

TOURISM IN SPAIN: DISAGGREGATED ANALYSIS OF THE INTERNATIONAL DEMAND

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Abstract

This paper analyses the main determinants of the international demand for tourism in Spain and quantifies their incidences. Given that the importance of tourism in Spain is not homogeneous through its territory, five models of tourism demand have been generated: one model for the total of Spain and another four models for the four groups that result of aggregating the Autonomous Communities according to their touristic profile. For the estimation we used dynamic specifications and a data panel of 15 countries (those with a larger weight in the volume of tourism to Spain) for the period 2001-2009. The results may be use to poliymakers in their decision-making processes.

Keywords: Tourism in Spain, International Demand

JEL Codes

1. Introduction

Tourism in Spain represented approximately the 10% of the GPD in the year 2010. According to the Hotel Occupation Survey of 2010 (EOH 2010), Spain received 82,660,334 visitors, including residents and non residents, representing a total of 366,575,056 overnight stays. It has traditionally been a sector that has tried to attract tourists looking for sun and beach, however in the last decade some changes have occurred that have led to expand the tourist destinations. Thus, destinations such as rural accommodations or camping have experimented important advances even though hotels still receive the majority of tourists.

Graph 1 shows the evolution of overnight stays in Spain in the last decade. Overnight stays have increased in a 5.16% in this period, as a result of an important advance of national tourism that has largely compensated the decrease (7.5%) of foreign tourists.

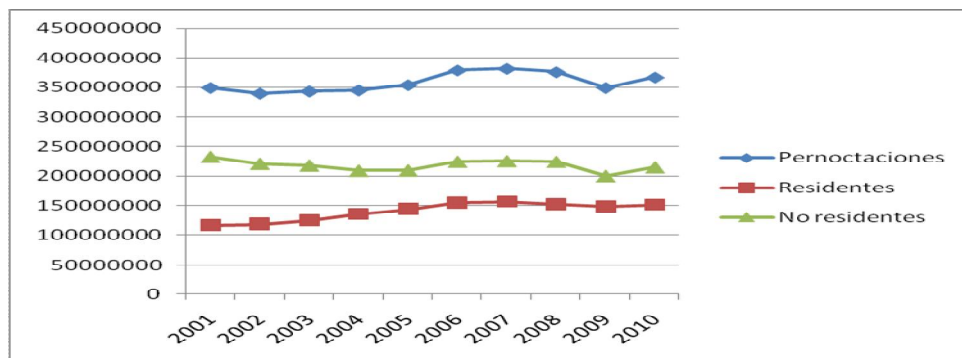
As we can see in the graph 2, international tourism has a larger weight in the total. The importance of international tourism is one of the reasons that justifies the analysis of its demand. Spain received in 2010 a total of 52.7 million international tourists. The total expenditure realized by these tourists was of 48,929 million euros. The biggest increase of tourists had its origin in the markets of Italy and the Nordic countries. Tourists from United Kingdom and Germany have experienced a decrease in the last years. Canary Islands and Catalonia have received a larger number of tourists, while Madrid and Valencia have seen the number of tourists decrease.

When we analyse the demand factors of tourism in Spain its necessary to point that the importance of tourism is not homogeneous along the Spanish territory, existing important differences between Autonomous Communities (AC). For this reason we must take into consideration the regional differences when we analyse the touristic sector because those Communities where tourism has a larger importance will generate a bunching effect over

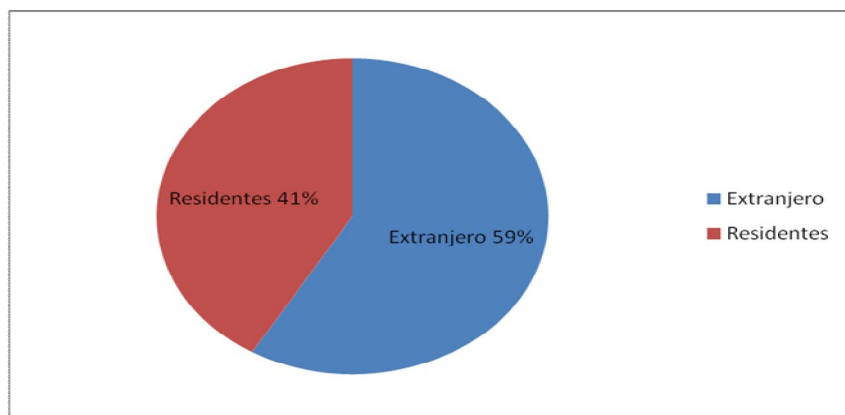
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the rest of the economy, and the determinants of its demand could also be different. Table 1 shows the Autonomous Communities differences in participation of each Community in the percentage of international tourists (Tourist) and in the percentage of expenditure of this tourists (Expenditure). In order to consider the different touristic profiles in Spain we have used information from the paper of Sala and Torres (2007). In this paper the Autonomous Communities are divided in groups according to the relative importance of the touristic sector.



Graph1. Evolution of overnight stays in Spain for the period 2001-2010. Source: Self elaborated from INE (Hotel Occupation Survey (EOH) 2001-2010)



Graph 2. Percentage of overnight stays by markets of origin. Source: Self elaborated from INE (EOH 2001-2010)

Table 1. Participation of the Spanish Communities (%). Year 2010

Communities	Tourist	Expenditure
Andalusia	14.1	16.0
Balearic	17.4	17.9
Canary	16.4	18.3
Catalonia	25.0	21.5
Madrid	8.8	10.3
Valencia	9.5	8.6
Rest of AC	8.8	7.4
Total	100	100

Source: self-elaborated based on data of Instituto de Estudios Turísticos (IET, 2011)

Relevance of touristic sector at a regional level is measured considering four indicators: participation of the Community in the percentage of tourists, in the percentage of expenditure of the tourists, contribution of the touristic sector to the regional GDP and the contribution of tourism to the employment in the Community. Following this analysis the Spanish Communities can be divided in four profiles:

Group 1: significant touristic profile, formed by Balearic Islands and Canary Islands. These Communities are focused in attracting tourists looking for sun and beach, especially foreigners. Both Communities are very specialised in tourism, being the motor of their economies. Therefore, the economies of both Communities are little diversified having tourism the biggest importance in their GDP.

Group 2: touristic profile, integrated by Catalonia and Andalusia. They have a high percentage of visitors and touristic expenditure, but tourism does not have an important contribution to the GDP and regional employment. Their regional economies are more diversified than those Communities that belong to group 1. Both Communities do not focus exclusively in a tourism of sun and beach, because of their natural and cultural resources that attract a kind of tourists looking for something different than the typical Spanish model of tourism.

Group 3: relatively touristic profile, formed by the Communities of Madrid and Valencia. In both Communities tourism has a relatively important significance in their regional economies but lower than the former groups.

Group 4: low touristic profile, integrated by the rest of the Autonomous Communities. These Communities do not have great importance in any of the indicators, they have a diversified tourism: cultural, camping, business... In these Communities foreign demand is less significant than tourism from the rest of Spain.

This paper analyses the determinant factors of international touristic demand. International demand has been chosen because foreign tourists are still a majority. In order to realize the study we only use data from the hotel sector, not counting with camping, rural establishments or touristic apartments. This decision is based in two facts. In first place a large number of tourists still choose hotels for accommodation, even though other establishments have had important advances in the last decade. In second place we choose hotels due to the more information disposable and for a longer period than in other establishments.

2. Modelling the touristic demand

In order to estimate the touristic demand we must choose between static models or dynamic models. The vast majority of empirical papers that estimate the determinants of tourism demand specify the models in a static form. Static models can suffer from a number of problems such as spurious regression, forecasting failures and structural instability, as pointed out by Witt and Song (2000).

Dynamic specification in tourism demand models, introduce several advantages since they incorporate the possibility of changes in consumer's preferences. A way to introduce such changes consists in incorporating in the model the lagged dependent variable as an explanatory variable. Hence, the parameter of the lagged dependent variable may be considered as a measure of habit formation (Garín-Muñoz, 2006). Also, as pointed out by Morley (1998), if the impact of past tourism is neglected, the effect of the relevant

variables will tend to be overestimated (since the estimated coefficients will involve direct and indirect effects). Another important decision, in order to estimate the model, would be to decide which variable is more indicated to represent tourism demand. This paper chooses the number of overnight stays because, even though in many papers the number of tourists was chosen as the dependant variable, it has the advantage of taking into account the length of the stay (Crouch and Shaw, 1992). More precisely, our dependent variable is the number of nights spent by visitors in hotel accommodation. According to the classical literature on tourism demand modelling and taking into consideration the availability of data, the model to be estimated can be expressed as follows:

$$\ln \text{Pernt}_{i,t} = \alpha_i + \beta_1 \ln \text{Pernt}_{i,t-1} + \beta_2 \ln \text{PIB}_{i,t} + \beta_3 \ln \text{Cost}_{i,t} + u_{i,t} \quad (1)$$

where

- α_i : is a constant that is different for each country of origin which takes into account the individual specific characteristics as well as possible omitted variables.
- $\text{Pernt}_{i,t}$: is the number of overnight stays of tourists from country i during the year t .
- $\text{Pernt}_{i,t-1}$: is the lagged dependent variable.
- GPD : Gross Domestic Product (per capita) of country i during the year t .
- Cost : price of crude oil¹.

In order to estimate the model we use a panel of 15 countries, choosing those countries with a bigger importance in Spanish tourism, during the period 2001-2009. This panel will consist of Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Russia, Sweden, Switzerland, United Kingdom and United States. As a result we obtain a panel with 105 observations. The use of annual data allows us to avoid the problem stemming from seasonality. The main sources of data are the National Statistics Institute of Spain (INE) for the number of overnight stays, the Spanish Ministry of Industry, Tourism and Trading for the price of crude oil and the World Bank for the GPD of each country. The estimation method is the Generalized Method of Moments of Arellano and Bond (1991). In these kind of dynamic panels, this methodology offers efficient, asymptotically normal and consistent estimations of the parameters. The double-logarithmic form of the model allows the interpretation of the estimated coefficients as elasticities. Moreover, the presence of the lagged endogenous variable in the model would imply the estimation of long-run dynamic multipliers, distinguishing the short-run from the long-run effect (Guisán, 1997). Therefore, the long-run elasticities can be calculated from the short-run estimates, dividing each coefficient by $(1-\beta_1)$. We expect positive values for β_1 and β_2 and a negative sign for β_3 .

2. Empirical results

This section presents the results of the estimation of the equations (1) using, as formerly mentioned, the GMM-DIFF estimator of Arellano and Bond (1991). This methodology implies the non existence of second order autocorrelation in the errors, being necessary, therefore, to realize a test to check this hypothesis. It is also necessary to include the Sargan test of over-identifying restrictions and the Wald test of joint significance of the

¹ We use the price of crude oil as a measure of the cost of the trip. The reason we don't use the price index of hotelier sector as an explanatory variable is that the cost of the trip represents a major proportion of the total cost being, hence, a more significant indicator to choose a destination.

explanatory variables, in order to assure good estimations. The estimation of the models have been carried out using Eviews 6.0. The empirical results of the estimation are shown in Table 1. Column 1.1 shows the results for Spain, column 1.2 shows the results for the group 1, column 1.3 is referred to the group 2, column 1.4 is referred to the group 3 and column 1.5 shows the results for the group 4.

The estimation results are robust. No signs of serial correlation are found. The Sargan test of over-identifying restrictions does not show the existence of correlation between the instruments and the error term in the differenced equation. The Wald test shows the joint significance of the explanatory variables. It should be noted that the results shown at the top of Table 2 are short-run demand elasticities, therefore, in order to obtain long run demand elasticities, it is necessary to divide each of the estimated coefficients by $(1-\beta_1)$. These results are shown at the bottom of Table 2.

Table 2. Estimation results of the dynamic model of international demand 2001-2009. Number of observations 105.

Variable	1.1 Spain	1.2 Group1	1.3 Group2	1.4 Group3	1.5 Group4
$LnPernt_{i,t-1}$	0.64 (12.80)	0.68 (52.58)	0.29 (7.30)	0.34 (19.86)	0.32 (6.46)
$LnGPD$	0.69 (4.55)	0.67 (20.05)	0.60 (8.82)	1.16 (6.02)	0.88 (5.49)
$LnCost$	-0.08 (-2.93)	-0.09 (-12.90)	-0.06 (-4.42)	-0.13 (-4.30)	-0.11 (-11.10)
<i>Autocorrelación</i> 2	-1.05	0.73	-1.37	-0.68	-0.54
<i>Sargan (d.f.)</i>	13.37 (12)	13.14 (12)	11.54 (12)	12.52 (12)	10.06(12)
<i>Wald test</i>	4998.66 (3)	36573 (3)	1130 (3)	826.50 (3)	827.90 (12)
Long run parameters estimated					
$LnGPD$	1.92	2.09	0.84	1.76	1.29
$LnCost$	-0.22	-0.28	-0.08	-0.20	-0.16

Notes: Dependant variable: logarithm of the number of overnight stays. t-ratios in parentheses. Estimations are obtained by using the instruments $LnPernt_{i,t-1}$ lagged up to two periods to avoid problems caused by having too many instruments in relation to the cross-sectional panel size (Alonso-Borrego y Arellano, 1999).

In first place, we can say that the results obtained in the five models have the same signs and their values are not significantly different. On the other side, the results show the importance of habit persistence to explain foreign tourism demand, especially in the case of Spain, where the 64% of the total overnight stays of foreign tourists are attributable to habit persistence and mouth-to-mouth effect, and group 1 (Canary Islands and Balearic Islands) where the 68% of the overnight stays of foreign tourists are imputable to these effects.

The estimated coefficient for the income variable has the expected sign. Since the estimated coefficient for this variable has a value lower to 1 in most of the estimations, we can conclude that tourism is not considered by foreign tourists as a luxury good, whereas tourism is very dependant of the economic situation of the countries of origin in the long-run. Short-run elasticities of the price of crude oil suggest overnight stays are not too sensitive to changes in theses prices. Low cost airlines may be the reason tourism demand is less sensitive to the cost of the trip since it is always possible to find reasonable prices.

4. Conclusions and policy implications

In this paper we used a dynamic model specified in a double-logarithmic form. An advantage of these kind of models is that, besides introducing the possibility of taste changes in visitors preferences, it also gives both long-run and short-run elasticities.

A first conclusion is the significance of the lagged dependant variable which may be interpreted in terms of high fidelity of consumers to the destination and/or as an important word-of-mouth effect on consumers decision in favour of this destination. Therefore, suppliers of tourism services should improve their service quality in order to attract new tourists and generate fidelity in the tourists that have already visited the country. On the other hand, economic conditions of the countries of origin have been estimated to be very significant to determine international tourism demand, estimating a big effect in the long-run. It would be convenient to diversify tourism promotion to different countries in order to avoid the risk of concentrating in few markets and thus depending on their economic conditions. Tourism demand in Spain presents a great seasonality so diversifying in markets looking for more options than just sun and beach would be interesting. It is possible that the appearance of low cost airlines could partially explain that international tourism demand is less sensitive to the cost of the trip. An important element to attract new tourists would be to continue improving in the future the possibility to travel at low prices.

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