ANALYSIS OF TOURIST FLOWS

FROM RUSSIAN FEDERATION

TO THE COUNTRIES OF EUROPEAN UNION

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ABSTRACT

The development of the Russian tourism industry since the last 20 years has resulted in a dramatic change in growth of number of trips made by Russian citizens abroad, including tourist trips to the countries of European Union. The present paper analyzes the current trends in tourist flows from Russia to the EU countries. In order to reveal the factors that determine the observed trends and changes in intensity of tourist flows, econometric model of outboard flows of Russian tourists to the countries of the EU is estimated. The forecast of tourist flows in short-term perspective is conducted.

1. INTRODUCTION

Tourism plays an increasingly important role in world economy. In 2010 international tourist arrivals worldwide reached 940 million, while tourism receipts generated USD 919 billion (UNWTO) and travel and tourism total contribution to GDP reached 9,0% (WTTC).

Until the early 90s, the tourism industry in the USSR was represented mainly by internal tourism and, to a much lesser extent, by outbound and inbound tourism. Outbound and inbound tourism was not developed enough for several reasons, primarily of political nature. The formation of a new system of market relations in post-Soviet Russia had an undeniably good effect on tourism industry and market development. Among forces apparently influencing the transformation of the Russian tourism industry in the beginning of 90s we should particularly mention the fall of the Iron Curtain; abolition of state monopoly on some kinds of business activities; privatization of government-owned enterprises; price liberalization; creation of a legislative and legal framework for domestic business; favoured nations status to foreign business operating in Russia; and others.

Thus, the modernization of Russian economy in the 90s led to a dramatic reform of the tourism industry and the market, as reflected in the increasing number of operating travel companies, expanding list of offered tourist destinations, the competition between Russian tourism industry players, increasing flows of foreign tourists to Russia, and thus inducing a rapid development of outbound tourism. At present, Russia is one of the largest suppliers of tourists to foreign tourism markets. According to the official data from the Federal State Statistics Service of Russia, the total number of trips made by Russian citizens to the non-CIS countries in 2010 amounted to 25 487 thousand versus 9 819 thousand in 2000, including 12 231 thousand trips for tourism purposes in 2010, whilst in 2000 this number was only 4 252 thousand (GKS).

It is possible to outline several reasons, currently crucially affecting the number and frequency of tourist trips made by Russians internationally:

- introduction of a visa-free regime with a range of countries and current negotiations with the European Union (EU) on visa system simplification with the European states;

- increasing amount of Russian tour operators and agencies;

- expanding activity of leading international tour operators (such as TUI) in Russia;

- market-oriented development of Russian relative and supporting services, such as transportations, banking, insurance;

- increase of the income of Russian householders, mainly in big cities;

- essential growth in the number of demanding domestic travelers and rising customers' expectations;

- development of information and communication technologies;

- ambitions to a healthier lifestyle, which, in particular, stimulates the demand for ski and spa tourism;

- sufficiently long holidays (traditional month's holiday and official extended weekends in January and May);

- a substantial length of the winter season in many regions of the country, which makes a holiday by a warm sea especially attractive;

- interest in getting acquainted with new, different cultures.

The countries of the EU are an important recipient of Russian tourists. On the whole, 2 496 thousand Russians visited the EU countries as tourists in 2000 (GKS). This number grew steadily, reaching 4 085 thousand in 2010. In 2010, the share of tourist trips

to the EU countries amounted to 33% of the total number of Russian citizens' tourist trips to non-CIS countries[i].

Thus, the European market is at present very attractive for Russian tourists. Meanwhile, the projected distribution of tourist flows from Russia between EU countries actually defines the challenges that Russian and European tourism and hospitality players will be facing in next years. Hence, the strategic development of Russian and European industry players is greatly affected by the tourism demand of Russian citizens for different EU destinations.

Tourism demand forecasting has been drawing tourism researchers' and practitioners' attention approximately since the early 80s (see, e.g., Li, Wong, Song, & Witt, 2006; Song, & Li, 2008; Li, Song, & Witt, 2005; Witt, & Witt, 1995; Jackman, & Greenidge, 2010; Andrawis, Atiya, & El-Shishiny, 2011).

However, there are almost no studies based on Russian data, most likely due to scarcity and inaccessibility of this information. The resent study (Bednova, & Ratnikova, 2011) has partly filled this gap by providing an econometric model of inbound tourism in Russia.

The current paper presents the results of the quantitative analysis of outbound tourism from Russia to the EU. The paper proceeds as follows. Introduction indicates the main trends in Russian outbound tourism since the last 20 years, the lack of research in forecasting the outbound tourist flows from Russia to the EU countries is determined. Section 2 contains the descriptive analysis of tourist flows from Russia to different European destinations. Section 3 describes the econometric model of tourism demand to the EU countries. In section 4 we present a short-term forecast of tourist flows from Russia to the EU countries. Section 5 pinpoints limitations and main directions of future research.

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[i] Calculated according to data of Russian Federal State Statistics Service, 2010

Conclusions include the main results of the study. Appendix A contains the forecasts of the tourist flows of Russian citizens to the EU countries, most popular among tourists, up to 2013.

2. DESCRIPTIVE ANALYSIS

For research purposes, we used data from 2000-2010 provided by Federal State Statistics Service of Russia, as well by the World Bank database.

It should be noted that Russian statistics include different types of trips made by citizens for a period from 1 day to 6 months. Thus, there is a distinction between business trips (including trips as service staff), trips for personal needs (e.g. educational or medical tourism), as well as tourist trips (holidays, participation in sporting and cultural events). The present study examines the trips made by Russian citizens to the EU countries for tourist purposes. We would also like to point out that we used the statistical data for countries that were EU members by the time of December 31, 2010. This list includes 27 countries. Some of the countries joined the EU after 2000. In order to comply with the comparability of data in the analysis, we will use the data for these countries not only from the moment of their accession to the EU, but for the period from 2000.

The number of Russians' trips for tourist purposes to the EU countries has grown since the last decade significantly. However, if we consider the share of visits of Russians to the EU in the total number of trips of Russian citizens for tourism purposes over the world excluding the CIS countries, a steady decline can be observed - from 59% in 2000 to 33% in 2010 (see Fig. 1). Amid a general rapid increase in outbound trips of Russian citizens, the European destinations are growing significantly slower, which can be explained to a certain extent by a gradual increase in the absolute number of trips to South-East Asia and North Africa, and recently also South America and the Caribbean. These

regions are attractive to tourists due to novelty effect, relatively low prices, value for money and originality of tourism product.

Insert Figure 1 about here

Despite an obvious interest in tours to countries that recently appeared on the Russian market, the flows of Russian tourists travelling to the EU countries we chose to analyze.

Russian tourist flow to the EU tended to increase within the observed period, with the exception of some countries, where it significantly decreased. The number of tourist trips increased especially for Austria (7-fold or 616%), Greece (7-fold or 577%), Netherlands (7-fold or 563%), and Czech Republic (6-fold or 496%). Some countries demonstrated a dramatic decline in tourist flows from Russia. In the first place it is Poland, where the number of Russians tourists decreased almost 22-fold (95%) from 2000 to 2010. This happened due to Russians losing their interest in Polish tourism products, accompanied by substantial complication of visa procedures, as well as the loss of Poland's attractiveness for the Russian shuttle trade. A decrease in the number of tourist trips made by Russians has been also observed in Estonia (11-fold or 91%), Slovakia (5-fold or 80%) and Lithuania (1.4-fold or 30%), which, like in Poland, is largely due to a serious complication of visa procedure.

One should also pay attention to the significant differentiation in the number of Russian tourists visiting particular EU countries (see Fig. 2). The biggest contribution makes the "big four": Finland - the country drove 709 thousand Russian tourists in 2010, which makes 17% of the total number of entrants to the EU countries as tourists, Germany - 471 thousand (12%), Italy - 452 thousand (11%), Spain - 411 thousand (10%). The

second group (4 to 10%) includes such countries as the Greece, Czech Republic, Bulgaria, Cyprus, France. Each of the remaining 18 countries, conditionally allocated to a third group, takes no more than 4% of the total number of Russians' tourist trips to the EU.

Insert Figure 2 about here

Intensity of tourist flows depends on many factors, some of which can be evaluated only qualitatively, while others have a quantitative measurement. We will further estimate the influence of traditional quantifiable factors on Russian tourist flows to the EU.

3. REGRESSION ANALYSIS OF DEMAND FOR OUTBOUND TOURISM FROM THE RUSSIAN FEDERATION TO THE EU COUNTRIES

Demand for some good is usually modeled as a function of consumer's income and the vector of prices in economy. In practice, only the prices for essential substitutes and complements are considered. Speaking of demand for tourist trip to a certain country, the tourist trip to some other country is considered the main substitute. Unfortunately, we don't possess the data on tourist price indices for all EU countries, therefore the data on consumer price indices (CPI) as a proxy were used. We calculate the relative consumer price index for country i as the ratio of CPI in that country to CPI in all EU. We also take into account the exchange rate between the currency of country of destination and the Russian ruble.

Using the 1999-2010 annual data from Federal State Statistics Service of Russia and the World Bank, we estimate the following equations for each country of destination separately:

$$\Delta \ln F_{t+1} = \beta_0 + \beta_1 \Delta \ln RI_t + \beta_2 \Delta \ln RCPI_t + \beta_3 \Delta \ln ER_t + \varepsilon_t, \tag{1}$$

$$\ln F_{t+1} = \beta_0 + \beta_1 \ln RI_t + \beta_2 \ln RCPI_t + \beta_3 \ln ER_t + \beta_4 trend_t + \varepsilon_t, \qquad (2)$$

where F_{t+1} is the number of tourist trips of Russian citizens to a country of interest in the year $t+1$,

RI_t is the real money income index in Russia in the year t,

$RCPI_t$ is the relative consumer price index in the country of destination in the year t,

ER_t is the exchange rate between the currency of the country of destination and the Russian rouble in the year t,

$trend_t$ – a variable that stands for trend in data (equals 0 for $t=1999$, equals 1 for $t=2000$, etc.).

β_0, β_1, β_2, β_3, β_4 are the estimated coefficients,

ε_t is the random error.

Log-linear specification is typical for tourism demand equations (Costa, & Manente, 1994; Botti, Peypoch, Randriamboarison, & Solonandrasana, 2007; Salman, Arnesson, Sörensson, & Shukur, 2009). It has the advantage of convenience in interpreting the estimates. In our log-linear models coefficients β_1, β_2 and β_3 are the elasticities of tourist flows with respect to income, relative price and exchange rate accordingly (Verbeek, 2000).

Note that the dependent variable in (1) has the index $t+1$ which means that the tourist flow in a certain year is explained by the factors of the previous year. Here we follow the works of Manente (see, for example, (Costa, & Manente, 1994)). Explanatory variables are lagged due to the following reasons:

1)   A model specified that way is suitable for making forecasts for the year ahead. Though it would hardly be a real forecast because of statistics publication lag, it

could be regarded as an estimate for the numbers of tourist trips which are not yet published.

2)   Taking the explanatory variables in lags helps to avoid endogeneity. The problem is that prices may be affected by tourist flows due to the interaction between demand and supply, what can lead to bias and inconsistency of regression estimates. However, we suppose that the current prices are not affected by the tourist flows in future, and so models (1) and (2) do not suffer from that problem.

It was supposed that estimates obtained from (1) and (2) would reveal the relationship between the number of tourist trips and the exogenous factors. With those figures at hand, one could make forecasts assuming different scenarios of explanatory variables' dynamics. In fact, that attempt failed. Model (1) has poor goodness-of-fit and for the most countries is insignificant. Model (2) is significant with high R^2 but estimated coefficients are improbable and very inaccurate due to multicollinearity.

There are numerous probable reasons for models inadequacy in the case of outbound tourist flows from Russia. Most of the reasons are caused by the facts that Russia is a multinational and multicultural country with a population of 143 million people and occupies the territory of 17 075 400 square km with a rather significant differentiation in the level of the regions' economy. Here are some reasons we consider to be most important:

- CPI is likely to be a poor proxy for tourism price index. The price of the trips to the EU countries for Russian citizens differs significantly over the Russian regions due to transportation costs. For example the distance from St. Petersburg and Moscow to Finnish border is about 200 and 900 km consequently that makes this country – one of the nearest Russia's EU neighbors – easy to reach from the European part of Russia even by car. Meanwhile the distance to Finland from the city of Irkutsk with the population about

600 thousand, situated in the East of the country is about 6 000 km, and from Khabarovsk, with the similar number of inhabitants is more than 9 000 km. Prices for tours to Europe and variety of travel agencies' offers in cities of Russia are also substantially different.

- Real money income index may not be an appropriate measure of Russian consumer's income. Its dynamics depicts the income of an average citizen while, in fact, tourists that travel to EU are relatively rich. The income inequality in Russia is rather high: according to the official statistics, Gini coefficient in 2010 is 0.42 (GKS), but there are reasons to regard that estimate as seriously biased downward. Thus average figures published by Federal State Statistics Service of Russia may not represent the dynamics of real consumer's income.

We suppose that the modeling should be conducted at more disaggregated level but the available statistics do not permit us to do so.

However, the data allow us to make forecasts by the means of univariate time-series models which do not take into account the influence of explanatory variables.

4. FORECASTING TOURIST FLOWS

The distribution of the current tourist flows of Russian citizens to the EU countries presented in Descriptive analysis indicates the current situation. Meanwhile tourist flows forecasting could be considered as a base for strategic development of Russian Europe-oriented tour operators as well as seems to be interesting in terms of the strategic development of European tourist destinations.

This section contains the forecast of tourist flows obtained by the means of univariate time series analysis of tourist flows in 2000-2010.

The most widespread tool of short-term forecasting are ARIMA models proposed by Box and Jenkins (Box, & Jenkins, 1970). Application of ARIMA models for tourism forecasting can be found in (Lim, & McAleer, 2001), (Divino, & McAleer, 2009), (Chaovanapoonphol, Lim, McAleer, & Wiboonpongse, 2010). Their advantages include both high accuracy and universality. Yet there are at least two reasons to look for another approach in the case of current study:

- Limited number of observations. Estimates obtained from 11-year sample would be unreliable.

- Non-stability of time series. Flows to some countries seem to have a structural change in trend. For example, number of tourists going to Czech Republic was practically constant in 2000-2003, but significantly growing in 2004-2010. In the case of Poland, after the rapid decline in 2000-2007 tourist flow from Russia stabilized at about 40 thousand tourists per year.

There is some evidence that one of the best approaches to forecast annual data on tourism is naïve method where the forecasted values equal the tourist flow in most recent observation (Song, Smeral, Li, & Chen, 2008), (Athanasoupulos, Hyndman, Song, & Wu, 2009). However, it does not hold in case of our data since the series for most destination countries have obvious trends.

We make the choice in favor of Holt model (Holt, 2004), based on the idea of exponential smoothing, which is also a well-known tool for making short-term forecasts. According to (Bhattacharya, 2011), the exponential smoothing performs as good as ARIMA in forecasting tourism series. Holt model has only two parameters to be estimated and allows for a change in trend due to the adaptive structure. Holt model has several modifications which are quite similar. The modification used in our study is presented below.

The observed number of tourists in year t (t=2000,…,2010) is denoted F_t. The level estimate $\bar{F}_t$ and trend estimate T_t are calculated using the following recursive equations:

$$\bar{F}_t = \alpha(\bar{F}_{t-1} + T_{t-1}) + (1-\alpha)F_t \tag{3}$$

$$T_t = \beta T_{t-1} + (1-\beta)(\bar{F}_t - \bar{F}_{t-1}) \tag{4}$$

Here α and β are the parameters estimated, both lying between 0 and 1. These parameters represent the sensitivity of the trend and level estimates to data. Thus, when β is equal to 1 the trend is time-invariant, and when β is zero the trend in the year t is determined only by the change in the level estimates: $\bar{F}_t - \bar{F}_{t-1}$.

Application of formulae (3) and (4) requires initial values of the level and trend estimates for t=2000. We set the initial level estimate equal to the observed tourist flow: $\bar{F}_{2000} = F_{2000}$. The initial trend is calculated as average annual change in number of tourists within the analyzed period: $T_{2000} = \dfrac{F_{2010} - F_{2000}}{10}$.

Standing at time t and looking h years into the future, we calculate the predicted value as $\hat{F}_{t+h} = \bar{F}_t + hT_t$. Coefficients α and β are selected to minimize the sum of squared forecast errors:

$$\sum_{t=2000}^{2009} (\bar{F}_t + T_t - F_{t+1})^2 \rightarrow \min_{\alpha,\beta}$$

The optimization problem is solved by the grid search method.

We also used a first-order autoregressive model in differences (ARIMA(1,1,0) – one of the models of Box-Jenkins class):

$$\Delta F_t = \alpha + \beta \Delta F_{t-1} + \varepsilon_t \tag{5}$$

Here $\Delta F_t = F_t - F_{t-1}$ is the increase in tourist flow in year t related to year t-1,

α and β are parameters estimated,

ε_t is the random component.

In most cases Holt model has demonstrated better goodness-of-fit measured by mean squared error.

Model fit and forecasts for five destinations, most popular among Russian tourists are presented in Appendix A. According to our forecasts those countries will attract increasing amounts of Russian tourists. It holds true for the most EU countries except some rather unpopular destinations. Among the exceptions, Poland and Lithuania account for the largest numbers of tourists. The predicted values of tourist flows are presented in Table 1.

Insert Table 1 about here

The tourist flow of Russian citizens to the EU countries will increase from 4 085 thousand in 2010 to 4 726 thousand in 2013 by 16%. Calculating the share of forecasted number of tourist trips to particular EU countries in the number of tourist trips to the EU in 2013 and using classification of countries in the groups according to the share of Russian tourists for a particular country in total tourist flow of Russians to the EU in 2010 (see Descriptive Analysis section), we can pinpoint only several possible changes in these groups. Thus, our estimates show that there will be little changes in the relative popularity of destination countries. We expect only one shift among the leaders: by 2013 Greece can become more attractive than Spain if the observed tendencies remain. Spain will move from the leaders group to the second group in 2013 taking less than 10% of the tourist flow of Russians to the EU (from 10,1% to 9,4%), while Greece will almost reach this "conventional line", taking 9,7% in 2013. Finland, Germany and Italy remain the undisputed leaders.

Other expected changes in the second group seem to be minor. Thus, Cyprus by 2013 is expected to become less popular than France. This result seems to be natural as tourist flows to France were more intensive in 2003-2009, and 2010 observation for Cyprus can be an outlier.

As for the third group, Austria, reinforcing its position among Russian tourists, will move from the third to the second group as the tourist flows from Russia to Austria will change from 3,3% in 2010 till 4% in 2013. In other respect, provided there are no significant relevant transformations of the environment, no major changes in the "balance of power" between the tourist flows of Russians to the EU are expected.

5. LIMITATIONS AND FUTURE RESEARCH

The present study encompasses several limitations. First, it considers the statistical data of Russian Federation at the national level while Russian regions are rather heterogeneous in terms of geographical and demographical characteristics, income, customers' behavior of citizens, etc. Second, it is based on the factors subject to statistical measurement only. Third, the study does not consider seasonality. Forth, it is focused on all EU countries when there is big differentiation between them in terms of the role of the tourism in the national economy and their orientation for tourism. Fifth, the tourist flows from Russia to the EU countries are investigated without taking into account the distinguishing features of EU countries' particular regions.

Thus, the following possible directions of future research could be outlined. First, analyses of tourist flows from different regions of Russia to the particular EU countries. Second, of interest could be expert judgments of factors that are not subject to statistical measurement and processing (for example, tourists' preferences, lifestyles) but, however, are still significant. Third, the future study could be focused on the analysis of seasonal

flows from Russia to the EU countries/countries' regions. Fourth, the analysis, forecasting and modeling of tourist flows of Russian citizens to the particular EU countries and groups of countries united on a certain basis (for example, the leading countries or vice versa, countries that demonstrate the highest rate of decline of tourist flows) could be an area of future research. Fifth, analysis, forecasting and modeling of the tourist flows from Russia to the particular regions of the particular EU countries seem to be a promising direction for future research.

6. CONCLUSIONS

Tourist flows of Russian citizens to the European Union show a steady upward trend. Meanwhile, there is a certain distribution of outbound flows from Russia between the EU countries. The current study presents the results of the statistical analysis of tourist flows from Russia to the countries of the EU. Modeling the relationship between the tourist flows from Russia to the EU countries and traditional statistically measurable factors showed no evident correlations. This is possibly due to extreme heterogeneity of Russian customers of tourist services, including the income differentiation, difference in preferences, lifestyles, location the place of residence in relation to Europe, etc. The available data enable the forecast of tourist flows from Russia to the EU countries within the short term perspective. The present study demonstrates that the existing trends of Russian citizens' tourist flows to the EU countries will not significantly change within the forecast period. Countries that show a steady increase in the number of Russian tourists' arrivals within the last decade will continue to show a similar trend. Finland, Germany, Italy, Greece and Spain will remain among the leading countries attracting the most significant flows of Russian tourists.

This present study might of interest both for Russian and European stakeholders of the tourism and related industries.

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Keywords:

tourism, tourist flows, forecasting, Russia, European Union

Appendix A. Observed, fitted and predicted values of tourist flows to the most popular destinations (Figures A1-A5).

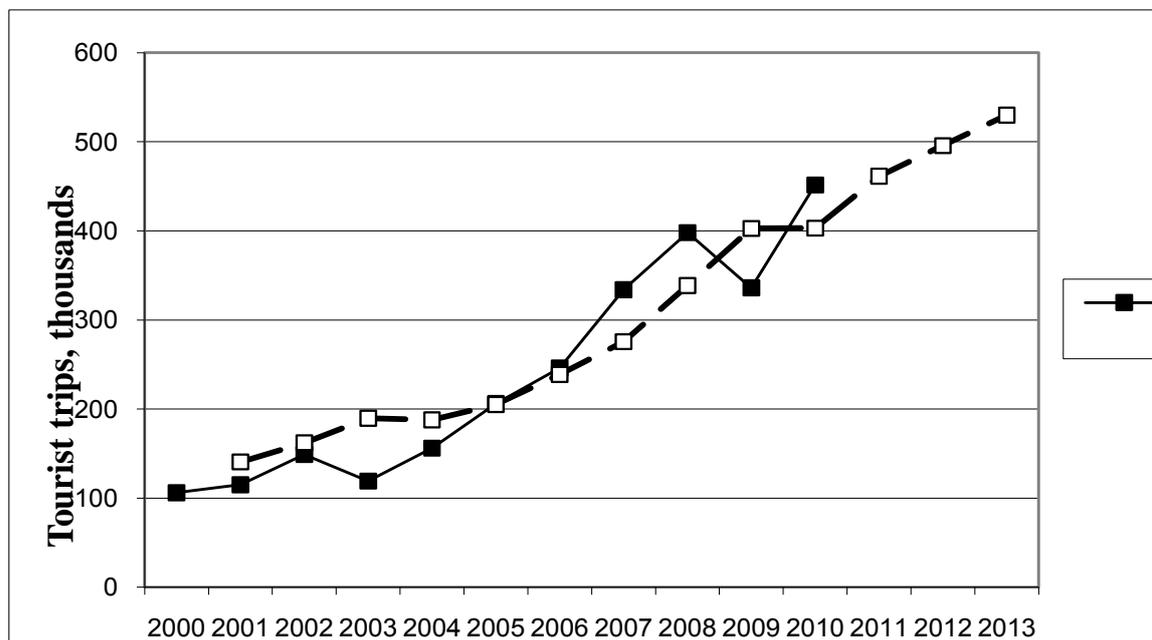## FIGURE A1.

Finland
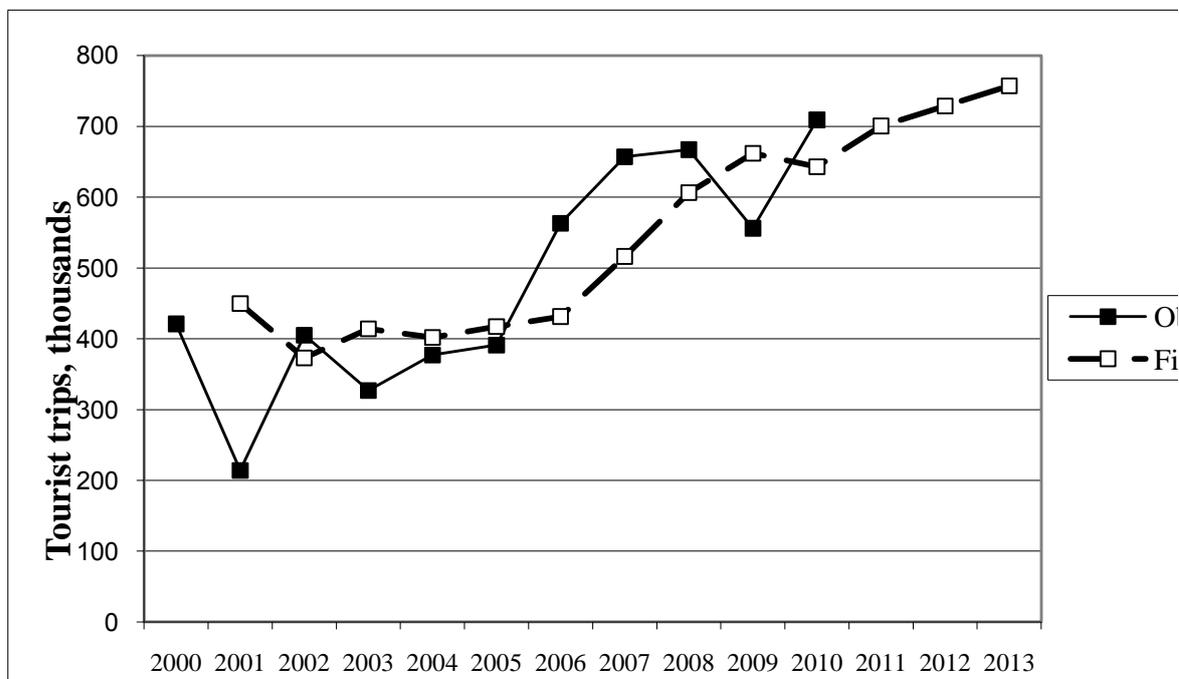
FIGURE A2.

Germany
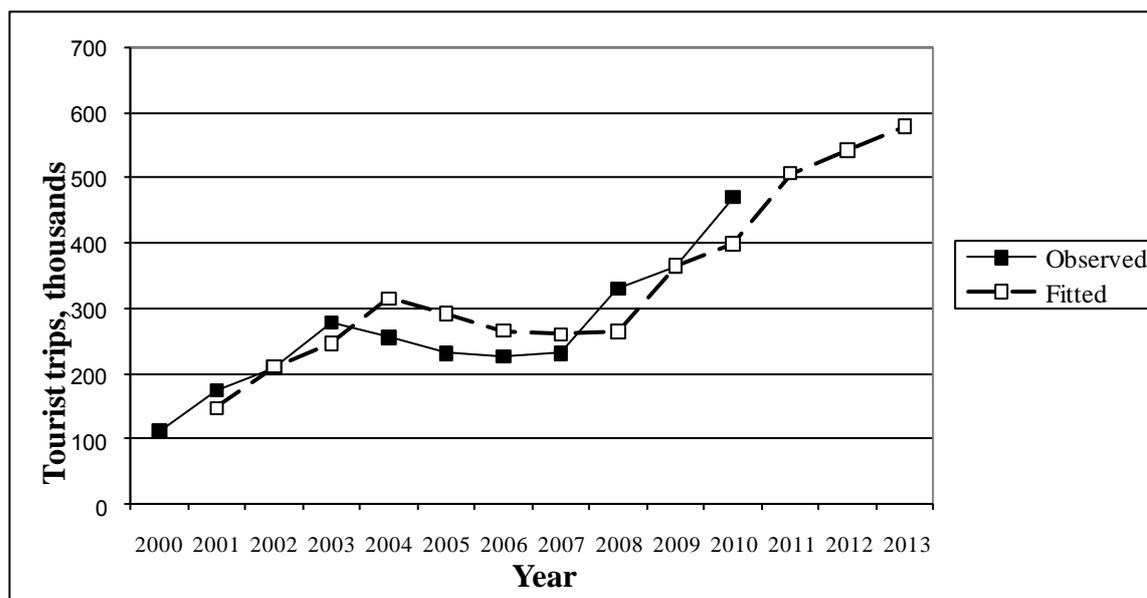
FIGURE A3.

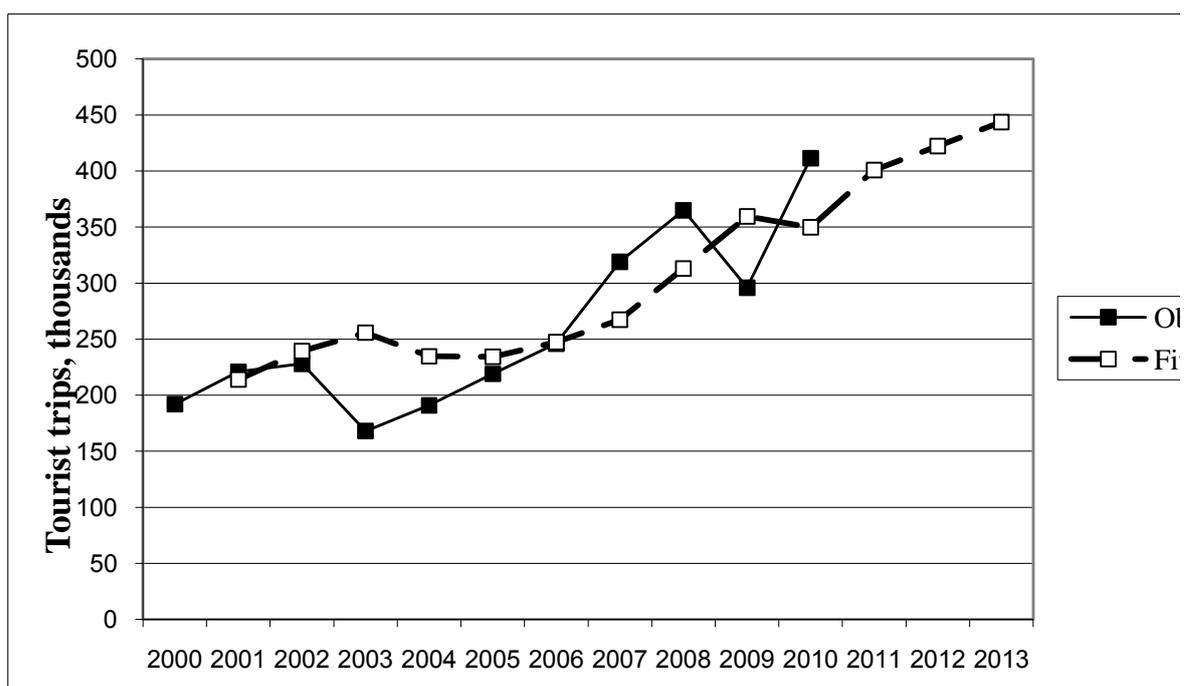**Italy**

FIGURE A4.

Spain
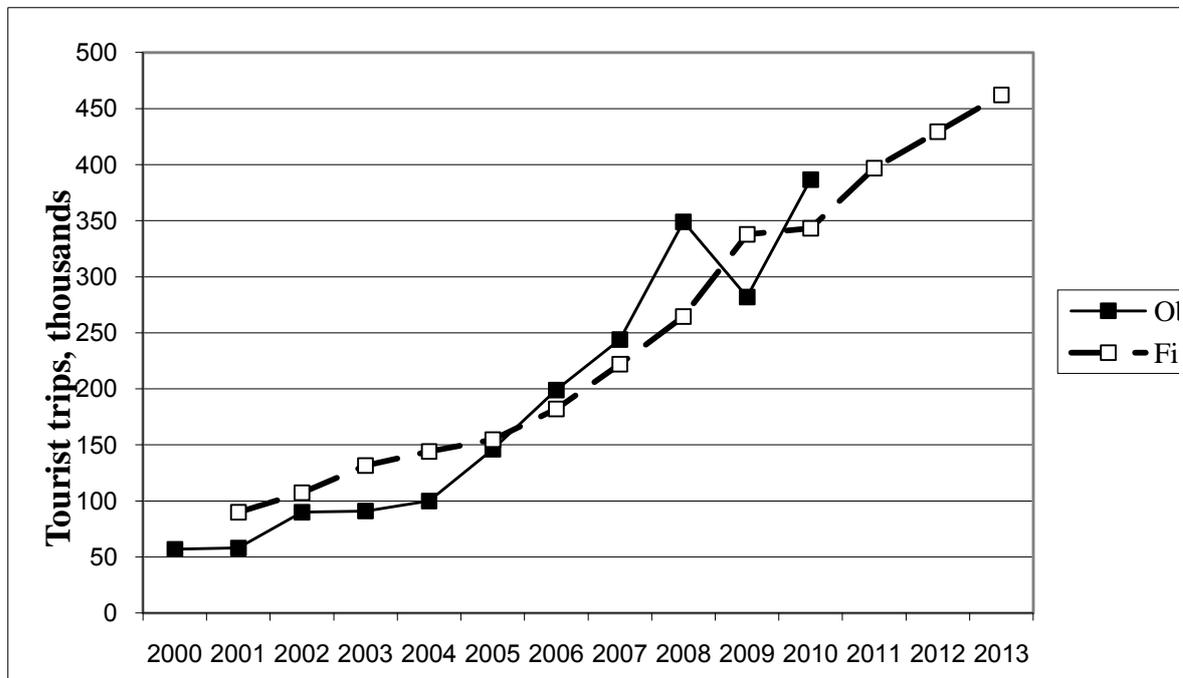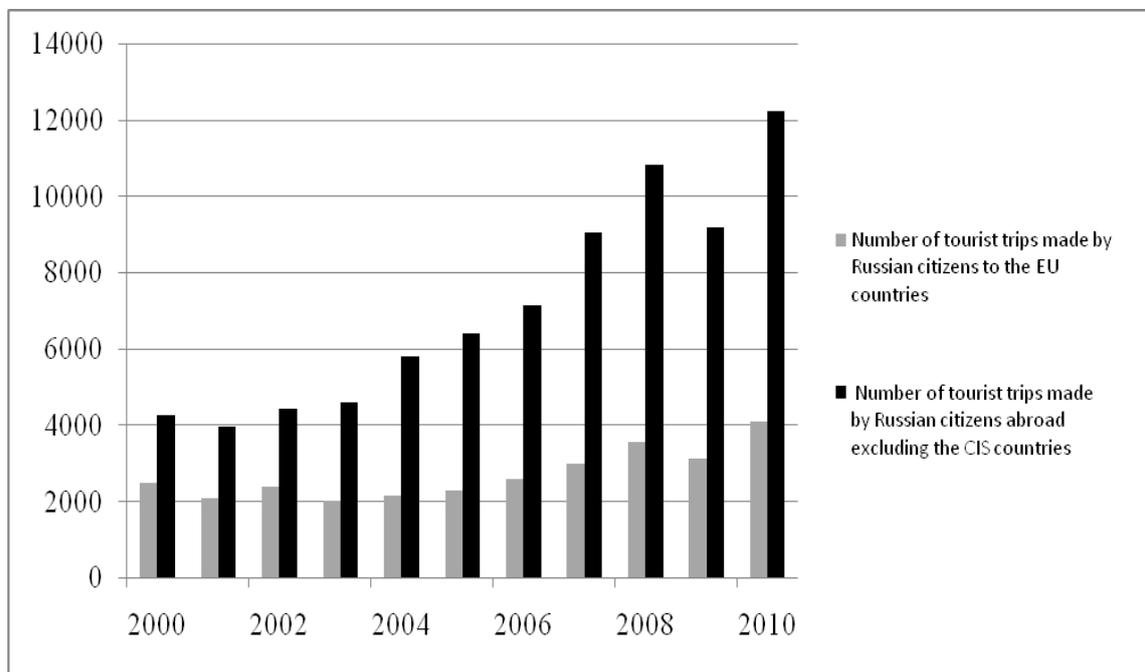
FIGURE A5.

Greece

FIGURE 1

Number of tourist trips made by Russian citizens to the non-CIS and EU countries

(in thousands)

FIGURE 2.

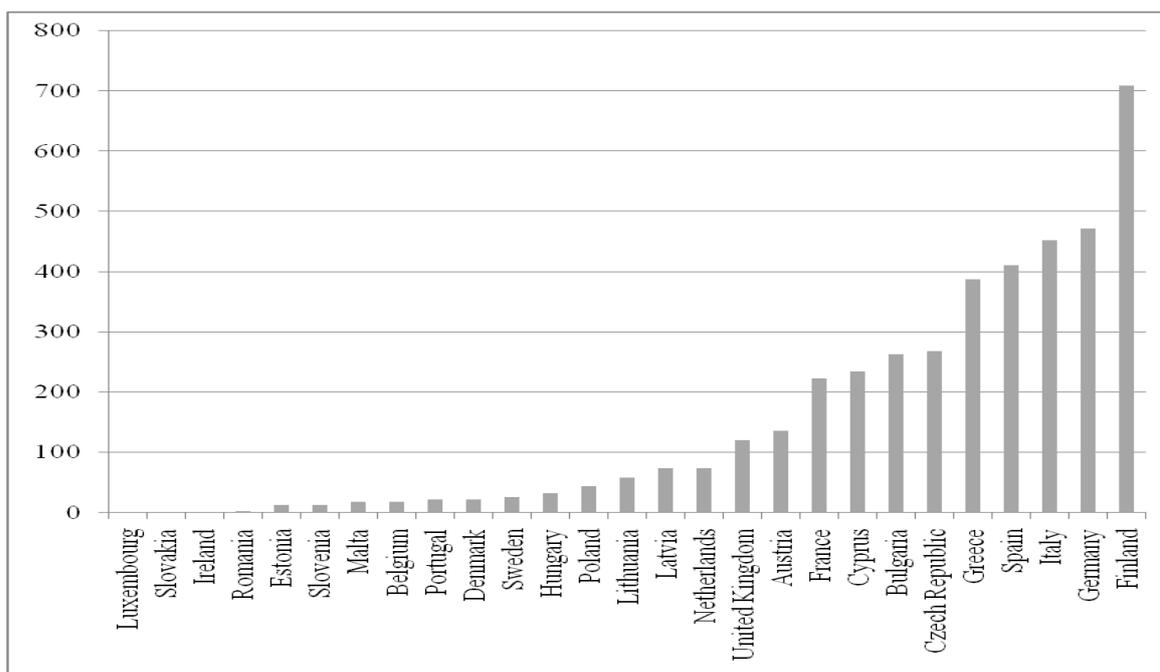**Number of tourist trips made by Russian citizens to the EU in 2010, by country**

(in thousands)

Table 1.

The predicted values of tourist flows of Russian tourists to the EU countries

Country	2000	2010	2013 (forecast)	Growth rate (2013 to 2010)
Austria	19	136	191	40%
Belgium	5	18	21	17%
Bulgaria	71	263	318	21%
United Kingdom	25	120	140	17%
Hungary	16	32	36	13%
Germany	111	471	579	23%
Greece	57	387	462	19%
Denmark	6	22	28	27%
Ireland	1	1	1	0%
Spain	192	411	444	8%
Italy	106	452	530	17%
Cyprus	109	234	257	10%
Latvia	24	73	80	10%
Lithuania	82	58	49	-16%
Luxembourg	0	0	0	0%
Malta	14	18	19	6%
Netherlands	11	73	116	59%
Poland	966	43	28	-35%
Portugal	5	21	24	14%
Romania	1	2	2	0%
Slovakia	5	1	0	-100%
Slovenia	4	12	15	25%
Finland	421	709	757	7%
France	61	223	273	22%
Czech Republic	45	268	326	22%
Sweden	8	25	30	20%
Estonia	131	11	0	-100%
Total	**2496**	**4085**	**4726**	**16%**