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# Central Government Transfers and Regional Convergence in Portugal

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## **Abstract**

Over the last decades, the Portuguese economy exhibited an outstanding growth performance. This period of fast economic growth allowed the country to consistently reduce its income gap with respect to the EU average. In spite of this, regions in Portugal exhibited large differences between each other in terms of GDP per capita.

Yet, the Portuguese government did make attempts at regional intervention by means of some policy instruments, namely public transfers to local (and regional) government. How successful these policies have been in terms of achieving their goal is still an open question, especially as far as Portuguese Central Government transfers are concerned.

The main purpose of the paper is to evaluate if the system of Central Government transfers has affected the intra-regional Portuguese convergence.

We haven't found unquestionable evidence that these policies have been effective at stimulating convergence among Portuguese regions and at improving the overall economies of the poorer regions.

Keywords: Regional convergence, Central Government transfers, Regional policy

JEL Classification: H71; O18; R58

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## **Introduction**

One of the aspects of integration theory is related with the fact that what it promises is possible economic gains for the countries involved. However, there is no guarantee that these can ever be achieved. Regional integration can result in losses rather than gains, and the losses (measured in terms of output, employment, income, social inequality) can be unevenly spread across different countries and different regions inside the countries.

Many observers have pointed out that during the 1980's and the 1990's regional disparities in the European Union (EU) showed no tendency to decrease and, on contrary, they increase, while the cross-country dispersion of per capita Gross Domestic Product (GDP) decreased (Neven and Gouyette, 1995; Fabergen and Vespergen, 1996; Magrini, 1999). All this facts still justify the aim of the EU regional policy.

In recent years, there has been an ongoing debate on regional policy in Europe and the present member states of the EU. The main reason for this debate is the EU's eastern enlargement, which may lead to an increase in regional divergence within the EU. Most of the regions in the accession countries have, up to now, a GDP per capita which is significant below the European average, what will make them eligible for European regional policy measures after the enlargement has taken place. The GDP per capita in the regions of the accession countries is also lower than the GDP per capita in the majority of regions within the existing EU that are supported today by European regional policy measures. After the enlargement, according to the existing rules of European regional policy, these regions will drop out of the system of EU regional policy - although their economic development problems will not have changed. There are different proposals in order to help the regions in question after the enlargement. Some scholars and politicians are suggesting that the EU should expand its budget for regional policy and give not only support to the regions in the accession countries, but also to the regions which are supported today by the EU. Others are proposing that regional policy should be re-nationalized, at least for the existing member states.

In this context, the debate turns to the efficiency of national regional policies in order to promote convergence and cohesion intra-nations. Only if the regional policies in each country have positive effects in regions the second proposal is coherent with the maintenance of regional concerns of EU.

Regional policy is always a policy of a more central level of government in order to help some regions or jurisdictions at a lower level of government to improve their economic performance. This makes it necessary that a jurisdiction at a higher level of government is transferring some kind of resources to the supported regions.

According to Carlino and Mills (1996) regional distribution of transfers tends to reinforce trends in regional per capita income convergence.

Portuguese National Budget typically induces a substantial redistribution of resources across regions through transfers to municipalities. This is an example of regional policy at national level in Portugal. The principal concern of this policy is to influence the dispersion of regional incomes and to promote or accelerate regional income convergence and cohesion.

Several studies have analysed the evolution of the regional economies of Portugal, without relating them explicitly to regional policies. This paper seeks to examine the regional incidence of transfers' policy in Portugal and to consider the mechanism in place for both redistributing income between regions and narrowing disparities in regional economic performance. We study transfers data for all Portuguese municipalities, grouped by NUTS II for the period 1980-2001, that covers the allocation of municipal transfers since their creation by the Law 1/79 in 2<sup>nd</sup> January until 2001.

To describe the economies of the regions and their evolutions, we present several statistics for five years spanning a 21- year period: the start and ending points of our sample (1980 and 2001). The three intermediate years correspond to important dates in European integration process: the year of accession of Portugal to European Economic Community (1986), the year of European Union Treaty (1992) and 1999, the first year of third phase of the European and Monetary Union. All euro-denominated data are in 1995 euros. In the text, the words *per capita GDP*, *income* and *Gross Value Added* (GVA) are used as synonyms to evaluate the regional development levels.

Our goal is to draw some inferences from the data about how the system of transfers has affected the intra-regional Portuguese convergence. The rest of the paper is organized as follows. In section I we summarize some theoretical and empirical aspects in regional policy applied to Central Governments transfers. Section II describes municipal transfer's arrangements and their legal evolution in Portugal. Section III is a description of the economic performance of the Portuguese regions between 1980 and 2001. In

section IV we analyse how this kind of regional policy have affected the economies of the regions. In the final section we conclude.

## **I. Basic Theoretical and Empirical Aspects on Regional Policy: Intergovernmental Transfers for Municipalities**

In economic theory, there is often some confusion on the meaning of “regional policy”. Some scholars and politicians are identifying regional policy with all kinds of policy measures of a region that are oriented to economic growth. Nonetheless, in this view, there would be no difference between regional policy and economic growth policy in general. Therefore, in this paper, we take regional policy as economic policy for regions conducted by policymakers from higher level of government: “Regional policy is always a policy *from above*” (Artobolevsky, 1997), what means that a minimum degree of centralization is always required for regional policy.

Other three important characteristics may define regional policy. First, the targets of regional policy are either growth - or equalization - oriented, which means that some concepts of regional policy are aiming at supporting the economic growth centers of an economy, in order to strengthen national economic growth. Second, regional policy exists only when regions receive unequal levels of support or rights from the state (Artobolevsky, 1997), which means that regional policy always includes an element of interregional redistribution. Third, regional policy tries to promote or stimulate private economic activities in certain regions (“supported regions”) and is not aiming at only compensating those regions that are economically lagging behind<sup>1</sup>.

Governments can certainly influence the rate at which regions accumulate various productive factors - particularly infrastructures and human capital - and there were positive redistributive effects as well as growth effects in regional intervention from Central Government. Consequently, national, institutional and political configurations determine the distinctive outcome of regional policy.

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<sup>1</sup> The system of general revenue sharing (the fiscal equalization principle) has the task of only compensating the poorer regions.

A case against regional policies can be found in some papers in the regional convergence literature (see Barro and Sala-i-Martin, 1991; and especially Sala-i-Martin, 1996). While these authors find that the speed of regional convergence is very low in Europe and in other samples, they are also sceptical about government' ability to speed up the regional convergence process. The main piece of evidence for this conclusion is a significant empirical regularity: the visible stability of the rate of convergence (close to 2 per cent a year in a diversity of samples). According to Sala-i-Martin, the fact that convergence takes place at nearly the same speed within groups of regions hypothetically characterized by quite different levels of redistributive effort implies that such policies cannot be very effective. Even if the stability of the convergence coefficient across different samples may indicate the level of redistributive effort has been too small to have a perceptible effect on the evolution of regional income disparities, it cannot be taken as evidence that regional policy per se is necessarily ineffective. Perhaps, the regional policies had not been very effective in some cases.

In sum, regional policy is always a policy (more or less effective) of a more central level of government in order to help some regions or jurisdictions at a lower level of government to improve their economic performance. This makes it necessary that a jurisdiction at a higher level of government is transferring some kind of resources to the supported regions.

The Central Government transfers to different regions or local areas can take two forms: interpersonal transfers (the focus is on the net amount of money actually paid/received by taxpayers' resident in different jurisdictions) and intergovernmental transfers (the focus is on the amount of resources transferred to/among local governments in order to achieve a more equalized distribution). The transfers discussed in this paper refer exclusively to those paid directly to municipalities and that pretend to result in a levelling of regional income differences.

Transfers from Central Government are an important tool, not only for the public sector finance, but also for the regional policy, in both industrialized and developing countries. Governments introduce intergovernmental transfers for a number of good reasons, and for a number of not-so-good reasons. In this part of the section we review the reasons for transfers, and we stress the point that the design of the system should be driven by the objectives to be accomplished.

A large part of the literature on intergovernmental transfers deals with their economic rationale. In this, it is presumed that economic objectives are the sole consideration for determining the quantum of transfers and the design of transfers systems. Of course, even economic objectives have political undertones and in actual practice, the volume and the distribution of transfers largely reflect political compromises, and they are designed to sub serve a host of political objectives.

Three economic reasons can be pointed to justify the role of transfers. First, Central Governments have advantages over subnational governments in raising revenues from many types of particularly productive sources, while subnational governments have advantages in providing many types of public services. There is virtually always an imbalance between expenditure responsibilities of subnational governments and their revenue raising powers. With economic growth and urbanization, public expenditures needs shift more toward services provided by local governments. The result is an inability of local governments to provide adequate levels of public service. The gap must be filled in one of two ways: by giving local governments more revenue raising power or by revenue transfers from the Central Government to the subnational governments.

Equalization is another justification for intergovernmental transfers: there are often substantial disparities in revenue-raising capacity across decentralized levels of government. If subnational governments were left to rely exclusively on their own resources, wealthier jurisdictions would be able to spend more on public services than lower-income jurisdictions. Such a situation has not only equity implications but efficiency implications as well. Developed countries are characterized by wide fiscal disparities among regions. These disparities will widen because the richest local governments have the greatest taxable capacities and the strongest administrative infrastructures.

If countries aim to equalize inter-regional differences in financial capacities, it must be done with intergovernmental transfers. The potential to equalize does not necessarily mean that equalization will occur, nor does it mean that equalization is necessarily a good policy for a country. The effects also depend on the distribution formulae used to allocate resources among the local governments.

Third, when local governments are left to make their own decisions, they may underspend on certain services where there are substantial external benefits to third parties, such as surrounding local governments. In addition to this, resources from the central level can be used to ensure that basic national priorities will be met in all subnational jurisdictions. In cases of existing externalities on other jurisdictions, the Central Government financially support sub-national authorities in order to guarantee the provision of some public services on the local level like pollution control and basic education (Tiebout, 1961; Davis and Lucker, 1982; Hyman, 1993; Rosen, 1995; Dahlby, 1996; Ahmad and Craig, 1997).

According Nam and Parsche (2001), intergovernmental transfers are aimed at rectifying not only the vertical imbalance caused by the unequal own tax revenues and expenditures of different tiers of governments but also the horizontal imbalance which is led by the different fiscal capacities among same level jurisdictions<sup>2</sup>. The compensation for the presence of spillovers or “externalities” between jurisdictions in the provision of regional and local public services is also a generally accepted reason for introducing fiscal transfers from Central Government.

The amount of grants should vary with the local expenditure needs and inversely with local fiscal capacity, while their distribution must be transparent and fair. More importantly, an effective transfers system should neither encourage overspending nor weaken tax collection efforts on the sub-national level (Gage and Mandell, 1990; Jones and Cullis, 1994; Bahl and Linn, 1994; Shah, 1994a and 1994b; Winkler, 1994; Oates, 1998).

A major issue faced by those who design transfer system and are driven by the vertical balance objective is how to measure vertical fiscal balance. In order to know how much transfer is necessary, one estimate the difference between the revenues available to subnational governments as a whole, and the expenditure needs of each level of government. This is quite a subjective matter, because expenditure needs are almost limitless. Most countries that use the vertical balance approach determine a “minimum service level”, and fill the gap with transfers. In some cases, the amount of transfers is determined by a central budget constraint rather than by a “minimum requirements”

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<sup>2</sup> The re-allocation of fiscal resources from one level of government to another can also take place through sharing of tax revenues. In this case tax bases can be shared on a tax-by-tax basis, or taxes can be pooled and shared systematically therefore.



approach. Alternatively, historical spending levels are used to determine subnational government “needs”.

## **II. Transfers from the Central Government of Portugal**

The national government retain control of most major tax bases but is constitutionally committed to transfer an increasing share of revenues to municipalities. The Portuguese Constitution establishes in its article 254, n.<sup>er</sup> 1 (share in the revenue from direct taxation) that: “*Municipalities shall share, in their own right, and in accordance with the law, the revenue from direct taxation*”. This is a municipal revenue sharing system, which assigned to the municipalities a share of the total current fiscal revenues of the national government. The meaning of this name may be misleading, since it is not a sharing on revenues on a derivation basis, but an unconditional funding distributed among municipalities by a formula that takes into account specific variables.

The main source of spending balance of the Portuguese regional authorities (municipalities) has been the transfers from the Central Government. The importance that such transfers assume for Portuguese municipalities in general is evident. As we can conclude from figure II.1, the share of Central Government transfers on total municipalities receipts starts from being above 60 per cent and has declined along the two decades, reaching less than 30 per cent in 2001. This evolution can be explained by the growing capability of each municipality to raise own receipts through the rising of municipality debt and the collection of municipality taxes, especially in the last decade.

The system of transfers to local governments follow the Constitutional Principle of Financial Balance (article 238, n.<sup>er</sup> 2), that is, a financial balance means the fair distribution of financial public resources between the State and municipalities (vertical fiscal balance) and between municipalities of the same type or degree<sup>3</sup> (horizontal fiscal balance).

Discussions over the criteria for the definition of the global transfer from the State budget to the municipalities, as well as over the criteria for the relative weight of each region, have a long history. In Portugal conscious efforts are made to increase the

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<sup>3</sup> Horizontal Fiscal Balance implies that transfers be set to equate revenues in per capita terms. It ignores local differences in needs, in costs and in own revenue-raising capacity (Chaparro et al, 2004).

revenue available in areas where the local tax base is considered insufficient to meet spending needs, or to where the costs of services which need to be provided are higher than normal. One of the purposes of part of the transfers is, not only, to endow the municipalities with minimum financial capacity for functioning, but also, to correct differences between municipalities and, as a consequence, promote intra-country cohesion and convergence.

The Local Finance Law (LFL) 1/79 in 2<sup>nd</sup> January laid out the specific parameters of financial transfers from Central Government to municipalities and local administration. The overall amount of resources to be distributed among municipalities is determined every year by law, and is updated in accordance with certain criteria that are applied automatically. Initially all the transfers from Central Government were called Financial Balance Fund (FEF) and aims to correct, not only socio-economic asymmetries inside the country, but also the financial imbalances created by different fiscal capacity of each region. Following the Law (Revision Law 1/87 in 6<sup>th</sup> January), the FEF for each year is calculated according to { EMBED Equation.3 }, with  $n$  as the current year,  $n-1$  the year before and VAT as Value Added Tax established in the Central Government Budget. The total amount of FEF is allocated to municipalities according to some social and economic criteria, like number of inhabitants, municipal road network or direct taxes per capita. The allocation of five per cent of the FEF depends directly from the legally defined Socio-economic Development Index (SDI). This Index is calculated for each municipality according to industrialization level, weight of primary activities in economy, the total dependency coefficient, accessibility, needs of basic infrastructures and domestic energy consumption per inhabitant. All these elements were used to evaluate the municipality development level.

In 1992 (Law 2/92 in 9<sup>th</sup> March), the Fiscal Compensation Index (FCI) of each municipality, that represents 5 per cent of the criteria for the transfers distribution, replaced the SDI. This new index depends on the gap between fiscal capitation of each municipality and the average fiscal capitation in what concerns to some municipality taxes.

In Portugal, the new Law (42/98 in 6<sup>th</sup> August) extinguished the FEF and created three new instruments. The first one, the Municipalities' General Fund (FGM) allocates

resources to the regions, largely based on regional needs for spending per capita<sup>4</sup>. A second fund, with explicit cohesion objectives Municipal Cohesion Fund (FCM) is limited to less developed municipalities, while an additional fund aim to ensure that the municipalities have adequate resources Parish Financing Fund (FFF).

The municipalities' participation in the state taxes is currently defined by the Law n.<sup>er</sup> 4/2001, of 20<sup>th</sup> August. At present, the financial state transfers to municipalities are processed through the three distinct instruments referred above.

### **i) Municipalities' General Fund**

The fund aims to endow the municipalities with financial conditions adjusted to their performance in terms of effected investment relative to attributions. The objective is to put in place a vertical balance, that is, an equitable distribution of the public resources between the State and the local authorities, in function of the type and amount of carried-out investments per item.

The name of this fund results from the fact that is attributed to all municipalities, in contrast to the municipal cohesion fund.

The total of the FGM is distributed through three territorial units (Continent, Autonomous Region of Açores and Autonomous Region of Madeira), as a direct function of criteria like resident population or area.

The distribution to the municipalities inside territorial units obeys to a variety of different criteria, such as: resident population under 15 years, the number of municipalities within the region, area, or total receipts of direct taxes.

### **ii) Municipal Cohesion Fund**

This fund aims at strengthening municipal cohesion and fostering the correction of asymmetries, to the benefit of the less developed municipalities. Its objective is to promote horizontal balance, that is, to correct the differences between municipalities of the same degree or type, through a harmonious distribution of the State transfers.

This fund had not been foreseen in the previous law but was created as a complement to the FGM, to be received only by those municipalities with a development level below

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<sup>4</sup> The value is assessed centrally, involving the estimation of a standardised level of public service per head of population.

the national average. The FCM is distributed according to the Fiscal Need Index and the Socio-economic Development Index. These two criteria give an idea about the municipality inferiority comparatively to the national average.

The assignments of this fund have been inherited from the Cohesion Fund created by the European Union in favour of its less developed Member States, namely in Southern Europe.

### **iii) Parish Financing Fund**

When the law of local finance began to be enforced, the parish (smallest administrative units in Portugal) at the outset had the right to an autonomous fund corresponding to 2.5 per cent of the simple arithmetic average of the receipts from direct (personal and corporate) and indirect (VAT) taxation, assigned for FFF.

This fund is distributed through three territorial units (Continent, Açores and Madeira) in accordance with criteria such as resident population and area. Twenty five per cent of the total amount of these transfers is equally spread by the national parish.

On the Budget Law of 2001 the item c) of paragraph 12 was designed temporarily as one more transfer that must be considered. In the following years, it was substituted by Municipal Base Fund (FBM). The regional distribution of item follows the same criteria of this last fund considered in 2002: it aims to endow the municipalities with minimum financial capacity for their functioning and is distributed on equal terms and by equal amounts for all the municipalities.

As we can conclude, the transfers are allocated among municipalities according to a complex collection of indicators (see table II.1) that suppose to assess regional needs and local taxable capacity. Two notable features of Portuguese system can be point out: population criteria receive a large weigh and part of the transfers amount is equally distributed by all the municipalities.

The evolution of total Central Government transfers to municipalities (figure II.2) follows the same increasing trend as Portuguese GDP, but the transfers have been grow at a higher rate.

In percentage of regional GDP (table II.2), public transfers ranged between 0.47 per cent (for the richer area of Centro) and 5.92 per cent (the poor region of Alentejo) of regional GDP in 1980, and between 1.08 per cent (for the richer area of Lisboa e Vale

do Tejo) and 6.84 per cent (the poor region of Alentejo) in 2001. Taking all funds together, public transfers to municipalities in terms of regional GDP increased steadily over the period 1980-2001, with a higher increase in some of the poorer regions (Alentejo and Açores). An exception in this trend is between 1987 and 1988, when almost all the regions had an enormous decrease, with especial significance for Alentejo.

As shown in table II.3, the transfers per capita are highest in the least prosperous regions, namely Alentejo, Algarve and Açores. Between 1980 and 1990, Alentejo and Algarve were top receivers. Alentejo, in particular, received almost twice of the Portuguese average. Since 1990, Alentejo remained as the first receiver of Central Government transfers per capita, but the second place in the rank order belongs to Açores. The regions that are consistently below average recipients of transfers included Lisboa e Vale do Tejo, Madeira and Norte.

In sum, in most of the years, the receiver regions were Alentejo, Algarve and Açores, the same is to say that these two regions were top receivers for each of the four public transfers. The non-receiver regions consisted of Lisboa e Vale do Tejo and Norte. In fact, the correlation between transfers - per capita and as percentage of GDP - and regional GDP per capita (table II.2 and II.3) is negative in all years between 1980 and 2001. This means that the transfers per capita preserve the same rule: they were relatively higher in less prosperous and poorer regions. Looking at figure II.3, it is also evident that there are a negative relation between transfers and regional GDP per capita, both in 2001 and in 1990.

As can be seen by examining the coefficients of variation displayed in the last but one rows of table II.2 and II.3, there was no significant disparity across the seven regions in the amounts received under transfers to municipalities. The fact that they not vary across regions could imply that there are not differential impacts on economic performance. This result can be confirmed with the Chi-Square test (last row) for similarity in transfers per capita and transfers as percentage of GDP. In what concerns to transfers per capita we can conclude that in all years the null hypotheses is rejected and inequality in distribution seems to be a fact, but relatively to the transfers as percentage of GDP the conclusion is ambiguous. Between 1980 and 1992 there were disparities between region, but after that year it seems that transfers are more equally

distributed. This can be explained by the convergence between regions that implies that transfers tend to be less imbalanced in the end of the period.

### **III. Economic Performance of the Portuguese Regions**

Over the last decades, the Portuguese economy exhibited an outstanding growth performance. Between 1980 and 2001, Portugal was ranked fourth among 25 OECD countries in terms of growth of per capita GDP, and third in terms of growth of GDP per worker. This period of fast economic growth allowed the country to consistently reduce its income gap in relation to the EU average.

The question is whether the Portuguese regions equally shared growth. Using data from Eurostat and INE (Portuguese Statistics Institute), Mateus's (2001) study suggests that convergence has been achieved, in the sense that the poorest regions have grown at a higher rate than the richest regions, although the rate of convergence has been found to be very low. Moreover, the author argues that disparities are not that high among Portuguese regions. The author also points to a deceleration of convergence in the 1990s and even divergence from 1995 onwards. Norte and Centro are the regions that suffered the most with the last business cycle.

#### GDP per capita, employment rate and GVA per worker<sup>5</sup>

Figure III.1 illustrate the evolution of GDP per capita in the Portuguese NUTS II regions, as indices relative to Portugal (set at 100). It shows that, between 1980 and 1993, almost all the regions have worsened their GDP per capita levels with reference to the national average. The ranking of the regions has suffered some changes: regions at the middle of the distribution have remained in their positions, but there have been some changes at the bottom and at the top positions. A particular case is Centro, the richest region in 1980, with GDP per capita two times higher than the national average. After

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<sup>5</sup> Figures on regional output are being subject to successive revisions and data are not necessarily consistent across tables. For this reason, we try to identify in each table the specific database being used. In the latest DGRegio database, data from GDP and GVA appear to reveal some inconsistencies, especially to Centro in the period 1980-1990.

1993, it suffered a large decrease and by 2001 it was 30 per cent below Portuguese average. The region Lisboa e Vale do Tejo outstanding all the other regions by very large margins and had an evolution contrary to the Centro decrease. On the other hand witnessed an improvement in relative standing: it starts at the bottom of the ranking and in 2001, it occupies the second place with Madeira.

Lisboa e Vale do Tejo was the richest region at the end of the sample, Norte was among the top three at all times and Alentejo was consistently one of the poorest region.

Table III.1 presents average annual growth rates of regional GDP per capita. The average growth rate for Portugal varied considerable from one period to the next. The period 1981-1986 was the period of fast growth, with an improvement in GDP per capita of fourteen per cent per year. The grow rate in the others sub periods was slow for more than a decade and it reaches less than 3 per cent a year.

The average growth rate of Portuguese GDP per capita is not equally distributed among regions. The region that grew faster in all periods was Algarve. Açores and Madeira had below average growth rate in almost all periods. The rich regions had irregular behaviour, with high growth in some periods and low in others, compared to Portuguese average: Norte and Centro were the only regions that had negative average annual growth rate (between 1992 and 1998) and none of the rich regions had an average growth rate above Portuguese average in all periods. These patterns are consistent with a narrowing of the differences among the regions over time in GDP per capita.

While in 1980 Centro had a GDP per capita ten times higher than Alentejo, by 2001 the wealthier region, Lisboa e Vale do Tejo, was a bit less than twice as rich as Açores.

Differences in the employment rate<sup>6</sup> also play a role in explaining regional asymmetries, and there has also been some convergence in this regard. The Portuguese evolution of employment parallels the evolution of GDP for the most part but neither for all regions nor all periods. The period of 1980-1986, a period of high growth of GDP per capita, exhibited negative employment rate growth in the country (see table III.2).

The employment losses and gains were unevenly distributed among regions. There have been clear gains in laggard regions and losses in more central areas (e.g. Porto, in the Norte, and Lisboa). Until 1995, Centro and Alentejo took first places in the ranking.

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<sup>6</sup> Employment Rate = Employment/working age population.

Since 1995, Lisboa e Vale do Tejo was the region with higher values for employment rate. This evolution, in particular, reflects the process of restructuring and development of an urban-metropolitan profile reflected in the development of the service sector and of New Technology-Based Industries. This concentration had impact on regional evolution of employment rate, consequently the richer regions had higher levels of employment.

In general, regions that experienced slow growth in GDP tended to have low or negative employment growth rates, but the opposite is not always true. For example, Algarve tended to do relatively well in terms of employment growth in expansionary periods and poorly in recessionary periods.

Traditionally, most of Portugal's economic activities were concentrated in the Norte and Lisboa e Vale do Tejo and its surrounding area. The regional concentration of economic activity has continued over the 1990s and even slightly increased, especially in favour of Lisboa area.

Productivity availed through GVA per worker is another indicator that can be used to measure economic performance and, consequently, to conclude about regional disparities. Breaking down differences in per capita GDP among Portuguese regions in different components, Ramos and Rodrigues (2001) conclude that regional disparities (in NUTS II and NUTS III) are only partially accounted for by differences in production efficiency. Probably this indicator (figure III.2) is the one that allow better to conclude about convergence in Portuguese regions: all regions converge to national average. Table III.3 presents GVA per worker in 1980, 1986, 1992, 1999 and 2001 and the growth average rate between these years. In 1980 there was huge differences between the region with higher productivity (Centro - with 9,81 thousands euros per worker) and Alentejo, with 1,18. In 2001, this difference was reduced: Lisboa e Vale do Tejo had only more 40 per cent than Açores.

Almost all regions began, in 1980, with productivity above Portuguese average, with exception of the south regions: Lisboa e Vale do Tejo, Alentejo e Algarve. All of them (except Lisboa e Vale do Tejo) decreased along the 21- years period in study. As we already mentioned in GDP per capita, Centro had a very strange evolution: this region started to be the region with higher GVA per worker and in the end of the period it occupies the last ranking places, with Alentejo and Açores.



As we can see, the regions with higher growth of productivity were Algarve and Alentejo, the ones that had the lowest levels of GVA per capita. This could mean, *per si*, convergence, however, the growth was also higher in Lisboa e Vale do Tejo. This region was the one that had the higher growth in all period we study. Supporting our conclusion we can refer Amorim et al (2004) where we can read that Alentejo suffers from a low productivity level and Algarve exhibited quite favourable dynamic in terms of productivity changes.

#### **IV. Analysis of the Effect of Regional Transfers on Regional Economic Performance**

To assess the impact of the transfers to municipalities on regional development, we compare the economic performance of two groups of regions between 1980 and 2001. Following Garcia - Milá et al (1996), we consider that one group consists of regions that are consistently above average on various economic indicators and below average in terms of transfers receipt from the Central Government. This group is called “non-receivers group”, and it consists of Norte and Lisboa e vale do Tejo. The other group consists of regions that are consistently below average on most of the economic indicators and above average in terms of transfers receipt and is called “receivers group”. In this group we classified Alentejo, Algarve e Açores (see classification in figure IV.1).

We are concerned in assessing whether the Central Government transfers’ policy has impact in aggregate measures of economic activity. We examine three different measures of economic well being or economic activity: i) Regional GDP per capita; ii) Employment rate; iii) Regional GVA per worker. Each variable was taken as independent variable in a regression with annual observations by region estimated using OLS.

This approach says very little about whether the transfers have caused changes in the economic performance of the regions.

The results in table IV.1 (rows 1) indicate that transfers to municipalities of the period appears to be associated with improvements in regional GDP per capita, except for Centro<sup>7</sup>.

In the results displayed in table IV.2 we find no evidence that the transfers policy is associated with improvements in employment rate for any region. The variable transfers per capita is no statistically significant for any region.

Table IV.3 presents results for the GVA per worker. In all regions central transfers per capita seems to explain regional productivity expansion, with exception of Centro. In all regional estimations, transfers per capita are statistically significant at 1 per cent of probability. For Lisboa e Vale do Tejo, Alentejo and Algarve more than eighty per cent of the variation of GVA per capita is explained by transfers per capita (we can see by the value of  $R^2$ ). Once more we must point out the case of Centro that had an unusual evolution in GVA between 1980 and 1993. This decrease could not be explained by the evolution of transfers and it has to do more with statistical adjustment in EUROSTAT calculations or in accounting rules.

One difficulty we encounter in trying to uncover an effect of the transfers on the economies of the poor regions is that, with the limited data available, it is difficult to unravel the effect of being a receiver region with the effect of being a poor region. In an effort to control for the effect of being receiver, we re-estimated the equations including a lagged value of the dependent variable. The inclusion of this variable improved the estimation for Lisboa e Vale do Tejo, Alentejo e Algarve, in what concerns to GDP per capita and GVA per worker. In this three regions, considered in 1980 as below Portuguese average, it seems that transfers per capita (lagged) had impact in economic performance.

In what concerns to employment rate it still seems that there's no relation between central transfers and this measure of economic activity. This conclusion has been anticipated in the section III when we evaluate the performance and assessed that the most part of the regions had an unusual evolution.

A main difficulty we face is that the period we examine was a period of massive changes in the economy, policy and politics of Portugal and its regions. It would be exceedingly difficult if not impossible to attempt to model all of the relevant processes

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<sup>7</sup> This result is related with the inconsistency of data already mentioned in section III.

and causes of regional economic growth. What our approach offers is a simple comparison of regional effects, controlling for factors common to all regions in different years.

## **V. Conclusion**

In Portugal, the transfers from the Central Government to the regional entities endowed them with the indispensable minimum financial capacity for their functioning. This is their first evident intending. Cohesion policy should foster convergence between the regions. The data allows concluding that a necessary condition for its effectiveness is satisfied: it redistributes funds from rich to poor regions through a sharing revenue system. Even though the cohesion objectives have constitutional commitment, it is not effectively observed. Although poor regions receive relatively much support, rich regions still receive some. This seems to mitigate the impact because every region received funds.

This paper has analysed the relationship between Central Government transfers and some measures of economic performance (GDP per capita, employment rate and GVA per worker) in the seven Portuguese regions. The main purpose of the paper is to evaluate if the system of public transfers has affected the intra-regional Portuguese convergence.

The results from estimation with all the measures does not allow to conclude, with confidence, that transfers to municipalities has impact in regional economic performance. This outcome could be justified by the available data or by the choice of the period we made. The period 1980-1990 was a period of massive changes in the economy, policy and politics of Portugal and its regions and these facts were not taken in account in ours estimations. We need further research to justify this conclusion.

The recent changes in the legislation suggest that in the future the Central Government transfers will effectively reduce regional imbalances. Nevertheless, the scope for increasing governmental funding is very limited indeed, highlighting quality of the local expenditures and the efficiency of the location criteria for distribution of funds among municipalities.



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## Appendix A - Tables

*Table II.1 - Distribution criteria of Portuguese transfers to municipalities: Evolution*

| Distribution criteria                    | FEF <sup>1</sup> |                  |          |                  | FGM <sup>2</sup> | FCM <sup>3</sup> | FFF <sup>4</sup> |
|--|------------------|------------------|----------|------------------|------------------|------------------|------------------|
|  | Law 1/79         | Decret Law 98/84 | Law 1/87 | Law 2/92         | Law 42/98        |                  |                  |
| Number of inhabitants                    | 35%              | 45%              | 45%      | 40% <sup>5</sup> | 35% <sup>5</sup> |                  | 50%              |
| Municipalities area                      | 15%              | 10%              | 10%      | 15%              | 30%              |                  | 25%              |
| Number of Parish                         | 15%              | 5%               | 5%       | 5%               | 5%               |                  |                  |
| Equal distribution by the municipalities |                  | 5%               | 10%      | 15%              | 15%              |                  | 25%              |
| Population with less than 15 years old   |                  |                  |          | 5%               | 5%               |                  |                  |
| Compensation fiscal index                |                  |                  |          | 5%               |                  | — <sup>6</sup>   |                  |
| Socio-economic development index         | 35%              | 20%              | 5%       |                  |                  | — <sup>6</sup>   |                  |
| Personal income tax                      |                  |                  |          |                  | 10%              |                  |                  |
| Acessibilities                           |                  |                  |          | 5%               |                  |                  |                  |
| Municipal road network                   |                  |                  | 10%      | 10%              |                  |                  |                  |
| Direct taxes per capita                  |                  | 15%              | 10%      |                  |                  |                  |                  |
| Number of houses                         |                  |                  | 5%       |                  |                  |                  |                  |
| Total                                    | 100%             | 100%             | 100%     | 100%             | 100%             | 100%             | 100%             |

Sources: Local Finance Law and further revisions.

Notes <sup>1</sup> FEF - Financial Balance Fund; <sup>2</sup> FGM - Municipalities' General Fund; <sup>3</sup> FCM - Municipal Cohesion Fund; <sup>4</sup> FFF - Parish Financing Fund; <sup>5</sup> Total population plus daily average of night's lodging in camping and hotels; <sup>6</sup> Each year the weight of this criteria is variable

*Table II.2 - Transfers as percentage of GDP*

|                                      | 1980        | 1986        | 1992        | 1999        | 2001        | Growth average rate (%) |             |             |             |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------------------|-------------|-------------|-------------|
|                                      |             |             |             |             |             | 1980-1986               | 1987-1991   | 1992-1998   | 1999-2001   |
| <b>Portugal</b>                      | <b>0,82</b> | <b>0,94</b> | <b>0,99</b> | <b>1,67</b> | <b>2,26</b> | <b>2,55</b>             | <b>1,60</b> | <b>7,76</b> | <b>8,50</b> |
| Norte                                | 0,73        | 0,78        | 1,25        | 2,00        | 2,52        | 1,48                    | 2,67        | 11,73       | 8,36        |
| Centro                               | 0,47        | 0,55        | 1,37        | 2,92        | 3,76        | 3,32                    | 9,35        | 20,07       | 8,82        |
| Lisboa e V.do Tejo                   | 1,23        | 1,40        | 0,96        | 0,88        | 1,08        | 2,63                    | -9,67       | -1,35       | 7,11        |
| Alentejo                             | 5,92        | 6,64        | 4,55        | 5,06        | 6,84        | 2,37                    | -10,36      | 0,06        | 13,17       |
| Algarve                              | 4,11        | 5,32        | 2,84        | 2,29        | 2,76        | 4,84                    | -14,93      | -2,61       | 5,61        |
| Açores                               | 1,07        | 1,27        | 2,69        | 3,69        | 5,16        | 3,13                    | 8,25        | 11,54       | 9,88        |
| Madeira                              | 0,55        | 0,69        | 1,36        | 1,77        | 2,72        | 3,94                    | 7,47        | 10,94       | 11,07       |
| Correlation coefficient <sup>1</sup> | -0,703      | -0,689      | -0,835      | -0,772      | -0,771      |                         |             |             |             |
| Variation coefficient                | 0,041       | 0,044       | 0,017       | 0,015       | 0,016       |                         |             |             |             |
| Chi-square (%)                       | 0,035       | 0,000       | 0,102       | 0,143       | 0,022       |                         |             |             |             |

Sources: EUROSTAT, June 2003; Orçamentos de Estado, DGO-MF

Notes: <sup>1</sup> with GDP per capita; values in euros



*Table II.3 - Transfers per capita*

|                                      | 1980         | 1986         | 1992         | 1999          | 2001          | Growth average rate (%) |              |             |              |
|--------------------------------------|--------------|--------------|--------------|---------------|---------------|-------------------------|--------------|-------------|--------------|
|                                      |              |              |              |               |               | 1980-1986               | 1987-1991    | 1992-1998   | 1999-2001    |
| <b>Portugal</b>                      | <b>15,21</b> | <b>38,34</b> | <b>90,14</b> | <b>147,25</b> | <b>196,11</b> | <b>16,73</b>            | <b>15,80</b> | <b>7,96</b> | <b>13,60</b> |
| Norte                                | 13,63        | 34,83        | 82,78        | 137,23        | 184,09        | 16,96                   | 15,77        | 8,48        | 13,67        |
| Centro                               | 19,05        | 48,96        | 113,71       | 187,84        | 252,10        | 17,16                   | 15,25        | 8,44        | 13,59        |
| Lisboa e V.do Tejo                   | 11,86        | 28,33        | 63,71        | 98,36         | 125,50        | 15,70                   | 15,60        | 6,60        | 11,76        |
| Alentejo                             | 29,04        | 74,35        | 184,58       | 321,44        | 449,63        | 17,14                   | 16,36        | 8,99        | 16,67        |
| Algarve                              | 19,59        | 62,56        | 125,50       | 177,04        | 224,14        | 21,56                   | 13,57        | 4,68        | 12,02        |
| Açores                               | 19,56        | 44,35        | 136,85       | 227,97        | 320,46        | 14,81                   | 21,91        | 8,42        | 16,04        |
| Madeira                              | 11,38        | 27,89        | 88,32        | 157,76        | 219,32        | 16,30                   | 22,31        | 9,43        | 16,23        |
| Correlation coefficient <sup>1</sup> | -0,242       | -0,300       | -0,653       | -0,692        | -0,709        |                         |              |             |              |
| Variation coefficient                | 0,005        | 0,006        | 0,007        | 0,008         | 0,008         |                         |              |             |              |
| Chi-square (%)                       | 0,045        | 0,000        | 0,000        | 0,000         | 0,000         |                         |              |             |              |

Sources: EUROSTAT, June 2003; Orçamentos de Estado, DGO-MF

Notes: <sup>1</sup> with GDP per capita; values in euros

*Table III.1 - GDP per capita*

|                    | 1980        | 1986        | 1992        | 1999        | 2001        | Growth average rate (%) |              |             |             |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------------------|--------------|-------------|-------------|
|                    |             |             |             |             |             | 1981-1986               | 1987-1991    | 1992-1998   | 1999-2001   |
| <b>Portugal</b>    | <b>1,84</b> | <b>4,08</b> | <b>6,65</b> | <b>8,28</b> | <b>8,63</b> | <b>14,42</b>            | <b>10,46</b> | <b>2,65</b> | <b>2,61</b> |
| Norte              | 1,87        | 4,44        | 6,61        | 6,86        | 7,32        | 15,83                   | 9,20         | -0,41       | 3,41        |
| Centro             | 4,09        | 8,84        | 8,30        | 6,44        | 6,71        | 13,98                   | 1,66         | -5,57       | 2,73        |
| Lisboa e V.do Tejo | 0,96        | 2,02        | 6,62        | 11,22       | 11,58       | 13,36                   | 24,22        | 9,13        | 2,16        |
| Alentejo           | 0,49        | 1,12        | 4,06        | 6,35        | 6,58        | 15,04                   | 26,49        | 8,43        | 1,65        |
| Algarve            | 0,48        | 1,18        | 4,42        | 7,73        | 8,11        | 16,54                   | 27,06        | 9,82        | 3,17        |
| Açores             | 1,83        | 3,49        | 5,08        | 6,18        | 6,21        | 11,70                   | 8,50         | 1,55        | 2,43        |
| Madeira            | 2,06        | 4,07        | 6,30        | 8,24        | 8,07        | 12,31                   | 9,59         | 3,08        | 0,96        |

Source: EUROSTAT, June 2003

Note: Values in thousand euros

*Table III.2 - Employment rate*

|                    | 1980        | 1986        | 1992        | 1999        | 2001        | Growth average rate (%) |             |              |             |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------------------|-------------|--------------|-------------|
|                    |             |             |             |             |             | 1981-1986               | 1987-1991   | 1992-1998    | 1999-2001   |
| <b>Portugal</b>    | <b>0,64</b> | <b>0,57</b> | <b>0,69</b> | <b>0,70</b> | <b>0,72</b> | <b>-1,84</b>            | <b>4,35</b> | <b>-0,22</b> | <b>1,38</b> |
| Norte              | 0,63        | 0,58        | 0,66        | 0,68        | 0,70        | -1,34                   | 3,63        | -0,24        | 1,20        |
| Centro             | 0,69        | 0,60        | 0,72        | 0,69        | 0,71        | -2,24                   | 4,99        | -1,34        | 1,90        |
| Lisboa e V.do Tejo | 0,62        | 0,58        | 0,71        | 0,74        | 0,76        | -1,07                   | 4,47        | 0,40         | 1,36        |
| Alentejo           | 0,73        | 0,50        | 0,60        | 0,62        | 0,66        | -5,73                   | 4,49        | -0,09        | 2,56        |
| Algarve            | 0,65        | 0,46        | 0,78        | 0,70        | 0,69        | -5,12                   | 12,87       | -1,64        | -0,36       |
| Açores             | 0,65        | 0,56        | 0,59        | 0,61        | 0,62        | -2,22                   | 1,53        | -0,79        | 2,57        |
| Madeira            | 0,64        | 0,55        | 0,63        | 0,67        | 0,68        | -2,38                   | 1,75        | 1,58         | 0,21        |

Source: EUROSTAT, June 2003

Note: Employment rate = employment/working age population

*Table III.3 - GVA per worker*

|                    | 1980        | 1986         | 1992         | 1999         | 2001         | Growth average rate (%) |             |             |             |
|--------------------|-------------|--------------|--------------|--------------|--------------|-------------------------|-------------|-------------|-------------|
|                    |             |              |              |              |              | 1981-1986               | 1987-1991   | 1992-1998   | 1999-2001   |
| <b>Portugal</b>    | <b>4,53</b> | <b>10,99</b> | <b>14,46</b> | <b>17,48</b> | <b>17,81</b> | <b>16,31</b>            | <b>5,68</b> | <b>2,69</b> | <b>1,34</b> |
| Norte              | 4,62        | 11,63        | 14,74        | 14,66        | 15,25        | 17,06                   | 5,23        | -0,52       | 2,32        |
| Centro             | 9,81        | 23,98        | 17,83        | 14,19        | 14,36        | 16,49                   | -3,10       | -4,56       | 0,83        |
| Lisboa e V.do Tejo | 2,37        | 5,21         | 13,59        | 22,04        | 22,28        | 14,46                   | 18,86       | 8,75        | 1,01        |
| Alentejo           | 1,18        | 3,82         | 10,70        | 16,10        | 15,93        | 22,63                   | 19,74       | 8,65        | -0,56       |
| Algarve            | 1,19        | 3,94         | 8,73         | 16,57        | 17,74        | 23,02                   | 15,38       | 11,57       | 3,43        |
| Açores             | 4,92        | 10,71        | 13,82        | 15,60        | 15,22        | 14,20                   | 5,53        | 1,55        | -0,53       |
| Madeira            | 5,26        | 12,09        | 15,44        | 18,32        | 17,74        | 15,25                   | 6,42        | 1,03        | 0,54        |

Source: EUROSTAT, June 2003

Note: Values in thousand euros

Table IV.1 - Gross Domestic Product per capita

|                       | Constant | TF        | TF <sub>t-1</sub> | R <sup>2</sup> |
|-----------------------|----------|-----------|-------------------|----------------|
| Norte                 | 3153,34  | 29,34     |                   | 0,6565         |
|                       | [0,00]*  | [0,00]*   |                   |                |
|                       | 3387,19  | 42,42     | -16,88            | 0,6398         |
|                       | [0,00]*  | [0,424]   | [0,772]           |                |
| Centro                | 7421,65  | -1,94     |                   | 0,0046         |
|                       | [0,00]*  | [0,765]   |                   |                |
|                       | 7840,58  | 64,65     | 77,25             | 0,0873         |
|                       | [0,00]*  | [0,347]   | [0,31]            |                |
| Lisboa e Vale do Tejo | -470,87  | 115,2     |                   | 0,9508         |
|                       | [0,224]  | [0,00]*   |                   |                |
|                       | -330,77  | -49,3     | 179,06            | 0,9628         |
|                       | [0,366]  | [0,419]   | [0,013]*          |                |
| Alentejo              | 323,93   | 18,72     |                   | 0,8789         |
|                       | [0,322]  | [0,00]*   |                   |                |
|                       | 334,07   | -26,18    | 50,82             | 0,9199         |
|                       | [0,245]  | [0,068]** | [0,004]*          |                |
| Algarve               | -829,73  | 45,99     |                   | 0,9474         |
|                       | [0,009]* | [0,00]*   |                   |                |
|                       | -739,67  | -13,04    | 63,83             | 0,9663         |
|                       | [0,01]*  | [0,469]   | [0,003]*          |                |
| Açores                | 2617,02  | 14,54     |                   | 0,7687         |
|                       | [0,00]*  | [0,00]*   |                   |                |
|                       | 2816,9   | 13,32     | -0,6              | 0,7644         |
|                       | [0,00]*  | [0,417]   | [0,976]           |                |
| Madeira               | 3104     | 30,26     |                   | 0,8102         |
|                       | [0,00]*  | [0,00]*   |                   |                |
|                       | 3280,8   | 15,35     | 15,42             | 0,8096         |
|                       | [0,00]*  | [0,665]   | [0,7]             |                |

Notes: t-statistic (in brackets) significant at \*1%, \*\*5% and \*\*\*10%; TF means Total Funds

Table IV.2 - Employment rate

|                    | Constant | TF         | TF <sub>t-1</sub> | R <sup>2</sup> |
|--------------------|----------|------------|-------------------|----------------|
| Norte              | 0,6      | 0,00       |                   | 0,51           |
|                    | [0.00]*  | [0.00]*    |                   |                |
|                    | 0,59     | 0,002      | -0,001            | 0,5416         |
|                    | [0.00]*  | [0,233]    | [0,0425]*         |                |
| Centro             | 0,64     | 0,0029     |                   | 0,1879         |
|                    | [0.00]*  | [0,044]*   |                   |                |
|                    | 0,63     | 0,0024     | -0,0023           | 0,3165         |
|                    | [0.00]*  | [0,110]*** | [0,163]           |                |
| Lisboa e V.do Tejo | 0,57     | 0,002      |                   | 0,7604         |
|                    | [0.00]*  | [0.00]*    |                   |                |
|                    | 0,56     | 0,003      | -0,0014           | 0,7737         |
|                    | [0.00]*  | [0,23]     | [0,598]           |                |
| Alentejo           | 0,596    | 0,00       |                   | 0,0045         |
|                    | [0.00]*  | [0,768]    |                   |                |
|                    | 0,579    | 0,0011     | -0,0012           | 0,085          |
|                    | [0.00]*  | [0,331]    | [0,374]           |                |
| Algarve            | 0,571    | 0,0007     |                   | 0,2084         |
|                    | [0.00]*  | [0,033]*   |                   |                |
|                    | 0,555    | 0,0022     | -0,0015           | 0,2427         |
|                    | [0.00]*  | [0,457]    | [0,632]           |                |
| Açores             | 0,6      | -0,00004   |                   | 0,0205         |
|                    | [0.00]*  | [0,525]    |                   |                |
|                    | 0,5944   | 0,0008     | -0,0009           | 0,0911         |
|                    | [0.00]*  | [0,209]    | [0,2]             |                |
| Madeira            | 0,58     | 0,00045    |                   | 0,4333         |
|                    | [0.00]*  | [0.001]*   |                   |                |
|                    | 0,574    | -0,0004    | 0,001             | 0,5277         |
|                    | [0.00]*  | [0,742]    | [0,458]           |                |

Notes: t-statistic (in brackets) significant at \*1%, \*\*5% and \*\*\*10%; TF means Total Funds

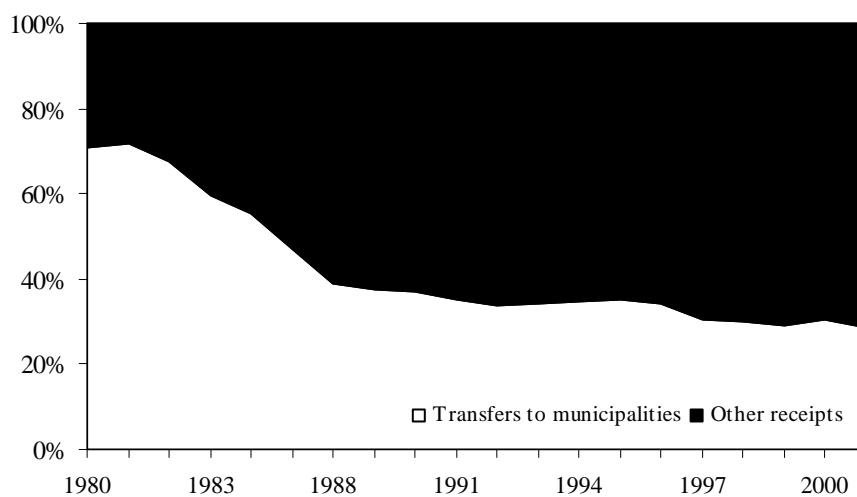
Table IV.3 - Gross Value Added per worker

|                    | Constant | TF       | TF <sub>t-1</sub> | R <sup>2</sup> |
|--------------------|----------|----------|-------------------|----------------|
| Norte              | 8,564    | 0,052    |                   | 0,47           |
|                    | [0.00]*  | [0.00]*  |                   |                |
|                    | 9,24     | 0,027    | 0,0203            | 0,4336         |
|                    | [0.00]*  | [0,839]  | [0,891]           |                |
| Centro             | 19,1     | -0,0187  |                   | 0,0561         |
|                    | [0.00]*  | [0,289]  |                   |                |
|                    | 20,3     | 0,085    | -0,124            | 0,1374         |
|                    | [0.00]*  | [0,648]  | [0,547]           |                |
| Lisboa e V.do Tejo | 0,436    | 0,217    |                   | 0,928          |
|                    | [0,619]  | [0.00]*  |                   |                |
|                    | 0,888    | -0,17    | 0,42              | 0,9462         |
|                    | [0,289]  | [0,225]  | [0,011]*          |                |
| Alentejo           | 1,56     | 0,046    |                   | 0,8268         |
|                    | [0,12]   | [0.00]*  |                   |                |
|                    | 1,649    | -0,091   | 0,155             | 0,8881         |
|                    | [0,061]  | [0,035]* | [0,003]*          |                |
| Algarve            | -1,024   | 0,096    |                   | 0,9378         |
|                    | [0,132]  | [0.00]*  |                   |                |
|                    | -0,669   | -0,057   | 0,1641            | 0,9657         |
|                    | [0,228]  | [0,141]  | [0,001]*          |                |
| Açores             | 8,177    | 0,0325   |                   | 0,6053         |
|                    | [0.00]*  | [0.00]*  |                   |                |
|                    | 8,68     | 0,019    | 0,013             | 0,59           |
|                    | [0.00]*  | [0,742]  | [0,844]           |                |
| Madeira            | 9,387    | 0,0554   |                   | 0,5887         |
|                    | [0.00]*  | [0.00]*  |                   |                |
|                    | 9,974    | 0,0492   | 0,00198           | 0,5715         |
|                    | [0.00]*  | [0,659]  | [0,987]           |                |

Notes: t-statistic (in brackets) significant at \*1%, \*\*5% and \*\*\*10%; TF means Total Funds

## Appendix B - Figures

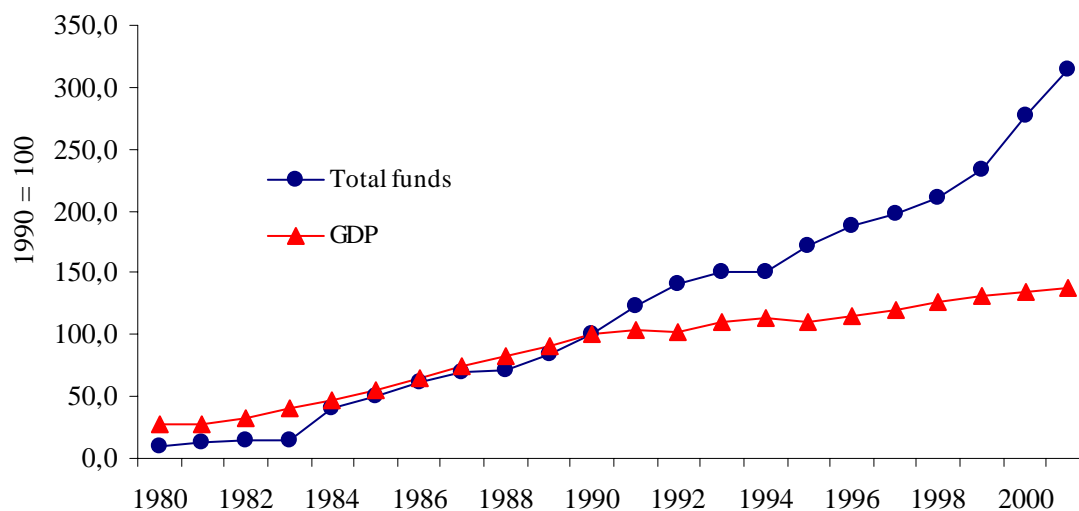
*Figure II.1 - Partition of municipalities' receipts*



Sources: Local finance law; Orçamentos de Estado, DGO-MF

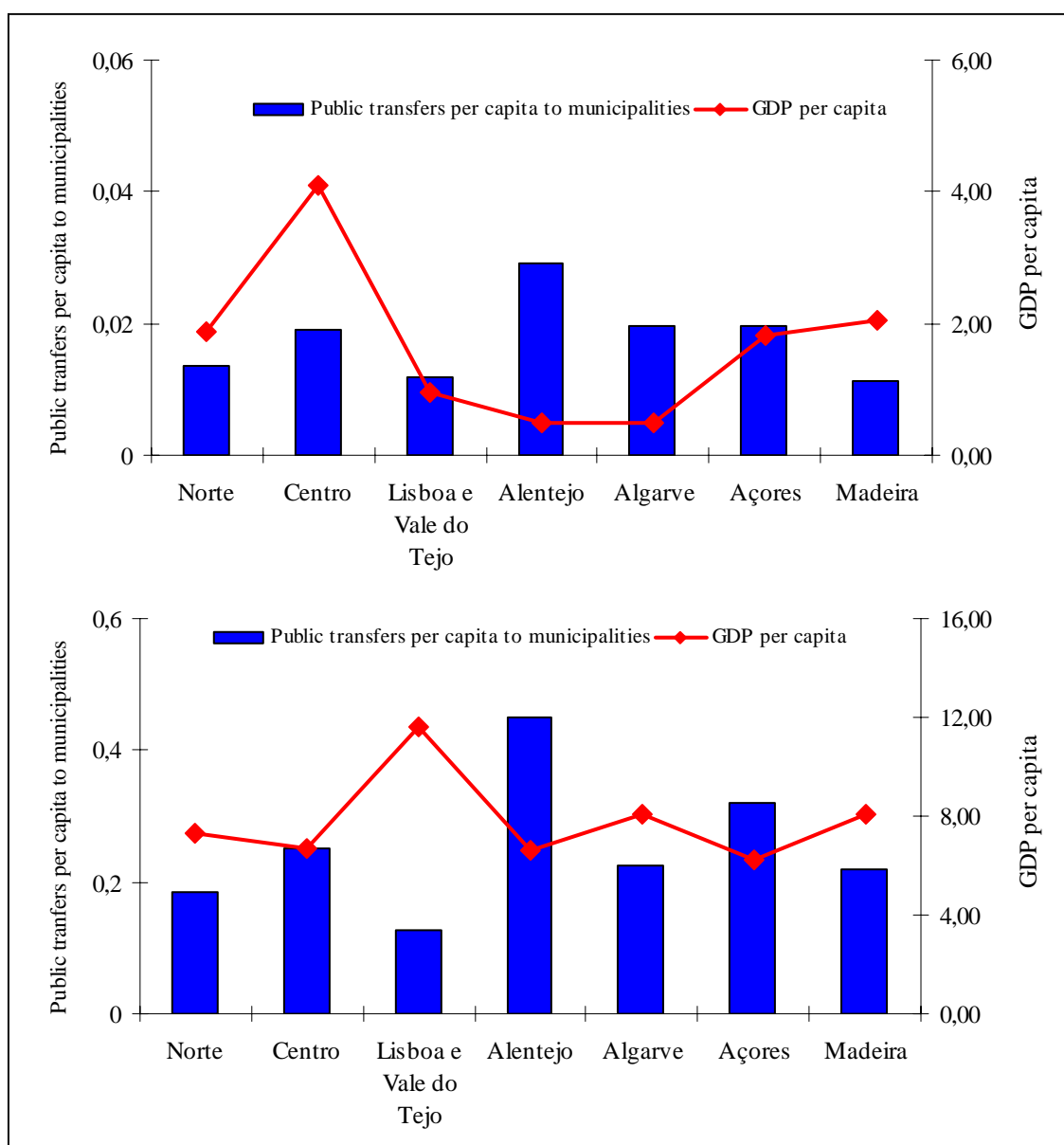
Note: There is no available data for municipalities' receipts in 1994 and 1995

*Figure II.2 - Relation Central Government-municipalities*



Sources: EUROSTAT, June 2003; Orçamentos de Estado, DGO-MF

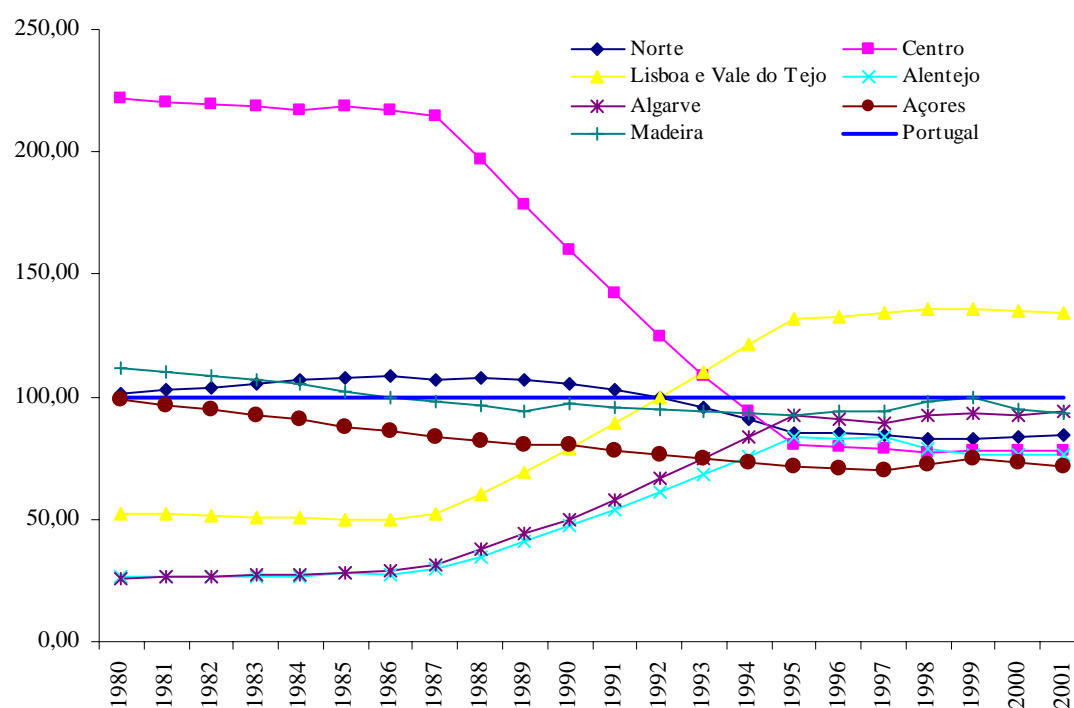
Figure II.3 - Public transfers to municipalities and GDP per capita, 1980 and 2001



Sources: EUROSTAT, June 2003; Orçamentos de Estado, DGO-MF

Notes: In 2001 public transfers per capita include Municipal Cohesion Fund, Municipalities' General Fund, Parish Financing Fund and item c)

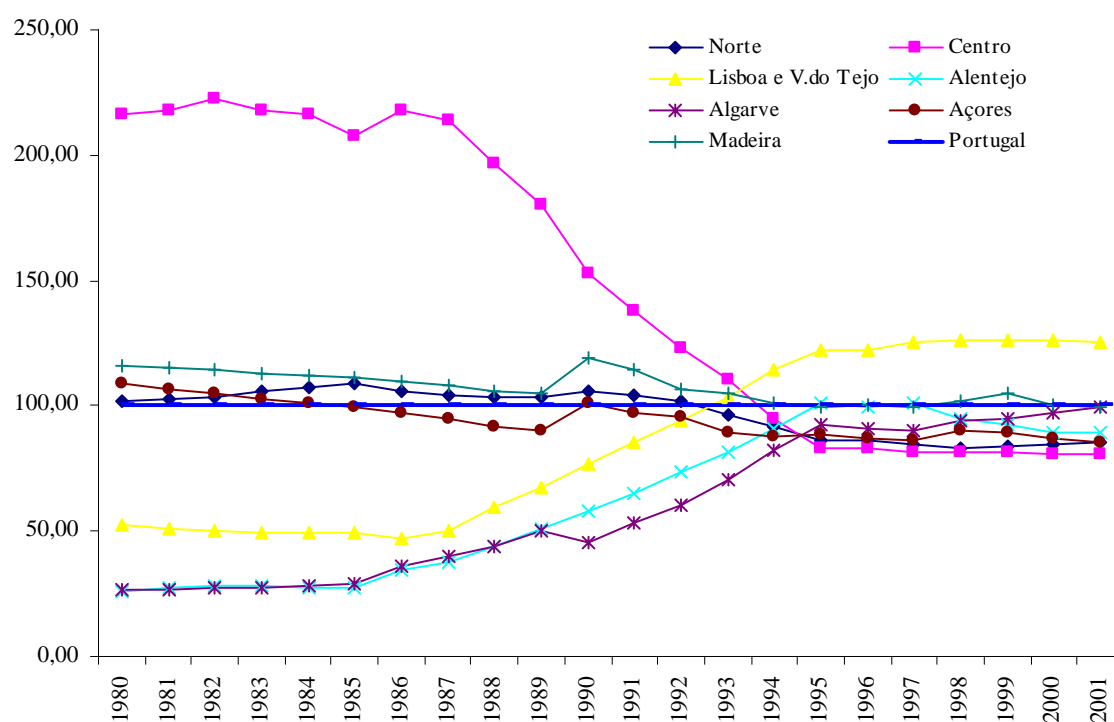
Figure III.1 - GDP per capita in the Portuguese NUTS II regions



Source: EUROSTAT, June 2003

Note: Portugal = 100

Figure III.2 - GVA per worker in the Portuguese NUTS II regions



Source: EUROSTAT, June 2003

Note: Portugal = 100



Figure IV.1 - Receivers group vs. non receivers group

| 1980-86             |       | Transfers to Municipalities |                               |
|---------------------|-------|-----------------------------|-------------------------------|
|                     |       | Below                       | Above                         |
| Economic Indicators | Below | Lisboa e Vale do Tejo       | Alentejo<br>Algarve<br>Açores |
|                     | Above | Norte<br>Madeira            | Centro                        |

| 1987-91             |       | Transfers to Municipalities |                               |
|---------------------|-------|-----------------------------|-------------------------------|
|                     |       | Below                       | Above                         |
| Economic Indicators | Below | Lisboa e Vale do Tejo       | Alentejo<br>Algarve<br>Açores |
|                     | Above | Norte                       | Centro                        |

| 1992-98             |       | Transfers to Municipalities |   |
|---------------------|-------|-----------------------------|---|
|                     |       | Below                       | Above                                   |
| Economic Indicators | Below | Norte                       | Alentejo<br>Algarve<br>Açores<br>Centro |
|                     | Above | Lisboa e Vale do Tejo       |   |

| 1999-01             |       | Transfers to Municipalities |  |
|---------------------|-------|-----------------------------|--|
|                     |       | Below                       | Above  |
| Economic Indicators | Below | Norte                       | Alentejo    Centro<br>Algarve    Açores<br>Madeira |
|                     | Above | Lisboa e Vale do Tejo       |  |

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