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THE GDP IMPACT ON INTERNATIONAL TOURISM DEMAND: A SLOVENIA BASED CASE

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Abstract: The paper empirically examines the relationship between Slovenian GDP and international tourism expenditures of Slovenia in the period 1994-2006. For this purpose, regression analysis in different functional forms was used to examine the impact of GDP on international tourism expenditures. The results reveal positive and strong impact of GDP on international tourism expenditure in Slovenia in the given period of time. Further, income elasticity of outbound tourism demand was calculated leading to the conclusion that travelling in foreign destinations has characteristics of a luxury good for Slovenian people.

Keywords: tourism demand, income elasticity of tourism demand, international tourism expenditures, outbound tourism.

INTRODUCTION

In the past 10 years Slovenia has successfully went out of the crisis that was characterizing Slovenian tourism in the early 90s of the previous century. Indeed, the number of tourists as well as their overnights in Slovenia has been continually growing in the last decade. However, the structure of tourists and their overnights shows that only the number of foreign tourists and their overnights has been growing the whole decade, while the number of domestic tourists as well as their overnights is unceasing in decline from 2000 to 2005, while it grew up in 2006.

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According to Statistical office of the Republic of Slovenia (SURS, 2006; SURS, 2007), there were 1.957 thousand tourists in total in 2000 in Slovenia, among them 1.090 thousand foreigners and 867 thousand domestic tourists. They created 6.719 thousand overnights in total in 2000 in Slovenia, among them 3.404 thousand overnights were created by foreign tourists and 3.315 thousand overnights were created by domestic ones. Till then to 2005 the structure between foreign and domestic tourists had changed in the benefit of the first. In 2006 there was a slight improvement in the number of domestic tourists which rose to 867 thousand as well as the number of their overnights rose to 3.231 thousands.

It was already found that domestic tourism expenditures competes relatively strongly, but not exclusively, with international tourism expenditures (Crouch et al., 2007, 255). Thus, the reason for a decline of domestic tourists and their overnights can be found in orientation of Slovenian tourists towards foreign destinations. Accordingly, international tourism expenditures of Slovenia are continuously rising. Outbound tourism demand respectively international tourism demand or expenditures are defined in our paper as expenditures for tourism import respectively outbound tourism. The reason for the phenomenon of rising international tourism expenditures in the case of Slovenia can be found in higher purchasing power of Slovenian people, usually defined by gross domestic product (GDP) per capita, more competitive foreign destinations with well-targeted marketing and, of course, development of low-cost airlines that have made travelling more available. However, international tourism expenditures of Slovenia form a negligible part of world and even European tourism expenditures since they form just around 0,2% of world tourism expenditures.

The aim of this paper is in attempt to estimate the strength of the impact of GDP on international tourism expenditures in the case of Slovenia. In this manner we could found how strong are the impacts of economic development in Slovenia on international tourism expenditures and how strong the impacts of other factors not taken in the study might be. The implications of the findings will be discussed in relation to losses of domestic tourism in Slovenia. The study also examines international tourism expenditures in constant prices in the period between 1994 and 2006. Moreover, income elasticity of tourism demand, which measures the responsiveness of outbound tourism demand to changes in income (such is GDP), is calculated and discussed in the context of international tourism expenditures of Slovenia in the given period of time.

The remainder of the paper proceeds as follows. The next chapter is devoted to a presentation of literature related to the studies of income impact on international tourism demand. The subsequent chapter introduces the research context. Following this, data sources, definitions and methodology are presented. After that the study results are shown. Finally, the paper provides the discussion and concluding remarks how GDP in Slovenia influences international tourism expenditures of Slovenian people.

1. RELATED LITERATURE

There are numerous research studies concerning the determinants of tourism expenditures. Indeed, an overview of this large body of research has been analysed and discussed in several studies, such as Crouch and Shaw (1992), Witt and Witt (1992), Crouch (1994a, 1994b, 1994c, 1994d, 1995, 1996), Lim (1999). For instance, Lim (1999) took under review 65 studies of international tourism demand that include income variable. In addition, there are still several new studies emerging recently on this body of research (for instance Smeral and Weber, 2000; Song and Witt, 2000; Song and Wong, 2003; Smeral, 2004; Mangion, Durbarry and Sinclair, 2005; Han et al., 2006). Following Crouch et al. (2007), the most commonly used method in identifying explanatory variables of tourism demand has been regression analysis, the most common model specification has been log-linear model and approach of time-series analysis. Moreover, in these studies the most frequently used explanatory variable was income. In fact, economic theory suggests that one of the major factors of tourism demand is tourist's income generated in the country of origin. According to this, all these studies have important contribution to understanding income in relation to international tourism demand.

Relation between income level and outbound tourism demand is measured by income elasticity of outbound tourism demand which varies over time. Income elasticity of tourism demand is defined as the relationship between the percentage change in quantity of tourism demand and percentage change in income (Tribe, 2005, 78). Income elasticity of tourism demand was investigated in many of the existing studies. Among them we should mention the study conducted by Smeral (2004) who carried out income elasticity of tourism demand for Slovenia in the period 1975-1999. He made a research on income elasticity of tourism demand across 25 different countries, based on the real tourism exports as the function of GDP. Income elasticity of outbound tourism demand was found to be 2,41 in Slovenia in the given period of time. Values of income elasticity of outbound tourism demand in the 25 countries ranged from 0,81 (Norway) to 9,23 (Czech Republic) in the same period in this study.

Income elasticity is one of the main outputs of tourism demand (Alegre, Pou, 2004, 139). It has been analysed across different countries lately in several studies (namely Alegre, Pou, 2004; Smeral, 2004; Veloce, 2004; De Mello, Fortuna, 2005; Han et al., 2006; Mervar, Payne, 2007). In line with the economic theory, tourism demand is less income sensitive when income increases. The law of development of tourism demand income elasticity says that income elasticity of tourism demand is falling over time as a consequence of real income increase (Planina and Mihalic, 2002, 90). It can be explained by the fact that economic development causes real income increase respectively higher purchasing power and, therefore, lowers sensitiveness of tourism demand to income changes. Additionally, Song and Witt (2000, 125) and Song and Wong (2003, 57) found out that income elasticity of international tourism demand dropped from 1970s to 1990s. They pointed out that long-haul tourism was viewed as a luxurious good because of strong budget constraints in 1970s inducing high income elasticity of tourism demand. In addition, following Socher (in Planina and Mihalic, 2002, 90), income elasticity of tourism demand even increases when tourism in no more a luxurious good and then begins to fall. In line with the theory, income elasticity

of tourism demand has a positive sign since it is not an inferior good and it falls with the rise of GDP per capita and wellbeing. In fact, income or GDP increase in the country of origins will increase the number of people travelling abroad and the level of their expenditures.

2. RESEARCH CONTEXT

The research investigates GDP impact on international tourism expenditures in the last period of time in the case of Slovenia. Therefore, our study begins with the model of tourism demand function:

$$ITE_i = f(Y_i), \quad (1)$$

where ITE_i is international tourism expenditures in year i and Y_i is GDP in year i.

The research is oriented towards to the latest period of time including years between 1994 and 2006. In this way the research tries to found the characteristics of the studied relationship in the recent time. However, following the aim of the paper, other demand factors of outbound tourism demand are not being taken under investigation. It should be mentioned that this is the limitation of our study. Based on the literature review respectively previous works and the aim of our research, the following hypothesizes is proposed:

Hypothesis: GDP has a strong and positive impact on international tourism expenditures in Slovenia.

2.1. Data sources, definitions and methods

Following to the World Tourism Organization (UNWTO, 2007), international tourism expenditures are defined as "the expenditures on tourism outside their country of residence made by visitors (same-day visitors and tourists) from a given country of origin". The definition is more extensive than that of the international travel expenditures in the balance of payments where international passenger transport is not included. Our study uses data on international travel expenditures from the Balance of Payments and, consequently, does not include expenditures on transport passenger services.

Our analysis is based on annual data. Data on international tourism expenditures were obtained from different issues of *Bank of Slovenia bulletin* published by Bank of Slovenia. Data were collected from the current account of balance of payments where they include expenditures in private and business international travel. Further, there are several measurement tools for income. Song and Wong (2003) stated that personal disposable income should be used in the analysis when leisure and holiday demand or visiting friends and relatives tourism is studied, whereas more general income variables, such as GDP, should be used, if the combination of leisure and business travel is considered. Therefore, GDP as income measure is used in the study since we include private and business international travel. Data on GDP are

gathered from different issues of S*tatistical Yearbook of Republic of Slovenia* published by Statistical office of Republic of Slovenia. Data in the study cover the period between 1994 and 2006, a total of 13 observations. The study assumes that international tourism demand is immediately adjusted (i.e. in the same year) to the changes in GDP not including lagged values of international tourism demand behind GDP.

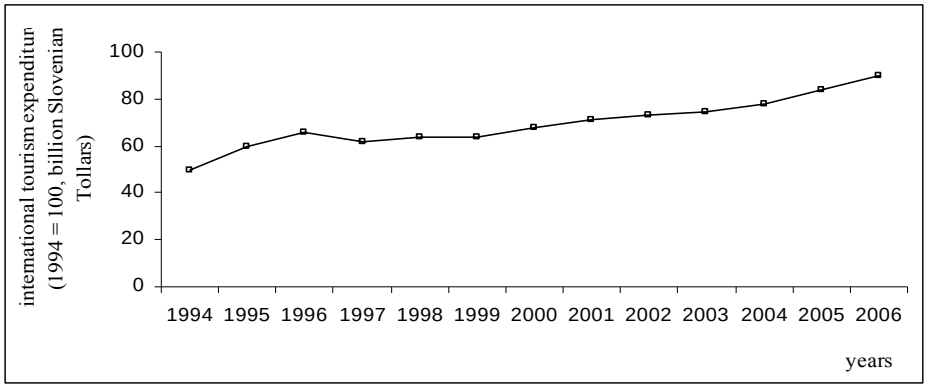
The first stage of the research involved gathering information on international tourism expenditures and GDP in Slovenia between 1994 and 2006, while the second stage of the research involved calculation of regression analysis and income elasticity of outbound tourism demand. Just a partial model of international tourism expenditures is conducted in the present study since we do not analyze price effects and other possible dummy variables as already noted.

At this point we have to stress that the researcher faces himself or herself in this kind of research with several deciding problems where he or she has to decide on his or her judgment on which type of data or variables to use to measure income and international tourism expenditures or which functional form to use. The choice can always be a matter of debate. There exist several functional forms of regression analysis which can be used to test the hypothesis. The problem is that "theory does not provide guidance to choose one functional form over the others and selection of functional form is usually made on statistical grounds" (Kerr and Sharp, 1985, 130). In this study, we decided to estimate GDP impact on international tourism expenditures by four different functional forms that are most commonly used in tourism demand studies (Li, Song and Witt, 2005, 88). They are linear, log-linear, log-lin and lin-log functional forms. Thus, the limitation of this research is the usage of these four functional forms in investigating GDP effect on outbound tourism demand. However, Crouch and Shaw (1992) stated that log-linear functional form is more efficient than others because it yields direct elasticity estimates. On the contrary, Song and Wong (2003) pointed out that "averages" of regression analysis in log-linear functional form does not take into consideration the change in time which is important for demand forecasting, too. Elasticity is variable in other functional forms, depending on the value of dependent or independent variable or both (Gujarati, 2003, 190). Further limitation of the study is the period of time used in the research. We should take a consideration that each of these decisions can affect the final results.

2.2. Analysis of results

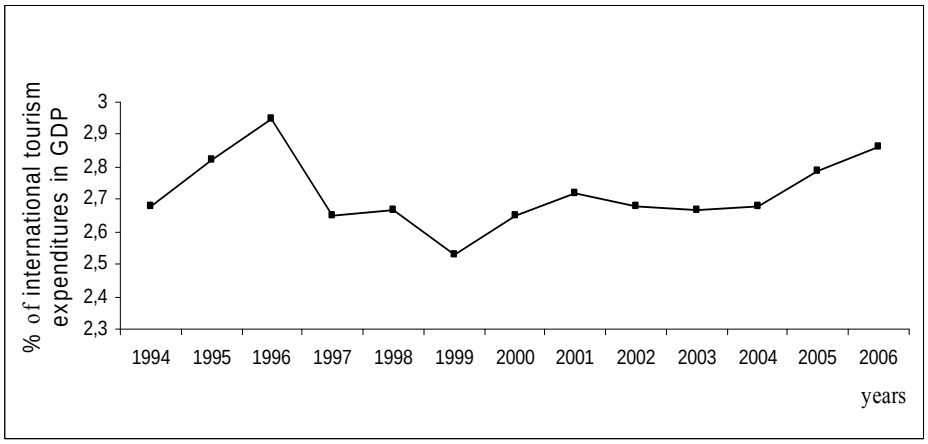
International tourism expenditures of Slovenia increased from 49,7 billion Slovenian Tollars in 1994 to 203,7 billion Slovenian Tollars in 2006. There was a constant increase of international tourism expenditures in current prices in Slovenian Tollars between 1994 and 2006, resulting in 310% nominal increase in the given period of time. However, there was only 81,5% of real increase of international tourism expenditures between 1994 and 2006 with a slight decrease in 1997. Figure 1 shows the movement of international tourism expenditures in the given period of time in constant prices (1994 = 100). It indicates that Slovenian people are increasingly interested in travelling abroad for either leisure or business purposes.

Figure 1: International tourism expenditures of Slovenia in period 1994-2006 (constant prices, 1994 = 100)



International tourism expenditures were equivalent to 2,68 % of GDP in 1994 and to 2,86 % of GDP in 2006. As depicted in Figure 2, the portion of international tourism expenditures in GDP in Slovenia has not changed substantially in the given period of time. The ratio reached the highest value of 2,95% of GDP in 1996 because the growth rate of international tourism expenditures exceeded substantially the GDP growth rate. Contrary, in the next years the ratio was falling due to the higher growth rate of GDP than that of international tourism expenditures. The lowest ratio value was in 1999 when international tourism expenditures reached 2,53% of GDP. It was probably partly connected with the introduction of VAT in Slovenia which substituted sales tax in summer 1999 and led to purchases of some durable and more expensive goods (i.e. cars) contributing to less tourism expenditures in this year.

Figure 2: International tourism expenditures as a percent of GDP in period 1994-2006 in Slovenia



The impact of GDP on international tourism expenditures between 1994 and 2006 in the case of Slovenia was examined by four functional forms. The results of regression analysis and autocorrelations detecting test are shown in Table 1.

Table 1: Regression statistics and Durbin-Watson *d* statistics for four functional forms in period 1994-2006

Functional form	Constant (t-statistics)	Coefficient (t-statistics)	Test statistics r^2	Test statistics F (p-value)	Durbin-Watson *d* statistics
Linear	-125,626 (-1,416)	0,037 (5,301)	0,719	0,037 (5,301)	1,533
Log-linear	-6,823 (-2,87180)	1,341 (5,327)	0,721	1,341 (5,327)	1,512
Log-lin	4,509 (18,170)	0,000105 (5,361)	0,723	0,000105 (5,361)	1,552
Lin-log	-4127,942 (-4,854)	473,512 (5,259)	0,690	473,512 (5,259)	1,492

The choice of functional forms should be based on economic theory and statistical specification. Economic theory supposes that GDP and tourism demand are positively correlated what can be seen from the β coefficient positive sign. In our study, all the four functional forms have positive β coefficient; therefore, all of them were accepted from the economic theory point of view.

Further, statistical specification concerns t-test of statistical parameters, r^2 and F test. All functional forms are theoretically consistent having statistically significant coefficient β for GDP variable. The constant (intercept) is not statistically significant just in the linear functional form. Further, all functional forms are highly significant at a 0,05 level as indicated by F-tests. Even determinant coefficients r^2 are almost equal.

In addition, functional forms were tested for heteroskedasticity and autocorrelation. The graphical method using scatterplot showed that heteroscedasticity was not present in any of the functional forms. Furthemore, autocorelation was tested using the Durbin-Watson *d* test which showed that the autocorrelation might be present only in lin-log functional form because (see Table 1).

Thus, according to Gujarati (2003, 476), time or trend *t* variable was included in the lin-log functional form to examine if the relationship between GDP and international tourism expenditures exhibits trend. Table 2 shows the corrected regression analysis and autocorrelation detecting test after the trend *t* was included into lin-log functional form.

Table 2: Regression statistics and Durbin-Watson *d* statistics for lin-log functional form in period 1994-2006 with added independent variable trend

Functional form	Constant (t-statistics)	Coefficient GDP (t-statistics)	Coefficient trend (t-statistics)	Test statistics R2	Test statistics F (p-value)	Durbin-Watson *d* statistics
Lin-log	27699,972 (0,575)	6564,398 (5,076)	-26,689 (-1,161)	0,756	15,499 (0,001)	1,968

After including trend *t* variable in the lin-log functional form, Durbin-Watson *d* test does not suggest autocorrelation in the residuals anymore, but the constant and trend *t* coefficient are not statistically significant.

Therefore, after analysis and comparison among the four functional forms was made, log-linear and log-lin functional forms were decided to be taken for further discussion. They are appropriate to explain the relationship between GDP and international tourism expenditures in the case of Slovenia in the given period of time. At the same time the both functional forms can give us the explanation of income elasticity of tourism demand which is interpreted in the sequel.

As a result, equations (2) and (3) respectively are given to explain the relationship between Slovenian GDP and international tourism expenditures of Slovenia in the period 1994-2006:

$$\ln (ITE) = - 6{,}823 + 1{,}341 \ln (Y), \quad (2)$$

$$\ln (ITE) = 4{,}509 + 0{,}000105 * Y, \quad (3)$$

Thus, the empirical results show that there is a significant influence of GDP on international tourism expenditures in the case of Slovenia that can be explained by two different functional forms. In addition, log-linear functional form suggests that the income elasticity of outbound tourism demand in period 1994-2006 was 1,34 revealing that a 1% increase in GDP in the given period of time caused a 1,34% increase of international tourism expenditures. It indicates that outbound tourism demand of Slovenian tourists was income elastic. In other words, Slovenian tourists had an elastic response of demand for travelling into foreign destinations to changes in income respectively GDP in the given period of time.

Additionally, log-lin functional form is used to calculate income elasticity of outbound tourism demand of Slovenian tourists for each year of the given period. The results are given in Table 3.

Table 3: Income elasticity of international tourism demand in Slovenia in period 1994 2006 (according to log-lin functional form)

Year	Income elasticity (log-lin functional form)
1994	1,28
1995	1,45
1996	1,38
1997	1,36
1998	1,35
1999	1,37
2000	1,31
2001	1,27
2002	1,27
2003	1,26
2004	1,28
2005	1,32
2006	1,38

According to the log-lin functional form (Table 3), income elasticity of outbound tourism demand was ranging from 1,28 in 1994 to 1,38 in 2006 reaching the lowest value of 1,26 in 2003 and the highest one of 1,45 in 1995. There was large fluctuation of income elasticity between 1994 and 1995, while it was relatively less volatile after 1996. Unfortunately, the 13-year period is too short to make any conclusion about income elasticity trend for outbound tourism demand. We can see just some fluctuations across years in the given period of time.

3. DISCUSSION AND CONCLUSION

The paper contributes to the understanding how strong are GDP effects on expenditures of outbound tourism in the case of Slovenia. International tourism expenditures are increasingly rising in the last years, representing from 2,5% to almost 3% of GDP of Slovenia. Therefore, international tourism expenditures do not form a negligible part of GDP spent for outbound tourism. At the same time it is worth being researched also because there was a decrease in number of domestic tourists and their overnights in several years after 2000 in Slovenia. It can be derived that domestic tourism in Slovenia is at the decline stage of the product life cycle, while Slovenian outbound tourism is at the growth stage of the product life cycle.

Impact of GDP on international tourism expenditures in the period 1994-2006 in the case of Slovenia was analysed by regression analysis. There was found r^2 of 72,1% in log-linear functional form and r^2 of 72,3% in log-lin functional form. The value of r^2 shows that GDP is in any case very important factor of outbound tourism expenditures of Slovenian people. F-test of chosen functional forms shows that they reflect the actual situation well. Thus, the proposed hypothesis is accepted. GDP had a

positive and strong impact on international tourism expenditure of Slovenia in the period 1994-20006.

Additionally, 27,9% respectively 27,7% of international tourism expenditures variation in the given period of time was due to variations of other variables. Mostly of them can be attributed to exchange rates. Since there were used different exchange rates in international tourism expenditures in the given period of time, many of which were highly variable, they may represent the main variation not included in the regression analysis. Further, other variables may be attributed to price changes in foreign destinations since we know that price competition contributes to substation price cuts. Variation of outbound tourism demand in the given period of time can be attributed to the expansion of low-cost airlines and other transportation costs (such as oil prices) as well. In conclusion, the increase of international tourism expenditures indicates not only economic growth but also people's desire to visit foreign destinations.

The paper sheds further light on income elasticity of outbound tourism of Slovenia. Hence, previous research on income elasticity of tourism demand pointed out that it was 2,41 on average in the period between 1975 and 1999. Afterward, in our study income elasticity of tourism demand in the period 1994-2006 was found to be 1,34 on average in accordance with log-linear functional form. Therefore, it is less than it was found in the above-mentioned study in the previous period of time. It is quite congruent with the economic theory of income elasticity of (tourism) demand.

Following it, income elasticity of (tourism) demand falls when income or GDP increases. It can be explained by the fact that higher income or GDP leads to minor change in tourism demand because of income or GDP change. Income elasticity of outbound tourism demand above 1 indicates that foreign destinations on average are considered as luxury destinations for Slovenian tourists. Following the results of the above-mentioned studies, it is not expected that income elasticity of outbound tourism demand in Slovenia will decline beyond 1 in the near future that would set outbound tourism as a necessity good. Unfortunately, against our expectations, there was not confirmed - using the log-lin functional form - that income elasticity of tourism demand was falling in the given period of time.

A high income elasticity of outbound tourism demand in Slovenia implies that demand for outbound tourism is relatively sensitive to GDP respectively economic situation in Slovenia. Since Slovenia is currently experiencing a continuing growth in GDP in 2007, we can forecast a continuing growth in outbound tourism expenditures and a decreasing income elasticity of outbound tourism demand. The results of the study are important for destination policy makers in Slovenia in providing useful information about the sensitivity of tourism spending of residents to income changes since Slovenia and foreign destinations are competing for the same pool of tourists.

Further Slovenian economic development will probably even more decrease the number of domestic tourists in Slovenia. Therefore, Slovenian tourism industry should pay attention to future economic activity in Slovenia. New ways of attracting domestic tourists by creating new strategies and smarter and well-targeted marketing

programs are needed to stop the continuing decline of domestic tourism. Otherwise, Slovenian tourism will probably depend even more on inbound tourism.

In summary, this paper contributes to the literature on tourism demand in Slovenia by using recently data on Slovenian outbound tourism. At this point we have to mention the main constraint of the study which is the 13-year old period of time. Although the period is short it can give us better understanding of relationship between GDP and outbound tourism demand in case of Slovenia.

The present work could be extended to study income elasticity of outbound tourism demand across different income groups. Further work could also add new variables and in this way allow studying exchange rate variations and the changing global competition in the tourism market that causes price cuts. Furthermore, a research of how international tourism expenditures compete with domestic tourism expenditures and expenditures of other goods is required.

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