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## Evaluating Regional Development Agencies (RDAs) assistance on Spanish regional economic growth

45th Congress of the European Regional Science Association: "Land Use and Water Management in a Sustainable Network Society", 23-27 August 2005, Amsterdam, The Netherlands

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**EVALUATING REGIONAL DEVELOPMENT AGENCIES' (RDAs)  
ASSISTANCE ON SPANISH REGIONAL ECONOMIC GROWTH**

**45<sup>th</sup> Congress of the European Regional Science Association**

**Land Use and Water Management in a Sustainable Network Society**

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**Abstract:**

In recent years, regional policy evaluation has been a theme under much debate internationally much of which has been spurred on through the significant EU Structural Funds transfers from the 1990s. This paper analyses how to evaluate performance of Regional Development Agencies (RDAs) in promoting territorial economic growth and development.

Thus, what must be analysed is whether or not the bodies promoting economic progress contribute to the convergence of the various typologies of Autonomous Communities (ACs), according to whether they belong to one group or another, over the period 2000-2003, for detecting and differentiating their impact on the Objective 1 regions, as opposed to the rest. An attempt is also made to isolate the institutional factor, measured by the presence or not of the RDAs. Finally, an important question, in any evaluation, regarding the effectiveness of RDAs, is about what would have happened in the absence of financial assistance.

**Key words:** Regional Development Agencies (RDAs); Objective 1 regions; Regional Development; European Structural Funds

**JEL:** R11; R38; R58

# EVALUATING REGIONAL DEVELOPMENT AGENCIES' (RDAs) ASSISTANCE ON SPANISH REGIONAL ECONOMIC GROWTH

## 1. Introduction.

Regional Development Agencies (RDAs) aim to be bodies which bring together all activities linked to the promotion of territorial economic development. These entities have the development of endogenous potential and support for SMEs as their main goal.

The community regional policy implemented by the European Union, through the European Commission, is delegating greater responsibility to regional governments in the question of the promotion of economic growth and development. For this reason, it promotes the creation of bodies such as RDAs, in regions assisted by Structural Funds.

In the process of decentralisation of regional policy, RDAs play a significant role as public agencies co-ordinating economic promotion and development strategies in their respective areas. As a result, the basic tasks to be developed by these entities may be summed up along the following lines: a) to create a *flexible and competitive economic framework* to stimulate investment; b) *to support innovation* and renovation of technological or development research processes; c) *to provide all kinds of services*, such as information, assessment, management help, financing, infrastructure, etc.; d) *to support for SMEs*, an area on which all RDAs lay special emphasis, preferably in those sectors considered of regional interest in relation to the productive structure of each region.

When it comes to evaluating the role and performance of public policies, as is the case with Regional Development Agencies (RDAs), no specific methodologies exist for the study of their impact or, at least, the economic literature is scarce in this field. For this reason, we propose to approach the question of measuring their impact in two alternative ways:

- 1) The first perspective is to analyse the macro-economic impact generated in the region or territory in question
- 2) The second approach is to evaluate the results of the RDAs from the microeconomic viewpoint or, in other words the beneficiaries. It is a qualitative study.

The principal problem posed with regard to evaluating public policies consists of establishing the “*production function*” of RDAs, which means the relationship between the outputs and

inputs (both multidimensional and complex). The outputs would be measured as the increase of income per capita and the improvement or the contribution to the productive and entrepreneurial fabric of the region. The inputs are the different categories of financial aid and subsidies of the RDAs (for promoting investment, enterprise creation, R+D expenditure, competitiveness, productivity, increased sales and exports, employment).

The approach adopted in this paper is the following: The second section contains a study of the impact of the RDAs from the point of view of the regional macroeconomic consequences. The third section puts forward an alternative, microeconomic method of evaluating the situation consisting of the evaluation, by means of questionnaires and interviews, of the “dead weight” provoked by financial aid. The fourth section presents our conclusions.

## **2. Analysis of the macroeconomic impact of the RDAs.**

The first methodological approach used to analyse the territorial consequences of the RDAs<sup>1</sup> at the macroeconomic level is to measure their relative weight, in monetary terms, on the regional public policy expenditure budgets. The distinct programmes of these economic promotion agencies can be characterised by their microeconomic nature or orientation, which allows us to predict that their impact on the large, regional macro-magnitudes has been necessarily limited. This can be seen in Tables 1 and 2, in which the spending budgets of these bodies are seen to be minimal in comparison with the regional budgets of the respective Autonomous Communities (ACs). The largest, in relative terms, correspond to Castille and Leon, Asturias and Murcia.

Similar results are obtained in comparison with the regional Gross Added Value (GAV) and, more specifically, with the aggregate GAV of the industrial and market service sector, which are the areas where the RDA aid is principally spent. In this case, to the ACs previously mentioned, we would have to add Galicia and Andalusia, all of which are Objective 1 regions, situated above 0.5 points of the total GAV.

These ratios, from another point of view, would reflect the effort carried out by the ACs in the promotion and impulsion of the productive and entrepreneurial fabric of the region. In

consequence, it can be stated that the amount of budgetary funds managed by the previously mentioned RDAs is limited.

**Table 1. Relative participation of Spanish RDA Budgets in relation to AC Budgets and the regional GAV**

RDAs	ACs	Percentage Budg. RDA/Budg. ACs			Percentage Budg. RDA/ / regional GAV			Percentage Budg. RDA/ /GAV (ind+mark ser)		
		2001	2002	2003	2001	2002	2003	2001	2002	2003
ADE	Castilla y León	2,08	2,29	1,73	0,35	0,39	0,44	0,55	0,60	0,69
CIDEM	Cataluña	0,09	0,12	0,13	0,02	0,02	0,02	0,02	0,02	0,03
IAF	Aragón	0,59	0,76	0,83	0,08	0,12	0,13	0,11	0,17	0,18
IFA	Andalucía	0,99	1,17	1,41	0,25	0,32	0,40	0,39	0,50	0,65
IFR	Asturias	1,80	1,87	1,92	0,29	0,32	0,50	0,43	0,49	0,75
IFRM	Murcia	1,83	1,84		0,24	0,26		0,37	0,39	
IGAPE	Galicia	1,14	1,21	1,26	0,30	0,32	0,35	0,47	0,50	0,54
IMADE	Madrid	0,62	1,37		0,05	0,12		0,07	0,15	
IMPIVA	Valencia	0,58	0,41	0,48	0,10	0,08	0,09	0,12	0,11	0,11
SODERCAN	Cantabria	1,47	1,38		0,19	0,22		0,27	0,30	
SPRI	País Vasco	3,57	1,16	0,88	0,65	0,24	0,16	0,84	0,31	0,22

Source: Own.

Secondly, in order to delimit the macroeconomic ambience in which there might exist an economic impact, we have to determine in which fields the RDAs intervene. The functions to be carried out by these bodies are set out in a series of aims to be reached, of strategic lines of action and, finally, tools to be used.

**Table 2. Total and Capital spending per capita, in Euros, of the Spanish RDAs**

RDAs	ACs	RDAPc (€)			RDAPc capital Spending (€)			RDAPc capital Spending / ACs capital Spending		
		2001	2002	2003	2001	2002	2003	2001	2002	2003
ADE	CyL	40,18	45,16	51,85	37,09	41,36	47,99	13,91	14,03	13,86
CIDEM	Cataluña	2,23	2,70	3,17	0,50	0,83	1,02	0,34	1,19	1,44
IAF	Aragón	10,22	15,49	16,77	9,07	14,25	15,17	4,40	4,71	5,07
IFA	Andalucía	23,30	29,83	38,41	17,22	17,49	21,35	8,35	6,85	7,82
IFR	Asturias	29,72	33,96	53,61	24,80	28,50	47,53	8,88	8,43	13,72
IFRM	Murcia	24,29	25,66		20,55	21,90		10,75	11,56	
IGAPE	Galicia	29,17	31,94	35,41	4,89	2,45	1,99	1,80	0,81	0,63
IMADE	Madrid	8,30	19,06							
IMPIVA	Valencia	11,00	9,55	9,65	5,88	4,25	4,41	4,69	3,49	2,98
SODERCAN	Cantabria	22,65	25,90		13,02	17,81		8,54	8,79	
SPRI	País Vasco	97,48	36,65	25,67	32,76	26,27	15,59	12,97	11,32	7,55

RDAPc Spending = Regional Development Agency Spending per capita.

Source: Own.

<sup>1</sup> Only the RDAs belonging to the ACs mentioned in Table 1 are considered, as it is these that are fully consolidated, having been functioning for several years. Recently created RDAs are not included.

The final “*outputs*” to be obtained will be, on the one hand, to increase the income level and welfare of the population and, on the other, to improve the conditions surrounding the productive and entrepreneurial fabric in the region, as a key element for economic development. In this regard, the functions entrusted to these bodies manifest themselves in a series of strategic lines of action and aid to enterprises, which consist of the following (Echevarria, 1993, Urueña, 1996, Velasco and Esteban, 1997):

- 1) Support for the creation, expansion and modernisation of the companies
- 2) Research, development and technological innovation (R+D+i)
- 3) Internationalisation
- 4) The promotion of competition
- 5) Finally, with respect to the effect generated by all the previous factors, the creation and maintenance of employment.

In this sense, it is first necessary to establish which factors are the most decisive in the evolution of the Gross Regional Domestic Product (GRDP) per person<sup>2</sup> in the region (as an explanatory variable of the development and economic welfare of the territory) and if the economic development agencies can have any effect on them by means of their strategic intervention plans. As is to be expected, the initial economic situation of the various ACs (or groups of ACs) in these areas is very different, as can be deduced from Table 3, which shows the situation as it was in 2003<sup>3</sup>.

Thus, what must be analysed is whether or not the bodies promoting economic progress contribute to the convergence of the various typologies of AC, or whether different behaviour patterns have arisen, according to whether they belong to one group or another, over the

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<sup>2</sup> Some authors such as Collantes & Domínguez (2003), Goerlich et. al (2002), question the use of the *per capita GDP* variable, as the convergence of the Spanish regions may occur “*by defect*” on the basis of the demographic decline. For these authors, the optimum aspect would be growth and an increase in the *per capita GDP* without a decrease in the population.

<sup>3</sup> The regional economic situation (in terms of the *per capita GDP*), from a structural point of view, is explained using a series of variables related to the capital, both physical (infrastructures of any kind) and human (skilled labour), and other factors such as structural (weight of each sector) and institutional (European Commission, 2004, pp.36-37).

period 2000-2003. This analysis is carried out from the perspective of real evolution over a given period of time with all data expressed as variation rates of the corresponding variables.

The choice of this stage fits the existing data from the current programme period 2000-2006 of the European Structural Funds, for detecting and differentiating their impact on the Objective 1 regions, as opposed to the rest (in particular grants for the development of the regional business and production fabric). An attempt is also made to isolate the institutional factor, measured by the presence or not of the RDAs. This study covers all the Spanish ACs, grouping them according to the criteria in Table 3.

**Table 3. Values of the variables influenced by the RDAs, grouped by ACs, for the year 2003**

Year 2003	Total National	ACs with RDAs	ACs without RDAs	ACs with RDAs and Obj.1	ACs with RDAs and no Obj.1	ACs Obj. 1	ACs and no Obj. 1
N° enterp./1000 inhab	65,9	66,4	63,1	60,2	73,8	59,9	73,9
Large enterp./100.000 inhab	11,8	12,3	9,0	7,0	18,8	7,0	18,3
N° enterar. creates/1000 inhab	2,9	3,0	2,5	2,6	3,5	2,5	3,5
R+D Spending/1000 inhab (€per inhab.)	192,3	211,0	92,4	126,5	312,7	115,9	295,8
Personnel I+D (1000 inhab.)	3,5	3,9	1,9	2,6	5,4	2,4	5,2
Researchers/1000 inhab	2,2	2,3	1,3	1,7	3,1	1,6	3,0
Industrial employees/1000 inhab	67,1	70,6	48,9	56,7	87,3	53,0	86,3
Market Services Employees./1000inhab	176,0	178,1	165,0	154,5	206,6	154,6	205,1
Total employment/1000 inhab	395,5	399,1	375,9	371,4	432,5	369,9	430,2
Exports (X) (€inhab)	3,2	3,5	1,7	2,7	4,4	2,3	4,3
Imports (M) (€inhab)	4,3	4,7	2,3	2,6	7,1	2,5	6,8

Source: Own.

From another viewpoint, we are concerned with detecting the impact or effect on the dependent variable regional *per capita GRDP* of a series of independent variables (representative of each of the strategic lines of the RDAs), by means of a multiple linear regression analysis as follows (the independent variables are expressed in demographic terms to avoid the effects of regional increase or decrease in population on *per capita GRDP*):

$$\Delta PIBpc_{t-n,t} = \beta_0 + \sum_{i=1}^n \beta_i \times \Delta X_{i;t-n,t} + D_1 + D_2 + D_3$$

Where  $X_i$  are the independent variables shown in Table 3; ( $t-n$ ,  $t$ , is the time period),  $D_1$  is a *dummy* variable with a value of 1 if the region is Objective 1, and 0 if it is not.  $D_2$  is another *dummy* variable that takes the value of 1 if the ACs have a consolidated RDA, and 0 if not. Finally,  $D_3$  is another *dummy* variable whose value is 1 if an AC has an RDA and is also Objective 1, whereas the value is zero when a region has an RDA but is not Objective 1.

**Table 4. Assignment of Spanish ACs according to whether or not they have a consolidated RDA, are Objective 1 regions or both.**

	And	Arag	Ast	Bal	Can	Cant	CyL	C-M	Cat	Val	Ext	Gal	Mad	Mur	Nav	Pvas	Rioj	CyM
RDA	X	X	X			X	X		X	X		X	X	X		X		
Obj1	X		X		X		X	X		X	X	X		X				X
RDA-Obj1	X		X				X			X		X		X				

Source: Own.

The introduction of three *dummy* variables is justified by the need to verify whether, in the course of the period 2000-2003, there are differences in behaviour, on the one hand, between the Objective 1 ACs and those that are not; and on the other, between the ACs that have a functioning consolidated RDA and those that do not. Finally, within the group of ACs that have an RDA, to distinguish between those that are Objective 1 and those that are not.

More specifically, the independent variables  $X_i$ , built in homogeneous terms of population to verify the presence of growth in the territorial and social cohesion, apart from the demographic evolution and for the 17 Spanish ACs, are:

- Four variables have been considered for the creation and modernisation of enterprises:
  - 1) The density variation of enterprises measured by the number of existing companies per 1,000 inhabitants in each of the Autonomous Communities.
  - 2) The number of companies created in the period 2000-2003 for every 1,000 inhabitants.
  - 3) The number of large companies created in the same period for every 100,000 inhabitants.
  - 4) The social capital of companies created, in euros, for every 1,000 inhabitants.
- To study the effect of spending on R+D, we have taken into consideration four variables:
  - 1) The ratio between spending on R+D and the gross regional domestic product (GRDP).
  - 2) R+D Expenditure for every 1,000 inhabitants.
  - 3) The personnel researchers for every 1,000 inhabitants.
  - 4) The number of researchers for every 1,000 inhabitants.



- To quantify the internationalisation, we have considered, on the one hand, the amount of exports, in euros, per inhabitant; and, on the other, the value of exports, in euros, per inhabitant.
- For the creation and maintenance of employment, the regional employment variation during the period 2000-2003 has been chosen, on the one hand, related to industrial variations, as well as to market services employment changes; and, on the other, with respect to the total regional employment variation.
- Other variables were also included, which all the analytical studies include as determinants to explain the *per capita GRDP*. For the object of our study, the separate participation of the industrial and market services sector has been included in relation to the total *GAV*.

The adjusted multiple linear regression model to describe the relationship between the *per capita GRDP* and sixteen independent variables for the period 2000-2003, once the statistically unimportant variables have been discounted, is the following:

$$\text{GRDP pc} = 2.70323 + 0.519828 * \text{Var. companies per 1000 inhab.} + 0.0539306 * \text{Var. large companies per 1000 inhab.} + 0.0998799 * \text{Var. companies created per 1000 inhab.} + 0.0280902 * \text{Var. spending on R+D for every 1000 inhab} + 0.272171 * \text{Var. market service sector employment} - 0.0470524 * \text{Exports (€ per inhab.)} + 0.737194 * \text{Percentage market service sector GVA} + 2.19452 * \text{RDAs} - 2.32841 * \text{Objective 1 regions}$$

R-squared = 96.2626 percentage

R-squared (adjusted for g.l.) = 92.058 percentage

Standard error of est. = 0.724667

Absolute mean error = 0.404451

Durbin-Watson statistic = 2.20281 (P=0.4000)

Once the regression analysis has been carried out, and considering just the nine significant variables, it can be seen that only two are closely related to the actions of the RDAs: the variation in enterprise creation for every 1,000 inhabitants and the increase of the market services sector participation on total *GAV*.

From this adjusted regression model we can calculate the effort needed, in each of the nine independent variables<sup>4</sup> mentioned, “*ceteris paribus*”, to reach convergence or parity, in terms of *per capita* GRDP, with the average in Spain.

### ***2.1. The evolution of the Spanish regional economies with respect to RDA intervention and its contribution.***

Having carried out the above multiple regression analysis, and once the variables that determine the growth and evolution of regional welfare (*per capita* GRDP) over the established period are known, the evolution can then be set out by groups of regions. The aim is to compare any differences, if they exist, in the behaviour of Objective 1 ACs and other regions that are not Objective 1; between those with a consolidated RDA and those that do not; and also between those that have an RDA and are also Objective 1 and those that are not.

This epigraph describes, by groups of Spanish ACs, the overall changes experienced by the variables which reflect the final and intermediate objectives of the RDAs with greater accuracy. Specifically, we analyse the following aspects: the creation of enterprises, internationalisation, spending on R+D and, finally, the creation of employment.

The methodological sequence employed to quantify the impact can be broken down into two phases:

- ❑ The first describes the general evolution of the regional variables, which constitute the strategic lines of the RDAs. This stage attempts to highlight the overall changes during the period mentioned, without assigning the level of responsibility the RDAs might have in the said changes.
- ❑ The second phase tackles the problem of evaluating the results obtained for each of the programmes, or of the strategic lines of the RDAs. From this perspective, in order to evaluate, finally, the contribution of the RDAs to the changes experienced by the regional environment (identified in the first phase), we must divide the results

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<sup>4</sup> Additionally, through the construction of multiplicative variables for each of the independent variables, together with the *dummy* variables, we can know if there are differences between the coefficients. In other words, if the behaviour is conditioned to being an Objective 1 region, to having an RDA or not, or a combination of both. With the multiplicative variables, only one independent variable is relevant, that is, the variation in the number of enterprises per 1,000 inhabitants.

obtained by these agencies among the total changes experienced by the regional economies. In this case, it will be applied specifically to the Castilla and Leon Economic Development Agency (EDA), although it could also be extended to the rest of the development agencies.

### 2.1.1. Evolution of enterprise creation.

The creation and modernisation of enterprises is a determining variable for a country or region's economic growth and welfare. Regional disparities show up, in this field, in a lower entrepreneurial density in the most under-developed regions, and these continue to be true over time. Thus, the key to overcoming this situation is to try to improve the rhythm of enterprise creation, until it reaches approximately the national average.

The public bodies promoting economic progress, using such implements as subsidies, can play a role in stimulating and encouraging the creation of enterprises. Table 5 and Graphic 1 show these data by AC groups. All the variables have been put in terms of the number of enterprises per 1,000 inhabitants, or per 100,000 inhabitants in the case of large enterprises, these being considered as enterprises with over 200 workers<sup>5</sup>.

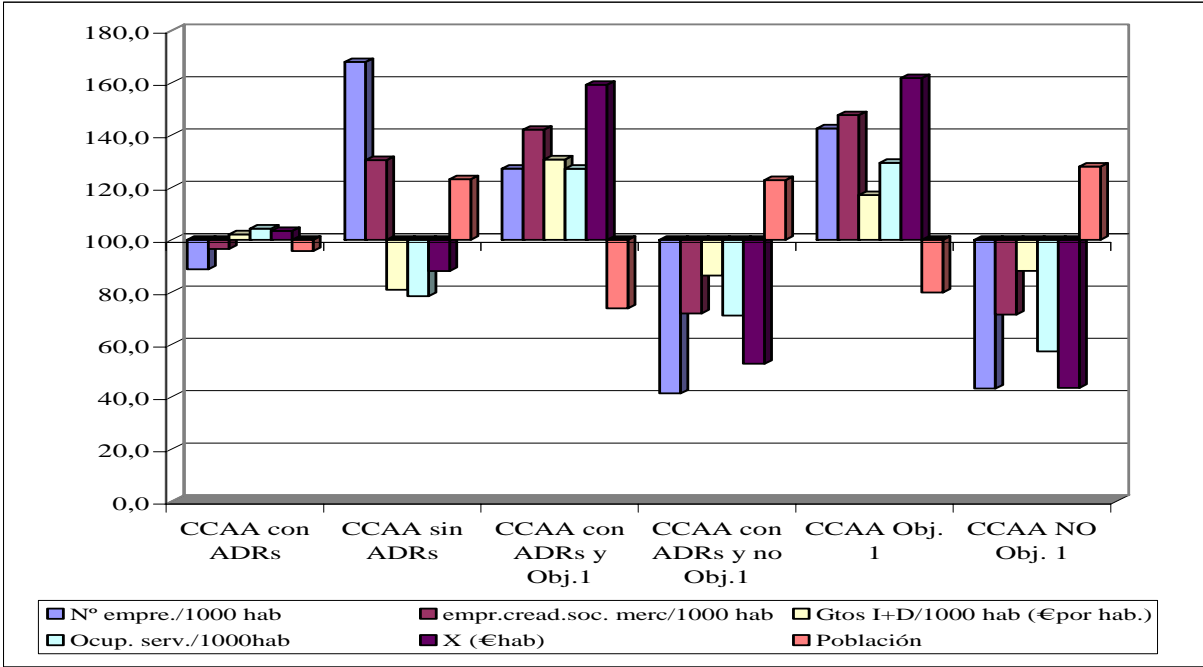
**Table 5. Evolution of entrepreneurial density, enterprise creation and the number of large enterprises, for different Spanish AC groups (2000-2003)**

	Nº enter. 1000 inhab.			Nº mark.soc.creat. 1000 habit.			Nº large enter. 100.000 h.			Populat.
	2000	2003	T.Var.	2000	2003	T.Var.	2000	2003	T.Var.	T.Var.
TOTAL NATIONAL	64,1	65,9	2,8	2,88	2,92	1,6	10,1	11,8	17,4	5,5
AC with RDAs	64,8	66,4	2,5	2,90	3,00	3,4	10,6	12,3	16,8	5,2
AC without RDAs	60,3	63,1	4,6	2,74	2,50	-8,6	7,3	9,0	22,7	6,7
AC with RDAs and Obj.1	58,1	60,2	3,5	2,31	2,59	12,3	5,6	7,0	24,8	4,0
AC with RDAs and no Obj1	73,0	73,8	1,1	3,64	3,50	-3,8	16,7	18,8	12,5	6,7
AC Obj. 1	57,7	59,9	3,9	2,34	2,53	8,1	5,6	7,0	25,7	4,4
AC no Obj. 1	73,0	73,9	1,2	3,62	3,46	-4,5	16,3	18,3	12,4	7,0

Source: Own elaboration from Estadística de Sociedades Mercantiles, the DIRCE and the Cifras de Población. INE. Several years.

<sup>5</sup> The original data are taken from the INE: DIRCE, for the years 2000 and 2003. In the different salary layers, there is a group that stretches from 200 to 499 workers. Thus, there is no layer of less than 250 employees which is the criterion used by the European Commission to define the small and medium sized businesses in its recommendation of May 6th, 2003, concerning the definition of such businesses (2003/361/CE) (Official Diary L 124 of 20.5.2003).

**Graphic 1. Variation rates (index numbers, Spanish mean = 100) of the main explanatory variables for the growth of per capita GRDP, under the different AC groups**



Source: Own elaboration

During this stage, between the years 2000 and 2003, it can be seen that the evolution was more positive for the Objective 1 regions (as opposed to those that are not Objective 1), both in terms of variation in entrepreneurial density per inhabitant and societies created, and of the number of large enterprises.

Similarly, to the detriment of the AC group with RDAs, both the evolution of the entrepreneurial density and the number of large enterprises were less positive than for the regions which do not have this instrument. This would seem to put doubt on its very existence (although there is the possibility that the difference would be even greater, should they not exist). On the other hand, the number of commercial societies created was greater in the ACs with RDAs.

Finally, within the AC group with RDAs, what is noteworthy is the more favourable evolution of those that are also Objective 1 regions, as opposed to those that are not (Graphic 1). In any case, even though there has been convergence during this period, it is insufficient to correct the initial position of inequality (Table 5).

### 2.1.2. The Evolution of spending on R+D.

There is abundant economic literature that relates the need for R+D expenditure with economic growth and development. Proof of its importance is that the Lisbon Agenda<sup>6</sup>, among other strategies, considers innovation, research and the society of knowledge to be a challenge for the future and an element of competitiveness. More specifically, in its various European Council meetings, the EU has established a quantified objective for R+D expenditure of 3% of the GDP for the year 2010.

Regional disparities in this field can be seen through a lower expenditure ratio in R+D/GDP for the most backward regions. The key to overcoming this situation is to try to encourage this kind of expenditure, both public and private. Table 6 and Graphic 1 show the evolution of these data over the period 2000-2003 by AC groups. Once more, in order to be able to carry out homogeneous comparisons, the variables refer to the number of inhabitants.

**Table 6. Total internal spending on R+D (euros per inhabitant) and personnel and researchers for every 1,000 inhabitants, for different AC groups. Period 2000-2003**

	Gastos internos (€/per inhab)			Personeel R+D (1000 inha.)			Researc. R+D (1000 inh.)		
	2000	2003	T.Var.	2000	2003	T.Var.	2000	2003	T.Var.
TOTAL NATIONAL	141,2	192,3	36,2	3,0	3,5	19,1	1,9	2,2	14,4
ACs with RDAs	154,1	211,0	36,9	3,2	3,9	18,7	2,0	2,3	13,9
ACs without RDAs	71,5	92,4	29,3	1,5	1,9	24,6	1,1	1,3	20,8
ACs with RDAs and Obj.1	85,9	126,5	47,3	2,1	2,6	22,7	1,4	1,7	19,5
ACs with RDAs no Obj.1	238,4	312,7	31,2	4,7	5,4	15,6	2,8	3,1	9,7
ACs Obj. 1	81,4	115,9	42,3	2,0	2,4	20,3	1,3	1,6	18,0
ACs no Obj. 1	224,4	295,8	31,9	4,4	5,2	17,4	2,7	3,0	11,2

Source: Own from *Estadísticas sobre las actividades en Investigación Científica y Desarrollo Tecnológico (INE) and EDA Annual Budgets. Several years.*

During the period 2000-2003, the evolution was more favourable for Objective 1 regions in all three variables considered. This should be valued most positively, although the differences in absolute terms for the three variables show that the regions that are not Objective 1 double the value of the ACs that are.

Similarly, although the *per capita* expenditure has increased more in the ACs with RDAs, their evolution was less positive in terms of personnel and researchers than for the rest of the

<sup>6</sup> Commission Report: “*Making Europe*”. (COM (2004) 29 final/2).

regions. Once more, this begs the question of whether the difference would be even greater if the RDAs did not exist.

Finally, if a distinction is made within the group of ACs with RDAs between those regions that are Objective 1 and those that are not, we can see that the greatest increase occurs for the first group of regions considered, that is, the most backward. Thus, convergence has occurred during this period.

### 2.1.3. Evolution of internationalisation (imports, exports and direct foreign investment).

Table 7 and Graphic 1 clearly show that the evolution of imports and exports, in euros per inhabitant, behaved better in the most backward regions (Objective 1) than in the rest. Even the growth in exports was much greater than that of imports.

In differentiating between the ACs with RDAs and those without, what is noteworthy is that the evolution of exports in the former was more positive than in the latter. Furthermore, the imports in euros per inhabitant grew less. As a result, the improvement in the commercial balance is greater in the regions with RDAs.

**Table 7. Exports and Imports, in euros per inhabitant, for the different groups of Spanish AC**

	Imports (€/per inhab.)			Exports (€/per inhab.)		
	2000	2003	T.Var.	2000	2003	T.Var.
TOTAL NATIONAL	4,2	4,3	3,4	3,0	3,2	5,2
ACs with RDAs	4,5	4,7	3,4	3,3	3,5	5,4
ACs without RDAs	2,2	2,3	4,4	1,6	1,7	4,6
ACs with RDAs and Obj.1	2,5	2,6	4,1	2,5	2,7	8,3
ACs with RDAs no Obj.1	7,0	7,1	2,1	4,3	4,4	2,7
ACs Obj. 1	2,4	2,5	4,7	2,1	2,3	8,4
ACs no Obj. 1	6,7	6,8	1,8	4,3	4,3	2,3

Source: Own from data of Secretaría de Estado de Comercio y Turismo, con datos de Aduanas.

Finally, if a distinction is made within the ACs with RDAs between those that are additionally Objective 1 and those that are not, once more, the best behaviour occurs in the most backward regions, there being convergence in this period.

#### 2.1.4. *The evolution of employment in industrial and market service sectors.*

In relation to the employment variations, we have to evaluate just the employment creation in the industrial and market service sectors, which are the areas in which the RDAs' aid is principally spent. Table 8 shows this evolution for the established groups of ACs.

**Table 8. Employment in the industrial and market service sectors, for every 1,000 inhabitants**

	Indust. Employ (1000 inhab.)			Market Serv Emp (1000 inhab)			Total Empl (1000 inhab.)		
	2000	2003	T.Var.	2000	2003	T.Var.	2000	2003	T.Var.
TOTAL NATIONAL	71,3	67,1	-5,8	171,0	176,0	2,9	394,2	395,5	0,3
ACs with RDAs	75,1	70,6	-6,0	172,8	178,1	3,1	397,7	399,1	0,4
ACs without RDAs	50,5	48,9	-3,1	161,3	165,0	2,3	375,3	375,9	0,2
ACs with RDAs and Obj.1	58,4	56,7	-2,9	148,9	154,5	3,7	365,3	371,4	1,7
ACs with RDAs no Obj.1	95,7	87,3	-8,8	202,4	206,6	2,1	437,8	432,5	-1,2
ACs Obj. 1	54,5	53,0	-2,6	149,0	154,6	3,8	363,8	369,9	1,7
ACs no Obj. 1	94,6	86,3	-8,8	201,7	205,1	1,7	436,6	430,2	-1,5

*Source: Own from data of INE.*

Firstly, what stands out are the marked initial differences between the least developed ACs and the most advanced in terms of the number in employment per 1,000 inhabitants. However, in spite of these initial differences, during the period 2000-2003, employment grew more in the Objective 1 regions than in the rest, both in the case of the total number of employed and the market services sector, per 1,000 inhabitants. What is more, the fall in the industrial sector was less.

Secondly, this same favourable dynamic is repeated in the case of the ACs with RDAs, as opposed to the rest. Finally, considering only the regions with RDAs, the evolution was also noticeably better for the most backward regions in comparison with the rest; that is, the ACs with RDAs being also Objective 1 as opposed to the rest, resulting in convergence in employment too.

#### 2.2. *An approximation to the potential impact of the EDA on the socio-economic regional environment.*

Initially, in Tables 1 and 2, we presented the basic results, commencing with the indicators which related the spending of the EDA and its capital expenditure with the budget managed by the Autonomous Communities and their respective GAV and GAV (industry + market

services), as a demonstration of the effort carried out by the regional authorities through the RDAs to generate regional economic development.

To estimate the socio-economic and territorial impact of any programme of an RDA, aimed at improving the productive structure of the economy, one must estimate the weight of the general actions of these programmes (impact indicators) on the changes experienced by the regional variables directly related to the programmes carried out.

**Table 9. Impact of EDA aid on regional economies**

Years	N° enterpr. creates			N° enterpr.			R+D Spending (Million €)			Create-mantein. Empl (thous.)		
	ADE	CyL	%	ADE	CyL	%	ADE	CyL	%	ADE	CyL	%
2.000	97	4.098	2,37	3.244	147.775	2,20	23,9	222,8	10,72	25,3	488,6	5,18
2.001	93	3.826	2,43	2.640	147.496	1,79	26,9	295,9	9,09	19,9	494,8	4,02
2.002	63	3.907	1,61	1.908	151.448	1,26	34,6	334,6	10,33	24,1	515,7	4,67
2.003	107	4.264	2,51				51,4	405,1	12,69		521,1	

Source: Own

It should be taken into account that the aid and subsidies actually conceded, for improving the productive fabric, have an effect on private investment, as there must be co-financing (and so, the final effect on the regional GAV would be greater).

The number of enterprises created (Table 9) with funds from the EDA is only 2.5% of the total number of enterprises created in the year 2003. Likewise, the enterprises which received some type of funding (grants, subsidies, minor interest rates, etc) represent 1.3% of the total existing companies in the same year. Moreover, the importance of spending on R+D is significant because it represents an amount of about 12.7% of the regional total, thus highlighting even more its strategic importance.

Finally, the relative importance of employment created and sustained thanks to the funding of the EDA can be quantified at approximately 5%, but these data are probably overestimated due to the fact that, normally, the figures for sustained employment are considered as the total of the existing staff, which is not entirely correct.

### **3. Qualitative and microeconomic evaluation of the EDA results: Application to the EDA case**

An important question in any evaluation of the effectiveness of RDA policy is what would have happened to firm performance and regional background in the absence of assistance and



financial support from RDAs, whose responsibility it is to stimulate growth and competitiveness.

The estimates of “deadweight” are based on a self-assessment of the counter-factual by the owner-manager of the firm and as a result may be subject to a respondent’s effect in both directions. It should always be kept in mind that firms have an interest in the continuation of public support and may thus over-emphasise the effect assistance has (and thus underestimate the level of “deadweight” for example), for fear that findings might influence authorities, giving them less or, in the extreme case, no assistance next time round (Turok, 1991; Lenihan, 2003).

To produce an assessment of this counter-factual scenario involves considering two key components of additionality, they are, *deadweight* and *displacement* (Lenihan, 2003).

### **3.1. Estimating RDA “Deadweight”.**

As Turok (1991, p. 1547) states, to identify the results of a public policy, the “outputs” obtained must be compared with a particular action and the results that would have been obtained had such a policy not been applied (logically, this is a hypothetical situation). In this study, deadweight is defined by Lenihan et al. (2003) as the degree to which projects would have gone ahead without financial assistance from RDAs<sup>7</sup>.

To assess deadweight directly, the following line of questioning was pursued: Respondents were asked to answer the hypothetical question of what would most likely have happened (with hindsight) if they had not received financial assistance. More precisely, respondents were given the options (Lenihan, 2003):

- a) Gone ahead as now unchanged, that is, same scale, time and location (pure deadweight).
- b) Gone ahead but at a different location (partial deadweight).
- c) Gone ahead at a later date (i.e. delayed the project) (partial deadweight).
- d) Gone ahead but on a reduced scale (i.e. removed certain features) (partial deadweight).
- e) Combination of at a later data and on a reduced scale (partial deadweight).
- f) Abandoned the project (zero deadweight).

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<sup>7</sup> In the Objective 1 regions, in general, the RDAs are the intermediaries in the management of the structural funds destined for the productive and business fabric, including the Global Subsidies.

Table 10 shows the responses to the different categories of deadweight for the sample firms in Ireland (Lenihan et al, 2003). As can be seen, the vast majority of firms (73.8%) fit into the “partial” deadweight categories. Finally, 19 per cent of firms reported “pure” (100%) deadweight, with 7.1 per cent of firms reporting “zero” deadweight. Therefore, it is possible to conclude that 81 per cent of the case study firms were impacted to some degree by the financial assistance provided by *Enterprise Ireland (EI)*.

**Table 10. Deadweight Category Percentage of Firms (number of firms)**

Pure deadweight (100%) (a)	19.0%
Partial deadweight (different location) (b)	0.0%
Partial deadweight (later date) ©	7.1%
Partial deadweight (reduced scale) (d)	35.7%
Partial deadweight implies a combination of later date and reduced scale (e)	28.6%
Partial deadweight implies a combination of different location and later date (f)	2.4%
Zero deadweight (g)	7.1%

Source: Lenihan et al. (2003)

So, deadweight can be broadly estimated at 19 per cent. In other words, we can state that this proportion of firms did not need any assistance from *EI* to undertake and complete their business development project. To evaluate the deadweight effect, it must be taken into account that the funding percentages applied differ substantially according to the type of aid and, within this, according to the final beneficiaries and the territory, which greatly complicates the evaluation or quantitative measurement and the real impact.

For the specific EDA case, after the face to face interviews maintained with several managers, and the impossibility of knowing data by means of surveys, a qualitative study was done and main estimations and conclusions obtained are as follows:

**Table 11. Estimating EDA deadweight**

Percentage	EI	Industry, Trade and Service			I+D
		Small Firms		Medium and big size firms	
		New	Established		
Pure deadweight (100%)	19	-	-	-	-
Partial deadweight (different location)	0	5	5	10	10
Partial deadweight (later date)	7,1	45	50	42	25
Partial deadweight (reduced scale)	35,7	30	33	38	30
Partial deadweight (combination of later date and reduced scale)	28,6	-	-	-	-
Partial deadweight (different location and later date)	2,4	-	-	-	-
Zero deadweight	7,1	20	12	10	35

*EI = Enterprise Ireland*

Source: Own.

- Initially, we should differentiate whether we are, on the one hand, in the area of industrial, commercial or market service industries. One should also differentiate, in the same way, between small and medium-to-large projects, as well as between newly created enterprises or those already established. On the other hand, we have the R+D projects which are much more sensitive to the aid received and “zero deadweight” gets the highest level and after that, “partial deadweight” (reduced scale) is secondly important.
- For the second one, industrial, commercial and market service investment projects, we must distinguish between small projects (where “zero deadweight” is an issue qualitatively more important) with respect to medium and large size investments (less degree of “zero deadweight”).
- In both cases, partial deadweight -later date- is the most important option and after that, partial deadweight –reduced scale-.
- Even in small firms, there are differences between newly created or start up firms in relation with those already established enterprises, where “zero deadweight” is minor.

### **3.2. *Other considerations to be taken into account.***

As a result of the interviews carried out with the people responsible for the management of the aid granted by the EDA, in qualitative terms, the following considerations can be deduced:

- Approximately 35% of the enterprises benefited are newly created, compared with the remaining 65%, which are expansions or consolidations of those already in existence.
- The number of projects related to small and medium enterprises is very high in relation to the total. However, the large projects absorb a significant percentage of the total amount of the subsidies granted (in the year 2002, more than 76% of the total investment generated, as well as of employment and more than 53% of the total subsidies received).
- When it comes to judging the actions of the RDAs, we should evaluate not only the quantitative data obtained but also the quality. Thus, two “macro-projects” provide spectacular investment figures, amount of employment generated and maintained, R+D+i etc, with scarce “intervention” on the part of the EDA. On the other hand,

these same data might have been obtained as a consequence of numerous small projects, at great cost and effort.

- Favouring and cheapening entrepreneurial financing has a very positive influence on investment, independently of the subsidies received. This action is strategically important for the SMEs due to the difficulties of traditional financing (the insistence on high guarantees and the non-availability of long term financing).
- The investment in R+D generates a very positive impact on the growth of the socio-economic environment, although not easily measurable, from a twin perspective. a) Every Euro invested in R+D leads finally to productive investment and b) statistically, there exists a greater proportion of enterprises that carry out productive investment as a consequence of previous R+D projects (new products and improvement of the productive process).
- The percentages of the aid and subsidies granted are very uneven, even within the same line of intervention, depending on who the beneficiaries are (young people, women, entrepreneurs, etc.) or the geographic zone.
- When measuring or evaluating the results of the RDAs, we should take into account the fact that, according to the financial instrument employed (subsidies, discounts on types of interest, aid to trade missions and fairs, participation in the share capital, training courses, scholarships, etc.), their impact is different with the same quantity of resources employed.

#### **4. Conclusions**

The most relevant conclusions are the following:

- a) The different programmes contained in the RDAs are characterised by their nature or microeconomic orientation (productive fabric), which implies that their impact on the large regional macro-magnitudes has been necessarily limited. Therefore, the evaluation of what would have happened without the aid is important from a microeconomic and qualitative point of view.
- b) During the period 2000-2003, corresponding to the first half of the programmed period 2000-2006 of the European structural funds, the regional *per capita* GDP showed convergence due to the improvement in the main explanatory variables of the evolution of

the productive fabric and R+D+i. In other words, the Objective 1 regions, receiving this aid, as well as the ACs whose aid is managed by the RDAs, showed a better economic behaviour in this period.

- c) The public sector has exercised a positive influence, through aid via the RDAs, in growth and territorial convergence over the period 2000-2003, by means of policies supporting investment, the creation and modernisation of enterprises, infrastructures and spending on R+D+i, encouraging the foreign sector and the maintenance and creation of employment. The European structural funds hope to unite convergence of *per capita* income with social and territorial cohesion.

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