Tourism and the Brazilian Economy: an analysis of the input output matrix

Contributed paper

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Summary: This paper develops the input output matrix – MIP for the tourism sector in Brazil, in the year of 2004, and based on the indicators derived from the MIP it analyzes the main dimensions of the tourism in the Brazilian economy. First, we excluded the part of goods and services of the residents, using a research about the employment on tourism in Brazil, from IPEA (Institute of Applied Economics Research). Second, the relationship between the set of sectors defined as tourism is analyzed, as well as the forward and backward linkages of the tourist production on the other sectors. Finally, the impacts of the development of tourism over income and employment are estimated and discussed.

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INTRODUCTION

In global terms, tourism over the years has shown good economic performance, with average growth rate of 7% per year, according to World Tourism Organization (WTO). Several authors, including Archer (1995) Frechting and Hovart (1995), Heng and Low (1990), Henry and Deane (1997), and West (1993) have stressed the economic importance of the tourism sector for a variety of countries. Given the good performance of the tourism sector, it is important to investigate in which ways tourism has contributed to reduce poverty and promote economic development in emerging countries. One should notice that the tourism sector affects not only economic growth but also social variables, such as income distribution, employment, and poverty. Thus, when adequately explored in all its potential, tourism may be used to improve social welfare.

Essentially, tourism depends on traditional variables, such as consumer's income and prices, which are determinants of the supply and demand for goods and services. In this way, there are variables related to disaggregated or individual aspects of tourism as an economic activity. In addition, consumption and production expenses generate and expand the productive capacity of goods and services, and so affect tourism. Analysis of the multiplier effects of tourism can be found in Fleischer and Freeman (1997), Kahn (1990), and Lin et al (1999). Studies of tourism as a product that can be characterized by a system of supply and demand equations will contribute to better understanding the sector as a market with wide economic potential.

In Brazil, there are few analytical studies that are able to evaluate properly the tourism sector as an authentic contributor to economic growth. Due to this lack of evidence, there is little idea as to which macroeconomic variables might have an impact on the tourism sector. The main goal of this paper is to estimate an econometric model of supply and demand for tourism using data for Brazilian municipal districts. We estimate a simultaneous equation model to identify variables that affect tourism, and discuss policies that can be applied to explore and develop the tourism sector in the Brazilian economy. It is expected that the findings can provide inputs for the formulation and implementation of public polices to develop and improve the tourism sector in the country. This has been a major concern of the Federal Government since the creation in 2003 of the Ministry of Tourism.

The paper is organized as follows. In the second section we present the construction of the tourism gross domestic product (or tourism GDP) for each one of the 5,500 Brazilian municipal districts. The relative importance of the tourism in the local economies is discussed. In the third section, we compute the tourism price index (TPI), which is calculated for a sample of 793 municipal districts that comprise the main tourist destinations in the country. This sample also serves as reference for the estimation of the supply and demand functions for tourism, which is done in the fourth section. The fifth section presents the price elasticity of supply and price elasticity of demand for tourism in Brazil. The sixth section discusses policies that might be implemented to expand the tourism sector. Finally, the seventh section gives some concluding remarks.

TOURISM GDP FOR BRAZILIAN MUNICIPAL DISTRICTS

The tourism GDP was computed for all Brazilian municipal districts following the official classification published by IPEA (Institute for Applied Economic Research) and IBGE (Brazilian Institute of Geography and Statistics). The municipal district tourism GDP was computed according to the definition of a typical tourist consumption basket provided by the WTO, which is composed of expenses in transportation, hospitality, restaurants, and entertainment. The sources of the data were the IPEA electronic dataset

(www.ipeadata.gov.br), and the tourism GDP was derived from the GDP of total services. For each municipal district, those components not related to the typical tourist consumption basket were excluded from the GDP of services.

A general overview of the geographic distribution of tourism GDP for all Brazilian municipal districts is presented in Figure 1. It shows a map with the distribution of the tourism GDP across the country.

From Figure 1, we can derive some interesting information regarding the concentration of the tourist activity. First, we can see that the tourism GDP is concentrated in the Brazilian south and southeast regions, and northeast coastline. This is expected because those regions are the major tourist receptive regions in the country, according to the Brazilian Enterprise of Tourism (EMBRATUR) official reports. In those regions, there is great potential for tourist activity.

Second, by aggregating tourism GDP and comparing subsets of municipal districts, we can have a good idea regarding its concentration. Specifically, the results show that 10% of the municipal districts with the highest tourism GDP represent more than 96% of total Brazilian tourism GDP. Yet, if we take only 1% of the municipal districts with the highest tourism GDP, they represent more than 77% of total tourism GDP. This evidence shows that the tourism sector is extremely concentrated in the Brazilian economy. Additional information regarding the tourism GDP for selected municipal districts is presented in the tables that follow[8].

Table 1 presents the Brazilian municipal districts with bigger tourism GDP9. São Paulo city leads the group, because São Paulo is the municipal district with the highest receptive rate for domestic tourists in Brazil, according to the EMBRATUR official reports. On the other hand, Rio de Janeiro city appears in second place, which is explained by the fact that Rio is the second most receptive municipal district for domestic tourists, and the first most receptive for foreign tourists in Brazil. One should have in mind that the size of the city, as measured by its total population, has a significant influence on tourism GDP because the sectors of transportation, restaurants, hotels, and entertainment, which are used to compute tourism GDP, according to the WTO typical tourist consumer basket, are highly influenced by the size of the municipal district. To avoid this bias, it is more instructive to examine the per capita tourism GDP and to analyze the participation of the tourism sector in the local economy.

Table 2 displays municipal districts where the ratios between tourism GDP and total GDP are the most expressive. The municipal districts were divided into three groups, according to total population. The ratios give a good indication as to the importance of the tourism sector in the local economies. It is possible to see, for instance, that Brasilia has tourism GDP greater than Salvador. However, tourism is relatively more important in Salvador than in Brasilia, as shown in the last column of Table 2.

Another interesting point is that, even though tourism GDP of small municipal districts, with less than 100,000 inhabitants, are very low when compared to medium and large municipal districts, the participation of tourism in the economy of the small municipal districts is significantly higher than in the more populated ones. Thus, while in the large municipal districts the tourism GDP accounts for around 6 to 10% of the total municipal GDP, in the small municipal districts this value lies in the interval 11 to 25%. This finding shows that tourism in small municipal districts is an important source of income for the local population.

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[8] For evidence on the economic importance of tourism in other countries, see Summary (1987), Wagner (1997) and Wien (1989).

[9] All the data and empirical results are available from the authors upon request.

TOURISM PRICE INDEX

In order to estimate the simultaneous equation model for supply and demand for tourism, we computed the Tourism Price Index, hereafter TPI. This index compares prices in the tourism sectors across municipal districts that represent the major destinations in the country, and define the sample used for estimation. The typical tourist consumer basket used to build TPI is the one defined by the WTO, which has been used to calculate tourism GDP. Therefore, TPI can be seen as a broad measure of inflation in the tourism sector, being equivalent to the tourism GDP deflator. Hence, using a standard tourist consumption basket and taking São Paulo as the basis for comparison (with the São Paulo TPI set to 100), TPI was computed for each municipal district in the sample. The source of the data was the Guia Quatro Rodas dataset, which searches about 6,000 tourist establishments around the country, and is by far the most consulted tourist guide in Brazil.

Table 3 reports the top 20 most expensive municipal districts according to the TPI. There are two distinct types of municipal districts. The first is characterized by relatively small districts that supply luxury tourist goods, such as Una, located in the state of Bahia, where the price of tourism is 53.21% higher than in São Paulo. The district of Una contains the Comandatuba Island, where there is a luxury hotel and related attractions. Other municipal districts that are well known for their high costs of tourism include Campos do Jordão, Angra dos Reis, and Buzios.

The second type refers to big municipal districts, which are characterized by a high cost of living. This is the case of Rio de Janeiro, and São Paulo, which are among the most expensive cities in the world. The high cost of living in these municipal districts is reflected in the cost of tourism, which translates into a higher TPI.

SUPPLY AND DEMAND FOR TOURISM IN BRAZIL

The econometric model used in estimating the supply and demand for tourism in Brazil at the municipal districts level is a simultaneous equation model. The idea is to allow for interactions between supply and demand in the determination of equilibrium price and quantity in the tourism market. Due to correlation between price, which is in both equations, and the error term, the instrumental variables estimator is used. In addition to the price of tourism, described in the previous section, we seek to identify other variables that are important to explain the supply and demand for tourism in the Brazilian municipal districts.

The general form of the system of equations is detailed below. These functions include only those variables that are identified as statistically significant in estimation:

$$DD_i = C + f_1 TPI_i + f_2 VIO_i + f_3 CSP_i + f_4 DCE_i + f_5 PIN_i + f_6 POP_i +$$
$$f_7 NBB_i + f_8 BEA_i + f_9 EST_i + f_{10} ATR_i + f_{11} RES_i + f_{12} NRO_i + U_i \tag{1}$$

$$OT_i = K + f_{13} TPI_i + f_{14} PPL_i + f_{15} IDH_i + f_{16} AYS_i + f_{17} IBS_i + f_{18} EHU_i +$$
$$f_{19} EEC_i + f_{20} EAP_i + f_{21} POP_i + f_{22} EHS_i + f_{23} NTR_i + R_i \tag{2}$$

Starting with the demand for tourism, equation (1), the variables are:

DD_i = demand for tourism in municipal district i;
TPI = tourism price index;
VIO = number of homicides for each 100 thousand inhabitants in the previous period;
CSP = cost of transportation from the municipal district to São Paulo in R$;
DCE = distance from the state capital in km;
PIN = percent of female children between 10 and 14 years of age who are mother (variable used as proxy for childhood prostitution);
POP = population of inhabitants;
NBB = number of bank branches;
BEA = dummy variable for the presence of a beach;
EST = dummy variable for the presence of a resort;
ATR = number of tourist attractions;
RES = number of restaurants;
NRO = number of hotel rooms;
U = error term, assumed to be homoscedastic and uncorrelated.

Equation (2) for the supply of tourism has following specific variables:

PPL = percent of people below the poverty line (family income less than US$1.00 per day, as defined by the World Bank);
IDH = index of human development, defined by the United Nations;
AYS = average years of study for people who are 25 or older;
IBS = total investment in the municipal bank sector;
EHU = municipal expenses on habitation and urbanism;
EEC = municipal expenses on education and culture;
EAP = economically active population (number of inhabitants);
EHS = municipal expenses on health and sanitation;
NTR = number of tourist routes;
R = error term, assumed to be homoscedastic and uncorrelated.

The main source of data was the IPEA regional economic dataset, which is electronically available at www.ipeadata.gov.br, and refers to the demographic census of 2002. Some variables also come from the Guia Quatro Rodas dataset. The supply and demand equations were estimated by using the method of weighted two stages least squares, which is robust to heteroscedasticity, a common problem in estimation of cross sectional data. Some independent variables were used as their own instruments, in addition to a few extra variables. The results of estimation are reported in Table 4.

From Table 4 we can see that, in general, the variables display the expected signals and high statistical significance. The models are well adjusted, as indicated by the determination coefficients in the range of 90%. The general significance is evident from the high values of the calculated F statistics. Some specific comments, however, are worthy noting.

The tourism price index has an important role in explaining both the demand and supply of tourism. An increment in the TPI causes an increase in the supply of tourism. However, it provokes a decrease more than proportional in the demand for tourism. The net effect of a higher TPI is that of a reduction in the equilibrium quantity of tourists, determined by the reduction in demand. The average decrease is around 1,500 tourists as for each base point of increase in TPI. In both equations, the TPI effect is statistically significant at the 1% level.

Looking at other variables that affect the supply of tourism, it is important to mention the positive and significant effect of expenses with habitation and urbanism (EHU). According to the estimated coefficient, an increase of R$ 1 million (about US$480,000) in such expenses increases the supply of tourism by about 3,500 tourists. The number of tourist routes (NTR) is also an important variable that increases supply of tourism. For each additional route, the growth is close to 8,400 tourists. The human development index (IDH) is another variable that has an important positive impact on the supply of tourism. Municipal districts with higher IDH supply more tourism than those that have smaller IDH.

On the supply side, an interesting result is that municipal districts with a high level of qualifications supply less tourism, as shown by the negative coefficient of AYS. This result can be explained by the predominance of non-qualified workers in the tourism production function, and also by the high informality that characterizes the sector, as shown by Divino, Takasgo, Teles, and Farias (2005). Thus, municipal districts with a highly qualified work force tend to have economic activities that are not directly related to the tourism sector.

On the demand side, it is important to comment on the negative effect that violence has on the demand for tourism. The coefficient is significant at 99% of confidence and the estimate shows that an increase of 1 homicide per each 100 thousand inhabitants in the previous period lowers the current demand for tourism in about 580 tourists. The effect of violence on tourism is delayed, given that the number of homicides refers to the previous period. This result indicates that violence has a considerable negative impact on the Brazilian tourism market.

Other undesirable factors are given by the positive value of the coefficient associated with the PIN variable, the percent of female children between 10 and 14 years of age who are mothers. This variable was used as a proxy for childhood prostitution, as suggested by international organizations, and as an indicator of sex tourism in Brazil. The positive coefficient indicates that municipal districts where there is evidence of childhood prostitution experience a higher demand for tourism.

Municipal districts located in the coastline of the country represent an important destination for tourists. The presence of a beach (BEA) increases the demand for tourism by about 29,000 tourists. This result confirms the geographic dispersion of the tourism GDP observed in Figure 1, where municipal districts with higher tourism GDP are located along the Brazilian coastline. The number of restaurants also exerts a strong attraction for tourists. Each additional restaurant in the municipal district leads to a growth of about 10,500 tourists. This result shows that restaurants work as an important attractive in the demand for tourism.

Finally, transportation costs are an important restrictive factor in the demand for tourism. The coefficients representing these costs (CSP and DCE) are negative and highly significant. The effect of such variables determines a significant reduction in the demand for tourism in the face of higher transportation costs.

In the following section, we analyze some implications of the specific supply and demand curves. The main point is to look at the implications for public polices to develop the tourism sector in the economy.

PRICE ELASTICITIES OF SUPPLY AND DEMAND FOR TOURISM

We compute the price elasticities for supply and demand for tourism. These elasticities show how sensitive is the equilibrium quantity of tourism to changes in the price of tourism, as measured by TPI.

Price elasticity of supply of tourism

Consider the general form of the estimated supply of tourism for municipal district i:

$$OT_i = K + \alpha\ TPI_i + \sum_j \delta_j OV_{i,j} + R_i$$

where:

K = intercept;
α, δ_j = coefficients;
TPI_i = tourism price index;
$OV_{i,j}$ = other j variables in the model;
R_i = error term.

The price elasticity of supply is calculated as:

$$E_{PO} = \frac{\partial OT}{\partial TPI} \times \frac{\overline{TPI}}{\overline{OT}} = \alpha \times \frac{\overline{TPI}}{\overline{OT}}$$

where $\dfrac{\partial OT}{\partial TPI}$ is the partial derivative of the supply of tourism with respect to the price of tourism, $\overline{TPI}$ is the cross-municipal district average tourism price index, and $\overline{OT}$ is the cross-municipal district average supply of tourism.

Using the estimated values from the simultaneous equation model, the supply price elasticity of tourism is[10]:

$$E_{PO} = 999.15 \times \frac{32.64}{47953.4} = \underset{(0.32)}{0.68}$$

This result indicates that a 1% increase in the tourism price index causes a rise of 0.68% in the supply of tourism in municipal district i. Thus, the Brazilian supply curve of tourism is inelastic, that is, it is less sensitive to variations in the price of tourism. This evidence has important policy implications, as will be discussed below.

Price elasticity of demand for tourism

Consider the estimated demand for tourism for municipal district i:

$$DD_i = C + \beta\ TPI_i + \sum_j \gamma_j OV_{i,j} + R_i$$

where:

C = intercept;
β, γ_j = coefficients;
TPI = tourism price index;

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[10] The number into parenthesis is the standard deviation.

$OV_{i,j}$ = other j variables in the model;
R_i = error term.

The price elasticity of demand is given by:

$$E_{PD} = \frac{\partial DD}{\partial TPI} \times \frac{\overline{TPI}}{\overline{DD}} = \beta \times \frac{\overline{TPI}}{\overline{DD}}$$

where $\dfrac{\partial DD}{\partial TPI}$ is the partial derivative of the demand for tourism in relation to the tourism price, $\overline{TPI}$ is the cross-municipal district average tourism price index, and $\overline{DD}$ is the cross-municipal district average value of demand for tourism.

Using the estimated values obtained from the simultaneous equation model, it follows that[11]:

$$E_{PD} = -2507.64 \times \frac{32.64}{47953.4} = -\underset{(0.45)}{1.71}$$

This result indicates that an increase of 1% in the tourism price index (TPI) leads to a decrease of 1.71% in demand for tourism. Compared with the supply of tourism, the Brazilian demand for tourism is elastic, meaning that it is sensitive to variations in the price of tourism. Any decrease in the tourism price index yields an increase that is more than proportional for the demand for tourism. Some implications of this result are also analyzed in the next section.

PUBLIC POLICIES FOR THE TOURISM SECTOR

The results from the previous section lead to some policy recommendations that might be useful for improving the participation of the tourism sector in the economy as whole. It is important to notice that in equilibrium, given that supply is inelastic and demand is elastic, the first curve is steeper than the second.

The first point to consider is the low sensitivity of the supply of tourism with respect to price variations. This implies that policies that seek to expand only the demand for tourism, such as expenditures in marketing and advertising will basically produce an increase in the price of tourism with little change in the equilibrium quantity of tourists.

On the other hand, policies that aim to increase supply of tourism will lead to an expansion more than proportional in quantity than in the price of tourism. Thus, unilateral supply policies will produce bigger impacts on the quantity of tourists than unilateral demand policies.

The picture above is modified if, parallel to incentives to the demand for tourism, policies that promote expansion of the supply of tourism are implemented. In this scenario, there will be a marginal increase in the price of tourism, while the new equilibrium quantity will be considerably higher than the initial equilibrium. Thus, a combination of policies that aim to affect positively both the demand and supply of tourism is an optimal strategy to

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[11] The number into parenthesis is the standard deviation.

expand the tourism market in the Brazilian economy. Policymakers should not expend money only in marketing and advertising, which is easy and attractive because it has immediate effects on the demand for tourism. They should also invest in the supply side, even though those are long-term investments that may not have immediate impacts on the tourism market.

CONCLUDING REMARKS

This paper has derived economic indicators for the tourism sector in the Brazilian economy and estimated a simultaneous equation model to identify the main variables that affect the demand and supply of tourism in Brazil. With the objective of providing analytical as well as reliable indicators to support decisions on public policies to the tourism sector, we computed the tourism Gross Domestic Product (tourism GDP) and the Tourism Price Index (TPI) for all Brazilian municipal districts. Such indicators provide important information on the geographic distribution of the tourism activity as well as on the relative costs of tourism.

It is important to emphasize that the participation of tourism in local economies is considerably higher in small municipal districts (with fewer than 100 thousand inhabitants) than in larger ones (with more than 500 thousand inhabitants). In the first group, the average participation is around 8%, while in the second group it rises to 16%, on average. In addition, the concentration of tourism GDP is such that 10% of the municipal districts with the highest tourism GDP have approximately 95% of the total Brazilian tourism GDP.

A simultaneous equation model was estimated for supply and demand for tourism for the major tourist destinations in the country. Among the variables included in the model, it is important to mention that violence has a negative effect and childhood prostitution has a positive effect on the demand for tourism. These findings should be used as evidence to support public policies that seek to reduce violence and eliminate sex tourism in the country. On the positive side, the presence of a beach in the municipal district is a feature that exerts a huge attraction on tourists when choosing their destination. This seems to be the most attractive natural resource for tourists to Brazil.

From the supply side, it is important to emphasize that municipal districts with better basic infrastructure, including good conditions of health, sanitation, habitation, and urbanization, supply more tourism, on average. On the other hand, an increase in the years of school of the population decreases the supply of tourism. This finding is confirmed by the Brazilian production function of tourism, as computed by Divino, Farias, Takasago, and Teles (2005), according to which tourism is a labor intensive activity with predominantly unqualified workers who earn wages that are below the average wage of the economy.

Price elasticities computed from the estimated simultaneous equation model revealed that the supply of tourism is inelastic, while demand is elastic. This result indicates that a combination of policies, focused on giving incentives to both supply and demand, can be effective in expanding the tourism sector in the Brazilian economy.

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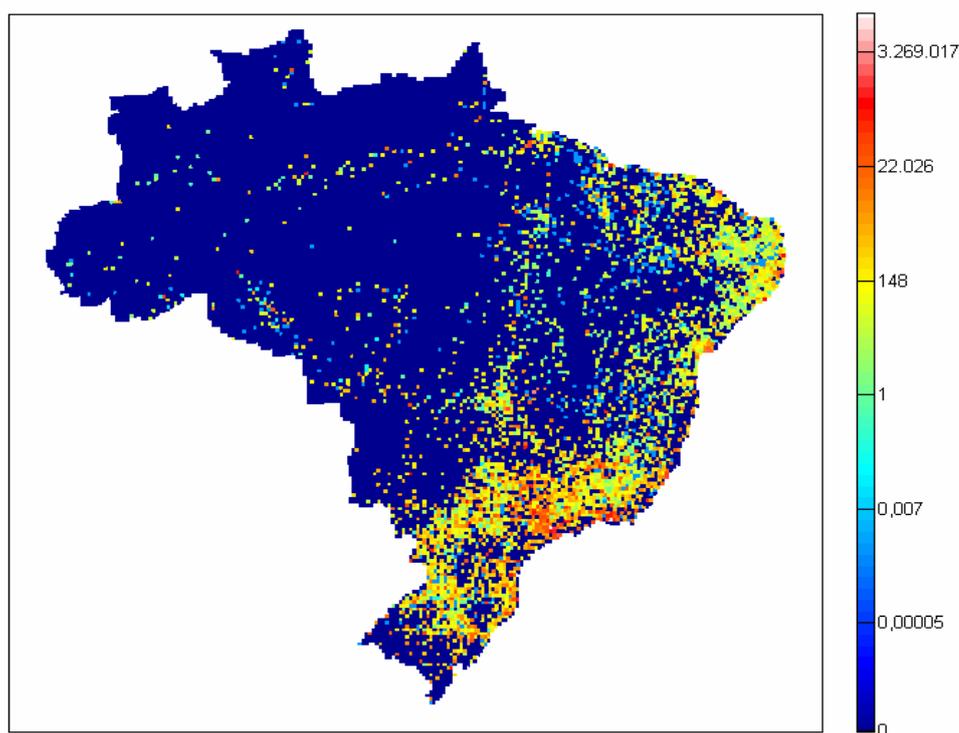
Note: the scale in the right hand side is in R$1,000.

Figure 1 *Geographic Distribution of the Municipal Districts Tourism GDP*

Table 1 *Top 12 Municipal Districts Tourism GDP (in US$ 1,000)*

State	Municipal District	Tourism GDP	Per capita Tourism GDP
SP	São Paulo	5403231,9	516,8
RJ	Rio de Janeiro	3325094,7	566,5
MG	Belo Horizonte	1209872,4	539,4
RS	Porto Alegre	1065656,5	781,6
DF	Brasília	1043314,8	507,6
PR	Curitiba	657518,5	413,4
BA	Salvador	642171,6	262,3
SP	Campinas	510873,7	525,9
SP	Santos	498882,7	1191,1
PE	Recife	409565,5	287,3
CE	Fortaleza	404555,9	188,5
ES	Vitória	306538,8	1046,6

Table 2 *Participation of the Tourism GDP in the Total GDP (year of 2002)*

Municipal Districts with more than 500,000 inhabitants			
Municipal District	Tourism GDP (B)	GDP (A)	Share (B/A)
Porto Alegre (RS)	1058407,2	10142006,3	10,4%
Belo Horizonte (MG)	1201642,0	13102801,4	9,2%
Ribeirão Preto (SP)	194142,0	2172873,2	8,9%
Campinas (SP)	507398,4	5780837,7	8,8%
Rio de Janeiro (RJ)	3302475,0	38917903,2	8,5%
Salvador (BA)	637803,0	7874191,1	8,1%
Belém (PA)	266177,7	3312995,9	8,0%
Osasco (SP)	153123,8	1936406,1	7,9%
São Paulo (SP)	5366475,2	70421854,2	7,6%
João Pessoa (PB)	141402,2	1945686,5	7,3%
Mun. Dist. with more than 100,000 and less than 500,000 inhabitants			
Municipal District	Tourism GDP (B)	GDP (A)	Share (B/A)
Itaboraí (RJ)	52494,9	307415,4	17,1%
Cariacica (ES)	92136,2	586987,3	15,7%
Paranaguá (PR)	82699,0	573957,1	14,4%
Santos (SP)	495488,9	3468826,3	14,3%
Botucatu (SP)	61385,3	458787,7	13,4%
Vitória (ES)	304453,5	2661773,8	11,4%
Olinda (PE)	84284,7	809213,7	10,4%
Itajaí (SC)	53118,4	525215,5	10,1%
Florianópolis (SC)	212181,6	2122393,5	10,0%
Foz do Iguaçu (PR)	47244,5	491666,8	9,6%
Municipal Districts with less than 100,000 inhabitants			
Municipal District	Tourism GDP (B)	GDP (A)	Share (B/A)
Rio Quente (GO)	4175,6	16172,8	25,8%
Bálsamo (SP)	6833,9	35072,7	19,5%
Águas de São Pedro (SP)	1890,8	10165,0	18,6%
Pirajuí (SP)	19292,5	106128,7	18,2%
Loreto (MA)	1695,1	9775,9	17,3%
Cerro Cora (RN)	2911,9	18374,9	15,8%
Morungaba (SP)	6385,7	42453,7	15,0%
Ilha Solteira (SP)	10704,4	71174,8	15,0%
Conceição do Jacuípe (BA)	1786,0	12310,3	14,5%
Vassouras (RJ)	8888,6	64944,2	13,7%

Table 3 *Municipal Districts Tourism Price Index (São Paulo = 100)*

Municipal District	TPI
Una (BA)	153.21
Rio de Janeiro (RJ)	151.17
Mairiporã (SP)	133.92
Cabo de Santo Agostinho (PE)	129.12
Campos do Jordão (SP)	121.99
Mata de São João (BA)	120.67
Mangaratiba (RJ)	117.31
Guarujá (SP)	116.14
Angra dos Reis (RJ)	113.78
Ipojuca (PE)	104.51
Moji das Cruzes (SP)	100.95
São Paulo (SP)	100
Armação dos Búzios (RJ)	95
Brasília (DF)	94.16
Manaus (AM)	90.13
Florianópolis (SC)	86.89
Atibaia (SP)	86.16
Salvador (BA)	83.96
Natal (RN)	83.91

Table 4 *Estimated Supply and Demand for Tourism*

Demand for tourism		Supply of tourism	
Variables	Coefficients	Variables	Coefficients
Constant	62035.4	Constant	-320042.4
	[0.0034]		[0.0074]
TPI	-2507.64	TPI	999.15
	[0.0001]		[0.0348]
VIO	-580.15	PPL	1051.26
	[0.0051]		[0.0224]
CSP	-13.14	IDH	3989.26
	[0.0024]		[0.0099]
DCE	-50.74	AYS	-12041.38
	[0.051]		[0.0196]
PIN	6250.83	IBS	-0.0184
	[0.4228]		[0.0000]
POP	0.7559	EHU	0.0035
	[0.0000]		[0.0000]
NAB	-3168.64	EEC	-0.0033
	[0.0000]		[0.0000]
BEA	29081.34	EAP	3.0519
	[0.0147]		[0.0000]
EST	27586.45	POP	-0.8653
	[0.2001]		[0.0000]
ATR	1551.38	EHS	0.0015
	[0.0146]		[0.0000]
RES	10332.91	NTR	8433.44
	[0.0000]		[0.1482]
NRO	22.02	___	___
	[0.0354]		
R^2	0.89	R^2	0.93
F	6391.97	F	11127.84
	[0.0000]		[0.0000]

Note: the numbers in brackets are the *p-values*.