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Tourism and Economic Growth in Turkey: Disaggregated Approach

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Abstract

To enhance our understand of the relationship between tourism and economic growth, we used quarterly data of Turkey between 2003q1-2014q4, disaggregated tourism variable into many segments according to tourism motivation and tested the hypothesis that different segments of tourism have different effects on economic growth. We used Johansen co-integration test, estimated Error Correction Model ECM, and found a long run causation from tourism segments to economic growth, but we did not find short term causation. By estimating the long run model, we found that different segments of tourism have different effects on economic growth. The most important segment was leisure tourism followed by business tourism. Visiting relatives has insignificant effect, while shopping tourism has negative and insignificant effect. The results affirmed our hypothesis. The added value of our article is mixing microeconomic and macroeconomic approach in studying TLG.

Keywords: Tourism; Economic growth; Market segmentation; Expending behavior

Introduction

Generally, the relationship between tourism and economic growth is represented by the hypothesis of Tourism Lead Growth TLG, which is derived from Export Lead Growth ELG hypothesis [1]. From the view point of the neoclassical growth theory, expansion of exports may cause economic growth by promoting economies of scale, provide incentives for using new technologies and improve the skills of management in the face of foreign competition [2]. Moreover, according to the Heckscher-Ohlin theory international trade raises the productivity and induces better allocation and exploitation of resources. In addition, McKinnon [3] refers to tourism as a source for foreign exchange that finances necessary imports and enhances economic growth. In brief, whether from the view point of demand, tourism as a resource for more demand for exports or a factor for enhancing the supply abilities, tourism may be a factor for economic growth [4].

However, tourism is not a common type of export as the consumer moves instead of the product. So a large ratio of tourist's demand is related to consumption of non-traded domestic goods and services, which may cause positive in addition to negative effects on economic growth. There is a possibility for negative effects on the relative prices and availability of non-traded goods and services for domestic consumers [1]. Also, emphasis on exporting tourism may deprive the other sectors from resources and cause de-industrialization and dampen the economic growth. Some researchers refer to the probability of "Dutch Disease effect" of tourism [5]. In addition, there are the problems of seasonality and many kinds of pollution.

Empirical researches found four types of relationships between tourism and economic growth. Tourism leads to the economic growth TLG, economic growth leads to tourism GLT, bidirectional relationship between tourism and economic growth, and no relationship between the two variables. According to a survey

conducted by Pablo-Romero, et al. [6] for a sample of 87 empirical studies, 55 supported TLG, 16 found a bidirectional relationship between tourism and economic growth, 9 supported GLT and 4 did not find any relationship between the two variables.

There are many factors for these differences in the results of empirical researches. For Tang, et al. [7] these differences relate to the economic characteristics of every country, such as: the share of tourism in the whole economy, the extent of economic openness and the production capacities of every country. However, the empirical studies for the same country have not given the same results when using different periods or methodologies. For Turkey, as an example, Ongan, et al. and Katircioglu [8,9] found different results. In this context, we can refer to the heterogeneity of tourism product, which is defined as "a basket of different goods and services" [10]. These different goods and services are supplied by different firms which react differently to the same economic events and conditions [7]. Hence, the aggregated variables, which are used in the empirical studies to capture tourism, may hide many details that affect the relationship between tourism and economic growth.

According to the studies of tourist expending behavior, the expenditure of tourists differs by quality and quantity with their segments [11]. To study this behavior and its economic effects accurately, tourism markets are segmented according to demographic, socioeconomic, and psychographic, which include tourism motivation, characteristics of tourists [12]. Marrocu et al. [13] assures that holiday motivation plays a big role in tourist spending, and agrees with Alegre et al. [14] that tourists who are visiting relatives or friends spend less compared with other tourists, so we expect that different expending behavior may affect economic growth differently. Accordingly, studying tourism by its different segments in its relationship with economic growth may enhance our understanding of that relationship.

Turkey is one of the most important tourism destinations in the world, and tourism is one of the important economic sectors in its contribution to Turkey GDP, by creating job opportunities and providing foreign exchanges. In the year of 2014 the contribution of

tourism to the total Turkey GDP was 4.7% or 37.6 billion USD. Tourism industry created 2.2% of job opportunities [15].

In the year 2013 Turkey occupied the sixth first position in the world by the number of international tourist arrivals [16]. Table 1 gives more details about tourism in Turkey. Beginning from 1980s with changing the development strategy from imports substitute to export oriented, Turkish government gives tourism sector high level of importance. As the government has many plans to benefit from tourism sector in the context of economic development, assessing the economic effects of tourism and differentiating between more effective and less effective activities in this sector may help the government in concentrating its efforts on the most effective activities. We expect that studying the relationship between tourism segmentations according to motivation and economic growth will help the government in designing better plans relating the trends of tourism development and better targeting of market segments in marketing efforts.

	Tourist arrivals	Tourism receipts Billions \$
2010	31364000	22,585
2012	35698000	25,345
2013	37795000	27,997
2014	39811000	29,552

Source: UNWTO, 2015

Table 1: Turkey tourism.

The added value of this article is disaggregation of the variable that is used in empirical studies to measure tourism according to the market segmentation approach by tourism motivation and to use it to investigate the relationship between tourism and economic growth. Disaggregation approach may give more information about the effects of the behavior of different segments of tourism markets on economic growth. In other words, we try to mix macroeconomics and microeconomics approaches to study the relationship between tourism and economic growth. The rest of this paper is organized as follows: the next section reviews some empirical literature relating tourism and economic growth, section 3 is empirical investigation and the last section is the conclusion.

Literature Review

Pablo-Romero, et al. [16] studied 87 articles, issued between 2003-2013, about the relationship between tourism and economic growth. These studies used many methodologies (time series, penal data and cross sectional data) and applied many econometric techniques. The results of these studies were mixed though the majority assured TLG. An article by Brida et al. [17] which studied 96 papers between 2002-2013 about the same matter gave the same results. Whole of those papers used aggregate variable to capture tourism behavior.

For the purpose of our paper, we will not review all articles that studied relationship between tourism and economic growth; instead we will deal with the articles which studied Turkey in addition to those used disaggregation approach.

Gunduz, et al. tested the TLG hypothesis using Turkish data for the period of 1965-2002; by applying the leveraged bootstrap causality

tests they supported TLG. Kaplan, et al. [18] used VAR procedure to test the relationship between tourism and growth and found that tourism causes economic growth in the long run. The same result was affirmed by Gokovali, et al. [19], who used the data of the period 1985-2005, applying the OLS technique. Also Husein, et al. [20] using Johansen multivariate cointegration and error correction model for the period 1964-2006, found long relationship and causality from tourism to economic growth. Arslanturk, et al. [21] analyzed data for the period 1987-2009 by Granger causality and VAR model, and supported TLG. Panahi et al. [22] investigated the same relationship, using time-varying coefficients estimation and Kalman filter for the period 1970-2011, and assured it for the whole period. Also Terzi, et al. [23] questioned TLG for the period 1963-2013 applying Granger causality and VAR and affirmed it.

However, Ongan, et al. [8], by using the Granger causality test for the period of 1980-2004, found bidirectional causality between tourism and economic growth. While a study conducted by Arslanturk et al. [24], depending on time-varying coefficients estimation method to analyze the Granger causality by error correction model for data of 1963-2006, indicated that there is causation from tourism to economic growth just for a part of the period after 1980, but the research of Katircioglu, [9] who employed bounds test and Johansen approach for co-integration using data from 1960-2006, did not affirm TLG at all.

Although the majority of researches affirm the TLG, there is no consensus about it, so we need to deepen and broaden our understanding for this relationship. We can do that by using different econometric techniques, different variables, or different models. The previous researches aggregated tourism by one variable, while, as we know, tourism is a heterogenous product that is produced by different industries and different firms. Therefore, we expect that disaggregate tourism variable to many variables representing market segments in studying its relation with economic growth may develop our insight for its relationship with economic growth.

To the best of our knowledge, the first study which disaggregated tourism sector was that of Tang, et al. [7]. Using the financial performance of four tourism related industries (airlines, casinos, hotels, and restaurants) as proxy for tourism, they could not find any co-integration between tourism and economic growth. This study used the financial performance of four tourism related industries, but, as we know, these industries cannot capture tourism activities as a whole. Also these industries are related to non-touristic activities, and the financial performance is not always the reflection of real performance. The second was Jackman, [25] research, which disaggregated tourism by using four major markets for Barbados tourism, studied their relationship with economic growth, and found causality from tourism to economic growth for the four markets, but this study used only a major market, not whole markets which may hide some details; it did not try to differentiate between the markets according to strength or the direction of the effect.

In this paper, we divide tourism variable, as the studies of tourist expenditure behavior used to do, by the motivation of tourists, and as they are listed in the statistic tables of Turkey Statistic Institution. We are testing the hypothesis that different segments of tourists, according to their motivation, have different effects on economic growth.

Empirical investigation

To investigate the relationship between tourism and economic growth we used the model used by Balaguer, et al. [1] as follow:

$$LY = \alpha_0 + \alpha_1 LT + \alpha_2 LX$$

Where LY refers to the natural logarithm of real GDP as the proxy of economic growth, LT to the logarithm of tourist arrivals to Turkey and LX to logarithm of real exchange rate, which used to refer to the competitiveness of the economy.

Taking into account the approach of tourist expenditure behavior and the availability of the data, we disaggregated the variable T according to motivations of tourism into: business tourism B, leisure tourism E, visiting relative tourism V, shopping tourism S and other tourism O, so our model is:

$$LY = \alpha_0 + \alpha_1 LB + \alpha_2 LE + \alpha_3 LV + \alpha_4 LS + \alpha_5 LO + \alpha_6 LX$$

The model is in logarithmic form, so there is no problem in being linear, and the estimated coefficients represent the elasticity of the relationship between the variables.

The data which are used here are the Turkey quarterly data for the period of 2003 q1-2014 q4 taken from the website of Turkish Statistic Institution (<http://www.turkstat.gov.tr>). Real GDP is calculated by the constant price of 2010. The exchange rate is calculated by multiplying the Turkish Lira TL exchange rate to US dollar by Consumer Price Index CPI in USA and divides the result by CPI in Turkey. We test the data for seasonality and adjusted E, S, B and O for seasonality.

When the data series are not stationary, using OLS (ordinary least squares) may give spurious estimation for the model. Therefore, Johansen's co-integration approach and The Error Correction Model (ECM) may be used, conditioned by the same degree of integration for the variables. This gives us the long run and short run relationships (causalities) [26].

Test Var.		ADF		PP	
		Level	First difference	Level	First difference
Y	Intercept	0.782	-2,779***	-2,607***	
	Trend and intercept	-3,298***		-6,275***	
	None	1,694	-1,644***	2,874	-8.711*
X	Intercept	-3,366**		-3,366**	
	Trend and intercept	-2,728	-6,815*	-2,728	-7,509*
	None	0.757	-6,670*	0,742	-6,696*
E	Intercept	-2.14	-9,845*	-1,765	13,067*
	Trend and intercept	-5.6*		-5,552*	
	None	2.085	-9,253*	5,005	-9,543*
V	Intercept	-3,157**		-3,443**	
	Trend and intercept	-2,863	-8,165*	-2,863	-28,102*
	None	2,331	-9,381*	2,565	-9,430*
S	Intercept	-5,574*		-5,162*	
	Trend and intercept	-6,165*		-5,647*	
	None	0,126	-7,391*	0,353	-13,379*
B	Intercept	-3,934*		-3,961*	
	Trend and intercept	-3,746**		-3,797**	
	None	0,608	-7,451*	0,738	-7,451*
O	Intercept	-4,338*		-2,89***	
	Trend and intercept	-2,935	-8,1*	-3,312***	
	None	1,697	-6,579*	0,989	-10,09*

*significant at 0.01 level, **for 0.05 level and ***for 0.10 level

Table 2: The Results of Stationary Tests

To test the stationary of our time series we conducted ADF (Augmented Dickey-Fuller) and PP (Philips and Perron) tests, and the

results are listed in Table 2. We can see from the table that our variables tend to be non-stationary and integrated of the first degree I (1).

According to Engle, et al. [27] when the variables are non-stationary at the level but co-integrated, we should use the Error Correction Model ECM. We applied Johansen co-integration test [26] and got the results showed on Table 3. The table indicates that the variables are co-integrated, so we can use OLS to estimate the long run relationship and estimate the ECM to investigate long run and short causalities [28].

	Eigenvalue	Prob.
Trace		
None	0,866	0,000
At most 1	0,593	0,008
At most 2	0,508	0,129
Maximum eigenvalue		
None	0,866	0,000
At most 1	0,593	0,035
At most 2	0,508	0,069

Table 3: The results of co-integration test.

We estimated the ECM with two lags because our observations did not allow us to use more lags. As we can see from Table 4, the coefficient of the error correction term is 0,987, negative and significant at the level 0.05 which means that 98.7% of variations from the equivalent level between the variables are corrected quarterly. Moreover, it assures along run causality from X real exchange rate, E leisure tourism, V visiting relatives tourism, S shopping tourism, B business tourism and O other tourism to economic growth Y. This result agrees with the majority of previous studies. In addition, we did not find any kind of causality toward the other variables. For short term causality, there is not any significant short term association except for real exchange rate lag 1. Also we conducted the Wald test and could not find any joint effect of the variables on d(Y).

As the variables are co-integrated and there is a long run causality from the variables to Y, we estimated the long run model using Ordinary Least Square OLS. Table 5 shows the results of estimation. As we see from the table, the different segments of tourism did not affect the economic growth by the same degree and the same direction. The elasticity of economic growth to leisure tourism is the highest (0.303) and significant at the level 1%. Next one is elasticity to business tourism (0.261) and significant at the level 1%. After that there are the elasticity's to visiting relatives and other tourism, (0.156), (0.024), respectively, but the two are not significant. As we expect that the effect of tourist expenditure depends partially on the amount of spending, this result agrees with Wang, et al. [11] who found that the total average expenditure of regular tourists (US\$1,143) while the conference tourists spent (US\$891.12) in Taiwan, and with Thrane, [29] that tourists visiting relatives or friends spend less than all other tourists. However, the elasticity to shopping tourism is negative but not significant, which agree with the view that tourism may affect economic growth negatively, especially that there is a possibility for negative effects on the relative prices and availability of non-traded goods and services for domestic consumers [1].

The variable	Coefficient	Prob.
Error Correction Term	-0,987	0,035
d(Y(-1))	0,479	0,096
d(Y(-2))	-0,324	0,218
d(X(-1))	-0,606	0,043
d(X(-2))	-0,338	0,206
d(E(-1))	-0,194	0,171
d(E(-2))	-0,152	0,235
d(V(-1))	-0,107	0,463
d(V(-2))	-0,065	0,665
d(S(-1))	0,009	0,896
d(S(-2))	0,055	0,432
d(B(-1))	-0,092	0,508
d(B(-2))	0,043	0,692
d(O(-1))	-0,090	0,315
d(O(-2))	-0,018	0,811
C	0,009	0,119

Table 4: The Estimation of ECM (The dependent variable d(Y))

The results as a whole affirm our hypothesis that different segments of tourists according to their motivation have different effects on economic growth. While elasticity to real exchange rate is positive, which is logical as it is the indicator of competitiveness of the economy, it is not significant [30,31].

Variable	Coefficient	Prob.
C	2,92	0,000
X	0,250	0,205
E	0,303	0,003
V	0,156	0,199
S	-0,107	0,236
B	0,261	0,003
O	0,024	0,794

Table 5: The Long Run Model (dependent variable Y).

Conclusion

Trying to broaden and deepen our understanding of the relationship between tourism and economic growth, we used disaggregation approach to test the hypothesis that different segments of tourism market, segmented according to the motivation of tourists, have different effects on economic growth. We divided tourism arrivals to Turkey into five segments (leisure tourism, business tourism, visiting relatives tourism, shopping tourism and other tourism), and applied ECM on Turkey quarterly data between 2003q1-2014q4. As a result of

estimating ECM, we found long run causation from the variables to economic growth, but we did not find short run causation. By estimation of the long run model, we found that the different segments of tourism have different effects on tourism. The most important segment is leisure tourism followed by business tourism; the two have significant positive effects. After that there are visiting relatives tourism and other tourism whose effect is positive but not significant. For shopping tourism, its effect is negative but not significant, too. All these results affirm our hypothesis that different segments of tourism have different effects on economic growth.

The limitation of this study was the availability of a small sample of observations, so we could not use all segmentation groups as grouped by motivations. Instead, we used other tourism, O variable, as a proxy for many segments of tourism such as health tourism, cultural tourism, education tourism and religion tourism. Accordingly, we recommend for future studies, when there are enough observations, to test the TLG using all standards of segmentation segmented by demographic, socioeconomic and psychographic characteristics.

As a recommendation for policy makers, we suggest to give the priority to leisure and business tourism in their planning and marketing activities to get the highest level of effectiveness of tourism in economic growth.

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