



*Journal of Economics and Business*  
Vol. VII – 2004, No 2 (63 – 79)

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## **Labour Productivity and Competitiveness: an Initial Examination of the Hotels and Restaurants Sector in Selected Countries**

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### ***Abstract***

In this paper we investigate the relationship between the market performance of tourism, productivity and employment. Previous studies have tested the hypothesis that cost and institutional factors are a major source of country differences in export shares in traditional sectors such as manufacturing. This study analyses the Hotels and Restaurants Sector (NACE 55) – one of the leading tourism sectors in France, Greece, Italy, Portugal and Spain with the highest degree of specialization - using a panel data set for 5 countries and 13 years (1990 – 2002). There is some evidence that labour productivity levels are important determinants in explaining competitive performance of these countries (i.e. the number of arrivals of non-resident tourists staying in hotels and similar establishments) in international

markets. However, by keeping constant other exogenous (unobserved) variables, performance improvements of these countries, during this period, were found to be related more to increases in employment rather than to improvements in labour productivity.

**KEYWORDS:** Tourism, competitiveness, labour productivity, employment

**JEL classification:** J24, L83

## **Introduction**

Tourism is a market in constant evolution in direct response to changes in both demand and supply factors such as disposable income, prices, exchange rates and the evolution in tourism destinations (quality, security, environment, culture, etc). These changes affect countries' positions in the world markets. According to World Tourism Organization (WTO), the European Union (EU) numbered six Member States among the top 10 countries in the world welcoming the largest number of international tourists arrivals. Within the EU, income from international tourism in 2002 was highest in Spain, France, and Italy, followed by Greece and Portugal. It is worth mentioning countries' changing shares and places in the positions of the league tables during the last decade or so.

Previous studies have attempted to explain market share positions by focusing on (mostly demand side factors) prices, exchange rates, qualitative and other institutional factors. Supply side factors, and in particular costs structures and productivity, have not been taken explicitly into consideration. For instance the cost of labour and the productivity of labour determine the unit labour cost of labour, a significant factor for the competitiveness of an industry and particularly the tourism industry, where the demand for its products is characterized by high elasticity. Moreover, tourism relies on enterprises from a variety of sectors which have different structure, conduct, and performance. Of particular importance is the Hotels and Restaurants Sector (NACE), one of the leading tourism sectors in France, Greece, Italy, Portugal and Spain, with the highest degree of specialization.

This paper examines the levels of labour productivity and employment in the Hotels and Restaurants Sector and their impact on the competitiveness of the sector in terms of international arrivals in France, Italy, Spain, Greece and Portugal. The structure of the paper is as follows: Section 2 reviews theoretical and empirical studies dealing with productivity and destination's competitiveness. Section 3 examines sectoral, costs and institutional aspects of countries' competitiveness.

Section 4 presents an econometric analysis in order to understand the influence of employment and labour productivity on visit levels. Section 5 presents the results and provides answers to our questions concerning the relationship between employment, its productivity, and competitive performance. Section 6 concludes the paper.

### **Productivity and competitiveness**

Competitiveness of tourist destinations is crucial for tourist destination countries, particularly for the countries which rely heavily on travel and tourism for their economies, as they are striving for a bigger market share of the world tourism industry. Tourism destination competitiveness is becoming an area of growing interest though it remains a general concept. Hassan (2000) defines competitiveness as “the destination’s ability to create and integrate value-added products that sustain its resources while maintaining market position relative to competitors”. This definition incorporates economic, organizational, marketing and sustainability issues. Detailed work [by Ritchie and Crouch (1993), Pearce (1997), Ritchie, Brent and Crouch, (2000), Dwyer and Kim (2003), Enright and Newton, (2004)] uses a systemic approach incorporating cultural and political factors as well other qualitative factors. Though this approach is very useful for a system’s view of destination competitiveness, modeling and constructing indicators, and concept operationalization, industry members and policy makers still need to examine comprehensively specific factors, and their impact and relationships, in order to correct for market or policy failures in specific areas of responsibilities.

Competitiveness has traditionally been measured by export prices, unit labour costs or productivity. Carlin, et al (2001) examined the relationship between export market shares and relative unit costs using a panel of 12 manufacturing industries across 14 OECD countries. They have found that both costs and embodied technology are important, but neither can fully explain changing export positions. Previous multi-country studies of export competitiveness [Fagerberg 1988, Amendola *et al.* 1993] yielded little consensus about whether relative costs matter for the export performance of advanced economies.

In tourism, previous studies have examined tourism competition among the Mediterranean countries with particular emphasis in explanatory variables such as income index, a price index of the host country, a price index of the competitors and exchange rate. The results show that the main determinants of Mediterranean tourism destination competitiveness are both price indexes and exchange rates. Dwyer et. al. (2000), isolate factors such as price differentials coupled with exchange rate movements, productivity levels of various components of the

tourism industry and qualitative factors affecting the attractiveness of a destination. They give emphasis to price competitiveness by distinguishing two major categories – those relating to and from a destination (travel cost) and those relating to prices within the tourism destination (ground cost). Ground costs rely on enterprises from a variety of sectors, with different structures, conduct and performance, which can be summarized as the provision of accommodation, food and drink, transport facilities and services and entertainment. Changing costs in particular destinations relative to others, and adjusted for exchange rate variations, are regarded as the most important economic influence on destination international market shares. According to Edwards (1995), an increase in relative cost, in both the medium and long term, can be shown to be linked to a fall in market share in travel from every origin country. A fall in relative cost is linked to a rise in market share (Crouch 1992, 1994). Therefore, two important factors of the ground cost are productivity and employment. The quality and cost of labour (human capital and wages) and productivity of labour determine the unit labour cost of labour, a significant factor for the competitiveness of the tourism industry.

### **Observed differences in selected Countries**

The EU countries examined in this study are among the world's top tourism destination countries. According to World Tourism Organization (WTO), the European Union (EU) numbered six Member States among the top 10 countries in the world welcoming the largest number of international tourists arrivals. Within the EU, receipts from international tourism in 2002 were highest in Spain, France, and Italy, followed by Greece and Portugal. Within these countries, the sector of hotels and restaurants emerges as one of the largest in their economy (Eurostat, 2004a). The hotel and restaurant sector – which mainly covers hotels, restaurants, cafés and bars, camping grounds, canteens and catering – has witnessed tremendous development in the European Union (Eurostat, 2004b). In particular Spain, Greece and Italy experienced the highest specialization compared with the EU average.<sup>1</sup> France experienced specialization equal to the EU average and Portugal below average.

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<sup>1</sup> *An indicator of sectoral specialization of EU-15 Member States that compares a country's value added shares across industries with the average EU-15 industry's shares. A value of 1 for a given industry indicates specialization equal to the EU average. The higher the value of the indicator, the higher the country's specialization compared with the EU average.*

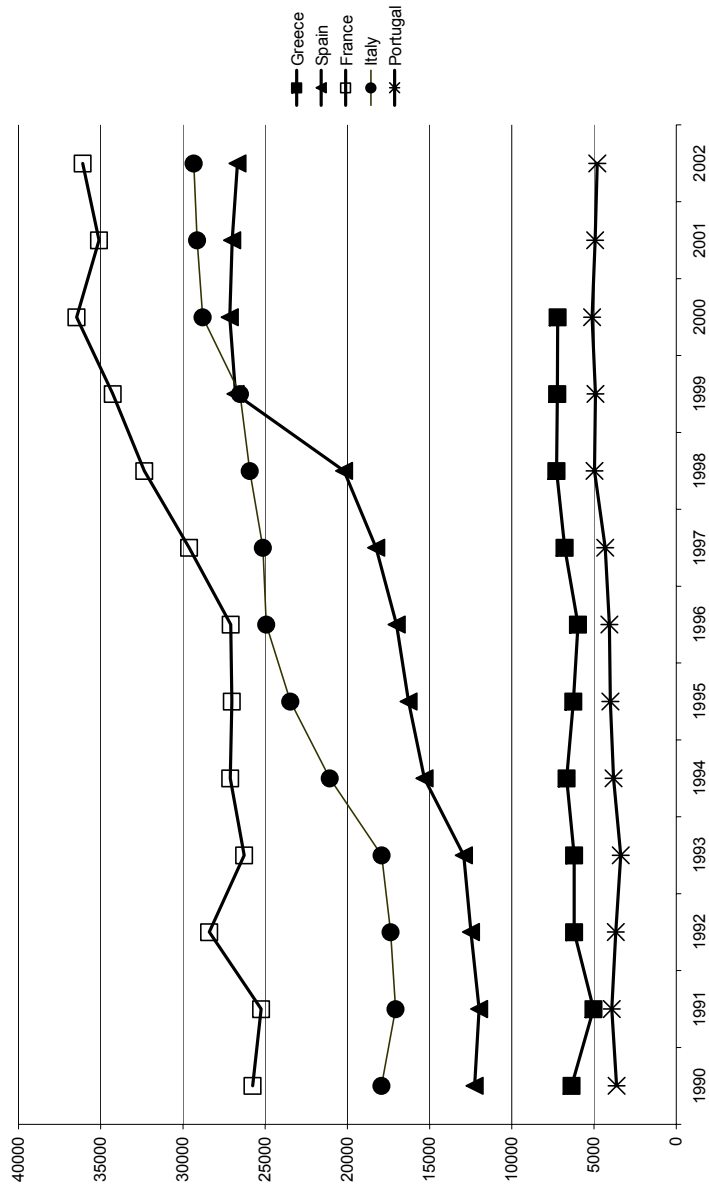
**Table 1:** Sectoral Specialisation

<b>Rank</b>	<b>Country</b>	<b>Specialization index</b>
1	Spain	2,97
2	Greece	2,70
3	Italy	1,37
4	France	1,00
5	Portugal	0,84

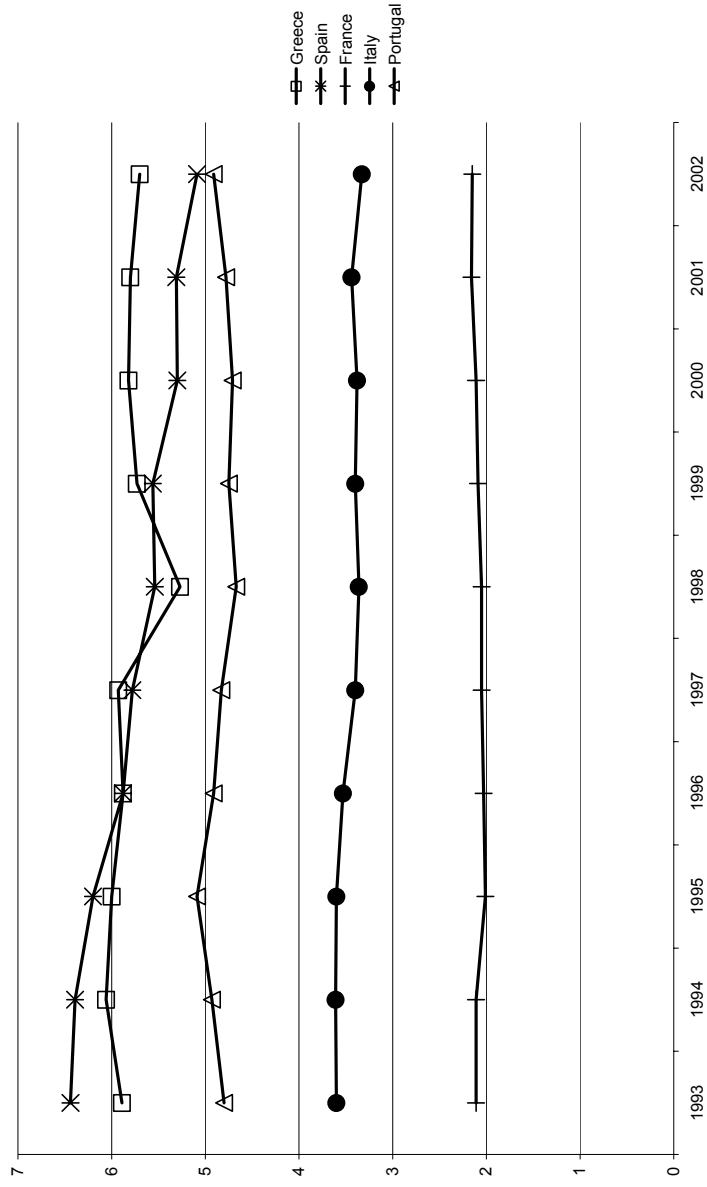
Source: O'Mahony, M. and Van Ark, B. (2003), *EU productivity and competitiveness: an industry perspective*, Brussels: European Commission.

Concerning international tourist arrivals, France was the country which in 2002 welcomed the largest number of tourist arrivals, followed by Italy and Spain (the leading group with rapidly increased demand), and Greece and Portugal (following with relatively stable growth – see Chart 1). In terms of the average overnight stays by non-residents, Greece led the way in 2002 (with nearly 6 nights), followed by Spain and Portugal (5 nights), Italy (3,5 nights) and France (2 nights).. It should be noticed that while the other countries maintain their tourists average nights stable over time, Spain's demand model changes (the average number of overnight stays decreased from 6,5 to 5 nights).

**Chart 1:** Differences in non resident arrivals (arrivals of non-resident tourists staying in hotels and similar establishments, in thousands).



**Chart 2:** Differences in number of nights stayed (average number of nights spent in the country per non-resident arrived in the country, data 1990-2002)



The share of the labour cost in the total productivity cost depends on the level of wages and salaries in a sector. Table 2 presents considerable differences in the mean hourly labour cost in the hotels and restaurants industry among the examined countries with the mean average in the EU being 14.63 euros. France has the highest hourly labour cost (20.74 euros) in 2000. Italy is in second position but her hourly labour cost is considerably smaller than that of France (12.81). The other three countries follow with much lower levels of labour cost (Greece 10.71, Spain 9.97, Portugal 5.72). These differences can not be attributed to specific economic conditions or employment practices but they should be attributed rather to structural factors like higher levels of the labour force so that they are reflected in higher levels of productivity.

Labour productivity is defined as output – measured<sup>2</sup> by value added at constant prices – per unit of labour input (hours worked). Labour productivity growth is associated with gains in price competitiveness and/or increases in standards of living. It is worth noting that the calculation of the productivity in the service sector of the economy is a difficult task due to the fact that the provision of services, in particular in the tourism sector, includes the element of the quality.

Chart 3 presents the level of labour productivity in the hotels and restaurants industry. France has the highest level of productivity (approximately 25.00 euros per hour worked in 2002), followed by Spain, Italy, Greece and finally Portugal. The time series of labour productivity shows some interesting results in terms of the productivity gap between France Spain and Italy and Greece and Portugal. Comparing France Spain and Italy, the data reveal a substantial decrease in the gap mainly due to substantial decrease in the levels of labour productivity in France. Chart 3 reveals the diversity in performance across countries and over time.

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<sup>2</sup> A number of studies, dealing with cost competitiveness, complement the analysis of productivity with measures of unit labour cost, i.e. labour cost per unit of output. The unit labour cost is primarily determined by the level of wages and salaries as well as the amount of product per employee; in other words the labour productivity. However we do not have detailed data on wages and salaries for the hotels and restaurants sector and therefore unit labour costs are not dealt here.

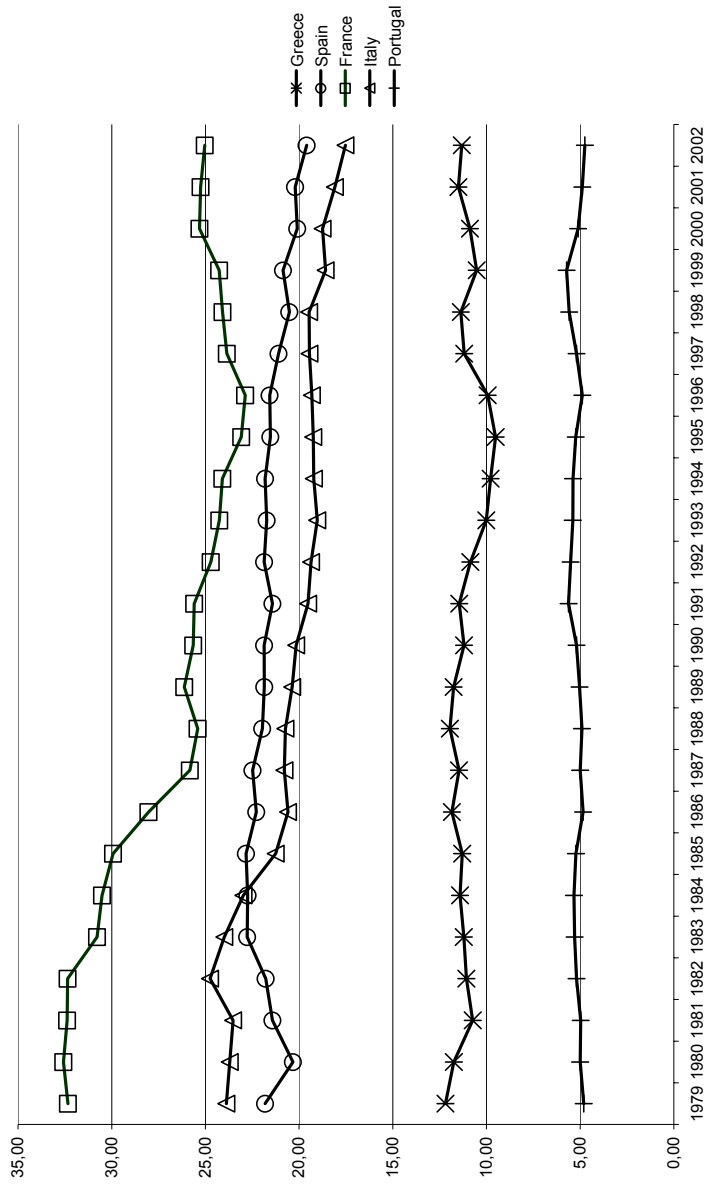


**Table 2:** Hourly Labour Cost in the Hotels and Restaurants Industry (in euros, 2000)

<b>Rank</b>	<b>Country</b>	<b>Hourly Labour Cost (Euros)</b>
1	Portugal	5.72
2	Spain	9.97
3	Italy	12.81
4	Greece	10.71
5	France	20.74
	EU average	14.63

Source: Eurostat, Statistics in Focus, Theme 3, 1/2003

**Chart 3:** Differences in labour productivity per hour worked



### **Econometric Analysis**

The analysis in Section 3 revealed the productivity problem of the industry due to its fragmented nature and to its high labour intensity. Moreover, tourism industries are less productive than other economic sectors due to the personalized nature of their services (Keller, 2004). These differences in productivity have to be reflected in the prices, thus reducing destination countries' international competitiveness.

The product of the tourism industry is complex and of a perishable nature (Archer, 1987). The tourism product is consumed at the place (destination country) and the time it is produced. The product is based on social interaction between the supplier and the consumer, where the quality of the product is mainly defined by this interaction. This particular nature may influence the characteristics of competition among countries, which could be considered as tourism destination countries and may affect developments in both their product and factor markets. In a global economy of shifting production locations, comparative, and competitive advantages, it is the immobile factors of production (labour, wages and productivity) that determine competitiveness in tourism sectors and destinations.

Labour productivity per hour worked is one crucial determinant. It affects unit labour costs as well as relative prices and improves competitiveness in international markets. Low labour productivity has serious implications for international competitiveness and sectoral growth rates. It can be offset by lower wages in order to stop costs from rising which might be passed on in the form of higher prices. Alternatively, in those countries which have a wage advantage low productivity can be offset by increased employment (semiskilled, seasonal, irregular work patterns, etc.). Although a few countries have relatively low wages and a cost advantage (see Table 2) wages, for instance in France, are relatively high compared to those of many competitors and they cannot offset the low productivity levels. Another possibility is to influence exchange rates so that prices remain competitive internationally<sup>3</sup>. Therefore labour productivity would influence competitiveness in international tourism markets as it is widely accepted that international travelers and tourists are sensitive to prices (Grouch, 1992; Dwyer et al. 2000).

Although tourist visits can take place for various reasons, most of the empirical studies are concerned with holiday trips and especially with international tourism. The studies carried out to explain tourism demand, treated the latter in several ways. Demand has been taken in terms of number of visits, (Tie-Sheng and Li-Cheng 1985, Gunadhi and Boeye 1986, Chadee and Mieczkowski 1987, Witt 1990,

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<sup>3</sup> Since the studied EU Member Countries have all introduced the euro there is no such issue.

Walsh 1996). Per capita holiday visits (Martin and Witt 1987, 1988, Geyikdagi 1995) are also used as a dependent variable. Expenditure (Rosensweig 1988, Edwards 1985, White 1985, Smeral et al. 1992, Papatheodorou, 1999) is another agent for tourist demand. The usual explanatory variables were tourists' income, transportation costs, exchange rates, the own price of the product, the price of its substitutes and investment in tourism. Several dummies were used to take into consideration factors such as oil crises, economic recessions and border closures. In this paper we present an econometric analysis of competitive performance in the Hotels and Restaurants Sector (NACE 55) in France, Greece, Italy, Portugal and Spain using a panel data set for 5 countries and 13 years (1990 – 2002). We empirically test for two factors that may influence arrivals of non-resident tourists staying in hotels and similar establishments: labour productivity and employment. A natural empirical specification of the relationship between arrivals and labour productivity and employment is the following:

$$\text{ARRIV}_{it} = a_0 + b_{it} \text{LPHOUR} + c_{it} \text{EMPL} + d_{it} \text{COUNTRY} + e_{it} \text{YEAR} + u_{it}$$

where  $\text{ARRIV}_{it}$  represents the number of non-resident arrivals in the country  $i$  for the period  $t$ ,  $\text{LPHOUR}$  represents labour productivity per hour worked (in chained, 1995, Euros),  $\text{EMPL}$  represents persons engaged in the sector (level of employment).  $U_{it}$  is the error term.

We acknowledge that there are many factors that influence arrivals other than  $\text{LPHOUR}$  and  $\text{EMPL}$ , which if correlated with  $\text{ARRIV}$  will bias the coefficients. Therefore we included a full set of country and year dummy variables to account for unobservable differences due to systematic country and year variation. By introducing a time-series ( $\text{YEAR}$ ) it makes it easier to capture some systematic time elements relevant to such factors as interest and exchange rates or seasonal variation of arrivals. The panel data set has a total of 65 observations. The estimation technique is least squares with group and period effects<sup>4</sup>. The number of arrivals is extracted from Eurostat. The source for labour productivity and employment is Groningen Growth and Development Centre, 60-Industry Database, <http://www.ggdc.net>.

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<sup>4</sup> The LIMDEP package provides estimates based on Ordinary Least Squares (OLS), fixed effect and random effect models.  $F$ -test and log-likelihood ratio statistics were significant for all the countries rejecting the hypothesis that unobserved firm-specific differences are not significant. Given that countries included in the analysis differ vastly in terms of their structures, development, capital, and labour quality, these results are to be expected. The Hausman statistic rejected the null hypothesis that the random effect model is appropriate in the case of most countries and therefore, the analysis here presents the results of the fixed effect model. The fixed effect model eliminates the problem of aggregation and productivity differences between countries can be taken into account.

### **Empirical results**

Table 3 presents the results of the regression analysis. Column (1) contains only the LPHOUR variable, column (2) includes country and year dummy variables. This column should be thought of as a test whether the association of arrivals and labour productivity stands up after controlling for country and time effects. The same applies for columns (3) and (4) for the EMPL variable. Column (5) contains the LPHOUR and EMPL variables and column (6) includes the dummy variables. The R squared is quite high in all specifications.

Labour productivity as proxied by LPHOUR is an important determinant of international arrivals. The parameter estimate for LPHOUR in explaining arrivals is positive and statistically significant (at the 1 per cent level of the two-tailed test - column (1)). However in column (2) with the inclusion of country and year fixed effects the parameter changes sign and magnitude (turns to negative and significant at the 5 per cent level). The weaker result suggests that other factors not related to labour productivity are becoming more important in influencing international competitiveness and growth of the hotels and restaurants sector.

The parameter estimate for EMPL in explaining arrivals is positive and statistically significant (at the 1 per cent level of the two-tailed test - column (3)). The variable remains positive and significant with the inclusion of country and year fixed effects column (4). This result suggests that international competitiveness and growth of the hotels and restaurants sector is related to labour intensity and job creation. Column (5) contains the LPHOUR and EMPL variables and column (6) includes the dummy variables. The EMPL variable remains positive and statistically significant in both specifications. LPHOUR turns to insignificant when taking into account other unobservable (fixed) factors.

**Table 3:** Parameter Estimates

Dependent / Explanatory variables	ARRIV Coefficient (t-statistic) (1)	ARRIV Coefficient (t-statistic) (2)	ARRIV Coefficient (t-statistic) (3)	ARRIV Coefficient (t-statistic) (4)	ARRIV Coefficient (t-statistic) (5)	ARRIV Coefficient (t-statistic) (6)
<b>Constant</b>	6.396 (108.025)	7.975 (16.953)	1.136 (2.596)	0.651 (0.670)	3.192 (3.615)	1.987 (1.552)
<b>LP HOUR</b>	0.043 (12.853)***	-0.055 (-1.876)**	NO	NO	0.019 (2.643)***	0.008 (0.837)
<b>EMPL</b>	NO	NO	0.454 (13.660)***	0.492 (6.635)***	0.274 (3.635)***	0.379 (3.482)***
<b>COUNTRY EFFECTS</b>	NO	YES	NO	YES	NO	YES
<b>YEAR EFFECTS</b>	NO	YES	NO	YES	NO	YES
<b>Adjusted R<sup>2</sup></b>	0.71	0.86	0.74		0.77	0.86
<b>Number of observations</b>	65	65	65	65	65	65

## Conclusions

In this paper we investigated the relationship between arrivals, productivity and employment levels in the Hotels and Restaurants Sector in France, Greece, Italy, Portugal and Spain using a panel data set for 5 countries and 13 years (1990 – 2002). There is some evidence that labour productivity levels are important determinants in explaining competitive performance of the sector of these countries. However, keeping constant other unobserved exogenous variables, performance improvements were found to be related more to increases in employment rather than to improvements in labour productivity.

This result is not surprising given the supply side characteristics of the sector. There are certain constraints to increasing productivity related to the nature and quality of the service, customer satisfaction, etc. The sector is dominated by Small and Medium Sized Enterprises (SMEs) which offer personalized services, are more labour intensive, feature irregular work patterns, and therefore are less productive when compared to the other non-financial service sectors.

However, in the future developments in human and social capital and technological developments such as the adoption and use of information and communication technologies, integrated management systems may positively affect productivity. There are certain sectors or segments in a few countries, that are more advanced and therefore a more disaggregated study would be useful.

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