INBOUND TOURISM IN UKRAINE

by

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Abstract

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This paper studies determinants of inbound tourism demand in Ukraine in a theoretical framework of the gravity model. The sample under study contains unbalanced panel data for 75 sending countries during the period 1999-2003. Ordinary least squares (OLS) with panel-corrected standard errors (PCSE) estimation technique is used. The results suggest that the number of foreign tourists' arrivals at national borders of Ukraine depends positively on wealth of tourists (measured by GPD per capita in a sending country) and total number of tourists' departures; number of tourists' arrivals depends negatively on distance to Ukraine and visa requirements for residents of a country. The paper shows that there are region-specific effects determining demand for Ukrainian tourism services: while CIS countries' citizens are more inclined to visit Ukraine than the others, EU15 inhabitants are reluctant to spend vocations in Ukraine compared to the others. The paper suggests abolishing visa requirements for world greatest traveling nations and discusses recent realization of this recommendation by Ukrainian government.

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GLOSSARY

Inbound tourism is tourism of non-resident visitors within economic territory of the country of reference.

Outbound tourism is tourism of resident visitors outside the economic territory of the country of reference.

Chapter 1

INTRODUCTION

During the last several decades tourism has become one of the major industries in the world economy. Tourism revenues have grown to the third largest after revenues from exports of oil and automobiles. The sector constitutes nearly 10% of the world gross income, 8% of world exports and up to 35% of world trade in services. The number of tourists' journeys increased from 25 million in 1950 to 700 million in 2003, and is predicted to reach 1.6 billion in 2020. This implies that average annual growth rate of tourism sector will be 3.5%, while predicted growth rate of heavy industry is 3% (WTTC, 2006).

International tourism has become a major foreign exchange earner for many low-income countries and small islands, and it is a principal export for 83% of developing countries (WTO, 2001).

Three types of tourism are separated by those interested in the field: domestic, outbound and inbound tourism. Inbound tourism is defined as tourism activities of non-residents within the economic territory of a country of reference.

Many countries attempt to develop tourism sector and increase the number of coming visitors because of several reasons: international tourists bring foreign currency to a host country; tourism sector is much more merciful toward environment than many industries producing goods; growth in tourism industry accelerates other, related industries (retail, entertainment, transportation).

An interesting fact about inbound tourism in Ukraine was widely advertised in mass-media in 2005: the abolition of visa requirement for visitors from the European Union and some other countries increased the number of their

citizens' arrivals by two to 2.5 times (Kontrakty, 2005). Several questions naturally arise as response to such claims. Was visa requirement such a big obstacle for European tourists? Wasn't tourism boom provoked by any other issue, unrelated to visa regime between the countries (e.g. Eurovision-2005 held in Kyiv)? To what extent was increase in demand driven by visa abolishment? Further, it is interesting to know what the other determinants of inbound tourism in Ukraine are. Can their impact be measured and can the government influence them in order to bring more foreign tourists (and, thus, higher revenues) to the country?

This study aims at answering at least some of the questions. It verifies the determinants of tourism demand in Ukraine. This gives a basis to offer some policy advice for the government to support this sector.

The remainder of the paper is organized as follows. Chapter 2 describes shortly the state of tourism sector of Ukraine. Chapter 3 gives the overview of inbound tourism demand studies in different countries; it enumerates the most widely used determinants of tourism demand and generally accepted estimation techniques. Chapter 4 explains the model used to estimate Ukrainian inbound tourism demand. Chapter 5 describes the data and discusses estimation results. Chapter 6 provides inferences driven from estimation of the model and discusses possible policy actions to increase the number of incoming tourists. Chapter 7 summarizes the main conclusions of the study and outlines its possible extensions.

Chapter 2

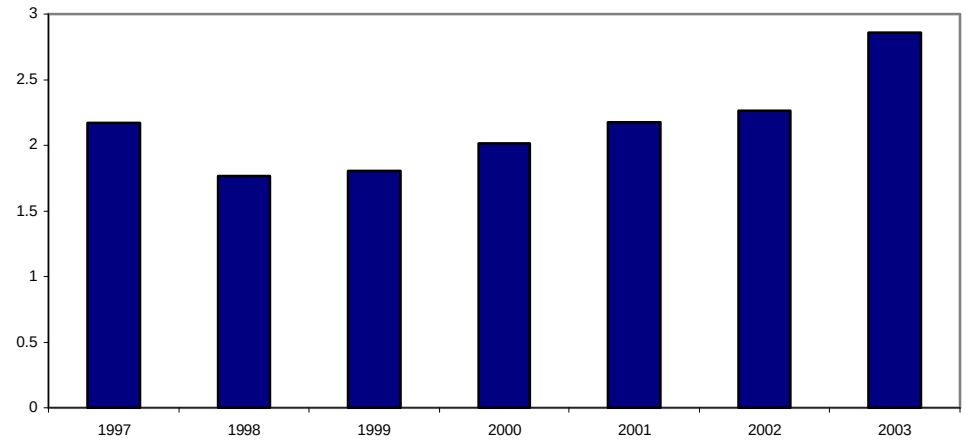
TOURISM SECTOR IN UKRAINE

The issue of inbound tourism development is essential for Ukraine for several reasons:

- Firstly, geographical position of some of the Ukrainian regions is perfectly appropriate for tourism industry and is poorly suitable for other purposes. As an example, the Crimean peninsula is a wonderful place for travelers in summer due to warm Black sea and plenty of beaches, but it is not appropriate for industry because of its remoteness from the main resources and consumer markets. Similarly, winter activities can be successfully arranged in the Carpathian Mountains, while production in the region is limited by the similar remoteness problem.

- Secondly, the worldwide amount of tourism spending increases significantly year by year. Aaccording to World Travel and Tourism Council 'The 2005 Travel and Tourism Economic Research'(nd), travel and tourism consumption grew by 37%, from US$3.2 trillion in 2000 to estimated US$4.4 trillion in 2005. Tourism industry is considered to be the most promising one in terms of future flows of revenues. High GDP growth can be achieved due to business boom in this sector: As Palatnikov (1997) describes, GDP growth acceleration was observed due to tourism sector expansion in Spain, Greece and Portugal, resulting in tourism being the first export sector in their economies.

Figure 1. Number of tourists' arrivals in Ukraine, mln people



Source: State Statistics Committee of Ukraine

Influx of foreign tourists to Ukraine increased steadily in 1998-2003 (see Figure 1). The main preconditions for that were:

- Location. Ukraine is situated in the East of the Europe, which makes travel to Ukraine for citizens of this continent short.

- Climate. The Crimean peninsular and the Carpathian mountains make it possible to supply different tourism services, both in the summer and in the winter.

- Culture. Throughout centuries Ukrainian culture evolved in close relationship with the European one remaining, however, rather peculiar, especially in local traditions and mode of life. Current development of international economic relations caused popularization of foreign languages among the working force of the country. This ensured gradual decline of cultural barrier between the Ukrainians and Europeans.

At the same time, Ukrainian tourism infrastructure, which includes hotels, restaurants, transportation facilities, entertaining establishments and insurance services is in poor condition now. Inferiority of Ukrainian tourism sector is especially appreciable compared to infrastructure in world-wide aknoledged European tourism-oriented countries, such as France and Spain.

As Hrytsyk (2005) notices, tourism sector in Kyiv is characterized by lack of investments, low level of concomitant tourism services provided, insufficient number of rooms and scarcity of qualified staff in the hotels. The claim of low level of development of tourism sector in Ukraine is supported by Stechenko (2005); he points out the main reasons of poor utilization of existing tourism capacities in the country: undeveloped tourism infrastructure (80% of Ukrainian hotels needed renovation as of 2003), ineffective regulatory system

of inbound tourism supply business activity, low qualification of the manpower.

Meanwhile, development of tourism sector led to emergence of a few Ukrainian high-quality hotels, mainly in Kyiv as the center of tourists' concentration. These hotels use the monopoly power to charge unreasonably high prices for the rooms. As Romaniuk (2006) describes, only 3% out of 8700 hotel rooms in Kyiv meet international standards. At the same time, hotel services cost from $50-60 to $300-400 per day which is considerable higher than in many European capitals. Poor infrastructure and monopoly power of a few operating companies on the market lead to a result that 'a one-week tour around Ukraine costs as much as a two-week vocation to Spain' (Economy of Ukraine, 2005).

The numerated facts make evident necessity to develop the tourism sector in Ukraine. To make it efficient, determinants of tourism demand should be specified in order to insure worthwhileness of investments of both human and physical capital.

Chapter 3

LITERATURE REVIEW

As Durbarry (2000) points out, when modeling tourism demand, economists usually use two measures of inbound tourism demand - the number of tourists' arrivals (Kliman, 1981; Gunhadi and Boey, 1986) and total tourists' expenditures (Loeb, 1982; Lee et al., 1996; Halicioglu, 2004). While amount of expenditures theoretically estimates tourism demand more precisely, it is extremely difficult to measure in practice. At the same time, the number of tourists' arrivals is usually registered in the customs, so is much easier to measure. That is why number of tourists' arrivals at the national borders is the predominant measure of inbound tourism demand.

The most commonly used explanatory variables are income, relative prices of tourism services and transportation costs (Lim, 1997). Crough (1994) considers income to be the most important variable, while inclusion of prices - quite ambiguous. He confirms his conclusion by the wide range of price elasticities across economic papers studying inbound tourism – from -0.05 to -6.36, which he explains by the numerous proxies used to estimate the average price level of the tourism services in different countries. The same problem occurs with estimation of the transportation costs due to the complexities of the price structure of transportation – as Halicioglu (2004) describes, researchers often included the distance of travel, price of airline tickets or crude oil prices as a suitable proxy for transportation costs.

Usually the researchers model tourism demand in a particular country, so they introduce ad-hoc models including some specific variables. Lim and McAleer (2003) found out from the dynamic log-linear single equation model that the amount of international travel of Singapore tourists to Australia is likely to depend on relative price levels in the two countries, transportation costs, real income per capita in Singapore and exchange rate of the two currencies. On the other hand, lagged value of the number of arrivals, the number of hotels and dummy variables for airport entrance and the coastal situation are proved to be explanatory variables of tourism demand in China by Atherinos (nd).

Stanciulescu and Titan (2002) provided a study of inbound tourism development in the countries of the Black Sea area and showed that there is a strong correlation between sustainable development of a country's economy and tourism development. Determinants of tourism demand in Turkey are pointed out by Kerimoglu and Ciraci (nd). They are entertainment facilities, recreation and sports activities, shopping centers and art activities.

Katafono and Gounder (2004) concluded that the major determinants of international tourism demand for Fiji are income of the major trading partners (with the elasticity greater than one), price level (which unexpectedly had

positive effect, and was explained by high wealth of visitors who are not deterred by increasing in the long-run prices) and coups. However, weather (estimated by occurrence of cyclones) does not have a significant impact on the demand for tourism.

Ledesma-Rodriguez et al. (1999) showed the substantial influence of exchange rate, cost of trip, endogenous lagged variable, level of infrastructure and promotion expenditure on the tourists' activities in Tenerife.

Also, the elasticity of demand for inbound tourism with respect to different variables has been studied, and the results obtained seem to contradict each other: while some studies show that the inbound tourism demand is price inelastic, the others suggest that it is highly elastic. This contradiction is not surprising since tourism services are heterogeneous all over the world, and the determinants of the demand for tourism may be country-specific. While Lim and McAleer (2003) said that Australian inbound tourism demand is income inelastic, Ledesma-Rodriguez et al. (1999) found that 'the number of visitors lodged in Tenerife exhibits a high elasticity with respect to the real income per capita, showing the luxurious nature of tourism' Tenerife. So, there might exist two different categories of tourism – 'normal' and 'luxury' as defined in Microeconomics by values of income elasticity.

According to Durbarry's (2000) estimations, the effective price elasticity of tourism demand for the UK is approximately unitary. Basing on this fact, he made a policy recommendation to lower the value added tax, which would spur the tourists to visit the UK on condition that the reduction of VAT will result in the drop of tourism services' prices. He also found that 'prices in competing destinations are of around unitary price elasticity, which implies that there is a need to monitor price changes in competing destinations, as a change in relative prices would result in a change in competitiveness among destinations'.

Another determinant of inbound tourism demand, maybe the newest one, is advertisement in the Internet. Investigation of Heung (2003) indicates that 'approximately 30 percent of travelers use the Internet for reservation or purchase of any travel products or services. Western countries with higher education levels and higher annual household income are more likely to use the Internet for online purchase of travel products'. The idea is also supported by the study of Rossello (2005) who used data for visitors of the Balearic Islands. He concluded that tourists search the information about the destination place before deciding to visit it. This fact should be taken into account by the Ukrainian travel agencies who seek for the tourists to come to the country. They must create and promote corporate web-sites and provide advertisement through the web-based services used by travelers.

Another important issue widely discussed in the literature is the role of the government in tourism industry development. Australian Productivity Commission (2005) claimed that the government should assist tourism industry in all aspects (marketing and promotion, transport infrastructure, tariffs on tourism inputs, R&D tax concession). Muristaja (2003) concluded that 'the best destination development plans can be worked out in cooperation with private, public and non-profit sector; organizing and coordination are the activities with the key meaning'. Besides, she explained that three main sectors must be developed in order to increase tourism demand for Parnu County (Estonia): training and improvement of hospitality, marketing and organizing research for development. Also, Halicioglu (2004) underlined the significant role of the Turkish state in guaranteeing a stable tourism demand and providing a sustainable tourism policy; he named the duties of the government which intends to increase the tourism attractiveness of the country: it 'should provide more business incentives and develop economic policy tools so that they would stimulate continuous private investment in the sector, better education for the tourism work force, and marketing and promotion of cultural and natural resources'.

Four major steps of improving the position of the Croatian spas on the world tourism services markets are enumerated by Bunja (2003): ‘modern management embraced in tourism businesses, creation of destination identity and image of Croatia, investment, especially in franchising, and improvements in the transport infrastructure’.

Further, the government which decides to participate in the attraction of tourists to the country may choose one of the two strategies, as Hwang (2005) describes. According to the first strategy, the tourism sector should be developed in all possible directions in order to satisfy requirements of all visitors, whatever wealth, preferences and goals of arrival they have. However, Bhutan and Botswana stick to the other, the so called "high value, low volume", tourism strategy: they intentionally attract only rich visitors (the number of which is not that high), who are ready to pay much for services provided. This strategy has a number of advantages: profits attained by the sector are high due to greater than average prices, low number of tourists allows serving each of them perfectly, while not many human resources are participated in the sector; besides, this strategy allows to avoid some disadvantages of tourism industry, such as overcrowding and nature exhaust. However, despite advantages of the latter strategy, it does not seem very likely to be efficient in Ukraine unless there exist some exclusive allures to tourists, for instance unusual wild nature spots or possibilities to participate in extraordinary activities.

Surprisingly, there are no studies of Ukrainian inbound tourism demand available in the economic literature. Although many economists and businessmen are conscious about the necessity to improve the existing level of tourism services, they blame the government for the lack of opportune conditions. The first and main task of the government in this field is creating a strong, simple and transparent legal system. In spite of many debates raised during the last years, Ukraine still has to adjust its laws to the world and

UNWTO (World Tourism Organization) requirements. As is indicated on the web-site of Borders of Ukraine(nd), there are no laws to enumerate clearly the rights and responsibilities of tourists, and those laws which do exist are not applicable to visitors from the former soviet countries.

Analysis of the tourism market is provided only in those Ukrainian regions where the industry is more or less developed. For instance, in Odessa region this analysis is made on the yearly basis. The 2004 results were optimistic: the number of visitors and their spending increased. On the web-site of the administration of external economic relations, European integration and tourism (2005) this increase is explained by augmented investments in the sector, though no investigation was conducted to support this claim. In other Ukrainian regions, for instance Chernivtsi region, many reforms are to be done before tourists start to arrive, but the focus is again on the supply rather than demand side of business: what costs the tourism development will cause and what benefits it will bring (the web-site of the project 'Economic development of towns', 2005).

The group of agents most interested in the Ukrainian demand for tourism, its determinants and ways to improve are the travel agencies. As Bazhal (2004) indicates, few Ukrainian travel agencies specialize in inbound tourism. These agencies study the demand carefully and enumerate the main reasons for foreign tourists to come to Ukraine: low prices, hospitality of local people and unusual surrounding. Though empirically and intuitively these reasons might be indeed the determinants of inbound tourism, other determinants of changes in tourism arrivals to Ukraine should also be taken into account, such as transportations costs in terms of money and time, political stability in the country, information about tourism opportunities in Ukraine. Anyway, it is better to have some empirical analysis before of tourism demand before implementing some policies to support development of the sector. Hence, deep survey of the inbound demand should be provided and prove or refute all

the assumptions made by state and private agents related to the tourism industry.

The reviewed literature describes the following estimation techniques used in studies of inbound tourism. Most commonly, the log-linear model is used, with three to five independent variables and one to three dummies. However, the authors also use different techniques to describe the process properly and to give the correct elasticities of demand with respect to the regressors.

An extensive study of models used to explain the inbound tourism demand was conducted by Durbarry (2000). He concluded that single equation models were the most common ones, and enumerated the works by Archer (1970), Johnson and Ashworth (1990), Sinclair (1991) as an example. Besides, Durbarry notes that usually time series analysis is applied to the study, though pooled and cross-sectional data is also used. The most widely exploited explanatory variables in the models of tourism demand are income per capita (in the tourists' countries), tourism prices in the destination and its substitutes, transport costs, exchange rates, advertising expenditure, and dummy variables for one-off events.

Halicioglu (2004) modeled inbound tourism demand for Turkey by the log-linear model (with constant term), in which the regressors were world income, relative prices and transportation costs. She used also 'a recent single cointegration technique, ARDL'. The tourism demand was measured by the number of visitors' arrivals. As the results suggest, the most significant factor in determining the level of tourist arrivals in Turkey is real world income level, which is followed by the relative prices and transportation cost.

However, Durbarry comments that 'single model specifications have been subject to some criticisms, such as being somewhat ad hoc and lacking an explicit theoretical basis' (Sinclair, 1998; Sinclair and Stabler, 1997). Most studies did not use dynamic models which take into account the existence of

intertemporal relationship between tourism demand and prices (but for Syriopoulos, 1995). Besides, only a few studies by Kulendran (1996), Kim and Song (1998), Vogt and Wittayakorn (1998) made stationarity tests prior to carrying out regressions. However, if the relationship is nonstationary, then the results will be spurious and estimates will be biased. In this case, cointegration and error correction models may be applied.

One of the studies which used cointegration and error correction approach was undertaken by Katafono and Gounder (2004) to model the demand for tourism in Fiji. Visitors' arrivals were aimed to be explained by the trade-weighted real gross domestic product of Fiji's major trading partners and the real effective exchange rate, as well as two dummies for the weather conditions and the political stability inside the country. Katafono and Gounder used an error correction model (ECM) and explained the appropriateness of the cointegration analysis by the fact that the variables in consideration were I(1). They showed it was statistically acceptable to simplify the model to a first order VAR. The short-run elasticities were obtained from ECM, which enabled them to explain how adjustments take place among the various variables and to 'restore long-run equilibrium, in response to short-term disturbances in the demand for tourism in Fiji'. Besides, they provided some tests for normality, heteroskedasticity, specification error and stability, which suggested the model was well specified.

Alternative approach to model tourism demand, as Durbarry mentions, is the so called Almost Ideal Demand System (AIDS), introduced by Deaton and Muelbauer's (1980). It incorporates both the axioms of consumer choice and the stage budgeting process, and is used to explain the allocation of tourism expenditure among different countries by White (1982), O'Hahan and Harrison (1984), Syriopolos and Sinclair (1994), Papatheodorou (1999), and De Mello et al. (1999). Recently, Mangion at al. (2004) used AIDS model to examine the price competitiveness of tourism destinations Malta, Spain and

Cyprus, and calculated the own price, cross price and income elastisities of tourism demand.

To avoid disadvantages of both single equation model and AIDS, Durbarry (2000) applied a gravity-type model for the UK tourism demand study. He explained that 'gravity-type models are applied in physics and have achieved increasing recognition in the analysis of economic phenomena related to the flow of goods and/or services (Shi, et al., 1997; van Beers and van den Bergh, 1997; Lowe and Sen, 1996; Helliwel, 1996; Frankel, Stein and Wei, 1995). This type of model has yet to be applied, with a proper theoretical base to tourism demand. Although some studies may claim to have estimated a variant of the gravity model, omitted variables from the model and incorrect estimation technique bias the results'.

Chapter 4

SPECIFICATION OF THE MODEL

Trade flows of goods and services are widely described in economics with the help of gravity models. These models underline importance of distance between trading countries and their economies' sizes for the amount of goods and services traded. Besides, they allow including other, country-specific factors. As a result, specified models explain trade flows in the best possible way.

Gravity models originated from physics, where gravitation is a force which increases with mass of the two objects and decreases with the distance between them. In economics, the gravity-based models were first used in 1962 by Jan Timbergen to estimate the international trade flows. Since then, the gravity-type models with different improvements and extensions were widely used in economics.

As Durbarry (2000) points out, the commonly used form of the gravity model applied in international trade theory is

$$PX_{ij} = b_0 \left(Y_i\right)^{b_1} \left(Y_j\right)^{b_2} \left(D_{ij}\right)^{b_3} \ f\left(A_{ij}\right) u_{ij} ,$$

where PX_{ij} is the value of the trade flow from country *i* to country *j*, $Y_i \left(Y_j\right)$ is the nominal value of GDP in country *i* (*j*), D_{ij} is the distance between the two countries, $f\left(A_{ij}\right)$ is a function containing a vector of additional variables either aiding or resisting the flow between *i* and *j*, and u_{ij} is a log-normally distributed error term.

As Durbarry describes, Bergstrand (1987) derived a generalized gravity equation, from which the conventional form of gravity equation can be derived 'by assuming perfect substitutability of goods international in production and consumption, perfect commodity arbitrage, zero tariffs, and zero transport costs.' These assumptions are rather strong and have been criticized by Issard (1977), Kravis and Lipsey (1984).

The general specification of the gravity model is given by Matyas (1998):

$$Y_{ijt} = a_i + g_j + l_t + b_1 X_{ijt} + b_2 X_{it}^{*} + b_3 X_{jt}^{**} + ... + u_{ijt} ,$$

where

Y_{ijt} is the dependent variable (e.g. number of tourists coming from country i to country j at time t);

X_{ijt} are explanatory variables varying in all three dimensions *i*, *j* and *t* (e.g. exchange rate);

X_{it}^{*} are explanatory variables varying in dimensions *i* and *t* (characteristics of the sending country *i*, e.g. GDP per capita);

X_{jt}^{**} are explanatory variables with variation in dimensions *j* and *t* (characteristics of the receiving country *j*);

a_i is the sending country effect which does not change with time and is the same for any receiving country,

g_j is the receiving country effect,

l_t is the time effect,

u_{ijt} is a white noise disturbance term.

As Matyas (1998) explains, 'when estimating such a model, the specific effects (α, γ and λ) can be treated as random variables (error components approach) or fixed parameters (fixed effect approach)'.

Using the theoretical foundation of Bergstrand's model, Durbarry (2000) showed that gravity model is appropriate to estimate inbound tourism demand in a particular country. This model, as Durbarry suggests, allows taking into account some peculiarities of tourism services. They are: (1) tourism destinations are not perfect substitutes of each other, and (2) travel activity involves, except direct expenditures on living, eating and entertaining, transportation and currency exchange costs.

Following the authors of reviewed papers, I use the gravity model to estimate inbound tourism demand in Ukraine. The following modifications are made to it. Except for "traditional" variables present in the model (sizes of trading countries measured by GDP per capita and distance between the countries), I include some tourism-specific explanatory variables. By this I aim to take into

account factors determining tourism demand and, thus, describe tourists' flows to Ukraine more precisely. Theoretical reasons of including every variable, as well as predicted signs of estimated coefficients follow specification of the model.

In microeconomics, main factors determining demand for goods or services are their price and quality, as well as existence and characteristics (price, quality, availability) of their substitutes. These factors are included into the model, directly or via some instruments. The model takes into account visa requirements - a significant obstacle for consumption of tourism services by foreigners. Heterogeneity of consumers originating from their nationality is also taken into consideration by including country-specific dummies.

The specification of the gravity model describing inbound tourism demand in Ukraine is the following:

$$\ln TA_{UA\,it} = a_0 + a_1 \ln GDP_{it} + a_2 \ln DIST_{UA\,i} + a_3 \ln TOUR_{it} + a_4 \ln VISA_{it} + a_5 \ln P_{UA\,it} + b_0 YEAR_0 + b_1 YEAR_1 + b_2 YEAR_2 + b_3 YEAR_3 + g_1 EU + g_2 ERP + g_3 CIS + g_4 AMER + g_5 ME + g_6 ASIA + u_{UA\,it},$$

where

$TA_{UA\,it}$ is the number of tourists' arrivals in Ukraine (UA) from a sending country i in year t;

GDP_{it} is GDP per capita in a sending country i in year t;

$DIST_{UA\,i}$ is the distance between Ukraine and a sending country i;

$TOUR_{it}$ is the number of total tourists' departures from a sending country i in year t;

$VISA_{it}$ is visa requirement for tourists from sending country *i* coming to Ukraine in year *t*. It is equal to 1 if there was visa regime between the countries, zero otherwise;

$P_{UA\,it}$ is relative price level in a sending country *i* compared to Ukraine. It is measured with the help of purchasing power parity index (see Appendix 1 for details);

$YEAR_0$,..., $YEAR_3$ are dummies for years 2000-2003. These dummies capture common period-specific factors, not picked up by other explanatory variables, and compare each of 2000-2003 years to the base year 1999;

EU is a dummy for EU-15 countries (sample under study, 1999-2003, is before the last enlargement of EU in 2004),

ERP is a dummy for the rest of the Europe,

CIS is a dummy for Commonwealth of Independent States countries,

ME is a dummy for Middle East countries,

ASIA is a dummy for Eastern Asia countries,

AMER is a dummy for North and South America countries; all country dummies are equal to 1 if a country is within the area and zero otherwise.

$u_{UA\,it}$ is the white noise disturbance term.

Hypotheses to check are the following:

- Coefficients a_1, a_3, a_5 corresponding to variables *ln GDP*, *ln TOUR* and *ln P* are expected to be positive: (1) higher GDP per capita increases consumption of luxury services, one of which is outbound tourism; (2)

greater number of total tourists' departures expands number of visits to Ukraine, holding share of Ukraine in world tourism is not declining[1]; (3) higher level of prices in a sending country *i* compared to price level in Ukraine allows visitors buying more goods and services in Ukraine than in their home country for the same amount of money, which invigorates tourists to visit Ukraine.

- Coefficients a_2 and a_4 corresponding to variables *ln DIST* and *ln VISA* are expected to be negative, since both of these variables introduce obstacles to tourists by imposing additional costs on the trip.

- Coefficients $b_0, ..., b_3$ reflect changes in demand for tourism services due to changes in tourism industry since the base year 1999. The signs of parameters are ambiguous because both positive and negative shocks took place during 2000-2003.

- $g_1,...,g_6$ reflect heterogeneity of tourists coming to Ukraine. They show willingness or aversion of residents of particular regions to visit our country. I suppose that people from CIS and European countries should be interested in Ukraine more than others due to historical and cultural relations between our nations. This assumes positive signs of $g_1,...,g_3$. Countries of North and South America have relatively large Ukrainian diaspora, while Asian countries send young people to study in Ukrainian universities. That is why $g_4 > 0$ and $g_6 > 0$ is expected. The sing of g_5 is ambiguous.

[1] According to World Bank World Development Indicators 2005, Ukrainian share of world tourism measured by number of arrivals increased constantly during 1999-2004, from 0.73% in 1999 to 1.47% in 2001 and 2.47% in 2003.

Chapter 5

DATA DESCRIPTION

AND ESTIMATION OF THE MODEL

The sample under study is unbalanced panel. It contains 375 observations of tourists' arrivals at national borders of Ukraine from 75 countries during 1999-2003. The chosen sending countries are the largest in terms of number of visitors of Ukraine, so that jointly they count for more than 98% of total foreigners' demand for Ukrainian tourism services.

Summary statistics for data used are provided in Table 1, data sources and description are given in Table 2 and list of the sending countries included in the sample is given in Table 3 in Appendix 2.

ESTIMATION PROCEDURE

Assuming well-behaved residuals, random effect estimation technique is preferred to fixed effect and pooled regression. The coefficients estimated by fixed effect and random effect are provided in Table 4, specification tests – in Table 5 in Appendix 3.

However, assumption of white noise residuals is frequently violated in case of panel data. As Acosta and Coppedge (2001) describe, three methodological problems arise when cross-country pooled time series data are used. The first potential problem is panel heteroscedasticity, i.e. 'the error processes may differ from country to country' (Harrinvirta and Mattila, 2001; Beck and Katz, 1995). The second problem is contemporaneous correlation of the error terms, i.e. 'errors in one country at a specific time point might be correlated with errors in another country at the same time point' (Harrinvirta and Mattila, 2001; Beck

and Katz, 1995). The third potential problem is serial autocorrelation within countries, as exists in any time series.

To check whether the data for tourists' arrivals in Ukraine follows one of described problem, the following methods were used. Random effect model was corrected to allow for AR(1) disturbances. It did not give strong evidence of autocorrelated residuals (see Table 4 in Appendix 3). Correlation coefficient $r = .104$ implies Durbin-Watson d statistic $d = 2(1 - r) = 2(1 - .104) = 1.792$ belongs to ambiguity interval[2], so we can neither reject nor accept hypothesis of no autocorrelation. However, Wooldridge test for autocorrelation in panel data supported assumption of autocorrelated residuals (see Table 5 in Appendix 3). Assumption of homoscedastic residuals was rejected by modified Wald test – see Table 5 in Appendix 3.

Alternative to weighting the data method of dealing with heteroscedasticity is adjusting the standard errors. Beck and Katz (1995) named this approach 'ordinary least squares (OLS), or Praise-Winsten, regression with panel-corrected standard errors (PCSE)'. This method allows for both autocorrelation and heteroscedasticity and accommodates several types of within-panel and across-panel disturbance structures. As Worrall and Pratt (2004) describe, 'PCSE inflate standard errors in light of the panel structure of the data. PCSE approach leaves the data in their original form and so is desirable for those who do not wish to engage in empirical weighting of the data. Some regression routines in statistics packages (e.g., STATA) allow weighting the data by the square root of a specified variable as well as opting for the PCSE approach. This means that autocorrelation and heteroskedasticity remaining after weighting can be “controlled” for with panel corrected standard errors.'

[2] $(d_{low}, d_{up}) = (1.601, 1.931)$ for $k=15$, $N \geq 200$.

Since autoregression is highly probable in sample under study, I used options 'correlation(ar1)' and 'correlation(psar1)' in PCSE estimation of the model. The first option specifies that there is first-order autocorrelation within panel and that coefficient of AR(1) process is the same for all panels; the second option allows for different coefficients of AR(1) process for each panel. Options for heteroscedasticity are not specified since the disturbances are assumed to be heteroskedastic (each panel has its own variance) and contemporaneously correlated across the panels (each pair of panels has their own covariance) by default. The results of two estimations of the model by PCSE technique are given in Table 6, Appendix 3.

ESTIMATION RESULTS

As Table 6 suggests, estimates of parameters of the model given by PCSE regressions with two different disturbance structures do not differ substantially neither in value nor in significance. However, estimates of autocorrelation coefficients (rhos) are significantly different from each other, so assumption of the same correlation of AR(1) process is incorrect, and OLS estimation with PCSE allowing for different autocorrelation coefficients for different panels (column (2) of Table 6) fits the data better than the others. This model explains 94.2% of variation in the explanatory variable (R^2 = .942).

According to the estimation, number of foreign tourists coming to Ukraine depends positively on their wealth and total number of departures, and negatively - on distance to Ukraine and necessity to get visa. These results correspond to theoretical predictions.

Income elasticity of inbound tourism demand in Ukraine is estimated by $a_1 = .313$: one percent increase of GDP per capita in sending countries increases the number of tourists' arrivals in Ukraine by .3%. The fact that a_1 is positive suggests that Ukrainian tourism services are not inferior – richer countries send more visitors than poorer ones. Inbound tourism demand in

Ukraine is relatively inelastic (a_1 is close to zero); this makes tourism services in Ukraine more 'necessities' than 'luxury services'.

Coefficient a_3 suggests that when people start to travel more, they also visit Ukraine more: one percent raise in the total number of tourists' departures increases tourists' arrivals in Ukraine by $a_3 = .68\%$.

Increase in distance from a sending county to Ukraine by 1% lowers the number of visitors from that country by 1.8%, while existence of visa requirement lowers the number of coming tourists by 57.7%. The last parameter can be interpreted in two ways:

- On the one hand, abolishment of visa requirement for citizens of a sending country *i* would increase number of tourists coming from that country by 57.7%. In 2003, Ukraine was visited by 720 thousands of tourists from countries with visa regime with Ukraine. If visas were abolished for them, the number of arrivals would increase by approximately 420 thousand.

- On the other hand, $a_4 = -.577$ means that introduction of visa requirement for tourists from countries with no current visa regime would decrease number of tourists' arrivals from those countries by 57.7%. In terms of year 2003, when 11.5 ml of visitors came from countries with no visa regime with Ukraine, introduction of visa for all of them would cause 57.7% or 6.6 ml decline of arrivals.

Parameter of ln P variable, a_5, turned out to be insignificant, suggesting that relative prices in Ukraine compared to prices in countries of origin do not alter tourists' decisions. Possible explanation of this insignificance is that when a tourist makes decision to go for an overseas trip, he compares price levels between possible destination countries rather than between them and his home country.

Estimation results also prompt that there are region-specific effects for tourists' arrivals from two groups of countries – EU15 and CIS. Negative parameter of EU15 countries $g_1 = -1.61$ means that, holding other things constant, citizens of EU15 countries are reluctant to visit Ukraine compared to the others[3]. On average, EU15 countries send 161% less tourists to Ukraine than equivalent in all other aspects countries from any other part of the world. This aversion possibly comes from comparison of Ukrainian resorts to European ones: they are less comfortable and various, with comparatively alien environment and society.

On the contrary, inhabitants of CIS countries are more willing than the others to come to Ukraine. $g_3 = 2.37$ means that *ceteris paribus* CIS countries send 237% more tourists to Ukraine than other countries do. Wide-spread Russian language, existence of many relatives and acquaintances among Ukrainians, traditional perception of the Crimean peninsula and the Carpathian Mountains as superior places to spend a vacation are the most likely explanations of positive preferences of CIS citizens to Ukrainian resorts.

Furthermore, the model estimated significant changes captured by years' dummies for 2001 and 2002 compared to the base 1999 year: $b_1 = -.26, b_2 = -.29$. Both years were less favorable for tourism than 1999, decreasing the number of tourists' arrivals on average by 26% and 29% correspondingly. This was the result of world-wide demand shocks rather than individual Ukrainian peculiarities; as WTO (2002) gives it, the following factors adversely affected international tourism in 2001-2002: economic slow-down and uncertainties (stocks sliding, decrease in consumer confidence, slight increase in unemployment); 11th September terrorist attacks and ensuing military action; floods in Central Europe (which also had significant negative consequences in Ukraine in terms of buildings destruction and human victims).

[3] Here 'others' means 'whole population of the Earth except residents of EU15 and CIS countries'.

Chapter 6

POLICY RECOMMENDATIONS

The results of this study suggest several means for the government to increase the number of foreign tourists coming to Ukraine.

The most important and the easiest to implement method to allure tourists to Ukraine is abolishment of visa requirements. This was in fact done in 2005 for EU25 countries, the US, Canada, Liechtenstein, Switzerland and Japan[4]. As a result, the number of arrivals from those countries increased by two to 2.5 times (Kontrakty, 2005) which gives the growth rate of 100-150% - substantially higher than this paper predicts (approximately 58%). This happened because new factors arose during 2004-2005. They were not present in the sample under study, so could not be included in estimation. The most sizable of these factors were the Orange Revolution in Fall, 2004 and Eurovision song contest in May, 2005. The main contribution of these events into increase of inbound tourism demand in Ukraine was world-wide advertisement of a country: while many foreigners were indifferent to our country before, they became curious about Ukraine afterwards, and preferred trip to Ukraine to travel around other European countries.

Another key result of estimation provided in Chapter 5 is aversion of EU15 citizens to visit Ukraine. This becomes an especially vital issue in the light of the fact that Europeans are active travelers: Germany, UK and Italy are among the top-ten traveling countries of the world (in absolute terms). As long as Europeans do not change their attitudes towards Ukrainian tourism activities, the country will lose considerable revenues it could get otherwise. In order to improve attitudes of Europeans towards tourism opportunity in Ukraine, two-fold activities may be conducted: (1) development of tourism infrastructure in

[4] In 2003 number of tourists coming from these countries to Ukraine was nearly 3 ml people, or approximately 25% of foreign visitors.

the country, provision of high-quality services to tourists at comparatively low price, and (2) extensive advertisement of Ukrainian recreational facilities in the European countries via mass-media and participation in international tourism exhibitions. The government is unlikely to be efficient in direct involvement in the first activity: state enterprises are usually less effective than privately-owned ones, subsidies and other preferences from the government are likely to create distortions and stimulate bribery rather than to improve the situation in the sector. However, indirect involvement of the government in terms of creation of strict simple legislative and regulatory basis is highly desirable.

Conversely, participation of the government in the second mentioned activity is fairly advantageous. Private companies are rarely involved in wide international advertisement campaigns because they are relatively expensive and do not increase profits of the companies directly. The government has enough funds to finance promotion actions of the country and is long-living enough to wait for deferred returns in the form of boom in tourism sectors and increased tax revenues.

At the same time, it would be a mistake to orientate Ukrainian tourism sector exclusively on Western tourists. CIS countries constitute the major share of total Ukrainian inbound tourism demand[5], and this study suggests that CIS countries send approximately two times more tourists to Ukraine than identical non-CIS countries (other things equal). Since economic relationships with CIS countries historically involve more political issues than those with Western countries, it is vital for Ukrainian authorities to conduct delicate policy which would not diminish positive attitudes of citizens of those countries towards Ukraine as a whole and its tourists' facilities in particular.

Other findings of this paper are more interesting to scholars than to policymakers: though distance from the country of origin and number of

[5] According to the State Committee of Tourism and Health Resorts, in 2004 joint share of tourists from Russia, Moldova and Belarus was 68% of total tourists' arrivals in Ukraine.

tourists' departures are significant determinants of inbound tourism demand in Ukraine, they can hardly be influenced by any policy actions of a single country.

Chapter 7

CONCLUSIONS

This paper aimed to verify determinants of inbound tourism demand in Ukraine. For this purpose, the gravity model with modification was introduced and OLS with PCSE was used as the most appropriate estimation technique.

The main findings of the paper are that number of foreign tourists' arrivals in Ukraine depends positively on the wealth of those tourists and total number of their departures, suggesting that Ukrainian tourism services are 'normal' (as opposed to inferior) services with low income elasticity. The main obstacles of inbound tourism verified by this study are distance from the country of origin to Ukraine and visa requirement for tourists.

Policy implications proposed are straight forward: visa requirements as the easiest factor to influence should be abolished, for world's greatest traveling countries foremost (Germany, UK, Italy, the US and Japan). This recommendation is post-factum, however, since visa abrogation was made in 2005 for EU, the US and some other countries, which substantially increased number of visitors from those countries.

The findings of this paper could be extended in a number of directions. The first of them is further analysis of inbound tourism demand in Ukraine; quality of tourism services and competitors of Ukraine could be directly included in the analysis. The second direction of extension of this paper is analysis of negative consequences of inbound tourism demand growth. Since redundant expansion of tourism industry has several disadvantages (overcrowding,

seasonal fluctuations of income, excessive dependence of the economy of external factors), it is important to estimate the limit of profitable extension of tourism sector in Ukraine and prevent harmful outcomes of infinite growth of tourists' arrivals in the country.

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Appendix 1

The relative price level $P_{UA\,it}$ is calculated as follows:

$$P_{UA\,it} = \frac{PPP_{it}}{PPP_{UAt}} \cdot e_{UAH,LCUt} = \frac{PPP_{it}}{PPP_{UAt}} \cdot e_{UAH,\$t} \cdot e_{\$,LCUt} =$$

$$\frac{PPP_{it}}{PPP_{UAt}} \cdot \frac{e_{UAH,\$t}}{e_{LCU,\$t}} = \frac{PPP_{it}}{e_{LCU,\$t}} \cdot \frac{e_{UAH,\$t}}{PPP_{UAt}},$$

where

PPP_{it} is the purchasing power parity conversion factor for country *i* in year *t* (as World Bank (2005) gives it, this is the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as a U.S. dollar would buy in the United States);

PPP_{UAt} is the purchasing power parity conversion factor for Ukraine in year *t*;

$e_{UAH,LCUt}$ is Ukrainian hryvnia to currency unit of country *i* average exchange rate in year *t* (LCU stands for local currency unit);

$e_{UAH,\$t}$ is hryvnia to U.S. dollar average exchange rate in year *t*, calculated as an annual average based on monthly averages (World Bank, 2005),

$e_{\$,LCUt}$ is U.S. dollar to currency unit of country *i* average exchange rate in year *t*, calculated as an annual average based on monthly averages.

As follows from definition of PPP, PPP_{it} compares price level in country *i* to price level in the United States, while PPP_{UAt} compares price levels in Ukraine and the United States. The ratio of the two gives price level in a

sending country *i* relative to price level in Ukraine. To make them comparable, I multiply the ratio by official exchange rate between the two currencies, and then show it is equal to the ratio of PPP conversion factor of country *i* to exchange rate of its local currency to U.S. dollar $\frac{PPP_{it}}{e_{LCU,\$t}}$, divided by the ratio of PPP conversion factor of Ukraine to exchange rate of hryvnia to U.S. dollar $\frac{PPP_{UAt}}{e_{UAH,\$t}}$. These ratios are given in World Development Indicators (World Bank, 2005).

Appendix 2

Table 1. Summary statistics of the sample.

Variable	# of obs	Mean	Std. Dev.	Min	Max
ln TA	375	7.535679	3.117938	0	15.4584
ln GDP	375	8.216337	1.432197	4.9488	10.7041
ln DIST	375	8.159128	1.032278	5.9901	9.7576
ln TOUR	351	14.55963	1.781502	9.472705	18.15149
ln P	373	1.027372	.5620987	-.0407781	2.210016
VISA	375	.8426667	.3646012	0	1
EU	375	.16	.3670958	0	1
ERP	375	.1333333	.3403888	0	1
CIS	375	.12	.3253957	0	1
AMER	375	.2533333	.4355012	0	1
ME	375	.0666667	.2497771	0	1
ASIA	375	.12	.3253957	0	1
YEAR0	375	.2	.4005344	0	1
YEAR1	375	.2	.4005344	0	1
YEAR2	375	.2	.4005344	0	1
YEAR3	375	.2	.4005344	0	1

Table 2. Data sources and description.

Variable	Description	Source
ln TA	Number of tourists' arrivals at national borders of Ukraine	UNWTO – World Tourism Organization world-tourism.org
ln GDP	Natural logarithm of GDP per capita	International Financial Statistics of International Monetary Fund http://ifs.apdi.net/imf/logon.aspx
ln DIST	Natural logarithm of distance between capitals of sending countries and Kyiv	CEPII – Centre d'Etudes Prospectives et d'Informations Internationales http://www.cepii.fr/anglaisgraph/bdd/distances.htm
ln TOUR	Natural logarithm of number of tourists' departures from sending countries	World Bank 'World Development Indicators 2005'
ln P	Ratio of purchasing power parity conversion factor (PPP) divided by official exchange rate of a sending country to PPP divided by official exchange rate of Ukraine	World Bank 'World Development Indicators 2005'
VISA	Dummy for existence of visa requirement for residence of a sending country to enter Ukraine. Equal to 1 if	Ministry of Foreign Affairs of Ukraine www.mfa.gov.ua

Table 3. List of sending countries included in the sample, ordered by the number of arrivals.

Russian Fed.	Georgia	Kyrgyzstan	Morocco	Ecuador
Rep Moldova	France	Syria	Brazil	Venezuela
Belorus	Italy	Belgium	Argentina	Sierra leone
Hungary	Armenia	India	Philippines	Bolivia
Poland	Azerbaijan	Australia	Mexico	Colombia
Germany	Kazakhstan	Iran	Sri lanka	Nepal
Slovakia	Austria	Jordan	Algeria	Costa rica
Usa	Canada	Turkmenistan	New Zealand	Uruguay
Romania	Netherlands	Japan	Thailand	El salvador
Israel	Estonia	Finland	Peru	HongKong, China
Czech rep	China	Slovenia	Mauritius	Uganda
Uk	Switzerland	Tunisia	Singapore	Paraguay
Lithuania	Denmark	Egypt	Panama	Dominican Rep.
Latvia	Sweden	South Africa	Chile	Guatemala
Turkey	Spain	Ireland	Nicaragua	Fiji

Appendix 3

Table 4. Baseline models: Fixed effect and random effect estimation with white noise disturbances; random effect estimation with AR(1) disturbances.

Regressor	FE	RE	RE with AR(1)
	(1)	(2)	(3)
ln GDP	.486 (.538)	.410 (.242)	.403 (.233)
ln DIST	dropped	-1.91* (.389)	-1.88* (.368)
ln TOUR	.195 (.276)	.597* (.126)	.613* (.121)
ln P	-.004 (.551)	-.249 (.396)	-.292 (.395)
VISA	-.804 (.539)	-.986* (.480)	-.990* (.482)
EU	dropped	-1.34 (.865)	-1.31 (.820)
ERP	dropped	-.478 (.961)	-.460 (.908)
CIS	dropped	2.23* (.986)	2.24* (.944)
AMER	dropped	.267 (.562)	.246 (.530)
ME	dropped	.487 (.882)	.508 (.835)
ASIA	dropped	.066 (.633)	.040 (.597)
YEAR0	.208 (.116)	.167 (.114)	.164 (.112)
YEAR1	-.140** (.122)	-.190 (.117)	-.195 (.120)
YEAR2	-.163 (.135)	-.236* (.122)	-.243* (.125)
YEAR3	.210 (.150)	.164 (.128)	.172 (.132)
intercept	1.34 (4.34)	12.1* (3.83)	11.7* (3.63)
R-squared	.217	.798	.799
rho_ar	---	---	.104

Standard deviations are given in parenthesis.
*p < 0.05.

Table 5. Specification tests.

Test	H0	Statistic	p-value of statistic	STATA command
Hausman test - fixed effect versus random effect	Non-systematic difference in coefficients (random effect)	chi2(8) = 3.76	Prob>chi2 = 0.8784	hettest
Breusch-Pagan LM test – random effect versus pooled OLS	No random effect	chi2(1) = 371.58	Prob > chi2 = 0.0000	xttest0
Modified Wald test for groupwise heteroscedasticity	No heteroscedasticity	chi2(74) = 2.3e+06	Prob > chi2 = 0.0000	xttest3 after xtreg …, fe

Table 6. OLS models with panel-corrected standard errors (PCSE).

Regressor	PCSE, corr(ar1)	PCSE, corr(psar1)
	(1)	(2)
ln GDP	.384* (.189)	.313* (.146)
ln DIST	-1.76* (.114)	-1.86* (.366)
ln TOUR	.651* (.063)	.677* (.037)
ln P	-.464 (.356)	-.186 (.186)
VISA	-1.22* (.282)	-.577* (.165)
EU	-1.14* (.246)	-1.61* (.662)
ERP	-.415 (.279)	-.790 (.619)
CIS	2.07* (.340)	2.37* (.395)
AMER	.093 (.491)	-.315 (.172)
ME	.586 (.331)	-.064 (.277)
ASIA	-.039 (.358)	-.275 (.371)
YEAR0	.152* (.017)	.112 (.064)
YEAR1	-.213* (.031)	-.264* (.096)
YEAR2	-.266* (.047)	-.288* (.113)
YEAR3	.245* (.082)	.083 (.157)
intercept	10.7* (1.44)	11.2* (2.27)
R-squared	0.799	0.942
rho(s)	.665	.348, .998, 1, 1, .607, ..., .872