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# A NOTE ON THE EFFECTIVENESS OF PRICE POLICY ON TOURIST ARRIVALS TO GREECE

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## ABSTRACT

This paper aims at pointing out the adverse repercussions on the Greek travel industry resulting from the contradicting policy measures taken by the various governments due to the lack of a consistent strategy on tourism. The analysis takes as an example the reduction of the VAT from 11% down to 6.5% for hotel accommodation which has been followed by an increase of the VAT from 13% to 23% for certain categories of restaurant services. The paper concludes by underlining that the damage done is not so much the net negative impact of the two specific measures and their disappointing fiscal performance, as the adverse repercussions that they entail for the market through the confusion that they cause, thus discouraging both tourists as well as prospective foreign investors.

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## 1. Introduction

This note focuses on an effectiveness assessment of the measures taken by the government to reduce the VAT from 11% down to 6.5% for hotel accommodation while, in parallel, to increase the VAT from 13% to 23% for certain categories of restaurant services. To do so it uses a typical arrivals function to accompany a price function describing the structure of the tourist package to Greece. The next section deals with the technical background while two further sections are devoted to the empirical results and the conclusions.

## 2. Technical background

The long-run export volume function employed by Gazopoulou (2011) has been modified to substitute the typical travel package variable for the Greek CPI. Thus, the appropriate explanatory variables chosen to determine the long-run behaviour of travel arrivals to Greece (ARR) are the income of the countries of origin ( $Y_F$ ), the price of a typical travel package to Greece ( $P_G$ ) and the prices of competitors<sup>1</sup> ( $CPI_F$ ). Estimation takes place over the period 1980 to 2010 and uses annual data in log form as described in (1) below:

$$ARR = f(Y_F, P_G, CPI_F) \quad (1)$$

The use of the number of arrivals as a dependent variable rather than travel receipts aims at avoiding collinearity problems with the price variables used as independent variables. The income variable is composed of the weighted average of income growth rates of the top nine countries of origin for arrivals in Greece, the weights representing the share of each of these countries in total arrivals in Greece. Given the extensive time period covered, the weights are allowed to vary annually to account for any possible

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<sup>1</sup> The variable measuring the prices of competitors is the weighted average of the consumer price indices of the four main competitor countries, namely Italy, Spain, Portugal and Turkey, expressed in dollar terms. France has been excluded from the basket given that the package offered by France is not comparable to that of the four main competitors of Greece; the latter set of countries exhibit a strong seasonal pattern, with an emphasis on offering a combination of "sun and sea", without placing particular emphasis on alternative tourism forms. The weights used in this case are the shares of these four competitor countries in international travel activity and are allowed to vary each decade to account for structural changes over time.

structural changes occurring in the pattern of tourist trade flows. Despite the fact that Cyprus is one of the top countries of tourism origin, it has been excluded from the basket used in order to avoid including a large number of arrivals for business purposes which would distort the picture. It must also be borne in mind that the length of all series that extend back to 1980 has made it necessary to express the relevant figures in dollar terms to avoid possible breaks in the series resulting from the Eurozone membership of the country<sup>2</sup>.

The typical travel package price is represented by  $P_G$  which is a weighted average of the Greek CPI representing tourists' expenditure patterns in the arrivals market, the prices offered by the Greek hotels and international oil prices to capture the transportation cost of the package. Focusing on the hotel price policy, in particular, this has changed to a considerable extent following the Eurozone membership of the country. In fact, prior to 2001 the prices offered in the context of a price-making policy were rather high anticipating the depreciation effect, given that such contract prices were agreed upon in drachma terms as early as in October of the previous year. In cases in which the response to such prices was limited, those hoteliers who ran the risk of suffering losses due to the limited demand ended up with offering much lower prices by resorting to last minute booking and "all-inclusive" packages\_aiming at just covering their variable costs. Following the Eurozone membership, however, price-taking behaviour became more and more applicable to the case of Greek hotel managers rather than tour operators who face the entire travel package price. In fact, electronic booking has changed the behaviour of hotel managers to price-making to a large extent (see e. g. Tsartas and Christou, 2006 or Kanellos, 2009), while the CPI component of the travel package leaves considerable room for price flexibility. This means that VAT plays a role in competitiveness-loss terms given the reactions from the part of the hoteliers and the restaurant owners because it affects competitiveness both through the package price and its CPI component, as well as in terms of outdoor entertainment of the individual tourist

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<sup>2</sup> Converting national currencies before the euro into euro at the fixed - entry conversion rate has been avoided both because it would introduce a certain error in the analysis which dates back to the seventies and because the presence of Turkey in the basket of the competitor countries and that of Switzerland and Sweden in the countries of origin would be a problem in such a case.

over and above the price of the package. It seems, therefore, that given the above the oil bill is the only component of the travel package beyond any price-making possibilities.

Thus, the long-run travel package price function for Greece is expected to be expressed as in (2) below:

$$P_G = g(P_H, CPI_G, P_{OIL} ) \quad (2)$$

where ( $P_G$ ) is the Greek package price, ( $P_H$ ) stands for hotel prices and ( $CPI_G$ ) represents the Greek consumer price index and  $P_{OIL}$ , international oil prices, with the estimation period ranging between 1980 and 2011, using annual data in log form.

### **3. Empirical results**

The series used are initially tested for stationarity and Table 1 suggests that they all have a unit root. Hence, first differences of these series (the prefix D denoting first differences of the corresponding variables) are used in the short-run price equation presented in Table 4, with Tables 2 and 3 devoted to the long-run versions of both arrivals and price equations.

The equations reported in Table 4 above show that, in the short run, travel arrivals (ARR) are affected by foreign income ( $Y_F$ ) and the price of the Greek travel package ( $P_G$ ), as well as by expectations preceding the drachma devaluations that occurred in 1983, 1985 and 1998 including the expected depreciation towards the revalued central rate within ERM II that occurred just before the beginning of the Eurozone membership of the country (DEV). An additional dummy (DEX) has been used to take into account the effect of exogenous disturbances on travel flows to Greece caused by the Iraqi war, the Olympic Games and the Imia crisis.

More specifically arrivals to Greece appear to be elastic with respect to income indicating that tourism is regarded as being a luxury good by the majority of tourists coming to Greece belonging to the middle or low income class brackets. It follows, therefore, that the volatility of travel receipts is expected to increase with all that this may entail concerning the reliability of the services account to safeguard overall current

account sustainability<sup>3</sup>. The behaviour of tourist arrivals with regard to price changes, however, is inelastic while it is interesting to note that foreign (competitors') prices have been dropped from both the long and the short-run version of the equation as being persistently insignificant in a series of different specifications. This means that tourists intending to travel to Greece base their decision more on the extent to which they can afford to go on holidays per se rather than on opting between alternative destinations<sup>4</sup>.

It is interesting to point out that it takes one year for most of the explanatory variables to influence travel arrivals in the short run. This is to be expected given that travel contracts with tour operators are usually signed sometime towards the end of the year prior to the travel period concerned. These tactics gave tour operators a major advantage during the period before Greece entered the euro area, given that the prices provided for in the contracts signed were expressed in drachma terms during a period in which the drachma followed a depreciating trend. This is the reasoning that accounts for the use of the dummy variable (DEV) capturing the effect of devaluations, with strong explanatory power. Finally, the volatility of travel arrivals is sensitive to exogenous disturbances. The variable (DEX) provides for the response of tourism activity in Greece to the Gulf War, the Imia crisis and the Olympic Games and underlines the volatility of travel receipts due to their sensitivity to exogenous disturbances. All variables have the expected signs and they are significant at the 5% level. The explanatory power of the equations is substantial with the standard error of the regression being on the low side.

The empirical results reported in Table 4 in terms of elasticities point to the ineffectiveness of price policy as a means of increasing domestic travel activity. Specific measures to reduce VAT from 11% down to 6.5% on the price of accommodation would cause only a negligible reduction of hotel prices in percentage terms, even assuming a 100% pass-through, which, in turn, is expected to bring about an even smaller decline of the package price, as small as about 2%. If this is the case then the impact on the arrivals for the following year, given the corresponding elasticity coefficient will be a minimal

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<sup>3</sup> Most sources in the literature tend to agree that tourism is a luxury rather than a necessity, depending, of course, on a variety of circumstances, e. g. Song et al. (2010) and Crouch (1996).

<sup>4</sup> On the issue of dropping competitors' prices from the travel export demand function Song et al. (2009, p. 5) argue that "although some theoretical attention has been paid to the notion of substitute travel costs in the literature, they do not often feature in tourism demand functions". For a comprehensive review on the issue of elasticities, see Song et al. (2010).

increase of less than 100 thousand tourists that would be expected to contribute an extra €60 million; this represents an increase of about just 0.60%, compared to the performance of last year given that the average expenditure per journey amounts to about €640<sup>5</sup>.

The problem with this sort of price policy exercised by means of interventions on VAT rates is not only its ineffectiveness but, in addition, the possibility of introducing a dimension of inconsistency as regards its overall assessment. Thus shortly after the application of the VAT reduction as described above, the government decided to raise VAT on restaurant services. According to calculations of the association of Greek hoteliers the specific measure is expected to add to the average package price to Greece an extra 3%. With the help of the elasticity figures in Table 4, one can conclude that there will be a reduction of the order of 1% to the number of arrivals as a result of this increase, translated to a loss of about €100 million, assuming again the same average expenditure per journey<sup>6</sup>.

The net effect of the two measures described above will be about €40 million loss of travel receipts. The main problem, however, resulting from the combination of these two measures is not so much their net negative impact, as the adverse repercussions that they entail for the market through the confusion that they cause, thus discouraging prospective foreign investors.

Finally, in fiscal policy terms, the net result of these conflicting measures is expected to be rather disappointing: If the average price per bed is €40, as stated before in footnote 5, then the revenue reduction due to the hotel VAT decrease from 11% to 6.5% will be about €2. Given that the annual number of arrivals may even exceed 16 million and the average length of stay according to the Bank of Greece Travel Frontier Survey is 9 days, this means that the revenue losses will approach €250 million. At the same time, the Medium Term Fiscal Strategy programme for the Greek economy expects

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<sup>5</sup> Travel Frontier Survey, Bank of Greece, 2010. The reasoning behind this conclusion is the following: Given that the weighted average hotel price per bed in Greece is about €40 (Hadjidakis, 2011 and Hellenic Tourism Research and Forecasting Institute 2010), a drop of the VAT from 11% down to 6.5% is expected to result to a rough daily reduction per bed of €2, or 5%. With the help of the elasticities reported in Table 4, the impact on the number of arrivals following this reduction is not expected to exceed 100 thousand arrivals, contributing an extra €60 million.

<sup>6</sup> The impact of a VAT increase on restaurant services can turn out to be even more pronounced based on similar calculations in relevant sources in the literature (e. g. ECOFIN, 2009).

that the revenue collected as a result of the restaurant VAT increase from 13% to 23% is not expected to exceed €200 million<sup>7</sup>.

#### **4. Conclusions**

This paper has examined the sensitivity of Greek tourist arrivals to changes in the price of their package. It has been shown that arrivals are not that sensitive to price changes; thus small changes in price will have even smaller effects on the number of tourists coming to Greece. The results point to the conclusion that attracting more tourists to Greece is less a question of price reduction, or the relationship with the prices of competitors, and more one of non-price structural factors such as the infrastructure that supports travel activity in Greece (Bank of Greece 2009). In this sense, certain measures recently considered aiming at privatising local airport installations and relieving the market from its cabotage restrictions certainly point to the correct direction.

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<sup>7</sup>Medium Term Fiscal Strategy 2012-2015. The first quarter figures for 2012 report a mere €14 million collected from this specific VAT rise. Even if one assumes that this performance will be steady throughout the year the total revenue collected is not going to exceed €60 million which is much lower compared to the target figure of the Medium Term Fiscal Strategy Programme..

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**Table 1: ADF Test Results (5% t-statistic -2.95 )**

<b>Variable</b>	<b>ADF Critical Value</b>
L. R. EQUATION (1) RESIDUALS	-3.00
L. R. EQUATION (2) RESIDUALS	-3.42
ARR	-1.15
Y <sub>F</sub>	-2.19
P <sub>H</sub>	3.54
CPI <sub>F</sub>	-1.28
P <sub>G</sub>	0.62
CPI <sub>G</sub>	0.36
P <sub>OIL</sub>	-0.53
DARR	-5.00
DY <sub>F</sub>	-3.11
DP <sub>H</sub>	-4.56
DCPI <sub>F</sub>	-4.33
DP <sub>G</sub>	-5.52
DCPI <sub>G</sub>	-4.10
DP <sub>OIL</sub>	-7.48

**Table 2: Estimation Results of the Long-Run Arrivals Equation**

<b>DEPENDENT VARIABLE: ARR</b>	<b>COEFFICIENT</b>	<b>t- STATISTIC</b>
CONSTANT	0.7719	8.3513
$Y_F$	0.9863	15.1079
$P_G$	-0.1610	-2.4800

**Table 3: Estimation Results of the Long-Run Tourist Package Price Equation**

<b>DEPENDENT VARIABLE: <math>P_G</math></b>	<b>COEFFICIENT</b>	<b>t- STATISTIC</b>
CONSTANT	-0.0151	-0.1569
$P_H$	0.3823	11.4317
$P_{OIL}$	0.2823	24.2200
$CPI_G$	0.3412	6.4894

**Table 4: System Estimation Results: Arrivals and Package Price Equations**

	<b>DEPENDENT VARIABLE: DARR</b>	<b>DEPENDENT VARIABLE: DP<sub>G</sub></b>
CONSTANT	0.0418 (3.1172)	-0.0001 (-0.0489)
DY <sub>F</sub>	1.2391 (4.2217)	
DY <sub>F</sub> (-1)	-0.7162 (-2.1021)	
DP <sub>G</sub> (-1)	-0.2777 (-5.6482)	
DP <sub>H</sub>		0.4111 (10.5695)
DP <sub>OIL</sub>		0.2701 (32.0298)
DCPI <sub>G</sub>		0.3242 (7.2991)
DEV	0.0571 (4.4189)	-0.0530 (-8.5668)
DEX	-0.0917 (-9.1240)	
RESIDUALS(-1)	-0.4248 (-5.5334)	-0.2515 (-3.1077)
R <sup>2</sup>	0.8902	0.9866
S. E.	0.025	0.012
B-G LM	0.36	0.06
ARCH	0.37	0.67
J-B	1.42 (p-value: 0.49)	0.80 (p-value: 0.67)

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