



# The International Journal of Applied Economics & Finance

ISSN 1991-0886

**science**  
alert

**ANSI***net*  
an open access publisher  
<http://ansinet.com>

## The Impact of Tourism on Economic Performance: The Case of Turkey\*

Muhittin Kaplan and Tuncay Çelik

Department of Economics, University of Niğde, 51200, Niğde, Turkey

---

**Abstract:** This study examines the relationship between tourism expansion and economic performance in Turkey over the period of 1963-2006. Empirical analysis carried out employing the VAR procedure indicates the presence of one cointegrating vector among real output, real tourism receipts and real effective exchange rate and tourism has a long-run effect on output. In addition, test results show the presence of one-directional causality indicating that tourism and exchange rate causes output.

**Key words:** Tourism expansion, economic performance, Granger causality, cointegration, Turkey

---

### INTRODUCTION

Today, the importance of tourism as a major source of income is recognised by all countries in the world. According to the World Tourism Organisation (WTO) 806.8 million people traveled to a foreign country in 2005 spending more 682.7 billion dollars, making tourism the world's number one export earner, ahead of automotive products, chemical, petroleum and food. Despite downside risk facing global tourism last 4 years, in particular terrorism, Iraq-USA conflict, rising oil prices, Thailand and Maldives tsunami in 2004, 842 billion people traveled around the world and spent approximately 715 billion dollars in 2006.

In parallel, countries engaged in fierce competition to increase their shares in the world tourism since the tourism industry generates substantial economic benefits to host countries. Especially for developing countries facing foreign exchange constraint, promoting tourism became a primary policy goal because tourism earnings contributes significantly to the economic performance of the host country by removing the balance of payments deficits, which in turn increases the availability of those imported inputs that have no domestic substitutes and are crucial for production (Nishimizu and Robinson, 1986; Balagner and Cantavella-Jorda, 2002). Other tourism-generated benefits involve increasing employment, additional source of income for households and governments (Oh, 2005; Henry and Deane, 1997; Szivas and Riley, 1999; Durbarry, 2002; Khan *et al.*, 1990).

Over the years, Turkey has emerged as a popular tourist destination for many Europeans, often competing with Greece, Italy and Spain. According to travel agencies, 31 of the 100 best hotels of the world are located in Turkey. In the year 2005, Turkey hosted 21 billion tourists and earned 18.2 billion dollars in total and around 680 dollar per tourist. The latest figures indicate that the tourism is the most dynamic and fastest growing sector in Turkey (Tosun, 2001; Tosun *et al.*, 2003). It is also the second most important source of foreign currency earnings. Tourist arrivals and tourism receipts has been rapidly increased since 1970. While the share of tourism receipts in GDP was only 0.5% in 1970, it rapidly increased to 1.5% in 1980, 2.8% in 1990 and reached to 4.6% of the GDP in 2006.

Although the tourism sector has grown rapidly in Turkey, researchers have paid little attention to the empirical analysis of the contribution of the tourism sector to the Turkish economy. Kasman and Kasman's (2004) and Gündüz and Hatemi's (2005) studies are some of those that paid attention to the issue of the relation between economic growth and tourism, in which the authors found that the

---

**Corresponding Author:** Muhittin Kaplan, Department of Economics, University of Niğde, 51200, Niğde, Turkey

\*Originally Published in *The International Journal of Applied Economics and Finance*, 2008

TLG (tourism-led growth) hypothesis was valid for Turkey. The aim of this study is to make empirical analysis of the role of tourism on the level of output in Turkey and make inferences about policy makers.

### **TOURISM EXPANSION AND ECONOMIC PERFORMANCE**

In contrast to the empirical literature on the export-led growth hypothesis which investigates the relationship between traded-goods and economic growth (Paul and Chowdury, 1995; Moosa, 1999; Fountas, 2000; Balaguer and Cantavella-Jorda, 2001), the studies that investigate the causal relationship between non-traded goods, such as tourism and economic growth are limited in number and provide mixed results. Empirical studies undertaken by Balaguer and Cantavella-Jorda (2002) and Dristakis (2004) for two important tourism destination countries, Spain and Greece respectively, provides a support for the tourism-led growth hypothesis, which considers tourism as being a major determinant of long-run economic growth. Balaguer and Cantavella-Jorda (2002), in their study for Spain, tested the tourism-led growth hypothesis and the direction of causality over the period 1975 to 1997. Estimation results indicate that tourism-led growth hypothesis holds for Spain and the direction of causality goes through tourism to long-run economic growth.

In a similar study, Dristakis (2004) investigated the effect of tourism on the long-run economic growth for Greece over the period of 1960-2000. The results of the study shows that GDP, real effective exchange rates and international tourism earnings variables are cointegrated but there exists bi-directional causality between economic growth and tourism and between economic growth and real exchange rate. Dristakis (2004) concludes that both tourism-led growth and growth-led tourism hypotheses hold in the case of Greece.

However, Oh (2005) argued that whether tourism-led growth hypothesis holds for a country is closely related to the extent that tourism accounts for a significant part of its GDP. The author tested this argument making use of South Korean data over the period from 1975 to 2001. Empirical results of the study indicate no long-run relationship between economic growth and tourism. In addition, the author provides evidence on economic growth caused tourism rather than the other way around.

Kim *et al.* (2006) enquire whether Oh (2005)'s argument can be generalized making use of Taiwan's data, which is very similar to South Korean data in terms of the share of tourism in GDP for the period 1956-2002. The authors examined the long-run relationship between economic growth and tourism and tested the direction of causality among these variables. The results indicate that there is a long-run equilibrium relationship between economic growth and tourism and a bi-directional causality between the two factors. In other words, in Taiwan's case, tourism and economic development reinforce each other.

Taken together, the empirical evidence suggests that tourism has a long-run impact on economic growth for those countries in where the share of tourism in GDP is relatively higher, indicating that tourism affects long-run growth after some threshold level. In this respect, we expect that tourism expansion contributes economic growth significantly in Turkey since the tourism sector is the most dynamic and fastest growing sector and tourism accounts for a significant amount of GDP in Turkey.

### **RESULTS AND DISCUSSION**

Variables subject to empirical analysis in this study determined based on the previous empirical work on the relationship between economic growth and tourism. The data is annual data on real Gross Domestic Product (GDP), Real Effective Exchange Rate (REER) and real total tourism receipts (TY) covering the period 1963-2006. All data has been taken from the Central Bank of the Republic of Turkey (CBRT) electronic data delivery system and Turkish Statistical Institute (TSI) (Table 1). Real tourism figures are obtained by deflating nominal tourism receipts by Consumer Price Index (CPI). All variables used in the empirical analysis are transformed variables by the use of natural logarithms.

Table 1: Definitions of variables

Variables	Definitions	Source
LGDP	Natural logarithm of real gross domestic product of Turkey	CBRT
LTY	Natural logarithm of real total tourism income of Turkey	TSI
LREER*	Natural logarithm of real effective exchange rate of Turkey	CBRT

\*: Increases in LREER show the revaluation of the domestic currency because exchange rate is defined as foreign currency per unit of domestic currency

Table 2: Augmented Dickey-Fuller and Phillips-Perron statistics for unit root tests

Variables	With intercept			With intercept and trend		
	LGDP	LTY	LREER	LGDP	LTY	LREER
ADF*	-1.851(0)	-1.732 (0)	-1.655(0)	-1.7820(0)	1.680(0)	-1.156(0)
PP	-2.464(7)	-1.743(2)	-1.671(1)	-1.485(2)	-1.680(0)	-1.182(1)
Variables	$\Delta$ LGDP	$\Delta$ LTY	$\Delta$ LREER	$\Delta$ LGDP	$\Delta$ LTY	$\Delta$ LREER
ADF*	-5.554(0)	-5.215(1)	-6.443(0)	-5.859(0)	-5.430(1)	-6.616(0)
PP	-5.056(5)	-5.398(2)	-6.444(2)	-5.047(10)	-5.601(5)	-6.801(5)

The selection of lag lengths for the ADF tests and the truncation lags for the PP test is determined based on the Schwartz Information Criterion (SIC) and the Newey-West bandwidth criterion, respectively, \*: Indicates that the null hypothesis is rejected at the 5% level

Recent research on time series analysis shows that many macroeconomic time series contain unit roots and non-stationary regressors may invalidate most of the standard empirical results (Engle and Granger, 1987; Enders, 1995). Therefore, it is important to determine the stochastic properties of the series (whether a particular series is stationary at levels or difference stationary) before undertaking a modelling exercise in order to avoid spurious results. Such an analysis was undertaken for each of the variables of interest considered at levels using the Augmented Dickey-Fuller (ADF). The ADF statistics were calculated for the LGDP, LTY and LREER series including intercept and trend in the underlying Dickey-Fuller regressions. Considering the fact that in the presence of a structural break in a stationary series ADF test may reject the null of a unit root process where as in fact it is stationary, we also tested the level of integration of series using the Phillips-Perron (PP) test. In both cases, the selection of the number of lags is carried out using the Akaike Information Criteria (AIC). The results of the ADF and PP tests computed over the sample period for the levels and first differences of variables are shown in Table 2.

Inspection of the results table shows that the null hypothesis of unit root cannot be rejected in levels of variables but it is rejected in their first differences indicating that the variables considered are integrated of the same order 1, I(1).

Having established that our variables are integrated of the same order 1, we proceed with the multivariate Vector Autoregression (VAR) approach developed by Johansen (1988) and Johansen and Juselius (1990) to examine whether there is a long-run relationship among LGDP, LTY and LREER series. The VAR methodology is a better approach to investigate the long-run relationship because it approximates well the unknown model of the true economic structure by taking the dynamic interactions into account among the variables in the system. The selection of the optimum lag length in the underlying Vector Autoregression (VAR) model is carried out using the Schwarz's Information Criterion (SIC), Akaike Information Criterion (AIC) and Hannan-Quinn (HQ) criteria. The SIC, AIC and HQ criteria yield a VAR (1).

The inspection of Table 3 indicates that the null hypothesis of no cointegration ( $r = 0$ ) among the variables is rejected in favour of the general alternative  $r = 1$  since the trace statistic is 30.06, which is above the 95% critical value of 29.80. In addition, the null of  $r = 1$  can not be rejected at a 5% level of significance. The maximum eigenvalue tests also show that the null hypothesis of no cointegration ( $r = 0$ ) is rejected at 10% and the null of  $r = 1$  is rejected at 5% level of significance the presence of only one cointegrating vector,  $r = 1$ . Taken the results provided by the trace and the maximum eigenvalue tests together, it can be concluded that there is only one cointegrating relationship among the three variables subject to empirical analysis.

Table 3: Johansen-Juselius maximum likelihood cointegration tests

Trace test				Maximum eigenvalue test			
Null	Alternative	Statistic	95% critical value	Null	Alternative	Statistic	95% critical value
r = 0	r ≤ 1	30.06*	29.80	r = 0	r = 1	20.68**	21.13
r ≤ 1	r ≤ 2	9.38	15.49	r ≤ 1	r = 2	6.27	14.26
r ≤ 2	r ≤ 3	3.10	3.84	r ≤ 2	r = 3	3.11	3.84

In the determination of lag length in the VAR model, the Schwarz's Information Criterion (SIC), Akaike Information Criterion (AIC) and Hannan-Quinn criteria (HQ) are employed, \*: indicates that the null hypothesis is rejected at 5% significance level and \*\*: denotes statistical significance at 10%. r stands for the number of cointegrating vectors

Table 4: Granger causality tests, 1963-2006

Null hypothesis	F-statistic	Probability
LTY does not granger cause LGDP	8.46889	0.00588*
LREER does not granger cause LGDP	9.05477	0.00452*
LGDP does not granger cause LTY	1.24731	0.27073
LGDP does not granger cause LREER	0.00465	0.94595
LREER does not granger cause LTY	0.00028	0.98684
LTY does not granger cause LREER	0.15142	0.69925

\*: Indicates that the null hypothesis is rejected at the 1% level

The estimates of the long run cointegrating vector and corresponding t-values are presented in Eq. 1. Examination of the Eq. 1 shows that the tourism receipts have a positive and statistically significant long-run effect on output level in Turkey. Interestingly, the positive and statistically significant coefficient on the effective exchange rate implies that the revaluation of the domestic currency increases the level of output in the long-run.

$$\begin{aligned}
 \text{LGDP} = & 1.8476 \text{ Cons} + 0.2942 \text{ LTY} + 0.2704 \text{ LREER} & (1) \\
 & (19.4834) & (2.2145)
 \end{aligned}$$

Although this finding seems counter-intuitive, there is well documented literature which shows the revaluation of domestic currency has a positive impact on output level. This relationship between economic growth and real appreciation stems from a differential productivity growth between the manufacture of traded goods and non-traded goods and services internationally and known as the Balassa-Samuelson effect. Such an appreciation over the long term has been evident among fast growing countries, such as Japan, Korea, Taiwan Province of China, Singapore and Hong Kong (Caramazza and Aziz, 1998). Bahmani-Oskooee (1992), Bahmani-Oskooee and Rhee (1996), Kamin and Rogers (2000), Faria and Leon-Ledesma (2003) and Lommatzsch and Tober (2004) provides evidence on this hypothesis.

Considering the discussions about the direction of causality among tourism and long-run growth, we carried out the Granger Causality test to determine the direction of causality among LGDP, LTY and LREER variables in the case of Turkey (Table 4).

As evident from the inspection of the table, the null hypotheses that both the LTY and LREER do not cause the LGDP are rejected at 1% level of significance implying that there is one-way causality going through the tourism receipts and the real effective exchange rate to the level of output. In addition, we found that the null hypothesis that LTY (LREER) does not cause LREER (LTY) could not be rejected at 5% level of significance indicating the lack of causality among these variables. These results imply that Turkey has exceeded the threshold level in tourism, which is measured by the share of tourism in GDP and therefore it is expected that the contribution of tourism to the economic performance of Turkey will be higher in the long-run.

## CONCLUSION

The main goal of this study was to assess the relationship between tourism expansion and economic performance and to test the direction of causality among these variables using Turkish data over the period of 1963-2006. The estimated VAR model showed that there is only one cointegrating vector among real output, real tourism spending and real effective exchange rate and tourism has a long-run effect on output. In addition, causality test results indicated the presence of one-directional causality going through tourism and exchange rate to output. Obviously, these findings indicate that the threshold level in tourism has been exceeded and the tourism industry contributes substantially to the economic performance in Turkey. In this sense, it can be argued that the tourism receipts can be regarded as a stable source of foreign currency in Turkey and the payoff of economic policies directed to develop tourism will be higher in the long-run.

## REFERENCES

- Bahmani-Oskooee, M., 1992. A Time-series approach to test the productivity bias hypothesis in purchasing power parity. *Kyklos*, 45 (2): 227-236.
- Bahmani-Oskooee, M. and J.H. Rhee, 1996. Time-series support for Balassa's productivity-bias hypothesis: Evidence from Korea. *Rev. Int. Econ.*, 4 (3): 364-370.
- Balagner, L. and M. Cantavella-Jorda, 2001. Examining the export-led growth hypothesis for Spain in the last century. *Applied Econ. Lett.*, 8 (10): 681-685.
- Balaguer, L. and M. Cantavella-Jorda, 2002. Tourism as a long-run economic growth factor: The Spanish Case. *Applied Econ.*, 34 (7): 877-884.
- Caramazza, F. and J. Aziz, 1998. Fixed or flexible? Getting the exchange rate right in the 1990s. *Economic Issues*, No. 3, IMF Publications, Washington.
- Dristakis, N., 2004. Tourism as a long-run economic growth factor: An empirical investigation for Greece using causality analysis. *Tourism Econ.*, 10 (3): 305-316.
- Durbarry, R., 2002. The economic contribution of tourism in Mauritius. *Ann. Tourism Res.*, 29 (3): 862-865.
- Enders, W., 1995. *Applied Econometric Time Series*. Wiley, New York.
- Engle, R.F. and C.W.J. Granger, 1987. Cointegration and error correction: Representation, estimation and testing. *Econometrica*, 55 (2): 251-276.
- Faria, J.R. and M. Leon-Ledesma, 2003. Testing the Balassa-Samuelson effect: Implications for growth and the PPP. *J. Macroecon.*, 25 (2): 241-253.
- Fountas, S., 2000. Some evidence on the export-led growth hypothesis for Ireland. *Applied Econ. Lett.*, 7 (4): 211-214.
- Gündüz, L. and A. Hatemi, 2005. Is the tourism led-growth hypothesis valid for Turkey? *Applied Econ. Lett.*, 12 (8): 499-504.
- Henry, E.W. and B. Deane, 1997. The contribution of tourism to the economy of Ireland in 1990 and 1995. *Tourism Manage.*, 18 (8): 535-553.
- Johansen, S., 1988. Statistical analysis of cointegration vectors. *J. Econ. Dynam. Control*, 12 (1): 231-254.
- Johansen, S. and K. Juselius, 1990. Maximum likelihood estimation and inference on cointegration with application to the demand for money. *Oxf. Bull. Econ. Stat.*, 52 (2): 169-210.
- Kamin, S.B. and J.H. Rogers, 2000. Output and the real exchange rate in developing countries: An application to Mexico. *J. Dev. Econ.*, 61 (1): 85-109.
- Kasman, S.K. and A. Kasman, 2004. Cointegration and causality between tourism and economic growth (in Turkish). *Iktisat/İşletme ve Finans*, 220 (7): 122-134.

- Khan, H., C.C. Seng and W.K. Cheong, 1990. Tourism multiplier effect on Singapore. *Ann. Tourism Res.*, 17 (3): 408-418.
- Kim, H.J., M.H. Chen and S.S. Jang, 2006. Tourism expansion and economic development: The case of Taiwan. *Tourism Manage.*, 27 (5): 925-933.
- Lommatzsch, K. and S. Tober, 2004. What is behind the real appreciation of the accession countries' currencies? An investigation of the PPI-based real exchange rate. *Econ. Syst.*, 28 (4): 383-403.
- Moosa, I.A., 1999. Is the export-led growth hypothesis valid for Australia? *Applied Econ.*, 31 (7): 903-906.
- Nishimizu, M. and S. Robinson, 1986. Productivity Growth in Manufacturing. In: *Industrialisation and Growth*, Chenery, H., S. Robinson and M. Syrquin (Eds.). A Comparative Study, London: Oxford University Press for the World Bank.
- Oh, C.O., 2005. The contribution of tourism development to economic growth in the Korean economy. *Tourism Manage.*, 26 (1): 39-44.
- Paul, S. and K. Chowdury, 1995. Export-led growth hypothesis: Some empirical tests. *Applied Econ. Lett.*, 2 (6): 177-179.
- Szivas, E. and M. Riley, 1999. Tourism employment during economic transition. *Ann. Tourism Res.*, 26 (4): 747-771.
- Tosun, C., 2001. Challenges of sustainable tourism development in the developing world: The case of Turkey. *Tourism Manage.*, 22 (3): 289-303.
- Tosun, C., D.J. Timothy and Y. Ozturk, 2003. Tourism growth, national development and regional inequality in Turkey. *J. Sustain. Tourism*, 11 (2): 133-161.