified facilities have been created in the tourism sector. Treasury Department of emerging countries promotes improvement in the tourism sector, mainly through credit facilities provided by the Development bank or commercial banks.

For emerging markets such as Turkey, the current account deficit is one of the important fragility indicators. For this reason, tourism revenues have great importance to reduce the current account deficit in fragile markets such as Turkey. Geographical location of the country and the exchange rates have important effect on tourism revenues. Low exchange rate, in other words local currency worthless against foreign currency and the location of the country can increase tourism revenues.

In this study, unlike other studies, it was determined that the stock market index, which acts as a barometer of the economy, also causes a change in total travel expenditures. In addition, it was concluded that total travel revenues are also a variable that impact the BorsaIstanbul index. It has been revealed that BorsaIstanbul index is one of the reasons affecting the total travel revenues or in other words tourism revenues for Turkey. Since BorsaIstanbul is affected by all macroeconomic variables and undergoes a change, it also leads to a change in tourism revenues.

The Role of Tourism in The Turkish Economy

Since developing countries' foreign exchange reserves are limited, it is difficult for them to obtain financial resources from international financial markets. For this reason, in developing countries, foreign exchange requirements are essential for financing energy consumption and importing intermediate goods (Aktaş, 2009, p.36). Due to the credibility problem, tourism companies have limited access to borrowing from global financial markets and appropriate loans. Therefore, tourism companies borrow from global financial markets through their banks. Borrowing from international markets provides advantages such as a more cost-effective capacity increase and benefiting from financial leverage.

Tourism constitutes almost 40% of all services trade worldwide and makes an essential contribution to economic growth and development as an invisible export item (Bahar and Bozkurt, 2010, p.255). For this reason, the relationship between tourism revenues and banking and economic growth in different countries are examined in detail. The main driving force of export-led change (ELG) is the increase and stability of tourism revenues. Since the 1980s, many developing countries, including Turkey, apply growth-based development rather than import substitution; thus, increasing

tourism revenues is prioritized. Through regulatory authorities and economic incentives to encourage the integration of national markets into international markets, efficient results are obtained in resource allocation and directing them to exports, thus increasing export revenues.

Tourism is also considered as an export channel as the country's economy earns foreign currency income. While the increase in tourism revenues leads to a direct increase in national income, the multiplier effect decreases external deficits in the balance of payments. It provides a significant increase in per capita income. As a result, as in the ELG hypothesis, in the tourism-led growth (TLG) hypothesis, it is accepted that tourism development makes a positive contribution to economic growth. (Polat and Günay, 2014, p.207).

The tourism sector shows a structural change after the economic decisions of January 24, 1980, and it is seen as the locomotive of the country's development. By adopting the export-oriented industrialization strategy, prioritizing the foreign exchange earning investments of export-oriented sectors has accelerated the economy's structural change. Thus, in the tourism sector; Since it is a fast, efficient, and relatively inexpensive tool, this transformation is considered the priority sector. On the other hand, the growth trend in tourism worldwide has created new opportunities and has been a basic income and employment source for national economies. Today, tourism is the most crucial source of foreign exchange after coming from Turkey's manufacturing industry.

Tourism facilities include accommodation, touristic restaurants, travel agencies, yachting tourism providers. The supplier companies that provide products and services to the tourism sector can, in principle, be financed by Eximbank, development banks, and international financial markets. The financial resources spent on the funding of new investment, renovation, modernization, and energy efficiency of the companies require different term sources.

Businesses need to increase their capital or long-term borrowing for various reasons: The main reasons for the rise of money the requirement are the firm's growth and the restructuring of the capital structure in favor of long-term funds and financing of renewal investment. They prefer bank credit by criteria such as cost, maturity, amount to be borrowed, ease of application process, and a short time to obtain. Large-scale hotel businesses choose the source of funding by taking into account the costs. However, the structure of firms and the availability of financial resources are also important. To finance a new fixed asset investment such as hotel building, machinery, facilities, and equipment, companies need to use equity and long-term bank loans to meet their long-term funding needs. However, fixed assets are sometimes financed by short-term loans since banks' development, and commercial banks are usually unwilling to provide medium-term loans in emerging countries.

Funding through the capital market is not easy for small and medium-sized firms. Funding from the capital market is particularly advantageous in terms of cost of capital and maturity structure. Hotel businesses are also unwilling to undergo strict regulations and formalities of the capital market by issuing securities. On the other hand, due to the change in market interest rates or volatility, they tend to provide the resources they need from internal sources, despite the higher costs. Thus the majority of the hotel enterprises do not prefer to go for an initial public offering.

The tourism sector, which can survive even in times of local economic recession or global financial crises, is supported by Treasury incentives and banks' credit packages. In addition to the working capital and investment loans extended to the company, banks also directly meet their cash needs through consumer loans. The traditionally large portion of operating income and profitability in coastal hotels is taking place in the May - October period, known as a high season. In this period, the working capital requirement of the sector increases. Due to uncertainties and unpredictable factors, operational capital needs vary from year to year. Commercial and corporate banks offer additional loan packages for tourism businesses to meet the changing customer demand depending on the environment and conditions. Loans provided to tourism companies generally consider the periods they will generate cash flow. Granted loan packages should be repaid by operating cash flow of the companies in Turkey are summarized below:

- Ziraat Bank, the sun in tourism, is now rising with Ziraat Bank! "Slogan provides financial solutions to the tourism companies in the short and medium-term.

- Denizbank offers Tourism loan to meet the needs of SMEs for all their renewal, renovation, and investment purposes,

- Garanti Bank will be able to make up to 60 months of maturity for the development and continuity of tourism activities.

- Halkbank offer loans from 6-months to 48-month term loans in one year to meet the various needs of the tourism companies and a different package in a high season under the name of Sun Credit.

-Vakıfbank has an 8-month maturity deferment period in the period in question during the year as the dead season for the repayment of the loans used to meet the needs of the enterprise and preparing the company for the next season.

- Loans provided by TEB are indexed to the operating periods of the enterprises and available with a maturity of 6 months to 48 months.

The financing of tourism companies from external sources leads to relatively higher costs. However, the interest rate for borrowing in the Eurozone is reasonable. With the zero-interest rate imposed by the continuation of expansionary monetary policies in the Eurozone, banks grants business loans currently with better conditions. It should be considered in favor of developing countries. Since the companies' foreign revenues are Euro-based, it is suggested as a rational choice borrowing in Euro. It is recommended that tourism companies not take foreign currency positions other than Euro to remove the foreign exchange loss. Looking at the current relationship between the tourism sector and financial markets, the borrowing in this industry is parallel to growth, investments, and no structural risk supported by more supervision. Analyzing the loans used in the tourism sector shows that the average maturity is around five years. We can also find out that, because of periodic sales volume/occupancy losses, volatility in exchange rate differences, high inflation, and higher cost of capital increases affect the performance of tourism firms negatively and frequently cause operating losses to firms.

Tourism companies in various fields of perceived stagnation of Turkey's economy also affect funding sources. Borrowing of the tourism sector has increased significantly in recent years. The banking sector is the most significant source of lending and capital accumulation for hospitality companies. The banks support the tourism sector's financing in both the short and long term; thus, the financial statements are prepared in a more detailed, transparent, reliable, and realistic manner. Short term liabilities in the balance sheet grew mainly due to international currency loans and short-term borrowing from domestic markets. The debt-to-equity balance of resources in the tourism sector has deteriorated in recent years. There may be a failure in financial crises when financing opportunities change, lending opportunities, and appetite of the creditors change, and uncertainties increase. Therefore, the tourism sector's current capital structure needs to be restructured, and the share of long-term debt and equity within the total financing resources should be increased. To strengthen the companies' capital structure, short-term debt should be converted into long-term capital.

Literature Review

Fayissa, Nsiah, and Tadasse (2008, p. 808) examine international tourism revenues, fixed capital investments, economic freedom index, and enrollment rate, foreign direct investment in% GDP, net external trade, and per capita consumption expenditure using static panel data analysis to investigate the relationship between per capita GDP of the 42 African countries for the period of 1995-2004. The results indicate that tourism's income contributed significantly to both the current gross domestic product level and sub-Saharan African countries' economic growth, such as physical and human capital investments. Findings imply that African economies can boost their short-term economic growth by strengthening tourism industries. Fayissa, Nsiah and Tadesse (2009, p. 22) also examine the

impact of the tourism industry on the economic growth and development of 17 Latin American countries in the framework of the traditional neoclassical growth model for 1995 -2004 using the panel data analysis. The empirical results indicate that the tourism industry's revenues contribute to the growth of both the current gross domestic product level and the investments in physical and human capital. The study's findings show that Latin American economies can increase their economic growth by strategically strengthening the tourism sector and not neglecting other industries that support economic growth.

Another analysis is conducted by Tang and Jang (2009, p.553). They examined the relationship between the performance of four tourism-related industries (airlines, casinos, hotels, and restaurants) in the US by using cointegration and causality tests from 1981 to 2005. The results indicated that there is no cointegration between economic growth and hospitality performance in the USA. Accordingly, mechanisms that increase the income of tourism-related industries can be successful in the long run, even in continued economic stagnation. The results also show that it can be an excellent tool for scheduling and prioritizing resource allocation between industries to improve overall tourism and economic outcomes. They also suggest that the investors and managers identify resource allocation and timing strategies by looking at leading sectors' performance in the temporary hierarchy.

Martin, Morales, and Scarpa (2004) have investigated 21 Latin American countries from 1985 through 1998. They examined the independent variables such as the growth rate of expenditure per tourist, domestic investments, public spending on education and general government expenditures and per capita GDP dependent variables, and dynamic panel data analysis. They state that the tourism sector is not necessarily for developed countries, although it is sufficient for middle or low-income countries' economic growth. Then, instead of explaining economic development by analyzing the analysis's causality aspect, they examined the conditional tourism arrivals and other variables such as infrastructure investment security, prices, and education level. The results also explain that the cost of the exchange rate and PPP target is not essential for tourism growth.

Lee and Chang (2008, p.187) examined 23 OECD countries and 32 countries out of the OECD, including Asia, the United States, and Sub-Saharan Africa, from 1990 to 2002. They analyze the real tourism income per capita and the number of tourists, real effective exchange rate, and shadow variable GDP as an indicator of external competition using panel unit root and cointegration analysis. They examine tourism and economic growth through Full employment Modified Ordinary Least Squares (FMOLS) and ECM different, using panel cointegration techniques. Their finding indicates that tourism had a more significant impact on GDP in non-OECD countries than in OECD countries during the 1990-2002 period. This relationship concludes that there is a one-way relationship for evidence from OECD countries. Proenca and Soukiazis (2008, p. 791) examine the importance of tourism as a conditioning factor in improving the tourist area's standard of living in selected European countries (Greece, Italy, Portugal, and Spain) 1990-2004. They use Barro and Sala-i-Martin's conditional convergence approach to test convergence in per capita income between them. The share of real investments in real GDP, population, technological growth, depreciation rate, international tourism income, and dummy variable GDP per capita is used in static panel data analysis. The results indicate that tourism improves living standards and contribute to the convergence in these countries. Cortes and Pulina (2006) have examined whether exports and tourism encourage growth, the export-led growth hypothesis, and the tourism-led growth hypothesis. Spain and Italy, the leading developed countries in the Mediterranean region, are examining tourism expansion. They apply cointegration techniques and multivariate Granger causality tests. The results indicate that exports cause long-term economic growth for both countries; while they have identified only in Spain, tourism affects long-term economic growth.

Campos and Sequeira (2005) used 509 observations to examine the tourist arrivals and tourism revenues, growth per capita GDP rates, and panel data analysis from 1980 to 1999. After explaining that this is related to firm scale and high productivity in R & D, they have used a panel data method to solve the endogeneity problem. Consequently, Countries specialized in tourism do not grow more than others, and in contrast to most studies, they found that tourism alone could not account for the higher growth rates of these countries. Chen and Chiou-Wei (2009, p.812) examined the causal

relationship between expanding tourism and economic growth in two Asian countries, Taiwan, and South Korea. From 1975 to 2007, the real exchange rate and tourism revenues using the EGARCH-M model to examine real GDP per capita. An EGARCH-M model with uncertainty factors tested the causal aspect between tourism expansion and economic growth and investigated the impulse effects of uncertainty on both variables. The results show that Taiwan supports the tourism-driven economic growth hypothesis, and there is a two- way causal relationship for South Korea. They have also identified the crucial effects of uncertainty on growth.

Belloumi (2010, p.550) examined the role of tourism in Tunisia's economic growth and the relationship between tourism revenues, GDP, and effective exchange rates between 1970 and 2007. The results show an association between tourism revenues and economic development, and tourism has indirectly been found to have a positive effect on GDP.

Studies investigating the relationship between tourism revenues and economic growth in developing and developed countries show that there is usually a one-way relationship between tourism revenues and growth. Several studies have been conducted to examine the relationship between tourism revenues and economic development in Turkey. In most of these studies, they positively correlated with tourism revenues, like other emerging countries' investigations. These studies are summarized below. Beşel and Uygun (2017) examine the relationship between tourism revenues and economic growth in 1964- 2016. This study uses annual data to test for cointegration and causality. Fourier ADF unit root test, Fourier cointegration test, time-varying causality tests, and bi-directional causality relationship between economic growth and tourism income were found. Balıkçıoğlu and Oktay (2015, p. 113), the causal relationship between economic growth and tourism in Turkey were examined following public policy. Their analysis covers 2003-2014; the Granger causality test investigated the relationship between tourism and economic growth by using quarterly data. As a result of the investigation, it was determined that there is a one-way causality relation between economic development to tourism. As a result of the study, they have evaluated this causal relationship following public policies.

Bahar and Bozkurt (2010, p.260) investigated the relationship between tourism and economic development in developing countries: Using dynamic panel data analysis, they empirically tested the economic growth and tourism relationship. They conclude that promoting tourism activities impact economic growth.

Çetintalp and Bektaş (2008, p.39) short- and long-term relationships between short and long-term relationships, work in tourism and economic growth between Turkey tourism and economic growth using the ARDL method, they analyze and they investigated the direction of causality between the two variables. While there is no short-term relationship between tourism and economic growth, tourism, in the long run, has positively affected economic growth.

Polat and Günay (2014, p.209) examined the effects of their exports and tourism revenues on Turkey's GDP growth. Causality analysis was made for the period 1969-2009 with annual data. A long-term relationship was found between the cointegration test results, export revenues, tourism revenues, and economic growth. Gökovalı and Bahar (2006, p.162) analyzed whether there is any positive relationship between the emerging tourism sector and economic growth in the long term. They use the static panel data analysis to examine the relationship between the percentage of tourism revenues and GDP as a fixed percentage of GDP and growth rate in the GDP of 13 Mediterranean countries for 1998-2005. The analysis showed that a 1% increase in tourism revenues led to a 2,825% increase in long-term economic growth, which indicates a positive and significant relationship between tourism and economic development. Arslan's (2008, p.10) study on the relationship between tourism and economic growth in Turkey has been analyzed using time series for the 1992-2007 period. It is concluded that there is a long-term indirect relationship between economic growth and tourism revenues. Gündüz and Hatemi (2005, p.499) analyzed the effects of tourism on growth for 1963-2002 with annual data. Using the ARCH model, the interaction between tourism and economic growth has been examined by leveraged opening causality tests. The results support the hypothesis that tourism caused the economic development of Turkey.

In addition to these studies there are some works which analyzed effects of Covid-19 pandemic on tourism sector. Scarlett (2021, p.3) examined the economic impact of tourism on economic growth and other macroeconomic variables in a panel of 46 countries. Panel GMM model was used for his analyze. Findings show that tourism has a statistically significant positive effect on economic growth. The test results investigate that increase in tourism receipts effects growth positively.

The other important issue in literature is about competition in tourism sector and between tourism sector and other sectors of economy. The research in Pakistan (Khan and others, 2020) highlights the important role of tourism in the development of emerging economies. The findings of their study suggest that a 1% increase in tourism significantly enhances gross domestic product (GPD) by 0.051%, foreign direct investment by 2.647%, energy development by 0.134%, and agriculture development by 0.26%, and reduces poverty by 0.51% in the long run.

Purpose of The Study

Economic growth and export revenues are essential for developing countries. Therefore, the causality relation between tourism revenues and economic development and the impact of tourism revenues on economic growth attracts many researchers. However, different results were obtained in empirical studies for other countries. Unlike studies in the literature, the relationship between tourism revenues of manufacturing industries in Turkey and how they affect economic growth are examined in this study. For this purpose, data of these sectors was examined in this paper.

Methodology and Data

There are some limitations for this study. First of them is the time. Series starts before Global Financial Crisis and ends before the strain in trade between USA and China, and Covid-19 pandemic. The other limitation is preventing currency difference between data. For this purpose, equivalent of all series in dollar terms were used in the analysis.

In the other words, when evaluating foreign trade relations, particularly between China and the USA, it is seen that China has always given a surplus in terms of its foreign trade balance against the world and the USA. The increasing tension between the two countries in 2019, due to the US foreign deficit and China's rising economic power, affected the tourism industry and other industries and created a structural break. The pandemic process, which continues in late 2019 and 2020, has shapely or aggressively involved all industries. Therefore, the post-structural breakpoint period was not included in this study.

Firstly, stability of series investigated. VAR model, Cointegration and Causality tests were the next steps for empirical analysis. ADF and PP tests examined the stability of series. All series became Stabil in the first difference. Afterwards Johansen Cointegration test applied for understanding long term relationship between the series. Finally, Granger causality test was conducted to investigate the short-term relationship between the series.

Table 1. *Definitions and Sources of the Series*

Variables	Definitions	Sources of the Series
TSG_t	Total Travel Revenues	TCMB EVDS
$KBOH_t$	Average Travel Expenditures per person	TCMB EVDS TÜİK
TSH_t	Total Travel Expenses	TCMB EVDS
$TUFEKUR_t$	Real effective exchange rate based on CPI	TCMB EVDS TÜİK
$UFEKUR_t$	Real effective exchange rate based on PPI	TCMB EVDS TÜİK
$BIST\ 100_t$	BIST100 closing index	TCMB EVDS BİST
KKO_t	Capacity Utilization Rate of Manufacturing Industry	TCMB EVDS TÜİK

Findings

Data used in this analysis are based on a monthly frequency and cover January 2007 - December 2018 period. The data were taken from the CBRT EVDS and analyzed with E-views 10 and STATA 15 programs. The study investigates the relationship between the tourism sector and both the real and the financial industry. The variable examined for this purpose is total travel revenues (TSG)(in million USD), total travel expenditures(TSH) (in million USD), average travel expenditures per capita (KBOH), CPI-based real effective exchange rate (TUFEKUR), PPI based real effective exchange rate (UFEKUR), BIST100 closing index(BIST100) and capacity utilization rate of the manufacturing industry(KKO). The series consisting of 144 observations for each one and reflect both the pre-crisis period (2008) during the crisis period and afterward. They were analyzed by considering the structural breaks that occurred during this period.

ADF and PP tests were used to investigate the stability of the series. All the series became stationary at the first difference, and then the Johansen Juselius Cointegration test was performed to examine whether there is a long-term relationship between them. The cointegration relationship was found between the series, and it means that the series move together in the long term. Then, the vector error correction model was applied, and the inverse root circle of the VAR model was examined. Finally, the Granger causality test was used to investigate the short-term relationship between the series.

Table 2. *ADF and PP Test Results of Series at Level Value*

	Level value, with intercept			
Series	ADF test results		PP test results	
	t-stat	Prob	t-stat	Prob
TSG	-2.441332	0.1325	-3.922198	0.0024*
$KBOH_t$	-0.136151	0.9421	-3.676608	0.0054*
TSH_t	-2.697047	0.0772	-6.664928	0.0000*
$TUFEKUR_t$	-0.360050	0.9115	-0.655376	0.8532
$UFEKUR_t$	-0.984227	0.7959	-1.120581	0.7068
BIST 100_t	-1.375880	0.5926	-1.376596	0.5923
KKO_t	-2.371175	0.1518	-2.519206	0.1130
	Level value, with intercept and trend			
	ADF test results		PP test results	
Variables	t-stat	Prob	t-stat	Prob
TSG_t	-2.393552	0.3812	-3.873174	0.0156*
$KBOH_t$	-1.284987	0.8872	-4.349154	0.0036*
TSH_t	-2.564200	0.2974	-6.942732	0.0000*
$TUFEK_tUR_t$	-3.575471	0.0355	-3.123593	0.1022
$UFEKUR_t$	-3.546715	0.0383	-3.404190	0.0548
BIST 100_t	-2.852452	0.1814	-2.866967	0.1765
KKO_t	-2.398396	0.3788	-2.545653	0.3060

Both series graphs and partial correlation values were examined to measure whether there was a trend effect in the data. It is observed that there is a trend effect in the level values of the series. For avoiding this, first order differences applied to the series. When the differences of the series were taken, it was observed that the trend effect disappeared. Unit root tests were performed to determine whether the series were stationary. Using the Augmented Dickey-Fuller and Phillips Perron unit root tests, the series were tested with both intercept and trend & intercept options in both the level value and the first differences. Not all sets are stagnant at level values but inactive at primary differences. The stagnation of all series simultaneously has also been a pioneer for cointegration and causality test selections.

According to the ADF test, the Ho hypothesis is tested as " a unit root in the series." The Ho hypothesis is rejected if the test statistic calculated in the outputs is higher than the table critical value, or if the test probability value is less than the tested significance level (1%, 5%, or 10%) (Dickey and Fuller, 1981, p.1057). In other words, it is decided that there is no unit root in the series, and the series is stationary. If the test statistic is less than the table critical value, and the test probability value is higher than the tested significance level, the Ho hypothesis cannot be rejected. Thus, it is decided that the unit is the root or not stationary in the series. Then, the difference of the series is taken to determine the stationarity level of the non-stationary series.

Table 3. *Mackinnon Critical Values (both for level value and first difference)*

	ADF Testi (0)		PP Testi (0)	
Critical Value	İntercept	intercept and trend	intercept	intercept and trend
%1	-3.57	-4.14	-3.57	-4.14
%5	-2.92	-3.50	-2.92	-3.50
%1	-2.59	-3.18	-2.59	-3.18

Recall that the ADF test has been criticized for ignoring structural breakage and some effects, however. Other features charged are the standard error regarding the trend effect and error terms that may occur depending on the train is different. The PP unit root test was applied to avoid these drawbacks (Phillips and Peron, 1998, p.335-346). Hypotheses for both ADF and PP tests are expressed as follows:

Ho: Seri has a unit root

Probe <0.05

Ho: is rejected

If the absolute value of t statistics is higher than the MacKinnon critical values in unit root tests, the Ho hypothesis is rejected. In this case, the serial unit does not contain roots; thus, the serial is stationary.

Here, the lag length is automatically selected by e-views based on the Schwarz information criterion.

Generally, the regression equation for cases where there is no trend and constant term:

$Y_t = \delta Y_{t-1} + u_t.$

As expressed, for the constant term and trending regressions is shown as

$\Delta Y_t = b_0 + b_1 t \; + \; \delta Y_{t-1} + u_t.$

These regression equations generally apply to both ADF and PP unit root tests. The unit root results are given in Table 2 and Table 3. Tables shows the t statistics and probability values of ADF and PP tests for both fixed and trending and fixed and non-trending equations in the series' level

values . Simultaneously, information on MacKinnon critical values by 1%, 5%, and 10% error margins is also given in the table.

As a result of unit root tests, it was concluded that all series are stationary from the same degree, i.e., the first difference. A cointegration test was performed to find out whether the series has long-term cointegration. Applying the VAR model to the series, appropriate delay lengths of the series were designed as "3" in the light of the information criteria. Then, the Johansen Co-integration test was chosen as an appropriate cointegration test since the number of series was more than two, and all these series are stationary in the first degree.

Table 4. *ADF ve PP Test Results (first difference, trend and intercept included)*

	First difference value, with intercept			
Series	ADF test results		PP test results	
	T-stat	Prob	T-stat	Prob
TSG_t	-3.295688	0.0170*	-7.369812	0.0000*
$KBOH_t$	-4.204201	0.0010*	-12.43914	0.0000*
TSH_t	-3.666190	0.0057*	-35.19405	0.0001*
$TUFEKUR_t$	-9.382536	0.0000*	-9.263204	0.0000*
$UFEKUR_t$	-10.46875	0.0000*	-10.38847	0.0000*
BIST 100_t	-12.33356	0.0000*	-12.33337	0.0000*
KKO_t	-10.11405	0.0000*	-10.14534	0.0000*
	First difference value, with intercept and trend			
	ADF test results		PP test results	
Variables	T-stat	Prob	T-stat	Prob
TSG_t	-3.312019	0.0688	-7.366880	0.0000*
$KBOH_t$	-4.328424	0.0039*	-12.41797	0.0000*
TSH_t	-3.762815	0.0217*	-69.33090	0.0001*
$TUFEKUR_t$	-9.472724	0.0000*	-9.277152	0.0000*
$UFEKUR_t$	-10.45694	0.0000*	-10.37470	0.0000*
BIST 100_t	-12.29053	0.0000*	-12.29031	0.0000*
KKO_t	-10.07985	0.0000*	-10.11130	0.0000*

* denotes %1 significance

As a result of unit root tests, it was concluded that all series are stationary from the same degree, i.e., the first difference. A cointegration test was performed to find out whether the series has long-term cointegration. Applying the VAR model to the series, appropriate delay lengths of the series were designed as "3" in the light of the information criteria. Then, the Johansen Co-integration test was chosen as an appropriate cointegration test since the number of series was more than two, and all of these series are stationary in the first degree Ho: there is at least r cointegration vectors hypothesis being tested. Alternative hypotheses

$H_1: r \geq p$ trace test

$H_1: r = p$ max eigenvalue test

In the tables above, trace statistic is higher than 5% critical value, simultaneously the maximum-Eigenvalue Statistic is higher 5%, according to both trace and Max Eigen statistic results.

Ho hypothesis is rejected, and the alternative view is accepted; therefore, it is concluded that the series are cointegrated. The results of the cointegration test are summarized as follows.

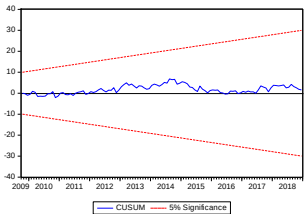
Trace statistics and leading Eigenvalue of the series show cointegration between the series, and it means that the series are cointegrated. After the cointegration test, the vector error correction model was tested; the error term was found negative (-0.415980) and statistically significant.

Table 5. *Johansen and Juselius Co-integration Test Results*

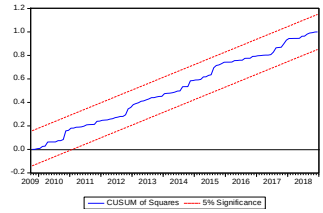
Null hypothesis	Trace Statistic	0.05 Critical Value	Probability
Ho: r=0*	283.9057	197.3709	0.0000
Ho: r<_1*	167.1441	159.5297	0.0179
Ho: r<_2	121.0306	125.6154	0.0921
Ho: r<_3	85.26260	95.75366	0.2114
Ho: r<_4	57.19833	69.81889	0.3313
Ho: r<_5	36.17043	47.85613	0.3878
Ho: r<_6	19.17293	29.79707	0.4805
Null hypothesis	Maximum Eigenvalue Statistics	0.05 Critical Value	Probability
Ho: r=0*	116.7615	58.43354	0.0000
Ho: r<_1	46.11350	52.36261	0.1894
Ho: r<_2	35.76804	46.23142	0.4120
Ho: r<_3	28.06427	40.07757	0.5572
Ho: r<_4	21.02790	33.87687	0.6820
Ho: r<_5	16.99749	27.58434	0.5802
Ho: r<_6	13.62204	21.13162	0.3968

According to the trace test results, there are two cointegration vectors between the series.

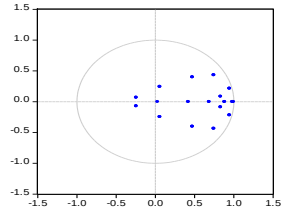
Since the series was analyzed between 2007 and 2018, it is also examined whether structural breakage, CUSUM, and CUSUM of Squares tests were performed. CUSUM of Squares, known as the actual refraction test, refers to the cumulative sum of error squares. The test is calculated with consecutive error squares; confidence limits are determined by plotting the model's errors in a specific confidence interval. The graphics for the tests are as follows:



Graphic 1. *CUSUM Test*



Graphic 2. *CUSUM of Squares Test*



Graphic 3. *Inverse Roots of AR Roots*

In both graphs, it is observed that the graph line remains within the bands; that is, there is no structural breakage. We can also check again whether the VAR model performed for analysis is the correct choice or not. For this purpose, the VAR model's inverse root circle was examined and showed that this model was the right model since all the factor variables are inside the process.

Granger causality test was performed to show whether there is a causal relationship between the models' variables in the short term. Suppose the historical information of one variable (X) is useful

in the forward estimation of another variable (Y). In that case, the beneficial variable (X) is said to cause the other variable (Y), Granger. (Gujarati, 2009, p.653-654). For this test, the hypothesis "Ho: = X variable is not the Granger cause of the Y variable," and the alternative view is interpreted as "The X variable is the Granger cause of the Y variable." In general, suggestions for causality testing,

Ho: It is formed as no causality relationship from the independent variable to the dependent variable.

If the probe is <0.05, it is interpreted as; Ho: rejected, that is, "there is a causal relationship from the independent variable to the dependent variable."

Table 6. *Granger Causality Test Results*

Null hypothesis	Chi-sq	Probability	Result
TSH→TSG	10.15998	0.0173	TSH Granger causes TSG
KKO→TSG	9.129889	0.0276	KKO Granger causes TSG
KBOH→ TSG	16.67811	0.0008	KBOH Granger causes TSG
BIST100→ TSG	10.61012	0.0140	BIST100 Granger causes TSG
TSG→TSH	32.03366	0.0000	TSG Granger causes TSH
TUFEKUR→ TSH	10.82894	0.0127	TUFEKUR Granger causes TSH
UFEKUR→ TSH	12.15421	0.0069	UFEKUR Granger causes TSH
KBOH→ TSH	22.53707	0.0001	KBOH Granger causes TSH
BIST100→ TSH	8.241278	0.0413	BIST100 Granger causes TSH
UFEKUR→ TUFEKUR	11.70850	0.0085	UFEKUR Granger causes TUFEKUR
TUFEKUR→ UFEKUR	10.55538	0.0144	TUFEKUR Granger causes UFEKUR
TSH→ KKO	9.117094	0.0278	TSH Granger causes KKO
TSG→KBOH	19.18356	0.0003	TSG Granger causes KBOH

Discussion and Conclusion

The main feature that distinguishes this study from other studies is while to analyze the relationship between tourism revenues and macroeconomic variables, it also investigates the relationship between the stock market index and tourism revenues. The stock exchanges perform like barometer of economy and this indicator let to understand the aim of customers and financial markets. This study examines the relationship between the tourism sector, finance sector and real sector. For this purpose, total travel revenues, average travel expenditures per person, total travel expenses, CPI-based real effective exchange rate, PPI based real effective exchange rate, BIST100 closing index (BIST100) and manufacturing industry capacity utilization rate variables were analyzed. The variables included in the analysis cover the period 2007-2018 with monthly frequency. Data were analyzed with the E-11 program and data take from the Central Bank of Turkey. According to the results of the cointegration test, it can be said that the series have long-term balance and cointegration. However, it has been determined that there is both one-way and two-way causality relationships among other variables. This study is unique in literature because of variables which analyzed in model. Specially relationship between stock exchange index and tourism revenues have not analyzed in literature.

This study aimed to investigate the relationship between tourism income and both the industrial and financial industries. For this purpose, total travel revenues and expenditures, average travel expenses per person, real effective exchange rate based on CPI and PPI, the closing index of the

manufacturing industry of listed companies in BIST100, and capacity utilization rate series were examined.

ADF and PP tests are used to determine the stationary of the series. All the series became stationary at the first degree, and then the Johansen Cointegration test was applied to investigate whether there is a long-term relationship between them. The analysis result indicates that there is cointegration between the series and the series move together in the long term. After cointegration test, the Vector error correction model was applied, and it was determined that the error correction vector was statistically significant.

Later, CUSUM and CUSUM of Squares tests were conducted to investigate structural breaks in the model. Both test charts showed no structural cracks in terms of tourism revenues during the research period.

Then, the Granger causality test was used to investigate the short-term relationship between the series. According to the causality test results, the causality relationship was determined from total tourism incomes, capacity utilization rate, average expenditures per capita, and the BIST100 index to the total travel revenues. Besides, the causality relationship was determined from total travel revenues, consumer price index-based exchange rate, PPI -based exchange rate, average expenditure per capita, and BIST 100 index to total travel expenses. A mutual causality relationship was also observed between the purchasing power index-based currency and the CPI-based currency. The causality relationship was determined from total travel expenditures to capacity utilization rate and from total travel revenues to average spending per person.

While there is no short-term relationship between tourism sector and economic growth, tourism sector positively impacts economic growth in the long run. The findings indicate that an increase in tourism revenues supported by bank loans during the period which examined. Expansion in the tourism sector positively affected economic development and increased the number of tourists and tourism revenue.

In this study for the period of 2007 and 2018 tourism revenues have examined. While the share of tourism revenues in Gross Domestic Product was the lowest in 2017 with 3.1 percent, it was observed that the highest was 3.9 percent in 2019. For this reason, there was no need for different methods to be applied, considering that there were no structural breaks and great volatility did not occur during the study period, which did not encounter a great change in tourism revenues. Of course, it is possible to make additional analysis with different methodologies.

In the studies in the literature from a methodological point of view, it is seen that tourism revenues are modeled using different models such as time series and panel data methodology. Researchers used different conventional end modern tests and models for empirical analyze.

In their study in 2008, Fayissa, Nsiah and Tadasse concluded that tourism revenues accelerated the short-term economic growth of 42 African countries. The same researchers examined 17 Latin American countries in their study in 2009. As a result of the study, they concluded that Latin American countries will also increase their economic growth by strengthening the tourism sector structurally. According to the results of their study by Lee and Chang in 2008, the impact of the tourism sector on GDP in 23 OECD countries examined is greater than the other 32 non-OECD countries investigated in the study. Proenca and Soukazis, in their study in 2008, concluded that Spain's tourism revenues affect economic growth. Başel and Uyğun found a significant relationship between economic growth and tourism revenues in Turkey in their study in 2017.

In this study, findings were obtained in support of the studies mentioned above. The fact that Turkey's geographical location and economic indicators are like those of the Mediterranean and OECD countries has also shown itself in the results of the analysis. It has been revealed that there is a significant cause and effect relationship between tourism revenues and macroeconomic indicators in Turkey, as in these countries, at the time of the research.

Finally, in addition to other studies, together with other macroeconomic indicators it was concluded that the BIST100 index, which is an indicator of capital markets, affects total tourism revenues and expenditures in Turkey.

In the addition there are other indicators which effects growth in tourism sector. Environment policies and legal basis of investments are the fundamental issues for doreign investors. Environmentally clean projects, competitive, and sustainable policies should be applied for increasing international tourism incomes in future years.

Ethics Statement

During the writing process of this study titled " Do Tourism Revenues Effects Financial and Real Sector in Turkey?", scientific rules, ethics and quotation rules were followed; No falsification has been made on the data collection and this study has not been sent to any other journal for evaluation.

References

Aktaş, C . (2009). Türkiye'nin ihracat ithalat ve ekonomik büyüme arasındaki nedensellik analizi . *Kocaeli Üniversitesi Sosyal Bilimler Dergisi,* (18), 35-47. Retrieved from https://dergipark.org.tr/en/pub/kosbed/issue/25702/271210

Arslan, A . (2008). Türkiye'de ekonomik büyüme ve turizm ilişkisi üzerine ekonometrik analiz . *Erciyes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* 1(24), 1-12. Retrieved from https://dergipark.org.tr/tr/pub/erusosbilder/issue/23757/253190

Bahar, O , and Bozkurt, K . (2010). Gelişmekte olan ülkelerde turizm-ekonomik büyüme ilişkisi: dinamik panel veri analizi . *Anatolia: Turizm Araştırmaları Dergisi*, 21 (2) , 255-265 . Retrieved from https://dergipark.org.tr/en/pub/atad/issue/16800/174511

Balıkçıoğlu, E. and Oktay, K. (2015). Türkiye'de turizm gelirleri ve ekonomik büyüme ilişkisinin kamu politikaları doğrultusunda değerlendirilmesi, *Sosyoekonomi*, 23(25), 113-126, DOI: 10.17233/se.80513 2015

Beşel, F. and Uygun, U. (2017). The relationship between economic growth and tourism ıncome: the case of Turkey: *3rd SCF International Conference on "Economic and Social Impacts of Globalization,"* Antalya 5-7, October 2017.

Belloumi, M. (2010). The relationship between tourism receipts, real effective exchange rate and economic growth in Tunisia, *International Journal of Tourism Research,* 12(5), 550–560. https://doi.org/10.1002/jtr.774

Campos, C. and Sequeira, T.N. (2005). Tourism and economic growth: a panel data approach. *International Conference: Theoretical Advances in Tourism Economics, University of Évora, Portugal.* 18-19 March 2005.

Çetintaş, H. and Bektaş, Ç. (2008). Türkiye'de turizm ve ekonomik büyüme arasındaki kısa ve uzun dönemli ilişkiler. *Anatolia: Turizm Araştırmaları Dergisi,* 19(1), 37-44.

Chen, C. ve Chiou-Wei, S.Z. (2009). Tourism expansion, tourism uncertainty, and economic growth: new evidence from Taiwan and Korea, *Tourism Management,* 30(6). 812–818. 10.1016/j.tourman.2008.12.013

Cortes-Jimenez, I. and Pulina, M. (2006). Tourism and growth: evidence for Spain and Italy, 46th congress of the European Regional Science Association: "Enlargement, Southern Europe and the Mediterranean", August 30th - September 3rd, 2006, Volos, Greece, *European Regional Science Association (ERSA),* Louvain-la-Neuve

Dickey D.A. and Fuller W. A., (1981). Likelihood ratio statistics for autoregressive time series with a unit root, *Econometrica, Vol.49*, ss.1057-1072.

Fayissa, B., Nsiah C. and Tadasse B. (2008). Impact of tourism on economic growth and development in Africa, *Tourism Economics,* 14(4), 807-818. https://doi.org/10.5367/000000008786440229

Fayissa, B., C. Nsiah and B. Tadasse (2009). Tourism and economic growth in Latin American Countries (LAC): further empirical evidence. *The University of Minnesota-Duluth, Department Of Economics And Fınance Working*

Paper Series, March 2009. 1-26. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.587.6092&rep=rep1&type=pdf

Gökovalı, Ü. and Bahar, O. (2006). Contribution of tourism to economic growth: a panel data approach, *Anatolia,* 17(2), 155-167, DOI: 10.1080/13032917.2006.9687184

Gunduz, L. and Hatemi-J., A. (2005). Is the tourism-led growth hypothesis valid for Turkey?, *Applied Economics Letters,* 12(8), 499–504, DOI: 10.1080/13504850500109865

Khan, A, Bibi, S. , Lorenzo 4,A. , Jiaying, L and Babar, Z.U. (2020), Tourism and development in developing economies: a policy ımplication perspective, sustainability, 12, 1618; 1-19, doi:10.3390/su12041618

Lee, C.C. and Chang, C.P. (2008). Tourism development and economic growth: a closer look at panels, *Tourism Management,* 29(1). 180–192. https://doi.org/10.1016/j.tourman.2007.02.013

Martin, J. L., Morales, N.M. and Scarpa, R. (2004). Tourism and economic growth in latin american countries: a panel data approach. Retrieved from https://www.feem.it/m/publications_pages/NDL2004-026.pdf.

Philips, P., C., B. and Peron, P., (1998). Testing for a unit root in time series regression, *Biometrika,* 1998-75(2), 335-346

Polat, E. and Günay, S . (2014). Türkiye'de turizm ve ihracat gelirlerinin ekonomik büyüme üzerindeki etkisinin testi: eşbütünleşme ve nedensellik analizi . *Süleyman Demirel Üniversitesi Fen Bilimleri Enstitüsü Dergisi,* 16(2), 204-211. Retrieved from https://dergipark.org.tr/en/pub/sdufenbed/issue/20798/222101

Proença, S. and Soukiazi, E. (2008). Tourism as an economic growth factor: a case study for southern european countries, *Tourism Economics,* 14(4), 791–806. https://doi.org/10.5367/000000008786440175

Scarlett, H.G.(2021). Tourism recovery and the economic impact: A panel assessment. *Research in Globalization* 3 (2021) 100044, 1-11. https://doi.org/10.1016/j.resglo.2021.100044

Tang, C.-H.H. and Jang, S.S. (2009). The tourism-economy causality in the united states: a sub-ındustry level examination. *Tourism Management,* 30, 553-558. http://dx.doi.org/10.1016/j.tourman.2008.09.009

Trading Economics (2019). Turkey tourism revenues. retrieved from https://tradingeconomics.com/turkey/tourism-revenues