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## Offshoring and reshoring of services in tourism: A round trip

### Offshoring y reshoring en servicios turísticos: Un viaje de ida y vuelta

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#### ABSTRACT

Coinciding with the onset of the economic crisis in 2007, a reshoring process, consisting in the return to the home country of part or all of the activities previously offshored abroad can be observed in all advanced economies. This study aims to analyse for first time whether this strategy has affected the tourism sector. The results show that between 2007 and 2010 a major reshoring process took place in the tourism sub-sectors, while in 2015, the levels of offshoring recovered slightly but did not compensate the previous strong decline. This reshoring strategy in tourism has basically been carried out through a replacement of foreign suppliers with national suppliers.

**Keywords:** Offshoring; reshoring; tourism services; strategy.

#### RESUMEN

Coincidiendo con el inicio de la crisis económica en 2007, se observa en todas las economías desarrolladas un proceso de reshoring, consistente en el retorno al país de parte o del total de actividades previamente deslocalizadas en el extranjero. Este estudio tiene como objetivo analizar por primera vez si esta estrategia ha afectado al sector turístico. Los resultados muestran que entre 2007 y 2010 se produjo un importante proceso de reshoring en todos los subsectores turísticos, mientras que en 2015 los niveles de offshoring se recuperaron levemente, aunque sin compensar el fuerte descenso anterior. Esta estrategia de reshoring en turismo se lleva a cabo básicamente mediante la sustitución de proveedores extranjeros por proveedores nacionales.

**Palabras clave:** Offshoring; reshoring; servicios turísticos; estrategia.

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## I.-INTRODUCTION

In the first decade of the twenty-first century, developed economies experienced significant growth in the internationalisation of services, including those of tourism activities. The growing development of services offshoring strategies has played a highly important role in this process (Bradford and Kletzer, 2005; Blinder, 2006; Camacho and Rodríguez, 2008; Stratman, 2008; Zeynep and Masini, 2008; Stringlelow et al., 2008; Vivek et al., 2008; Contractor et al., 2010; Fuster and Martínez-Mora, 2013).

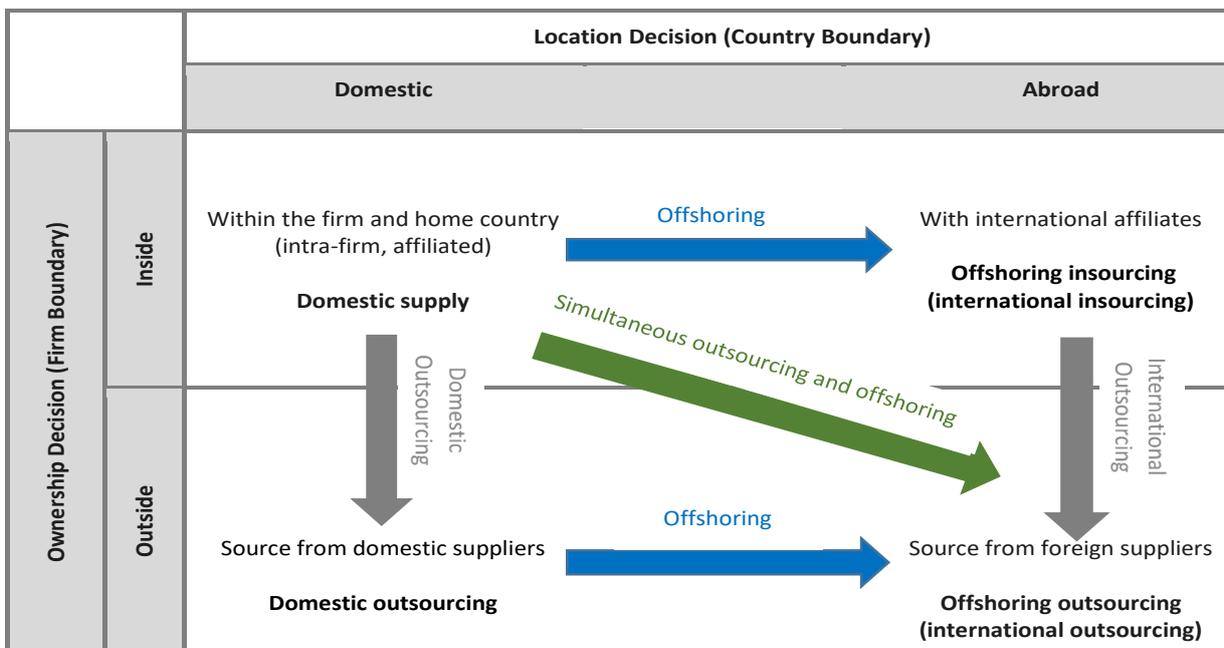
This strategy of services offshoring is a process whereby companies transfer certain services that complement the activities developed in the home country to foreign countries. Companies implement this practice because, in general, the activities that they develop can be broken down into different and separable stages which can be undertaken inside or outside of the firm and in the home country or overseas (Martínez-Noya et al., 2012). For example, innovation activity can be made up of technologically different activities or services. Due to the complexity of these innovation processes in general, it is difficult for companies to obtain the same level of efficiency in all of the activities that make up the process, which may lead to the search for external companies that are more efficient in each of the phases of the innovative activity.

The range of activities or services that companies externalise is becoming increasingly broader and includes, for example, those related to ICTs, administrative management, such as accounting and human resources, those related to sales teams or marketing, transport, finance, communication, technology maintenance, recovery management, etc.

These practices are called outsourcing when the hiring of external suppliers is carried out in the home country and offshoring when the external provision of the services is carried out in foreign countries. The term services offshoring refers to the supply, by companies, of services produced in other countries. There is an offshoring of services when firms contract intermediate services abroad which had previously been carried out in the home country, either by the firm itself or domestic providers. Furthermore, the activities transferred to other countries can be undertaken by the firm itself through affiliates located abroad (offshoring insourcing or international insourcing) or by foreign suppliers (offshoring outsourcing), the latter is also known as international outsourcing (Fig. 1). In both cases, the offshoring of services implies a greater dependence upon imported intermediate services.

Figure 1. Outsourcing *versus* offshoring of services

		Change of location of service production	
		Same country	Other country
Change of ownership/control of service production	Same firm	DOMESTIC SUPPLY	OFFSHORING INSOURCING INTERNATIONAL INSOURCING
	Other firm	DOMESTIC OUTSOURCING	OFFSHORING OUTSOURCING INTERNATIONAL OUTSOURCING



Own elaboration

With these strategies, companies seek to improve their competitiveness, as they draw from the comparative advantages of more competitive domestic or international external suppliers. This is widely corroborated in the economic literature, both theoretically (Grossman and Rossi-Hansberg, 2008; Helpman, 2011), and with empirical evidence (Lo Turco and Maggioni, 2013; Arestei et al., 2013; Bas and Strauss-Kahn, 2011; Díaz-Mora et al., 2018; Martínez-Mora and Merino, 2019).

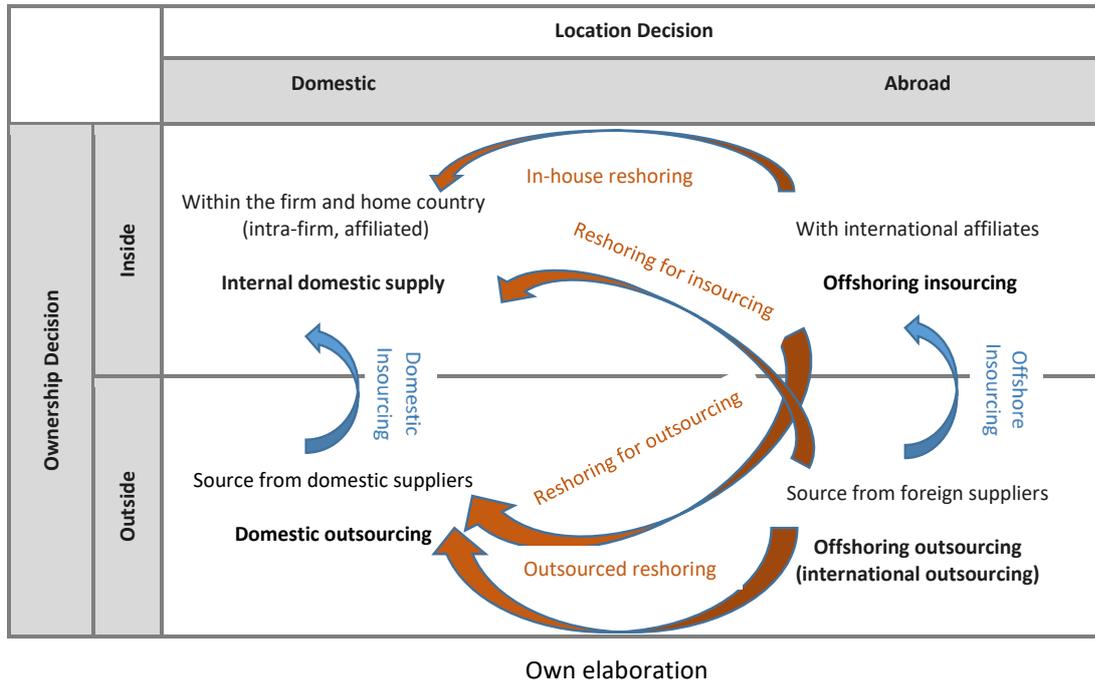
After a previous period beginning in the 1990s, during which material inputs were offshored (Feenstra, 1998; Feenstra and Hanson, 1996; Campa and Golberg, 1997; Hummels et al., 2001; Díaz-Mora et al., 2007), in the first decade of the twenty-first century this offshoring phenomenon expanded to the services sector (Bradford and Kletzer, 2005; Blinder, 2006; Camacho and Rodríguez, 2006; Stratman, 2008; Zeynep and Masini, 2008; Stringlelow et al., 2008; Vivek et al., 2008; Doh et al., 2009; Contractor et al., 2010; Fuster and Martínez-Mora, 2013). This strategy of services offshoring can also be observed in the tourism sector, although this is a field of study that requires further development in the economic literature. Some studies have been carried out for different tourism sub-sectors such as the hotel industry (Espino-Rodríguez and Chun-Lai, 2014; Espino-Rodríguez et al., 2017), the air transport sector (Rieple and Helm, 2008; Hsu and Liou, 2013) and medical tourism (Bies and Zacharia, 2007; York, 2008). And one study has been conducted for the whole of the tourism sector (Fuster et al., 2018), in which the importance of these strategies in some tourism subsectors is highlighted.

In fact, there are many examples of offshoring of services in the tourism sector. For example, the air transport services industry may be located in one country, but it uses tour operators from other countries to manage tickets or hires catering services based in other countries. A museum can be located in one country but it offshores its management, design, marketing services, IT services and so on to companies abroad. Also, hotel companies may be located in one country but they use tour operators and OTAs (on line travel agencies) from other countries to manage bookings. Furthermore, they may hire companies in other countries to undertake services such as promotion, consulting, catering services, design, IT services or training.

In recent years and coinciding with the beginning of the global economic crisis in 2007, a process of a reversal of previous offshoring strategies called reshoring can be observed in all advanced economies. This process consists of the return to the home country of a part or all of the production or activities previously offshored abroad (Gray et al., 2013; Ellram et al., 2013; Fratocchi et al., 2014; Bals, et al., 2016; Wan et al., 2019), through the replacement of service imports with domestic suppliers (reshoring for outsourcing and outsourced reshoring) or in-house production within the company (reshoring for insourcing and in-house reshoring) (Fig. 2). While the services offshoring strategy implies a greater dependence on imported intermediate services, the reshoring strategy implies a lower dependence on foreign intermediate services.

The afore-mentioned examples also explain the strategy of reshoring services in tourism, as the importing of intermediate services, such as design, advertising, consulting, IT services, catering services, training etc., would be discontinued and replaced with the production of these services within the company itself or by suppliers in the home country.

Figure 2. Insourcing *versus* reshoring of services



There is already an abundance of economic literature that analyses the determinants of the reshoring of material inputs in manufacturing companies (Fratocchi et al., 2014, Martínez-Mora and Merino, 2014; Stentoft et al., 2016; Delis et al., 2019). However, reshoring in services has hardly been analysed and there are very few studies available that examine its characteristics, causes and effects (Luce and Merchant, 2003; Aksin et al., 2007; Roggweeen et al., 2007; Bharadwajand and Roggweeen, 2008; Metters, 2008; Aundhe and Mathew, 2009; Nearshore Americas, 2010; Isidore, 2011; Heizer and Render, 2014; Lacity et al., 2016; Albertoni et al., 2015, 2017; Fuster et al., 2020). The economic literature has yet to analyse whether this reshoring phenomenon in services is affecting the tourism sector.

For this reason, and to fill this gap, the aim of this study is to analyse whether reshoring is taking place in tourism services and, if so, to measure its size and examine its characteristics. The study is carried out for the case of Spain, whose tourism sector represents 12.4% of GDP and 12.9% of total employment (Tourism Satellite Account of Spain, year 2019). The data are drawn from the input-output tables of Spain’s National Accounts of the Spanish National Statistics Institute (INE by its initials in Spanish) for the period between 2000 and 2015, the last available year with complete information. The results of this study can be applied to the tourism activities of other countries.

The paper is structured as follows. After this introduction, the previous empirical evidence on the reshoring of services is presented. Then, in the following sections, the empirical analysis is carried out. The evolution of the offshoring of services in tourism activities is analysed for the period considered, identifying the tourism sub-sectors where reshoring has taken place. In addition, the study analyses whether the reshoring strategy for each sub-sector involves a reversal of the offshoring strategy through the replacement of foreign suppliers

with in-house provision within the company or with domestic suppliers. The conclusions of the study are presented in the final section.

## II. RESHORING OF SERVICES: PREVIOUS EMPIRICAL EVIDENCE

The few empirical studies conducted on the reshoring of previously offshored services include, on the one hand, case studies analysing separately the activities of those services in which the reshoring phenomenon is detected with greater intensity. On the other hand, there are two more recent studies that address the issue from a more general approach based on a database with a large number of companies, contemplating all of the service categories.

With respect to the first group of studies based on case studies, one activity in which an intense reshoring phenomenon has been detected in recent years is the service provided by call centres (Aundhe and Mathew, 2009). These services had been offshored in the past by many organisations that hired independent providers to undertake their call centre services, fundamentally based in countries with labour cost advantages, as this type of services is labour intensive. The call centre service supply chain represents a very significant part of the whole process of the outsourcing of services (Xia et al., 2015). However, in recent years, we can observe a growing number of companies eliminating their previously offshored call centres.

Some studies analyse the reasons why this reshoring phenomenon has occurred in the case of call centres from the point of view of the companies (Aksin et al., 2007; Heizer and Render, 2014; Nearshore Americas, 2010). They find that the principal factors causing it are the poorer service quality provided by the foreign suppliers to consumers, the negative publicity in the home country, the lower productivity in foreign countries, the technological requirements to provide high quality services and the desire to eliminate the geographical risk. Other studies focused on consumer considerations (Bharadwaj and Roggweeen, 2008; Roggweeen et al., 2007), suggest that the causes of reshoring are the problems of acceptance by domestic consumers of offshored call centres, that is, their preferences to interact with domestic operators. Meanwhile, Isidore (2011) and Luce and Merchant (2003) analyse the reshoring process in specific cases of US companies that have terminated their previous call centre offshoring contracts in India to take them back to the home country. And others, through theoretical models, study the characteristics that determine the optimum location of call centres, obtaining results that explain the reshoring phenomenon (Xia et al., 2015).

Another example in the services sector in which reshoring processes have been observed is in financial and accounting services. Based on a descriptive case study, Lacity et al. (2016) analyse the reshoring process carried out by a large company with its head office in the United States, which reversed the offshoring contracts that it had maintained with Indian suppliers from 2005, replacing them with a domestic supplier in 2015. The study indicates the advantages that are gained from providing the services in the home country with respect to providing them abroad, such as the increased productivity of the domestic workers, the reduction in costs related to coordinating with foreign suppliers, the lower transaction costs of domestic provision and the greater transparency and flexibility in the provision of the services. The reduction in transaction costs, derived from both the need to undertake more thorough checks when the supplier is located abroad and the difficulties in managing geographically dispersed teams, is a result also obtained in previous studies on offshoring (Carmel and Tjia, 2005; Lacity and Rottman, 2008; Kanawattanachai and Yoo, 2007; Levina and

Vaast, 2008; Mahnke et al., 2008; Choudhry and Sabherwal, 2003; O'Leary and Cummings, 2007; Oshri et al., 2007). Therefore, although the labour costs are higher in the United States than in India, they are compensated by the lower transaction costs and the higher productivity rates. These results coincide with those of other studies that find that, in the offshoring business services, the cost savings sought are not always obtained (Dibbern et al., 2008; Sakthivel, 2007; Wiener et al., 2010).

Another example of reshoring can be found in IT services. Until 2009, the multinational companies in advanced economies offshored a large part of these activities through offshoring outsourcing processes in China and, most of all, India. In recent years, many of them have been reducing the offshoring of these services to these countries and integrating them in-house in their home countries. The main reasons for this are based on the elimination of hidden costs associated to the offshoring outsourcing strategy, the obtaining of greater flexibility and larger innovations adapted to the local market (Margulescu and Margulescu, 2014).

The second group of studies, which analyse the reshoring of services from a more general approach covering all the categories of services, includes the studies by Albertoni et al. (2015, 2017).

In Albertoni et al. (2015) a descriptive analysis is made of the reshoring processes of services detected throughout the world until 2015, distinguishing between home countries and host countries. The data are drawn from the database developed by the Offshoring Research Network (ORN). The study finds that there a services reshoring phenomenon exists, although still very small. Of the offshoring strategies observed, only 7.17 per cent are reversed through reshoring. Among the initiatives involving reshoring, the number of those that were offshored in-house is greater (35.40%) than those that were previously outsourced (22.12%). In other words, there is a greater tendency to relocate activities that were transferred abroad through direct investment than those that imply changing from one external supplier to another. A greater tendency is also observed in reshoring practices among European companies (77%) than US companies (22%). Furthermore, reshoring plans are more frequent from India (40.71%), Asia (except India and China, 12.39%), Eastern Europe (11.50%) and Western Europe (10.62%), indicating that Asian countries are losing their appeal as locations in which to hire service activities. Finally, the types of services most subject to reshoring are Information Technology (24.78%), Call centres (18,58%) and Software development (13,27%), that is, mainly middle and low-value added tasks. The reshoring phenomenon still does not affect the high-value added activities.

Using a standard logistic regression, Albertoni et al. (2017) estimate the causes of the reshoring of services for a sample of 454 companies, based on the same afore-mentioned database (ORN). The authors find that the service activities most prone to being reshored are those that are easily broken down. This is one of the characteristics that also explains the offshoring processes. This is because the activities that can be broken down into several stages and do not need to remain integrated in the company and in the home country are those that are can be most easily transferred to other countries through offshoring. And, logically, they are also those that, for the same reasons, can return to the home country through reshoring processes when the objectives of the previous offshoring strategies are not fulfilled. Another characteristic of those services most likely to be reshored is that which links these processes to previous offshoring processes related to the penetration of new markets. And the third

variable that explains the reshoring processes in services is the labour cost savings. When these cost savings decrease or disappear in the countries in which offshoring was carried out, the strategy is reversed through reshoring.

In short, the same variables that explain the offshoring processes also explain the reversal of the strategy through reshoring.

### III. METHODOLOGY AND DATA

The empirical literature has analysed the dependence on imported inputs using several methodologies. The studies that analyse the phenomenon of offshoring based on input-output tables use two indicators. Following the methodology initially proposed by Feenstra and Hanson (1996, 1999), in order to measure the level of offshoring, an indicator is defined as the proportion of imported inputs (II) over total inputs, both domestic and imported (TI). In subsequent studies, the indicator used to measure offshoring is defined as the proportion of imported inputs (II) over the value of production (Y) (Campa and Goldberg, 1997; Díaz Mora et al., 2007; Cadarso et al., 2012; Michel and Rycx, 2012; Castellani et al., 2013; Fuster et al., 2018, 2019).

$$IDIM1_{jt} = \frac{\sum_{i=1}^n II_{ijt}}{\sum_{i=1}^n TI_{ijt}} \quad (1)$$

$$IDIM2_{jt} = \frac{\sum_{i=1}^n II_{ijt}}{Y_{jt}} \quad (2)$$

Where  $IDIM1_{jt}$  and  $IDIM2_{jt}$  are two alternative definitions of the level of dependence on imported inputs of sector  $j$  in year  $t$ ;  $II_{ijt}$  represents the imported inputs by sector  $j$  from sector  $i$  in year  $t$ ;  $TI_{ijt}$  represents the total inputs of sector  $i$  (domestic and imported) used by sector  $j$  in year  $t$ ; and  $Y_{jt}$  refers to the value of production of sector  $j$  in year  $t$ .

An increase in the value of any of these indicators reveals a greater dependence on imported inputs, in one case, over total inputs and in the other, per unit of production. In both cases we can observe the existence of offshoring. A decrease in the value of the indicators denotes a lower dependence on foreign intermediate inputs, either over total inputs or over production, which is known as reshoring.

The data used in this study have been obtained from the Input Output Tables (TIO by its initials in Spanish) of Spain's National Accounts published by the Spanish National Statistics Institute (INE). The TIO provide complete data, including the import destination table, published on an annual basis until 2010. However, from 2010 the import destination table is only available every five years. In other words, the next year in which they are complete is 2015. As this information for the years between 2011 and 2014 is not available, the analysis for these years cannot be carried out. Hence, the calculations have been made for the period 2000-2010 and for the year 2015, the last available year with complete information. In accordance with the periodicity of the import destination table, the next year of analysis is 2020, which is pending publication.

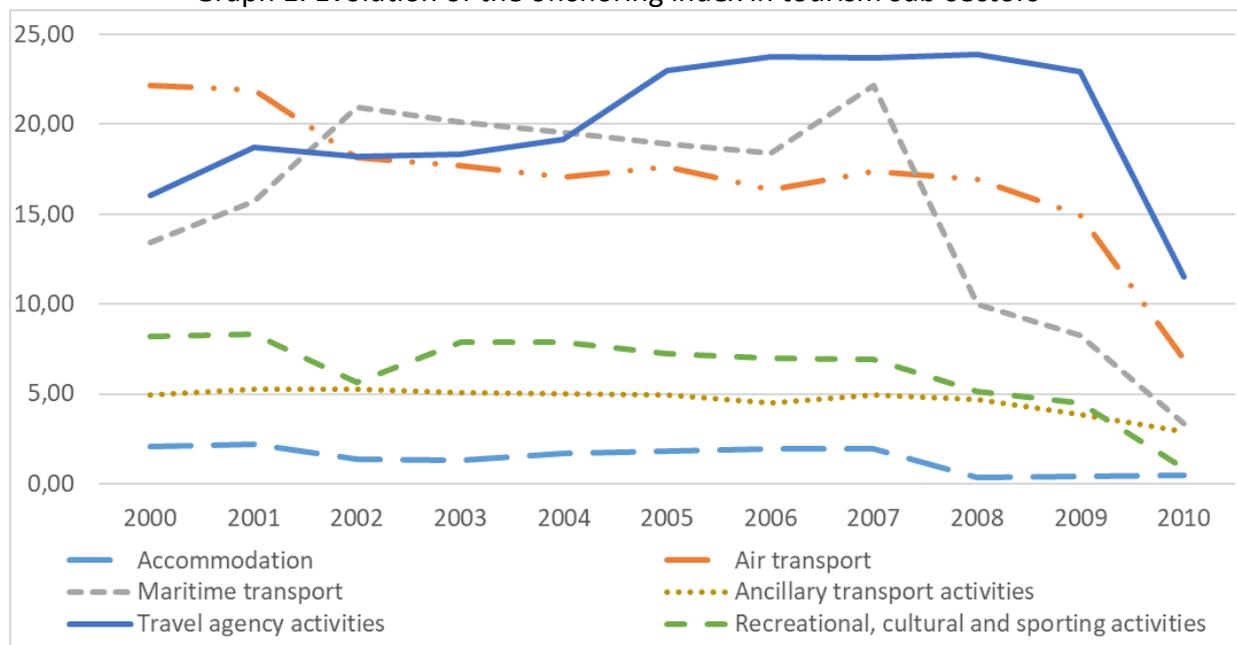
Based on the TIO, we have analysed the dependence of tourism sub-sectors on imported services. The objective is to study the offshoring and reshoring of services in activities related to tourism in the period between 2000 and 2015.

#### IV. OFFSHORING AND RESHORING OF SERVICES IN TOURISM ACTIVITIES

In the years preceding the economic crisis of 2008, the services offshoring strategies implemented by services companies in Spain exhibited an increasing trend (Fuster and Martínez-Mora, 2013; Fuster et al., 2019).

In the ranking of the tertiary activities with the greatest dependence upon imported services by product unit between 2000 and 2007, the first three positions were held by activities directly related to tourism. Specifically, travel agency, maritime transport and air transport activities. However, other tourism sub-sectors, such as recreational, cultural and sporting activities and those related to accommodation or transport, also undertook offshoring processes, although less intensely (Graph 1).

Graph 1. Evolution of the offshoring index in tourism sub-sectors



Own elaboration

However, the outbreak of the crisis gave rise to a change in this trend. There was a reversal of the initial strategy, that is, a significant reshoring process began in 2007. This behaviour can also be observed in tourism services, with considerable decreases in the indicator of the dependence on imported intermediate services in all the tourism sub-sectors, revealing a reversal of the previous offshoring strategies carried out during the period of economic growth (Graph 1).

During the first years of the economic crisis from 2007 to 2010, the reductions in the offshoring indices intensely affected all of the tourism activities. In the tourism sub-sectors with higher levels of offshoring during the growth stage, the decreases were 46.72 percent in maritime transport, 26.54 in air transport and 21.33 in travel agency activities. But the reductions in the rest of the sub-sectors with a lower incidence of offshoring were even greater. Therefore, the offshoring index of recreational, cultural and sporting activities fell by 87.19 per cent, that of accommodation by 37.54 percent and that of ancillary transport activities by 16.08 per cent (Table 1).

Table 1. Evolution of the dependence on imported services in tourism sub-sectors

Tourism sub-sectors	Annual average rate of change				
	2000-2007	2007-2010	2010-2015	2007-2015	2000-2015
Accommodation	-0.86	-37.54	5.99	-14.69	-7.52
Air transport	-3.42	-26.54	-0.06	-12.40	-7.51
Maritime transport	7.42	-46.72	4.30	-21.32	-7.55
Ancillary transport activities	-0.02	-16.08	3.86	-4.65	-2.21
Travel agency activities	5.73	-21.33	2.99	-7.85	-1.20
Recreational, cultural and sporting activities	-2.31	-87.19	5.56	-22.40	-12.13

Own elaboration

Next, we will examine the reshoring process carried out by companies in tourism sectors during the period 2007-2010, analysing for each tourism sub-sector which activities were wholly or partially relocated or brought back to the home country.

The travel agencies probably undertook offshoring strategies in the growth period of 2000 to 2007 to facilitate their introduction into new markets. They basically sub-contracted air and maritime transport services and financial intermediation services and even the services of other travel agencies and tour operators in the foreign countries. However, during the years of the economic crisis, maybe because they were unable to obtain the forecast growth results, they drastically decreased the offshoring of these services. Air transport services were reduced by 89 percent between 2007 and 2010, maritime transport by 98 per cent and travel agencies and tour operators reduced by 93 per cent.

In maritime transport, the offshoring index of auxiliary transport services decreased by 97 per cent and that of insurance services by 89 per cent.

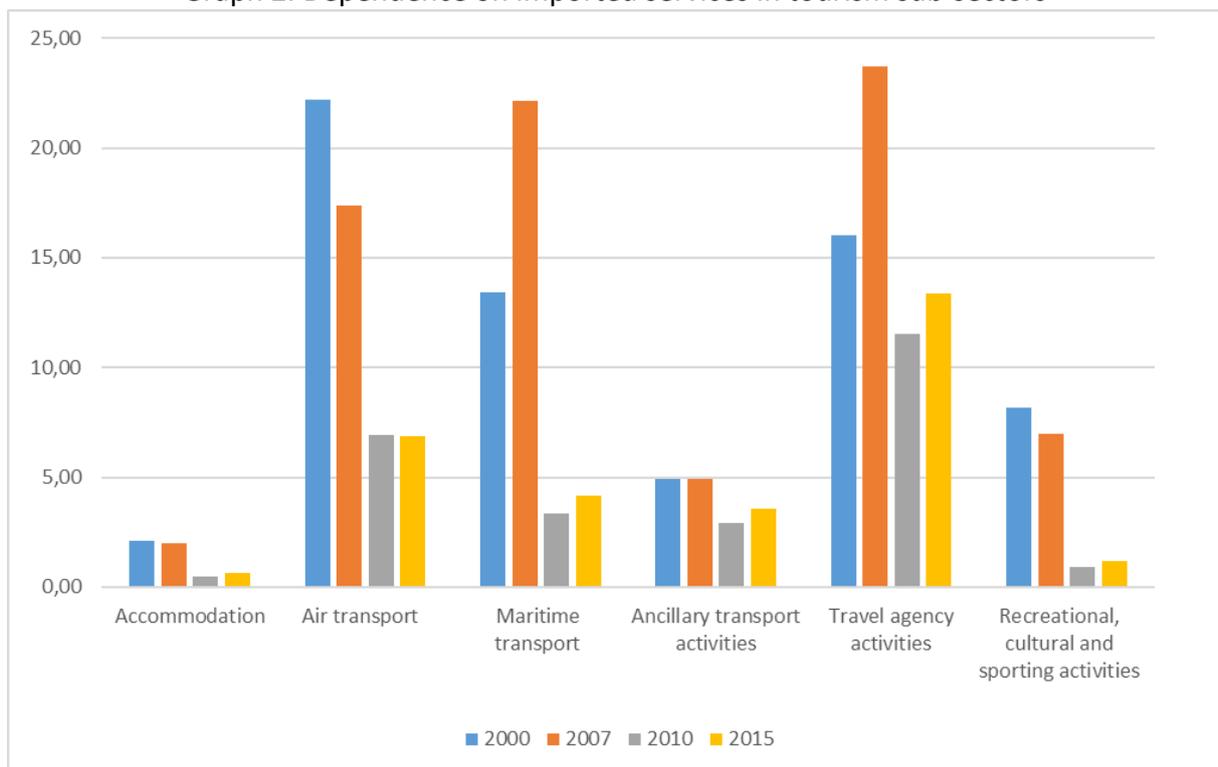
Finally, the air transport sector reduced the air transport services that it contracted in other countries by 87 per cent, auxiliary transport services by 69 percent and machinery hiring services by 53 per cent.

In this period between 2007 and 2010, as well as the three above-mentioned sectors, which are those that implemented offshoring practices during the growth period and partially reversed the strategy after the crisis, another two sectors also carried out reshoring. These were ancillary transport activities and recreational, cultural and sporting activities. Although the latter did not display a noteworthy offshoring index in 2007, it is the sector that experienced the highest reversal in percentage terms in the three following years (87.19 per cent). This sector scaled back the hiring of services of the same sector of activity (82 per cent) and almost completely eliminated the consulting services that it hired before the crisis (98 per cent). Meanwhile, the ancillary transport activities reduced the hiring of services of the same branch of activity (72 per cent) and of air transport (78 per cent).

It should be taken into account that during this period world trade collapsed (Baldwin and Taglioni, 2009) as a result of the global economic crisis, which probably explains part of these reductions in the dependence on imported services. However, the subsequent

economic recovery and the increase in international trade that it generated did not lead to a re-establishment of the offshoring indices prior to the crisis in the tourism sectors. The data of the 2015 offshoring indices reveal a slight increase with respect to 2010 (Graph 2). Growth is observed in the travel agencies (2.99 percent), maritime transport (4.30 percent), ancillary transport activities (3.86 percent), recreational, cultural and sporting activities (5.56 percent) and also in accommodation (5.99 percent). The air transport sector remained practically constant with a slight drop in this period (-0.06 percent). However, the increase in the offshoring indices between 2010 and 2015 was so small compared to the large decrease in the previous years that the net balance of 2007 to 2015 continued to be negative and considerable (Table 1).

Graph 2. Dependence on imported services in tourism sub-sectors



Own elaboration

With the exception of the air transport sector, the increase in the offshoring index between 2010 and 2015 for the rest of the sectors can be explained by the increase in contracting the following services abroad. The accommodation activities sector increased the offshoring of accommodation services (800 per cent), health care (433 per cent), telecommunications (280 per cent), consulting (108 per cent), road transport (106 per cent), energy, gas, steam and air conditioning services (103 per cent), advertising (89 per cent), legal services (81 per cent), insurance (79 per cent), financial services (37 per cent), wholesale trade (27 per cent) and security and research services and other support services to companies (20%). Ancillary transport activities expanded the offshoring of energy services, gas, steam and air conditioning (148 per cent), wholesale trade (45 per cent), storage and auxiliary transport services (41 per cent) and road transport (20 per cent). The travel agencies sector fundamentally increased the foreign contracting of travel agency services (842 per cent), as did that of air transport (343 per cent), energy, gas, steam and air conditioning (208 per cent),

rental services (138 per cent) and financial services (31 per cent). Finally, recreational, cultural and sporting activities offshored mostly more wholesale trade (686 per cent), financial services (650 per cent), energy, gas, steam and air conditioning (209 per cent), legal services (131 per cent), road transport (56 per cent), accommodation (43 per cent), rental (32 per cent) and air transport (there was a shift from not importing these intermediate goods to hiring them abroad in 2015).

The reshoring of services, therefore, plays an important role in the international trade in services, given that tourism companies have significantly reduced their dependence on imported services, not only in their own branch of activity, but also in others related to tourism or otherwise, necessary for the development of their operations. As a result, this reduction in the imports of services has an impact on the trade in services on a global level.

Furthermore, these reshoring strategies can help to improve the image of companies that return activities to the country of origin and provide advantages gained from the proximity of these intermediate services in the form of synergies from their localisation and a possible improvement in employment in the country's services sector.

## V. RESHORING OF SERVICES TO REPLACE FOREIGN SUPPLIERS WITH DOMESTIC SUPPLIERS OR INTERNAL PRODUCTION

An increase in the dependence upon imported intermediate services, that is, the phenomenon of offshoring of services, can be the result of the replacement of domestic suppliers external to the company with foreign suppliers or a process of international fragmentation of production. In other words, the company ceases to perform certain phases of the value chain which it hires abroad third parties to undertake. Meanwhile, a decrease in the dependence on imported inputs, which is called reshoring, could be derived from a replacement of service imports with domestic suppliers (reshoring for outsourcing and outsourced reshoring) or in-house production within the company (reshoring for insourcing and in-house reshoring).

In order to analyse whether offshoring is due to a change in the source of supply (from domestic to foreign suppliers) or whether it is the result of international fragmentation of production, the indicator of the dependence on imported inputs previously defined as the proportion of imported inputs over the value of production ( $II/Y$ ), can be broken down into two components. On the one hand, the proportion that imported inputs represent of total inputs used, (both of domestic and imported origin) ( $II/IT$ ) and, on the other hand, the total inputs used in relation to the value of production ( $TI/Y$ ), as expressed in Equation 3.

$$IDIM_{jt} = \frac{\sum_{i=1}^n II_{ijt}}{Y_{jt}} = \frac{\sum_{i=1}^n II_{ijt}}{\sum_{i=1}^n IT_{ijt}} \times \frac{\sum_{i=1}^n IT_{ijt}}{Y_{jt}} \quad (3)$$

Where  $IDIM_{jt}$  represents the level of dependence on imported inputs of sector  $j$  in year  $t$ ;  $II_{ijt}$  represents the imported inputs by sector  $j$  from sector  $i$  in year  $t$ ;  $IT_{ijt}$  represents the total inputs (domestic and imported) of sector  $i$  used by sector  $j$  in year  $t$ ; and  $Y_{jt}$  refers to the value of production of sector  $j$  in year  $t$ .

The existence of offshoring implies an increase in imported inputs per unit of production, that is, a rise in the ratio  $II/Y$  of equation (3). If this increase is accompanied by a rise in the other two ratios of this equation, this indicates an increase in the proportion of total inputs in relation to the value of production (increase in  $TI/Y$ ), which means that some inputs that were previously produced internally are now being externalised and substituted by foreign suppliers (increase in  $II/TI$ ). This phenomenon is called international fragmentation of production. However, if the increase in the first ratio ( $II/Y$ ) is accompanied by a negative variation in the ratio ( $TI/Y$ ), this would mean that the proportion of total inputs per unit of production ( $IT/Y$ ) reduces, which would indicate that the use of domestic inputs also decreases and is substituted by foreign suppliers.

Analogically, we can analyse whether reshoring is the result of a replacement of foreign suppliers with domestic suppliers or with in-house production within the company.

This breakdown of the index has been used to analyse the phenomenon of offshoring (Díaz Mora et al., 2007; Castellani et al., 2010; Fuster and Martínez-Mora, 2013 and Fuster et al. 2018) and reshoring (Fuster et al., 2020) but it has not yet been used to analyse the phenomenon of reshoring of services for the tourism sector.

In this study, this breakdown has been used to examine the strategy of reshoring of services carried out by tourism-related sectors from the beginning of the international financial crisis.

Between 2007 and 2010, all tourism-related sectors recorded a reduction in the dependence upon imported intermediate services, that is, reshoring. In the majority of the sectors (maritime transport, air transport, travel agency activities, recreational, cultural and sporting activities and amusement and recreational activities), this strategy involves a replacement of service imports with domestic suppliers, either through outsourced reshoring or through reshoring for outsourcing. There are exceptions to this behaviour in ancillary transport activities and accommodation services, where the reshoring strategy is the result of replacing service imports with in-house production within the company, either through reshoring for insourcing or through in-house reshoring (Table 2).

Table 2. Reshoring of services in tourism sub-sectors, 2007-2010

Tourism sub-sectors	Percentage variation 2007-2010		
	$II/Y$	$II/TI$	$TI/Y$
Maritime transport	-84.87	-87.38	19.95
Air transport	-60.31	-66.71	19.24
Ancillary transport activities	-40.70	-37.98	-4.49
Accommodation services	-75.42	-68.79	-21.41
Travel agency activities	-51.31	-57.73	15.13
Recreational, cultural and sporting activities	-87.07	-88.17	9.21
Sports activities and amusement and recreation activities	-84.87	-87.38	19.95

Note:  $II$  represents the intermediate services imported;  $IT$  represents the total inputs (domestic and imported); and  $Y$  represents the value of production.

Own elaboration

## VI. CONCLUSIONS

The analysis of the strategies of offshoring and reshoring of services in tourism activities constitutes a field of study that has not been sufficiently developed in the economic literature. In this study, sectoral data has been used to analyse how these strategies have evolved for the different tourism sectors for the period between 2000 and 2015, the last available year with complete information. During this long period there were both growth and recession phases in the economic activity. The findings show how the phenomenon of the offshoring of services was developed in the stage of economic growth at the beginning of the twenty-first century and reversed through reshoring in the recession phase arising from the international financial crisis that began in 2007.

In the period of economic growth (2000-2007), three tourism sub-sectors stood out in terms of the scale of their services offshoring strategies. These were the travel agency, maritime transport and air transport sub-sectors. Subsequently, with the beginning of the economic crisis, the offshoring trend was reversed and between 2007 and 2010 an important process of reshoring of services was observed with a significant reduction in the dependence on imported intermediate services in all tourism sub-sectors. On the one hand, in the most prominent sub-sectors such as maritime transport, air transport, travel agency activities, this strategy comprised the replacement of services imports with domestic suppliers. On the other hand, in auxiliary transport activities and accommodation services, which have lower indicators of dependence on imported intermediate services, the reshoring strategy was the result of the replacement of services imports with own production within the company.

Meanwhile, the data for 2015 reveal a slight change in trend with respect to 2010, with very small growth in the indicators of dependence on imported services inputs for the tourism sub-sectors, with the only exception of air transport, although its reduction slowed significantly. This change in the evolution of the services offshoring indices could be interpreted as the end of the reshoring phase observed between 2007 and 2010 and the return to offshoring. However, these data should be interpreted with caution, as we should take into account that this increase in the offshoring indices between 2010 and 2015 is so small that it does not compensate the previous reductions, indicating a reshoring trend if we take into account the longer period of 2007-2015.

Furthermore, with the current exceptional circumstances throughout the world caused by the Covid-19 pandemic and the current and future restrictions to international mobility, some reshoring processes initiated in the previous crisis are being resumed, and it is forecast that this phenomenon is likely to continue to grow in the future (Juergensen et al., 2020; Chowdhury et al., 2021).

The main limitation of this study is the lack of data for the period analysed, given that, as previously mentioned, the National Statistics Institute (INE) did not publish the data used for this study between 2011 and 2014. Therefore, we are unable to observe a clear evolution in this sub-period, although its variation rate reveals a reversal of the trend in the strategy of offshoring services.

For the same reason, the years following 2015 cannot be analysed either. The study of a new period with present and future data could help us determine whether the Covid-19 pandemic will lead to an intensification of services reshoring strategies in the tourism

activities. It is probable that the reshoring trend in tourist activities will resume in the short and medium term with greater intensity.

Many lines of research can be derived from this study, such as the analysis of the effects of the reshoring of services on employment in tourism in the country of origin or on the competitiveness of the tourism sectors.

On the other hand, more studies are required on these indicators on a microeconomic level with company data that could provide more information about how these offshoring/reshoring processes of services in tourism are being carried out in sub-sectors such as travel agencies, transport, hotels, restaurants and other tourism activities

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#### **CONTRIBUCIONES DE LAS AUTORAS:**

Las tres autoras han trabajado en el artículo por igual, tanto en la concepción de la idea, análisis de la literatura, la metodología de índices y descomposición de índices, interpretación de los resultados y obtención de conclusiones. Las tres autoras hicieron comentarios críticos sobre todo el trabajo y contribuyeron significativamente a su versión final.