

Checking convergence hypothesis of the Russia tourist market

Yulia Pshenichnykh^{1*}, Marianna Yakimenko² and Elena Zhertovskaja³

¹ Southern Federal University, Graduate School of Business, Department of Management Technologies in the Tourism Industry, 105/42 Bolshaya Sadovaya Str., 344006, Rostov-na-Don, Russia. E-mail: pshenichnih.julia@gmail.com

² Southern Federal University, Graduate School of Business, Department of Management Technologies in the Tourism Industry, 105/42 Bolshaya Sadovaya Str., 344006, Rostov-na-Don, Russia

³ Southern Federal University, Graduate School of Business, Department of Management Technologies in the Tourism Industry, 105/42 Bolshaya Sadovaya Str., 344006, Rostov-na-Don, Russia

* Corresponding author

Abstract

The purpose of the article is to study the convergence hypothesis for the main countries which have tourist flows to Russia. To test the convergence hypothesis, the authors follow existing papers by applying a unit root test between the total number of international tourist arrivals and the international tourist arrivals from a certain initial market. The results show long-term convergence in the tourist market of Russia. Structural change testing revealed that thirteen countries show signs of convergence with discontinuity periods, which are mainly observed in Russia during the period of 2014–2015. These findings mean that the policies used by the state to increase the total number of visitors arriving in Russia have been successful, and maintaining these strategies can continue to increase the number of international visitors to the country.

Keywords: convergence, tourism, unit root tests, structural breaks

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Introduction

Today, tourism is considered to be one of the most dynamic sectors of the modern world economy. Due to the development of the world tourism market and its increasing role in the economy, many government bodies are trying to introduce new strategies to revitalize their tourism sectors. Scientists have studied various aspects of tourism, including the relationship between tourism and economic growth (Balaguer & Jorda, 2002; Durbarry, 2004; Nowak *et al.*, 2004; Gökovalı & Bahar, 2006; Bahar & Bozkurt, 2010, etc.), and convergence between the general tourist flows into the country and the tourist flows of particular countries (Narayan, 2006, 2007; Lean & Smyth, 2008; Lean & Tang, 2010; Lee, 2009; Tan & Tan, 2013).

The convergence hypothesis in tourism is a fairly new area of research. Narayan (2006, 2007) was one of the first researchers who suggested using the convergence hypothesis in tourism. Using an assessment of the converging of the general tourist flows into the country and the tourist flows of particular countries that send tourists to that country, Narayan proposed to test the effectiveness of the marketing policy in the field of tourism. The convergence hypothesis states that if tourist flows from a particular country converge with the total international tourist arrivals, then the government's policy towards the country is effective (Narayan, 2007). This means that the increase in tourist flows from the tourist market will contribute to the growth of international arrivals, and thus revenues.

According to his model, the Malaysia market was investigated by Lean & Smyth (2008), Lean & Tang (2010) and Tang (2011). The results confirmed the connection between the converging of Malaysia's tourism market and the success of the Malaysian government's intensive marketing strategies. Singapore's tourist market has been explored by Lee (2009) and Tan & Tan (2013). Both studies confirmed the convergence and effectiveness of the country's marketing policy. Multiple studies of the convergence hypothesis were carried out using the example of the Turkish tourist market (Ozcan & Erdogan, 2015; Yilanci & Eris, 2012; Hepsag, 2016; Kaplan & Şule, 2017; Zhibin Lin *et al.*, 2019; Berhan & Esin, 2019). The results showed that, in general, most tourist flows from different countries converge with the tourist flow that proves the effectiveness of the Turkish government's actions. The converging of the tourist markets was also investigated by Loewy & Papell (1996), Lorde & Moore (2008), Solarin (2014), Solarin & Lean (2014), Tiwari (2016), etc. Thus, the researchers have shown great interest in studying the theory of convergence in the tourist field. Most of the scientists confirmed the presence of the processes of converging in the tourist market and showed that the marketing policy is effective and contributes to the growth of the tourist arrivals.

This study can complement existing discussions in several fundamental aspects. First, the application of the convergence hypothesis for the tourist market of Russia is an important addition to the literature on the tourism industry of the country, as none of the publications have taken such effect so far. The tourism sector in the country continues to position itself as a force to be reckoned with both domestically and internationally. The Russian Federation has a high tourist potential, but the share country in the global tourist market, according to the World Tourism and Travel Council (WTTC) data equaled to 1.7% in 2018. In the domestic scene, tourism has become a rapidly growing and important service sector in the economy. The problem of tourism development is considered to be one of the most priority sectors for the economic growth of the Russian Federation. The contribution of the Russian tourism industry to the country's GDP was 78.6 billion USD in 2018, which is 4.8% of the total GDP (WTTC, 2019), influencing on 53 related industries. The creation of the one workplace in the field of tourism entails the creation of up to 5 jobs in related industries (Concept of the federal target program 'Development of domestic and entry tourism in the Russian Federation (2019-2025 years)'). The number

of international tourist arrivals has been increasing over the years, from 22.281 million in 2010 to 24.551 million in 2018 (UNWTO, 2019).

Recently, the country's tourist market is undergoing profound changes. Over the past few years, the inbound tourism market in Russia has been influenced by two factors. On one hand, tensions between Russia and other European countries, as well as the United States, led to the introduction of sanctions towards Russia and the reduction in tourist flows in the Russian market from some countries. On the other hand, the international tourist arrivals from Asian markets to Russia have intensified. The achievement of this indicator was facilitated by an intergovernmental agreement between the Russian Federation and China on a visa-free exchange of tourist groups between the two countries. To attract Chinese tourists, special programs and itineraries have been developed, taking into account their specifics (the "China Friendly" program, "red routes", etc.). The positive dynamics on Korean tourists are largely due to the establishment of a visa-free regime, the agreement of which for short-term trips between Russia and South Korea came into force on January 1, 2014. Russia is interested to meet the Korean tourists in accordance with the developed direction of educational tourism. A significant drop in inbound tourism was recorded in the Turkish market, which was also due to political factors. In particular, for the citizens of Turkey at the end of 2015, the entry rules in Russia was changed due to the growing terrorism attacks, which came from the Turkish side. However, Russia has become attractive and profitable for foreign tourists due to the sharp depreciation of ruble to dollar and euro. The holding of the 2014 Winter Olympics and the 2018 World Cup in Russia had a favorable impact on the tourist market.

Second, Russia has recently been pursuing a very active marketing policy. The strategy of promoting Russian tourism potential called "Visit Russia" was launched, which implies the presence of Russian tourist offices worldwide, development of information partnership between these offices and the regions of Russia, and the implementation of travel programs, including involvement of transport companies, and mass media. The concept of the federal target program, 'Development of domestic and entry tourism in the Russian Federation (2019-2025 years),' defines advertising of tourist opportunities of Russia on the domestic and international market as one of the measures to increase the competitiveness of the domestic tourist market. Yet, there are studies (Vershina & Orlova 2019) that identify the failure of the methods used to assess the socio-economic effectiveness of both tourism development programs in general and individual areas. Given the importance of the tourism industry to Russia, planning and managing a designed strategy to attract more tourists are priority areas of the marketing policy. In this context, our analysis of the converging of international tourist arrivals to the country becomes very relevant in connection with the implementation of Concept of the federal target program 'Development of domestic and entry tourism in the Russian Federation (2019-2025 years)'.

Based on the concept of convergence, which was mentioned above, the main goal of this paper is to test the convergence hypothesis for 20 countries that have the largest number of tourist arrivals sent to Russia from 2010 to 2018 and their contribution of literature due to the lack of similar research for the tourist market of Russia. This is relevant, first, to assess the general direction of development of the tourism industry and the effectiveness of the marketing policy used. Second, it will allow for the tourism market of the country to further diversify.

Methodology

According to Narayan (2007), the convergence for the tourist market is the total tourist flow of the country converges with the tourist flow of a particular country as a tourist supplier and based on Equation (1):

$$Y_{TAi,t} = \ln\left(\frac{TA_t}{TA_{i,t}}\right), \quad (1)$$

where $Y_{TAi,t}$ - is the natural log total visitor arrivals (TA_t) to tourist arrivals from source market ($TA_{i,t}$).

If the difference between the total number of arriving international visitors and arriving foreign tourists from the original market is stationary, then the tourist markets converge. To test the hypothesis on assigning a time series to a stationary class there are several different criteria. In practice, two tests are most often used in analyzing the stationarity of time series: ADF (Dickey-Fuller Advanced Test) and KPSS (Kwiatkowski-Phillips-Schmidt-Shin Test).

At the same time, the power of the above tests is weakened due to the structural breaks and some abnormal features of the series. It is necessary to use the Lagrange multiplier (LM) unit root test worked out by Lee and Strazicich (2003).

The basic equation is (2):

$$\Delta Y_t = \delta' Z_t + e_t, \quad e_t = \beta e_{t-1} + \varepsilon_t \quad (2)$$

where Δ is the difference operator, δ' is the regression coefficients of ΔY_t on ΔZ_t , Z_t contains exogenous variables, $\varepsilon_t \approx N(0, \sigma^2)$.

The LS unit root test statistics calculated from the following equation (3):

$$\Delta Y_t = \delta' \Delta Z_t + \phi \tilde{\delta}_{t-1} + \sum \gamma_i \Delta \tilde{\delta}_{t-1} + \varepsilon_t, \quad (3)$$

The null hypotheses of unit root test is based on $\phi = 0$.

In this article we use the traditional unit root test based on ADF- and KPSS-criteria, as well as the test of Lee and Strazicich (2003) with two structural breaks.

Results and Discussion

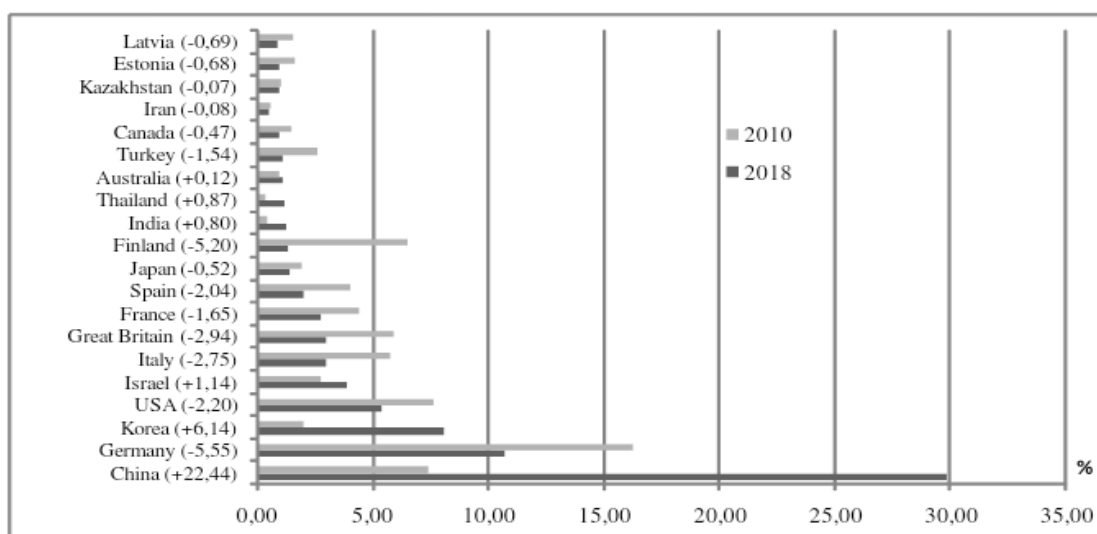
The research analysis of tourism statistics in the Russian Federation over the past 9 years indicates the increase in inbound flow to the country. The structure of international tourist arrivals in Russia over the past nine years has been led by two countries such as China (1.256.515 visits in 2018) and Germany (451.467 visits). Korea is on the third place (34.2308 visits in 2018); it has displaced the USA (227.656 visits), holding the fourth place now (Table 1).

For the last 9 years, the volume of the tourist flows from China increased almost by 8 times. Achievement of such indicator was promoted by the intergovernmental agreement between the countries on visa-free exchange of tourist groups. The special programs and routes considering visitors' interests are developed for the involvement of the Chinese tourists.

Table 1. Tourist arrivals to Russia during 2010-18 (according to the Border Guard Service, 2019), thousand pers.

Nº	Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	Change 18/17, %
1	China	158,1	234,1	343,4	372,3	409,8	677,6	890,7	1106,5	1256,5	+13,56
2	Germany	347,2	346,6	375,3	380,3	349,5	358,1	389,2	408,6	451,5	+10,50
3	Korea	42,6	47,0	48,4	52,1	82,5	116,3	143,7	236,5	342,3	+44,83
4	USA	162,4	169,8	179,8	197,3	162,1	165,1	178,1	223,6	227,7	+1,81
5	Israel	58,7	75,5	86,0	92,5	108,2	127,4	149,0	147,9	163,7	+10,67
6	Italy	123,0	125,1	118,7	117,9	107,1	109,4	116,8	115,9	126,9	+9,46
7	Great Britain	126,5	128,5	135,9	157,8	134,3	114,5	122,1	125,7	125,7	-0,03
8	France	94,3	94,9	99,6	96,9	94,9	86,8	101,4	110,9	116,5	+5,03
9	Spain	86,7	100,8	70,3	70,2	60,4	79,4	87,1	88,1	85,3	-3,13
10	Japan	42,2	38,0	44,7	55,1	54,1	50,3	52,8	66,5	61,2	-7,97
11	Finland	139,2	133,6	120,3	93,8	68,6	59,6	67,5	55,8	55,9	+0,15
12	India	9,6	12,6	26,6	17,8	16,3	27,8	38,0	47,0	52,6	+11,82
13	Thailand	7,5	9,4	10,4	11,5	12,3	21,5	25,2	41,9	51,3	+22,36
14	Australia	21,2	24,8	33,0	36,1	36,5	31,3	36,6	41,5	46,7	+12,55
15	Turkey	56,4	80,8	100,9	122,7	134,7	139,3	20,4	44,4	46,5	+4,78
16	Canada	31,5	34,9	36,3	41,0	35,8	30,4	30,4	41,3	42,4	-38,98
17	Iran	12,5	13,9	14,0	8,5	17,2	35,4	62,1	69,5	21,5	-69,11
18	Kazakhstan	21,9	16,5	23,8	21,1	26,2	38,8	37,3	40,8	40,0	-2,00
19	Estonia	34,6	31,3	27,4	26,3	25,9	27,8	38,0	38,2	39,6	+3,79
20	Latvia	33,8	33,5	32,1	28,1	29,2	30,4	36,5	33,4	37,5	+12,18
Total		2134	2336	2571	2665	2583	2934	3267	3810	4210	+97,28

(Source: Border Guard Service, 2019)

**Figure 1.** Market share of twenty top markets in Russia, 2000-18

Of particular interest to Russia are the Germans. Traditionally, the top ten in terms of the number of trips to Russia are occupied by four countries of Western Europe of the “Big Seven” - Italy, France, Spain, and the United Kingdom. At the same time, tensions between Russia and the West, as well as the United States, the introduction of sanctions led to a reduction in tourist flows from these countries and enhancing international tourist arrivals from the Asian markets (Figure 1). However, the depreciation of the ruble contributes to the fact that Russia still remains attractive to the Western tourists.

Before carrying out the analysis of convergence we estimated a type of time series of data. A part of the markets has an expressed trend; there are seasonal fluctuations and structural gaps (Figure 2).

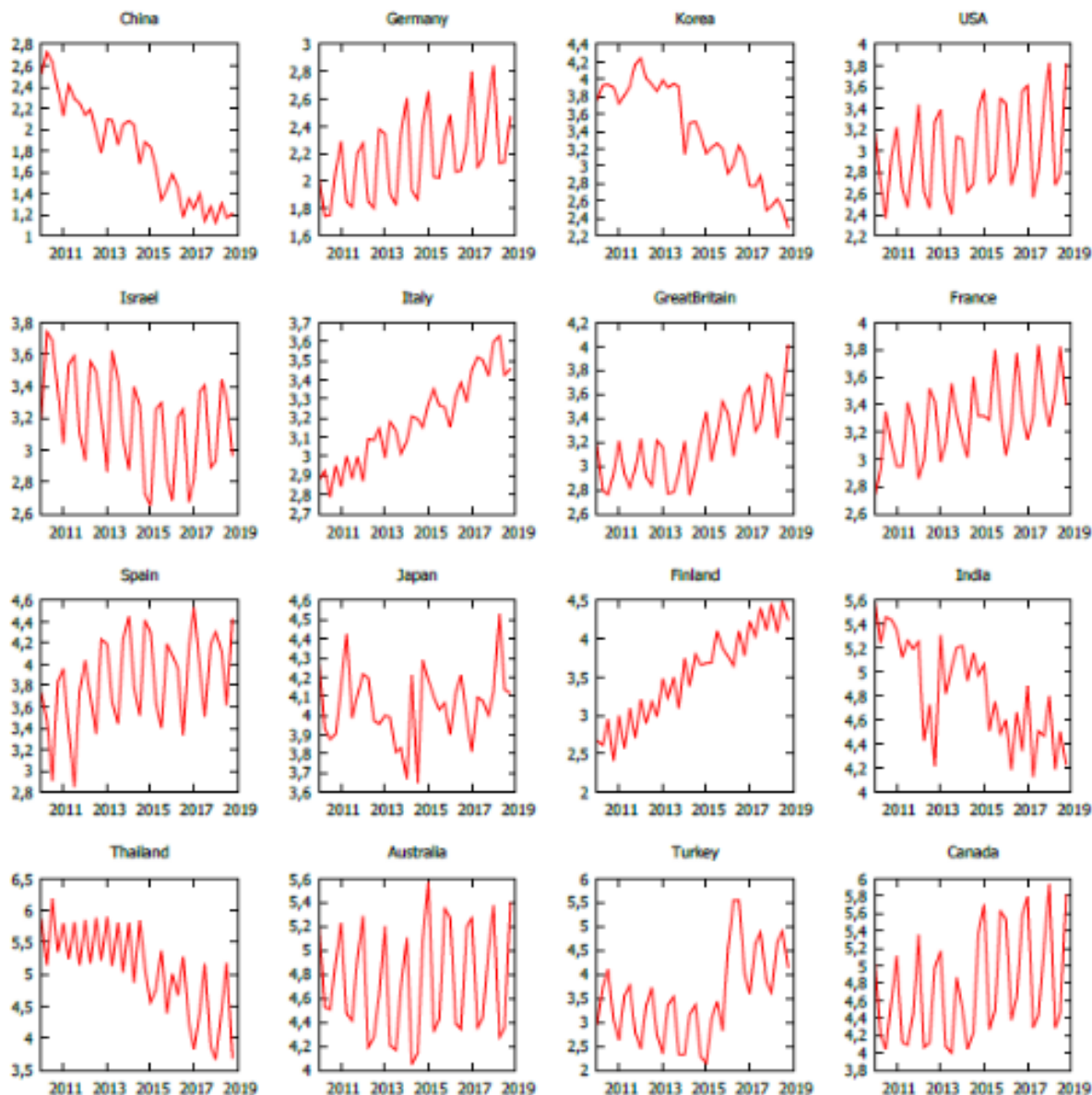


Figure 2. Natural log of the tourist arrivals ratio

At the first stage of the study, classical unit root tests were conducted without any structural breaks (Table 2).

Table 2. *Unit root tests with no structural breaks*

Country	ADF-test	KPSS-test
China	-3.1663	0.0659***
Germany	-5.8819***	0.0532***
Korea	-3.1022	0.1560
USA	-4.5629***	0.0725***
Israel	-1.0919	0.1711
Italy	-4.8543***	0.0740***
Great Britain	-2.3178	0.1676
France	-5.3290***	0.1270**
Spain	-3.5419**	0.1345**
Japan	-4.8943***	0.1041**
Finland	-5.4635***	0.1212**
India	-3.0703	0.0555***
Thailand	-1.8347	0.2269
Australia	-2.7351	0.1090***
Turkey	-2.2118	0.1603
Canada	-4.1256**	0.0936**
Iran	-1.9484	0.0910***
Kazakhstan	-1.9500	0.1173**
Estonia	-2.3943	0.1197**
Latvia	-5.4984***	0.01101

Notes: * (**) *** means statistical significance at the 10%, 5% and 1% levels respectively.

The ADF-test confirms the existence of convergence only for nine countries: Germany, USA, Italy, France, Spain, Japan, Finland, Canada, and Latvia. According to the KPSS test, we have no reason to reject the null hypothesis of stationarity of the series for thirteen countries: China, Germany, USA, Italy, France, Spain, Japan, Finland, Australia, Canada, Iran, Kazakhstan, and Estonia.

However, these tests are well proven in the case of a relatively smooth trend without structural changes. That is why it is necessary to make the unit root test with structural changes using the two-step LM test of Lee and Strazisich (2004) (Table 3-4).

The Crash Model Lee-Strazicich Unit Root Test showed convergence for China, Germany, USA, Italy, France, Spain, Japan, Finland, India, and Canada at a level of 5% and higher.

The Trend Break Model unit root test with one structural break showed the convergence for nine countries: Germany, Korea, USA, France, Spain, Japan, Finland, Thailand, Canada, and Estonia at a level of 5% and higher. When tested with two structural breaks, Great Britain, France, Spain, Japan, Thailand, Canada, Kazakhstan converged at a 5% level of significance and higher.

Table 3. Lee-Strazicich Unit Root Test - Crash Model (Model A)

Country	with one break		with two breaks		
	TB	S _{t-1}	TB ₁	TB ₂	S _{t-1}
China	2015:01	-0.6550**	2011:04	2015:01	-0.7188***
Germany	2015:04	-1.0680***	2014:02	2015:04	-1.1147***
Korea	2011:04	-0.4690	2013:04	2017:03	-0.4987
USA	2013:01	-0.8636***	2013:02	2017:01	-1.0382***
Israel	2016:04	-0.6097*	2016:04	2017:04	-0.7525**
Italy	2016:02	-0.6249***	2016:01	2018:01	-0.7769**
Great Britain	2012:04	-0.4419	2012:04	2014:04	-0.6746*
France	2015:04	-1.7982***	2014:03	2015:04	-1.9135***
Spain	2014:04	-0.6697**	2012:01	2014:04	-1.0146***
Japan	2012:03	-0.8858***	2012:03	2018:01	-0.9701***
Finland	2012:03	-0.9875***	2012:03	2015:02	-1.0054***
India	2013:03	-0.6573**	2013:03	2017:04	-0.6865**
Thailand	2014:03	-0.6064*	2015:02	2016:04	-1.0212***
Australia	2014:04	-0.6223*	2012:01	2014:03	-0.7619**
Turkey	2015:04	-0.4091	2015:04	2016:04	-0.5872
Canada	2014:04	-0.8826***	2014:04	2015:03	-0.9244***
Iran	2014:01	-0.2611	2014:01	2018:01	-0.3487
Kazakhstan	2017:01	-0.4285	2016:02	2017:01	-0.4942
Estonia	2015:04	-0.3828	2014:01	2015:04	-0.5007
Latvia	2015:04	-0.2179	2011:04	2015:04	-0.2594

Notes: TB is the date of the structural break; S_{t-1} is the LM test statistic. Figures in parentheses are t-values. * (**) *** denote statistical significance at the 10%, 5% and 1% levels respectively.

Table 4. Lee-Strazicich Unit Root Test - Trend Break Model (Model C)

Country	with one break		with two breaks		
	TB	S _{t-1}	TB ₁	TB ₂	S _{t-1}
China	2015:01	-0.6472	2013:02	2015:02	-1.0512
Germany	2015:04	-1.0794***	2015:04	2016:04	-2.0996*
Korea	2012:02	-0.8674***	2013:03	2015:04	-1.6489
USA	2012:04	-0.8973**	2014:01	2016:04	-1.1605
Israel	2014:02	-0.7785*	2013:02	2016:01	-2.5408*
Italy	2017:01	-1.3955	2012:02	2016:04	-0.9145
Great Britain	2013:01	-1.0266	2013:02	2015:03	-1.2432**
France	2015:04	-1.7953***	2014:03	2015:04	-2.0670**
Spain	2014:04	-1.6864**	2011:04	2015:01	-1.1865**
Japan	2013:02	-1.1243***	2013:03	2015:01	-1.3439***
Finland	2014:02	-1.0798***	2015:03	2017:01	-2.6849
India	2013:03	-0.6507	2012:04	2015:04	-1.4256
Thailand	2014:04	-1.0147***	2014:03	2016:01	-1.2609**
Australia	2014:04	-0.6264	2013:04	2015:03	-1.1410
Turkey	2015:03	-0.8912	2015:04	2016:04	-2.0209*
Canada	2014:03	-0.9104**	2013:03	2014:04	-1.2876**
Iran	2013:04	-0.4337	2013:01	2016:03	-1.9582
Kazakhstan	2015:04	-0.6091	2013:02	2014:04	-1.1430**
Estonia	2015:04	-0.7680**	2013:02	2015:04	-1.0350
Latvia	2012:01	-0.5011	2013:01	2016:03	-0.6928

The structural changes that can be identified by the results of the tests took place in the period of 2014-2015 because it was marked by sanctions and significant geopolitical disagreements for the Russian Federation. At the same time, 2014 was the impetus year for the growth of the inbound tourists' number in the Russian Federation by the end of 2014 and the beginning of 2015 due to Winter Olympic Games in 2014.

The convergence hypothesis was tested for 20 tourist markets in Russia. The results show a confirmation of the convergence hypothesis in major tourist markets of Russia and are consistent with the findings by Narayan (2006), Lee (2009), Tan & Tan (2013), Lean & Smyth (2008), Lean & Tang (2010), and Tang (2011). Our conclusions coincide with Berhan & Esin (2019), Solarin (2014), that breaks the impact on the test results. Tourism policies look ineffective and disproportionate, if structural breaks are not taken into account.

Conclusion, limits and perspectives

The study has analyzed the convergence hypothesis proposed by Narayan (2006) of the twenty main country-suppliers of tourists to Russia using unit root testing and taking into account certain structural changes. The empirical findings of Russia's tourism market were conducted from the period of 2010 to 2018. The results confirmed the convergence hypothesis for the eight main tourist markets of Russia, which make the most significant contribution to the volume of tourist flow into Russia. The empirical results show that the main structural gaps fall during the period of 2014-2015 when Russia experienced a crisis as a result of geopolitical policies. Yet, we can conclude that Russia's marketing strategies to encourage tourists to enter the country are effective. The average annual growth of tourists in the period 2010-2013 was 3.7%, and in 2015-2018 increased to 12.9%, which indicates that the geopolitical events did not slow down the growth of the tourism industry.

The empirical results have an important significance for Russia's tourism industry. The results represent a suitable platform for a further analysis of the effectiveness of advertising strategies in Russia's promotion to foreign markets (Solarin, 2014). The confirmation of the convergence hypothesis shows the effectiveness of the applied marketing policy and the possibility of taking into account these results in the future. However, attention should be paid to the tourism policies for the countries where the market has shown divergence as a result of the study. The marketing policies for these countries should be reviewed to increase the interest of tourists into visiting the Russian Federation and to increase the number of arrivals.

In the further research, the authors intend to expand the methodology and test the club convergence hypothesis following Abbott *et al.* (2012), as well as to test the algorithm of Kim & Perron (2009) in which an arbitrary number of structural shifts in the trend function is allowed and a generalized, least amount of squares method is used.

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