TÜRKİYE'DE TURİZM SEKTÖRÜNÜN TALEP VE GELİR ESNEKLİKLERİNİN ÖLÇÜMÜ

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ÖZET

Turizm sektörü, yüksek döviz kazandırma potansiyeli, dış ticaret dengesinin kurulmasına yardımcı rolü ve sunduğu istihdam fırsatları bakımlarından Türkiye ekonomisi için büyük önem taşımaktadır. Bu çalışmanın amacı Türkiye turizmine olan uluslararası talebin gelir ve talep esnekliklerine ilişkin ampirik bulgular sunmaktır. Çalışmada Arellano – Bond dinamik panel tahmin yöntemi kullanılarak, Türkiye'den en fazla turizm hizmeti talep eden ve toplamda Türkiye'yi ziyaret eden turist sayısının %80'inden fazlasını oluşturan 20 ülke incelenmiştir. Elde edilen bulgular Türk turizminde kulaktan kulağa pazarlama faaliyetlerinin önemli etkisi olduğunu işaret etmektedir (repütasyon etkisi). Ayrıca, hem gelir hem de fiyat esneklikleri kısa vadede oldukça düşük olduğu, gelir esnekliği uzun vadede artarken, talep esnekliğinin düşük kaldığı gözlenmiştir.

Anahtar Sözcükler: *Turizm Talebi, Esneklik, Dinamik Modelleme, Panel Veri, Türkiye.*

MEASURING INCOME AND PRICE ELASTICITY OF TURKISH TOURISM SECTOR

ABSTRACT

Tourism has been one of the promising industries of Turkish economy with its huge potential for generating foreign exchange, improving balance of payment, and providing employment opportunities. This research aims to present empirical evidence on income and demand elasticities of international tourism demand for Turkey. Arellano – Bond Dynamic panel estimation procedure is employed to estimate demand function of Turkish tourism by considering 20 major clients, accounting for more than 80% of tourism inflows. Empirical findings suggest that there exists important word of mouth effect. On the other hand, both income and price elasticity of demand for Turkish tourism in the short run are low, in the long run however, income elasticity increases whereas price elasticity of demand remains low.

Keywords: *Tourism Demand, Elasticity, Dynamic Modelling, Panel Data, Turkey.*

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INTRODUCTION

Tourism sector is of major importance for the World economies. Sector is considered to be an important source of foreign exchange earnings, making a significant contribution to balance of payments, as well as employment creation. According to the data provided by World Travel and Tourism Council (WTTC), following the banking sector, tourism is the second largest industry generating 9% of global GDP in year 2011. Sector also has been of strategic importance in terms of its backward, and forward linkages with various sectors such as transportation, finacial services, retailing, and telecommunications. By stimulating investments in these sectors, tourism acts as a catalyst for economic growth. Given the rising prominence of tourism in terms of its economic contribution, sector attracts much attention in academic research.

With its advantageous location and natural beauties, tourism sector has been attributed much importance in Turkish economy as well. Eventhough World Tourism Organization has been ranking Turkey within first 10 destinations for last five years, it seems that Turkish tourism has still huge potential for growth. Table 1 shows that the contribution of tourism sector to the GDP remains relatively limited by 4.0 % on average, whereas the growth rate of the sector highly fluctuated during last five years. Share of tourism receipts in both exports and trade balance deficit also seems to be far from a stable average. The contribution of tourism sector to the economy is expected to increase upon a stable level by both public, and private planning, and policy making. Being a labour intensive industry, the sector would be a promising one in terms of job creation. Moreover, tourism sector is an important source of foreign exchange earnings, and is expected to cure the chronic balance of payments problem to a great extent.

Being indicated by many scholars as an important source for economic development strategies, natural resources must be accompanied with the necessary infrastructure and managerial decisions in order to create, and maintain the global competitive advantage in the industry (Sinclair, 1998). The infrastructural investments, such as transportation and other touristic facilities, require the devotion of huge funds to the sector by both the public and private investment sources. Such kind of long term investment decisions necessisate the estimation of tourism demand function. Despite the importance of tourism sector for Turkish economy, empirical research remains limited in this area.

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Table 1: Summary Indicators for Turkish Tourism

Indicator	2005	2006	2007	2008	2009	2010
Tourism Direct Contribution to GDP (% share)	4.4	4.1	4.0	4.0	4.3	4.0
Real Growth rate of GDP by Tourism	2.2	0.5	2.3	0.2	2.8	0.0
Growth rate of GDP*	8.4	6.9	4.7	0.7	-4.8	9.0
Tourism Direct Contribution to Employment	2.1	2.2	2.1	2.1	2.1	2.1
International tourism receipts (% of exports)*	19	16	14	14	17	16
Share of tourism receipts in trade balance deficit	21	27	18	36	32	15

Source: WTTC data
*Data from World Bank Database

The purpose of this research is to estimate a demand function for international tourism services in Turkey. The paper is expected to contribute to the existing literature by employing up to date econometric models, and providing new evidence for a wider range of client countries. The estimated demand function is expected to reveal the price, and income elasticities that are also important for tourism planners. It is evident that the accurate estimation of tourism demand would help the policy makers to make up their managerial strategy concerning marketing, and sales decisions.

The remainder of the paper is organised as follows, section two presents a review of the literature on international demand for Turkish tourism, section three explains the data and the methodological framework, section four provides, and discusses the empirical results. Finally, section five concludes.

INTERNATIONAL DEMAND FOR TURKISH TOURISM

International demand for Turkish tourism has so far attracted only a limited research interest. Empirical evidence yields mixed results, and concerning the price and income elasticities of demand for Turkish tourism, literature remains inconclusive. In an early study, İçöz, Var and Kozak (1998) asserted that, relative prices together with the exchanges rates had significant impact on tourism demand for Turkey by her major clients. However, empirical findings of the study also indicate that there exists large variances among the tourist sending countries with respect to their elasticities.

Akış (1998) researched on 18 countries for a period covering 1980-93. By fitting time series data into separate double logarithmic functional form of the regression models, she found greater than one income

elasticity of demand for all countries indicating that Turkish tourism is considered to be a luxury item by its major clients. Furthermore, for 15 of the 18 countries, in line with the conventional wisdom, she found statistically significant and negative relationship between relative prices and tourism demand for Turkey. In line with the findings of previous literature, for 9 out of 15 countries, demand for Turkish tourism appears to be price elastic.

Papatheodorou (1999) investigated the demand structure of international tourism in Mediterranean region. Almost Ideal Demand System model is applied to study tourist inflows from three origin countries (UK, France, and Germany) to six Mediterranean destinations (Greece, Italy, Portugal, Spain, Turkey, and Yugoslavia) over a period of 1957 - 1990. Findings indicate once again the existence of price elastic demand for Turkish tourism. However, demand is found to be inelastic with respect to per capita tourism expenditures by three origin countries.

Contrary to the findings of Akış (1998), and Papatheodorou (1999), more recent studies on the issue provided that the price and income elasticities of Turkish tourism demand is inelastic. Aslan, Kula, and Kaplan (2009) studied the determinants of tourism demand for Turkey by using dynamic panel model, and found that price elasticity of demand for Turkish tourism is lower than one. Interestingly, results of another recent empirical research by Görmüş and Göçer (2010) provided that there exists a positive and significant relationship between relative prices and tourist demand.

The differences in the literature may reflect different datasets, and measurement techniques. However, literature is in rather agreement on the fact that Turkey offers cheap package holidays due to its low cost of living, and exchange policy implementations (Patsouratis, Frangouli and Anastasopoulos, 2005; Papatheodorou, 1999; Görmüş and Göçer, 2010). Case of inelastic prices seem more in compliance with Turkish tourism marketing strategy. In this regard, dumping and promotion policies by Turkish suppliers of tourism are supposed to decrease the price elasticity of demand for Turkish tourism. Papatheodorou (1999) argues that the low expenditure elasticity may be attributable to the low income tourist profile of visitors who prefer to switch to more expensive destinations, such as Italy, as they get richer.

VARIABLE SPECIFICATION AND DYNAMIC MODELLING

Debates on whether basic time-series models or more sophisticated econometric models are better in modelling, and

forecasting tourism demand has dominated the relevant literature from the 1980 until 2000s. An extensive research by Martin and Witt (1989) revealed that simple models outperform more complex econometric models. Superiority of basic "no change" technique to more sophisticated models in tourism forecasting was also supported by the empirical evidence provided by Kulendran and King (1997), Kulendran and Witt (2001), and Song, Witt and Jensen (2003). Witt and Witt (1995) on the other hand, attributed the poor performance of ordinary least squares analysis to lack of using up to date methodological developments in empirical testing. They suggested that use of methodological developments such as diagnostic tests, and cointegration models would boost the accuracy of tourism forecasting studies. Kulendran and Witt (2001) investigated whether or not the poor performance of regression methods are the results of failure to adopt recent developments in econometric models. The results from their research demonstrate that eventhough the accuracy of estimation increased by recent advances in econometrics, casual analysis models are outperformed by time series models, and the basic no change model still performs best. In contrast, Kim and Song (1998) found that ECMs perform better compared to time series. In addition, Song, Romilly and Liu (2000) provided that econometric models outperform simple time series models.

Given the mixed results regarding the relative performance of time series and econometric models provided by the literature, there exists no clear cut evidence on the fact that any one model can consistently outperform other models. Forecasting performance depends highly on the data frequencies, sample size, and forecasting horizons (Song and Li, 2008). Time Varying Parameter model is found to be superior in short term forecasting, while static OLS model performs better for longer term forecasting (Song, Witt and Jensen, 2003). Low frequency data, such as annually, may have fewer unit roots and and fewer cointegrating relationships than the same series at quarterly level, hence different ECMs may perform better.

While debates over superiority of either model over the other is going on, it is evident that models are often built up depending on the nature of observations. Recently, panel data analysis has been employed more often in the literature in investigating tourism demand. Using panel data has several advantages. It gives more information given the use of cross section, and time series data simultaneously. Furthermore, panel data provides higher degrees of freedom, and more efficiency. However, some econometric problems might arise with regards to the use of

tourism demand model. First, the demand system includes variables which are usually considered to be endogenous, and the regressors may be correlated with the error term. In addition, time invariant country characteristics (i.e.geography, demography) may also be correlated with the explanatory variables. These problems are treated through fixed effects instrumental variable estimation. Second, the model usually includes lagged dependent variable, which gives rise to autocorrelation problem. The regressors are transformed by first differencing in order to remove both country specific fixed effects, and also instrumented first differenced lagged dependent variable with its past levels. Last, the data set used for this study includes small time, and large panels. In order to avoid any possible problems, Arellano - Bond dynamic panel model, which is designed for small T – large N panels is employed.

International tourism demand model considered for this study is

$$TA_{it} = f(TA_{it-1}Y_{it}, P_{it}, D_{crises})$$

Here, TA_{it}: Number of tourist arrivals to Turkey from country i in year t,

Y_{it}: Real per capita Gross Domestic Product for country i in year t,

P_{it}: Relative prices in Turkey for tourists from country i in year t,

PCO_{it}: Price of crude oil country i in year t,

D_{crises}: Dummy variable indicating years that the country i experienced financial crises.

20 major tourism clients of Turkey (Austria, Belgium, Bulgaria, Czech Republic,Denmark, France, Germany, Greece, Israel, Italy, Japan, Netherlands, Poland, Russian Federation, Spain, Sweden, Switzerland, Ukraine, United Kingdom, United States) which consists more than 80% of tourism demand during last five years is observed over the period 2000 – 2010.

Tourism demand is commonly proxied by several variables such as number of tourist arrivals/departures, tourist expenditures/receipts, travel exports/imports, length of stay, and nights spent at tourist accomodation (Lim, 1997). For the purpose of this study, the number of tourist arrivals is used as independent variable. Data is gathered from the Turkish Ministry of Tourism Statistics.

A lagged dependent variable is also included in the set of regressors in order to account for habit persistence. Eventhough the lagged dependent variable may suppress the explanatory power of other independent variables, inclusion of previous consumption as explanatory variable is expected to provide information on interdependent preferences, and word of mouth effect.

Other independent variables include income, and relative prices. Eventhough the real personal disposable income is the most appropriate measure of income for the purpose of the study, due to unavailability of data, real per capita GDP is used as a proxy for tourist income. The relative price movements, on the other hand, at best would be traced from indices constructed using a basket of goods and services consumed by tourists. However, such kind of Tourist Price Indices are non-existent, and relative Consumer Price Index adjusted by bilateral exchange rates is used as measure of relative prices. Real GDP per capita, CPI, and bilateral exchange rates data are gathered from World Bank data set.

As another important determinant of international tourism demand, a cost of travel variable is also included in the model. Calculation and dissemination of data for exact cost of travel for the tourists is impossible and non-existent. International airfare price data, and price of crude oil is widely used as a proxy in the literature (Garin Munoz, 2006; 2007). For the purpose of this research, price of crude oil is used as a proxy for cost of travel.

Finally, a crises dummy variable is also incorporated in the model with a value of 1 for the years that the country is exposed to crises, and 0 otherwise. During the observation period (2000 – 2010) many of the economies experienced global financial crises, and tourism industries, as many other industries, were exposed to demand shocks. Hence, in order to account for the effect of global crises on Turkish tourism demand, model contains a crises dummy. The dummy is constructed on the basis of crises information dataset provided by Laeven & Fabian (2012).

Dynamic model to be estimated takes the form:

$$\Delta lnTA_{it} = \beta_1 \Delta lnTA_{it-1} + \beta_2 \Delta lnT_{it} + \beta_3 \Delta lnP_{it} + \beta_4 \Delta lnPCO_{it}, \beta_5 \Delta D_{crises} + \Delta \varepsilon_{it}$$

(Equation 1)

Double logarithmic form of demand function allows coefficients to be interpreted as price and income elasticities. Also long run elasticities are to be obtained by dividing each of the coefficients by $(1-\beta_1)$.

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EMPIRICAL RESULTS

Stata 11.0 package program is used for the econometric estimation of equation 1. Parameters obtained from GMM – DIFF Arellano – Bond Dynamic Panel Estimation are shown in Table 1. The model assumes that there is no second order autocorrelation in errors. The test for autocorrelation and Sargan test of overidentification is conducted. Failure to reject the null hypothesis in both tests gives support to the validity of the instruments, and the model. In addition, there exists no signs of serial correlation, and the Wald test indicates the joint significance of explanatory variables.

According to the results, the lagged dependent variable has positive and statistically significant estimated coefficient. It shows that habit formation has considerable effect on Turkish tourism demand. 43% of demand for Turkish tourism is explained by repeated visits, and hence the word of mouth effect plays an important role in tourism demand.

Table 2: Estimation Results for Dynamic Panel Data (2000 – 2010)

Variable	GMM – DIFF Arellano – Bond Estimator
TA_{it-1}	.43 (11.77)***
Y_{it}	.66 (2.50)**
P_{it}	-.56 (-4.69)***
D_{crises}	.04 (1.15)
PCO_{it}	.001 (1.71)*
Autocorrelation2	-2.01
Sargan (d.f..)	171.78 (55)
Wald Test	1105.84 (4)
Num. Of Observations	200
Long run Y_{it}	1.16
Long run P_{it}	-0.98
Long run $\mathbf{PCO_{it}}$	.002

Note: Figures in brackets are t-statistics. *, **, and ** denote significance at 0.01, 0.05, and 0.10 levels.

Estimated coefficient for the income variable has positive sign and statistically significant at 0.05 level. Since double logarithmic model is used, the coefficients are directly interpreted as short run elasticities. In order to obtain long run elasticities, estimated parameters are divided by $(1-\beta_1)$. Results reveal that, international demand for Turkish tourism is income inelastic in the short run, though it becomes elastic in the long run. Findings are in line with the microeconomic theory suggesting larger elasticities for longer run. This may be attributable to the rising prominence of Turkey. Increasing popularity of Turkey as a new tourist destination propabably increases its income elasticity.

Estimated coefficient of relative price variable is negative and statistically significant, which is in line with the economic theory. Price elasticity of demand for Turkish tourism is lower than unity in the short run, and approaches to unity in the long run. Low short run price elasticity suggests that tourists are not very responsive to changes in relative prices in Turkey. A 1% increase in prices would lead to 0.56% decrease in tourist arrivals in the short run, and 0.98% decrease in the long run. Given the cheap package holidays, and low prices in Turkey, tourists are not sensitive to changes in prices.

Crises dummy variable, on the other hand, has positive and statistically insignificant coefficient, which is contrary to the traditional wisdom. Economic crises does not seem to curb tourist demand for Turkish tourism. The reason may be that clients perceive tourism to Turkey as a necessity, and demand is not affected significantly by the economic conditions of the country of origin.

Cost of travel has positive, statistically significant but only a minor effect on tourism demand. As the crude oil price increase by 1%, tourism demand also increases by 0.04%. This may be attributable in part, to the geographic location of Turkey. Major clients of Turkey are from European continent. Since Turkey is located geographically not far from its major clients, becomes a good substitute among its farther competitors, as crude oil prices surge.

CONCLUDING REMARKS

The research was pursued with the aim of exploring the determinants of Turkish tourism with respect to its 20 major clients, that count for more than 80% of its total tourism demand. A dynamic panel data method is conducted over the period 2000 – 2010. The study poses

some important policy implications with special regards to tourism marketing strategy.

Relatively low price elasticity of demand for tourism, together with almost inelastic cost of travel, suggests that Turkish tourism is considered to be a necessity for the origin countries. Moreover, external shocks, such as economic crises, does not seem to have any important negative impact on tourism demand. These results suggest that in order to increase total revenues out of tourism, prices may be increased.

In line with the previous research on Turkish tourism, income elasticity is found to be low especially in the short run, which supports the fact that travel to Turkey is considered to be a necessity by the tourists (Aslan, Kaplan & Kula, 2008, and Görmüş & Göçer, 2010). However, in order to become a trademark in tourism industry, and to be perceived as highly differentiated, effective advertisement, and marketing strategies should be carried out. This could increase the Turkish suppliers' power to implement aggressive pricing strategies, and hence raise the revenues. Often implemented, promotions imposing lower prices are considered to be unnecessary, and even inappropriate since further lowering the income elasticity. An important limitation to this study is that the model does not incorporate any variable concerning substitute prices. Inclusion of prices of alternative destinations in the dataset would improve the results of the model and pose important policy implications as well.

Statistically significant and relatively high value of lagged dependent variable may be interpreted as an important word of mouth effect. In order to attract more tourists, suppliers of tourism services should improve their quality and upgrade brand image, then the reputation effect is expected to increase tourist inflow. In order to achieve this aim, infrastructural investments, especially on domestic transportation, should be carried out by public authorities. In addition, countinous performance evaluation of all tourism service providers by external agencies could also help increasing standards.

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