

Daskalopoulou, Irene; Petrou, Anastasia; Skuras, Dimitris

**Conference Paper**

## Financial incentives and the location of tourism facilities in Greece

42nd Congress of the European Regional Science Association: "From Industry to Advanced Services - Perspectives of European Metropolitan Regions", August 27th - 31st, 2002, Dortmund, Germany

**Provided in Cooperation with:**

European Regional Science Association (ERSA)

*Suggested Citation:* Daskalopoulou, Irene; Petrou, Anastasia; Skuras, Dimitris (2002) : Financial incentives and the location of tourism facilities in Greece, 42nd Congress of the European Regional Science Association: "From Industry to Advanced Services - Perspectives of European Metropolitan Regions", August 27th - 31st, 2002, Dortmund, Germany, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:

<https://hdl.handle.net/10419/115722>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

**42<sup>nd</sup> European Regional Science Association Congress ‘From Industry to Advanced Services – Perspectives of European Metropolitan Regions’**

**Dordmund, Germany, August 27<sup>th</sup> –31<sup>st</sup>, 2002**

**Financial Incentives and the Location of Tourism Facilities in Greece**

by

Irene Daskalopoulou, Anastasia Petrou and Dimitris Skuras

Department of Economics

University of Patras

University Campus – Rio, P.O. Box 1391

Patras 26500

Greece

Fax: + 30 61 996161, E-mail:skuras@econ.upatras.gr

**Abstract**

The development of tourism activities in Greece has met a significant growth rate over the last two decades. At the same time, tourism facilities were developed in regions, which did not constitute traditional tourism destinations, thus changing the pattern of the regional allocation of tourism facilities. This occurred due to two reasons. First, the changing pattern of tourism arrivals which clearly moved out of the Greater Athens area to the Aegean and Ionian Islands and Crete. Second, regional development policy provided financial incentives and assisted investments in the tourism sector of certain Greek regions.

A database concerning 4,603 assisted investments realized in the tourism sector from 1982 onwards, has been assembled. The present paper examines the factors influencing the regional location of these investments. Among the factors researched are the effects of the size of financial assistance and the suitability of the region for the development of tourism facilities. Furthermore, the paper attempts to evaluate the regional policy's effects on the location of the tourism sector in Greece.

## **1. Introduction**

Tourism is one of the most important sectors in the Greek economy as indicated by the latest available data provided by the National Tourism Organisation (NTO, 2000). The tourism sector provides employment for 690,000 persons (i.e. 19% of the economically active population in the country), while it is even more important that from 1980 onwards, employment in the sector increased by 87% (compared to a 9.2% increase in national employment and a 15% decrease of employment in the secondary sector of the economy). During the same period, from 1980 to 1997, tourism accounted for 53% of the increase in the country's GDP in contrast to a 4.6% increase contributed by the industrial sector. Further, it has been estimated that the amount of value-added produced directly and indirectly from tourism demand in the country approximates 18-20% of the country's GDP. Exchange income produced by the sector amounts to 9 billion dollars that is 2.5 times larger than the exchange acquired from industrial exports and 1.8 times larger than the exchange acquired from total national exports. Finally, it should be noted that the tourism sector has made a considerable contribution to the improvement of regional income distribution observed during the last 25 years (NTO, 2000).

The last finding is extremely important in terms of regional social cohesion and stability supported by the development of the sector. Efficiency of the tourism development policies and programs implemented within the last two decades largely depends upon its success in promoting the sector's development in the regions that needed it the most. In light of the growing importance of the sector for a large number of the country's regions emphasis has been placed on identifying and alleviating the sector's disadvantages. To serve that aim, the National Tourism Organisation has constructed the profile of the Greek tourism sector and put emphasis on the actions necessary in order to increase the competitiveness of the sector (NTO, 2000). The following have risen as central issues regarding the development of the Greek tourism sector:

- The dominant pattern is that of mass holiday tourism narrowly based on two products: "sun" and "sea". Consequently, Greece faces severe competition from other Mediterranean countries.
- Arrivals of foreign tourists increase and that increases the share of arrivals using airline services. This indicates a growing need to develop tourism infrastructure so as to meet growing demand for these services.

- The number of tourists originated from other European countries increases but there is a considerable decrease in the share of tourists from the USA. The number of tourists from eastern European countries also increases. These result into loss of high-income tourists and consequently a declining amount of money is allocated per tourist during visit.
- The short length of the tourism period in Greece results into excess demand during the summer time and under-utilisation of existing infrastructure during the rest of the year.
- Demand for tourism from Greeks increases and this provides an opportunity to better distribute tourism demand throughout the year and differentiate tourism activities from seasonal, mainly summer, tourism.
- Natural and cultural heritage constitutes the comparative advantage of Greece as a tourism destination. It follows that there exists an important fringe of qualitative improvements especially as regards human capital involved in all related activities.
- The oligopsonistic structure of tourism demand (relatively few tour-operators) exercises large pressure to continuously sustain low prices for tourism products.

Finally, it should be noted that, local administration authorities do not allow entry of new businesses (hotels and other accommodation facilities) in the sector due to repletion from existing facilities. As a result, investments in improving existing facilities have decreased and the operation of many 'illegal' accommodation facilities (i.e. without permission from the NTO) has been observed.

## **2. Regional Development Policy in Greece and the Tourism Sector, 1982-1997**

Right after World War II, the Greek economy faced two major problems. First, a destroyed manufacturing industry and agricultural sector and second, a large and wide regional inequality in development and growth rates. Various governments have attempted to provide solutions to the issue of unbalanced regional growth in Greece. All the attempts include the use of financial and fiscal incentives to various industrial sectors. In 1949, tax incentives aiming to strengthen the industry in provinces and rural areas, were adopted by the state. In 1952 a law named 'Law for the Protection of Provincial Industry' further strengthened and broadened these incentives. This framework stated the first 'regional' differentiation of industry by defining 'provincial

industry' as every industry established or transferred in every province and region except Athens. In 1955, the first industrial zones were established in different towns and regions of Greece while tax reductions for manufacturing industries were further supported and reached 80% in the lagging areas of the country.

In the period 1961-67, the country was divided into seven planning regions. This was eventually the first measure of decentralization of the central government, albeit the fact that the created administrative mechanisms had no statutory rights. The first pure regional development framework was introduced in 1971. In this framework, Greece was divided in three regions where various quantitatively differentiated incentives held. The first incentives concerned with tax reductions but consecutive alterations to this basic regional framework provided subsidies for the establishment of new firms and extended the incentives besides the manufacturing industry to the mining industry and the primary sector. In the period to 1981, various amendments to the previously established regional development framework extended incentive provision and support to the tertiary sector and especially the tourism industry of the country.

In 1982, the first integrated and coherent framework for regional development was introduced by Law 1262/82. Law 1262/82 provided grant aid (free capital) and interest rate subsidization to businesses, together with several fiscal incentives. Law 1262/82 assisted a total of 18,290 investment projects in the period 1982-90 of which 10,348 or 56.6% of assisted projects concerns projects in 17 sectors of the manufacturing industry and 3,657 or 35.3% in the tourism sector. Assisted projects claimed the creation of 164,642 new jobs of which 33,240 or 20.2% of all created jobs were in the tourism sector. Table 1 presents descriptive statistics of the results of Law 1262/82 for the 51 Greek prefectures.

In 1990 the regional development Law 1892/90 as amended by Law 2234/90 corrected and completed the regional development framework held up to 1998. Under these frameworks, four types of incentives were provided to all industries including the tourism sector. First, capital subsidies in the form of free capital provision differentiated among the different regions of the country. Second, interest rate subsidy on the bank loans received for servicing the investment. Third, tax free discounts on the firms net profits, if new investments are realised. Fourth, increased depreciation on the firm's fixed assets. For the investment plans approved under this regional development framework, our data end to year 1997. Law 1892/90 assisted a total of 7,166 investment projects in the period 1990-97 of which 5,028 or 70.2% of assisted projects concerns

projects in 17 sectors of the manufacturing industry and only 946 or 13.2% in the tourism sector. Assisted projects claimed the creation of 130,030 new jobs of which 8,624 or 6.6% of all created jobs were in the tourism sector. Table 1 presents descriptive statistics of the results of Law 1892/90 for the 51 Greek prefectures.

Until now, very few researchers have attempted to examine the effects of the Greek regional development policy in general and assess whether the aims and objectives of the policy were met. One interesting work examined the impact of regional grant aid to the spatial distribution and sectoral structure of investments under the regional development framework 1262/82 (Georgiou, 1991). Psycharis and Papadaki (1996) have attempted to examine various issues concerning the sectoral and spatial concentration of investments under the regional framework 1892/90 while Daskalopoulou et al. (2000) have examined the effect of regional development policy on the relocation of the manufacturing industry. Other researchers have examined the effectiveness and efficiency of grant-aid schemes specifically for firms in lagging rural areas of the country, including schemes under the Common Agricultural Policy (Skuras and Tzamarias, 1997). All aforementioned research has focused on the effects of grant-aid on either the macro characteristics of the regions (concentration, sectoral structure, etc.) or on job creation and the additionality of grant aid. However, the effects of regional development policy on the regional development of tourism have been highly neglected as a research topic. This is mainly due to the absence of regionally desegregated data on grant aided investments in the tourism sector.

### 3. The Location of the Greek Tourism Sector

#### 3.1. The Location of Tourism Activities

The location of the Greek tourism sector is examined and presented in terms of the sector's employment due to the lack of other reliable measures such as invested capital, or product. The changing nature of the regional location of the tourism sector in Greece is approached through two descriptive indices, the location quotient and the coefficient of localization. We computed the following location quotients:

$$QL_{YEAR} = \frac{A_{ir} / A_r}{A_{in} / A_n}$$

where QL is the estimated location quotients for 1981 and 1991,  $A_{ir}$  is the mean annual employment in tourism in region  $r$ ,  $A_r$  is the total employment in region  $r$ , including the primary sector,  $A_{in}$  is the national employment in the tourism sector, and  $A_n$  is the country's employment for all sectors including the primary sector. Location quotients larger than one indicate that a region's share of employment in the tourism sector (share of number of employees in tourism out of total number of employees in all sectors) is larger than the share of employment in tourism in the country. Thus, the estimated location quotients are independent of the scale of tourism or the region and make direct reference to national figures. In the appendix of this paper we show the regional variation of the estimated Location Quotients for tourism for 1981 and 1991 (maps 1 and 2).

In order to examine whether the distribution of location quotients in 1981 and 1991 has changed significantly we applied the Wilcoxon matched-pairs signed-ranks test. This is the non-parametric equivalent of the t-test for related samples and, although it makes no assumptions about population distributions, it is nevertheless as powerful as the t-test. The null hypothesis asserts that the measurements of each pair of the location quotients in 1981 and 1991 differ through chance sampling and the mean of the differences in the population from which the sample has been drawn is zero. With a z score of  $-3.149$  we reject the null hypothesis at the 99% level of significance and assume that the differences in location quotients are not due to chance sampling. Thus, one research aim would be to examine whether the difference in location quotients is due to the effect of investments provided under the regional development frameworks presented earlier.

Furthermore we computed the following coefficients of localization:

$$CL_{YEAR} = \frac{1}{2} \sum_{r=1}^{51} \left| \frac{A_{ir}}{A_{in}} - \frac{A_r}{A_n} \right|$$

which is actually an index of dissimilarity measuring the difference between the regional share of employment in the tourism sector and the regional share of total employment. When the index approaches zero employment in the tourism sector is distributed to the regions in the same way to total employment. When the index approaches one employment in the tourism sector is distributed in the regions in a totally different way than total employment. The coefficient of localization was

measured as 0.325 in 1981 and 0.385 in 1991. In the decade 1981-91, the regional distribution of employment was further localized but not significantly.

### *3.2 Factors Influencing the Location of Tourism Activities*

We hypothesize that the operation of the regional development frameworks has a profound impact on the regional location of the tourism activities. Grant-aided projects influence the location of tourism activities due to the financial assistance provided and the jobs created in the sector and also due to the fact that assistance is regionally differentiated. The ratio of private to total contribution of assisted investments in the tourism sector has been highly differentiated in respect to regional policy's objectives in favour of disadvantaged and border areas of the country. Thus, the two variables best describing the effects of regional policy is the absolute number of jobs created by assisted projects in the region and the ratio of assistance i.e., the ratio of grant-aid to the total cost of investments. Two more variables concern with the absolute number of hotel beds in the region used as a proxy to the sector's size at regional level and the growth of the volume of new buildings used as a proxy of the region's attractiveness for new houses. These variables were regressed against the location quotient of tourism activities in 1991 and derived as explained above and the difference between the location quotient in 1991 and 1981.

Table 2 shows the results of these two regressions. The location quotients for the tourism activities in 1991 are highly and negatively influenced by the size of the tourism in the region in 1981, the growth of the volume of buildings in the period preceding the estimation of the location quotient and the size of the effects of the assistance directed in the region measured by the number of new jobs created in the region. The results indicate that assistance was directed to those regions with the lowest location quotients. The rate of assistance is not statistically significant implying no effect on the location of the tourism activities. The difference in the location quotients between 1991 and 1981 is highly and positively influenced by the rate of assistance provided to tourism projects in the region. The higher the rate of assistance, the higher the difference implying that the region has increased its location quotient in 1991 and thus increased the distance between the two location quotients. The growth of the volume of new buildings may be interpreted as a proxy for the region's urbanization or



attractiveness as a residential place. In those regions where the growth of new buildings was high the difference in the location quotients between 1981 and 1991 decreased.

#### 4. The Location of Assisted Investments in the Greek Tourism Sector

##### 4.1. The Location of Assisted Investments

The location of assisted investments can be examined through the derivation of location quotients for the number of jobs created through the assisted projects and the number of new beds in all types of hotels. In our case, the location of assisted projects was modeled through the following location quotients:

$$QL_{YEAR} = \frac{A_r / A_r}{A_m / A_n}$$

where QL is the estimated location quotients of assistance in the tourism sector for the periods 1981-90 and 1991-97 correspondingly,  $A_r$  is the number of hotel beds in the of the projects assisted in the periods 1981-90 or 1991-97,  $A_r$  is the total number of hotel beds in region r in the start of the period, i.e., 1981 or 1991,  $A_m$  is the country's total number of hotel beds in the projects assisted in the periods 1981-90 or 1991-97, and  $A_n$  is the country's total number of hotel beds in the start of the respective periods. Location quotients larger than one indicate that a region's share of assistance in terms of hotel beds (the ratio of hotel beds created due to assisted projects to the total number of hotel beds in the region at the start of the period) is larger than the respective share in the country. Thus, the estimated location quotients are independent of the scale of tourism in the region because they are weighted by the region's total number of hotel beds and also make direct reference to national figures. In the appendix of this paper we show the regional variation of the estimated Location Quotients for assisted projects in tourism 1981 and 1991 (maps 3 and 4).

##### 4.2 Factors Influencing the Location of Assisted Investments

Location quotients are descriptive tools and cannot explain why the observed variation in the location of assisted projects occurred. In order to test whether the location of

assisted projects is influenced by the size of provided assistance, and the rate of assistance, we regress the location quotients of the assisted projects and estimated the effect of a range of variables on the location of assistance. Table 2 presents the estimated coefficients and test statistics. The rate of the assistance but not the size of the assistance has influenced the location quotient of assisted projects in the period 1981-9. Again, the size of the tourism in the region measured by the available number of beds and the growth of the volume of new buildings are negatively related to the location of the assistance. In the period 1991-97, both the size and the rate of the provided assistance positively influenced the location of assisted projects. Results indicate that the location of the assistance provided at regional level measured by the location quotient of assistance, i.e., the assistance in relation to the regional size of the sector was higher, controlling for the size of the assistance itself, when the rate of assistance was increased. In other words, the policy signaled the location of new projects through the appropriate leveling of the rate of assistance.

## **5. Preliminary Conclusions and Future Research Directions**

### Conclusions

Regional development policy in Greece has assisted a significant number of tourism projects that have altered the regional location of tourism infrastructure. However, this is due to the fact that the size of assistance, the number of projects, and the total size of investments were very high and able to influence the locational pattern of the Greek tourism industry. The analysis of the location of the tourism industry showed that various factors influenced both the shape of the location in 1991 and the observed change between 1981 and 1991. At the same time the regional location of assisted projects was found to be highly correlated to the location of existing tourism infrastructure and to the provided assistance rate i.e., the percentage of granted aid. Our analysis so far has neglected the demand side of the Greek tourism industry. The demand, as this is revealed by the actual number of stays may have influence the location of assisted projects and, vice versa, may have been influenced by the location of the assisted projects. The first argument is straightforward. If there is seasonal excess demand for tourism in a region, capital subsidies may be directed so that excess demand is facilitated. The second argument, however, deserves some further explanation.

Capital subsidies in the form provided by the two regional development frameworks may have influenced the cost of providing tourism services and assign the recipient regions with a cost advantage over competing regions. This may have influenced actual demand in favour of subsidized regions. On the other hand, if, as the analysis so far shows, the location of assistance has been directed to those regions already having a high capacity of tourism facilities, then assistance has created excess capacity. Of course, such assumptions are the subject of future research.

### Future Research

Future research should be directed in two fields. First, to examine whether capital subsidies in the tourism sector have drastically altered the demand and supply of tourism facilities. This may be explored using switching demand and supply models with known regime of excess demand and/or supply. These models will allow us to examine whether the assistance provided has changed the regional tourism market away from or close to equilibrium. Second, to examine whether capital subsidies have influenced regional factor productivity in the tourism sector. This research exercise may be performed using appropriately designed production models and incorporating the effects of capital subsidies.

### Acknowledgment

This publication arises out of the 'KARATHEODORIS' programme 1946, financed and administered by the University's of Patras Research Committee.

### References

Daskalopoulou, E., D. Psaltopoulos and D. Skuras (2000). *Regional Development Policy and the Location of Manufacturing Industry: A Greek Case Study*". Paper presented at the 40<sup>th</sup> European Regional Science Association (ERSA) Congress 'European Monetary Union and Regional Policy', Barcelona, Spain.

- Georgiou, G. (1991). *Spatial Distribution and Sectoral Structure of Investments under law 1262/82*. Centre for Economic Planning and Research, Athens (in Greek).
- National Tourism Organisation – NTO (2000). *The Basic Characteristics of Greek Tourism*. (Unpublished).
- OECD (1981). *Regional Problems and Policies in Greece*. OECD: Paris.
- Psycharis, Y., and Papadaki, O., 1996. *Investment Incentives and Regional Development in Greece*. 36<sup>th</sup> European Congress of the Regional Science Association, Zurich, 26-30 August.
- Skuras, D., and Tzamarias N. 1997. *Job Creation by Assisted Rural Enterprises: A North-South Comparison*. 17<sup>th</sup> ESRS Congress, Crete, August 1997

Table 1. Descriptive Statistics of Assisted Investments in Tourism for 51 Greek Prefectures, 1982-97.

|   | Sum     | Mean    | St. Dev. | Range  |
|---|---------|---------|----------|--------|
| <i>Regional Development Law 1262/82</i> |         |         |          |        |
| Number of Projects                      | 3,657   | 71.7    | 67.7     | 246    |
| Jobs Created                            | 33,240  | 651.8   | 600.9    | 2,125  |
| Number of New Beds                      | 53,278  | 1,044.7 | 1,020.5  | 4,447  |
| Investment (in million Euros)           | 676.2   | 13.3    | 13.3     | 53     |
| Private Contribution (in million Euros) | 260.4   | 5.1     | 5.6      | 23.9   |
| % Private Contribution                  | ——      | 32.7    | 13.1     | 52.5   |
| <i>Regional Development Law 1892/90</i> |         |         |          |        |
| Number of Projects                      | 946     | 18.6    | 24.3     | 157    |
| Jobs Created                            | 8,624   | 169.1   | 257.6    | 1,711  |
| Number of New Beds                      | 131,131 | 2571.2  | 5,410.2  | 35,553 |
| Investment (in million Euros)           | 569.3   | 11.2    | 18.2     | 118.8  |
| Private Contribution (in million Euros) | 296.0   | 5.8     | 9.5      | 60.0   |
| % Private Contribution                  | ——      | 46.6    | 12.0     | 53.7   |

Table 2. Factors Influencing the Location of Tourism Activities

| Independent Variables                                    | Coefficient Estimates  |  |
|--|------------------------|--|
|  | Location Quotient 1991 | Difference in Location Quotients 1991-1981 |
| Constant   | 7.426<br>(2.319)**     | 4.872<br>(2.998)**                         |
| Assisted jobs created in the region, 1981-90 ('000)      | -0.046<br>(-1.732)*    | -0.0037<br>(-0.257)                        |
| Rate of assistance (%), 1981-90                          | -0.015<br>(1.341)      | 0.015<br>(2.532)**                         |
| Number of hotel beds in the region in 1981, ('000)       | -0.025<br>(9.280)**    | 0.008<br>(0.586)                           |
| Growth of the volume of buildings in the region, 1981-90 | -8.021<br>(-2.351)**   | -5.527<br>(-3.192)**                       |
| F <sub>(df)</sub>  | 31.58 <sub>(4)</sub>   | 5.525 <sub>(4)</sub>                       |
| R <sup>2</sup>   | 0.74                   | 0.32                                       |

Note: Numbers in parentheses are t-values. Two and one asterisks indicate significance at the 5% and 10% levels of significance correspondingly.

Table 3. Factors Influencing the Location of Assistance to the Tourism Sector

| Independent Variables   | Coefficient Estimates          |                                |
|---|--------------------------------|--------------------------------|
|   | Location of Assistance 1981-90 | Location of Assistance 1991-97 |
| Constant  | 17.72<br>(2.22)**              | -3.56<br>(-1.067)              |
| Assisted jobs created in the region, 1981-90 and 1991-97 respectively in '000       | 0.010<br>(1.47)                | 0.034<br>(3.130)**             |
| Rate of assistance (%), 1981-90 and 1991-97 respectively                            | 0.042<br>(1.776)*              | 0.035<br>(2.925)**             |
| Number of hotel beds in the region in 1981 and 1991 respectively in '000            | -0.017<br>(-2.59)**            | -0.001<br>(-3.451)**           |
| Growth of the volume of buildings in the region in 1981-90 and 1991-97 respectively | -18.18<br>(-2.14)**            | 3.608<br>(1.010)               |
| F <sub>(df)</sub>   | 3.91 <sub>(4)</sub>            | 6.07 <sub>(4)</sub>            |
| R <sup>2</sup>  | 0.26                           | 0.35                           |

Note: Numbers in parentheses are t-values. Two and one asterisks indicate significance at the 5% and 10% levels of significance correspondingly.









