Structural changes in the Balearic Islands

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Abstract:

The 2004 input-output table, the 1997 input-output table and the 1983 input-output table show the Balearic Islands as a service oriented economy, highly specialized in the production of services for tourists. The main purpose of this paper is to provide an assessment of the weight of tourism in the Balearic Islands in 1983, 1997 and 2004 using input-output techniques and several alternative assumptions on endogeneity of final demand components. We want to know the structural changes in this period in the tourism sector in the Balearic economy.

Key words: Input-output table, input-output model, tourism impact.

1. Introduction

The main aim of this paper is to analyse the economic structure of the Balearic Islands over the last 20 years and, more specifically, the role that the tourist industry has played in it. The said analysis is based on input-output tables for the Balearic economy, available at three points in time: firstly, the "*1983 Input-Output Tables for the Autonomous Community of the Balearic Islands*", drawn up by a team of researchers from the University of the Balearic Islands and published by the Government of the Balearic Islands' Treasury Department in 1988; secondly the "*1997 Input-Output Tables for the Autonomous Community of the Balearic Islands*", drawn up by a team of researchers from the University of the Balearic Islands; and lastly the "*2004 Input-Output Framework for the Balearic Islands*", published by the Government of the Balearic Islands' Department for the Economy, Treasury and Innovation in 2007.

A uniform analysis could offer a global insight into the evolution of the Balearic tourist industry and its contribution to the Balearic economy from 1983 through until 2004. Unfortunately, however, methodological differences in the three input-output tables make strictly sectoral comparisons impossible. The 1983 and 1997 input-output tables classified companies as belonging to a specific sector, depending on their main activity. This means that the hotel sector's output in 1983 and 1997 cannot be compared with its output in 2004. In 1983 and 1997, the hotel sector encompassed output by hotels in terms of accommodation, catering and other secondary activities. The 2004 symmetrical table, which works with uniform fields of activity, only takes into account the output of products within that specific field and so the hotel sector only encompasses accommodation, while all secondary output is classified under the corresponding field of activity. To overcome this problem, the tourist sector as a whole was analysed.

The analysis was conducted in three separate stages. Firstly, an analysis was made of the percentage of wages and salaries, gross operating surplus, gross value added and output generated by sectors defined as tourist sectors (the tourist industry) and changes in these percentages during the three available points in time. Secondly, after analysing the origin of intermediate consumption by the tourist industry, output and uniform demand growth multipliers were calculated. These facilitate the detection of those sectors with the highest capacity to have a ripple effect or strangle the Balearic economy in 2004. Finally, the gross value added and necessary labour to meet the tourist demand by non-residents in the Balearics in 1983, 1997 and 2004 were obtained.

2. The role of tourism in the Balearic economy and recent trends

Input-output frameworks offer a detailed description of the production process (cost structure, generated earnings and labour) and flows of goods and services (output, imports, exports, final consumption, intermediate consumption, and capital formation by product groups).

All this information in the input-output tables provides a comprehensive, detailed vision of different sectors of the economy, making it possible to analyse and evaluate the structure and evolution of regional economies. This information also serves as a statistical basis for the design, execution and monitoring of regional policies. Merely by interpreting the three available input-output tables for the Balearic economy, a comparison can be made of the share of the total figure for the economy that is accounted for by the output, wages and salaries, and gross operating surplus of each regional economic sector.

The main problem that is involved in this analysis of the tourist sector is the fact that tourist activities are not concentrated in one single sector, since many sectors contribute toward meeting tourism demand. Consequently, following international conventions, lodging, travel agency, car-hire, restaurant, bar and cafeteria, cultural and recreational, real estate rental, and air, sea and land transport services were all classified as tourist activities (see Appendix 1).

Table 1 shows the contribution of the Balearic tourist industry to various total figures for the Balearic economy during these three moments in time. The table shows that, in 1983, the tourist industry generated 43.21% of the Balearic GVA at market prices, with the figure changing to 45.39% in 1997 and 40.95% in 2004.

This analysis was made by aggregating sectors classified as tourist sectors, even though some were included (like restaurants, bars and cafeterias) whose output is not solely focused on tourism demand. As a result, strictly speaking we should not talk about tourism's share of the GVA but rather the tourist industry's share of it (since its output is mainly but not exclusively directed at meeting tourism demand).

It is also important to bear in mind the fact that the percentages that are analysed over the eleven years are not strictly comparable, due to methodological changes in the input-output tables and national accounting in general during the period. The breakdown of the sectors for each year might also affect the comparison. Despite these obstacles, our analysis is a good approximation.

Table 1: The Balearic tourist industry

	1983	1997	2004
	Tourist industry	**Tourist industry**	**Tourist industry**
Intermediate inputs	36.90	40.09	48.38
Wages and salaries	32.20	31.29	27.58
Gross operating surplus	54.86	56.62	54.24
Gross value added	43.21	45.39	40.95
Value of output	40.71	43.43	44.78

If the two main components of the GVA - wages and salaries and the gross operating surplus - are analysed for the three aforementioned years, the following conclusions can be reached. The Balearic tourist industry's share of the region's total wages and salaries dropped, falling from 32.20% in 1983 and 31.29% in 1997 to 27.58% in 2004. Meanwhile the Balearic tourist industry's share of the region's gross operating surplus remained more or less constant, with percentages of 54.86% in 1983, 56.62% in 1997 and 54.24% in 2004.

The Balearic tourist industry's share of the region's total intermediate consumption rose sharply from 36.90% in 1983 to 40.09% in 1997 and 48.38% in 2004. If intermediate consumption is broken down according to its origin, the tourist industry's share of intermediate consumption originating in the Balearic Islands was 38.91% in 1983, 38.26% in 1997 and 52.44% in 2004. This shows the increasing connection between the Balearic tourist industry and the economy's remaining sectors. In terms of output, an analysis of the input-output tables shows that the Balearic tourist industry's share of the region's total output rose during the period under study from 40.71% in 1983 to 43.43% in 1997 and 44.78% in 2004.

Once again, it is worth highlighting that these figures reflect output by the tourist industry rather than tourism's share of Balearic output in the strict sense of the word, because these sectors produce goods and services to meet the total demand, whether by residents (motivated or not motivated by tourism), or non-residents.

To round off the overview offered by the input-output tables, it is interesting to analyse the contribution of different components of the final demand to the regional economy's total final demand figure in 1983, 1997 and 2004 (i.e. consumption by residents or non-residents, the public authorities, non-profit-making organizations servicing households, gross fixed capital formation, changes in stocks, and exports).

Table 2: Structure of the final demand

	% of final demand 1983	% of final demand 1997	% of final demandl 2004
Consumption by residents	39.01	42.38	38.44
Consumption by non-residents	34.06	31.42	25.24
Public authorities	6.61	6.61	8.90
Non-profit-making orgs. serv. households			1.23
Gross fixed capital formation	13.82	14.61	14.93
Changes in stocks	0.76	0.18	0.02
Exports	5.73	4.79	11.13
Total final demand	**100**	**100**	**100**

The biggest change occurred in consumption by non-residents. In 1983, consumption by this group represented 34.06% of the Balearic economy's final demand. In 1997, this percentage dropped to 31.42%, and in 2004 the input-output tables show that consumption by non-residents fell once again to 25.24% of the total final demand.

This drop in the contribution of consumption by non-residents to the total final demand did not, however, imply a drop in output by the tourist industry. As a result, without overlooking the importance of consumption by non-residents in the Balearics, it can be seen that the contribution of exports to the Balearic economy has grown. In 1983 exports accounted for 5.73% of the total final demand, falling to 4.79% in 1997 but then moving up to 11.13% in 2004.

New export sectors have emerged, displacing traditional ones. In 1983, the footwear industry accounted for 28.29% of all Balearic exports, followed by the fashion jewellery sector with a share of 10.55% and metal products with 10.17%. In 1997, the metal manufacturing sector accounted for 39.50% of all exports by the Balearics, while footwear accounted for 8.65%. However, if we look at 2004, the structure changed completely, with real estate services, property sales and ancillary activities accounting for 12.05% of Balearic exports, air passenger transport accounting for 9.10%, the building sector 8.35%, footwear, leather and finishes 7.32%, ancillary services for the passenger transport sector (which includes travel agencies) 6.68%, and other business services 6.06%.

In short, there are sectors classified as forming part of the tourist industry that not only produce goods and services to meet the demand by non-residents within the Balearics but also the external demand for tourist services. Consequently, although the contribution of consumption by non-residents to the Balearic GDP dropped over the course of these years (with a figure of 47.33% in 1983, 42.34% in 1997 and 33.56% in 2004), the tourist industry maintained its level of output, thanks to the emergence of a new type of export service.

Relations among the different sectors used to define the Balearic economy in the three available input-output tables are reflected in the intermediate consumption matrix.

In continuation, an analysis will be made of intermediate consumption by the tourist industry (that is, accommodation, travel agency, car-hire, restaurant, bar and café, cultural and recreational, and property rental services) in 1983, 1997 and 2004, showing the changes that occurred in sectoral relations.

Table 1 shows that the tourist sector's share of total intermediate consumption by the Balearic economy amounted to 36.90% (122,847,494 thousand pesetas) in 1983. Of this figure, 13.71% was attributable to the real estate rental sector, 12.41% to energy, 6.86% to beverages, 6.70% to the livestock slaughter and meat industry, 6.02% to other food industries, 4.94% to the wine and spirits sector, and 4.64% to wholesale trade.

In 1997, the tourist sector's share of the region's total intermediate consumption was 40.09% (465,059 million pesetas), of which 12.47% was attributable to the energy sector, 10.74% to the food and tobacco industries, 8.57% to construction, 7.86% to business supply services, 5.48% to ancillary services for the transport sector, and 4.94% to real estate activities.

Lastly, in 2004, the tourist industry consumed an amount equivalent to 9,005,117 thousand euros (48.38% of all intermediate consumption by the Balearic economy), of which 17.16% was attributable to the hotel accommodation sector, 8.14% to ancillary services for the passenger transport sector (which includes travel agencies), 6.56% to the construction sector, 6.53% to air passenger transport services, 5.71% to financial intermediation services, and 5.43% to other business supply services. The main difference, in comparison with the two previous periods, is the fact that sectors defined as forming part of the tourist industry gain in importance as the producers of intermediate goods needed by other tourist sectors for production purposes.

The growth in the tourist industry's share of Balearic total intermediate consumption between 1983 and 2004 is further reinforced, if possible, by the increase in the contribution of intermediate consumption by the Balearic economy to the value of Balearic output from 1983 to 2004. In 1983, the corresponding figure was 39.52%, while in 2004 it had risen to 51.54%.

Following this initial overview, the input-output tables can be used to look further in depth at the region's economic structure by using output multipliers (the final effect on all sectors of a one-unit increase in sector j's final demand) and uniform demand growth multipliers (the final effect on output by sector i of a one-unit increase in the final demand experienced by all sectors).

Through output multipliers, an analysis can be made of the extent to which a particular sector will generate an increased output by all remaining sectors of the economy if it increases its own output; that is, the ripple or knock-on effect it causes. Meanwhile, with uniform growth demand multipliers, an analysis can be made of the extent to which output by one sector in particular is needed for all remaining sectors to be productive. This is known as the capacity to strangle the economy.

These calculations facilitate the definition of key sectors (sectors whose knock-on effect or strangling capacity is higher than average for the economy), sectors that act as driving forces (whose knock-on effect is above average although their strangling capacity is below average), strategic sectors (whose strangling capacity is above average although their knock-on effect is below average), and finally independent sectors (whose knock-on effect and strangling capacity are below average for the economy).

Because the different methodologies that were used to draw up the three available input-output tables for the Balearic economy hinder strictly sectoral comparisons, it can lead to errors if output and uniform demand growth multipliers are used to examine the evolution of intersectoral relations from 1983 to 2004. As a result, we will focus on an analysis inferred by the 2004 Balearic input-output table, since it is the most recent. A classification of sectors of the Balearic economy into key, strategic and driving force-type sectors in 1983 and 1997 can be found in articles by C.N. Juaneda (1990) and C. Polo and E. Valle(2002), respectively.

In 2004, key sectors of the Balearic economy were ancillary services for the passenger transport sector (which includes travel agencies), ancillary services for the goods transport sector, and real estate rental services. The hotel accommodation sector can be classified as a strategic sector. Insofar as the travel agency sector is accountable for the highest percentage of consumption by non-residents and the source of most intermediate consumption by travel agencies is the accommodation sector, if the accommodation sector saw a halt in production, it would strangle the rest of the economy. That is why it is strategic. The restaurant sector, maritime and air transport sectors, and real estate services, and real estate sale sectors act as driving forces. If they see a growth in demand, it does not just boost output within the corresponding sector but also within all other sectors of the Balearic economy

3. Analytical framework

The importance of tourism branches and non residents' final consumption are a clear indication of the importance of tourism sectors in the BI economy. But this information is insufficient to calculate the share of production, value added, employment, etc. due to tourism. Fortunately, the input-output model can be used to assess the weight of tourism in the BI economy.

The standard input-output model allows one to calculate the production vector y that satisfies a predetermined final demand vector d. Since the 1997 IOT distinguishes flows by origin, the equilibrium condition among production and uses by sector is set as follows

$$y = A^I y + d^I \qquad\qquad (1)$$

where A^I is the matrix of domestic intermediate input coefficients and d^I the vector of domestic final demand. An estimate of production associated with tourism y_T can be obtained solving equation (1) for the predetermined final demand vector d_T^I that stands for tourism demands:

$$y_T = A^I y_T + d_T^I. \qquad (2)$$

Then, intermediate consumption, value-added, employment and imports due to tourism can be calculated for each branch multiplying the corresponding technical coefficients by the activity levels. In this way, one can calculate the share of tourism on value added or employment for the entire economy. [1]

The standard model can be modified to take into account that residents' consumption and (partially) investment may be endogenous. In the first case, the model is modified by including an additional activity that produces a consumption bundle in fixed proportions

$$\begin{pmatrix} y_T \\ C \end{pmatrix} = \begin{pmatrix} A^I & c \\ l\bar{c} \end{pmatrix} \begin{pmatrix} y_T \\ C \end{pmatrix} + \begin{pmatrix} d_T^I \\ 0 \end{pmatrix} \qquad (3)$$

where C stands for aggregate residents consumption, c is the vector of consumption shares, $l^{'}$ is row vector of labor coefficients, $\bar{c}$ the average consumption per unit of labor.

4. The weight of tourism in the Balearic Islands

4.1. The input-output model

In the second section, an analysis was made of the tourist industry's share of the total Balearic GVA. This figure was 43.21% in 1983, 45.39% in 1997 and 40.95% in 2004.

The next step is to analyse the GVA of each of the Balearic economy's different sectors that was needed directly or indirectly to meet the demand by non-residents in 1983, 1997 and 2004. In this way, not only is the value added generated by the tourist industry considered but also the value added generated by all other sectors of the economy needed to meet the demand. Using this method, we can find the weight of consumption by non-residents in relation to the whole of the Balearic economy and, more specifically, in relation to each of its economic sectors.

In 1983, 38.24% of the Balearic GVA was needed directly or indirectly to meet the demand by non-residents (a figure worth 190,604 million pesetas). 44.79% of this percentage

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[1] The model can be modified to take into account that some intermediate goods used in production are tourist in nature. In order to account for that, the model can be stated as follows:
$y_T \equiv A_T^I y_T + \tilde{d}_T^I + x_T$ where A_T^I is the matrix of technical coefficients calculated after excluding tourism intermediate inputs in all sectors and x_T is the vector of those intermediate tourism inputs.

was generated by the hotel sector, 9.04% by the real estate rental sector, 8.88% by the tourist apartment sector, 3.67% by restaurants, 3.18% by wholesale trade, 2.48% by bars and cafés, 2.17% by retail trade, and 2.14% by travel agencies.

At the same time, we will analyse what percentage of the GVA of each sector was needed to meet the demand by non-residents in the Balearics in 1983. As expected, the highest percentages occur in the tourist sectors. The hotel sector dedicated 99.75% of its GVA to meeting the demand. The corresponding figure for the property rental sector was 85.72%, with percentages of 83.86% for the tourist apartment sector, 69.81% for the travel agent sector, 56.36% for beverages, 56.16% for bars and cafés, 53.89% for the restaurant sector, 51.54 for night clubs, and 43.15% for the real estate rental sector.

In 1997, 36.23% of the Balearic GVA (714,901 million pesetas) was directly or indirectly needed to meet the demand by non-residents. Of this percentage, 32.76% was generated by the one, two and three-star hotel sector, 12.08% by four and five-star hotels, 7.59% by tourist apartments, 5.67% by real estate activities, 3.76% by restaurants, 3.35% by bars and cafés, 3.18% by business supply services, 2.83% by land transport, 2.79% by car hire and moveable property, 2.59% by guesthouses and other accommodation, 2.39% by retail trade, 2.26% by wholesale trade, and 2.22% by travel agencies.

The data indicates that in 1997, 99.33% of the total GVA generated by four and five-star hotels was needed to meet the demand by non-residents in the Balearic Islands, with corresponding percentages of 98.69% for the tourist apartment sector, 98.46% in the case of one, two or three-star hotels, 98.28% for guesthouses and other accommodation, 95.78% for car hire and moveable property, 73.83% for travel agencies, 56.40% for bars and cafés, 49% for nightclubs and other cultural and recreational services, 47.08% for the air transport sector, 40.33% for land transport, and 39.90% for the restaurant sector.

In 2004, 26.64% of the Balearic economy's GVA (4,663 million euros) was needed directly or indirectly to meet the demand by non-residents in the Balearics. Of this, 24.73% was generated by the hotel accommodation sector, 15.08% by restaurants, 9.01% by ancillary services for the passenger transport sector (travel agencies), 7.40% by services relating to holiday home accommodation in owned property or on free lease, 6.06% by real estate rental services, 4.73% by retail trade, 3.45% by other business services, 3.19% by machinery hire and household goods, and 2.68% by intermediate financial services.

If an analysis is made of what percentage of the GVA of each sector was needed to meet the demand by non-residents in the Balearics, the following results are obtained: 89.90% in the case of ancillary services relating to the passenger transport sector (including travel agencies), 89.62% for the hotel lodging industry, 79.32% for the maritime passenger transport sector, 69.77% for the machinery hire and household goods sectors, 69.47% for services relating to holiday home accommodation in owned property or on free lease, 67.75% for the discretionary

on-land passenger travel sector, 51.09% for market services relating to recreation, culture and sport, 48.86% for air passenger transport, and 41.64% for the restaurant sector.

In analyses of the GVA generated in 1983, 1997 and 2004 by each sector of the Balearic economy in order to meet the demand by non-residents, it is interesting to look at these effects in employment terms.

In 1983, 29.30% of all employment in the Balearics was directly or indirectly involved in the production of goods and services needed to meet the demand by non-residents in the Balearics. This represented 68,767 jobs. Of these jobs, 38.65% were engaged in the hotel trade, 6.55% in restaurants, 4.85% in bars and cafés, 4.36% in apartments, 4.23% in wholesale trade and 3.41% in retail trade.

In 1997, 30.12% of all employment in the Balearics was directly or indirectly involved in the production of goods and services needed to meet the demand by non-residents in the Balearics. This represented 104,148 jobs, 27.63% of which related to jobs in one, two or three-star hotels, 9.4% in four or five-star hotels, 6.4% in bars and cafés, 5.34% in tourist apartments, and 5.14% in restaurants.

Finally, it can be seen that in 2004, 22% of all employment in the Balearics was engaged in the direct or indirect production of goods and services needed to meet the demand by non-residents in the Balearics. This represented 100,295 jobs. Of these, 23.12% were engaged in the hotel accommodation sector, 18.87% in the restaurant sector, 10.29% in retail services, 7.79% in ancillary services for the passenger transport sector (which includes travel agents), 4.92% in other business services, and 4.17% in market services relating to recreation, culture and sports.

In continuation, a calculation will be made of the tourism multiplier for the Balearic economy in 1983, 1997 and 2004. This compares initial tourist expenditure in the Balearic economy with the total output required in exchange for this expenditure.

In 1983, by dividing the value of products at factory prices needed to meet the demand by non-residents (319,896,804 thousand pesetas) by the value of the said tourism demand (235,895,562 thousand pesetas), we get a multiplier of 1.36, which means that for each one-unit monetary rise in tourism expenditure, the Balearic economy experiences a 1.36-unit monetary rise in output. Payeras and Sastre (1994) obtained a tourism multiplier, based on the input-output table for the Balearic Autonomous Community for 1983, with data from the Tourist Expenditure Survey for 1991, of 1.49. A comparison between both multipliers is not possible because, although the economic structure of the 1983 input-output tables was maintained, tourist expenditure for different years is used. This is not the only reason why a comparison is impossible. Methodologically, Payeras and Sastre also included imports in the calculation of the multiplier, obtained by dividing the total resources (output and imports) needed to meet the demand by non-residents by the value of the said demand.

In 1997, by dividing the value of products at factory prices needed to meet the demand by non-residents by the value of the tourism demand, we get a multiplier of 1.28 (Polo and Valle, 2008), which represents a drop in comparison with the 1983 figure of 1.36.

Lastly, in 2004, by dividing the value of the output at basic prices needed to meet the demand by non-residents by the value of the tourism demand, we get a multiplier of 1.73, which means that for each one-euro rise in tourist expenditure, the Balearic economy experiences a 1.73-euro rise in production.

Such a big rise in the tourism multiplier can be accounted for by the sharp increase in the tourist industry's share of Balearic intermediate consumption for the period under study.

4.2. Endogenous consumption by residents

All the data analysed up until now captures the GVA and total direct and indirect employment needed to meet the demand by non-residents in the Balearics. However, what has not been captured so far is the effect of the output that is needed to meet the demand generated by tourist industry earnings. That is, workers and employers from the tourist industry earn income that enables them to demand new goods or services. To capture this effect, consumption by residents will be endogenized, including the domestic services sector as if it were just another productive sector, thus obtaining the direct, indirect and induced effects on the GVA and employment in the Balearics needed to meet the demand by non-residents.

In 1983, the direct, indirect and induced GVA generated by the Balearic economy in order to meet the demand by non-residents in the islands constituted 54.75% of the region's total GVA (272,885 million pesetas). 31.30% of this figure was generated by the hotel sector, 10.07% by the real estate rental sector, 7.68% by retail trade, and 6.78% by the tourist apartment sector.

If an analysis is made of the percentage of the GVA of each sector that is needed to meet the demand by non-residents in relation to data without induced effects, it can be seen that 99.80% of the hotel sector's GVA is required. Also needed are 91.65% of the GVA of the apartment sector, 90.56% of the GVA of the real estate rental sector, 83.62% of the GVA of the travel agency sector, 77.25% of the GVA of the bar and café sector, and 75.61% of the GVA of the restaurant sector. There are big differences when induced effects are included, particularly in sectors whose output is not devoted exclusively to meeting the demand by non-residents, like the restaurant sector, which dedicated 53.89% of its value added if direct and indirect effects are included and 75.61% if induced effects are also included.

In 1997, the direct, indirect and induced GVA generated in the Balearics to meet the demand by non-residents amounted to 53.76% of the total GVA (that is 1,060,856 million pesetas). Of this percentage, 22.23% was generated by one, two and three-star hotels, 10.66%

by real estate rental activities, 8.16% by four or five-star hotels, 6.81% by the retail trade, 5.15% by tourist apartments, and 4.32% by restaurants.

If we analyse the percentage of the direct, indirect and induced GVA for each activity needed to meet the demand by non-residents in the Balearic economy in 1997, we can see that almost 100% of the GVA of the accommodation sectors, 97.51% of the GVA of the car-hire and moveable property sectors, 83.82% of the GVA of the travel agent sector, 76.90% of the GVA generated by bars and cafés, 73.02% of the GVA generated by nightclubs and other cultural and recreational services, and 67.90% of the GVA from the restaurant sector were needed.

Lastly, in 2004, the direct, indirect and induced GVA generated in the Balearic Islands to meet the demand by non-residents represented 36.59% of the total GVA (that is 6,404,461 thousand euros). Of this amount, 18.26% was generated by the hotel sector, 15.58% by the restaurant sector, 8.67% by real estate rental services, 6.90% by retail services and 6.63% by ancillary services for the passenger transport sector, which includes travel agents.

The percentage of the direct, indirect or induced GVA that each sector dedicated to meeting the demand by non-residents in 2004 can be seen in continuation. The hotel sector dedicated 90.86% of its GVA, ancillary services for the passenger transport sector (travel agencies) dedicated 90.81%, maritime passenger transport 83.20%, services relating to holiday home accommodation in owned property or on free lease 78.86%, discretionary on-land passenger transport 74.75%, machinery rental and household goods 73.26%, market services related to recreation, culture and sports 63.05%, and the restaurant sector 59.06%.

Following this analysis of the GVA, it is interesting to study the impact on total employment in the Balearic Islands.

46.91% of all direct, indirect and induced employment was needed to meet the demand by non-residents in 1983, amounting to 110,088 jobs. Of these, 24.15% were employed in the hotel sector, 10.82% in retail trade, and 5.74% in restaurants.

In 1997, 49.05% of all direct, indirect and induced employment was needed to meet the demand by non-residents in the Balearic Islands, amounting to 169,590 jobs. Of these 17.09% were engaged in the one, two and three-star hotel sector, 11.63% in retail trade, 5.79% in four or five-star hotels, 5.38% in restaurants and 5.36% in bars and cafés.

Lastly 32.65% of all direct, indirect and induced employment was needed to meet the demand by non-residents in the Balearics in 2004, amounting to a total of 148,848 jobs, of which 18.03% were engaged in the restaurant sector, 15.79% in the hotel sector, and 13.89% in the retail trade.

5. Conclusions

By way of a summary, an outline will be made of the main conclusions of our analysis of the three available input-output tables for the Balearic Islands. Firstly, the share of the tourist industry's total regional GVA was calculated (43.21% in 1983, 45.39% in 1997 and 40.95% in 2004). Secondly, an analysis was made of the direct and indirect GVA needed to meet consumption by non-residents in the Balearics, reaching the conclusion that 38.24% of the Balearic GVA was needed in 1983, 36.23% in 1997 and 26.64% in 2004.

These results show that while the tourist industry maintained its share of the total Balearic GVA, the direct and indirect GVA needed to meet the demand by non-residents in the region dropped in 2004 in comparison with the previous years for which input-output tables are available. This does not mean that tourism's contribution to the Balearic economy has dropped. It indicates that there are different types of tourism demand, not just the demand by non-residents in the Balearics but also the tourism demand by residents and the demand for tourism services outside the Balearics. This diversification has led to a reduction in the importance of consumption by non-residents in its capacity as the sole driving force behind the demand for tourism services in the Balearics.

6. References

Conselleria d'Economia i Hisenda del Govern Balear (1988), "Las tablas input-output de la Comunidad Autónoma de las Islas Baleares 1983". Baleares.

Conselleria d'Economia, Hisenda i Innovació del Govern de les Illes Balears (2007), "El Marco input-output de las Islas Baleares 2004". Baleares.

Payeras Llodrá, M. and F. Sastre Albertí, (1994), "El multiplicador turístico: su aplicación a la economía balear", *Papers de Turisme*, 16, pp. 15-29.

Juaneda Sampol, C.N., (1990), "Análisis de las interdependencias y encadenamientos sectoriales de la economía balear", *Papeles de Economía Española. Economía de las comunidades autónomas*, 8.

Polo, C. and E. Valle, (2002), "Un análisis input-output de la economía balear", *Estadística Española*, 44 (151) pp 393-444

Polo, C. and E. Valle, (2008), "An assessment of the impact of tourism in the Balearic Islands", *Tourism Economics*, 14 (3) pp 615-630

Universidad de las Islas Baleares "Las tablas input-ouput de la Comunidad Autónoma de las Islas Balearse 1997"

Appendix 1

1983: Tourist Industry
Hotels
Tourists' apartments
Travel agencies
Car renting
Bars and coffee shops
Restaurants
Real Estate
Real Estate
Other transport
Land transport
Related transport activities

1997: Tourist Industry
4-5 star hotels
1-3 star hotels
Tourists' apartments
Inn's and other lodging
Travel agencies
Car renting
Bars and coffee shops
Restaurants
Disco bars, nightclubs, etc.
Sport activities
Real Estate

Land transport
Sea transport
Aerial transport
Related transport activities

2004: Tourist Industry
Lodging services
Holiday home lodging, on property or free lease
Other supporting services for transport of passengers (Travel agencies)
Leasing or rental services concerning machinery and equipment without operator (including motor vehicles and vessels) and personal and household goods
Food serving services
Real estate services – selling of real estate and auxiliary activities
Real estate services – renting of real estate
Market recreational, cultural and sporting services
Non-market recreational, cultural and sporting services
Non-market tourism services of the general government
Scheduled road transport services of passengers
Non-scheduled road transport services of passengers
Road transport services of freight
Maritime transport services of passengers
Coastal and transoceanic water transport services of freight
Air transport services of passengers
Air transport services of freight
Other supporting services for transport of freight