TOURISM AND ECONOMIC GROWTH IN TURKEY

Jülide Yıldırım[*], *Nadir Öcal*[**]

ABSTRACT

Tourism sector entails both costs and benefits to the economy. The costs are mainly emphasized as opportunity costs. On the other hand tourism revenues may have growth promoting potential benefits: It is a source for deriving foreign exchange which can be used to import capital goods for productive purposes. Thus, a rise in tourism revenues may result in higher production and employment. This paper examines empirically the effects of tourism revenues on economic growth in Turkey for the time period 1962-2002, in a VAR framework. The empirical findings indicate that even though there is growth promoting effects of tourism revenues in the long-run, there is no short-run relationship between tourism and economic growth.

Keywords: *Tourism, economic growth, Turkey, VAR.*

INTRODUCTION

Even though the domestic tourism with regard to pilgrimages, spa tourism and summer resorts has a long tradition in Turkey (Seckalman (2002)), Turkey has entered the international tourism market in late 1980s. After the Turkish government began to regard the importance of international tourism for economic development and as a source of foreign exchange, it established some tourism facilities and provided incentives for private investment.

Until the late 1970s, Turkey has implemented an import substitution policy for economic growth. However, monetization of public debt, 1973-1974 and 1978-1979 oil price shocks and the balance of payments crisis in 1978 hampered industrial production and added to inflation. This economic situation which led to 1979 crisis necessitated a new engine of growth. From the early 1980s onwards,

* Doç. Dr., Gazi Üni., İ.İ.B.F., Ekonometri Bölümü
** Doç. Dr., ODTÜ., İ.İ.B.F, İktisat Bölümü

with the introduction of the stabilization programme in January 1980, there was a change in the industrialization strategy towards an export-led growth regime, aiming the integration of the country into the global economy. As huge balance of payment and current account deficits could not have been corrected only by workers' remittances, external balance became a major concern for the governments. Tourism revenues, as one of the alternative sources of foreign currency earnings, gained importance in addition to the export revenues. Tosun (2001) notes that "... Turkey saw tourism as an easy, effective and relatively cheap instrument to achieve export-led industrialization as a core principle of the free market economy...".

Accordingly, in 1982 the government enacted the Tourism Encouragement Law to accelerate tourism development, which induced private and public entrepreneurs to undertake fixed investments in tourism by providing incentives. Moreover, it appropriated state-owned land for tourism development, relaxed restrictions on employment of foreigners in the tourism sector, introduced vocational education and training development projects (See Tosun (2001) for a brief discussion on sustainable tourism development in Turkey). Thus, governments see tourism as an opportunity to derive foreign exchange which can be used to import the capital goods for productive purposes. This, in turn, may increase employment and economic growth.

However, in addition to the benefits of tourism such as foreign currency earnings, tourism also entails costs to the economy, making demands on the infrastructure and scarce resources of the economy in addition to the environmental damages, such as pollution and uncontrolled development (For a cost-benefit analysis of tourism, please see Archer and Cooper (1998)). Moreover, the development of tourism industry in developing countries requires some of scarce resources, such as capital and skilled labour, to be diverted from their alternative uses, leading to the production loss in other sectors. Thus, the overall impact of tourism sector on economy depends primarily upon the nature of the country's economy and alternative forms of development that are applicable. In cases where tourism sector stimulates economy in the form of spillover effects and externalities, it can be considered as an engine for economic growth.

Even though there is a debate concerning the impact of tourism on economic growth in tourism economics literature, empirical evidence is rather limited. In their analytical paper, Hazari and Ng (1993) report that tourism may be welfare reducing in a monopoly power framework. However, in Hazari and Kaur (1995), it

has been reported that in a Komiya (1967) type first-best model, tourism enhances welfare. Similarly, Hazari and Sgro (1995) developed a dynamic model where tourism positively affects economic growth of a small economy in the long run. In an empirical framework, Modeste (1995) claims that tourism enhances economic growth of selected Caribbean countries, and that growth in tourism sector is accompanied by a contraction in the agricultural sector. Balaguer and Cantevella-Jorda (2002) examine the role of tourism in the development of Spanish economy, and claim a significant impact of tourism on economic growth. Kulendran and Wilson (2000) and Shan and Wilson (2001) report a strong reciprocal relationship between international trade and international travel for Australia and China, respectively.

This paper is an attempt to broaden the scope of this issue by examining the relationship between tourism revenues and economic growth in Turkey for the time period 1962-2002, employing vector autoregressive modelling (VAR). In VAR analysis it is important to include all relevant variables, otherwise the estimated relationship will not be accurate. However, this may lead to degrees of freedom problems in the estimation. Thus the final decision about the variables to be included in the analysis should be made considering the trade-off between these two issues. In a recent study Ballaguer and Cantevalla-Jorda (2002) investigated the role of tourism in the Spanish long-run economic growth, employing a vector autoregressive (VAR) analysis. The major shortcoming of this study is that they did not consider any explanatory variables other than the tourism revenues and exchange rate, which may render their causality analysis inaccurate as there are other factors explaining economic growth of a country, such as capital and labour. Therefore, in order to avoid any misspecification errors and thus misleading results, in this paper the empirical model is based on a theoretical foundation which is outlined in the following section, where empirical estimates are also presented. Finally, the last section concludes.

THEORETICAL MODEL AND THE EMPIRICAL RESULTS

The Model

Feder (1983) developed a model to analyse impact of export sector on economic growth where the economy is divided into two sectors: One is an advanced sector export (X) and the other is a domestically oriented sector (non-export sector). There are positive externalities from advanced sector to rest of

economy. Ram (1986), and Biswas and Ram (1986) applied this model to the study of defence spending in a cross-section of LDCs. Modeste (1995) applied this model to investigate the impact of tourism growth on economic development for selected Caribbean countries. Firstly, it is assumed that the economy consists of two sectors as tourism sector (T) and the non-tourism sector (N).

$$T = T(K_T, L_T) \tag{1}$$

$$N = N(K_N, L_N, T) \tag{2}$$

where K represents capital input and L is for labour and subscripts refer to each sector. The main point in this model is that, it considers externalities from sector T to sector N allowing for factor productivity differentials.

When equations (1) and (2) are totally differentiated we obtain

$$\dot{T} = T_k \dot{K}_T + M_l \dot{L}_T \tag{3}$$

$$\dot{N} = N_k \dot{K}_N + N_l \dot{L}_N + N_T \dot{T} \tag{4}$$

where a dot over a variable denotes its difference.

From Feder (1983), Ram (1986), Biswas and Ram (1986) and Modeste (1995) the factor productivity differential is δ, then

$$\frac{T_k}{N_k} = \frac{T_l}{N_l} = 1 + \delta \tag{5}$$

Thus when it is rearranged

$$T_k = (1 + \delta) N_k \tag{6}$$

$$T_l = (1 + \delta) N_l \tag{7}$$

Equations (6) and (7) are substituted in equation (3) yielding

$$\dot{T} = (1 + \delta) N_k \dot{K}_T + (1 + \delta) N_l \dot{L}_T \tag{8}$$

Since economic output, Y, is the sum of outputs, the growth of output can be represented as

$$\dot{Y} = \dot{N} + \dot{T} \tag{9}$$

Substituting equations (8) and (4) in equation (9) yields

$$\dot{Y} = (1+\delta)N_k \dot{K}_T + (1+\delta)N_l \dot{L}_T + N_k \dot{K} + N_l \dot{L}_N + C_T \dot{T} \quad (10)$$

To simplify let

$$\dot{L} = \dot{L}_T + \dot{L}_N$$

$$\dot{K} = \dot{K}_T + \dot{K}_N = I$$

where I denotes investment. Then equation (10) reduces to

$$\dot{Y} = N_k I + N_l \dot{L} + \delta(N_k \dot{K}_T + N_l \dot{L}_T) + N_T \dot{T} \quad (11)$$

After obtaining N_l and N_k from equations (3) and (4) and substituting in equation (11) yields

$$\dot{Y} = N_k I + N_l \dot{L} + \left(\frac{\delta}{1+\delta} + N_T\right)\dot{T} \quad (12)$$

The model can be expressed in econometric form as follows:

$$\dot{Y}_t = \beta_1 I_t + \beta_2 \dot{L}_t + \beta_3 \dot{T}_t + \varepsilon_t \quad (13)$$

where t denotes time and ε is the error term.

Empirical Results

In order to investigate the effects of tourism revenues on economic growth a four equation VAR is considered, where the variables are GNP at 1987 prices (Y), real tourism revenues (T), real savings (S) to proxy for investment, and labour force (L). The data is obtained from State Institute of Statistics of Turkey. All financial data are in billions of Turkish Lira. All variables are in the logarithmic form and are denoted by lowercase letters. Annual data is available for the time period 1962-2002. Even though a longer time period would liked to be preferred, the lack of tourism revenues data prior to 1962 restricted our analysis to the time period specified. Estimation is carried out using PcFiml version 9.00 (See Doornik

and Hendry (1997)). Prior to modelling the relationships between the variables, their univariate time series properties are established. The results of the augmented Dickey-Fuller tests, which are not reported here to conserve space, indicate that all variables considered by the study qualify as I(1). All dummy variables discussed below are included in the short-run dynamics. Furthermore the trend is restricted to the long-run dynamics as otherwise it would induce a quadratic trend in levels, for which there is no evidence (See Hendry (1995)). From an economic point of view, on the other hand, the time trend may pick up the effects of other determinants of economic growth that are missing in the model. Additionally two dummy variables are included in the model: D94 and D99, which takes the value of one for 1994 and 1999, respectively, are employed to capture the effects of financial crisis in Turkey in the indicated years. The analysis has started with four lags for each variable. But, the results of the specification tests, which are given in Table 1, indicate that the reduction by 32 parameters for eliminating lags 3 and 4 are acceptable on the overall F-tests. Furthermore the Schwarz and Hannan-Quinn criteria also indicate the selection of the two lag system. Hence a two lag system with two dummy variables, a trend and a constant is selected as the final model.

Table 1: *Specification Tests*

Hannan-Model	Lag-length	Schwarz	Quinn	Model Reduction	F-tests
1	4	-6.238	-8.566		
				1→2	F(16,37) = 0.752
2	3	-7.008	-8.870		(0.72)
				2→3	F(16,49) = 0.727
3	2	-7.988	-9.385		(0.72)
				1→3	F(32,45) = 0.71
					(0.83)

Note: p-values are in parentheses.

Table 2: *Goodness of Fit and Diagnostic Test Results*

	y	t	s	l	VAR
$F_{ar}(2,23)$	1.36	3.97	4.78	0.025	
	(0.27)	(0.04)*	(0.07)*	(0.97)	
$F_{arch}(1,23)$	1.12	2.90	0.31	0.29	
	(0.30)	(0.10)	(0.58)	(0.59)	
$F_{het}(18,6)$	0.62	2.46	0.27	0.28	
	(0.79)	(0.13)	(0.98)	(0.98)	
$\chi^2(2)$	1.88	0.06	2.72	3.84	
	(0.39)	(0.96)	(0.25)	(0.14)	
$F^v_{ar}(32,53)$					1.70
					(0.04)*
$\chi^v_{het}(180)$					201.78
					(0.12
$\chi^v_{nd}(8)$					10.68
					(0.22)

Note: * denote significant at the 5% level and p-values are in parentheses.

Table 2 records statistical information about the unrestricted VAR reported by PcFiml. In Table 2 $F_j(.,.)$ denotes F-tests for the hypotheses of no serial correlation against serial autocorrelation up to order 2 (F_{ar}), no autoregressive conditional heteroscedasticity against a four lag alternative (F_{arch}), no heteroscedasticity (F_{het}) and a chi-square test for normality (χ^2); analogous vector tests are also given and these are indicated by superscript v. Although there is some indication of a problem of autocorrelation in the tourism and savings equations as well as in the vector estimates, they are not significant at 1% level. Furthermore, all other diagnostics are satisfactory.

After the VAR model is adequately specified, cointegration in the four equation system is investigated using Johansen procedure. Table 3 gives the cointegration analysis, where λ denotes the eigenvalues, Max denote the associated maximum eigenvalue statistics. Table 3 formally supports the hypothesis that there is only one cointegrating vector.

Table 3: *Cointegration Analysis*

r	1	2	3	4
λ	0.61	0.43	0.31	0.14
Tr	75.86**	40.94	20.08	5.93

Note: ** denote significant at the 10% level.

In order to identify the cointegrating vector, the weak exogeneity of (t, s, l) for the parameters of income equation is tested. This requires that the first cointegrating vector does not appear in short-run equations of (t, s, l) indicating that tourism revenues, savings, and labour do not react to disequilibriums in the real income but still react to its lagged changes. This restriction is accepted when tested, yielding $\chi^2(3)= 8.1734$ with a p-value of 0.0426, where the degrees of freedom equals the number of over-identifying restrictions. Accordingly the restricted coingtegrating vector is defined by

$$CI = y_t-0.058*t_t-0.131*s_t -0.376*l_t-0.0163*trend$$

This indicates that long run income is positively related to all variables in the system. In addition to the savings and labour, increases in tourism revenues enhance economic growth in the long run.

Table 4: *FIML Model Estimates*

$$\Delta y_t= 1.85+0.65\Delta l_t-0.41(CI1)_{t-1}$$
$$(4.42) \quad (1.97) \quad (-4.33)$$
$$\Delta s_t= -0.0074+0.39t_{t-1}$$
$$(-0.89) \quad (3.41)$$

t ratios are in parentheses.

The starting point of the second stage of the analysis is to model changes in the variables of the system as a response to departures from the long-run relationships, augmented by the short-run dynamics generated by the current and lagged first differences of t he variables included in the model. The resulting VAR

equations are estimated by FIML and presented in Table 4. The preliminary estimates of the model indicated that tourism revenues and employment are not determined by the system, so they are treated as exogenous variables. Since the test of over identifying restrictions does not reject at 10 per cent level ($\chi^2_{or}(16)=23.60$ with a p-value of 0.07), the model parsimoniously encompasses the PVAR. The short run estimates of the model indicate that the changes in income are positively affected by changes in labour. However, tourism revenues do not have any affect on income growth in the short run. Furthermore, the short-run income function has an adjustment coefficient of 0.41, which indicates that 41 percent of disequilibrium is corrected in each year. In the second equation of the system savings, which is a proxy for investment, are positively related to tourism revenues. This may indicate that tourism revenues in Turkey enhance economic growth by increasing investment first. Additionally the model diagnostic statistics, given in Table 5, are all insignificant at 1 per cent level of significance, matching the valid reduction from the parsimonious VAR.

Table 5: *Model Statistics*

$F^v_{ar}(8,60)$	0.79
	(0.61)
$F^v_{het}(51,45)$	1.34
	(0.03)*
$\chi^2_{nd}(4)$	11.10
	(0.15)

Note: * denote significant at the 5% level and p-values are in parentheses.

CONCLUSION

This paper has provided an empirical analysis of tourism revenues – economic growth relationship in Turkey over the period 1962-2002, employing a vector autoregressive model (VAR). The VAR estimates of the initial system revealed that there is only one cointegrating relationships in the long run, which measures the income as a function of tourism revenues, savings and labour. In the short run structure, on the other hand, a two equation system is estimated by FIML.

The empirical findings indicate that the weak exogeneity of tourism revenues, savings and labour for the long run parameters of income equation is satisfied. Therefore, income can be regarded as being exogenously given for the long run structure. The tourism revenues appear to enhance economic growth in the long run, but there is not any relationship between the variables in the short-run. The analysis provided an adjustment coefficient of 0.41, indicating that 41 per cent of disequilibrium in income is eliminated every year. Furthermore, tourism revenues positively affect savings, which is a proxy for investment. Thus the argument that foreign exchange revenues from tourism may be used for importing capital goods may be valid for Turkey, which requires further investigation.

REFERENCES

Archer, B.H. and C. Cooper, 1998, "The Positive and Negative Impacts of Tourism. In Global Tourism: The Next Decade, W. Theobald eds., 2nd ed, pp. 73-91. ***Oxford: Butterworth-Heinemann.***

Balaguer, J. and M. Cantevalla-Jorda, 2002, "Tourism as a Long-run Economic Growth Factor: The Spanish Case". ***Applied Economics,*** 34: 877 - 884.

Biswas, B. and R. Ram, 1986, "Military Spending and Economic Growth in Less Developed Countries: An Augmented Model and Further Evidence" ***Economic Development and Cultural Change*** 34 (2): 361-372.

Doornik, J. A. and D. F. Hendry, 1997" Modelling Dynamic Systems Using PcFiml 9.0 for Windows. London" ***International Thomson Business Press***.

Feder, G. 1983, "On Exports and Economic Growth" ***Journal of Economic Development"*** 12 (1/2): 59-73.

Goymen, K., 2000, " Tourism and Governance in Turkey" ***Annals of Tourism Research*** 27(4):1025 1048.

Hazari, B. R. and C. Kaur, 1995, "Tourism and Welfare in the Presence of Pure Monopoly in the Non-traded Goods Sector", ***International Review of Economics and Finance***, **4:** 171-77.

Hazari, B. R. and A. Ng, 1993, " An Analysis of Tourists' Consumption of Non-Traded Goods and Services on the Welfare of the Domestic Consumers" ***International Review of Economics and Finance**, 2: 3-58.*

Hazari, B. R. and P. M. Sgro, 1995, "Tourism and Growth in a Dynamic Model of Trade" **The Journal of International Trade and Economic Development 4:** 253-56.

Hendry, D. 1995, ***Dynamic Econometrics Advanced Texts in Econometrics***. Oxford University Press.

Komiya, R. 1967, "Non-traded Goods and the Pure Theory of International Trade. International Economic Review, 8**:** 132-152.

Kulendran, N. and K. Wilson 2000, "Is There a Relationship between International Trade and International Travel". ***Applied Economics, 32: 1001-1009.***

Modeste, N.C. 1995, " The Impact of Growth in the Tourism Sector on Economic Development: The Experience of Selected Caribbean Countries" ***Economia Internazionale 48: 375 385.***

Ram, R., 1986, "Government Size and Economic Growth: A New Framework and Some Evidence from Cross-Sectional Time Series Data" ***American Economic Review***, 76 (1): 191-203.,

Seckelman, A. 2002 Domestic Tourism- a Chance for Regional Development in Turkey? ***Tourism Management***, 23 (1): 85 92.

Shan, J. and K. Wilson, 2001, "Causality Between Trade and Tourism: Empirical Evidence from China***", Applied Economic Letters***, 8: 279-283.

Tosun, C., 2001, "Challenges of Sustainable Tourism Development in the Developing World: the Case of Turkey. ***Tourism Management,*** 22 (3): 289 303.