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A System of Regionalized Public Accounts for Spain. Methodology and Results for 2005*

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Summary

This paper develops a methodology for the construction of a System of Regionalized Public Accounts (SRPA) using a burden-benefit approach and applies it to the year 2005. The SRPA provides a detailed picture of the regional distribution of the tax burden and of the benefits arising from public expenditure and can be used to make homogeneous comparisons across regions in terms of many budgetary aggregates. This new statistical tool allows a much richer analysis of the regional incidence of public sector activity than the standard approach based on the calculation of regional net fiscal balances that has been used in many previous studies.

Keywords: Spain, regional fiscal balances, regionalized public accounts.

Clasification JEL: H10, H60.

1. Introduction

One of the key recurring themes in the Spanish political debate has to do with the fairness of the regional distribution of public expenditure and the tax burden. The controversy has been particularly intense and bitter in Catalonia, where the growing perception among the population that the region has been fiscally mistreated for decades by the Central Government has played an important role in the rise of pro-independence sentiment. Although

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with considerable less intensity, the topic is also present in the public debate in practically all the other Spanish regions. In each one of them, public opinion tends to focus on those aspects of fiscal relations with the Central Administration that are perceived as unfair or discriminatory from a local perspective, quite often without a documented basis. To a large extent, however, this is the fault of the successive Central Governments because, independently of their political sign, they have never made a determined effort to make available to the public the information that would be required to undertake a systematic analysis of the regional incidence of their tax and expenditure programs –a facet of their activities which should not be exempted from the control and scrutiny mechanisms that are standard in a democratic country.

The limited information on the subject that has been available to the public has generally come from studies on *regional fiscal balances* [1]. These studies have focused almost exclusively on the calculation of the net fiscal balances of the regions or *autonomous communities* with the Central Government, that is, on the difference between the benefits the residents of reach region derive from the activities of the Central Administration and their fiscal contribution to its financing. This approach suffers, in our view, from a fatal flaw: the net fiscal balance of a region is a rather uninformative figure because it is obtained through the indiscriminate aggregation of fiscal flows that pursue very different objectives, proceeding in a way that almost inevitably leads us to evaluate the activities of the Central Administration in terms of a single criterion –its net territorial incidence– whose relevance is highly questionable because it has little or nothing to do with the objectives of most public policies.

The main objective of the present study is to compile, organize and present in as useful a form as possible the data required to evaluate the rationality and fairness of the regional distribution of taxes and public expenditure. For reasons we have already noted, this requires us to go beyond the calculation of regional fiscal balances. What we need is a set of regionalized public accounts that will allow us to make valid comparisons across territories for the largest possible number of homogeneous tax and expenditure aggregates. Such accounts, moreover, have to be organized in a way that will help us identify those budget headings that do respond to a regional logic, separating them from those in which territorial incidence can be, at most, a secondary consideration, and must allow us to quantify the impact of each program or group of them on aggregate fiscal balances, making it possible to break up each region's aggregate balance into a series of components that can be valued separately. In the end, these calculations should allow us to decompose regional fiscal balances into two parts: one that should not worry us because it is only the result of applying uniform tax and benefit rules to populations with different demographic and economic characteristics, and a second one that should indeed concern us because it may reflect differences in the treatment of similar individuals that would clash with basic notions of horizontal equity and with the principle of equality enshrined in our Constitution.

In this paper we develop a methodology for the construction of such a System of Regionalized Public Accounts (SRPA from now on) and illustrate its application with data from the year 2005. We have chosen this year because it has already been analyzed in several previous studies of regional fiscal balances, a fact that has simplified the data collection process and has allowed us to focus more on methodological issues. On the other hand, 2005 is also sufficiently close as to make us think that our results are still valid at present, at least in qualitative terms. Our more recent work for the year 2011 (DBU, 2014b) confirms that it is indeed so.

The paper is divided into two large blocks, complemented by a series of appendices that are available on the web (in Spanish) as DBU (2014a). The first block of the paper (sections 2 to 4) deals with methodological issues. It describes in detail the structure of the SRPA and the basic criteria that have been used to impute public revenues and expenditures to the different regions. The second block (sections 5 to 10) summarizes the main results of the analysis and section 11 concludes. The Appendices provide a detailed discussion of the regional imputation of public revenues and expenditures and of the adjustments we have introduced to overcome asymmetries in the distribution of competences across administrations in a way that facilitates comparisons across regions. The paper is accompanied by an Excel file with the detailed results of the exercise that is available at: http://www.fedea.net/hacienda-autonomica/

2. A System of Regionalized Public Accounts

As has already been noted in the introduction, the main objective of the regionalized public accounts that are constructed in this paper is to facilitate an informed discussion of the fairness and rationality of the regional distribution of the burdens and benefits that are generated by the Spanish public sector. This goal dictates some key characteristics of the design of such accounts. First of all, since we are talking about equity issues, the allocation of public revenues and expenditures is undertaken form a burden-benefit perspective. That is, the only relevant consideration for the imputation of tax revenues and public expenditures across autonomous communities is the place of residence of the citizens in whose benefit public policies are designed and undertaken and of the taxpayers who ultimately bear the burden of the taxes that finance such policies. From this perspective, the location of the administrative units that provide or manage such services or that of the production facilities of the enterprises that supply intermediate inputs used in the production of such services is irrelevant. This would not necessarily be true if we were working on the regionalization of the National Accounts or if we were interested on the effects of public procurement on regional employment, but this is not the case.

Second, our accounts should not lead us to mix budget items of different nature in terms of their relation to the territory in a way that might force us to evaluate them using a logic that is foreign to them. It is clear, for instance, that the per capita financing of the different regional administrations, or per capita expenditure in police protection in each jurisdiction are relevant variables because they determine the level of provision of certain services that is enjoyed on average by the residents of different territories. Hence, cross-regional comparisons in terms of such variables make sense and are of considerable interest from an equity point of view because they may alert us of the existence of differences in the treatment of groups of citizens with the same rights and similar needs that would, at the very least, require a detailed justification. The same is not true, however, in the case of other variables such as military expenditure, unemployment benefits or farm subsidies per capita within each region. In these cases, the most reasonable presumption is that differences in per capita expenditure across territories simply reflect peculiarities of the relevant services that require them to be localized in certain areas or differences in the characteristics of the different regions or their populations. None of these things are in principle worrisome from the point of view of territorial equity. To avoid mixing different types of spending, the SRPA is constructed around a classification of public expenditure that clearly separates what may be called *properly regionalizable expenditure* from other budget items that are allocated –and should therefore be evaluated– on the basis of criteria that have nothing to do with the territory.

In order to quantify the contribution of the different revenue and expenditure items to aggregate regional fiscal balances, we need to construct such balances in a manner that allows an additive decomposition by programs or groups of programs. This is very easy to do when we work in relative terms. Instead of asking whether a given region pays more than it receives, which only makes sense in the aggregate, we can measure the extent to which each territory is above or below the average in per capita terms and multiply the result of this calculation by its population in order to arrive at a total relative balance which coincides with the (neutralized version of the) standard fiscal balance under certain assumptions regarding the imputation of the Central Government's budget deficit (see section 4 for additional details). The great advantage of this procedure is that it can be applied item by item, both on the expenditure and on the revenue side, in a way that allows us to calculate partial balances that can be used to quantify the impact of each group of programs. It allows us in particular to isolate the fiscal deficit or surplus that is generated in each region by those public programs that do follow a territorial logic, such as regional financing or infrastructure investment, and in which the Central Government does have at least some degree of discretional choice.

Finally, the accounts we want to construct must reflect the peculiar territorial organization of the Spanish administration, which is characterized by a high degree of decentralization and autonomy and by a considerable amount of territorial asymmetry in the allocation of responsibilities within a given level of the administration. Both of these things complicate the analysis.

If we wanted our accounts to capture all public expenditure, decentralization would raise two problems that would be difficult to solve. The first one, purely practical in nature, would have to do with the difficulty of gathering the required information, which is spread among many different sources and with the heterogeneity of accounting and classification standards that exists in such sources, which makes them hard to compare among themselves. The second is a conceptual problem: since regional and local administrations enjoy a high degree of autonomy and can therefore choose to spend their resources in different ways (or set different schedules on devolved taxes), existing differences across regions in terms of the volume of expenditure on any given item (or in terms of tax revenues) could be due at least in part to the existence of different preferences –a phenomenon which, from our perspective, is not problematic.

A reasonable way to avoid both problems is for our accounts to reflect, not the expenditure of regional and local governments, but the resources that are available to them in order to provide the services for which they are responsible (before making use of their autonomy to raise or lower devolved taxes). From an equity point of view, this is the only variable that should concern us because it is the one that determines the overall capacity of each administration to provide services to its residents. On practical grounds, moreover, there is no realistic alternative to this choice, for collecting and homogenizing detailed data on regional and local expenditures would require a truly herculean effort. Hence, we will focus only on the revenues of local and regional governments, a choice that leads us to construct the SRPA from the point of view of a hypothetical "augmented central administration" that would in principle collect all taxes and then channel part of their revenues to regional and local administrations, either through direct transfers or through devolved taxes.

The existence of asymmetries in the allocation of responsibilities within certain administrative levels also tends to complicate things because it makes regional financing aggregates and certain expenditure items not entirely comparable across regions. The problem is that a given service may be managed by the Central, Regional or even Provincial administration depending on the territory we are considering, and would therefore appear, in the absence of appropriate adjustments, in different sections of our accounts in different parts of Spain. To solve this problem, the SRPA introduces a set of adjustments that essentially amount to moving certain expenditure items from one place to another in the case of those regions that have atypical competences or responsibilities. Although the details will be discussed later on, it may be useful to provide a concrete example at this stage. Since Catalonia is the only autonomous community that has assumed the management of the prison system, the Central Government does not spend any money on this service in the region, but it does transfer to the Generalitat (the Catalan regional government) some resources to cover the relevant costs that are channeled through the regional financing system. To avoid comparing apples with oranges, in the case of Catalonia it is necessary to take prison transfers out of general regional financing and add them to expenditure on public security.

As has already been noted, the fiscal autonomy of regional and local administrations also introduces distortions that tend to complicate revenue comparisons across territories. To neutralize this effect, we will generally decompose the yield of regional taxes into two parts: one that will approximate the revenues that would have been obtained under a uniform tax schedule in the entire country, and a second one that will capture the "supplementary tax effort" that each regional administration has decided to ask of its residents. This will allow us to construct net fiscal balances, indicators of regional financing and other aggregates of interest at "equal fiscal effort." For obvious reasons, it has not been possible to introduce a similar adjustment in the case of the taxes managed by the more than 8.000 local administrations that operate in the country.

2.1. Revenue and expenditure headings included in the SRPA and their classification

The public expenditure and revenue aggregates that are analyzed in the present study are summarized in table 1. Expenditure data generally refer to recognized budget obligations and are taken from the Annual Reports on the Results of the General Central Budget (GCB) of 2005 (IGAE, 2006) and the Social Security Budget of the same year (MTAS, 2007). In general we only consider non-financial expenditure, although some large financial operations of particular interest are included in an appendix that constitutes section 6 of the expenditure side of the SRPA.

The Annual Report on the GCB provides data on the revenue and expenditure of the Ministries and most public organisms of the Central Administration. To these figures we add a number of expenditure and revenue items that do not flow through the GCB. These include the revenues and expenditures of certain public organisms (such as the Bank of Spain, the Securities Commission and other regulatory agencies), the investment in infrastructure of certain public enterprises and bodies (such as the airport and port authorities, the railway companies RENFE and FEVE, the railway infrastructure authority ADIF and the concessionaries of toll highways) and those EU grants that are managed directly by the regional administrations. We also include, both on the revenue and on the expenditure side, the tax revenues that accrue to regional and local administrations. This item is treated as part of the revenue of the Central Government that is then transferred to other administrations through the vehicle of devolved taxes.

To avoid double counting, we subtract from Central Government expenditure the internal transfers that take place across its departments and related organisms and enterprises, except for those that go to public organisms and enterprises that are not included in the GCB (such as the public TV network, the postal system and several transportation firms). Transfers to the General Budget of the European Union are also excluded from Central Government expenditure. Hence, we are in effect consolidating the EU administration with the Spanish public sector because it would be impossible to separate them neatly given that the Spanish administrations execute a large number of expenditure programs that are partially funded by EU grants.

On the revenue side, tax revenue data refer to the liquid tax intake, measured on a cash basis, because this is the only revenue measure for which we could find the required information for all of the variables of interest. Revenue data on Central Government taxes, including the component that is devolved to the regional and local administrations, come from the 2003 and 2005 reports on the regional financing system (MEH, 2005 and 2007a) and from MHAP (2012a), which collects information on regional tax revenues that are not included in the GCB. Data on social contributions by civil servants and other workers are taken from the Annual Reports on the GCB and the General Budget of the Social Security System, IGAE (2006) and MTAS (2007), from the annual report of the Public Employment Service (INEM) and from the reports of public servants' associations. Municipal tax revenues come from MEH (2008b) and other sources. Tax revenues include the so-called REF resources that accrue to Canarias due to its special fiscal regime and the intake of the indirect tax (IPSI) that replaces VAT and tariffs in the Ceuta and Melilla. We also take into account the fees charged by the Central Administration and by certain regulatory agencies, and the property and financial income of the Central and Social Security Administrations. The net operating surplus of certain public enterprises that operate various parts of the transportation system are included in the expenditure side of the SRPA with a negative sign in order to integrate them into an aggregate that measures public expenditure on infrastructure and transportation services net of user charges.

Table 1
FISCAL FLOWS THAT HAVE BEEN INCLUDED IN THE SRPA

• *Expenditure:*

= Non-financial expenditure by the Ministries and higher state bodies (the monarchy, parliament, etc), its Autonomous Organisms and certain public organisms that are included in the GCB (chapters 1 to 7 of the expenditure classification used in the public accounts).

- internal transfers across administrations, including transfers to the EU budget.

+ Subsidies to or investments by certain public organisms and enterprises that are not included in the GCB.

+ Expenditure by certain regulatory organisms not included in the GCB (regulatory commissions for securities markets, energy and telecommunications and Bank of Spain)

+ Implicit transfers to regional local administrations through devolved regional taxes and local taxes and user charges

+ EU grants not channeled through the GCB

+ Consolidated expenditure of the Social Security Systems

• *Revenues:*

= Revenues from direct and indirect taxes and tariffs. It includes revenues from Central Government taxes, taxes devolved to the regions and taxes established by the regional governments.

+ social contributions (including those paid by civil servants)

+ local taxes (IBI, IAE, IVTM, IIVTNU e ICIO)

+ Other revenues of the Central Administration: user charges and public prices, proceeds from the sale of goods and services, transfers from certain public organisms and enterprises (e.g. the State Lotteries) and other financial and property income.

+ Fees charged by certain regulatory organisms (CNMV, CMT and CNE) and revenues of the Bank of Spain.

On the revenue side, we include all Central Government taxes, including those that have been entirely devolved to the regions and those whose revenue is shared with regional and local administrations, as well as regional taxes in a strict sense (those established by the regional governments) and local taxes and user charges. As will be seen below, the tax revenues of the autonomous communities and local administrations will also appear on the SRPA as an expenditure item within the heading of regional and local financing. As a result, they will have an effect on net regional fiscal balances only to the extent that the tax burden is shifted to other regions. Hence, these taxes are treated as if they were collected by the Central Government and their revenues were then transferred to regional and local administrations. As already noted, the intake of some of these taxes will be decomposed into two components: a homogeneous component that will try to approximate the revenues that would have been collected under a unique tax schedule for the whole country, and a second component that will reflect the (positive or negative) supplementary fiscal effort of each region's residents.

Table 2 shows the composition of the public revenues we are considering, disaggregated by source of revenue and by receiving administration. In the column corresponding to the autonomous communities (CCAA) we have included their participation in the big shared taxes (personal income tax, VAT and excise taxes) and the intake of the so called "traditional devolved taxes" (estate tax, wealth tax, stamp duties and taxes on games of chance) as well as that of other minor taxes that have been entirely devolved to the regions (vehicle matriculation tax and tax on retail sales of fuel). We also include in this category the revenue of the taxes managed by the so-called *Foral Territories* of Navarre and the Basque Country (after the adjustment that is applied to bring these territories' share of revenues from VAT and excise taxes in line with their consumption). This category includes certain taxes (such as the corporate income tax) that correspond entirely to the Central Government in the rest of Spain.

The column corresponding to the Local Administrations includes these administrations' share of certain national taxes, as well as the main municipal taxes. Finally, the Catholic Church shows up in the table because it receives a share of income tax revenue, as determined by taxpayers, who have the option of assigning a small fraction of their taxes to the Church by ticking a box in their tax forms.

Table 2
CLASSIFICATION OF PUBLIC REVENUES, YEAR 2005
LIQUID TAX INTAKE, THOUSANDS OF EUROS

	Total revenue	% of total	Central Adm.[c]	CC.AA.[d]	Local adm.	Catholic Church
1. Direct taxes	***98,646,065***	***28.46%***	***69,860,681***	***28,095,514***	***548,631***	***141,239***
Personal income tax	59,133,365	17.06%	35,952,948	22,490,547	548,631	141,239
Corporate income tax	34,326,578	9.90%	32,495,275	1,831,303		
Tax on non–resident income	1,402,180	0.40%	1,350,529	51,651		
Estate and gift taxes	2,392,621	0.69%	24,164	2,368,457		
Wealth tax	1,391,321	0.40%	37,765	1,353,556		
2. Indirect taxes	***100,567,884***	***29.01%***	***45,031,175***	***54,192,617***	***1,344,091***	
VAT	55,040,365	15.88%	32,285,029	22,261,538	493,798	
Excise taxes[a]	18,765,698	5.41%	9,973,769	8,593,729	198,201	

Table 2 (*Continued*)
CLASSIFICATION OF PUBLIC REVENUES, YEAR 2005
LIQUID TAX INTAKE, THOUSANDS OF EUROS

	Total revenue	**% of total**	**Central Adm.[c]**	**CC.AA.[d]**	**Local adm.**	**Catholic Church**
Electricity	925,511	0.27%	–52,236	977,747		
Vehicle Matriculation	1,791,165	0.52%	257	1,790,908		
Tariffs	1,485,462	0.43%	1,485,462	0		
Tax on insurance premia	1,402,663	0.40%	1,314,002	88,661		
Stamp duty	15,621,009	4.51%	9,562	15,611,447		
Tax on retail fuel sales	1,180,797	0.34%		1,180,797		
Taxes on games of chance	1,900,357	0.55%	15,330	1,885,027		
REF Canarias[b]	1,460,170	0.42%		808,078	652,092	
IPSI Ceuta and Melilla	135,587	0.04%		135,587		
Taxes established by regions	859,099	0.25%		859,099		
3. Local taxes and user charges	***19,834,969***	***5.72%***			***19,834,969***	
4. Social Contributions	***110,153,027***	***31.78%***	***110,153,027***			
To Social Security	88,192,339	25.44%	802,847			
Unemployment and wage guarantee	19,215,034	5.54%	19,215,034			
To civil servant associations	1,942,807	0.56%	1,942,807			
To public pension scheme	802,847	0.23%	802,847			
5. User charges, fees and other revenues	***17,440,866***	***5.03%***	***17,440,866***			
User charges and proceedings of sales of goods and services	4,141,665	1.19%	4,141,665			
Financial and property income	13,299,201	3.84%	13,299,201			
Total	**346,642,812**	**100.00%**	**242,485,750**	**82,288,131**	**21,727,692**	**141,239**

Notes:
[a] Excise taxes on alcoholic drinks, fuel and tobacco
[b] The Canary Islands' REF resources are shown in gross terms (i.e. before discounting the region's compensation to the Central Government for the suppression of the IGTE, the General Tax on Business Activity) and include the part that corresponds to the local administrations.
[c] Central Administration = Central Government organisms and Ministries and Social Security Administration.
[d] The column corresponding to regions (CCAA) also includes the tax revenue of the provincial tax authorities of the foral regions and some tax revenue of the autonomous cities of Ceuta and Melilla.

Sources:
– Central and regional taxes: MEH (2007a and 2008a) and MHAP (2012a). Liquid tax intake.
– Municipal tax revenues are those corresponding to IBI, IVTM, IIVTNU, IAE e ICIO and are taken from MEH (2008b). Data for Ceuta and Melilla (including IPSI and municipal taxes) are taken from MHAP (2013). Those on the Canary Islands' REF resources come from IGCAC (2006?).
– User charges, fees and other revenues of the Central Administration: includes Social Security and certain regulatory organisms (CMT, CNE, CNMV and Bank of Spain).

Table 3
CLASSIFICATION OF PUBLIC EXPENDITURE, YEAR 2005
RECOGNIZED BUDGET OBLIGATIONS, THOUSANDS OF EUROS

	Thousands euros	% of total
G1. General Administration and Public Goods and Services of National Scope and General Interest	***14,866,455***	***4.5%***
1.1. Higher State Institutions	479,230	0.1%
1.2. Foreign Relations	1,400,013	0.4%
1.3. Defense	8,218,226	2.5%
1.4. Financial, tax and budgetary management	1,828,508	0.6%
1.5. Other services of general interest	808,081	0.2%
1.6. Basic research, other studies and statistics	1,667,907	0.5%
1.7. Economic regulators	464,489	0.1%
G2. Properly regionalizable expenditure	***174,959,261***	***53.3%***
2.1. Homogenized regional financing (for standard functions)	103,407,676	31.5%
At standard fiscal effort	104,163,731	31.7%
Supplementary regional fiscal effort	–756,055	–0.2%
2.2. Local financing	34,773,232	10.6%
a. Provinces and islands	5,934,737	1.8%
b. Municipalities	28,838,496	8.8%
2.3. Productive and environmental infrastructures, transport and communications	14,386,899	4.4%
2.4. Regional aid	6,442,624	2.0%
2.5. Other regionalizable expenditure	15,948,829	4.9%
a. Health care and consumer protection	3,457,354	1.1%
b. Education	702,160	0.2%
c. Justice, prisons, public security and traffic	9,700,830	3.0%
d. Housing and urbanism	898,925	0.3%
e. Culture and sports	1,189,560	0.4%
G3. Social protection	***106,183,619***	***32.3%***
3.1. Pensions, unemployment and other pecuniary benefits	102,995,646	31.4%
3.2. Social services	1,303,196	0.4%
3.3. Support services and administration for Social Security	1,884,776	0.6%
G4. Economic regulation and promotion	***15,499,569***	***4.7%***
4.1. General issues, economics and employment	6,432,897	2.0%
4.2. Agriculture, animal husbandry and fisheries	7,682,205	2.3%
4.3. Industry, energy, tourism and others	1,384,466	0.4%
G5. Interest payments on Central Government debt	***16,964,382***	***5.2%***
G. TOTAL NON-FINANCIAL EXPENDITURE	**328,473,285**	**100.0%**
F6. Selected financial operations	***12,602,374***	

Table 3 shows the breakdown of public expenditure into five categories that have very different objectives and bear very different relations to the territory. The first of these categories includes *public goods and services of national scope and general interest*, that is, things such as defense, international relations or the operating cost of the higher state institutions such as the Crown or the Parliament that benefit all Spanish citizens to the same extent, independently of where they live and independently of where these goods, services and institutions are produced or located. The third item captures expenditure on *social services and benefits*, including pensions and unemployment benefits. These are personal entitlements, with perfectly divisible benefits, that are assigned throughout the country with uniform criteria that have to do with the economic and personal circumstances of each citizen. The fourth group of programs includes expenditure on *economic regulation and promotion*, including subsidies to enterprises and sectors that are assigned in accordance with economic and sectorial criteria. The fifth group includes *interest payments* on the Central Government's debt.

The second section of table 3 contains what we will call *properly regionalizable expenditure*, which can be roughly defined as spending in services or benefits to which citizens have access as a function of their place of residence. This category includes the financing of the regional and local administrations, several national and European regional aid programs, Central Government investment on productive infrastructure (mostly transportation networks) and its expenditure on education, health care and other public goods and services that are consumed collectively at the local and regional level, such as public security and cultural installations. In general terms, we are dealing with the financing of services that must be produced locally and that are either collectively consumed by the population of a given territory or at least cover needs that are linked more closely to the size of the population than to its characteristics. Unlike what happens in relation to the other expenditure categories listed above, these features imply that deviations from equal per capita expenditure across territories are in principle suspect and may alert us of possible inequities in the allocation of public resources. It is true that in some cases, such as regional development programs, it would be illogical to expect an egalitarian allocation of expenditure, but even then, per capita expenditure would still be a relevant piece of information that should be made explicit and evaluated in each case in the light of the program's benefits.

Appendix 1 (DBU, 2014a) contains a detailed listing the budgetary programs that existed in 2005, classified into the different groups we have just described. Some programs that include very different types of expenditures are divided into subprograms that fit into different sections of the SRPA. Table 3 also includes a sixth item that captures selected financial operations, including the purchase of stocks and other financial assets and the granting of loans to enterprises and other entities, such as research institutions. Although these activities are not expenditures in the strict sense of the term, they also consume resources that must be generated by the public sector.

In the remainder of this section we describe the construction of some components of properly regionalizable expenditure that require fairly elaborate adjustments in order to allow homogenous comparisons across regions.

2.2. Regional financing

In order to be truly comparable across regions, data on regional financing need to be homogenized to neutralize the effects of the important asymmetries that exist in Spain in terms of regional responsibilities, as well as those arising from the use regions have made of their capacity to raise or lower devolved taxes. In this section we describe the necessary calculations, distinguishing between *common regime* autonomous communities and the so-called *Foral Terrritories* of Navarre and the Basque Country, which enjoy a very different financing system from the rest of Spain.

Table 4
CONSTRUCTION OF HOMOGENIZED REGIONAL FINANCING, COMMON REGIME AUTONOMOUS COMMUNITIES AND AUTONOMOUS CITIES OF CEUTA AND MELILLA

	Details	Adjustments
Central Govt grants under the regional financing system	Advances for 2005 and liquidation payments for 2003 for the Sufficiency Fund and Health Care Guarantee-net of transfers to the Central Government for negative Sufficiency Fund allocations.	
+ regional participation in taxes shared with the Central Government, homogenized revenues	Regional shares in personal income tax (PIT), VAT and excise taxes, including the one on electricity consumption. For PIT, we use the homogenized or normative revenues provided by the regional financing system.	
+ homogenized revenues from totally devolved taxes	Regional revenues from estate and wealth taxes, taxes on games of chance, vehicle matriculation and retail fuel sales. Homogenized revenues.	
+ Canary Islands' REF resources	REF revenues accruing to the autonomous community of the Canary Islands (rather than to their local administrations), net of the compensation to the Central Gov't for the elimination of the tax on business turnover (IGTE).	
+ Central Gov't expenditure in Ceuta and Melilla	Direct expenditure by the Central Gov't (CG) and the Social Security system on education, health care and social services in Ceuta and Melilla.	Subtract from the corresponding CG expenditure program
+ other revenues of Ceuta and Melilla	Revenues from the tax on production, services and imports (IPSI) and CG compensations linked to this tax.	
- financing for non-standard competences	Advances and liquidation payments from the Sufficiency Fund earmarked for non-standard responsibilities, transferred only to some regions.	Move to the corresponding CG expenditure programs
= financing for homogeneous competences at equal fiscal effort		
+ supplementary fiscal effort	Revenues from taxes created by the autonomous communities + supplementary fiscal effort on devolved taxes.	
= observed financing for homogeneous competences		

Table 4 describes the construction of a homogeneous regional financing aggregate for the common regime regions and, at least approximately, for the autonomous cities of Ceuta and Melilla. First, we consider the revenues of these territories that appear as Central Government grants in the General Central Budget of the year we are considering, that is, the advances of the Sufficiency Fund for 2005 and the final “liquidation” payment for the balance of that Fund and the Health Care Guarantee corresponding to 2003, which were paid, as usual, with a two-year lag in 2005 once all the data needed for the required calculations became available. Next, we add the revenue of devolved taxes, measured with a homogeneous criterion that attempts to approximate the revenue that each region would have obtained with a common tax schedule for the entire country [2]. Within this item we include the advances and liquidation payments corresponding to the important taxes that are shared with the Central Government (personal income tax, VAT and excises) and the revenue from taxes that are entirely devolved to the regions and are not subject to a liquidation process (estate and wealth taxes, stamp duties, taxes on games of chance, retail sales tax on fuel, vehicle matriculation taxes and the Canary Islands REF resources) [3]. Finally, in the case of Ceuta and Melilla we move into regional financing (subtracting it from the original budget program) Central Government’s expenditure on education, health care and social services because such services are managed by the autonomous communities in the rest of Spain. We also add to the revenues of these autonomous cities the intake of the tax on production, services and imports (IPSI) –the indirect tax that replaces VAT and tariff duties in these two North-African cities.

In this manner we obtain a regional financing aggregate at equal or standard fiscal effort from which we need to subtract the resources earmarked for those “singular competences” such as the police, the prison system or the Courts’ personnel that have only been transferred to some autonomous communities. The resources that have been assigned to these responsibilities are moved out of regional financing and into those sections of the SRPA that reflect Central Government expenditure on the same areas in most regions. At this point, we arrive at an indicator of *regional financing for homogeneous competences at equal fiscal effort* that can be directly compared across all common regime regions (and, at least approximately, also for Ceuta and Melilla). Finally, we add to this aggregate those tax revenues that entail a supplementary fiscal effort on the part of the regions to obtain a measure of *observed financing for homogeneous competences.* This aggregate includes the intake of those taxes that have been established by the regions themselves as well as the extra revenues obtained by raising tax rates on devolved taxes. It should be noted that in many cases supplementary fiscal effort is negative, as most regions have used their tax autonomy to reduce rates rather than to raise them.

Table 5 describes the calculations that are required in the case of the so-called Foral Communities of the Basque Country and Navarre. These regions enjoy a special fiscal and financing regime under which they collect practically all taxes, keep the proceeds and pay only a set compensation to the Central Government that should in principle cover the cost of those services that have not been transferred to them. In this case, we start out with the homogenized revenues of devolved taxes (practically all of them except for social contributions). Next we introduce the (in principle) technical adjustments that are required to bring the distribution of revenues from the key indirect taxes between the Central Government and the Foral administrations in line with the relevant consumption of their residents. To arrive at net financing, from the result of the previous calculations we have to subtract the transfers that flow from the Foral Regions to the Central Government to cover their share of the cost of the common services provided centrally. This transfer is known as *el cupo* in the Basque Country and as *la aportación* in Navarre. At this point, we also take into account certain minor transfers across administrations that correspond to financial compensations that were negotiated when certain excise taxes were devolved to the Foral territories.

Table 5
CONSTRUCTION OF HOMOGENIZED REGIONAL FINANCING, FORAL TERRITORIES OF NAVARRE AND THE BASQUE COUNTRY

homogenized revenues from devolved taxes collected by the foral regions + consumption adjustment on VAT and excises	Regional homogenized revenues from devolved taxes, including PIT, Corporate Income Tax, VAT on domestic transactions and excise taxes. Adjustments to adapt revenue shares to shares in the consumption of taxed goods.	
- transfers to the Central Government	Contribution of the foral regions to common services provided by the Central Gov't + negotiated financial compensation for some devolved excise taxes.	
- financing for non-standard competences	Imputed cost of certain competences that are directly financed by the Central Gov't in the rest of Spain.	Move to the corresponding CG expenditure programs
= financing for homogeneous competences at equal fiscal effort		
+ supplementary fiscal effort	Revenues from taxes created by the autonomous communities + supplementary fiscal effort on devolved taxes.	
= observed financing for homogeneous competences		

From the result of these calculations, we need to subtract the estimated costs of a series of competences that have been transferred to the foral regions but not to the common regime territories (or at least to most of them). Two very important ones are the police and tax collection services (including the management of the property registry or *catastro*). A third one has to do with the financing of the local administrations. While in the rest of Spain these administrations receive substantial grants from the Central Government, in the Basque Country and Navarre, the transfers come mostly from the provincial administrations, which are the ones that collect most taxes and then transfer part of those resources to the Central Government and, in the case of the Basque Country, also to the Regional Government. Finally, there is a fairly long list of areas in which Central Government expenditure is zero in the Foral Regions, or at least much lower than in the common regime territories. This situation arises in connection with investment in roads and highways, housing subsidies, social services and non-contributive social benefits and in some programs in the areas of culture, agriculture and other areas.

After subtracting the estimated cost of these competences (see below), we arrive at a measure of regional financing at homogeneous competences and equal fiscal effort that is directly comparable with its counterpart for the common regime autonomous communities. As in these regions, observed financing at homogenous competences is obtained by adding each region's supplementary fiscal effort to regional financing at standard fiscal effort –that is, by adding to the homogenized revenues of devolved taxes the intake of those taxes that have been created by the foral territories and the extra revenue arising from increases in tax rates on devolved taxes– or, more frequently, deducting from the homogenized tax intake the loss of revenue that results from reductions in tax rates.

2.2.1. *Adjustments for atypical competences*

As we have seen, not all autonomous communities have the same competences. Differences across them tend to complicate comparisons in terms of overall regional financing and the level of spending in certain services. To avoid this problem, we have introduced a number of adjustments that essentially consist in moving certain expenditure and revenue items around so that they are in the same section of the SCTP in all regions.

Table 6 shows the main adjustments we have introduced. Starting from the end, we have the case of the autonomous cities of Ceuta and Melilla, where the Central Government is still responsible for the provision of health care, education and social services that in the rest of the country are managed by the autonomous communities. To make the figures for these cities comparable to those for the autonomous communities, we need to add Central Government expenditure on such services (row 7) to "regional" financing, which is where such resources appear in the rest of the country. Proceeding in a similar way but in the opposite direction, Central Government grants earmarked for the financing of certain non-standard competences that have been transferred only to certain autonomous communities, such as the police and the prison system in Catalonia, (row 8) are moved out of regional financing and into the expenditure category that is appropriate in each case.

The first block of adjustments (rows 1 to 6) concerns the Foral regions and is similar to the last correction discussed in the previous paragraph except in that there generally does not exist an explicit official valuation of each competence. The general procedure in such cases consists in imputing to the affected regions a fictional expenditure for the relevant concept such that total per capita expenditure in each region (including both the correction and actual Central Government expenditure whenever it is not zero) should be equal to average expenditure per capita on the same service in the rest of Spain. The total amount of the correction is subtracted from regional financing and added to Central Government expenditure on the relevant concept. In this manner, the adjusted regional financing we calculate for the

Foral Communities is shown net of the cost of financing, at the average level observed in the rest of Spain, those services that don't have a budgetary cost for other regional governments. The regional expenditure on such services is moved to other headings so as to allow homogeneous comparisons regarding certain expenditure items that are managed by the Central Government in some cases and by the autonomous communities or even provincial administrations in other cases.

Table 6
MAIN ADJUSTMENTS FOR NON-STANDARD COMPETENCES

Competences	Affected regions	Valuation criterion/correction
1. Tax collection and property registry	Foral regions	Same total per capita expenditure as in the rest of Spain (STPCE)
2. Local financing	Foral regions	STPCE
3. Housing, culture, highways, education, social services, agriculture….	Foral regions	STPCE with some exceptions
4. Court system, promotion of regional languages	Foral regions	Same per capita expenditure as in the common-regime regions that have assumed the competence
5. Police	Foral regions	Valuation based on the cost of the Catalan police.
6. Non-contributive pensions	Foral regions	Observed expenditure in Foral regions
7. Health, education and social services	Ceuta and Melilla	Move observed Central Gov't Expenditure into regional financing
8. Non-standard competences of common regime autonomous communities	Common regime autonomous communities	Move resources earmarked for non-standard competences from regional financing into the appropriate item

Note: For additional details see section 2.1 of Appendix 2 and the detailed descriptions of the budget programs indicated there.

In some instances, we have additional information that can be used to improve our valuation of non-standard competences. In the case of the court system, the promotion of regional languages or the police (rows 5 and 6), the relevant competences have been transferred also to other common regime territories for which we do have an official valuation that can be used as a reference to estimate their cost in the Foral regions. In the case of the police, the calculation is a bit more complicated (see the discussion of the program AF14 in section 2.1 of Appendix 4 in DBU, 2014a) because we need to take into account the different strengths of the various regional police forces (relative to the size of the relevant population). Finally, in the case of non-contributive pensions, we use the observed cost of the competence for the Foral administration. The reason is that, since in this case the Foral regions simply apply a uniform national law, the volume of expenditure is in principle independent of the Administration that manages the service. The same procedure is also used in the case of the economic benefits for handicapped people that are included in expenditure on social services.

2.3. General Structure of the SRPA

Table 7 summarizes the structure of the SRPA. On the revenue side, we start from the homogenized tax revenues of the Central and Regional Administrations, possibly augmented or diminished by the supplementary fiscal effort of the autonomous communities and the tax reductions arising from the special fiscal regimes that are applied in the Foral Regions, the Canary Islands and Ceuta and Melilla. Next, we incorporate local taxes and user charges, social contributions and other revenues of the Central Administration to arrive at the total revenues of the hypothetical augmented Central Administration with which we are working.

Table 7
GENERAL STRUCTURE OF THE SRPA

I. REVENUE
I1. Homogenized tax revenues of the Central and Regional Administrations
I1.1. Homogenized direct taxes
I1.2. Homogenized indirect taxes
I2. Supplementary regional fiscal effort and tax reductions in Canarias and Ceuta and Melilla
I3. Local taxes and user charges
I4. Social contributions
I5. Other revenues of the Central Administration
I5.1. User charges, public prices and proceeds from the sale of goods and services
I5.2. Other financial and property income
Total revenue at equal fiscal effort = I1 + I3 + I4 + I5
Observed total revenue = (I1 + I3 + I4 + I5) + I2
G. EXPENDITURE
G1. General administration and national public goods and services
G2. Properly regionalizable expenditure
G2.1 Regional financing
Homogenized regional revenues
- resources for non-standard competences of the common regime territories*
+/- other adjustments for non-standard competences: foral regions and Ceuta and Melilla*
= Financing at homogeneous competences and equal fiscal effort
+ supplementary regional fiscal effort
= Observed financing at homogeneous competences
G2.2. Local financing
G2.3. Productive and environmental infrastructure and expenditure on transport
G2.4. Regional aid
G2.5. Other regionalizable expenditure: health, education, public security...
G3. Social protection
G4. Economic regulation and promotion
G5. Interest on the Central Government Debt
Total expenditure = G1 + G2 + G3 + G4 + G5
Total expenditure at equal fiscal effort = total expenditure – supplementary fiscal effort
F6: Selected financial operations
R. Personal redistributions = G3 – I1 – I4

* The amounts that are added to or subtracted from regional financing as part of these corrections come from or are added to other expenditure items.

On the expenditure side, we pay special attention to the construction of an indicator of regional financing at homogeneous competences and equal fiscal effort that can be used to make valid comparisons across all regions, including the Foral Territories. As we have seen, the adjustments for non-standard competences that are required to arrive at this aggregate require different items to be moved from regional financing to other headings or the other way around. We also analyze in some detail the rest of regionalizable expenditure, which is the most interesting budget heading from our perspective since it is here that legitimate concerns about territorial inequities may arise.

3. Imputation criteria for public revenues and expenditures

In order to complete the SRPA we need to allocate the public revenues and expenditures we are considering across the different Spanish regions, including Ceuta and Melilla as an additional territory to be added to the seventeen autonomous communities. Although the literature describes a number of possible approaches to this task, the only one that is appropriate given the paper's objective is, as we have already noted, the *burden-benefit approach*. In this methodology, public expenditure is assigned to the region of residence of its beneficiaries, i.e. the citizens that are the consumers or recipients of the relevant goods, services or pecuniary benefits –and not to its direct producers, who may be the immediate recipients of public expenditure in exchange for their work or for the production of intermediate goods and services but are not in any case the intended final beneficiaries of those services. In the same manner, tax revenues and social contributions are assigned to the region of residence of the taxpayers that ultimately bear the burden of each tax, who are not necessarily those that make the actual payment in the first place and could even reside in a different territory from the one where the taxable transaction took place.

An important qualification to this rule is that public revenues and expenditure are assigned entirely to the residents of Spain (to whom we may refer in occasion as "Spaniards" or "citizens" for the sake of brevity). Those expenditure items whose direct beneficiaries are non-residents ("foreigners") such as foreign aid or benefits for Spanish migrants living in foreign countries, are distributed across all Spanish regions in proportion to their resident population, as measured in the municipal register *(padrón*). The same procedure is followed for the part of the tax revenues of Spanish administrations that are born by non-residents (mostly foreign tourists and the buyers of Spanish exports). The first part of this convention fits well, as will be seen below, with the criterion we have used to allocate those expenditure items that have a uniform effect on the entire population. The second part has been adopted so that the distribution of the taxes born by non-residents will not distort the regional distribution of the fiscal burden that is born by Spanish residents, which is really what concerns us.

Unlike some earlier studies (see for instance IEF, 2006) we have not constructed a second, alternative distribution of revenues and expenditure following the so-called *monetary flow approach*. The use of this allocation procedure is often justified with the argument that it provides a better approximation to the impact of the public sector on the economic activity of the different territories. In our opinion, however, the only relevant thing from the point of view of the discussion that motivates the present study are the direct effects of public programs and not their possible indirect effects on employment and economic activity. Moreover, we seriously doubt that the monetary approach adequately captures such effects, since in most cases the relevant fact would not be where public expenditure materializes, which is the criterion followed under the monetary flow approach, but rather the place where the relevant goods and services have been produced, which is generally not known.

3.1. Imputation criteria for expenditure programs

When it comes to the imputation of public expenditure, it seems natural to start out from a classification of budget programs in terms of the territorial scope of the benefits they generate. For our purposes, it will be convenient to distinguish first of all between *public goods and services of national scope* and other items whose benefits do not in principle extend beyond the territory of an autonomous community. Within the first group, we can then distinguish between public goods and services that benefit all citizens in the same way and those that benefit certain segments of the population more directly or with a greater intensity depending on their place of residence, their age, the sector in which they work or some other characteristic. We will refer to the first category as *public goods and services of national scope and general interest*. This group constitutes section G1 of our expenditure classification and includes classical examples of pure public goods of national scope, with indivisible and non-excludable benefits, such as foreign relations, defense or the political and administrative superstructure of the State, including the bulk of the activities of certain political and administrative ministries. All these expenditure programs will be distributed across regions in proportion to their average population during the year of interest, approximated by the average of beginning and end-of-year resident population according to the municipal population register or *padrón*.

The second category includes those public goods and services of national scope that have an uneven impact on different groups of citizens. This heading includes expenditure programs of very different nature that are generally included in sections G2 and G4 of the SRPA. They are distributed across autonomous communities in proportion to indicators that attempt to approximate the regional distribution of their beneficiaries. In some cases, the relevant population subgroup is spread throughout the entire country but its distribution may differ from that of the overall population. For instance, certain general programs of sectorial Ministries such as Education and Health, including regulation, planning and coordination activities, will be imputed in proportion to the beneficiary population that resides in each territory (e.g. the number of students enrolled in the school system or the age-weighted population variable that is used in Spain to approximate health care expenditure needs). In the same manner, the central services of sectorial economic ministries, such as Agriculture and Industry, and subsidies to certain economic sectors will be imputed in proportion to indicators of sectorial activity, such as Gross Value Added, employment or touristic revenues. Investment in transport infrastructure and expenditure on the management and supervision of transport activities will be allocated taking into account both their localization and the residence of its ultimate beneficiaries, which will be approximated using data on passenger traffic by place of residence and of merchandise traffic by origin and destination. This is discussed in greater detail in Appendix 2 (DBU, 2014a).

We can also include in the same category of expenditure of national scope but possibly uneven impact all those goods and services that have a greater impact on those territories in which they are located or produced but which also contribute to the welfare of residents in other regions through *spillover effects* of various types whose magnitude and distribution are hard to approximate directly. Among other things, we include in this category investment on cultural installations of national interest, such as the Prado Museum or Barcelona's Liceu Theatre. These are investments that benefit all Spaniards to some extent, but much more so those who happen to live close by and therefore have easier access to them and to the economic benefits generated by the tourism they attract. The same is true of many expenditure programs that focus on environmental protection, public security or the Court System. Typically, such programs generate benefits that spread to residents in other areas. Since it is generally very difficult to establish with any precision what part of such benefits corresponds to each territory, in many cases we have decided to adopt a generic solution, to which we will refer as the *standard correction for spillovers*, that attempts to be prudent and hopefully generates reasonable results at least on average. In these cases, 75% of the relevant expenditure will be imputed to the region in which it physically materializes, while the remaining 25% will be distributed across all regions in proportion to their population and GDP, with equal weights.

The remainder of public expenditure (which will correspond mostly to categories G2 and G3 of the SRPA) finances the purchase of goods and services or the provision of cash benefits that benefit individual citizens or groups of them that do not extend beyond the borders of an autonomous community. In many cases, the allocation of the benefits arising from a given expenditure item does not raise any problems. Such is the case, for instance, when we are dealing with local goods or services (e.g. public municipal transportation), transfers to local administrations, cash benefits such as pensions or unemployment subsides, and collective services such as health or education that must be locally produced in each territory.

In other cases, practical or conceptual problems do arise. A very frequent one has to do with the tendency of public accounting systems to impute to Madrid more than its share of certain expenditure items. In some cases, the regional distribution of expenditure that is provided is rather implausible and suggests that certain things are being wrongly assigned to Madrid in their entirety, including transfers to organizations and business firms that have their headquarters in Madrid but operate throughout the country, or operating expenditures of Central Government units which provide general services that should be distributed across all regions. The problem is easy enough to solve when Madrid appears as the only recipient of transfers to national organizations or other such expenditures that clearly generate national benefits, since it then suffices to reclassify the transfer as central services and distribute it across regions in proportion to some appropriate indicator. The problem is a bit more complicated when Madrid does not appear as the only recipient of suspect expenditure but it is assigned a disproportionately large share of it. In such cases, we proceed as follows. First, we calculate average expenditure per capita in the other autonomous communities (possibly excluding the Foral Regions, depending on the nature of the program being considered). Next, we multiply this figure by Madrid's population to obtain an estimate of the expenditure that would correspond to Madrid per se. The remainder of the expenditure originally attributed to Madrid is moved to central services and distributed across all regions with the criterion that seems more appropriate in each case.

A type of expenditure that we often encounter captures the operating costs of administrative units that provide central and support services to Ministries and other organisms. These staff units generally perform a double function. On the one hand, they support other programs whose benefits can be allocated across regions, such as pension or unemployment benefits and infrastructure investments, and on the other, they perform functions that can be considered public goods of national scope, including planning and the preparation of legislation, the gathering and dissemination of statistics and coordination with other national and foreign administrations and with international organisms. Given this double function, one part of their expenditures will be allocated in proportion to the regionalized expenditure of the relevant organism, and the rest will be distributed in proportion to some general indicator of the location of the beneficiaries of the unit's work, which may be based on population, value added or employment.

Table 8 summarizes the criteria we have used to distribute across regions the different types of expenditure programs and the main sources of information used in each case. In Appendix 2 (DBU, 2014a) we provide a discussion of the programs that are included in each area and of the relevant allocation criteria. Appendix 4 (DBU, 2014a) includes a detailed description of how each program has been distributed across regions.

Table 8
ALLOCATION CRITERIA AND MAIN SOURCES AND INDICATORS USED TO REGIONALIZE PUBLIC EXPENDITURE

Group of programs	Allocation criteria and indicators	Indicator/source
G1. Gral. Administration and public goods and services of national scope & gral. interest	Benefit all citizens equally; resident population	Avge. population, municipal register (INE, 2013a)
G2. Regionalizable expenditure		
2.1. Regional financing	Region that receives transfers from the Central Gov't or revenues from devolved taxes	LIQFINAUT, MHAP (2012a), MEH (2008a), SGCAyL
2.2. Local financing	Region of the local administration that receives the transfers or tax revenues	LIQFINLOC, MEH (2008b), SGCAyL

Table 8 (*Continued*)
ALLOCATION CRITERIA AND MAIN SOURCES AND INDICATORS USED TO REGIONALIZE PUBLIC EXPENDITURE

Group of programs	Allocation criteria and indicators	Indicator/source
2.3. Infrastructure and transportation	Location of investment + indices of passenger traffic (by region of residence) and merchandise traffic (by origin and destination), except for expenditure on local transportation (subways and other local public transport).	SICOP, Annual report of the Ministry of Public Works (MF, 2006), ENTUR
2.4. Regional aid	Region that benefits from the aid or residence of its beneficiaries	MEH (2008a), SICOP, IRMC
2.5. Other regionalizable expend.		
a. Health care and consumer protection	Location of the expenditure and equivalent population for purposes of health care, for general and support services	SICOP, SICOSS, Min. of Health, annual reports of civil servant mutual aid associations
b Education and training	Location of the expenditure, school enrollment and school-age population for general and support services	SICOP, Min. of Education
c. Court System, Prisons, public security and traffic	Location of expenditure with standard correction for spillovers whenever relevant, personnel of the Courts and police. Total population for general and support services	SICOP, JUST, Min. of the Interior, SGCAyL
d. Housing and urban planning	Location of expenditure	SICOP, Min. of Public Works
e. Culture and sports	Location of expenditure with correction for spillovers in some cases. Total population for some programs of national scope	SICOP, Min. of Culture, IGAE
G3. Social protection		
3.1. Pensions, unemployment and other cash benefits	Residence of the beneficiaries	SICOSS, SICOP, SPEE, IMSERSO, Reports of civil servants' associations
3.2. Social services	Residence of the beneficiaries	SICOP, SICOSS, IMSERSO
3.3. General and support services	In proportion to the relevant expenditure in other subsections of G3	
G4. Economic regulation and promotion		
4.1. General issues	Location of expenditure, employment, population, Gross Value Added (GVA)	SICOP, SPEE, CRE
4.2 Agriculture, animal husbandry and fisheries	Residence of beneficiaries of grants and in its absence location of subsidized production. Sectorial GVA for general services and some programs of national scope	SICOP, CRE, Min. of Agriculture, MEH (2008a)
4.3. Industry, commerce, energy, tourism and others	Residence of beneficiaries of grants and in its absence location of subsidized production. Sectorial GVA for general services and some programs of national scope	SICOP, CRE, Min. of Industry and Commerc

Table 8 (*Continued*)
ALLOCATION CRITERIA AND MAIN SOURCES AND INDICATORS USED TO REGIONALIZE PUBLIC EXPENDITURE

Group of programs	Allocation criteria and indicators	Indicator/source
G5. Interest on Central Gov't debt	In proportion to regionalized public expenditure that may have been financed in parte with Central Gov't debt. We exclude the tax revenues of local and regional administrations, grants from the EU and investment from public enterprises	

Key:
CRE = Regional Accounts (INE, 2013).
ENTUR = Touristic surveys, FAMILITUR and FRONTUR (Instituto de Estudios Turísticos, 2006 a, b y c).
IGAE = General Controller of the Central Administration (information provided by).
IMSERSO = Institute for Old Age and Social Services (information provided by).
IRMC = Institute for the Restructuring of Coal Mining and the Development of Mining Areas.
JUST = Statistics of the Justice System (La justicia dato a dato. Año 2005. Estadística Judicial) (CGPJ, 2006).
LIQFINAUT = Annual report on the results of the regional financing system (MEH, 2005 y 2007a).
LIQFINLOC = Annual report on the results of the regional financing system (MEH, 2007b y c).
SICOP = Accounting information system of the Central Administration.
SICOSS = Accounting information system of the Social Security Administration.
SGCAyL = General Secretariat for Coordination with Local and Regional Administrations (information provided by).
SPEE = Central Public Employment Services (information provided by).

3.2. Imputation criteria for public revenues

There is a well developed theory of tax incidence that can help us choose reasonable assumptions regarding the distribution of the effective burden associated with the different taxes that make up the Spanish fiscal system. The most frequently used assumptions in the fiscal balances literature may be summarized as follows: direct taxes on households are not shifted (i.e. are borne by those who pay them in the first place), social contributions fall on workers, indirect taxes on consumers and the corporate income tax is shared by the owners of capital, consumers and workers. Relying on these hypotheses, the total revenue of each tax at the national level is distributed across regions in proportion to one or several indicators that summarize the incidence assumptions that seem more adequate in each case, ignoring completely the available information on the geographical distribution of tax revenues according to their point of collection in all cases in which taxes may be shifted [4].

Our incidence assumptions are summarized in table 9. Table 10 shows the main data sources we have used to regionalize the revenues of the Spanish public administrations.

The most complicated part of the regionalization of public revenues has to do with indirect taxes. Revenues linked to these taxes (and part of corporate tax revenues) are regionalized using various indicators of what is called for short in table 8 *final consumption by region of residence*. These indicators (whose construction is discussed in detail in Appendices

5 and 6 of DBU, 2014a) summarize the geographical distribution of those flows of final private and public consumption that bear different indirect taxes, calculated with criteria that attempt to be coherent with the logic of the burden-benefit approach. Thus, the expenditure of Spanish households (or more precisely, those who are residents of the country) that directly or indirectly bears the tax is distributed according to their region of residence, while the relevant expenditure of non-residents (including spending in Spain by foreign tourists and the purchase of Spanish exports abroad) is distributed among all Spanish regions in proportion to their resident populations so as not to distort the distribution of the burdens that are born by residents.

Table 9
TAX INCIDENCE ASSUMPTIONS AND INDICATORS USED TO REGIONALIZE PUBLIC REVENUES

Tax	Incidence assumptions	Indicator
1. Direct taxes		
Personal income tax	No shifting: born by the original taxpayer	Tax witholdings and final payments by region of residence of the taxpayer
Corporate tax	Consumers 1/3 Capital 1/3 Workers 1/3	Final consumption by region of residence, dividends and similar payments by enterprises by residence of recipients private sector wage bill by region
Devolved direct taxes (estate and wealth taxes)	Original taxpayer	Regionalized revenues, by region of residence of the taxpayer
Non-resident income tax	Foreign taxpayers	Population
2. Indirect taxes		
VAT	Consumers	Final consumption and purchases of new housing, by region of residence
Excise taxes	Consumers	Final consumption, by region of residence
*Devolved indirect taxes**	Consumers	Final consumption and purchases of used housing, by region of residence
Tariffs and agricultural duties	Consumers	Final consumption, by region of residence
3. Social contributions	Workers	Revenues by region of residence of workers
4. Local taxes	Original taxpayers	Revenues by region where they are collected
5. Other revenues of the Central Administration	Population (with minor exceptions)	Population

* Stamp duties and taxes on retail sales of fuel.

To regionalize indirect tax revenues, we generally proceed in several stages. First, we use data from the input-output matrices to divide the total intake of each tax into a series of items that are collected from different agents or correspond to different types of transactions. Typically, the most important items are those that correspond to direct final consumption and investment (housing purchases) by households. In many cases, however, a significant fraction of revenues comes from final consumption by public administrations or from the purchase of intermediate goods by business firms.

Table 10
MAIN DATA SOURCES USED TO REGIONALIZE PUBLIC REVENUES

Aggregate tax revenue and its distribution:

MHAP (2012a). Recaudación y estadísticas del sistema tributario español, 2000-2010. (Tax revenue statistics).

Agencia Tributaria (AT, 2006). Informe anual de recaudación tributaria. (Annual report on tax revenue).

MEH (2008a). Haciendas Autonómicas en Cifras 2005. (Key figures on regional finances).

MEH (2008b). Haciendas Locales en Cifras, año 2005. (Key figures on local finances).

MEH (2007). Liquidación del sistema de financiación regional. (Annual report on the results of the regional financing system).

Aggregate consumption and consumption of specific goods and services:

Contabilidad Regional de España. INE (2013b) (Spain's Regional Accounts).

Encuesta Continua de Presupuestos Familiares. INE (2013c) (Household Budget Survey).

Instituto de Estudios Turísticos (2006b). EGATUR, Encuesta de Gasto Turístico. (Survey on touristic expenditure).

Liquidaciones de los presupuestos de las AAPP españolas. IGAE (2006), MTAS (2007), IGSS (2013), MHAP (2013 a y b) (Annual Budget reports of the Spanish Public Administrations).

Housing sales

Housing sales by region of residence of the buyer. Consejo General del Notariado through INE.

CRP (2006). Estadística Registral Inmobiliaria.

Domestic and foreign trade

MEC (2013). Datacomex, estadísticas del comercio exterior (Foreign trade statistics).

C-Interreg (2013). Estadísticas de Flujos de Comercio Interregional de mercancías en España (Statistcs on cross-regional merchandise trade flows).

Next, each of these items is distributed across the autonomous communities using indicators based on the available data on the geographical distribution of the relevant consumption flows. Regarding final consumption and housing purchases by households, the Spanish Regional Accounts (*Contabilidad Regional de España* or CRE) provide information on aggregate consumption broken down by region of residence (this is referred to as *regional consumption* as opposed to *interior consumption*) and the National Statistical Institute (INE) has provided us with data on housing purchases by region of residence of the buyer that have originally been collected by the General Council of Notaries. The Household Budget Survey (Encuesta Continua de Presupuestos Familiares, ECPF) provides information on the consumption of specific goods and services, also broken down with a residence criterion. There are also some data, although much less detailed, on the consumption pattern of foreign tourists in the Survey of Touristic Expenditure (EGATUR). Finally, the Survey on Internal Tourism (FAMILITUR) provides information on interregional population flows that we have used to distribute across regions certain consumption expenditures whose breakdown by region of residence is not known with precision.

Tax revenues that are linked to public consumption are allocated in proportion to regionalized indicators of public expenditure subject to tax because the effective burden of such taxes is born by the citizens served by these administrations through higher taxes or services of lower quality. Public consumption indicators are constructed using data on spending by Spanish public administrations on purchases of goods and services and on real investment (chapters 2 and 6 of public expenditure budgets). In general, the consumption of local and regional administrations is imputed to the regions where they operate, while that of the Central Administration is distributed across all regions in proportion to their population (with some corrections that are discussed in detail in section 1.5 of Appendix 5 to DBU, 2014a).

Finally, tax revenues arising from business expenditure on intermediate inputs or capital goods are distributed in proportion to indicators of aggregate final consumption that take into account, in addition to domestic private and public consumption, exports to foreign countries, except in the case of VAT since exports are not subject to this tax in Spain. As in the case of expenditure by foreign tourists while in Spain, taxes linked to exports are distributed across all regions in proportion to their population.

The calculations outlined in the preceding paragraphs are based on homogenized tax revenues. This variable, whose construction is discussed in detail in Appendix 3 of DBU (2014a), tries to approximate the revenue that each tax would raise in each region if they all had applied a common tax schedule that would roughly correspond to the "average schedule" in the common regime territories. Hence, the tax intake that is initially regionalized is a fictional aggregate that is somewhat different from the tax revenue that is actually observed. To estimate the distribution of the observed tax burdens in the case of those taxes whose schedules can be modified by Regional Governments, we need to regionalize the "supplementary revenues" that each of them has obtained by raising or lowering taxes. For this purpose, we have assumed that one part of these supplementary (positive or negative) revenues remains in the region, that a second one corresponds to exports to foreign countries and that the third one is distributed across all regions in the same way as the corresponding homogenized revenues. The weight of these three components is approximated using data on domestic and foreign trade regarding the share of exports to other regions and to other countries in the total production of each region. (See section 5 of Appendix 5 of DBU (2014a) for additional details).

4. The calculation of net fiscal balances

As has already been noted in section 2, the need to develop a measure of fiscal balances that could be additively decomposed by programs or groups of programs has led us to reformulate this concept in relative terms. In this section we describe the calculation of per capita and aggregate relative balances, analyze the relationship between relative balances and those that are generally constructed in the literature and establish some properties of relative balances that turn out to be quite convenient.

Aside from their additive decomposability, it is worth noting that aggregate relative balances add up to zero across regions. This property can be used to neutralize those effects of the business cycle that operate through the budgetary balance of the Central Administration, thereby providing a clearer picture of the redistributive nature of interregional fiscal flows than non-neutralized balances.

Let G_r, T_r and P_r, respectively denote total public expenditure in region r, the tax burden borne by its residents and its total population. We will use lower case letters to denote per capita magnitudes (e.g. $g_r = G_r/P_r$) and we will omit the regional subscript to indicate aggregate magnitudes or average values in Spain as a whole so that, for instance, $P = \sum_r P_r$ and $g = G/P$.

In this notation, the absolute fiscal balance of a region (AFB_r) is given by

$$AFB_r = G_r - T_r, \tag{1}$$

that is, by the difference between the public expenditure imputed to the region and its total tax burden. Notice that the sum of the regional balances defined in this manner is equal to the deficit of the public sector, D (or more precisely, to the difference between the public revenues and expenditures considered in the analysis, which is not necessarily equal to zero). We have, then,

$$\sum_r AFB_r = \sum_r G_r - \sum_r T_r = G - T \equiv D. \tag{2}$$

This property is often considered undesirable because it makes regional fiscal balances very sensitive to the budgetary balance of the Central Administration and may obscure somewhat the redistributive character of interregional fiscal flows. To reestablish the equality between aggregate costs and benefits, the standard neutralization procedure involves the calculation of a hypothetical balanced-budget fiscal balance (NFB_r). This neutralized magnitude is obtained by adjusting revenues upward or expenditure downward so that they are equal to each other. Implicitly, we are imputing the budget imbalance of the Central Administration to the different regions according to the following formula:

$$NFB_r = G_r - T_r - \alpha_r(G - T) \tag{3}$$

where the regional weights used to impute the Central Government's deficit must add up to one ($\sum_r \alpha_r = 1$). Notice that the sum of the neutralized regional fiscal balances is zero since

$$\sum_r NFB_r = \sum_r G_r - \sum_r T_r - \sum_r \alpha_r(G - T) = (G - T) - (G - T) = 0. \tag{4}$$

A standard practice is to define α_r as region r's share in total tax revenue (that is, $\alpha_r = T_r/T$). This choice is often justified with the argument that the deficit will eventually have to be financed through higher taxes and that, as a first approximation, such additional taxes are likely to come from the same regions as current revenues. The procedure, however, is not entirely satisfactory because it brings into the calculation of fiscal balances things that are no longer observed current fiscal flows. If taxes do indeed go up in the future in order to pay for past deficits, this will show up in the fiscal balances of other periods. Moreover, the geographical distribution of tax revenues may have varied significantly by then.

An alternative way to approach the problem consists in computing fiscal balances in relative terms. Following de la Fuente (2000), we define the total relative balance of region r (RFB_r) as the product of its per capita relative balance $(rfbpc_r)$ and its population, where the per capita relative balance is defined as the difference between the net per capita benefits the region derives from the activities of the public sector and the average value of the same magnitude in Spain as a whole. That is,

$$RFB_r = rfbpc_r\, P_r = [(g_r - t_r) - (g - t)]\, P_r = [(g_r - g) - (t_r - t)]\, P_r \tag{5}$$

It is easy to show that total relative balances add up to zero across regions, and that the total relative balance of a given region is equal to its neutralized balance provided the latter is calculated by distributing the Central Government's budget deficit across regions in proportion to their population. Notice that

$$RFB_r = (G_r - T_r) - (g - t) P_r \frac{P}{P} = (G_r - T_r) - (G - T)\frac{P_r}{P} \tag{6}$$

which is equal to (3) provided that $\alpha_r = (P_r/P)$. Summing over regions, r, we now have

$$\sum\nolimits_r RFB_r = \sum\nolimits_r (G_r - T_r) - (G - T)\sum\nolimits_r \frac{P_r}{P} = (G - T) - (G - T) = 0. \tag{7}$$

Finally, let us check that relative balances are additively decomposable over programs (which is the main reason we have chosen to work with this concept in the first place). Let g_{ir} and t_{kr} be the per capita expenditures and tax revenues that have been generated in region r by expenditure program i and tax k. Since $g_r = \sum_i g_{ir}$ and $t_r = \sum_k t_{kr}$, we can write RFB_r as the sum of a series of partial balances, each of which will reflect the contribution of a program or group of programs to the aggregate regional balance as a function of the population of the region and of its per capita treatment in the relevant program:

$$RFB_r = \sum\nolimits_i (g_{ir} - g_i)P_r - \sum\nolimits_k (t_{kr} - t_k)P_r = \sum\nolimits_j rfbpc_{jr}\, P_r = \sum\nolimits_j RFB_{jr} \tag{8}$$

where $rfbpc_{jr}$ is the per capita relative balance generated by budget program j in region r and RFB_{jr} the component of the region r's aggregate fiscal balance that comes from program j.

5. Aggregate results: the distribution of public revenues and expenditure

The details of our results are available in an Excel book that shows the geographical distribution of each of the revenue and expenditure programs included in the 2005 SRPA and of various aggregates of interest. In additional files, the book also shows per capita revenues and expenditure in euros per capita and in indices normalized to 100 for the national average, and the relative per capita and total net balances generated by each program and by different subsets of them [5].

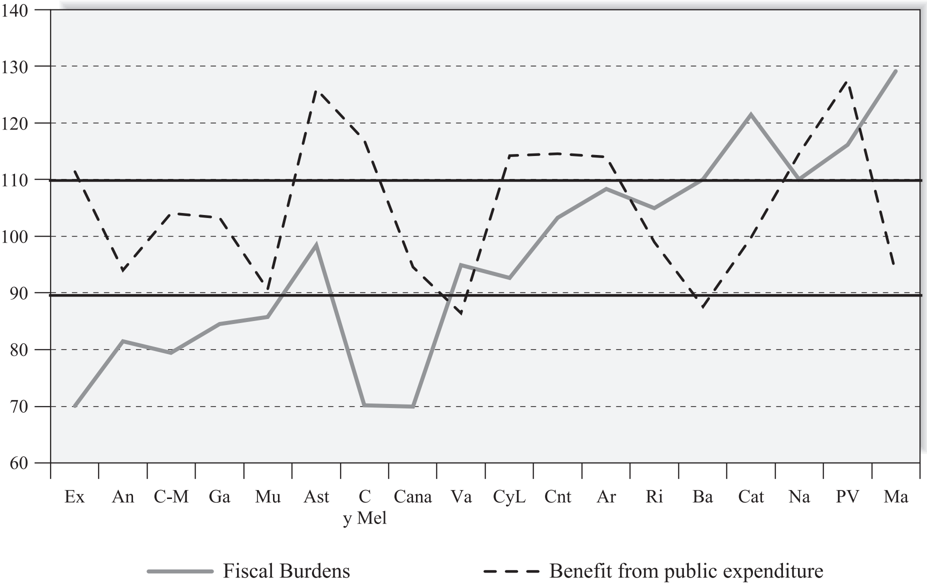

Figure 1. Aggregate indices of per capita fiscal burdens and benefits derived from public expenditure. Spain = 100, year 2005

Note regions arranged by increasing GDP per capita.

In the remainder of the paper we highlight some aspects of these data. Figure 1 summarizes the aggregate results of the analysis. After adding up all expenditure items on one side and all revenue items on the other and dividing each of them by regional population, we have constructed two indices that measure, respectively, the benefits derived from public expenditure and the fiscal burdens per capita of each region, normalizing in each case the corresponding national average to 100. The regions are arranged along the horizontal axis by increasing order of GDP per capita.

As expected, the tax burden generally rises with per capita income while expenditure is not significantly related to this variable. There are, however, some striking deviations from the general pattern. On the revenue side, Ceuta and Melilla, the Canary Islands and the Foral Regions display tax burden indices significantly below what may be expected on the basis of their income. On the expenditure side, it is worth noting that almost two thirds of the regions are outside a 20-percentage point band around the national average. In the upper tail of the distribution we again find Ceuta and Melilla and the Foral Regions, which are now joined by Asturias, Extremadura, Castilla y León, Cantabria and Aragón. At the other end of the distribution, expenditure levels are particularly low in Baleares, Valencia and Murcia.

Table 11
TOTAL REVENUE AND EXPENDITURE AND ABSOLUTE FISCAL BALANCES (MILLIONS OF EUROS)

	Total revenue	Total expenditure	Total absolute balance	Absolute balance/ GDP	Purchases of financial assets	Absolute balance adjusted for financial operations	Adjusted balance/ GDP
Andalucía	50,331	54,996	4,664	3.71%	2,245	6,910	5.50%
Aragón	10,777	10,740	–37	–0.13%	361	324	1.16%
Asturias	8,268	10,026	1,758	8.98%	306	2,064	10.55%
Baleares	8,519	6,430	–2,090	–9.22%	282	–1,808	–7.98%
Canarias	10,835	13,868	3,033	8.28%	562	3,596	9.81%
Cantabria	4,556	4,791	236	2.06%	160	396	3.47%
Castilla y León	18,190	21,256	3,065	6.26%	714	3,779	7.71%
Cast.-La Mancha	11,853	14,723	2,871	9.37%	543	3,414	11.14%
Cataluña	66,924	52,147	–14,778	–8.69%	2,005	–12,773	–7.51%
Valencia	35,166	30,342	–4,824	–5.45%	1,348	–3,476	–3.93%
Extremadura	5,938	8,939	3,001	19.72%	308	3,309	21.74%
Galicia	18,232	21,135	2,902	6.25%	785	3,687	7.94%
Madrid	60,303	41,422	–18,882	–11.75%	1,699	–17,183	–10.70%
Murcia	9,063	9,062	–1	0.00%	384	383	1.65%
Navarra	5,130	5,066	–64	–0.42%	170	105	0.68%
País Vasco	19,290	20,082	793	1.42%	604	1,397	2.50%
La Rioja	2,489	2,223	–265	–3.96%	86	–179	–2.68%
Ceuta y Melilla	777	1,226	449	17.34%	40	489	18.89%
Total	**346,643**	**328,473**	**–18,170**	**–2.00%**	**12,602**	**–5,567**	**–0.61%**

Note: Absolute balance = expenditure – revenues.

Tables 11 and 12 contain the same information but expressed now in terms of total revenues and expenditures and total and per capita relative fiscal balances. The first three columns of table 11 show the calculation of regional absolute balances as the difference between the expenditure and the tax revenues imputed to each region, without any correction, and the fourth column shows absolute balances measured as a percentage of regional GDP. Notice that the sum of the absolute balances is not zero but around –18 billion euros, which basically correspond to the Central Government's budget surplus with the sign changed. The fifth column of the table shows the Central Government's purchases of certain financial assets that are included in appendix F6 of the SRPA, which are distributed across regions in proportion to their population and the last two columns show absolute fiscal balances adjusted for financial operations, i.e. taking into account the purchase of financial assets that are the common property of all citizens [6].

Table 12 shows the per capita and total relative fiscal balances of the Spanish regions and their revenue and expenditure components. As we have seen in section 4, working with relative balances neutralizes the effects of the budget disequilibrium of the Central Government and ensures that the sum of total relative balances is zero. As an indicator of the total volume of redistributive flows across regions, the last row of the table shows the sum of those regional balances that have a positive sign (which is the same as the sum of the negative balances, with the sign changed). According to our calculations, redistributive flows across regions in 2005 added up to around 33 billion euros or 3.6% of Spanish GDP. From the point of view of net recipient regions (those with positive fiscal balances), net inflows amounted to 7.2% of their GDP, whereas net outflows from net contributing regions added up to 7.4% of their GDP.

Table 12
RELATIVE FISCAL BALANCES

	Total balances, millions of euros induced by				Per capita balances, euros induced by		
	Public revenues	Public expenditure	Total	Total/GDP	Public revenues	Public expenditure	Total
Andalucía	11,433	–3,532	7,902	6.29%	1,445	–446	999
Aragón	–838	1,322	484	1.73%	–658	1,039	380
Asturias	137	2,062	2,199	11.24%	127	1,915	2,042
Baleares	–775	–908	–1,684	–7.43%	–782	–916	–1,697
Canarias	4,636	–792	3,844	10.49%	2,339	–400	1,939
Cantabria	–144	611	467	4.09%	–254	1,081	826
Castilla y León	1,456	2,639	4,095	8.36%	579	1,048	1,627
C.-La Mancha	3,083	570	3,654	11.92%	1,611	298	1,909
Cataluña	–11,777	–110	–11,887	–6.99%	–1,667	–16	–1,683
Valencia	1,909	–4,790	–2,881	–3.26%	402	–1,008	–607
Extremadura	2,532	913	3,445	22.64%	2,334	841	3,175
Galicia	3,349	684	4,034	8.69%	1,211	247	1,459
Madrid	–13,577	–2,856	–16,433	–10.23%	–2,268	–477	–2,745
Murcia	1,498	–945	553	2.38%	1,107	–699	408
Navarra	–465	645	180	1.17%	–778	1,079	301
País Vasco	–2,669	4,333	1,664	2.97%	–1,254	2,035	781
La Rioja	–118	–23	–141	–2.11%	–388	–77	–464
Ceuta y Melilla	330	177	507	19.58%	2,327	1,250	3,577
Spain	0	0	0	0	0	0	0
Sum of positive balances			33,026	3.64%			

Note: Absolute balance = expenditure – revenues.

Figure 2 shows the relationship between the relative net balance per capita of each region and its GDP per capita, with both variables measured in thousands of euros. Along with the scatter of points that represent the position of the different territories, we show the regression line that has been fitted to the subsample comprised by the common regime autonomous communities, excluding as atypical observations the Foral Communities and

Ceuta and Melilla. This line describes what we may call the “normal” relationship between income per capita and aggregate regional relative balances. As may be expected, the fiscal balance tends to deteriorate as per capita income rises, so that richer territories generally display fiscal deficits and low income ones enjoy surpluses. Once again, the figure displays some surprising situations. The Foral Territories enjoy a fiscal surplus in spite of their high incomes, while Valencia displays a significant deficit with an income per capita below the national average and Murcia is practically in equilibrium in spite of its low level of income.

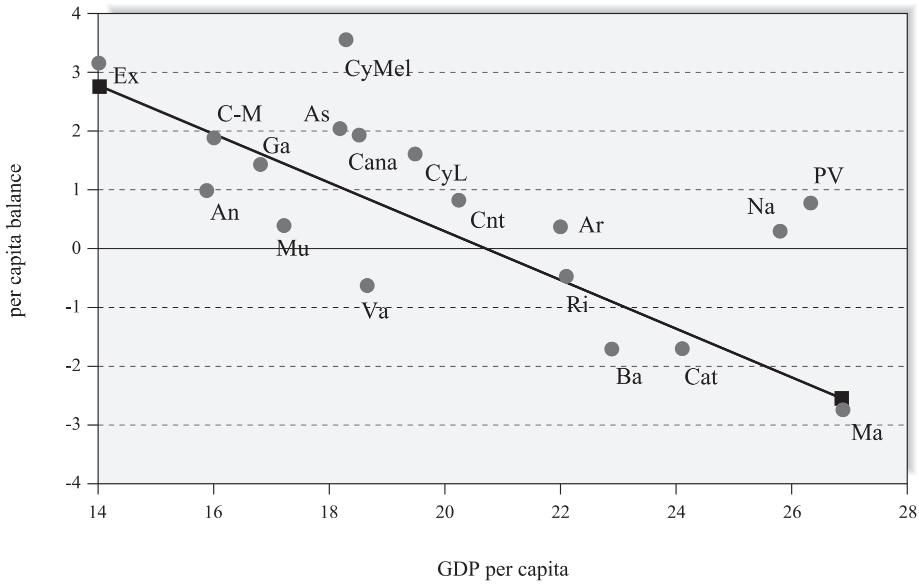

Figure 2. Total relative per capita net balance vs. GDP per capita, thousands of euros, 2005

Key: An = Andalucía; Ar = Aragón; As = Asturias; Cana = Canarias; Cat = Cataluña; CyL = Castilla y León; CyMel = Ceuta y Melilla; Cnt = Cantabria; C-M = Castilla-La Mancha; Ex = Extremadura; Ga = Galicia; Ma = Madrid; Mu = Murcia; Na = Navarra; PV = País Vasco; Ri = Rioja; Va = Valencia.

In the sections that follow we will examine in detail the regional distribution of the main components of public revenues and expenditure, seeking among other things to quantify the immediate sources of regional fiscal balances and to determine the origin of the apparent anomalies that have been detected in this preliminary analysis of aggregate expenditure and revenue patterns. Anticipating some of our key results, Table 13 shows the weights of certain key budgetary aggregates in regional fiscal balances. The first column shows the average value of these weights in the country as a whole [7] and the remaining ones list the values that correspond to the regions with the largest positive and negative fiscal balances.

The first column of the table tells us that, on average, *almost three quarters of regional fiscal balances simply reflect the fact that the residents of richer territories pay more taxes per capita than those of lower income regions*. The remaining quarter, which is the potentially worrisome part, comes from expenditure programs. Regional financing plays an important role in this area, with a weight of over 15%, along with regional aid programs and subsidies to certain productive sectors, especially agriculture. On the other hand, infrastructure investment and expenditure on transport generally plays a very minor role in regional fiscal balances, and so does expenditure in social protection.

Table 13
WEIGHTS OF DIFFERENT BUDGET ITEMS ON REGIONAL FISCAL BALANCES NATIONAL AVERAGE AND RESULTS FOR SELECTED REGIONS

	National average	Cat	Ma	Ba	Cana	As	Ex
Public revenues	73.70%	99.08%	82.62%	46.05%	120.61%	6.21%	73.51%
Public expenditure	26.30%	0.92%	17.38%	53.95%	–20.61%	93.79%	26.49%
Regionalizable expenditure	19.23%	12.78%	10.70%	22.21%	14.31%	18.99%	12.44%
Regional financing*	15.33%	11.51%	11.82%	15.74%	–0.86%	–0.76%	5.57%
Infrastructure and transport	0.37%	–0.29%	–2.74%	6.50%	–4.60%	6.60%	2.01%
Regional aid	6.31%	7.21%	4.91%	2.23%	8.29%	18.90%	9.36%
Other regionali–zable expend.	0.32%	0.70%	–0.98%	–0.27%	–0.48%	–0.60%	0.48%
Social protection	1.40%	–12.40%	0.56%	20.79%	–30.28%	63.37%	–6.59%
Economic regulation and promotion	6.78%	4.77%	5.66%	8.07%	–4.41%	–0.21%	16.15%
Interests on the national debt	2.42%	0.70%	2.24%	6.63%	0.75%	9.47%	3.33%

* At homogeneous competences and equal fiscal effort.
Note: A negative sign indicates that the partial balance has a different sign than the overall fiscal balance of the region.

The remaining columns tell us that regions are very different from each other. In Asturias, for instance, revenues contribute almost nothing to the region's fiscal surplus because its residents are almost on the national average in terms of the tax burden per capita. On the other hand, the region has a very large positive balance in the area of social protection that is due in part to its aged population and in part to the generosity of the early pensions that were negotiated during the restructuring of the region's large publicly-held industrial and coal mining sectors. Also important in Asturias were regional aid programs that were also largely linked to the restructuring of the coal-mining sector. Canarias is Asturias' mirror image. In spite of having a below average level of expenditure (largely due to low pension spending as a result of a very young population) the region enjoys a large fiscal surplus thanks primarily to a very low fiscal pressure as a result of a special fiscal regime characterized by very low indirect taxation. At the other end of the distribution, there are also very significant differences across regions. For instance, while Catalonia's deficit arises almost exclusively on the revenue side, in Baleares, the role of low public expenditure is more important than that of taxes.

6. The distribution of regionalizable expenditure

In the year 2005, the total volume of what we have called regionalizable expenditure was of approximately 175 billion euros, or 53% of the public spending registered in the SRPA. Within regionalizable expenditure, the biggest item by far corresponded to the financing of the autonomous communities. Figure 3 shows indices of regionalizable expenditure and homogenized regional financing per capita, both calculated at equal fiscal effort. In the remainder of the section we will analyze in greater detail both aggregates and their main components.

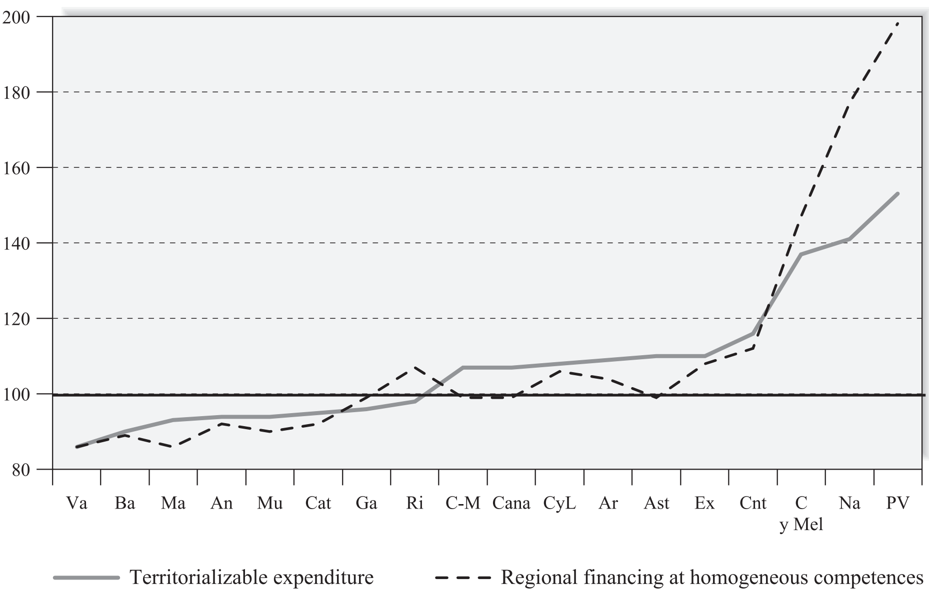

Figure 3. Aggregate index of regionalizable expenditure per capita at equal fiscal effort and of per capita regional financing at homogeneous competences and equal fiscal effort

6.1. Regional financing

The financing of the regional administrations is one of the biggest expenditure items in the public budget. In 2005, the resources assigned to the financing of the core competences that have been assumed by all autonomous communities, calculated at equal fiscal effort, came to 104 billion euros or 61% of regionalizable expenditure and 32% of total public spending (sections 1 to 5 of the SRPA).

As we have already seen, this aggregate includes regional revenues from devolved taxes, homogenized so as to approximate the intake that would have been obtained in each region applying a common tax schedule in the entire country. In the case of the Foral Regions, from the intake of devolved taxes we subtract, in addition to the *cupo* or *aportación* (the transfer back to the Central Government that should cover these region's share of central services) the estimated cost of those competences that only the Foral Regions have assumed, as well as those corresponding to competences that in the rest of Spain are financed through earmarked grants from the Central Government. This is done to ensure that the regional financing data are directly comparable across all regions because they measure the resources that would have been available to each autonomous community in order to finance a homogeneous set of competences before making use of their autonomy in fiscal matters to raise or lower their tax revenues.

Table 14
REGIONAL FINANCING AT HOMOGENEOUS COMPETENCES, EUROS PER CAPITA

	[1] homogenized revenue	[2] + cupo, aportación and other transfers from/to the Foral regions	[3] + adjustments for non-homogeneous competences	[4] = Subtotal: regional financing at homog. competences and equal fiscal effort	[5] + supplemen--tary regional fiscal effort	[6] = Observed financing at homogeneous competences
Andalucía	2,234	0	–72	2,162	–2	2,160
Aragón	2,467	0	–20	2,447	13	2,460
Asturias	2,330	0	0	2,330	27	2,357
Baleares	2,114	0	–35	2,078	47	2,125
Canarias	2,426	0	–97	2,329	–36	2,293
Cantabria	2,779	0	–144	2,636	–2	2,634
Castilla y León	2,497	0	–4	2,493	4	2,497
Cast.-La Mancha	2,321	0	–5	2,316	8	2,324
Cataluña	2,280	0	–128	2,152	66	2,218
Valencia	2,066	0	–44	2,021	29	2,051
Extremadura	2,522	0	0	2,522	20	2,542
Galicia	2,383	0	–54	2,329	38	2,367
Madrid	2,163	0	–142	2,021	32	2,053
Murcia	2,129	0	–9	2,120	26	2,146
Navarra	5,507	–749	–607	4,152	–648	3,504
País Vasco	5,915	–564	–713	4,638	–636	4,002
La Rioja	2,659	0	–144	2,515	–10	2,505
Ceuta y Melilla	160	0	3,281	3,441	0	3,441
España	2,484	–37	–102	2,346	–17	2,329
Common regime*	2,273	0	–75	2,198	24	2,222
Foral regions	5,826	–604	–690	4,531	–639	3,893

* Does not include Ceuta and Melilla.

Table 14 shows the most relevant magnitudes measured in euros per capita. The most striking feature of the table is the enormous difference that exists between the Foral regions and the rest of the autonomous communities. Since Foral regions collect practically all taxes in their territories, their homogenized per capita tax revenues are mucho higher than those of the other territories (see column [1]). From this magnitude, however, we have to subtract certain transfers to the Central Government that do not exist in other regions (basically, the *cupo* and *aportación*, column [2]), and the cost of a series of competences that the rest of the regions have not assumed or are financed with earmarked Central Government grants (column [3]). Even so, the per capita financing of the Foral Regions at homogeneous competences and equal fiscal effort (column [4]) is approximately twice the size of the financing of common-regime regions. Finally, fiscal pressure is also significantly lower in the Foral Regions which, unlike their common regime counterparts, display a negative and quite sizable supplementary fiscal effort (column [5]). Although such tax reductions lower the observed financing of Foral Regions, this is still over 75% above that of the average common-regime region.

Another atypical case is that of Ceuta and Melilla. Since these two North-African autonomous cities have not assumed responsibility over the provision of health care, education and social services, three competences that account for the bulk of the expenditure of autonomous communities, the per capita revenues they get from the regional financing system (a small grant from the Sufficiency Fund) are much lower than those obtained by the autonomous communities (see column [1]). On the other hand, when we take into account the direct expenditure of the Central Government on these services and the intake of the local indirect tax (IPSI) (column [3]), their level of financing per capita is among the highest (column [4]). It must be kept in mind, however, that this is due at least in part to the high expenditure needs that arise from the absence of economies of scale in the prevision of key services in two isolated territories with a small population.

When it comes to evaluating the distribution of autonomous financing, it is important to keep in mind the differences in the cost of public services that exist among territories as a result of their demographic and geographic characteristics. To take into account these factors, the regional financing system uses a population variable that is adjusted for the estimated unit costs of the services managed by the autonomous communities in order to try to approximate the expenditure needs of regional governments. In what follows, we will work with indices of financing per adjusted capita constructed using this indicator. Unadjusted per capita figures will also be used in order to include Ceuta and Melilla in the picture, as we do not have the information that would be necessary to calculate the adjusted population of these cities.

Table 15 and figure 4 show indices of regional financing at homogeneous competences per capita and per adjusted capita, distinguishing between financing at equal fiscal effort and observed financing after regional governments have made use of their powers to raise or lower taxes. All indices take as a reference average financing per capita or per adjusted capita in the set of common regime autonomous communities, excluding Ceuta and Melilla and the Foral Regions. The adjusted population is calculated with the formula used in the current financing system (approved in 2009) and using the average values of adjusted population on January 1st 2005 and 2006 in order to approximate the average adjusted population during the year 2005 [8].

Once again, the case of the Foral Communities is worth noting. They enjoy about twice as much financing per adjusted capita than the average common regime region when the calculation is made at equal fiscal effort. As for the common regime regions, the results are consistent with the widely known figures on regional financing that are published annually and do not change significantly when we use figures on observed financing rather than those calculated at equal fiscal effort [9].

Table 15
INDICES OF REGIONAL FINANCING AT HOMOGENEOUS COMPETENCES PER CAPITA AND PER ADJUSTED CAPITA

	Per capita financing at equal fiscal effort	Observed per capita financing	Financing per adjusted capita at equal fiscal effort	Observed financing per adjusted capita
Andalucía	98.4	97.2	100.0	98.9
Aragón	111.3	110.7	105.6	105.0
Asturias	106.0	106.1	103.1	103.2
Baleares	94.5	95.6	94.0	95.1
Canarias	105.9	103.2	102.2	99.5
Cantabria	119.9	118.5	120.9	119.5
Castilla y León	113.4	112.4	106.2	105.2
Cast.-La Mancha	105.4	104.6	98.1	97.4
Cataluña	97.9	99.8	99.8	101.7
Valencia	91.9	92.3	94.4	94.7
Extremadura	114.7	114.4	107.8	107.5
Galicia	106.0	106.5	100.8	101.4
Madrid	91.9	92.4	98.8	99.3
Murcia	96.5	96.6	98.9	99.0
Navarra	188.9	157.7	185.2	154.7
País Vasco	211.0	180.1	215.2	183.7
La Rioja	114.4	112.7	113.6	112.0
Ceuta y Melilla	156.5	154.8		
Spain	106.7	104.8	107.1	105.2
Common regime w/o Ceuta and Melilla	100.0	100.0	100.0	100.0
Foral communities	206.1	175.2	208.4	177.1

To quantify the impact that the uneven distribution of regional financing can have on regional fiscal balances, these balances are compared in table 16 with the *excess financing* of each autonomous community. This magnitude is defined as the difference between each re-

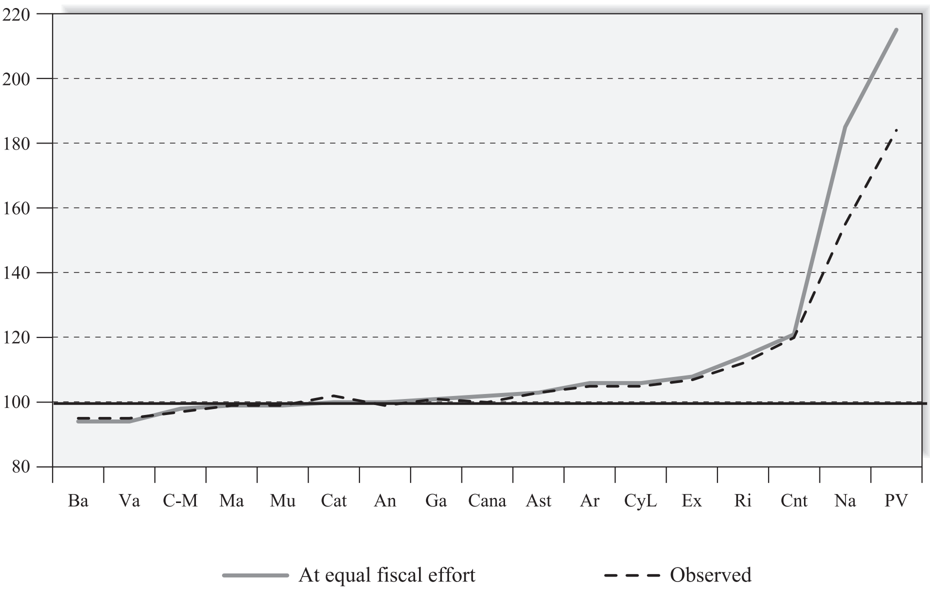

Figure 4. Regional financing per adjusted capita at homogeneous competences common-regime territories except for Ceuta and Melilla = 100

gion's actual financing (at homogeneous competences and equal fiscal effort) and the amount that would have corresponded to it (under the same conditions) if all of them had received the same financing per adjusted capita, keeping constant the observed level of total regional financing. Ceuta and Melilla (but not the Foral Regions) are excluded from the calculation because we have no data on their adjusted population.

Table 16
EXCESS REGIONAL FINANCING VS. RELATIVE REGIONAL FISCAL BALANCES

	Excess regional financing	Aggregate relative fiscal balance	Excess financing/ Fiscal balance
Andalucía	–1,181	7,902	–14.9%
Aragón	–41	484	–8.5%
Asturias	–93	2,199	–4.2%
Baleares	–284	–1,684	16.9%
Canarias	–215	3,844	–5.6%
Cantabria	172	467	36.9%
Castilla y León	–43	4,095	–1.1%
Cast. – La Mancha	–398	3,654	–10.9%
Cataluña	–1,097	–11,887	9.2%
Valencia	–1,278	–2,881	44.4%
Extremadura	21	3,445	0.6%

Table 16 (*Continued*)
EXCESS REGIONAL FINANCING VS. RELATIVE REGIONAL FISCAL BALANCES

	Excess regional financing	Aggregate relative fiscal balance	Excess financing/ Fiscal balance
Galicia	–392	4,034	–9.7%
Madrid	–997	–16,433	6.1%
Murcia	–234	553	–42.3%
Navarra	1,049	180	582.5%
País Vasco	4,966	1,664	298.5%
La Rioja	45	–141	–31.8%
Sum of positives	6,253	33,026	

The last column of the table shows the ratio between the two magnitudes shown in the previous two columns. This ratio is negative when excess financing and the region's relative fiscal balance have different signs, as it happens for instance in the case of Andalucía, which displays a positive aggregate relative balance and a below average level of financing per adjusted capita. The fact that this situation arises quite frequently reminds us that there is no systematic relationship between regional financing and aggregate fiscal balances. There are, however, some instances in which regional disparities in financing per adjusted capita explain a significant fraction of fiscal balances that can be considered anomalous. In the case of Valencia, for instance, raising the region's financing per adjusted capita to the national average would suffice to eliminate almost half of its fiscal deficit. In Baleares, Catalonia and Madrid, this ratio would be between 6% and 17%. In the two Foral Communities, bringing financing per adjusted capita down to the national average would more than eliminate their surprising fiscal surplus, bringing both the Basque Country and Navarre much closer to the fiscal position of other high-income regions.

6.2. Infrastructures and transport

In spite of its low weight in the public budget (4.5% of the expenditure included in the 2005 SRPA), the distribution of public spending on infrastructure and transport generally attracts a disproportionate amount of attention, as well as the unanimous complaints of the autonomous communities, all of whom feel mistreated on this account. This is, moreover, an area in which reasonable valuations of the distribution of expenditure can only be made on the basis of averages over relatively long periods for the lumpy character of large infrastructure projects implies that expenditure will tend to concentrate each year on a handful of regions that will vary over time. And even when we work with such averages, the results must be analyzed taking into account the effect on unit construction costs and on the demand for transport services of such things as the nature of the terrain, the dispersion of the population settlement pattern or the needs for merchandise transport. In this case, therefore, equality in spending per capita need not be desirable, even in the medium or long run.

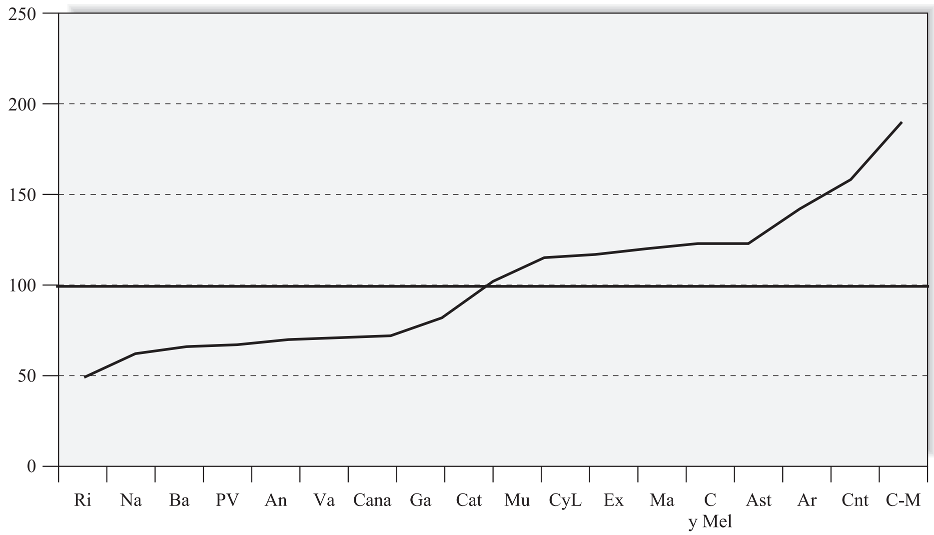

Figure 5. Per capita expenditure on infrastructure and transport, national average = 100

Figure 5 summarizes the situation in 2005. As expected, there are large differences across regions in per capita spending, with Rioja at one end of the distribution (with an index of 49) and Castilla la Mancha in the other (with 214). Around half of the spending in this last region, however, comes from the construction of a single segment of toll highway.

6.3. Regional aid

The Spanish Central Government and the European Union (EU) spent in 2005 around 6.3 billion euros in regional aid programs that concentrated on a handful of territories. Figure 6 shows two indicators of the volume of aid per capita in the Spanish regions. The thinner line corresponds to EU grants that go directly to the regions rather than through the General Central Budget (with the exception of the agricultural subsidies that are included in the section on economic regulation further on). To go from this line to the thicker black line, we incorporate the rest of the items included in this section to arrive at total expenditure on regional aid programs.

As expected, EU grants tend to fall as income rises. In terms of the figure, the introduction of national programs generates a clear “peak” in Asturias, which corresponds to subsidies to the coal mining sector, and smaller peaks in Andalucía and Extremadura (as a result of a special unemployment benefit for agricultural workers in both regions), Castilla y León

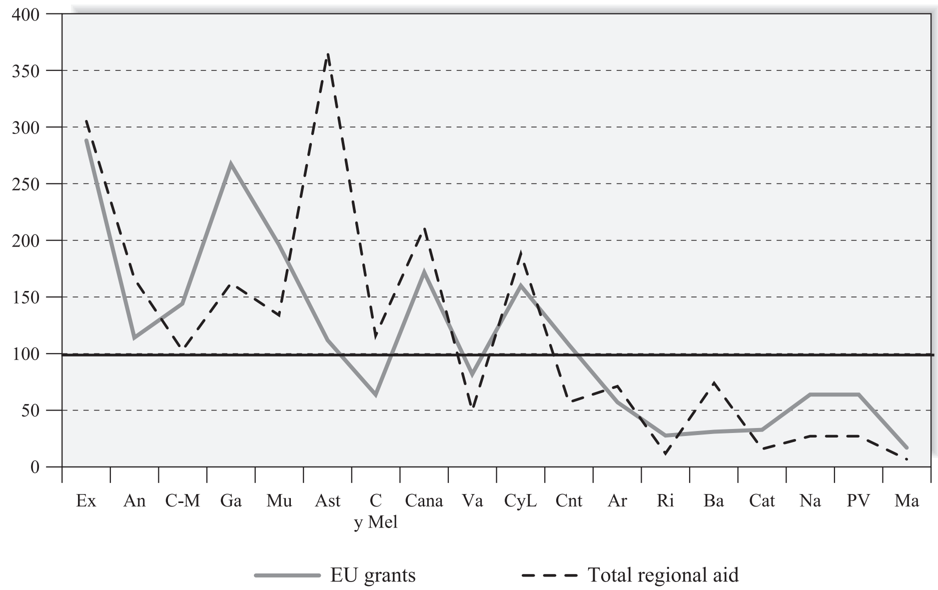

Figure 6. Regional aid per capita, national average = 100

Note: Regions arranged by increasing GDP per capita.

(also coal mining) and the island regions of Baleares and Canarias and Ceuta y Melilla (mostly because of transport subsidies to residents and merchandises). The subsidy going to the three regions most favored by these programs was over 300 euros per capita and reached 531 euros in the case of Asturias.

7. Expenditure on social protection

Expenditure on social protection in 2005 amounted to 105 billion euros, almost a third of the total volume of spending registered in the SRPA. The bulk of this expenditure corresponds to contributive pension benefits, followed in importance by unemployment benefit payments.

Figure 7 shows two indices of per capita expenditure on social protection. The thinner red line corresponds to contributive Social Security benefits (mostly pensions) and civil servants' pensions while the thicker black line describes total expenditure on social protection. In general terms, per capita pension expenditure tends to rise with income per capita (through higher contributions) and is very sensitive to the degree of aging of the population. To this we have to add in the case of Asturias the generosity of the early retirement schemes that were established for the mining and industrial sectors during the process of restructuring that the region has undergone during the last few decades.

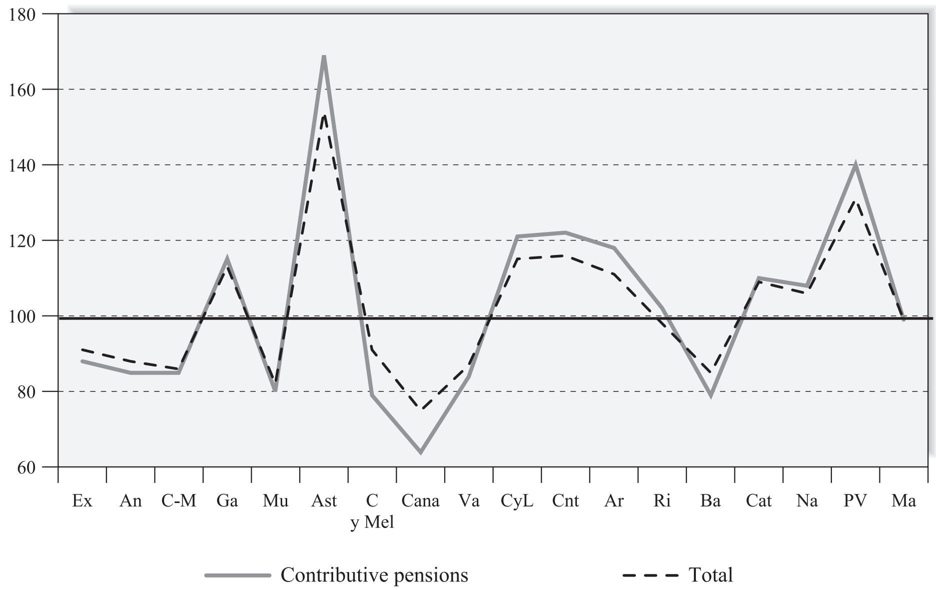

Figure 7. Per capita expenditure on social protection, national average = 100

Note: regions arranged by ingreasing GDP per capita. Contributive pensions include those of civil servants ("clases pasivas").

Table 17 shows a partial breakdown of social spending. In general, neither pensions nor other contributive benefits, which account for the bulk of this expenditure heading, are particularly redistributive at the regional level because benefit levels are linked to contributions that rise with wages. On the other hand, expenditure on social services seems to be more sensitive to aging than to income per capita.

Table 17
PER CAPITA EXPENDITURE ON SOCIAL PROTECTION NATIONAL AVERAGE = 100

	Contributive pensions, including civil servants	Unemployment benefits	Social services	Other social protection programs	Total
Andalucía	85.2	98.3	96.7	98.4	88.2
Aragón	117.7	77.7	100.7	98.1	110.9
Asturias	169.3	104.3	107.2	101.5	154.1
Baleares	78.7	134.0	87.5	79.5	85.2
Canarias	64.3	124.8	83.1	103.1	75.4
Cantabria	121.8	89.0	96.6	101.6	115.7
Castilla y León	120.6	80.8	114.5	106.4	114.5
Cast.-La Mancha	84.7	80.8	108.1	97.9	85.9

Table 17 (*Continued*)

PER CAPITA EXPENDITURE ON SOCIAL PROTECTION NATIONAL AVERAGE = 100

	Contributive pensions, including civil servants	Unemployment benefits	Social services	Other social protection programs	Total
Cataluña	109.6	113.7	96.8	97.7	108.7
Valencia	83.9	96.6	90.5	99.0	87.0
Extremadura	87.8	101.6	120.5	101.7	91.2
Galicia	114.7	102.3	110.9	112.6	113.0
Madrid	99.5	98.8	93.3	99.6	99.4
Murcia	79.8	79.5	128.5	98.2	82.2
Navarra	108.0	98.8	92.1	95.9	105.5
País Vasco	140.1	99.2	87.5	103.5	131.0
La Rioja	102.0	82.7	135.0	80.9	98.0
Ceuta y Melilla	78.9	94.6	458.6	135.1	91.1
National average	100.0	100.0	100.0	100.0	100.0
Avge in euros	1,842	275	29	245	2,391

8. Economic regulation and employment promotion

As can be seen in figure 8, the distribution of expenditure on economic regulation and employment promotion is dominated by the allocation of agricultural subsidies, which come mostly form the Common Agricultural Policy of the EU and concentrate on those regions with the greater output of certain agricultural products. On the other hand, spending on employment promotion is distributed much more evenly across territories. The rest of the programs included in this section channel a much smaller amount of resources than these two items and have little impact on the final distribution of expenditure.

9. The distribution of public revenues

Figure 9 shows the fiscal burden per capita borne by the residents of the different Spanish regions, distinguishing between the intake of Central and Regional taxes that amount for the bulk of the revenues of the Spanish public administrations and the total revenues registered in the SRPA, which also includes municipal taxes and user charges and certain minor revenue items of the Central Administration (including user charges, public prices, and financial and property income). As expected, the fiscal burden tends to rise in absolute terms with disposable income, a fact that is the main immediate source of regional fiscal balances, both positive and negative. There are, however, some noteworthy exceptions to this rule in the territories that enjoy special fiscal regimes (Canarias, Ceuta and Melilla and the two Foral Regions, *Na* and *PV* in the figure).

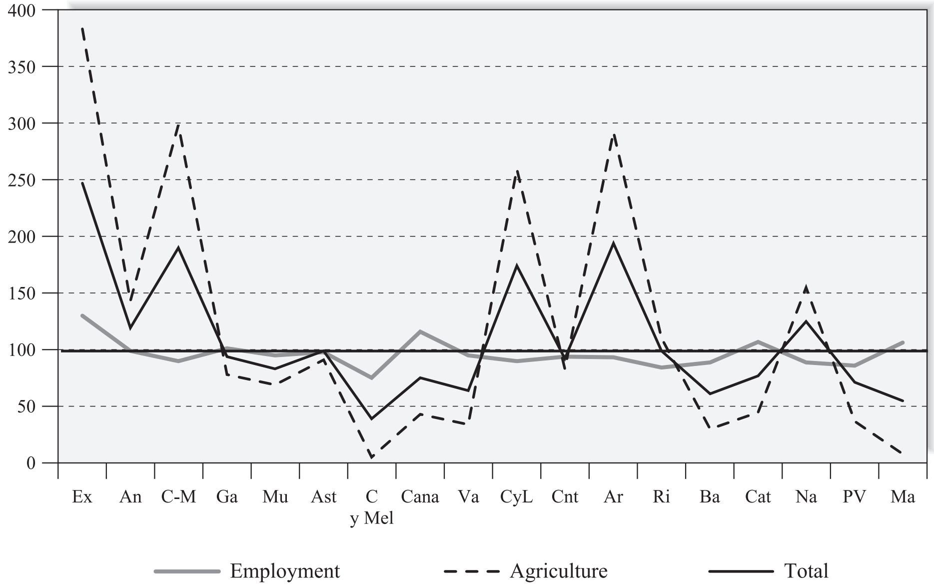

Figure 8. Per capita expenditure on economic regulation and employment promotion national average = 100

Note: regions arranged byincreasing GDP per cápita.

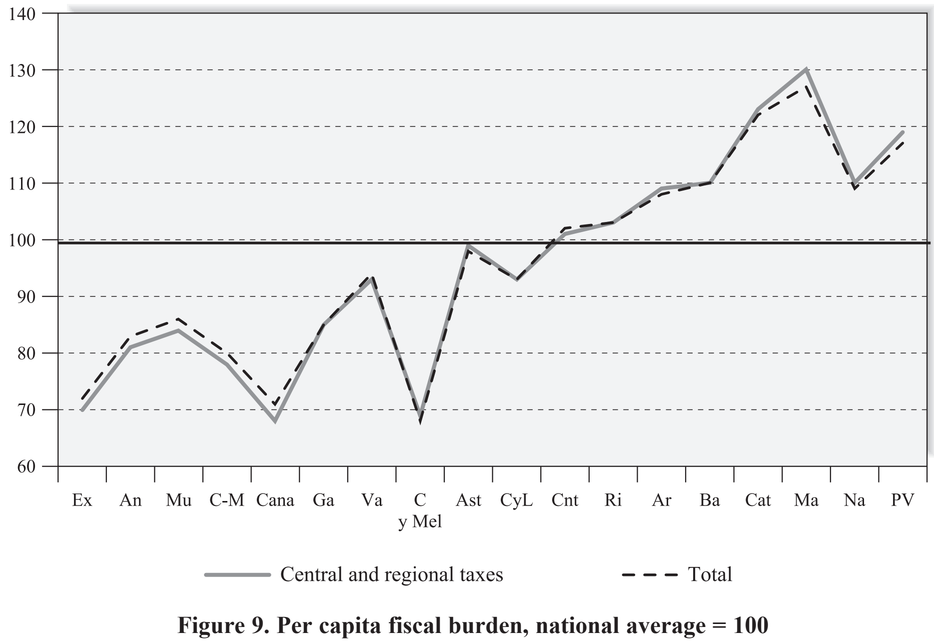

Figure 9. Per capita fiscal burden, national average = 100

Note: regions arranged by increasing per capita disposable income.

Figure 10. Per capita tax revenue of the Central and Regional Administrations observed intake vs. intake at equal fiscal effort, national average = 100

Focusing now on the tax revenues of the Central and Regional Administrations, figure 10 compares the total per capita tax burden with the one that would have existed if all regions had applied a common tax schedule. In this manner, we isolate the impact of the lower taxes enjoyed by the residents of Canarias and Ceuta and Melilla and the results of the use made by the regions of their powers to lower or raise taxes. This last effect is rather small except in the case of the Foral Regions, while those of the special fiscal regimes of the first two territories are quite important. Taken as a whole, the tax reductions in force contributed 2,300 million euros (1,160 euros per capita) to Canarias' fiscal surplus, 120 million (840 euros per capita) to that of Ceuta and Melilla and 1,230 million to the relative fiscal balance of the Foral Regions (around 450 euros per capita).

10. What part of regional fiscal balances should worry us?

As we have already argued in the introduction, an important objective of the SRPA is helping us isolate the part of the regional fiscal balances that may be considered potentially worrisome because it may reflect differences in the treatment of groups of citizens with the same rights and similar needs. On the basis of the above discussion, we should exclude from this category all expenditure on public goods and services of national scope that affect all citizens in the same way, as well as all spending on social protection and economic regulation. It also seems logical to exclude all those taxes that are paid according to a uniform schedule in the entire country. This does not mean that there are no questionable features in these programs but, to the extent that the criteria that determine the allocation of their resources respond to an individual or a sectorial logic that is applied uniformly in the entire country, their design does not in principle raise any territorial equity problems, which is what concerns us here.

This leaves us with two groups of programs whose costs and benefits are indeed distributed with a territorial logic. In connection with the majority of these programs (although certainly not in all of them) equal per capita treatment seems to be a reasonable fairness reference and deviations from it would require at least a reasoned justification. The first of these groups of programs is what we have called regionalizable expenditure in a strict sense, that is, regional and local financing, infrastructure investment and spending on transport, regional aid programs and expenditure on local or collective services such as health care, education and public security. The second group has to do with the existence of privileged fiscal regimes that allow certain territories to enjoy substantial tax reductions that, for our purposes, should be considered regional aid programs [10].

The sum of the partial fiscal balances generated by these two groups of programs gives us an upper bound for the size of the equity problems we may be facing in connection with the distribution of public resources and tax burdens. What this variable measures is the magnitude of the deviation from equal treatment per capita that arises in connection with that part of the public budget that is allocated with a territorial criterion. Certainly, there will be instances when deviating from per capita equality will be perfectly reasonable, but it seems prudent to require two things of such deviations. First, that they should be transparent. And second, that they should be evaluated periodically to see if they are justified, keeping in mind that what is given to some must be paid by others.

The relevant figures are shown in table 18. Looking at the table's last row, we see that we are talking about 11.3 billion euros, or 1.25% of Spanish GDP, that is distributed across regions in a way that may be potentially questionable. The most relevant items are the following. The low fiscal pressure that is enjoyed by residents in territories with special fiscal regimes (Canarias, Ceuta and Melilla and the Foral Regions) amounts to an implicit subsidy of around 3.6 billion euros that is paid by all other regions. On the other hand, approximately half of the "excess" regionalizable expenditure also concentrates on the Foral Regions, mostly thanks to a level of regional financing way above that of the rest of the country. The other half is allocated unevenly across territories, leaving the Mediterranean coastal regions and Madrid with a clear deficit. Adding up both items and dividing by population, we see that the regions that were worse off in 2005 were Valencia and Baleares, with per capita deficits of 614 and 426 euros respectively, followed by Madrid (–339), Andalucía (–306), Murcia (–290) and Catalonia (-259), while the most favored regions were Ceuta and Melilla (+2,307), País Vasco (+1,930), Navarra (+1,478) and Canarias (+1,415).

Table 18
POTENTIALLY PROBLEMATIC COMPONENTS OF REGIONAL RELATIVE FISCAL BALANCES

	Total relative balance, millions induced by			% of GDP	€ per capita
	Regionalizable expenditure	Surplus fiscal effort	Total		
Andalucía	–1,892	–528	–2,420	–1.9%	–306
Aragón	475	–100	376	1.3%	295
Asturias	465	–97	368	1.9%	342
Baleares	–311	–112	–422	–1.9%	–426
Canarias	512	2,293	2,805	7.7%	1,415
Cantabria	358	–36	323	2.8%	571
Castilla y León	857	–178	679	1.4%	270
Cast.–La Mancha	562	–144	417	1.4%	218
Cataluña	–934	–899	–1,833	–1.1%	–259
Valencia	–2,461	–454	–2,915	–3.3%	–614
Extremadura	469	–96	372	2.4%	343
Galicia	–339	–284	–624	–1.3%	–226
Madrid	–1,465	–567	–2,032	–1.3%	–339
Murcia	–252	–128	–379	–1.6%	–280
Navarra	602	282	883	5.7%	1,478
País Vasco	3,163	945	4,108	7.3%	1,930
La Rioja	–17	–17	–33	–0.5%	–109
Ceuta y Melilla	208	119	327	12.6%	2,307
Total	**0**	**0**	**0**	**0.0%**	**0**
Sum of positives*	7,671	3,639	11,310	1.25%	255

* Sum of positives is the sum of the positive balances for each concept (which is the same as the sum of the negative balances, with a changed sign). This variable measures the volume of the total redistributive fiscal flows across regions generated by each group of programs.

For reasons already noted, it would be imprudent to try to extract directly form table 18 a detailed set of recommendations regarding the optimal allocation of certain components of the public budget. Before going that far, we would have to evaluate very carefully the arguments in favor of regional development programs aimed at the poorer territories and the problems and specific features of certain regions that may justify special treatment in the form of higher levels of expenditure or lower levels of taxation, including higher costs in the provision of certain public services and the possible existence of locational disadvantages. But the analysis we have carried out in previous sections does suggest that, in general terms, the table does indeed point us in the correct direction: greater equality in the distribution of regionalizable expenditure would certainly be desirable from an equity point of view. A good place to start would be with a reform in this direction of the regional and local financing systems, with special attention to the foral case. Another thing that would not hurt would be a critical evaluation of existing regional aid programs, both on the expenditure and on the revenue side, in order to determine whether such programs are achieving their objectives and doing so at a reasonable cost.

11. Conclusion

In this paper we have developed a methodology for the construction of a System of Regionalized Public Accounts (SRPA) following a burden–benefit approach and have applied this methodology to the case of 2005. This new statistical tool can be used to compute the net fiscal balances of the Spanish regions but it also allows a much richer analysis of the territorial incidence of the public sector for at least two reasons. First, because the SRPA provides detailed information on the sources of aggregate regional fiscal balances that allows us to isolate the contributions to such balances of different groups of programs that should be evaluated with different criteria depending among other things on the relation they bear to the territory. And second, because the new statistic neutralizes the effects of the many asymmetries that characterize our model of territorial organization so as to allow valid comparisons across regions in terms of a great variety of homogeneous budget aggregates. One such aggregate that can be particularly interesting is the volume of regional financing at equal competences and fiscal effort.

A central result of the analysis that can surely be extrapolated to more recent years than the one analyzed here is that what we can call the potentially worrisome component of regional fiscal balances is rather small. Almost three quarters of such balances simply reflect the fact that more taxes per capita are paid in richer regions than in poorer ones. The remaining quarter comes from the distribution of public expenditure and it is in this area that we have found indications of worrisome things, although of a manageable scale.

The problems are concentrated in what we have called regionalizable expenditure in a strict sense, i.e. in those programs that finance services or benefits to which citizens have access depending on their place of residence. Within this area, we have documented the existence of differences across regions in things such as regional financing that seem unreasonably large and difficult to justify. We have also seen that a significant amount of resources are devoted to various regional aid programs (among which we should include the special tax regimes that exist in certain territories) whose effectiveness should be evaluated, taking into account the relevant costs. On the other hand, expenditure on infrastructure and transport has not played a significant role in the generation of regional fiscal balances –a rather unsurprising result, given the small weight of this item in overall public spending.

The aggregate volume of the partial fiscal balances generated by those programs whose distribution is potentially questionable from an equity point of view is around 11.4 billion euros or 1.25% of Spanish GDP. Over half of this figure arises from the uneven distribution of regional financing. Hence, a reform of the regional financing system oriented towards greater equality could mitigate very significantly the equity problems we have documented in this paper, especially if it succeeds in starting to reduce the very large differences in financing per adjusted capita that now exist between the Foral Territories and the rest of Spain.

Notes

1. See among many others Castells *et al.* (2000), de la Fuente (2000), Barberán (2006), Uriel and Barberán (2007) and IEF (2008).
2. In some cases, the Central Government Tax Agency (AEAT) directly calculates the revenues that each community would have obtained if it had not made use of its autonomy to modify the reference tax schedule set by the Central Government. Whenever possible, we use these data. For those taxes that are collected directly by the regions (the so-called traditional devolved taxes), however, this magnitude is not calculated, so we need to approximate it. The way this is done is discussed in Appendix 3 (DBU, 2014a). The procedure used depends on the information that is available for each tax and in some cases is far from ideal. We do believe, however, that our approach provides a better approximation to the magnitude we would ideally like to measure than the "normative revenues" provided by the regional financing system, which are obtained by updating with various ad-hoc indices the real revenues of each tax in the moment of its devolution to the regions.
3. We are not taking into account regional revenues from user charges and fees due to the lack of homogeneous information and the small size of this item.
4. The available information on tax revenues broken down by region of collection can be extremely misleading, especially in the case of those taxes that are collected from business firms, such as VAT and Corporate Income Tax. The reason is that such payments are generally centralized in corporate headquarters, which are disproportionately located in Madrid, Barcelona and Bilbao. Hence, a significant share of the revenues collected in Madrid, Catalonia and the Basque Country are generated in other regions.
5. The file is available at: http://www.fedea.net/hacienda-autonomica/ under "SCPT 2005"; click the link at "Resultados detallados 2005".
6. The most important items included in the section of financial operations are the contribution to the Social Security Reserve Fund, the granting of subsidized loans for research and other activities and the purchase of shares of certain public enterprises.
7. To calculate these weights we work with the aggregate formed by all regions with positive fiscal relative balances –or equivalently, by all regions with negative relative balances. Since aggregate relative balances and each one of their components must add up to zero across regions, the sums of each of these items within each of these two territories is the same in absolute value, although different in sign, and the ratios we calculate have the same value in both cases.
8. The data have been provided by the General Secretariat on Autonomic and Local Coordination and refer to the 17 autonomous communities, including the Foral Communities, but not Ceuta and Melilla.
9. The main differences between the data used here and the more standard ones based on the annual reports on the results of the regional financing system is that the latter include the normative or theoretical intake of regional government user charges and refer to the "definitive" or accrued regional financing for each year, rather than to observed financing calculated on a cash basis, as is the case here. These factors have a very small impact on relative financing per capita or per adjusted capita.
10. This leaves out the interest on the national debt, but since this expenditure is imputed in proportion to the rest of expenditure, it does not make sense to discuss its allocation independently. To the extent that any questionable features in the allocation of other expenditure items are corrected, the same will be true with the corresponding interests.

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Resumen

En este trabajo se presenta una metodología para la construcción de un Sistema de Cuentas Públicas Territorializadas (SCPT) elaborado desde la óptica carga-beneficio, así como una aplicación de esta metodología al año 2005. El SCPT ofrece una radiografía detallada de la distribución regional de los flujos de gastos e ingresos públicos y permite realizar comparaciones homogéneas entre regiones en términos de agregados presupuestarios muy diversos. Esta herramienta permite un análisis de la incidencia territorial de la actuación de las administraciones públicas mucho más rico que el basado en los saldos fiscales regionales en los que se han centrado muchos trabajos previos.

Palabras clave: saldos fiscales regionales, cuentas públicas territorializadasbalanzas fiscales, análisis de incidencia impositiva, transferencias interregionales.

Clasificación JEL: H10, H60.