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Public expenditures, aid and economic growth – some empirical evidence from the Portuguese autonomous regions

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Public expenditures, aid and economic growth – some empirical evidence from the Portuguese autonomous regions *

The financial perspectives in the after 2006 are clearly unfavourable for the Portuguese autonomous regions. Financial resources and investment will be channelled to the Easter Europe, and only the outer-most regions able to convince about their specificity (and need for substantial financial support) will receive similar levels of financial transfers. Like the majority of small island economies, the Madeira economy depends on a restricted group of sectors. It's unquestionable that the EU transfers are decisive in the dynamics of the regional economy. Therefore, post-2007 perspective is not encouraging, which is a concerning scenario. The communitarian funds transfers and tourism have a great effect on the economy dynamics. We intended to contribute to the on-going debate providing some empirical evidence about the importance of the EU and national transfers in the Portuguese autonomous regions.

1. Introduction

In a recent paper Armstrong (2004) argues that the outer-most regions financial perspectives in the after-2006 will be clearly damaged by the EU Enlargement. This context will imply a different look in terms of the EU social and economic cohesion policy and only the outer-most regions able to convince about their specificity (and need for substantial financial support) will receive similar levels of financial transfers. Armstrong (2004) concludes that the alleged exception associated with the outer-most regions is not justifiable tacking into account the highly favourable levels of employment and GDP per capita. The outer-most alleged handicaps are not an exclusive: the remote and mountainous regions in Europe share a similar set of disadvantages. It seems that the European Commission intended to analyse the social and economic island context, if we take into consideration the most recent reports granted.

The aid-growth study it is essential due to the global pattern of reduction in the external aid level, a relevant in terms of economic policy (World Bank, 2000). The FDI concentrates in Asia and in the Eastern Europe, and the after 2006 financial perspectives are not favourable especially in what concerns the Madeira Island. We intended to contribute to the on-going debate providing some empirical evidence of the autonomous Portuguese regions. Except for simplistic media analysis of the public finance policy, this geographical area has been overlooked in terms of academic research. In fact, the time span in consideration shows increasing levels of both aid and growth which seems to indicate a positive relationship between the 2 variables. It's unquestionable that the EU transfers are decisive in the dynamics of the regional economy. Therefore, post-2007 perspective are not encouraging, which is a concerning scenario.

In section 2, we consider some conclusions related to specific of the island context. In section 3 we summarize some theoretical and empiric evidence related to aid-growth nexus. In section 4 we show some empirical econometric evidence concerning to the Portuguese autonomous regions.

2. Islander economies developing potential

Given the islander economic weakness, the economic viability of these spaces is commonly questioned (Briguglio, 1988; Cèlimene et Salmon, 1995; Vellas, 1988). In

fact, the small island economies share a great specific and similar group of limitations, namely (Vellas, 1988;Tisdell, 1993;World Bank, 2000; Ortegon, 1988):

- . limitations of geographical characteristic, detaching the small physical area, unfavourable localisation (island isolation, outermost context, difficult access, etc) and the scarce endowment of natural resources;
- . environmental limitations, where we have to take into consideration the risk associated with the sea border erosion, the rising of the sea level and the presence of fragile ecosystems;
- .socio-economical characteristics with it's own difficulties to obtain scale economies both in private and public sector, and also the depending on a scarce number of products/sectors exportable and on a high degree of susceptibility to the international conjuncture.

As all the small islander economies, the RUP characterize themselves by the vulnerability of their own productive structure, established in the dependence upon a small number of sectors with the prominence of the agriculture activities, public administration and tourism. In agriculture, a group of basis products, can be considered decisive but is clearly affected by the disadvantages prices evolution in the world market and associated to modest contributions of the GDP. In secondary sector is relevant the civil construction sector financed by the EU funds. Charter I allows us to associate to RUP with one of the lowest of Europe GDP rates per capita and the double unemployment rates and also high inactivity rate.

Chater I: RUP characteristics

RUP	GDP PPP	GDP PPP/EU	Unemployment rates	Activity rate
Azores	12.006	53,1%	2,5 %	36,9%
Canaries	17.773	78,7%	14 %	28,9%
Guadeloupe	12.877	57%	26 %	30,7%
Guyane	11.948	52,9%	22 %	31,9%
Madeira	16.444	72,8%	2,5 %	45,7%
Martinique	14.952	66,2%	27 %	30,6%
Reunion	11.082	49,1%	33 %	24,5%

Source : Planistat et Bradley, 2003

Effectively, the RUP situation is associated with the permanent restraints of its own development. The RUP reality legally recognised in the EU is related with the physical discontinuity, with distant localisation from central regions of Europe, with narrow dimension and with a particular relief (See Charter II). This set of disadvantages establishes strong restrictions to economical activity, and confine the potential of individual and business mobility. In conclusion, it restricts the set of economic, social,

educational and cultural opportunities, and sends us to the near past of massive emigration.

Charter II: RUP Geographical characteristics

RUP	Distance to the capital of the main country	Density	Mountain	Archipelago
Azores	1.500	105	Yes	Yes
Canaries	2.000	222	Yes	Yes
Guadeloupe	6.800	247	Yes	Yes
Guyane	7.500	1,85	...	No
Madeira	1.000	314	Yes	Yes
Martinique	6.850	337	Yes	No
Reunion	9.400	289	Yes	No

Source : Planistat et Bradley, 2003

More recent data related with the outer most context shows an heterogeneous set of regions with substantial differences in some key variables, such as sector employment, unemployment rate, education levels, but similar in terms of the development levels (See Chart III).

Chart III: RUP economic and social characteristics

Region	EU-15	Port.	Azo.	Mad.	Fra.	Gua.	Gui.	Mar.	Réu.	Spa.	Can.
Pop.	379,6	10,3	0,2	0,2	60,9	0,4	0,2	0,4	0,7	40,3	1,7
Density	117	112	102	313	96,2	254	2	343	292	80	96
GDP/Hab	100	70,7	55,8	78,4	104,8	60,8	48,2	67,8	53,5	84,2	79,1
GDP (95-01)	2,5	3,5	3,9	5	2,6	4,4	-0,4	3,6	4,4	3,7	4,8
Emp.Agr.	4	12,4	13,7	12,8	4,1	2,8	2,4	2,8	1,7	5,9	4,6
Emp.Ind.	28,2	33,9	29,1	27,4	25,4	12,8	13,9	12,8	12,9	31,2	21,3
Emp.Ser.	67,7	53,8	57,2	59,8	70,5	84,4	83,7	84,4	85,4	62,9	74,1
Un.	7,8	5,1	2,5	2,5	8,7	26	24,4	22,9	29,3	11,4	11,1
Edu. L.	35,4	79,6	86,3	85,9	35,9	...	...	...	...	58,3	53,4
Edu. M.	42,9	11,1	8,9	9,3	40,6	...	...	...	...	17,3	17,1
Edu. H.	21,8	9,3	4,9	4,8	23,5	...	...	...	...	24,4	22

Port-Portugal; Azo-Azores; Mad-Madeira; Fra-France; Gua-Gaudalupe; Gui-Guyana; Mar-Martinica; Réu-Reunion; Spa-Spain; Can-Canaries Island.

One should recognize that there is a large number of the literature concerning the alleged islands handicaps in terms of development. However, the striking contrast between the referred handicaps and the reality (both in terms of GDP per capita and unemployment rates) raises increasing level of doubts about the islands difficulties so often mentioned in the literature. The remarkable economic performance raises an

ever-increasing curiosity in the explanatory factors of this success. Despite the difficulties and the external crisis (fall in the international price of the commodities, the debt problem and the natural catastrophes), the Caribbean experience demonstrate, without doubt, that the success is not the exception.

Given the apparent economic growth-islands disadvantages paradox, it is relevant a detailed explanation. Firstly, some authors point out the importance of sound macroeconomic policy. Preferential external markets access and substantial aid levels are also highlighted. Ortegon (1988) in a study related to the Caribbean context argues that the islandness is not the main handicap. The lack of sound macroeconomic policy, the lack of entrepreneurship spirit, the inability to mobilize endogenous resources and the lack of endurance in the pursuing of goals are the authentic handicaps.

McCarthy (1998) in a study about the resistance to economic shocks in the Caribbean context shows us the need of coherence in the economy developing strategy and politics options. The countries that bet on the opening of their economy to the external market, in the market diversification, in the productivity reinforcement, and in the production modernisation, reached high levels of economic development and develop a bigger resistance to external impacts. The McCarthy (1998) study in evidences the importance of the following variables in the economic performances evolution: public and private investment; balanced budget management (reduced deficits); external aids; reduced debts and; reduced inflation rate. McCarthy (1998) also suggests: that the foreign loans should be channelled to productive investments; the continuous attraction of EDI; the encouragement to internal savings; a bet in tourism; maximum utilisation of global opportunities; developing the financial services and; the use of commercial agreements favourable to the increasing exportation. In conclusion, theses countries should practice political economics similar to those of the OECD countries.

The remarkable political, macroeconomic and institutional stability seems to support the idea that the most important is a suitable set of macro and micro policies. On the other hand, the obvious absence of natural resources seems to call the attention of the local governments and societies to importance of the maximisation of opportunities, reducing the levels of instability, chaos, and economic damage (Armstrong, 2004; World Bank, 1996; Briguglio, 1995; Benson et Clay, 1998) .

The geographical and cultural specificities of the islands are an extraordinary attraction factor in terms of tourism demand (Butler, 2000). The most prosperous economies are specialised in tourism, which demands a very precise economic and political environment: low levels of inflation rate similar to those of the advanced economies, exchange rate stability, high level of public investment with the purpose of

providing infra-structure (transport and social facilities), political and institutional stability, low levels of crime rates, low level of unemployment, and high levels of social cohesion. The remarkable levels of institutional and democratic stability and the practice of democratic and peaceful conflict resolution are a reflex of the colonial experience. These territories share the western culture and institutional practices.

The high levels of openness prevent the implementation of protectionist measures (Armstrong, 2004). The increasing competition, especially in the tourism sector, and the absence of artificial protection implies a high level of local competition and an exclusive survive of the most competitive enterprises.

The small islands receive high levels of aid per capita, in comparison with the average of the developing countries. It's the importance of not being important. The relative invisibility of these territories is very advantageous and beneficial. It is easier to develop financial, environmental and commercial flexible legislation, decisive to attract activities and enterprises to the off-shore centres. In what concerns the autonomous territories (not independent territories) the participation of local islands parties in the national multiparty governments provide additional possibilities to an increase of the internal financial transfers.

The experiences of cooperation and regional integration have allowed an unexpected supplementary negotiation power at the international forums, clearly above the real importance of the single territories, and with important results in terms of international visibility, preferential market access and financial transfers.

Finally, a reduced dimension in terms of are and population implies economical, social and political advantages, related to the ability to develop economic and social networks. Geographical proximity and family ties facilitates the development of networks of trust, reciprocity and cooperation. But proximity imposes some problems to the public administration. Corruption, and an undesirably proximity between members of the government and the citizens are sometimes an unfortunately outcome.

In conclusion, we must say that the economic success is not spatial homogeneous. The probability of success is territorial dependent. Regions closed to the main global economic centres (North America, Europe, Japan), regions endowed with natural resources, such as the Caribbean and the Mediterranean areas, shows the most important results in terms of economic and social indicators. Distance matters. Geography matters. The economic performance is territorialized and the spatial dimension mattes.

3. Economic growth and external aid

External aid is fundamental to the economic development in the sub development context, due to the lack of financial resources necessary to the investments needs in the developing countries (Campbell,1999). One could consider that with some initial financial help it would be possible to fuel the economic dynamics thus reducing the the future financial assistance. In what concerns the islands territories the substantial needs in terms of infra-structure (due to the tourism specialisation) also requires substantial financial support. Nevertheless, the literature concerning the issue shows contradictory results. Campbell () mentions that the traditional growth models cannot be directly applied to the island context. There seems to be numerous reasons to explain the dubious econometric results.

Firstly, the consumption share (in the GDP) is extremely high in contrast with the investment levels. Therefore, the level of investment is probably below the minimum level required to induce the economic dynamics (Campbell, 1999; World Bank, 2000). One must bear in mind that consumption habits are influenced by the western values and the by low local offer levels.

It's seem that the aid is fungible. In the 60's and in the 70's, in the majority of territories, the maximization of the economic growth was not a priority to the locals government and societies due t the lack of social infra-structure (Campbell, 1999; Collier et Dehn, 2001). A great share of the external aid was probably channelled to solve the basic social needs (healthy, education, poverty reduction, social infra-structure construction). It's possible to confirm the existence of the problem analysing the local fiscal policy. Low taxation levels indicate a likely reaffectedation of the external aid to the current expenditures. An increase of public services demands an increase in the fiscal effort. We must refer that the social infra-structure is not directly and immediate productive like the direct investment in the productive sector (for instance, a factory or a hotel). And the profitability of the projects is size related. Therefore, projects development in the islands context are smaller, highly risky and less profitably with a slighter impact on the local economic growth.

Campbell (1999) shows contradictory results in a study related with the Caribbean experience. The conclusions are sample and time dependent, but it is possible to come to the conclusion that there is a positive relationship aid-growth. The inverse relation aid-saving level is more conclusive: it seems that local saving levels are insufficient and aid and local savings are substitutes. The previous conclusions might raise some important questions because of the global trend of aid reduction. It is necessary to increase (incentive) the local savings level, attract additional FDI, and the local private investment. It urges to develop the spatial capital in order to attract further

FDI through a reestablishment of the incentives policy. This above scenario demands also a new approach (priorities) in terms of public finance policy, debt levels, budget deficits and debt carrying capacity.

4. Empirical evidence from the Portuguese autonomous regions

The model's hypothesis is that the regional GDP in the Azores and in Madeira, tends to reflect the importance of tourism demand, GDP evolution in Portugal and the public expenditures levels. Chart IV shows the proximity between the autonomous regions and the national level. Public Expenditures have been largely financed by European Union grants as well as grants from the Portuguese government, both acting as compensation for insularity costs. Therefore, the following economic model has been estimated:

$$Y_t = f(YP_t, DP_t, TUR_t) \quad (1)$$

where:

Y_t , is regional GDP in the Azores and Madeira;

YP_t , is GDP for Portugal;

DP_t , are public expenses for the regions of the Azores and Madeira;

TUR_t , is a demand variable for the tourism industry in the Azores and Madeira.

Chart IV: Portugal/UE, RAA/UE and RAM/UE ratios

Region	UE-15	P/UE	RAA/UE	RAM/UE	RAA/P	RAM/P
Population	100,0%	2,7%	0,1%	0,1%	1,9%	1,9%
Density	100,0%	95,7%	87,2%	267,5%	91,1%	279,5%
GDP/Hab	100,0%	70,7%	55,8%	78,4%	78,9%	110,9%
GDP(95-01)	100,0%	140,0%	156,0%	200,0%	111,4%	142,9%
Emp. Agri.	100,0%	310,0%	342,5%	320,0%	110,5%	103,2%
Emp. Ind.	100,0%	120,2%	103,2%	97,2%	85,8%	80,8%
Emp. Ser.	100,0%	79,5%	84,5%	88,3%	106,3%	111,2%
Unemp.	100,0%	65,4%	32,1%	32,1%	49,0%	49,0%
Edu. L.	100,0%	224,9%	243,8%	242,7%	108,4%	107,9%
Edu. M.	100,0%	25,9%	20,7%	21,7%	80,2%	83,8%
Edu. H.	100,0%	42,7%	22,5%	22,0%	52,7%	51,6%

Average			104,4%	124,5%	79,7%	102,1%
			1,007	1,077	0,321	0,670

RAA- Azores; RAM- Madeira; Edu-Education;L-Low;M-Médium;H-High

The difficulties in obtaining consistent data set for the same period and data other variables, such as the level of exports, limit our choice of econometric estimation methodologies. The econometric model can be written in logarithmic form using the following equation:

$$\text{Log } Y_t = \alpha + \beta_1 \log YP_t + \beta_2 \log DP_t + \beta_3 \log TUR_t + \varepsilon_t \quad (2)$$

Y_t means the regional GDP at constant prices, for the period 1995-2001, YP_t means the National GDP (Portugal) at constant prices, for the period 1995-2001 and TUR_t means the tourism demand, which is measured in the case of Madeira by the nights spent and in the case of the Azores by number of hotel guests. The variables “numbers of guests” and “number of overnights spent in hotels” are both demand related indicators, thus presenting a high correlation coefficient but allowing the obtainment of distinct levels of significance for the model. The variable DP_t , representing public expenditures is measured in the case of Madeira by Total Expenditure from the Regional Budget, and in the case of Azores by Total Plan Investments from Regional Accounts. Both variables reflect the importance of public expenditures in regional GDP. The national and EU transfers are not statistical relevant but highly correlated with the variables included. All the data sets were taken from the National Statistics Institute (INE) and the Regional Statistics Services of the Azores (SREA) publications.

The models estimation using the [Ordinary Least Squares](#) method gives the following results, based on the sample data as above:

Chart V: Madeira Model

Variables	Coefficients	T-tes	Sig
Constante	-12,86	-8,787	0,000
LTur	0,245	2,246	0,038
LDp	0,257	3,031	0,008
LYp	0,863	4,862	0,001
R ² =0,988, F=452,8			

Unit root test (DF test)

Variable	Test Statistic (DF test)	Sig. (McKinnon p-value)
LY	0,858	0,00
LTur	0,397	0,98
LDp	-0,393	0,91
LYp	0,310	0,97
dLY	-3,137	0,02
dLTur	-3,791	0,00
dLD	-5,579	0,00
dLYp	-3,197	0,02

Critical values (Wlater Enders, 1995): -3,75 (1%), -3,00 (5%) e -2,63 (10%)

Cointegration Test: $\Delta e_t = a_1 * e_{t-1} + u_t$

Variable	Coefficient	T-test	Sig.
e_{t-1}	-0,743	-3,36	0,003
Critical value with no lags=3,37 (5%)			

Chart VI: Azores Model

	Var. Dep.	Var. Ind.		
	Ly	Lyp	Lt	Ld
Açores		0,87 (0,09)	0,154 (0,02)	0,121 (0,00)

The numbers in parenthesis indicate the significance level of the variables.

In general, both models present a very satisfactory explanatory power. The different series are I(1) integrated in the first order, guaranteeing the significance of the statistic tests usually used in the ambit of OLS regressions. In examining the results, we observe that the estimated β parameters are all positive according to our expectations.

From the results, we can confirm the empirical importance of the referred variables in explaining the performance of the regional global economy. The parameter associated with the variable Dt shows that an increase of 10% in public expenditure translates into an increase of 2,57% and 1,21% in GDP, respectively, in the case of Azores and Madeira. The impact of tourism demand in GDP is also most significant in the Madeira economy. This can be explained by the early tourism development in that

region since the 60's responsible for high multiplier effects. These reflect the existence of a more mature Madeira tourism sector than in the Azores, giving rise to a group of tourism related activities, namely: restaurants, entertainment, transportation, local handicrafts and construction. This whole set of economic activities has been highly impacted by tourism ever since the 70's, which direct and indirect impacts have been estimated around 25% of the GDP.

The development model observed in Madeira, is strongly anchored in tourism, construction (financed by public and public administration, allowing the region's GDP *per capita* to attain higher levels than the national mean (104% on average for the period of 1995-2001). Development in the Azores, being more recent in comparison with that of Madeira, has not attained the same level of RAM. The basis of the Azorean export sector is still centered on agricultural products. The GDP per capita in the Azores for the period of 1995-2001 is 76% of the European average.

5. Conclusion

The importance of the public sector in the island context is indisputable. The public expenditures are fundamental in terms of employment, added value and economic dynamics. Due to the difficulties related with the reduced dimension and the remoteness, the private initiative is not consistent and the local private investments are low. The natural economic specialization (tourism) demands high level of infrastructures, (usually) provided by the public sector. Some initial financial help is needed in order to stimulate the economic dynamics. These regions still show some retard in terms of development. The evidence from Madeira and Azores is conclusive. The after 2006 unfavorable perspectives demand an alternative (financial) response to development issue in the island context.

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