

# European Regional Development Issues in the New Millennium and Their Impact on Economic Policy

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## Theme

### REGIONAL DISPARITIES, PROBLEMS AND POLICIES

#### **Evaluation of the European Policies in Support of Ultraperipheral Regions, Azores, Madeira, Canarias, Guadalupe, Martinique, Guyane and Reunion**

(based in report presented to the European Parliament on October 2000)

Mário Amaral Fortuna, Tomaz Ponce Dentinho, José Cabral Vieira, Rui Gonçalves Luís

Universidade dos Açores  
tomaz.dentinho@angra.uac.pt

## Abstract

The paper looks at the development of the EU's outermost regions. We develop a model not only to explain the effects caused by peripherality but also to evaluate the European policies towards ultra peripheral regions. Ultra-peripherality is an economic and social phenomenon associated to a geographical structure characterised by two attributes: size and access. The structure of the model to analyse *size*, or supply performance, can be represented in three interrelated blocks: i) the first block explains the effect on the population of driving activities in island economies: exports, external aid for employment and external subsidies; ii) the second block establishes the relationships between population and activities associated to the provision of goods and services not receiving external aid; iii) the third block estimates the product and the income of the region by multiplying the quantity of each type of activity, measured in terms of the number of jobs involved. The structure of the model for *access*, or demand performance, is in a way implicit in the model of size through the population indicator; however, the population indicator does not clearly translate variations of accessibility to the region being. The present study uses the demographic potential to arrive at an accessibility indicator that uses easily accessible statistical data: the population and the traffic of passengers.

We conclude that the impact of ultra-peripheral policies are weaker in the regions more dependent on external public transferences, the connection with neighbour countries can produce important effects in the economy, the elimination of the "sea rights" in most of the regions could generate important impacts in the respective development process, the effective liberalisation of air transportation will lead to a strong increase in the accessibility and the development process based on import substitution and external public transferences can lead to a big increase in the population and created a great dependence on the "sea rights".

## 1. Introduction

The specificity of remoteness was recognised by the European Union in number 2 of article 227 of the Treaty of Rome and confirmed by the ultra-peripherality concept was first used in the European Union (EU) in the mid eighties, on suggestion of the Portuguese government. Before this date, the French departments already benefited from a special statute without any generalisation of the concept<sup>1</sup>.

With Portugal's and Spain's entry into the EU the problem of the territories at a considerable distance from the European continent became more significant since it now involved three Member States as opposed to one. The specific problems of these regions are then considered as an EU problem and not just of the respective countries.

<sup>1</sup> See, for example, Patrick Guillaumin. 2000. *La Dimension Ultraperipherique de L'Union Europeenne*. Mimeo.

The specificities of the French territories had already been recognised in number 2 of article 227 of the Treaty of Rome.

As of the approval of the Maastricht Treaty, the specificities of the UPRs are specifically referred in the declaration annex to that law. According to declaration:<sup>2</sup>

This was a first step, on the part of the EU, towards recognizing that there are regions with peculiar characteristics, different from all others and that, for this reason, specific policies are justified. On the basis of this declaration and following the programs for the French Overseas Departments (DOM), the POSEI<sup>3</sup> program was developed and called POSEIDOM for the DOM, POSEICAN for the Canary Islands and POSEIMA for the Portuguese archipelagos of Madeira and the Azores.

The program included a set of temporary measures, some with budget implications and others as exceptions to community norms.

Contrary to what happened relative to other regions, it became more evident that the specific measures in favour of the UPRs should be of a more permanent nature, warranting a firmer compromise on the part of the EU.

This difference was expressed in the Treaty of Amsterdam where the concept of ultraperiphery is recognized with the corresponding economic and social implications.

Specific reference to the less developed insular regions starts in article 158 of the Treaty as revised in Amsterdam<sup>4</sup>, **Community shall aim at reducing backwardness of the less favoured regions or islands.**"

On the other hand, number 2 of article 299, dedicated to the ultra-peripheral regions, states that:

**"2. The provisions of this Treaty shall apply to the French overseas departments, the Azores, Madeira and the Canary Islands.**

**However, taking account of the social and economic situation of the French overseas departments, the Azores, Madeira and the Canary Islands which is compounded by their remoteness, insularity, small size, difficult topography and climate, economic dependence on a few products, the permanence and combination of which severely restrain their development, the Council, ... shall adopt specific measures aimed, in particular, at laying down the conditions of application of the present Treaty to those regions, including common policies.**

**The Council shall, when adopting the relevant measures referred to in the second subparagraph, take into account areas such as customs and trade policies, fiscal policy, free zones, agriculture and fisheries policies, conditions for supply of raw material and essential consumer goods, State aids and conditions for access to structural funds and to horizontal Community programs.**

**The Council shall adopt the measures referred to in the second subparagraph taking into account the special characteristics and constraints of the outermost regions**

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<sup>2</sup> Treaty of the European Union (Maastricht)

<sup>3</sup> Programme d'Options Spécifique à l'Éloignement et l'Insularité

<sup>4</sup> Jornal Oficial das Comunidades Europeias, 97/C340/01.

**without undermining the integrity and the coherence of the Community legal order, including the internal market and common policies.”**

This article commits the EU to pursue, with the countries involved, the development of these regions through adequate specific measures.

## 2. An Interpretation of the Concept of Ultra-peripherality

The introduction of the concept of ultra-peripherality has led a considerable number of researchers to discuss its precise definition. We highlight here three approaches:

- I. One that identifies differences in the development processes and integration to justify policies as is explicit in the report COM(2000) 147 final and as is implied in the Treaty of Amsterdam;
- II. One that seeks to construct indicators that highlight differences in development processes that justify specific policies, as happens with the works of EURISLES<sup>5</sup>;
- II. Finally, one that seeks to understand the development and integration processes of the ultra-peripheral regions and to specify instruments to promote sustainable development, as is the case of the work of Tomaz Dentinho<sup>6</sup>, which is the basis for the concept of ultra-peripherality adopted in the present report.

### *The Treaty of Amsterdam and the Commission's Report*

By specifying the regions that fall within its concept of ultra-peripherality, the Treaty of Amsterdam limits some aspects of the concept as it intends to use it.

To justify specific actions the Treaty starts by recognizing that here is a **difficult structural social and economic situation**. On this matter the report of the Commission<sup>7</sup> states that six out of the seven regions involved are among the poorest of the EU. The Commission further specifies their low per capita income (59% of the EU average) and, in most cases, excessively high unemployment rates.

It is this situation that constitutes the starting point to justify specific economic policies. Various factors are listed to explain the backwardness of these regions. Number 2 of article 299 explicitly refers to **remoteness**, **insularity**, **small size**, **difficult topography** and **climate**, and the dependence of a **small number of products**.

The Commission's report also refers that "... these regions are very far from the European continent and at the same time, in the majority of the cases, near third countries that are less developed."<sup>8</sup>

### *Eurisles*

The EURISLES study tries to identify indicators that characterize restrictions to development specific to the ultra-peripheral regions. Their selection goes to indicators of accessibility conceived by reference to a relevant economic center. The study assumes, in its analysis of the UPRs, that the relevant center is Maastricht. This assumption imposes a strong restriction since for the Azores the center is still mainland Portugal which is better represented by Lisbon. For Madeira it can be Lisbon or some capital city in the North of Europe where its tourists come from. For the Canary Islands it will be Madrid or Barcelona. For the DOM it might be Paris.

Still according to this study, the concept of ultra-periphery, which is not limited to the concept of island or of insularity, is characterized by five factors. Two are of a geographical nature: remoteness from Europe and climatic conditions. Two are of an institutional and political nature: European frontier and specific institutional arrangements. One is economic: socio-economic weakness.<sup>9</sup>

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<sup>5</sup>Jean-Didier Hache. 1997. Statistical Indicators of Regional Disparities Generated by Insularity. Eurisles.

<sup>6</sup> Dentinho, Tomaz (1995) - Information and Communication Technologies and Regional Development: The Case of the Azores Dairy Value Chain. PhD dissertation, Centre for Urban and Regional Development Studies, University of Newcastle upon Tyne.

<sup>7</sup> COM (2000) 147, pp. 5

<sup>8</sup> COM (2000) 147, pp. 5

<sup>9</sup> According to the study

- "ultra-peripherality can be defined as the extreme distance of these territories from the European continent;
- ultra-peripherality is characterised by climatic constraints and by specifically tropical or sub-tropical productions;

The climate and distance parameters cannot be altered. However, they can be seen as a restriction or as a potential. Climate is beneficial for tourism in the Canary Islands and to milk production in the Azores. Distance is costly for exports but a protection of local production.

The institutional parameter refers to the political solutions that each country has found for its internal organization and to the special situations accepted by the EU

The frontier parameter refers to a function which is also political and which may legitimise an interventionist strategy in these regions. It appeals to the geo strategic interest that might be associated with the fact that these regions are part of the EU.<sup>10</sup>

Finally, the socio-economic vulnerability associated to insularity<sup>11</sup> is also reflected in accessibility, independently of the distance to the central regions because it limits the forms of transport of goods and people. Consequently, the access of people is invariably to Europe or to nearby geographical areas and is invariably done mostly by air travel. This fact alone is a strong factor of isolation and, in many cases, a strong limitation. The potential that can be harnessed from this isolation requires measures that are generally more difficult to implement and more uncertain in their results.

The access of merchandise is also limited to transport by air or by sea. These regions cannot benefit, for example, from the trans-European network of roads and railways.

Access to information does not have the same technical limitations as in the case of goods and people but the necessary initial investments can be a constraint, be it during their construction or during their operation, because of higher average costs for the users.<sup>12</sup>

These limitations have consequences not only in terms of the costs of providing the service but also and most important in terms of the distortions in the markets for these services. In fact, it is common to find monopolies (State or private) in the transport and communications systems in the ultra-peripheral regions.

### ***An Interpretation of the Concept of Ultra-peripherality***

There are many and diverse studies that seek to understand and explain the development and integration processes of the ultra-peripheral regions. This section addresses some relevant issues trying to lay out a model capable of evaluating the impact of development policies for ultra-peripheral regions.

Ultra-peripherality is an economic and social phenomenon associated to a geographical structure characterized by two attributes: size and distance<sup>13</sup>. The small size means that valuable but scarce resources in these regions can only

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- ultra-peripherality also has an additional role of EU frontier;
  - ultra-peripherality is an accumulation of constraints, the result of which confers its specific originality. The various variables selected for the Study and by the Treaty clearly show a clear difference of intensity in the handicap (unemployment, income, dependence, remoteness, GDP...);
  - ultra-peripherality is also marked by a different situation on the institutional level with particular status in internal and community law.

<sup>10</sup> If this is a function attributed to the UPRs then it should be made clear since it has important implications on the functioning of these regions.

<sup>11</sup> Even though French Guiana is not an insular region it has isolation characteristics similar to them.

<sup>12</sup> The Von Tunen model is also applicable to the cost of access to information - Brian Ilbery (1985). Agriculture Decision Making. Chapter 2 of Agriculture Geography, A Social and Economic Analysis. Oxford University Press, UK.

be fully utilized by outside markets<sup>14</sup>. The consequence of this is the shortage of space and of usable soil, the reduced size of the local market, the difficulty in mobilizing venture capital, the shortage of specialized labour and diseconomies of scale in the provision of standardized public services.

From an economic point of view, ultra-peripherality is a technological peculiarity considering that resources are available but limited.

What we find in the ultra-peripheral regions are not production functions with declining economies of scale, but rather technological processes, unexpectedly truncated, of resource mobilisation, production and distribution of consumption. But technology, interfacing between Man and the world, results from the social environment through the processes of demand, supply, adoption, understanding, adaptation, use and innovation<sup>15</sup>. Thus, the ultra-peripherality, characterised by remote demand and limited resources, changes not only the technological processes but also the organisational structures and cultural identities of the ultra-peripheral territories. Related to the size and access factors is not only a problem of limited resources but also another facet of ultra-peripherality: a compulsory spatial identity<sup>16</sup>. Truly the importance of the islands is also cultural - culture influenced by the social characteristics and ambience of each island. What would become of the Canaries without tourism and sun? of the Azores without milk and green fields? of Guadeloupe without sugar cane and white sand beaches?<sup>17</sup>

But if the compulsory spatial identity is a characteristic that results from size and isolation of the ultra-peripheral regions, what would then be the dividing line from other geographical realities with different patterns of size and access?

Figure I defines four types of regions through crossing two determinant factors of ultra-peripherality, *size* and *access*, and identifying other types of situations determined by geography: centrality, peripherality and marginality.

A central region is one that has accessibility and dimension. A peripheral region is one that has dimension but not accessibility. A marginal region is accessible but does not have size. Finally, the ultra-peripheral region has neither size nor accessibility.

Note that, in economic terms, the size normally associated with productive capacity and accessibility can be defined in terms of consumption possibilities. Since we are dealing with regions it is not clear that production capacity will result in consumption not only because we might have capacities that are not totally explored but also because there are special distribution mechanisms through which, for example, some richer regions finance less productive ones by paying for public services and investment.

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<sup>13</sup> Dirk Godenau (1992) - The Interaction of Population and the Economy under Conditions of Insularity. IV World Congress of RSAI, Palma de Mallorca, 26-29, May.

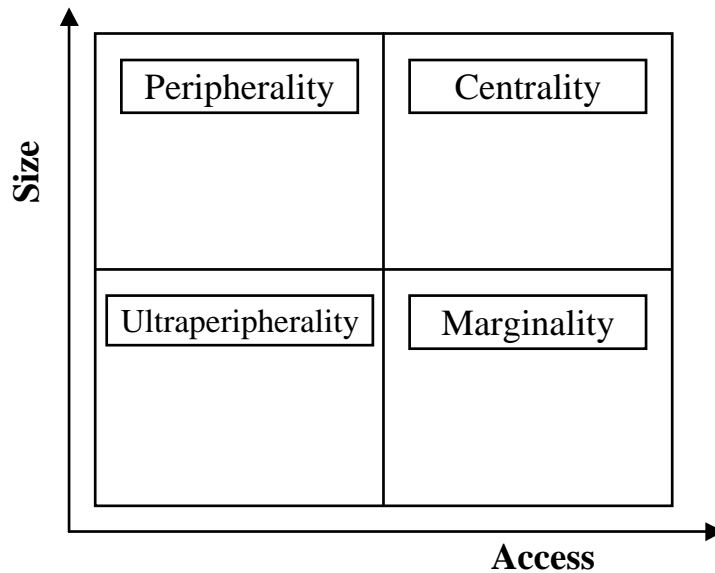
<sup>14</sup> Without outside connections the islands become fragmented between themselves and within themselves, in François Doumenge (1985) - The Viability of Small Intratropical Islands. pp. 70-118 of States, Microstates and Islands. Editors: Dommen, Edward & Hein, Philippe. Croom Helm, London.

<sup>15</sup> UNCTAD (1985) - Examination of the Particular Needs and Problems of Island Developing Countries pp. 118-151 of States, Microstates and Islands. Editors: Dommen, Edward & Hein, Philippe. Croom Helm, London.

<sup>16</sup> Coddacioni-Meistersheim, Anne (1990) - L'Ile Comme Système: Quelques Réflexions Methodologiques - Meeting SIDAM, Açores 1990, Universidade dos Açores.

<sup>17</sup> Jean Didier Hache (2000) - Quel statut pour les îles d'Europe? CRPE. L'Harmatan, 2000.

Figure 1: Typology of Regions



Four corollaries can be derived from this typology:

- First, significant differences exist between ultra-peripherality, peripherality, marginality and centrality<sup>18</sup>.
- Second, alterations of accessibility and dimension induce processes of regional transformation through which an ultra-peripheral region can, from an economic viewpoint, become peripheral, marginal or even central<sup>19</sup>.
- Third, ultra-peripherality has, at the same time, advantages and disadvantages: the isolation represents inaccessibility but can also offer protection and an environment of innovation; the limited resources represent a technological restriction but also a possibility to generate revenues<sup>20</sup> when good regulation exists; the small size enhances synergies but fosters the creation of monopolies; the specialisation is a risk<sup>21</sup> but also a potential to create competitive advantages<sup>22</sup>; the diseconomies of scale of public services<sup>23</sup> can also imply better quality and innovation<sup>24</sup> in their provision.

<sup>18</sup> These differences are confirmed in works that explain that the ultra-peripheral and insular economies are markedly different from peripheral economies, in Roberto Camagni & al. (1991) - Interregional Disparities in the European Community: Structure and Performance of Objective 1 Regions in the 1980's. Paper presented to the North American Regional Science Conference, New Orleans, November 6-9.

<sup>19</sup> It occurs that, the same region divides itself into marginal sectors and peripheral sectors generating a phenomenon of duality and structural conflict in the definition of policies. In the Azores the dairies are peripheral but the public services are marginal. In the Canaries and in Madeira tourism demand attains centrality but the public services are considerably dependent on outside support.

<sup>20</sup> Nicolas Vernicos (1987) - The Study of Mediterranean Small Islands, Emerging Theoretical Issues. *Ekistics* 323/324 March/April - May/June, Athens.

<sup>21</sup> Alison Hess (1990) - Overview. Sustainable Development and Environmental Management of Small Islands. Ed. Beller, W., d'Ayala, P. & Hein, P. UNESCO, Paris.

<sup>22</sup> Michael Porter (1990) - The Competitive Advantage of Nations. Macmillan Press Ltd. London.

<sup>23</sup> F. Casabianca & M. Biggi (1987) - Iles et Dependence. Colloque Espace et Peripherie, Lisbonne. Association de Science Régionale de Langue Française.

It is evident that European policies to aid the development of the ultra-periphery have not significantly decreased the relative underdevelopment of these regions. It is also clear that it is not enough to improve accessibility since it fosters processes of marginalisation, erodes production capacity, diverts investment towards rigid importing activities in a process called “Dutch disease”, increases dependence on the outside and stimulates either unemployment or population decreases. It is because of these facts that it is important to analyse and revise aid policies to the ultra-periphery, assuming that, even though the geographic characteristics of ultra-peripherality are permanent, this does not imply that the gap of economic and social development is insurmountable.

### ***The Management of Ultra-peripherality***

There are three types of measures of the management of ultra-peripherality that, by influencing the dimension and accessibility of the socio-economic systems, permit the processes of sustainable development in ultra-peripheral regions to better converge with the regions of the European community.

First, to intervene on the communication and transportation systems that influence the accessibility of the regions to consumption and supply markets<sup>25</sup>. Second, to improve the competitiveness of export value chains that use endogenous resources. Third, to modulate, through knowledge and technology, the information and decision systems that influence the mechanisms that control and distribute value.

In what concerns the first type of measures of management of ultra-peripherality, the regulation of the transportation and communications systems ought to be oriented not so much towards the supply at monopolistic prices (as happens in many cases in defence of a supposed public service), as to guarantee the commercialisation, internal and external, of products and services with competitive transport and communication prices. This implies the stimulation of competition in transport and communication between ultra-peripheral regions and adjacent regions and between these regions and the developed world where the more significant markets are located. It implies also that the research and development of transport systems, in sync with the systems dictated by the market, would be appropriate to the internal and external commercialisation of products from the ultra-peripheral regions. Finally, this implies the monitoring of price behaviour and service quality with the intention of adopting regulatory measures that promote competition, and control price and quality of services provided.

The second vector of the management of ultra-peripherality is associated with the dynamics of competitiveness in export value chains<sup>26</sup>, which implies the existence of competitive supply markets and buyers and the production, transformation and distribution of products with increasing value. For this it is important to encourage research and development of high value products, to reduce the stake in the commercialisation of non-differentiated products and to promote the factors that facilitate the entry of new businesses into the regional transformation and commercialisation sectors.

Finally, in reference to the third vector of the management of ultra-peripherality, in order to model information and decision systems, it is fundamental: i) to modernise information systems in exporters' value chains in a way that integrates ultra-peripheral regions into the dynamics of the Information Society; ii) to reorient information gathering systems to aid in the decision making of regional entities and to increase their participation in decisions that are made in the exterior that affect them; iii) to promote technological and methodological innovation in the supply of local public services.

With a combination of these measures, ultra-peripheral regions could begin a sustained process of development. It is fundamental to guarantee the sustainability of the measures implemented and to monitor their effects in terms of the appropriate development indicators. The model is sketched in the figure that follows.

Figure 2: Combined Effect of Measures

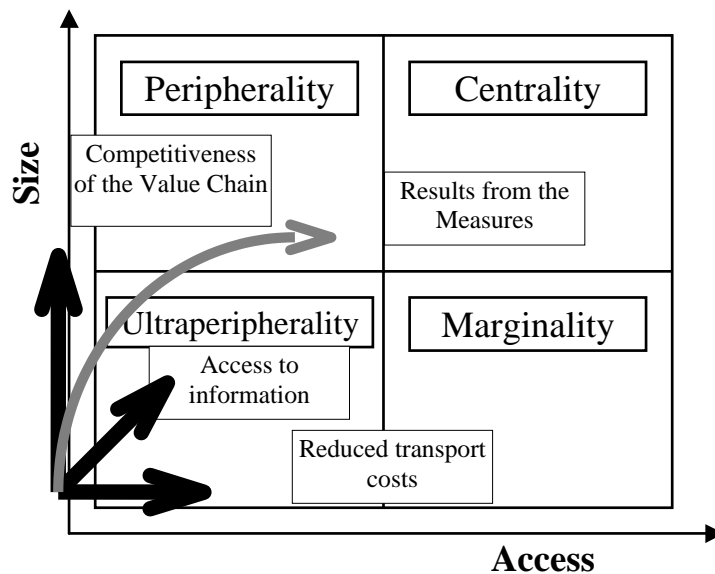
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<sup>24</sup> David Murray (1985) - Public Administration in the Microstates of the Pacific. Pp. 185-203. States, Microstates and Islands. Ed. Dommen, E. & Hein, P. Croom Helm, London.

<sup>25</sup> Robin Cohen (1983a) Introduction. In African Islands and Enclaves. Sage Publications, Beverly Hills.

<sup>26</sup> François Vellas (1988) - Les Stratégies d'Ouverture Internationale des Petits Pays Insulaires, pp.33-77. L'Enjeu des Petites Economies Insulaires. Ed. Crusol, J., Hein, P. & Vellas, F. Economica, Paris.





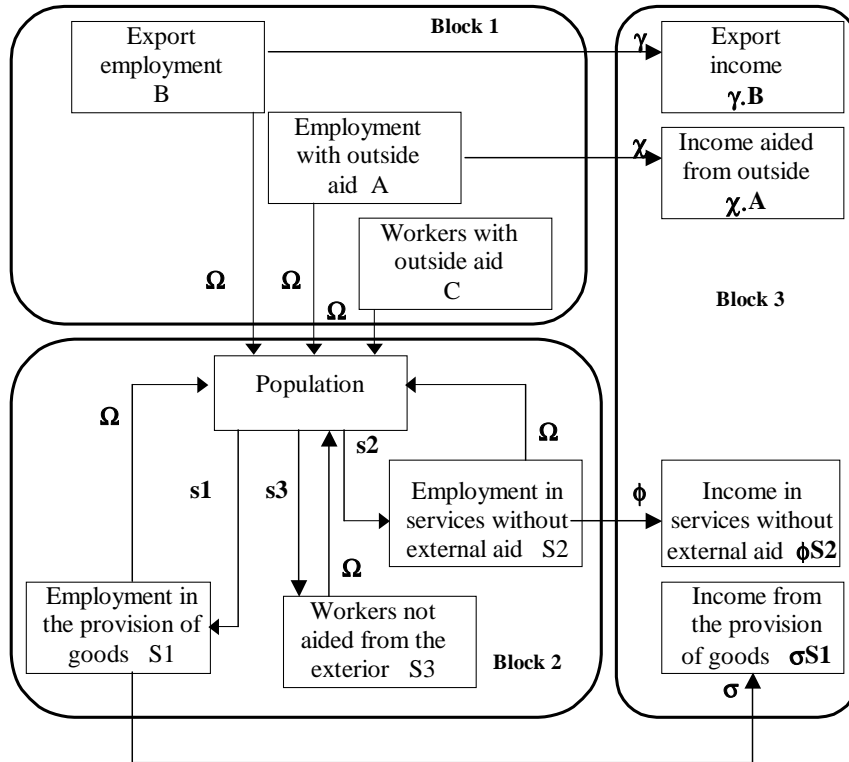
## 5. Refinement of the Methodology for Estimating the Costs of Peripherality

### *The Model*

#### Size

The structure of the model to analyse size (Figure 2), or supply performance, can be represented in three interrelated blocks (Figure 3): i) the first block explains the effect on the population of driving activities in island economies: exports, external aid for employment and external subsidies; ii) the second block establishes the relationships between population and activities associated to the provision of goods and services not receiving external aid; iii) the third block estimates the product and the income of the region by multiplying the quantity of each type of activity, measured in terms of the number of jobs involved, by the productivity of respective employment or by per capita subsidies to workers benefited.

Figure 3: Model of Analysis of the Size of Ultra-peripheral Economies



The model assumes that exports and external aid constitute the motors of the ultra-peripheral economies establishing not only their dimension but also the structure of the economy. It also assumes that the active population immigrates to other regions of the country when it does not have a satisfactory form of sustenance. Finally, the model does not desegregate the demand for goods and services on the part of the population by levels of income and allows that the dependent population per worker is equal in all sectors.

The first two blocks of the model use persons as a unit. The basic population (P) is given by the following expression

$$P = 1/\Omega (A+B+C)$$

where  $\Omega$  is the rate of activity (participation rate),  
 A is the employment that receives external aid,  
 B is the employment in the export sector and  
 C is the number of workers on social programs paid by external sources.

Employment in the supply of goods (S1), which includes employment in import activities, employment in service not receiving external aid (S2) and the workers receiving aid financed by internal sources (S3), is obtained by multiplying the population (P) by coefficients (s1), (s2) and (s3) that indicate the number of workers in the provision of services or associated with each resident that are not receiving external aid.

In this model, S<sub>2</sub> (employment in service not receiving external aid ) is given by

$$S_2 = S^* - A$$

where S\* is equal to employment in service activities to the resident population that the economy would have without external aid.

As such,

$$s_2 = s^* - A/P$$

where  $s^*$  is the coefficient of service to the population [ $s^* = S^*/P$ ] when there is no external aid to employment in services (A).

Also,

$$S_3 = S^{**} - C$$

where  $S^{**}$  is equal to the active beneficiaries associated to the population who do not have external aid.

This implies that

$$s_3 = s^{**} - C/P$$

where  $s^{**}$  is the coefficient of active beneficiaries in relation to the population [ $s^{**} = S^{**}/P$ ] when there is no external aid for these workers (C).

Export employment (B), employment aided through the exterior (A), and the activities subsidised through the exterior (C) are exogenous variables in the model. The population (P), the active population (E), employment in the provision of goods (S1), employment in services not aided through the exterior (S2) and the active internal financial beneficiaries (S3) are calculated by the formulas:

$$(1) \quad P = (B+A+C) \cdot \left\{ \frac{\Omega}{1-\Omega \cdot (s_1+s_2+s_3)} \right\}$$

$$(2) \quad E = (B+A+C) \cdot \left\{ \frac{1}{1-\Omega \cdot (s_1+s_2+s_3)} \right\}$$

$$(3) \quad S_1 = s_1 \cdot (B+A+C) \cdot \left\{ \frac{\Omega}{1-\Omega \cdot (s_1+s_2+s_3)} \right\}$$

$$(4) \quad S_2 = s_2 \cdot (B+A+C) \cdot \left\{ \frac{\Omega}{1-\Omega \cdot (s_1+s_2+s_3)} \right\}$$

$$(5) \quad S_3 = s_3 \cdot (B+A+C) \cdot \left\{ \frac{\Omega}{1-\Omega \cdot (s_1+s_2+s_3)} \right\}$$

Equation (6) represents the equilibrium in which total active population (E) results from the sum of export employment (B), plus employment aided externally (A), plus the unemployed supported with outside financial resources (C), plus employment in the provision of goods (S1), plus employment in services not aided through the exterior (S2), plus the unemployed supported with internal financial resources (S3):

$$(6) \quad E = B + A + C + S_1 + S_2 + S_3$$

The third block of the model explains per capita income ( $v$ ) as a function of the productivity of the various sectors. Through formula (6), the regional product (Y) is equal to the multiplication of the product per capita ( $v$ ) by number of existing jobs (E) and by the inverse of the rate of activity ( $\Omega$ ).

$$(7) \quad v = Y / P \quad \Leftrightarrow \quad v = Y / (E \cdot \Omega) \quad \Leftrightarrow \quad Y = v \cdot (E \cdot \Omega)$$

On the other hand, the product is equal to employment of the various sectors multiplied by the GVA (Gross Value Added) per worker. GVA per worker is represented by  $\gamma$  in the case of export employment;  $\chi$  for activities aided through the exterior;  $\sigma$  for employment in services not aided through the exterior and;  $\phi$  for employment in the

provision of goods. Work aided through the exterior is included in disposable income but not in the product (GDP). They, however, have an indirect influence on the product through (S1), (S2) and (S3), which depend on workers on social programs paid by external sources (C), through equations (3) and (4).

$$(8) \quad Y = v (E \cdot \Omega) = \gamma \cdot B + \chi \cdot A + \sigma \cdot S1 + \phi \cdot S2$$

Substituting (E), (S1) and (S2) with their formulas in (2), (3) and (4), it is possible to represent the per capita income  $v$  as a function of the productivity of each sector and of the structure of the economy.

$$(9) \quad v = \gamma \cdot \beta \cdot (1/\Omega - s1 - s2 - s3) + \chi \cdot \alpha \cdot (1/\Omega - s1 - s2 - s3) + \sigma \cdot s1 + \phi \cdot s2$$

where  $\beta$  represents the weight of export employment in the driving sectors of the economy [ $\beta = B/(B+A+C)$ ];  
 $\alpha$  represents the weight of services aided through the exterior in the driving sectors of the economy [ $\alpha = A/(B+A+C)$ ], and;  
 $(1/\Omega - s1 - s2 - s3)$  represents the relationship between driving activities and the population [ $(B+A+C)/P$ ].

### Access

The structure of the model for *access* (Figure 2), or demand performance, is in a way implicit in the model of size through the population indicator. However, the population indicator does not clearly translate variations of accessibility to the region being analysed.

One way of including accessibility is by estimating the cost of *access* as is done in the *Eurisles* study. This reference to accessibility is, however, at the discretion of the analyst: Will it be the capital city of each country? Will it be Maastricht? Will it be the nearest continent?

The present study uses the demographic potential to arrive at an accessibility indicator that uses easily accessible statistical data: the population and the traffic of passengers.

To make the accessibility indicator clear and viable we assume that the dynamics of the behaviour of merchandise and information traffic, both internal and external, for each region is reflected in the indicator of accessibility based on the population and on the traffic of passengers<sup>27</sup>.

This demographic potential assumes that the demographic strength of each territory depends not only on the resident population but also on residents headquartered in more easily accessible zones. In other words, the development potential of a region is not limited by its geographic territory but is a function of the relationships established with other territories. The mathematical expression of demographic potential is the following:

$$(10) \quad POT_i = \sum_j P_i P_j \cdot k \exp(-\beta \cdot C_{ij})$$

Where  $POT_i$  is the demographic potential of zone  $i$ ;  
 $P_j$  is the population of each of the  $j$  zones in the area of influence of  $i$ ;  
 $\exp(-\beta \cdot C_{ij})$  is a function that translates the friction  $\beta$  associated to the cost of transport ( $C_{ij}$ ), and;  
 $k$  is a scale factor.

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<sup>27</sup> This hypothesis is supported in the literature about transport and communications that refers that the complementary factors between passenger, goods and information transport are stronger than the substitution factor between these types of traffic (Peter Nijkamp, Gerard Pepping e David Banister - *Telematics and Transport Behaviour*, Springer, 1996).

Since the traffic between  $i$  and  $j$  can be explained by the following function<sup>28</sup>:

$$(11) \quad T_{ij} = k P_i P_j \exp(-\beta \cdot C_{ij})$$

we can deduce that the demographic potential  $POT_i$ , as a measure of accessibility, can be estimated by the internal and external passenger traffic given by the expressions  $(k P_i P_i \exp(-\beta \cdot C_{ii}))$  and  $(\sum_{j \neq i} T_{ij})$ , respectively.

$$(12) \quad POT_i = \sum_j T_{ij} \Leftrightarrow POT_i = k P_i P_i \exp(-\beta \cdot C_{ii}) + \sum_{j \neq i} T_{ij}$$

For zones in which the cost of internal transport is low relative to the cost of external transport we can assume that the cost of transport inside each zone is close to zero ( $C_{ii}=0$ ). Then the indicator of accessibility is equal to the sum of the square population, weighted by  $k$ , plus external traffic.

$$(13) \quad POT_i = k P_i^2 + \sum_{j \neq i} T_{ij}$$

Dividing equation (13) by  $(k P_i^*)$  we obtain the weighted formula for demographic potential where  $P_i^*$  is the base population. With this reference population the indicator reflects not only the population dynamics but also the evolution of external accessibility  $1/k P_i^* \sum_{j \neq i} T_{ij}$ .

$$(14) \quad PDP_i = P_i^* + (1/(k \cdot P_i^*)) \sum_{j \neq i} T_{ij}^{29}$$

## 7. A Statistical Revision of the Ultra-peripheral Regions

This section includes a statistical summary concerning a set of economic and demographic variables for the ultra-peripheral regions, such as employment, unemployment, GDP, the evolution of labor productivity and other indicators of development. The data are presented for each region separately.

### 7.1. The Azores

The archipelago of the Azores comprises nine volcanic islands located in the North Atlantic Ocean 2,000Km from Lisbon and 4,000Km from New York. Total land area is 2,335Km<sup>2</sup>. Of this area, 51% is used for agriculture. The temperature varies between 15°C in the winter and 25°C in the summer. The weather in these islands is suitable to grow grass and therefore for the production of milk and for raising cattle.

The archipelago was discovered and populated in the XV century by the Portuguese. Population growth and decline has varied with export cycles during more or less prosperous periods. The production of milk, initiated in the 1960s, marks the most recent cycle.

The population has decreased since the end of the 1950s. Had there been no aid from the mainland after political autonomy was implemented in 1976, and no aid from the European Union after 1986, the decrease would have continued and been more pronounced.

The regional GDP, in 1995 prices, grew at an average rate of 2.6% between 1990 and 1997. The GDP per capita reached 51% of the European Union average in 1997.

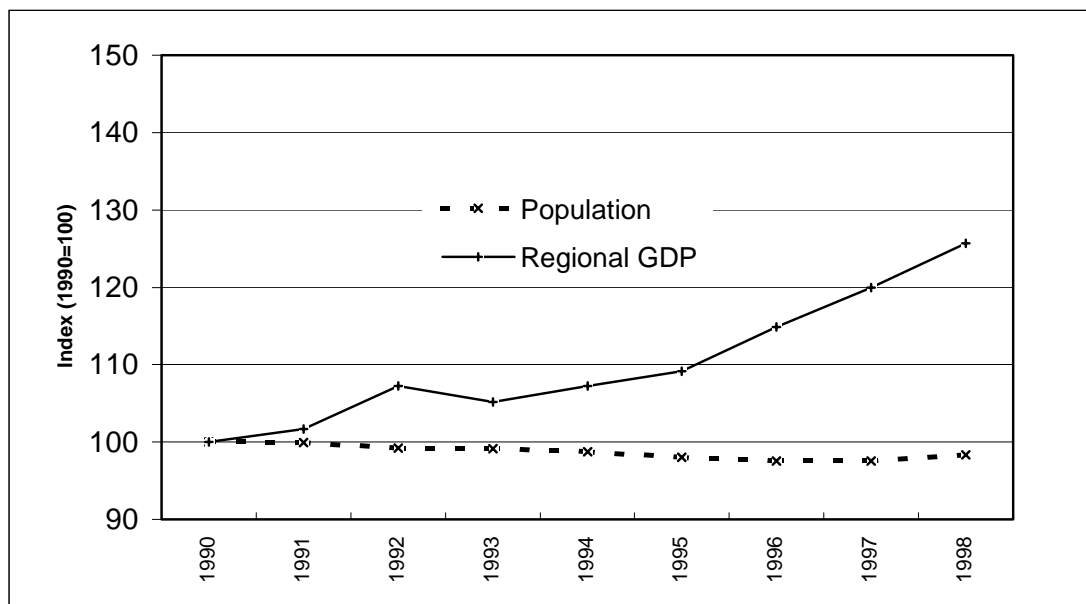
The data included in Table 7.1 suggest that, according to our model, exports (dairy products, cattle, tourism and transportation services) represent approximately 50% of the basic sector of this economy, with dairy products and

<sup>28</sup> Ashih Sen, Tony E. Smith - Gravity Models of Spatial Interaction Behaviour, Springer, 1995.

<sup>29</sup> For the present work it is considered that  $P_i^*$  is the population of each region for the year 1990

cattle responsible for 85% of the exports. The remaining basic sector is comprised of external financing to the administration and public works (41%) and of social security (9%). Productivity has increased in both sectors (basic and non-basic). However, the development was faster in the non-basic activities in the 1990-95 period. To some extent this is due to the fact that the productivity of exports decreased during that time. However, a recovery may have occurred after the mid-1990s.

Figure 7.1. Evolution of the GDP\* and of the Population



Evolution of the GDP at constant prices. The GDP was estimated for 1998.

\*

Table 7.1. Active Population and Income\* by Occupation

	1990			1995			1998		
	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)
	Persons	M PTE		Persons	M PTE		Persons	M PTE	
<b>Basic Sector</b>	<b>29918</b>	<b>71800</b>	<b>2.400</b>	<b>31711</b>	<b>77608</b>	<b>2.447</b>	<b>31817</b>	<b>89393</b>	<b>2.810</b>
<i>Exports</i>	15119	34757	2.299	15894	31401	1.976	15958	36217	2.270
<i>Activities supported by the exterior</i>	12945	35130	2.714	12983	44886	3.457	13018	51657	3.968
<i>Inactivity supported by the exterior **</i>	1854	1913	1.032	2834	1320	0.466	2842	1519	0.535
<b>Non-basic Sector</b>	<b>64361</b>	<b>177012</b>	<b>2.750</b>	<b>62647</b>	<b>194591</b>	<b>3.106</b>	<b>62838</b>	<b>224023</b>	<b>3.565</b>
<b>Imports</b>	34271	82694	2.413	32942	80314	2.438	33043	92463	2.798
<i>Activities not supported by the exterior</i>	27065	91203	3.370	25081	112124	4.470	25157	129081	5.131
<i>Inactivity not supported by the exterior ***</i>	3025	3115	1.030	4624	2153	0.466	4638	2479	0.535
<b>Active/Product/Productivity</b>	<b>94279</b>	<b>243784</b>	<b>2.586</b>	<b>94358</b>	<b>268726</b>	<b>2.848</b>	<b>94655</b>	<b>309418</b>	<b>3.269</b>
<b>Population/Product/GDPpc</b>	<b>237938</b>	<b>243784</b>	<b>1.025</b>	<b>233262</b>	<b>268726</b>	<b>1.152</b>	<b>233942</b>	<b>309418</b>	<b>1.323</b>

\* The Product is evaluated at constant prices of 1995 (the values for 1998 are estimated). For this purpose, we have used the inflation rate.

\*\* We assume that the subvention of a non-productive activity is the same as the provision of a service (e.g. security) to the population and tourists.

## 7.2 – Madeira

The archipelago of Madeira comprises two inhabited islands: Madeira and Porto Santo. Nearly 98% of the population lives on the island of Madeira. The city of Funchal is the main economic center of the archipelago.

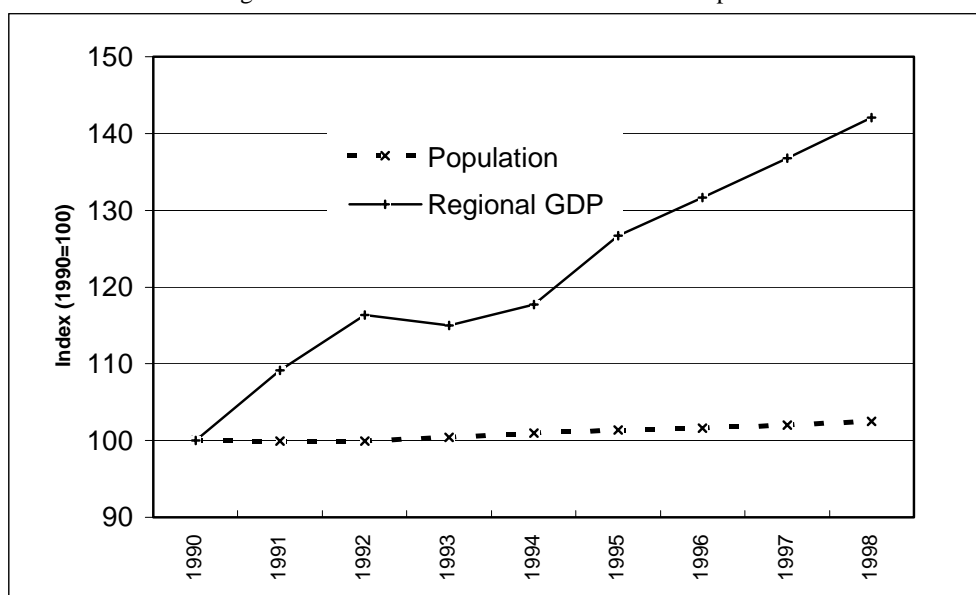
The archipelago was discovered and populated in the XV century by the Portuguese. Because of the geomorphologic features of the islands, the agricultural surface represents only 9% of the total area. In Madeira, the area above 1,000m of altitude comprises one fourth of the total surface of which only 11% has a slope below 16%.

This constrains the development of the agricultural sector. This sector, however, has an important role in preserving the landscape and the ecological equilibrium. The banana is one of the main agricultural products. Tourism is an important and expanding activity in the archipelago.

The regional GDP, in 1995 prices, grew at an average rate of 4.2% between 1990 and 1995. Per capita GDP reached 56% of the European Union average in 1997.

The data included in Table 7.2 suggest that exports (tourism and transportation services) represent approximately 42% to 50% of the basic sector of this economy. External financing to the administration, public works and social security forms the remaining basic sector. Productivity has increased in both sectors (basic and non-basic). However, the development was faster in the non-basic activities in the 1990-95 period.

Figure 7.2. Evolution of the GDP\* and of the Population



Evolution of the GDP at constant prices. The GDP was estimated for 1996-1998.

Table 7.2. Active Population and Income\* by Occupation

	1990			1995			1998		
	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)
	Persons	M PTE		Persons	M PTE		Persons	M PTE	
<b>Basic Sector</b>	<b>33523</b>	<b>62546</b>	<b>1.866</b>	<b>30358</b>	<b>76291</b>	<b>2.513</b>	<b>30620</b>	<b>85274</b>	<b>2.785</b>
Exports	17268	26036	1.508	14159	30160	2.130	14219	33476	2.354
Activities supported by the exterior	13415	33159	2.472	13527	44268	3.273	13694	49706	3.630
Inactivity supported by the exterior **	2839	3350	1.180	2673	1863	0.697	2706	2092	0.773
<b>Non-basic Sector</b>	<b>88581</b>	<b>188088</b>	<b>2.123</b>	<b>79400</b>	<b>242728</b>	<b>3.057</b>	<b>80268</b>	<b>272174</b>	<b>3.391</b>
Imports	62742	92030	1.467	52432	111116	2.119	53009	124605	2.351
Activities not supported by the exterior	22763	92460	4.062	24073	129593	5.383	24334	145307	5.971
Inactivity not supported by the exterior ***	3076	3598	1.170	2896	2018	0.697	2925	2261	0.773
<b>Active/Product/Productivity</b>	<b>122103</b>	<b>243686</b>	<b>1.996</b>	<b>109759</b>	<b>315138</b>	<b>2.871</b>	<b>110888</b>	<b>353095</b>	<b>3.184</b>
<b>Population/Product/GDPpc</b>	<b>253500</b>	<b>243686</b>	<b>0.961</b>	<b>254399</b>	<b>315138</b>	<b>1.239</b>	<b>259850</b>	<b>353095</b>	<b>1.359</b>

\* The Product is evaluated at constant prices of 1995 (the values for 1998 are estimated). For this purpose, we have used the inflation rate.

\*\* We assume that the subvention of a non-productive activity is the same as the provision of a service (e.g. security) to the population and tourists.

### 7.3 – The Canary Islands

This archipelago comprises seven volcanic islands and is one of the Spanish Autonomous Communities.

The geological features of the islands constrain the development of the agricultural sector. Production of banana and tomato, raising cattle and fishing are the main activities in the primary sector. These productions have an important



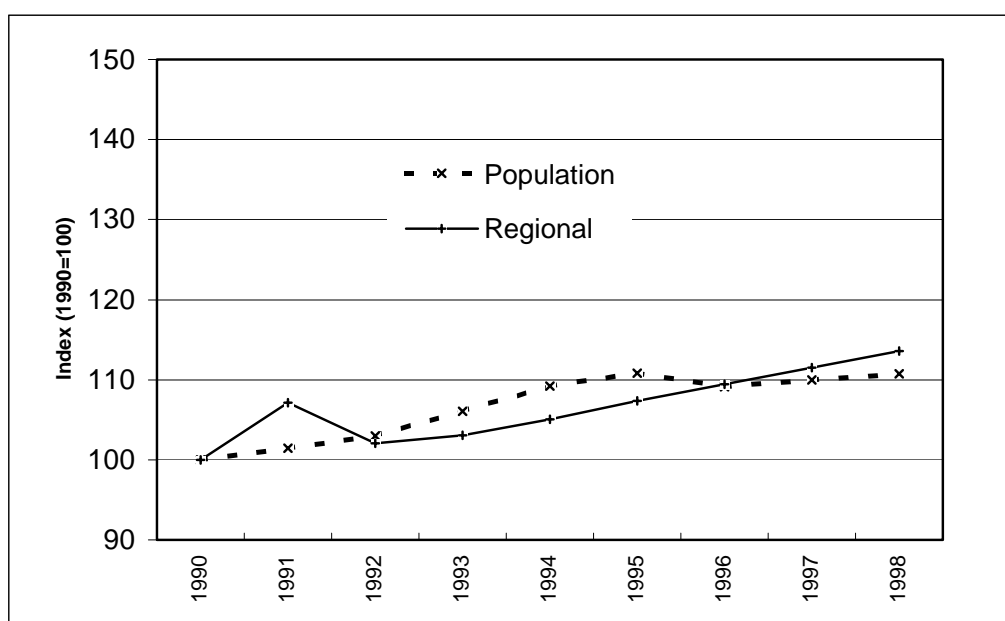
role in maintaining the populations in rural areas and therefore preserving the landscape and the environmental equilibrium.

The service sector is well developed. Tourism plays a crucial role in the economy of the archipelago.

Regional GDP, in 1995 prices, grew at an average rate of 1.5% between 1990 and 1996. The GDP per capita reached 76% of the European Union average in 1997.

The data included in Table 7.3 suggest that exports (tourism, banana and transportation services) represent approximately 47% to 58% of the basic sector of this economy. External financing to the administration, public works and social security forms the remaining basic sector. The productivity has increased in both sectors (basic and non-basic). However, the development was faster in the non-basic activities in the 1990-95 period.

Figure 7.3. Evolution of the GDP\* and of the Population



\* Evolution of the GDP at constant prices. The GDP was estimated for 1996-1998.

Table 7.3. Active Population and Income\* by Occupation

	1990			1995			1998		
	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)
	Persons	MESP		Persons	MESP		Persons	MESP	
<b>Basic Sector</b>	<b>173955</b>	<b>733524</b>	<b>4.217</b>	<b>188257</b>	<b>803805</b>	<b>4.270</b>	<b>189511</b>	<b>862204</b>	<b>4.550</b>
Exports	77063	419978	5.450	87221	480153	5.505	89065	521903	5.860
Activities supported by the exterior	53195	222509	4.183	51822	225222	4.346	51519	238192	4.623
Inactivity supported by the exterior **	43697	91036	2.083	49215	98429	2.000	48927	102109	2.087
<b>Non-basic Sector</b>	<b>382489</b>	<b>1855603</b>	<b>4.851</b>	<b>409334</b>	<b>2020438</b>	<b>4.936</b>	<b>409583</b>	<b>2146466</b>	<b>5.241</b>
Imports	242640	1349771	5.563	256541	1451567	5.658	256462	1543430	6.018
Activities not supported by the exterior	71502	367966	5.146	75816	414918	5.473	75964	442013	5.819
Inactivity not supported	68347	137865	2.017	76977	153953	2.000	77157	161023	2.087

<i>by the exterior ***</i>									
<i>Active/Product/ Productivity</i>	556445	2360225	4.242	597591	2571861	4.304	599094	2745539	4.583
<i>Population/ Product/GDPpc</i>	1557533	2360225	1.515	1631498	2571861	1.576	1630105	2745539	1.684

\* The Product is evaluated at constant prices of 1995 (the values for 1998 are estimated). For this purpose, we have used the inflation rate.

\*\* We assume that the subvention of a non-productive activity is the same as the provision of a service (e.g. security) to the population and tourists.

#### 7.4 – Martinique

Martinique is a volcanic island with a surface of approximately 1,100Km<sup>2</sup> located in the Caribbean, 7,000Km from France, 3,000Km from New York and 120Km from Guadeloupe.

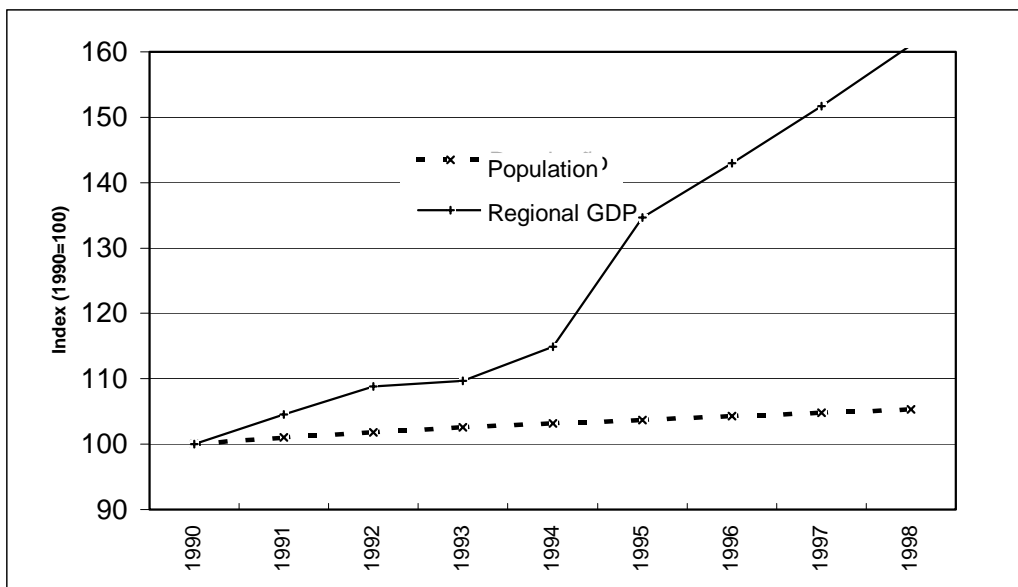
The island has a tropical climate and the temperature varies between 21°C and 31°C. It is affected by tropical storms. The island is divided through the Lamentain-Trinité axis in two climates. While the South is relatively dry it rains frequently in the north side of the island. The annual average rainfall varies between 1,500mm (in Sainte-Anne) and 4,000mm or more (in Morne-Rouge). The production of banana for export is very important to the island.

The population grew rapidly just after the World War II. However, this tendency has been counteracted by immigration, mainly of young people, to the mainland. Between 1990 and 1998 the population increased at an average rate of 0.6% per year.

Regional GDP, at 1995 prices, grew at an average rate of 5.8% between 1990 and 1995. The GDP per capita reached 54% of the European Union average in 1994.

The data included in Table 7.4 indicate that external financing to the administration, public works and social security correspond to 84% to 87% of the basic sector of the economy. Productivity has increased in both sectors (basic and non-basic). However, development was faster in the basic activities in the 1990-95 period.

Figure 7.4. Evolution of the GDP\* and of the Population



\* Evolution of the GDP at constant prices. The GDP was estimated for 1996-1998.

Table 7.4. Active Population and Income\* by Occupation

	1990			1995			1998		
	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)
	Persons	M. FF		Persons	M. FF		Persons	M. FF	
<b>Basic Sector</b>	<b>54712</b>	<b>6670</b>	<b>0.122</b>	<b>51157</b>	<b>7609</b>	<b>0.149</b>	<b>53590</b>	<b>9242</b>	<b>0.172</b>
Exports	6712	1140	0.170	7347	1120	0.152	6207	1437	0.232
Activities supported by the exterior	22721	4167	0.183	23431	4778	0.204	25635	6013	0.235
Inactivity supported by the exterior **	25279	1363	0.054	20378	1711	0.084	21748	1792	0.082
<b>Non-basic Sector</b>	<b>107909</b>	<b>17374</b>	<b>0.161</b>	<b>111342</b>	<b>19761</b>	<b>0.177</b>	<b>110463</b>	<b>24697</b>	<b>0.224</b>
Imports	33377	6331	0.190	41842	7458	0.178	33480	9407	0.281
Activities not supported by the exterior	47307	9583	0.203	47553	10460	0.220	50733	13127	0.259
Inactivity not supported by the exterior ***	27225	1460	0.054	21947	1843	0.084	26250	2163	0.082
<b>Active/Product/ Productivity</b>	<b>162621</b>	<b>21220</b>	<b>0.130</b>	<b>162499</b>	<b>23816</b>	<b>0.147</b>	<b>164053</b>	<b>29983</b>	<b>0.183</b>
<b>Population/ Product/GDPpc</b>	<b>359600</b>	<b>21220</b>	<b>0.059</b>	<b>373400</b>	<b>23816</b>	<b>0.064</b>	<b>379000</b>	<b>29983</b>	<b>0.079</b>

\* The Product is evaluated at constant prices of 1995 (the values for 1998 are estimated). For this purpose, we have used the inflation rate.

\*\* We assume that the subvention of a non-productive activity is the same as the provision of a service (e.g. security) to the population and tourists.

## 7.5 – Guadeloupe

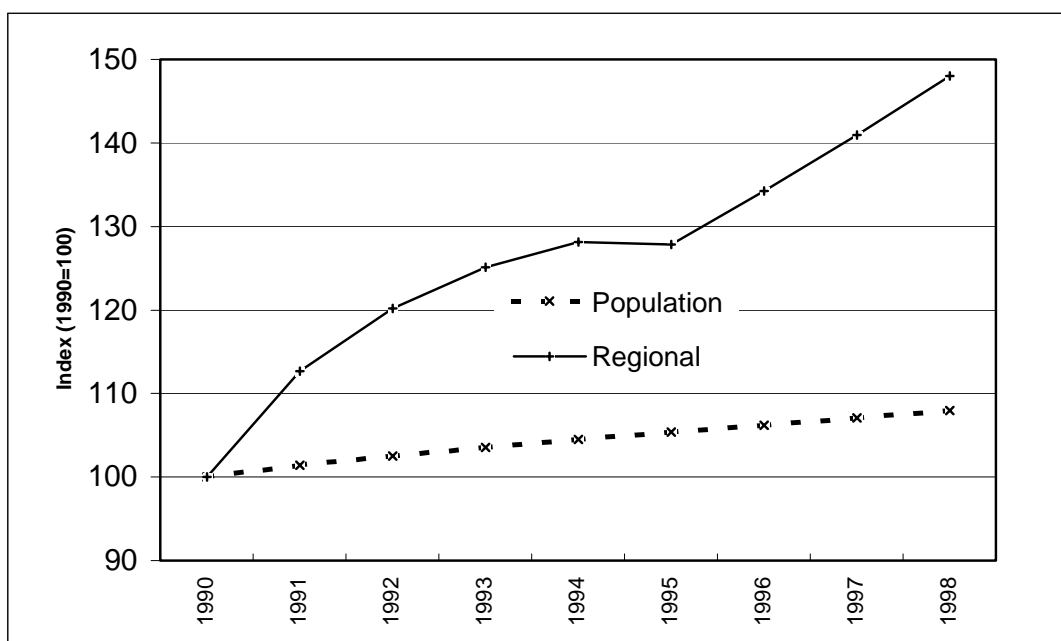
Guadeloupe is an archipelago that comprises eight inhabited islands. It is located in the Caribbean and has a surface of 1.705Km<sup>2</sup>. The two main islands are Basse-Terre (848Km<sup>2</sup>) and Grande-Terre (590Km<sup>2</sup>). The former is mountainous and has a large production of banana. The latter is more flat and its soil is suitable for the production of sugar cane. The archipelago has a tropical humid climate with an average temperature of 26°C. It is affected by tropical storms. The annual average rainfall varies between 1,500mm (in Pointe-à-Pitre) and 4,000mm or more (in Saint-Claude).

After a long period of stagnation, the population grew during the 1980s. It increased at an average rate of 0.96% per year between 1990 and 1998.

The regional GDP, at 1995 prices, grew at an average rate of 5% between 1990 and 1995. Per capita GDP reached 40% of the European Union average in 1994.

The data included in Table 7.5 indicate that the external financing to the administration, public works and social security correspond to 83% to 87% of the basic sector of the economy. The productivity has increased at approximately the same pace in the basic and in the non-basic sectors.

Figure 7.5. Evolution of the GDP\* and of the Population



\* Evolution of the GDP at constant prices. The GDP was estimated for 1996-1998.

Table 7.5. Active Population and Income\* by Occupation

	1990			1995			1998		
	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)
	Persons	M FF		Persons	M FF		Persons	M FF	
<b>Basic Sector</b>	<b>64768</b>	<b>6460</b>	<b>0.100</b>	<b>62449</b>	<b>8618</b>	<b>0.138</b>	<b>68502</b>	<b>10635</b>	<b>0.155</b>
Exports	8376	1359	0.162	8483	1121	0.132	7045	1303	0.185
Activities supported by the exterior	24624	3512	0.143	26741	5291	0.198	27534	6278	0.228
Inactivity supported by the exterior **	31767	1588	0.050	27225	2205	0.081	33923	3053	0.090
<b>Non-basic Sector</b>	<b>105368</b>	<b>14720</b>	<b>0.140</b>	<b>111314</b>	<b>21281</b>	<b>0.191</b>	<b>112410</b>	<b>24731</b>	<b>0.220</b>
Imports	35764	5347	0.149	41280	7962	0.193	39500	9217	0.233
Activities not supported by the exterior	48540	8304	0.171	51884	11849	0.228	51221	13562	0.265
Inactivity not supported by the exterior ***	21064	1070	0.051	18150	1470	0.081	21689	1952	0.090
<b>Active/Product/ Productivity</b>	<b>170135</b>	<b>18522</b>	<b>0.109</b>	<b>173762</b>	<b>26223</b>	<b>0.151</b>	<b>180912</b>	<b>30361</b>	<b>0.168</b>
<b>Population/ Product/GDPpc</b>	<b>384916</b>	<b>18522</b>	<b>0.048</b>	<b>407000</b>	<b>26223</b>	<b>0.064</b>	<b>417900</b>	<b>30361</b>	<b>0.073</b>

\* The Product is evaluated at constant prices of 1995 (the values for 1998 are estimated). For this purpose, we have used the inflation rate.

\*\* We assume that the subvention of a non-productive activity is the same as the provision of a service (e.g. security) to the population and tourists.

## 7.6 – Guiana

French Guiana is located in South America between Suriname and Brazil with an area of 83,534Km<sup>2</sup>. It has an equatorial climate and a dense forest covers most of its territory. The temperature varies around 27°C, but the humidity is very high (70-90%). The annual average rainfall varies between 2,400mm (in Rochambeau) and 2,800mm (in Saint-Laurent-du-Maroni).

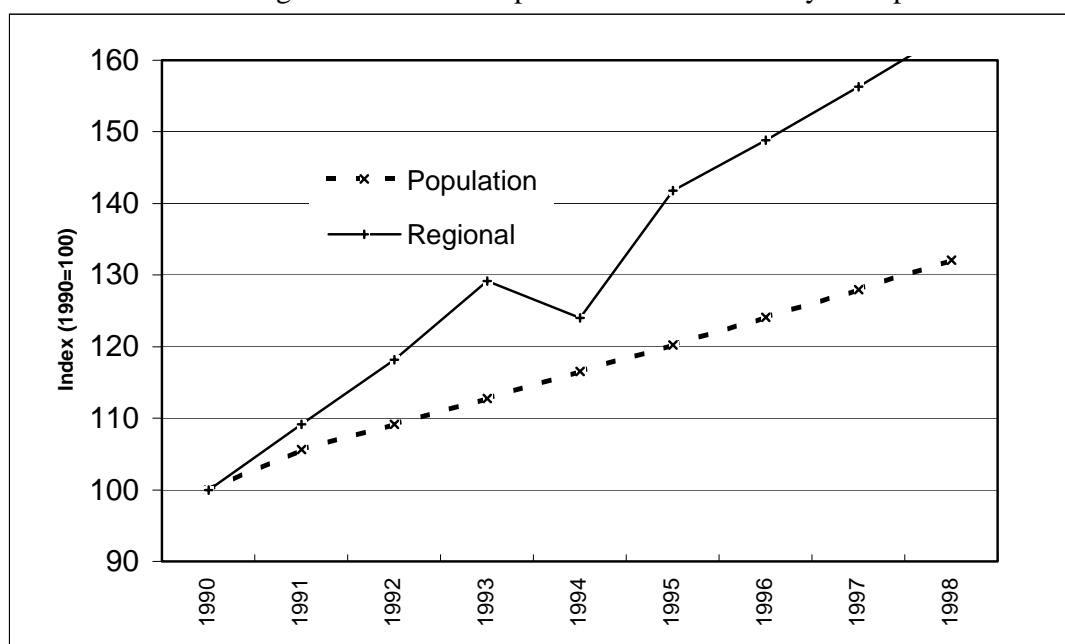
A traditional economy is based on fishing and lumbering, which coexist with the Space Center. The Space Center is located on the coastal side of the territory near the cities of Cayenne, Kourou and Saint-Laurent-du-Maroni.

The population increased at a very fast pace since the early 1990s at an annual rate of 3.5% between 1990 and 1998.

The regional GDP, in 1995 prices, grew at an average rate of 6.7% between 1990 and 1995. The GDP per capita reached 49% of the European Union average in 1994.

The data included in Table 7.6 indicate that the external financing to the administration, public works and social security correspond to 86% to 91% of the basic sector of the economy. The productivity has increased in both sectors (basic and non-basic). However, the development was faster in the basic activities in the 1990-95 period.

Figure 7.6. Active Population and Income\* by Occupation



Evolution of the GDP at constant prices. The GDP was estimated for 1996-1998.

Table 7.6. Active Population and Income\* by Occupation

	1990			1995			1998		
	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)
	Persons	M FF		Persons	M FF		Persons	M FF	
<b>Basic Sector</b>	<b>26467</b>	<b>3077</b>	<b>0.116</b>	<b>29153</b>	<b>4174</b>	<b>0.143</b>	<b>26121</b>	<b>4907</b>	<b>0.188</b>
Exports	2485	405	0.163	2269	496	0.218	2477	752	0.303
Activities supported by the exterior	17699	2263	0.128	20231	3146	0.156	14896	3533	0.237
Inactivity supported by the exterior **	6283	409	0.065	6653	532	0.080	8747	622	0.071
<b>Non-basic Sector</b>	<b>28943</b>	<b>4413</b>	<b>0.152</b>	<b>31993</b>	<b>7106</b>	<b>0.222</b>	<b>44439</b>	<b>8310</b>	<b>0.187</b>

<i>Imports</i>	12873	2282	0.177	14073	3892	0.277	12892	4481	0.348
<i>Activities not supported by the exterior</i>	9015	1669	0.185	10418	2613	0.251	21845	3140	0.144
<i>Inactivity not supported by the exterior ***</i>	7056	462	0.065	7502	600	0.080	9702	689	0.071
<b><i>Active/Product/Productivity</i></b>	<b>55410</b>	<b>6619</b>	<b>0.119</b>	<b>61146</b>	<b>10148</b>	<b>0.166</b>	<b>70560</b>	<b>11906</b>	<b>0.169</b>
<b><i>Population/Product/GDPpc</i></b>	<b>132250</b>	<b>6619</b>	<b>0.050</b>	<b>159045</b>	<b>10148</b>	<b>0.064</b>	<b>174685</b>	<b>11906</b>	<b>0.068</b>

\* The Product is evaluated at constant prices of 1995 (the values for 1998 are estimated). For this purpose, we have used the inflation rate.

\*\* We assume that the subvention of a non-productive activity is the same as the provision of a service (e.g. security) to the population and tourists.

## 7.7 –Reunion

Reunion is a volcanic island located in the Indian Ocean, 700Km East of Madagascar and 200Km West of Mauricia. It has a surface of 2,512Km<sup>2</sup>, of which 25% is arable. The average annual rainfall varies between 6,000mm (in Pítón des Neiges) and less than 1,000mm in the West and South. The temperature varies around 24°C. The island is affected by tropical storms during the Austral Winter.

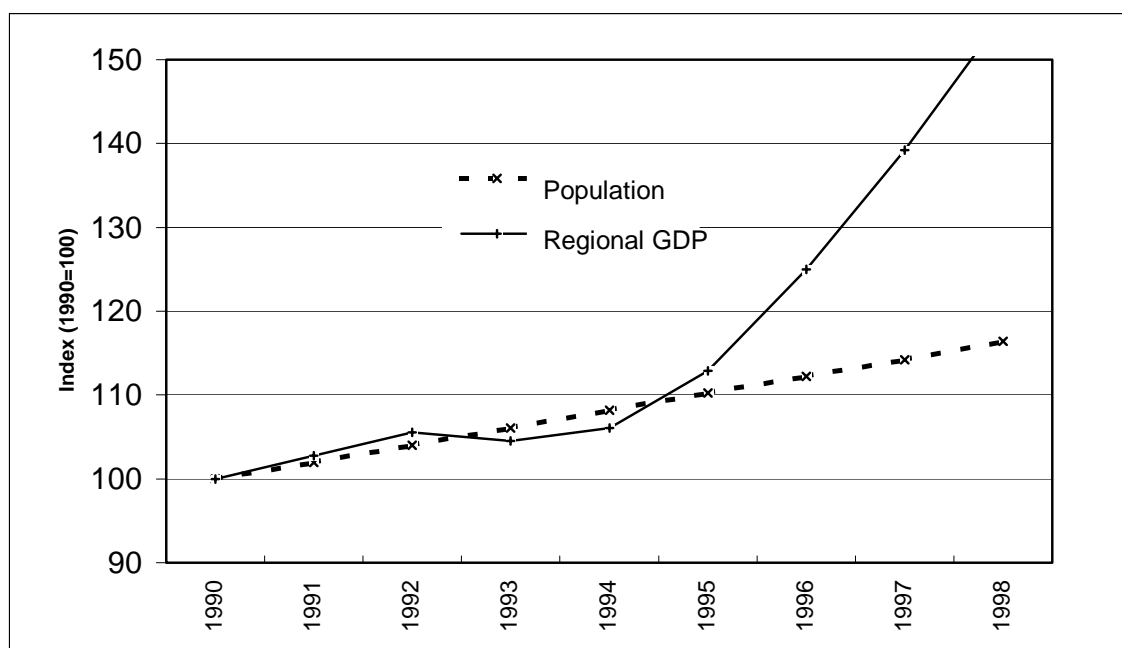
The island was uninhabited when Pedro de Mascarenhas first discovered it in 1533. It was populated during the second half of the XVII century but the population remained quite small until the end of the XVIII century. It had little more than 200,000 inhabitants in 1960 but has nearly 700,000 today. The origin of the population is very diversified - Europeans, Indians, Africans and Chinese.

Regional GDP, at 1995 prices, grew at an average rate of 2.5% between 1990 and 1995. Per capita GDP reached 46% of the European Union average in 1996.

The data included in Table 7.7 indicate that external financing of the administration, public works and social security are the driving forces of the economy. They represent nearly 87% of the basic sector. The sugar cane sector, with 7%, together with tourism and a portion of transportation and communications comprise the remaining 13% of the basic sector.

The sectors not directly supported by the government have the best performance in terms of productivity. In the basic sector, exports (sugar cane, tourism and transportation services) recorded a productivity growth of 3.4% per year between 1990 and 1995, and 12.3% between 1995 and 1998.

Figure 7.7. Evolution of the GDP\* and of the Population



\* Evolution of the GDP at constant prices. The GDP was estimated for 1996-1998.

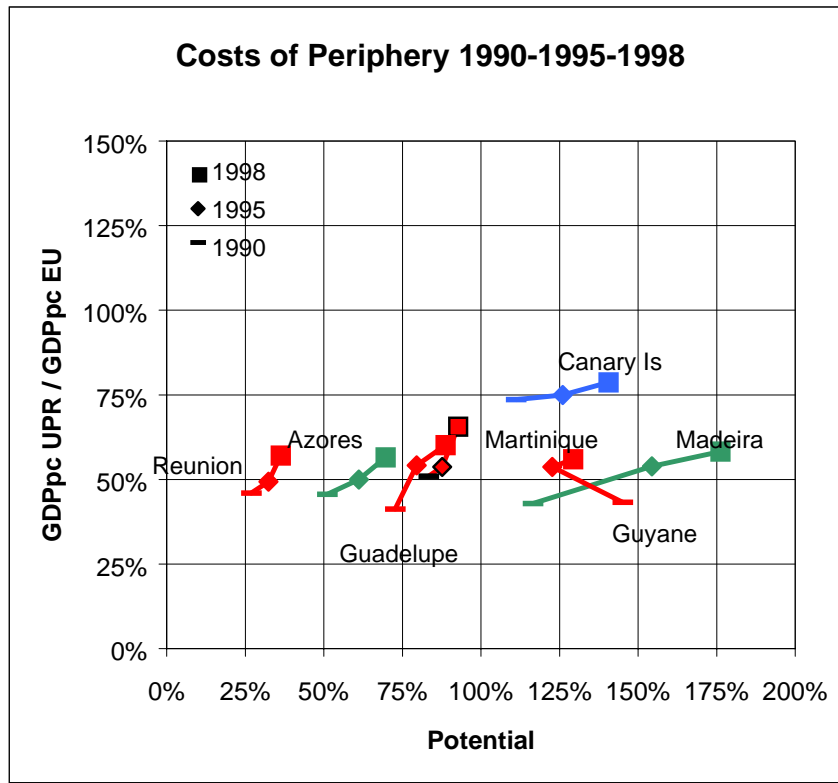
Table 7.7. Active Population and Income\* by Occupation

	1990			1995			1998		
	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)	Active Pop. (1)	Value (2)	(2)/(1)
	Persons	M. FF		Persons	M. FF		Persons	M. FF	
<b>Basic Sector</b>	<b>82309</b>	<b>13907</b>	<b>0.169</b>	<b>108008</b>	<b>17577</b>	<b>0.163</b>	<b>113321</b>	<b>23996</b>	<b>0.212</b>
Exports	10946	1469	0.134	13061	2071	0.159	14603	3281	0.225
Activities supported by the exterior	44618	9075	0.203	41387	8437	0.204	46360	12733	0.275
Inactivity supported by the exterior **	26745	3362	0.126	53560	7069	0.132	52358	7982	0.152
<b>Non-basic Sector</b>	<b>150368</b>	<b>30858</b>	<b>0.205</b>	<b>163794</b>	<b>34218</b>	<b>0.209</b>	<b>177836</b>	<b>49687</b>	<b>0.279</b>
Imports	53165	9846	0.185	50618	10125	0.200	53816	14681	0.273
Activities not supported by the exterior	55370	15817	0.286	69835	18372	0.263	81635	28545	0.350
Inactivity not supported by the exterior ***	41832	5196	0.124	43342	5720	0.132	42384	6461	0.152
<b>Active/Product/Productivity</b>	<b>232677</b>	<b>36207</b>	<b>0.192</b>	<b>271802</b>	<b>39006</b>	<b>0.191</b>	<b>291156</b>	<b>59240</b>	<b>0.253</b>
<b>Population/Product/GDPpc</b>	<b>596500</b>	<b>36207</b>	<b>0.075</b>	<b>668100</b>	<b>39006</b>	<b>0.078</b>	<b>703900</b>	<b>59240</b>	<b>0.105</b>

\* The Product is evaluated at constant prices of 1995 (the values for 1998 are estimated). For this purpose, we have used the inflation rate.

\*\* We assume that the subvention of a non-productive activity is the same as the provision of a service (e.g. security) to the population and tourists.

Figure 9.1. Evolution of the Costs of Periphery from 1990 to 1998

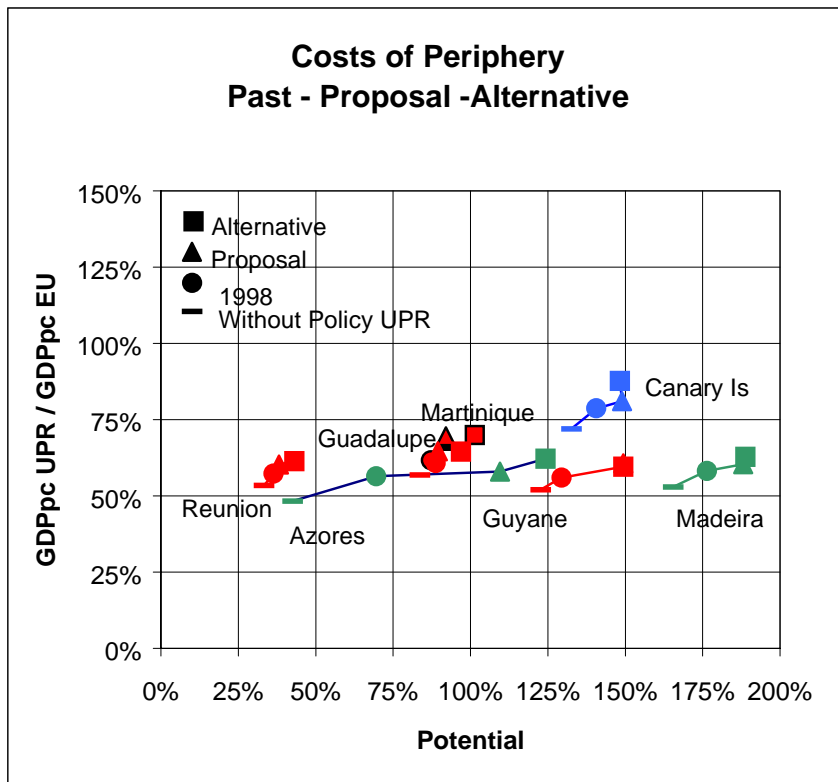


The impact on the Costs of Periphery that result from the combination of the various policies is shown in Table 9.2 from which it is possible to conclude that:

- the impact of those policies are weaker in the regions more dependent on external public transferences since public transferences are subject to decreasing marginal effects;
- for French Guiana the connection with neighbour countries can produce important effects in the economy mainly because it enlarges the market for products and resources at more competitive prices;
- the elimination of the "sea rights" in the Canary Islands, Martinique and Guadeloupe could generate important impacts in the respective development process because it enables more co-operation with neighbour countries and increases the security for foreign investment;

Figure 9.2. Future Scenarios for the Costs of Periphery





- the effective liberalisation of air transportation in the Azores will lead to a strong increase in the accessibility measured by the Potential and the elimination of the milk quota will accelerate the reduction of the Costs of Periphery in terms of Product per Capita;
- the support of the development process in Madeira, namely targeted to the tourist sector, can continue to generate positive effects in the reduction of the Costs of Periphery;
- for Reunion the development process based on import substitution and external public transferences led to a big increase in the population and created a great dependence on the "sea rights". European policies will not have a great effect if the national and regional development policy does not change to a more export oriented development strategy.

## 10. Some Options for Dealing with the Problems of Ultra-periphery

The disadvantages resulting from the ultra-peripherality of some regions of the EU were the object of specific actions undertaken in addition to those intended for Objective 1 regions. They assumed the form of exceptions to various community laws and of differentiated budgets in the case of agriculture and fisheries and, at times, for other measures such as aid for the transport of fuels and the REGIS program for which there were two editions.

The measures, whatever the form they have assumed, have been implemented, following requests on the part of each UPR, with the Commission assuming a reactive rather than a proactive posture. The isolated responses have also led to the absence of an explicit and previously announced logic for the intervention in these regions – a global and common policy for the UPRs.

In most cases measures have been adopted on an individual basis without a general policy respecting principles and objectives to be applied in all cases.

In what pertains to the principles, the need to adapt policies to the specificities of these regions has always been accepted. It however is constantly in conflict with the principle of free competition and has in many instances limited the set of acceptable solutions.

In what refers to the objectives, specification has been vague and has, in most cases, settled in qualitative goals without any quantification attempt.

In order to obtain better results from future policies in favour of the UPRs it is important, in the first place, to establish which objective the EU intends to pursue. It seems safe to say that the objective is that these regions converge to the per capita average income of the EU. This indicator reflects, in a condensed form, the evolution of the economy.

Given the general objective it is important to establish goals. It is not enough that economies of the UPRs converge as they did in the past. It is necessary that they converge at an adequate pace. The adequate pace is a matter to be dealt with by the community authorities and should have implications in the intensity with which the objective is pursued.

Having established the objectives and the goals it is necessary to identify the strategy and the instruments to use.

Concerning the strategy, one can simply apply in the UPRs the policies that apply to the rest of the EU. It is consensual that such a strategy will only result in a divergence from the main objective of convergence since it would be ignoring the handicaps of these regions and placing them at the mercy of the market forces which, naturally, favour the continental areas with greater economic dimensions. One can, on the other extreme, undertake a posture that is highly protective of these regions. This approach can also be highly criticised since it creates exceptions that tend to become permanent and prevent the working of positive innovation forces. It would also lead to a structural dependence of these economies on external aid. Between these extremes there will be an adequate equilibrium that admits some protection but evolves to a more self-sustained outcome.

In the first versions of the POSEI programs the EU adopted a set of measures, on request from the Member States, without an apparent global logic.

In the future, the strategy should be based on two main ideas:

- 1- Acting on the key factors for the competitiveness of the economies of the UPRs in order to eliminate shortfalls;
- 2- Improvement of the current productive sectors and promotion of new emerging sectors.

Viewed this way the strategy would demand an audit of the state of competitiveness of each region and, for each measure proposed, a justification of its expected impact on the competitiveness (necessarily global) of the sectors affected.

This approach is applicable both to the current economic base and to new activities that one might want to encourage.

The competitiveness approach requires that for each sector, including the traditional, one looks for the synergies that result from complementary activities (clusters). As such it is natural that one look at the complements of sugar cane/sugar/rum/energy in the case of La Reunion and grass/corn/milk/dairy in the case of the Azores or the tourism cluster in the case of Madeira and the Canary Islands. For some or all UPRs one should also look at the cluster composed of higher education/research/services.

In regions where economic diversification is very low one cannot stop supporting the activities that through the years have guaranteed the maintenance of the landscape and provided the necessary income for many families that would otherwise only thicken the unemployment lists. It is not logical that in the Azores milk production be limited by a quota that constitutes an effective restriction and cancels a production potential that has naturally developed with the introduction of better technology in the farms. The maintenance of this restriction in the case of the Azores will constitute a very important setback in a growth process where the alternatives are scarce and have impacts that can only be expected in a more distant future. It is not equally logical that the sugar beet/sugar/alcohol/liquor cluster not be supported given the multiple positive impacts it might have on the economy of this region.

The pursuit of competitiveness should be done not only taking into consideration the complements of various activities but also the promotion of factors such as education/training and research. The UPRs are not very attractive for some professional categories, which makes it more difficult to settle some levels of human resources. Improving regional human resources through a regional system of advanced education has many advantages. On the one hand it attracts educators who, because of their academic careers are also researchers. On the other hand, it takes total advantage of local human resources that otherwise would not go to the mainland to continue their education or that would have stayed in the mainland after their education was completed. The presence in these regions of highly qualified human resources facilitates not only research but also the transfer of technology in all areas, as is the case with information technologies. Given their involvement or their contacts with more developed economic areas, the presence of highly qualified human resources can lead to the development of export services both in the form of higher education and in the form of consulting in various areas. The DOMs are particularly well positioned in this respect given that they are located in areas where there is some potential for the attraction of university students and for the export of high value added services.

Sustainability of development processes requires that resources be used in a way that does not compromise future use. The respect for the environment therefore becomes a horizontal concern that is present not only when it comes to agriculture or industrial activities but also when it comes to the provision of services of all sorts, including tourism. Environmental conservation should be a permanent constraint in all policies implemented.

The instruments to use in the conduct of policies for the ultra-periphery can be grouped in two categories: exceptions and expenditures.

The exceptions include the alterations to rules and regulations, including those applicable to horizontal community initiatives. Expenditures involve the funds specifically allocated for spending in the UPRs.

The application of these instruments should, in order for them to make sense, be always considered in addition to other policies not included in the ultra-periphery envelope. That is, they should add to those that already exist for Objective 1 regions. They should also be conceived to have an impact that is significant and not merely cosmetic. It is important to see not only if the policy is adequate to solve a certain problem but also if it is being applied with the right intensity.

## 11. Conclusions and Recommendations

From the analyses described in the above sections we can arrive at a set of conclusions and advance with a set of recommendations.

We will start with the conclusions from the analysis of the Commission's report.

In what concerns the balance of the impact of past policies in favour of the UPRs, advanced by the Commission, we can arrive at the following conclusions:

1. between 1986 and 1996, per capita income grew in all UPRs at a higher rate than the average of the EU, even though in some cases the difference was less than a percentage point;
2. credit for the registered convergence cannot be attributed only to measures undertaken in favour of the UPRs or to EU policy in general, since there is a major component that should be credited to national and regional policies;
3. the Commission's report does not present the data necessary for a detailed analysis of the impact of the measures in favour of the UPRs, given that it omits information on the impact of exceptions that do not have direct budget implications;
4. the report points to the low utilisation of loans from the EBI but makes no attempt to explain this fact;
5. in referring to the high unemployment rates in the UPRs, the report omits the corresponding rates of the Member States and attempts no explanation of the phenomenon;
6. the rate of convergence in the period under analysis can be considered inadequate given the gap that still persists between the development levels of the UPRs and the EU;
7. even though the impact of the POSEI measures in favour of the UPRs had a positive impact, the final results can only lead to the conclusion that they were, nevertheless, insufficient.

With respect to the part of the report dealing with the future, we can conclude the following:

1. the Commission's report followed closely the joint memorandum of the UPRs and responded, one by one, to all requests on the part of the Member States;
2. the report does not seem, however, to respond to the need to re-launch Community action, pointed out in the joint memorandum of the UPRs, by comparison with the first POSEI initiative;
3. the report makes no explicit reference to the objectives and goals it will seek to attain, and sketches the strategy for action in a somewhat confusing way when it lists the instruments it proposes to use as it reviews the requests of the Member States;
4. when it addresses each of the requests of the Member States, the Commission only refers to the status of the analysis of each case without advancing an explicit global approach with objectives and targets;
5. comparing the POSEI program before the approval of the Treaty of Amsterdam and what is foreseen in report COM(2000) 147 final, one can conclude that the Commission only intends to continue the program as it was designed in the past without any perspective for new funds specifically for the UPRs or the reinforcement of the existing funds (agriculture and fisheries);
6. no plan is mentioned for the reinforcement of the capacity of the services responsible for the policies in favour of the UPRs (Inter-Services Group), as suggested in their joint memorandum;
7. action on the new policy areas (information society, research and development, SMEs, etc.) will be, in accordance with the report, undertaken through the horizontal programs, which the Commission proposes to adapt to encourage involvement of the UPRs.

From the conclusions that can be drawn from the application of the model proposed, we highlight the following:

1. the impact of structural funds on development tend to occur in the medium and long term and as such public investments tend to create the conditions for development but do not stimulate it;
2. the expected impact of Structural Funds for the period 2000-2006 are modest given the convergence objective;

3. the policies admitted by the Commission for the basic sectors of the economies of the UPRs will tend, in general, to be detrimental to the longer term development of these regions given that: in those that export sugar and bananas suggested policies (revision of COM's) will erode the competitiveness of these regions; in those that export tourism services there are no solutions to improve the accessibility of non-residents and these are hints that environmental constraints might be imposed; in those that produce vegetables and dairy products (as in the case of milk production in the Azores) quotas are imposed that strongly restrict development of these activities.

From the conclusions highlighted above and from the analyses described in this report we feel it is recommendable that:

1. real per capita income convergence to the EU average be adopted as the operational objective of the policies in favour of the UPRs;
2. a medium term goal for convergence be established (for example two percentage points above the EU average, per year, evaluated in four year periods);
3. the strategy adopted imply: a) acting on the key factors for the competitiveness of the economies of the UPRs' in order to eliminate shortfalls and; b) improvement of the current productive sectors and promotion of new emerging sectors;
4. all policies in favour of the ultra-periphery be evaluated as a function of their contribution to the competitiveness of each region;
5. the principle of significant additional contribution be adopted for all policies to be undertaken (they should all have a positive and significant contribution beyond what already exists for Objective 1 regions);
6. a new program be created, with its own financial resources (like REGIS), to finance initiatives besides agriculture and fishing;
7. more financial resources be allocated for the agriculture and fisheries programs;
8. the criteria for the concession of loans on the part of the EBI be reviewed or mechanisms be created to facilitate access on the part of SMEs;
9. aid be provided to encourage the complementary activities involving higher education/ research/ services;
10. an observatory be created (it might function in one or more universities or in similar institutions) to follow the development progress of the UPRs to promote cooperation among these regions and the elaboration of studies of their realities;
11. a forum be created to debate and analyse the issues pertinent to the ultra-periphery, to meet regularly, at least once a year.