STRIVING FOR SERVICE QUALITY: REALITY, PROBLEMS AND SOLUTIONS

Empirical Testing of Convergence Hypothesis of International Tourism Sector

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crossref http://dx.doi.org/10.5755/j01.ss.79.1.4070

Abstract

The importance of the tourism sector has been increasing over the last 20 years across the world, since it makes a contribution, enabling developing countries converge developed countries economically. The aim of this study is to analyze whether or not there is any convergence between top ten countries, listed by World Tourism Organization, which have the largest volume of visitor arrivals, Turkey being one of these countries. To test the convergence hypothesis, the authors of the current research have generated a 15-year panel data set to apply panel unit root analysis for the period of 1995 through 2009. The results show that the convergence is justified regarding a joint unit root process. For the individual unit root process, however, it is justified only among France, Germany, China, Turkey, Malaysia, and Mexico.

Keywords: **tourism and convergence hypothesis, international visitor arrivals, panel time series.**

Introduction

The importance of tourism activities in the world economy is gradually increasing, as tourism generates an important share of GDP and provides a large part of the employment. In addition, foreign exchange earnings from tourism make a major contribution to financing current and foreign trade deficits. Tourism, being a regional and especially labor-intensive structure, could help solve the unemployment problem in less-developed areas. Also, spillover effects of tourism influence many sectors, directly or indirectly, such as agriculture, manufacturing, building, transportation, communication, accommodation, trade, refreshments sector, banking, health services, etc. (Proença and Soukiazi, 2008).

In addition, tourism provides convergence of countries by redistributing the income from rich countries to the poor ones and from developed countries to less developed ones. It promotes regional development and reduces economic differences among regions. Thus, national and international investment in the tourism sector would positively affect the development of disadvantaged regions (Proença and Soukiazi, 2008). As a development strategy, the foundation on tourism, leading economic growth, arises from the export and economic growth literature (Vanegas and Croes, 2003). This foundation reveals itself in two ways. Firstly, the competition between domestic sectors and foreign destinations leads to increase in productivity. Secondly, domestic firms have a positive impact on economic growth by improving economies of scale (Proença and Soukiazi, 2008).

Since 1950s, the tourism sector, growing more rapidly than GDP growth, has become one of the most important sectors in the world. The increase in the world tourism income heats up the competition among the countries which are trying to get a share in this sector (Kozak, Baloğlu and Bahar, 2010). As follows, the international tourist number was 80 million in 1980 and increased by 360 percent to 288 million in 2009. International tourism income has increased by 735.2 percent from 102 billion to 852 billion dollars (WTO, 2010). These indicators are expected to be 1,6 billion people and 2 trillion dollars in 2020 (Cho, 2003), 2 billion people and 2,1 trillion dollars in 2050, and the sum of domestic tourism income and foreign tourism income over the world is expected to reach 24,2 trillion dollars in 2050 (Pizam, 1999).

By considering top ten countries having the largest visitor arrival volumes in the world, listed by WTO (World Tourism Organization), this study aims at analyzing whether or not there is any convergence among these top ten countries (Turkey is one of them) and seeks to verify the links between tourism and convergence in tourism economics for the period of 1995 through 2009. The analysis of these countries in terms of visitor arrivals may cause some criticism about the need for heterogeneity of tourist numbers. But it is clearly seen that the given countries are not homogenous considering their tourist numbers or development levels. In this context, first of all, a theoretical framework of the convergence hypothesis and the related literature research are given in the study. Having presenting the model, data set, and methodology, the study is completed by estimating the findings in the analysis.

1. Literature review

Neoclassical growth models, based on Solow tradition, indicate a faster growth tendency in poor regions, compared to developed regions or countries. This is stated as conditional β convergence. In Solow growth model, countries in the same level of saving, depreciation, population growth rate, and technology are subject to the same steady state. This means that poor countries, subject to the same steady state (which have lower per capita output), would catch up with rich countries (which have higher per capita output). This is called the 'absolute convergence hypothesis' in the economic literature. Also, the principle of transition period dynamics indicates for an economy that 'the lower the steady state level it has, the faster it grows' (Solow, 1956, p. 1957). Despite having different factor conditions in Neoclassical growth models, economies are assumed having the same level of technology and saving, and the population growth rates are taken as exogenous variables.

The literature on international tourism economics provides quite a limited number of studies in which tourism and the convergence model are employed together. Some of these studies deal with convergence indirectly while, in fact, they measure the impact of tourism on the economic growth (Bahar and Bozkurt, 2010; Balaguer and Jorda 2002; Durbarry 2004; Gökovalı and Bahar, 2006, Nowak et al., 2004).

Narayan (2006), being the first to analyze of the link between tourism and convergence, has tested 13 tourism centers which send an important number of visitor to Australia. He employed univariate variance analysis and panel lagrange multiplier (LM) for the period of 1991 through 2003 and confirmed that visitor arrivals to Australia from 13 countries converged to the total of visitors arrivals to Australia from all other countries. The policies to increase the volume of visitor arrivals to Australia from those 13 centers also stimulate tourism volume in the country. Hooi and Smyth (2006) have figured out the importance of the tourism sector in Malaysia for the last 25 years. They have analyzed whether there is any convergence of ten important tourism source markets for Malaysia. The Malaysian government practiced intensive marketing strategies in order to increase the volume of foreign tourist in the country. The study is an univariate variance analysis, using the panel LM to analyze the convergence of the number of foreign tourists. The findings confirm the convergence in the tourism market of Malaysia; tourism strategies in Malaysia are successful and tourism provides a contribution on economic growth.

Another study of Narayan (2007) has analyzed visitor arrivals to Fiji Islands from different tourism markets and has also discovered convergence, finding tourism policies in Fiji Islands successful. The study of Lean and Smyth (2008), based on Narayan (2007), has shown convergence in Malaysia among the tourism markets, as in Narayan's study.

Soukiazis and Proença (2008) have analyzed the conditional convergence hypothesis for the geographical regions of NUTS II and NUTS III in Portugal. The study has been based on the endogenous growth theory of Sala-i Martin; they use panel data set for the period of 1993 through 2001 by applying a static and dynamic (GMM) panel data analysis. The results confirm conditional convergence of the regions in NUTS III. Besides, tourism activities in NUTS II have a positive and significant impact on regional growth. Thus, the study emphasizes the importance of tourism policies in the context of contributing both to the increase in the regional per capita income and to the elimination of differences in interregional developments.

Proença and Soukiazis (2008) have analyzed the convergence hypothesis of per capita income, developed by Barro and Sala-i Martin (1990). The hypothesis has been tested in the countries which have explicit superiority in tourism activities, namely, Greece, Italy, Portugal, and Spain. The study assumes tourism income as one of the main factors to determine economic growth, such as capital accumulation and population growth. The aim of their study is to analyze the importance of tourism in these countries and the convergence of per capita income through the international tourism income. They apply conditional convergence of the tourism-oriented growth model on the panel data analysis for the period of 1990 through 2004. As the results show, tourism activities lead to an increase in life standards and are seen as an alternative source to contribute to growth. Also, the authors emphasize the importance of convergence with respect to eliminating asymmetries among countries through the 'Europe Adjustment Policies', and the tourism sector plays a crucial role in the reallocation of welfare among countries and regions.

Lorde and Moore (2008) have searched for the convergence of visitor arrivals to 22 Caribbean countries, applying a panel time series by monthly data for the period of 1977 through 2004. Although the growth rates of visitor arrivals are similar in these countries, empirical results do not support convergence.

There are only two studies in Turkey which analyze the convergence hypothesis in the tourism sector. The first one has been developed by Samırkaş and Bahar (2011), in which they measure the effect of the tourism sector on eliminating interregional development differences in Turkey. The data contains tourist volume and per capita income for the period of 1990 through 2000 in 39 cities and two main regions in Turkey. They use the OLS method to estimate the conditional and unconditional beta convergence and the variation analysis to estimate the sigma convergence. The results show that there is an increase in the income differences in interregional and intercity levels for the period of 1990 through 2000. During this period, the accumulation of tourism activities in certain regions causes much more increase in interregional income differences. Hence they do not find any convergence in Turkey.

In another study, developed by Abbot, Vita, and Altınay (2011), the convergence has been tested for visitor arrivals to Turkey from 20 countries for the monthly period of January 1996 through December 2009, and the results do not support any convergence too.

2. The econometric model and data set

The econometric model of this study has been based on the equation of 1.

$$\frac{1}{T} Log \left(\frac{(IVA)_{i,t}}{(IVA)_{i,t-T}} \right) = \alpha - \left[\frac{1-e^{\beta T}}{T} \right] Log \ (IVA)_{i,t-T} + \varepsilon_{i,t} \quad (1)$$

$(IVA)_{i,t}$: international visitor arrivals at time t
$(IVA)_{i,t-T}$: international visitor arrivals in the year of start-up
T: time period
ε: error term
i: country
t: time

The data set is formed by the top ten countries, listed by WTO (2010), which have the largest volume of visitor arrivals (Table 1, Appendix 1). The investigation reaches a panel data set by the international visitor arrivals in these countries for the period of 1995 through 2009 from the World Bank development indicators (WDI). The year 1995 has been chosen as the year of start, since the World Bank indexation of the given data starts by 1995.

3. Methodology

The analysis depends on the panel unit root test. In the literature, the test of Levin, Lin, and Chu (2002) (LLC), built on the study of Levin and Lin (1992, 1993) (LL), is the first well accepted test. But the LL Test evaluates all cross-section data as 'one cross section of data' in the unit root test, since a higher significance level of test statistics is gotten by this method.

The current research considers ADF regression and makes an assumption of homogeneous panel unit root, and LLC test also considers similar assumptions. But the present investigation identifies a different ADF regression for every cross section.

The basic regression model, used and estimated in our analysis, is the following ADF regression.

$$\Delta Y_{i,t} = \alpha_i + \beta_i Y_{i,t-1} + \delta_{i,t} + \sum_{j=1}^{p_j} \phi_{i,j} \Delta Y_{i,t-j} + \upsilon_{i,t} \quad (2)$$

$t = 1,2,..........,T$ and $i = 1,2,.........,N$

t shows the time from 1 to T and i shows every independent cross-section from 1 to N. The panel is homogeneous, and the β coefficient is the same for every cross section. The number of lags is equal in all cross section. p_j denotes the level of lag while every lag value is determined by AIC and Schwartz criteria. The LLC test follows four stages:

1st Stage: $\Delta Y_{i,t} = \alpha_i + \delta_{i,t} + \sum_{j=1}^{p_j} \phi_{i,j} \Delta Y_{i,t-j} + e_{i,t}$

$\hat{e}_{i,t}$ is calculated from the first equation.

2nd Stage: $\Delta Y_{i,t-j} = \alpha_i + \delta_{i,t} + \sum_{j=1}^{p_j} \phi_{i,j} \Delta Y_{i,t-j} + \upsilon_{i,t}$, here $\hat{\upsilon}_{i,t}$ is calculated.

3th Stage: $\tilde{e}_{i,t} = \hat{e}_{i,t} / \hat{\sigma}_{\varepsilon i}$ and $\tilde{\upsilon}_{i,t} = \hat{\upsilon}_{i,t} / \hat{\sigma}_{\varepsilon i}$, the homogeneity is arranged as the following equation.

$$\hat{\sigma}^2_{\varepsilon i} = \frac{1}{T - P_i - 1} \sum_{t=p_i+2}^{T} (\hat{e}_{i,t} - \hat{\alpha}_i \hat{\upsilon}_{i,t-1})^2$$

4th Stage: α_i is estimated from $e_{i,t} = \alpha_i \hat{\upsilon}_{i,t} + \eta_{i,t}$

The H_0 is tested by the following hypothesis by using ***t statistics***.

$H_0 = \alpha = 0$ (There is a unit root and the series are non-stationary)

$H_A = \alpha \langle 0$ (There is not a unit root and the series are stationary)

$$t_\alpha = \frac{\hat{\alpha}}{std.err(\overline{\alpha})} \quad (3)$$

t_α has a normal distribution, finite average and variance.

According to scientific literature, the second well accepted test has been developed by Im, Pesaran, and Shin (1997, 2003) (IPS). They admitted a heterogeneous panel structure by leading the homogeneity assumption to get flexible. The H_0 is joint in all other panel unit root tests, while H_A is boundary. The analysis considers the following equation of the ADF regression.

$$\Delta Y_{i,t} = \alpha_i + \beta_i Y_{i,t-1} + \delta_{i,t} + \sum_{j=1}^{p_j} \phi_{i,j} \Delta Y_{i,t-j} + u_{i,t} \quad (4)$$

$t = 1,2,....., T$ and $i = 1,2,....., N$

Heterogeneous panel approach:
$Cov\ (u_{i,t}, u_{j,t}) = 0$ ve $i \neq j$

Im, Pesaran, and Shin (2003) have used a likelihood framework and introduced a unit root test which is identified as *t-bar* statistics and considers a simultaneous stationarity and non-stationary process. They calculated firstly t_i statistics of the coefficient of the first rank for every cross section. Then, they calculated *Z –Bar* statistics by using the average of t_i statistics.

$$t_i = \frac{\beta_i}{std.err(\beta_i)} \text{ and } \bar{t} = \sum_{i=1}^{N} t_i / N \qquad (5)$$

$$Z - Bar = \frac{\sqrt{N}\,(\bar{t} - N^{-1}\sum_{i=1}^{N} E(t_{\beta_i})}{\sqrt{N^{-1}\sum_{i=1}^{N} \operatorname{var}(t_{\beta_i})}} \sim N(0,1) \qquad (6)$$

They illustrated the values of $E(t_{\beta_i})$ and $\operatorname{var}(t_{\beta_i})$ in *Z –Bar* statistics by Monte Carlo simulations and tabulated their results. Both LL test and IPS test $N \to \infty$, $N/T \to 0$ and find an application area for the panel data analysis, where N is rather smaller than T. At this point, they emphasize, simulation results may constitute a problem for both the LL and IPS tests, when N is getting larger than T. However, the IPS test gives information neither concerning the issue which cross section is stationary, nor with respect to the heterogeneity assumption.

Maddala and Wu (1997) have developed a panel unit root test depending on IPS. The only point which differs with IPS in this test is that β_i uses probability values (p_i) instead of *t statistics*. The Maddala and Wu test is a kind of Fisher test.

$$P_\lambda = -2\sum_{i=1}^{N} \ln(p_i) \sim \chi^2_{2N} \qquad (7)$$

The p-values in the unit root of every cross section are aggregated for testing the panel unit root. P_λ values show the distribution of χ^2 asymptotically in 2N degrees of freedom. Besides, it is logical to look at the Maddala and Wu test when $T \to \infty$ and $T \rangle N$.

Choi (2001) has developed a test similar to Maddala and Wu test, which emphasizes a kind of Fisher test. He calculated two different panel unit root test for $N \to \infty$ and $N \rangle T$ and finite situations of N. The null and alternative hypothesis in this test are the same in IPS.

Test statistics of $P_m = -N^{-1/2}\sum_{i=1}^{N} \ln(p_i + 1) \sim N(0,1)$ is calculated under the situation of $N \to \infty$ and $N \rangle T$; and as N gets larger, test statistics gets more power. The test statistics of $Z = N^{-1/2}\sum_{i=1}^{N} \phi^{-1}(p_i) \overset{asy}{\sim} N(0,1)$ is calculated when N is infinite and ϕ is a standard normal distribution function. P_i is valuated between $0 \le P_i \le 1$. Therefore, $\phi^{-1}(P_i)$ is a random variable and has a normal distribution, and this condition is valid for all cross sections when $T \to \infty$ (Choi, 2001). *Z-test* has a normal distribution asymptotically and is suggested as a panel unit root test by Baltagi and Kao (2000) with respect to giving much more significant results than IPS test, in some cases.

Hadri (2000) has suggested a residual-based LM test, different from all other studies mentioned above. He tests the null hypothesis of time series are stationary in a deterministic trend and the alternative hypothesis of all cross sections have unit root. He developed a kind of a Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test for the panel data analysis, since KPSS test analyzes the stationarity in time series. Hadri (2000) uses two basic models, with trend and without trend.

$y_{i,t} = \beta_{i,t} + u_{i,t}$ (the model with trend)

$y_{i,t} = \beta_{i,t} + \delta_i t + u_{i,t}$ (the model without trend)

The conditions in the equations are as follows: $\beta_{i,t} = \beta_{it-1} + e_{i,t}$ and $t = 1,2,......., T$ and $i = 1,2,......, N$

$u_{i,t}$ and $e_{i,t}$ are cross and identical distributed.

$E(u_{i,t}) = 0$ and $E(u^2_{i,t}) = \sigma^2_u \rangle 0$

$E(e_{i,t}) = 0$ and $E(e^2_{i,t}) = \sigma^2_e \ge 0$

The null and alternative hypothesis for the models with and without trend are $H_0 : \sigma^2_e = 0$ and $H_A : \sigma^2_e \rangle 0$. When the models with and without trend are solved by backward iteration, the following equations (see below) are obtained.

$$y_{i,t} = \beta_{i,0} + \sum_{t=1}^{T} e_{i,t} + u_{i,t} = \beta_{i,0} + \varepsilon_{i,t} \text{ (model without trend)} \qquad (8)$$

$$y_{i,t} = \beta_{i,0} + \delta_i t + \sum_{t=1}^{T} e_{i,t} + u_{i,t} = \beta_{i,0} + \delta_i t + \varepsilon_{i,t} \text{ (model with trend)} \qquad (9)$$

The stages of stationarity test have two different LM statistics (LM_{HM}, LM_{HT}) which are calculated below, regarding whether there is constant variance (long-term variance is homogeneous) or heteroscedasticity (long term variance is heterogeneous) between the panel cross sections of $u_{i,t}$.

$$LM_{HM} = \frac{N^{-1}\sum_{i=1}^{N} T^{-2}\sum_{t=1}^{T} s^2_{i,T}}{\hat{\sigma}^2_u}$$

and $s_{i,t} = \sum_{j=1}^{t} \hat{u}_{i,j}$; $\hat{\sigma}^2_u \sum_{i=1}^{N}\sum_{t=1}^{T} \hat{u}^2_{i,t}$

$$LM_{HT} = \frac{N^{-1}\sum_{i=1}^{N} T^{-2}\sum_{t=1}^{T} s_{i,T}^{2}}{\hat{\sigma}_{u,i}^{2}}$$

In the equation of LM_{HT}, $\hat{\sigma}_{u,i}^{2}$ is calculated separately under the assumption of heteroscedasticity for every cross section. In this context, Hadri (2000) shows the limit distributions of LM statistics for the model with and without trend as follows:

$$Z_{\mu} = \frac{\sqrt{N(LM_{\mu} - \psi_{\mu})}}{\phi_{\mu}} \sim N(0,1)$$

$$Z_{\tau} = \frac{\sqrt{N(LM_{\tau} - \psi_{\tau})}}{\phi_{\tau}} \sim N(0,1)$$

On the one hand, ψ_{μ} is the average of random variable of Z_{μ} and equals to 1/6. ϕ_{μ}^{2} is the variance of the random variable of Z_{μ} and equals to 1/45. On the other hand, ψ_{τ} is the average of random variable of Z_{τ} and equals to 1/15. ϕ_{τ}^{2} is the variance of random variable of Z_{τ} and equals to 11/6300. If the result of $LM_{HM;HT} \rangle LM_{critical}$ is obtained, H_0 would be rejected. In other words, the data would be accepted as non-stationary.

Discussion of findings

The study analyzes whether or not there is convergence of international tourist arrivals in the most developed ten countries on the tourism sector. $(IVA)_{i,t}$ shows "The Number of International Visitor Arrivals" for the country of *i* in a natural logharitmic form. The convergence in the number of international arrivals between these given countries is tested by H_A: LN $(IVA)_{i,t} \sim N(0)$ corresponding H_0 for the panel unit root. The results are given in Tables 2, 3, 4, 5, and 6 (Appendix 1).

A general view on the results shows that the convergence of international arrivals for the given countries is not rejected under panel unit root structure. Both tests of LLC (Table 2, Appendix 1) and Hadri (Table 6, Appendix 1), which analyze the joint unit root process, and the test statistics of IPS, Fisher-ADF and Fisher-PP, which analyze the individual unit root process, produce similar results rejecting H_0.

Application results show that the individual unit root test statistics of IPS (Table 3, Appendix 1), Fisher-ADF (Table 4, Appendix 1), and Fisher-PP (Table 5, Appendix 1) have some differences among units. Besides, the series are observed as stationary at 1st difference and 2nd difference, although there are small differences in test statistics.

The 1st difference individual intercept model in Table 3 (Appendix 1) of the individual IPS test results show that the convergence between China, Turkey and Mexico is not rejected. In the same Table, regarding 2nd difference individual intercept and trend model it shows that the convergence between China, France, Germany, Malaysia, and Mexico is not rejected either.

The 1st difference individual intercept model in Table 4 (Appendix 1) of the Fisher-ADF test results show that the convergence between China, Turkey, and Mexico is not rejected. In the same Table, at 2nd difference individual intercept and trend model it shows that the convergence between China, France, Germany, Malaysia, and Mexico is not rejected too. Also, the convergence between China, Italy, Turkey, Mexico, and Malaysia is not rejected at 1st difference of no intercept and trend.

The 1st difference individual intercept model of the Fisher-PP test results in Table 5 (Appendix 1) show that the convergence between China, Turkey, Malaysia and Mexico is not rejected. The convergence between Turkey and Mexico for the 1st difference individual intercept and trend model and the convergence between China, Italy, Mexico, Malaysia, and Turkey for the 1st difference of no intercept and trend are not rejected too.

Conclusions and implications

The aim of this study has been to analyze whether or not there is convergence between top ten countries, listed by WTO, which have the largest volume of visitor arrivals, Turkey being one of these ten countries, and to indicate the link between tourism and convergence. The analysis of these countries in terms of visitor arrivals may cause some criticism concerning the necessary heterogeneity of tourist numbers. However, the fact is that these countries are not homogeneous in both their tourist numbers and development levels.

To test the convergence hypothesis, a 15-year panel data set has been generated, covering the period of 1995 through 2009, and panel unit root analysis has been applied. The results have shown that the convergence hypothesis is justified regarding a joint unit root process. But for the individual unit root process, the convergence hypothesis is justified only among France, Germany, China, Turkey, Malaysia and Mexico.

Besides, significant results obtained from the test statistics at 1st and 2nd differences show that there are crucial effects of both supply and demand side shocks (especially price and technological shocks) on the convergence of international number of visitor arrivals. The findings of this analysis can be tested again, using different variables and different econometric methods, in similar future studies which will consider the supply and demand side shocks in terms of tourism economics.

Turkey has a rapid development trend on the tourism sector in parallel with developments in the world. The forward projections by WTO indicate that tourism will have greater developments in the 21th century, such as tourism income over the world will reach 2 billion dollars in 2020. Moreover, it is clear that the tourism sector will have larger growth than other sectors, considering the increasing share of income for travel and transportation facilities and, especially, the rising of welfare in developed countries. Thus, the governments in developing countries should give the necessary importance to the tourism sector; specifically, the main actors in the Turkish tourism sector should immediately produce policies to benefit this predicted future welfare in the international tourism market.

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Note: This paper has been presented at the 2nd Interdisciplinary Tourism Research Conference held in Fethiye (Turkey), April 24-29, 2012.

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Konvergencijos hipotezės tarptautinio turizmo sektoriuje validacija

Santrauka

Turizmo svarba pasaulinėje ekonomikoje nuolat stiprėja, o turizmo sektorius tampa svarbiu bendrojo nacionalinio produkto generavimo ir darbo vietų šaltiniu. Turizmas kaip regioninė ir darbo vietas kurianti struktūra turėtų išspręsti nedarbo problemas mažiau išsivysčiusiuose regionuose. Turizmo persiliejimo (angl. *spill-over*) padariniai taip pat tiesiogiai ir netiesiogiai veikia daugelį sektorių: žemės ūkio, gamybos, statybos, transporto, komunikacijų, apgyvendinimo, prekybos, maitinimo, bankininkystės, sveikatos paslaugų ir kt. (Proença ir Soukiazi, 2008). Kita vertus, turizmas skatina šalių susiliejimą perskirstydamas turtingų šalių pajamas neturtingoms šalims, išsivysčiusių šalių - mažiau išsivysčiusioms šalims. Jis skatina regionų vystymąsi ir mažina ekonominius skirtumus tarp jų. Taigi nacionalinės ir tarptautinės investicijos į turizmo sektorių teigiamai paveiktų nepasiturinčių regionų vystymąsi (Proença ir Soukiazi, 2008).

Šiame straipsnyje analizuojama, ar konvergencija pasireiškia dešimtyje labiausiai turistų pasaulyje lankomų šalių, tarp kurių yra ir Turkija (remiantis Jungtinių Tautų pasaulio turizmo organizacijos duomenis); ieškoma sąsajų tarp turizmo ir susiliejimo turizmo ekonomikoje 1995-2009 metais. Šių šalių analizė, atsižvelgiant į atvykstančių turistų skaičių, gali būti kritikuojama dėl to, kad turistų skaičiai nėra lygiaverčiai. Tačiau yra aišku, kad šios šalys nėra homogeniškos nei pagal atvykstančių turistų skaičių, nei pagal savo išsivystymo lygį.

Solow tradicija besiremiantys neoklasikiniai didėjimo modeliai rodo spartesnio augimo tendenciją neturtinguose regionuose, lyginant su turtingais regionais ir šalimis. Tai laikoma sąlygine β konvergencija. Solow augimo modeliu besivadovaujančios šalys, kurioms būdingas tas pats santaupų, nuvertėjimo, gyventojų skaičiaus augimo ir technologijų lygmuo, priklauso tai pačiai stabilios būsenos grupei. Tai reiškia, kad stabilios būsenos grupei priklausančios neturtingos šalys (pagaminančios

mažiau produkcijos vienam gyventojui) turėtų pasivyti turtingas šalis (pagaminančias daugiau produkcijos vienam gyventojui) – šis reiškinys literatūroje vadinamas „absoliučios konvergencijos hipoteze". Taip pat teigiama, kad „žemesnį stabilumo lygį turinčios ekonomikos auga greičiau", nes tai lemia pereinamojo laikotarpio dinamikos principas (Solow, 1956, 1957). Nepaisant įvairių neoklasikiniams augimo modeliams būdingų sąlygų, yra daroma prielaida, kad ekonomikos turi tą patį technologinio išsivystymo ir finansų lygį, o gyventojų skaičiaus augimo rodikliai laikomi išoriniais kintamaisiais.

Tarptautinio turizmo ekonomikos temas nagrinėjančioje literatūroje yra nedaug studijų, kurios gretina turizmą ir konvergencijos modelį. Kai kurios jų konvergenciją analizuoja netiesiogiai, nes tiesiogiai matuojamas turizmo poveikis ekonomikai augti (Bahar ir Bozkurt, 2010; Balaguer ir Jorda 2002; Durbarry 2004; Gökovalı ir Bahar, 2006; Nowak et al., 2004).

Narayan (2006), kuris pirmasis nagrinėjo turizmo ir konvergencijos ryšį, tyrė 13 turizmo centrų, išsiuntusių didelį turistų skaičių į Australiją 1991-2003 metais ir patvirtino, kad iš 13 šalių į Australiją turistai atvykstantys susiliejo su atvykstančiais iš kitų šalių. Iš 13 centrų atvykstančių turistų skaičių skatinanti politika taip pat didina turizmo apimtis šalyje. Hooi ir Smyth (2006) apibrėžė turizmo sektoriaus Malaizijoje svarbą per pastaruosius 25 metus. Jie nagrinėjo, ar susiliejimas pasireiškia dešimties Malaizijai svarbių turizmo rinkų atžvilgiu. Malaizijos vyriausybė vykdė intensyvią rinkodaros strategiją, siekdama padidinti užsienio turistų skaičių šalyje. Rezultatai rodo, kad susiliejimas yra būdingas Malaizijos turizmo rinkai, turizmo strategijos Malaizijoje yra sėkmingos, o turizmas prisideda prie ekonomikos augimo.

Kitoje studijoje Narayan (2007) analizavo iš įvairių kraštų į Fidži salas atvykstančių turistų srautus ir taip pat aptiko susiliejimo apraiškas; turizmo politika Fidži salose įvardinama kaip sėkminga. Lean ir Smyth (2008) studija, kurioje remiamasi Narayan (2007) rezultatais, taip pat rodo Malaizijoje egzistuojantį šių turizmo rinkų susiliejimą.

Soukiazis ir Proença (2008) sąlyginę konvergencijos hipotezę taikė Portugalijos geografinių regionų NUTS II ir NUTS III analizei. Studija remiasi endogenine augimo teorija (Sala-i Martin, 1990), joje naudojami 1993-2001 metais gauti duomenys. Rezultatai patvirtino sąlyginę NUTS III regionų konvergenciją. Be to, turizmo veiklos NUTS II regionuose turėjo teigiamą reikšmingą poveikį regionų augimui. Studijoje pabrėžiama turizmo politikos svarba tiek didinant regiono vienam žmogui tenkančias pajamas, tiek siekiant pašalinti tarpregioninio vystymosi skirtumus.

Proença ir Soukiazis (2008) tyrė vienam žmogui tenkančių pajamų konvergencijos hipotezę, kurią iškėlė Barro ir Sala-i Martin (1990). Hipotezė buvo taikoma šalims, pasižyminčioms aiškiais pranašumais turizmo veiklų srityje: Graikijai, Italijai, Portugalijai ir Ispanijai. Ši studija siekė išanalizuoti turizmo svarbą šiose šalyse ir vienam žmogui iš tarptautinio turizmo tenkančių pajamų konvergenciją. Rezultatai rodo, kad turizmo veiklos kelia gyvenimo lygį ir yra traktuojamos kaip alternatyvūs augimo šaltiniai. Autoriai taip pat pabrėžia konvergencijos svarbą eliminuojant tarp šalių egzistuojančias asimetrijas „Europos sureguliavimo politikos" pagalba; turizmo sektorius vaidina lemiamą vaidmenį perskirstant pelnus ne tik tarp šalių, bet ir tarp regionų.

Empiriniam konvergencijos hipotezės validavimui atlikti buvo remtasi 15 metų (nuo 1995 iki 2009) duomenimis. Rezultatai rodo, kad konvergencijos hipotezė pasitvirtino jungtinių procesų požiūriu, tačiau individualių procesų požiūriu konvergencijos hipotezė pasitvirtino tik Prancūzijos, Vokietijos, Kinijos, Turkijos, Malaizijos ir Meksikos atveju. Be to, nustatyti reikšmingi statistiniai skirtumai rodo, kad egzistuoja lemiamas pasiūlos ir paklausos šoko (ypač kainų ir technologinio šoko) poveikis tarptautinių atvykimų skaičiaus konvergencijai. Šios analizės rezultatai gali būti vėl tiriami taikant skirtingus kintamuosius ir ekonometrinius metodus ateityje, kai bus gilinamasi į pasiūlos ir paklausos šoko poveikį turizmo ekonomikai.

Turkija sparčiai plėtoja turizmo sektorių, neatsilikdama nuo pasaulinių tendencijų. Tolesnės Jungtinių Tautų pasaulio turizmo organizacijos prognozės rodo, kad XXI amžiuje turizmas vystysis dar intensyviau, iš turizmo gaunamos pajamos pasaulyje 2020 metais pasieks 2 bilijonus dolerių. Be to, yra aišku, kad turizmo sektorius vystysis sparčiau, nei kiti sektoriai pagal didėjančią pajamų dalį, tenkančią kelionėms ir transportui, ir ypač stiprėjančią išsivysčiusių šalių gerovę. Todėl besivystančių šalių vyriausybės turėtų skirti atitinkamą dėmesį augančiai turizmo svarbai, o pagrindiniai Turkijos turizmo sektoriaus veikėjai turėtų kurti iš tarptautinio turizmo gaunamą naudą palaikančią politiką.

Reikšminiai žodžiai: turizmo sektorius, konvergencijos hipotezė, tarptautinis turizmas.

First received: December, 2012
Accepted for publication: March, 2013

APPENDIX 1

Table 1

International Visitor Arrivals in Top Ten

Rank	Country	Million		Change (%)	
		2008	2009	08/07	09/08
1	France	79.2	74.2	-2.0	-6.3
2	USA	57.9	54.9	3.5	-5.3
3	Spain	57.2	52.2	-2.5	-8.7
4	China	53.0	50.9	-3.1	-4.1
5	Italy	42.7	43.2	-2.1	1.2
6	UK	30.1	28.0	-2.4	-7.0
7	Turkey	25.0	25.5	12.3	2.0
8	Germany	24.9	24.2	1.9	-2.7
9	Malaysia	22.1	23.6	5.1	7.2
10	Mexico	22.6	21.5	5.9	-5.2

Source: WTO (2010)

Table 2

LLC Panel Unit Root Test Results

Situation	LLC Stat	Prob.
Level, individual intercept	-2.92633	0.0017
1 st Difference, individual intercept and trend	-3.04280	0.0012
1 st Difference, none	-6.70589	0.0000

Table 3

IPS Panel Unit Root Test Results

Situation	IPS (Indivudual Unit Root)	Prob.
1 st Difference, individual intercept	-4.66726	0.0000

ADF Test Results

Cross Section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max.Lag	Obs
China	-4.0875	0.0095	-1.510	0.981	0	2	13
France	-1.9814	0.2901	-1.510	0.981	0	2	13
Germany	-3.0052	0.0606	-1.510	0.981	0	2	13
Italy	-3.1624	0.0465	-1.510	0.981	0	2	13
Spain	-0.1390	0.9251	-1.510	0.981	0	2	13
Turkey	-4.2635	0.0070	-1.510	0.981	0	2	13
UK	-2.5114	0.1386	-1.333	1.352	2	2	11
USA	-2.5097	0.1354	-1.510	0.981	0	2	13
Malaysia	-3.5134	0.0256	-1.510	0.981	0	2	13
Mexico	-4.6443	0.0037	-1.510	0.981	0	2	13
Average	-2.9818		-1.492	1.019			

Situation	IPS (Indivudual Unit Root)	Prob.
2 nd Difference, individual intercept and trend	-6.82450	0.0000

Intermediate ADF test results

Cross Section	t-Stat	Prob.	E(t)	E(Var)	Lag	Max.Lag	Obs
China	-6.4113	0.0015	-2.166	1.027	0	1	12
France	-5.0759	0.0089	-2.166	1.027	0	1	12
Germany	-5.1509	0.0080	-2.166	1.027	0	1	12
Italy	-4.1500	0.0372	-2.172	1.357	1	1	11
Spain	-4.3641	0.0247	-2.166	1.027	0	1	12
Turkey	-3.7228	0.0666	-2.172	1.357	1	1	11
UK	-1.4558	0.7808	-2.172	1.357	1	1	11
USA	-3.1829	0.1337	-2.166	1.027	0	1	12
Malaysia	-4.9929	0.0100	-2.166	1.027	0	1	12
Mexico	-6.0750	0.0024	-2.166	1.027	0	1	12
Average	-4.4581		-2.168	1.126			

Table 4

Fisher-ADF Panel Unit Root Test Results

Situation	Fisher-ADF		Prob.
1 st Difference, individual intercept	ADF-Fisher Chi-square	60.0689	0.0000
	ADF - Choi Z-stat	-4.41373	0.0000

ADF Test Results

Cross Section	Prob.	Lag	Max Lag	Obs
China	0.0095	0	2	13
France	0.2901	0	2	13
Germany	0.0606	0	2	13
Italy	0.0465	0	2	13
Spain	0.9251	0	2	13
Turkey	0.0070	0	2	13
UK	0.1386	2	2	11
USA	0.1354	0	2	13
Malaysia	0.0256	0	2	13
Mexico	0.0037	0	2	13

Situation	Fisher-ADF		Prob.
2 st Difference, individual intercept and trend	ADF-Fisher Chi-square	77.2874	0.0000
	ADF - Choi Z-stat	-5.84271	0.0000

ADF Test Results

CrossSection	Prob.	Lag	Max Lag	Obs
China	0.0015	0	1	12
France	0.0089	0	1	12
Germany	0.0080	0	1	12
Italy	0.0372	1	1	11
Spain	0.0247	0	1	12
Turkey	0.0666	1	1	11
UK	0.7808	1	1	11
USA	0.1337	0	1	12
Malaysia	0.0100	0	1	12
Mexico	0.0024	0	1	12

Situation	Fisher-ADF		Prob.
1 st Difference, none	ADF-Fisher Chi-square	89.9252	0.0000
	ADF - Choi Z-stat	-6.88616	0.0000

ADF Test Results

CrossSection	Prob.	Lag	Max Lag	Obs
China	0.0085	0	2	13
France	0.0467	0	2	13
Germany	0.0348	0	2	13
Italy	0.0065	0	2	13
Spain	0.3351	0	2	13
Turkey	0.0045	0	2	13
UK	0.0252	2	2	11
USA	0.0129	0	2	13
Malaysia	0.0067	0	2	13
Mexico	0.0001	0	2	13

Table 5

Fisher-PP Panel Unit Root Test Results

Situation	Fisher-PP		Prob.
1 st Difference, individual intercept	PP-Fisher Chi-square	68.5876	0.0000
	PP - Choi Z-stat	-4.74997	0.0000

Phillips-Perron Test Results

Cross Section	Prob.	Bandwidth	Obs
China	0.0089	2.0	13
France	0.3277	1.0	13
Germany	0.0606	0.0	13
Italy	0.0152	9.0	13
Spain	0.9625	1.0	13
Turkey	0.0021	6.0	13
UK	0.1942	2.0	13
USA	0.1602	3.0	13
Malaysia	0.0032	9.0	13
Mexico	0.0024	3.0	13

Situation	Fisher-PP		Prob.
1 st Difference, individual intercept and trend	PP-Fisher Chi-square	58.0527	0.0000
	PP - Choi Z-stat	-4.07449	0.0000

Phillips-Perron Test Results

CrossSection	Prob.	Bandwidth	Obs
China	0.0304	2.0	13
France	0.2068	1.0	13
Germany	0.2210	0.0	13
Italy	0.0613	9.0	13
Spain	0.6638	1.0	13
Turkey	0.0013	10.0	13
UK	0.4742	2.0	13
USA	0.4605	4.0	13
Malaysia	0.0371	7.0	13
Mexico	0.0004	9.0	13

Situation	Fisher-PP		Prob.
1 st Difference, none	PP-Fisher Chi-square	89.5581	0.0000
	PP - Choi Z-stat	-6.83879	0.0000

Phillips-Perron Test Results

Cross Section	Prob.	Bandwidth	Obs
China	0.0083	2.0	13
France	0.0567	1.0	13
Germany	0.0343	2.0	13
Italy	0.0068	5.0	13
Spain	0.3605	1.0	13
Turkey	0.0046	1.0	13
UK	0.0236	2.0	13
USA	0.0147	3.0	13
Malaysia	0.0067	0.0	13
Mexico	0.0001	3.0	13

Table 6

Hadri Panel Unit Root Test Results

Situation	Hadri Stat	Prob.
Level, individual intercept	9.94488	0.0000
1 st Difference, individual intercept	-0.39932	0.6552
Level, individual intercept and trend	3.79499	0.0001
1 st Difference, individual intercept and trend	2.91178	0.0018
2 st Difference, individual intercept and trend	1.59279	0.0556