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Maria Flavia Ambrosanio (♦) Massimo Bordignon (*) Floriana Cerniglia (•)

(♦)Istituto di Economia e Finanza, Università Cattolica del Sacro Cuore, Largo Gemelli 1 – 20123 Milano, e-mail: maria.ambrosanio@unicatt.it

(*)Istituto di Economia e Finanza, Università Cattolica del Sacro Cuore, Largo Gemelli 1 – 20123 Milano, e-mail: massimo.bordignon@unicatt.it

(•)Università di Milano Bicocca, e-mail: floriana.cerniglia@unimib.it

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Istituto di Economia e Finanza
Università Cattolica del S. Cuore
Largo Gemelli 1
20123 Milano
tel.: 0039.02.7234.2976
fax: 0039.02.7234.2781
e-mail: ist.ef@unicatt.it

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Constitutional reforms, fiscal decentralization and regional fiscal flows in Italy

Maria Flavia Ambrosanio[♦], Massimo Bordignon[*], and Floriana Cerniglia[•]

Abstract. In the last 15 years, Italy has been involved in a complex, confuse and unfinished process of fiscal decentralization. In this context, data on fiscal flows are continuously produced and thrown in the political arena by several actors, political parties, interest groups and media alike, with little scientific underpinnings and often with limited adherence to reality. This paper discusses at length the issue of fiscal federalism in Italy and presents a careful attempt to measure regional redistribution, or fiscal flows across regions. It describes the decentralization process in Italy from the beginning of the '90's to date and presents a few data on the main features of the Italian decentralization process, that only happened on the financing side, with little effects on the allocation of expenditure responsibility between levels of governments. The focus is however on the measurement of regional fiscal flows and on the problems concerning the regionalization of public expenditure and revenues. Our basic conclusions can be summarised as follows. Fiscal flows in Italy are huge and are mostly driven by the large difference in economic development between the different areas of the country. The public sector generally works in the direction of equalizing per capita (current) public expenditure across regions, at least for fundamental services. However, the distance in economic development, and therefore in tax revenues among regions, is so large that even this partial equalization is enough to generate consistent fiscal flows across the national territory. Clearly, fiscal federalism has some chances of success in Italy only if it works in the direction of reducing the distance between territorial areas and the Italian debate on fiscal federalism, rich in ideology and poor in facts, would certainly benefit by an improved quality of regional data and by official estimations, based on clear and transparent methodology, of regional fiscal flows.

Keywords: fiscal federalism, net fiscal flows, regional redistribution.
JEL code: H7, H73, H77

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♦ Università Cattolica del Sacro Cuore Milano, email maria.ambrosanio@unicatt.it
* Università Cattolica del Sacro Cuore, Milano, email: massimo.bordignon@unicatt.it
• Università di Milano Bicocca email: floriana.cerniglia@unimib.it

Introduction

In the Italian case, the issue of measuring regional redistribution, or fiscal flows across regions, has not only a scientific interest. In the last 15 years, the country has been involved in a complex, confuse and unfinished process of fiscal decentralization. A Constitutional reform, approved in the 2001 and which should have consolidated the new financial and political relationships between governments, is still waiting to be applied. The sharp difference in the level of economic development across areas of the country, with the consequent high level of territorial redistribution, has been both one of main cause of the decentralization process, and the main obstacle for its conclusion. The worsening conditions of the economy, which has seen the rate of growth halving in the 2000's with respect to the 90's, and the consequent financial difficulties of the public sector, have contributed to exacerbate the distributional conflict between territories. Regional parties, playing the role of advocates for the respective territories, have seen an increasing political support, although they still collect only a minority of consensus. In this context, data on fiscal flows are continuously produced and thrown in the political arena by several actors, political parties, interest groups and media alike, with little scientific underpinnings and often with limited adherence to reality. The confusion in the debate is facilitated by the poor quality of official data concerning regional expenditure and revenue, possibly a result of the national tradition of strong centralization of the public sector. Only recently some progresses have been made, but we are still far from the transparency in regional fiscal data which would be requested for a functioning fiscal federal system.

In this paper, we present a careful attempt to estimate regional fiscal flows, by considering different data sources and mixing them up coherently. For the difficulties of building up a consistent data set, we consider only one year (2005) and only focus on current expenditure, disregarding capital one. For methodological reasons which are better detailed in the rest of the paper, we apply a benefit principle to the regional allocation of public expenditure, but we avoid to consider tax shifting phenomena across regions. We also disregard interest payments on public debt from our computations.

Our results confirm the presence of strong financial flows from the rich regions of the North to the poor regions of the South. Through the public budget, a representative resident of the richest region, Lombardia, transfers about 30% of the total taxes and contribution she/he pays to the other regions, while a representative resident of the poorest region, Calabria, receives 55% in excess of what she/he pays. Per capita public expenditure for fundamental services (health, education) is approximately uniform across the territory, but there is a larger variance in the other local functions, where local tax revenue plays a much larger role. On the whole, total expenditure per capita turns out to be higher in the Northern regions. However, per capita tax revenue is much lower in the South of the country. This is almost entirely due to regional differences in income levels, as the tax system turns out to be approximately proportional to GDP. We also confirm the condition of absolute advantage of the Italian "special" regions, which enjoy a more favourable financing system than "ordinary" ones. We also attempt to isolate the different forces that shape the process. Social protection imbalance (mostly, in Italy, pensions for retired workers), for instance, plays an important role in determining the regional distribution of resources, in some cases working in the opposite direction of the fundamental North-South division line. We finally compare our results with previous attempts which have been made in Italy to estimate fiscal flows. It is comforting to note, considering the difference in methodology and data, that our results turn out to be broadly consistent with the existing literature.

It would not be possible to understand and appreciate these results without some notions of the functioning of the system of local governments in Italy. To this aim, we begin by presenting a brief introduction to the Italian local governments, their main functions and means of financing. We also provide a brief but up to date description of the decentralization process in Italy, from the beginning of the 90's to the most recent events. We finally comment on the difficulties that the persistent

difference in income levels across regions create for the implementation of the existent Constitution and the role that detailed information on fiscal flows could have in better guiding the process.
The rest of the paper is organized as follows. Section 1 describes the decentralization process in Italy from the beginning of the '90's to date, also introducing the reader to the mysteries of the new Italian Constitution. Section 2 offers more substance to this discussion, by presenting a few data on the main features of the Italian decentralization process. We show that it only happened on the financing side, with little effects on the allocation of expenditure responsibility between levels of governments. We also present some estimations on the likely effect of the implementation of the new Constitution on the devolution of resources to regions. Section 3 and 4 discuss our estimations of regional fiscal flows. We begin in section 3 by describing our data set, its limitation, and the methodology we follow in measuring fiscal flows. We then discuss separately our regionalization of public expenditure and revenues, commenting upon our findings. We finally compute our fiscal flows and disentangle them in their main components. Section 5 compares our findings with the previous literature. This section also contains a sample of the not academic computations of fiscal flows, which substantiated the political debate during the last political elections. Concluding remarks are offered in section 6.

1. The Italian path toward fiscal federalism

In 1999, William Oates opened his famous essay on fiscal federalism by writing "…and in Italy the movement toward decentralization has gone so far to encompass a serious proposal for the separation of the nation into two independent countries". The 1990s in Italy were no doubt a period of radical change in the financial relationships between levels of government. The process can be summarized by just two figures. In 1992, when the reform process got under way (in the wake of a severe financial crisis and on the road towards Maastricht) approximately only 15% of sub-national governments revenue came from own taxes; the rest from central government's transfers, most of which were earmarked to particular items of expenditure. By 2000, own taxes of local governments accounted for almost 45% of sub-national total revenue, and almost all earmarked grants were transformed in block grants, with no strings attached to money. Besides, in 2001 the country changed its Constitution, in the direction of more decentralization, and in 2006 it attempted to change it again (but failed), when a national referendum rejected a constitutional amendment introducing even more decentralization. The story has not come to an end, however. Following the national elections of April 2008, a new centre-right coalition took power, and inside this coalition, the Northern League, a separatist party of the North of Italy, almost doubled its share of votes. In the Northern League's political agenda, fiscal federalism ranks first, and under its pressure, in October 2008 the new government approved a new framework law[1] aimed to further implement the 2001 Constitution, by reinforcing fiscal autonomy of local governments and by revising the interregional redistribution mechanism.
In the following, we will offer a brief survey of these processes, to the aim of helping the reader to better understand the computations of the next paragraph and the Italian debate on fiscal flows and fiscal federalism.

[1] "Disegno di legge recante delega al governo in materia di federalismo fiscale in attuazione dell'articolo 119 della costituzione".

Some basic facts about levels of government in Italy

In Italy there are three levels of sub-national governments[2], namely 20 Regions (Regioni), 107 Provinces (Province) and 8101 Municipalities (Comuni), with no hierarchical links between the different levels of sub-national government[3]. Regions are divided in two groups, 15 "ordinary" and 5 "special", the two Islands and three small regions at the Northern border, one of which (Trentino Alto Adige) is in turn divided in two autonomous provinces (Provincia di Trento and Provincia di Bolzano). Special regions enjoy a particular status, more autonomy, and a different (and often more generous) financing system than ordinary regions. Special regions were introduced in the aftermath of the World War II in response to a threat of secession and as a result of international treaties aimed to defend linguistic minorities living in these regions. Italian regions differ to a large extent in terms of size, population, and economic development.

Table 1 - Socio-economic indicators by region

Regions	Population	Area Km^2	Population by age		GDP per capita (thousand euro)	Incidence of poverty	Rate of employment 14-65
			0-14	>65			
Piemonte	4330172	25.399	12,4	22,4	26,8	7,1	64,0
Valle d'Aosta	122868	3.263	13,2	20,2	31,8	6,8	66,3
Lombardia	9393092	23.861	13,6	19,4	31,6	3,7	65,5
Trentino Alto Adige	974613	13.607	16,1	17,7	30,4	5,1	67,1
Veneto	4699950	18.391	13,9	19,2	28,5	4,5	64,6
Friuli Venezia Giulia	1204718	7.855	12,0	22,6	27,0	7,2	63,1
Liguria	1592309	5.421	11,1	26,5	24,9	5,2	61,1
Emilia Romagna	4151369	22.124	12,5	22,7	29,9	2,5	68,4
Toscana	3598269	22.997	12,1	23,2	26,7	4,6	63,8
Umbria	858938	8.456	12,5	23,3	22,9	7,3	61,6
Marche	1518780	9.694	13,1	22,6	24,5	5,4	63,5
Lazio	5269972	17.207	13,9	19,1	29,3	6,8	58,4
Abruzzo	1299272	10.798	13,4	21,3	20,1	11,8	57,2
Molise	321953	4.438	13,4	22,0	17,8	21,5	51,1
Campania	5788986	13.595	17,5	15,3	15,8	27,0	44,1
Puglia	4068167	19.362	15,7	17,3	15,9	19,4	44,4
Basilicata	596546	9.992	14,5	19,9	16,9	24,5	49,3
Calabria	2009268	15.080	15,3	18,3	15,8	23,3	44,6
Sicilia	5013081	25.708	16,2	18,0	16,1	30,8	44,0
Sardegna	1650052	24.090	12,9	17,6	19,1	15,9	51,4
ITALIA	58462375		14,1	19,7	24,4	11,1	57,5

Table 1 presents some selected regional indicators for the year 2005. As we discuss below, the differences stressed in the Table 1 are useful to understand the Italian evolution towards fiscal federalism and to interpret our results in terms of regional fiscal flows.

[2] In all the paper, with "sub-national governments" we mean Regions plus Provinces, plus Municipalities, with "general government" we mean the national government plus sub-national governments plus Social Security and with "central government" we mean only the national government.
[3] In 2009, three new provinces will be operative, so in Italy we will have 110 provinces.

1.2 The decentralization process of the 90's

Over the last three decades, Italy has gradually implemented a process of fiscal decentralization and reformed fiscal relations among levels of government. Table 2 summarizes the main institutional changes underpinning this path toward fiscal federalism.

Table 2 - Main steps to fiscal decentralization

1948	- Constitution foresees the creation of regions; special powers are granted to five special statute regions.
1972-77	- "Ordinary statute" regions are set up. The tax reform of the early 1970s heavily centralizes revenue against the significant decentralization of expenditure.
1978	- Health expenditure is decentralized to regions.
1992	- Health contributions and automobile taxes are attributed to regions. - Attribution of ICI (a local tax on property) to municipalities
1993	- Electoral reform: the mayor and the president of provinces are elected directly by citizens.
1995	- Specific state transfers are abolished and replaced by a share of the excise on gasoline - A new equalization fund is set up.
1997	- A new tax on productive activities (IRAP) is introduced and assigned to regions and its yield more than replaces the abolished health social contributions.
1998	- A surcharge on the personal income tax (IRPEF), by 0.5 percentage points, is introduced (offsetting an equal reduction in the national IRPEF) for regions and municipalities.
1997-98	- Bassanini Laws: more administrative powers are attributed to local governments
1999	- A Reform having constitutional status granted the Regions' freedom to decide their own form of government and regional statutes.
2000	- Legislative decree 56 replaces central transfers with tax revenue sharing (the most significant share is based on a time-varying formula for VAT to be assigned to regions).

The Italian Constitution of 1948 foresaw the creation of ordinary regions. However, differently from special regions, which were introduced immediately after the war, ordinary regions were set up only 20 years later, in 1970, when for the first time regional elections took place. During the 1970s and 1980s, following the 1948 Constitution, most functions related to health care were attributed to the ordinary statute regions, together with agriculture, industry and local transportations. Financing was granted by a number of earmarked transfers and tax shares. Municipalities traditionally enjoyed more tax autonomy than regions. However, in 1973-74, a massive tax reform strongly centralized revenues, so that taxing power was taken away from municipalities and substituted by a system of grants from the national government. The system proved to be unstable, however. Sub-national government's spending resulted systematically and significantly exceeding their own revenues; the deficit was covered ex post by the central government, and endemic problems of soft budget constraint emerged in the Italian intergovernmental system (see Bordignon, 2000; Bordignon and Turati 2005) Following the turmoil of the beginning of the 90's (characterized by a severe financial and political crisis), a number of reforms were implemented with the aim to harden the local budget constraints and to improve accountability and responsibility of local governments. These reforms affected both the expenditure – through further decentralization of some functions to sub-national governments – and in particular, the financing side – through the assignment of new local taxes to regions and municipalities (see Table 2). As we document below, this marked a strong shift from "centrally

derived" financing, with all resources provided via earmarked transfers by the Centre, to more "autonomous" financing with block grants, some regional sharing of central government taxes (such as the VAT) and own taxes.
Reforms, however, did not only occur on the financing side. In an attempt to further improve the accountability of local politicians, electoral reforms were introduced both at the municipal (1993) and at regional level (1999), roughly moving the local electoral rules from the traditional pure proportional-parliamentary system to a presidential-majoritarian one (direct election of Mayors and Presidents of regions). This strengthened the political importance and the powers of Mayors of big cities and of regional Presidents, who were elected for the first time under the new system in the spring of 2000. These new political leaders started to call for more reforms and more devolution of powers, especially in the north, where the Northern League gained consensus. Under this new political scenario, the National Parliament began a discussion to introduce amendments on the articles of the 1948 Constitution relating to the distribution of powers and resources between levels of government. In spring 2001, the Parliament approved a constitutional reform which modified a number of articles (from 114 to 133) concerning the powers of sub-national governments and their financial relationships with the central government. The reform was approved by popular referendum in October 2001.

1.3 The 2001 constitutional reform

A detailed discussion of the overall implications of the new Constitution would go far beyond our aims here (see Giarda, 2004). However, key elements are the attribution of new legislative powers and competences to regions in a large subset of functions. Furthermore, the new Constitution also allows for "asymmetric federalism" (according to a detailed political procedural, a Region can ask for extra powers) and makes the plea that as far as possible, power of executions should be transferred to municipalities and provinces (whereas formerly this power was strictly connected to the legislative power).
But the key innovation of the new Constitution is art. 119, that describes the new fiscal relations among the different levels of government. First, it establishes that the regions ought to be financed totally with revenue of their own and tax shares, allowing them to introduce new taxes, and ruling out transfers by the central government as standard practice of financing. Secondly, it introduces an interregional redistribution fund whose sole purpose is to reduce the differences in the fiscal capacity of different regions (in the form of unconditional grants), with no reference to difference in regional needs or current regional expenditure.
This article has proved to be too revolutionary to be implemented so far. Several attempts and also several amendments to the Constitution which were proposed during the 2000's failed or were rejected by referendum (see Table 3). In spite of the new Constitution, regions and other local governments keep to be financed as they were already in the '90's, and several functions that the Constitution assigns to regions are in fact still under the strict control of the central government. This contradiction between the Constitution and ordinary legislation creates a situation of continuous uncertainty for private economic agents (e.g. it is never clear who has the right to pass legislation on a number of issues), and has generated an ongoing conflict between the regions and the central government (the constitutional conflict before the Italian Constitutional Court increased by 500% after the reform).
While it is clear that this situation cannot go on indefinitely, it is also clear why it has proved so difficult so far to implement the new Constitution. First, there is a distributional conflict between areas of the country. As we document below, the distance between the rich regions of the North and the poor regions of the South is simply too large to allow for a literal implementation of the new financing systems. It would imply, at least in the short run, a sharp reduction in the level of public expenditure in the South and a sharp increase in territorial inequality. Second, the deteriorating

economic situation of the 2000's and the need for the more productive North to regain the ability to compete at the international level has made this conflict even more acute, invigorating separatist movements in the North. Third, the ongoing difficulties of public finance (with a debt/GDP ratio that is still above 100%) have made the central government, in spite of the Constitution, unwilling to give up resources and functions to periphery, fearing that this may result in a loss of control and a financial crisis.

Table 3 - Further proposals to amend the Constitution

2002	- DDL 26 february 2002: change in art. 117, devolution in health, education, local police service
2003	- Law 5 june 2003, "legge la Loggia"
2003	- 11 april 2003 "Disegno di legge costituzionale" other changes in art. 117 and suppression of asymmetric federalism
2003	- AS 2544 "Bozza di Lorenzago" proposal of changing 35 articles of the Constitution
2006	- Constitutional Law, 18 November 2006 n.268 voted by the Parliament. This law was changing almost 40% of the Constitution of 1948, but is was rejected by popular referendum in June 2007

1.4 The current situation and future developments

In the meantime, with the formation of the new government, the legislative process for implementing the new Constitution has started again. A proposal approved by the regional council of Lombardia in 2007 and written in the political programme of the main party of the coalition which won the 2008 political elections, *Partito delle Libertà*, (paradoxically, a party mostly voted in the South of the country) was eventually abandoned by the same party as being too "radical" , as it would have implied leaving too many tax resources to regions, and in particular to the Northern ones. As already mentioned, a more "moderate" project has been finally approved by the central government in October 2008 and it is going to be implemented in the next two years by government's decrees. The project is more moderate in the sense of allowing for more regional redistribution than the former, as the proposal recognizes that the redistribution system must guarantee the "full financing of the essential levels of fundamental services" (such as Health and Education) in all the national territory, disregarding art.119 on this respect. But the meaning of this proposition in terms of regional redistribution has been (on purpose?) left unclear, and we will have to see if this project (and the government coalition which proposed it) survives when it will be made precise in the future implementation phase.

2. The data: revenues and expenditures by levels of government

Some data on decentralization in the 90's

But what did exactly happen in the 90's in terms of devolution of functions and resources to local governments? And what would the new Constitution imply in terms of further devolution to local levels of government? This section briefly answer these queries by presenting a few data.
First, we look at expenditure. Table 4 presents a decomposition of total public expenditure (including interest payments) by levels of governments and by function in two selected years, 1990 (at the beginning of decentralization process) and 2006 (the last year available).

Table 4 - Public expenditure by levels of government and by functions (% of the total expenditure of the general government) in 1990 and 2006

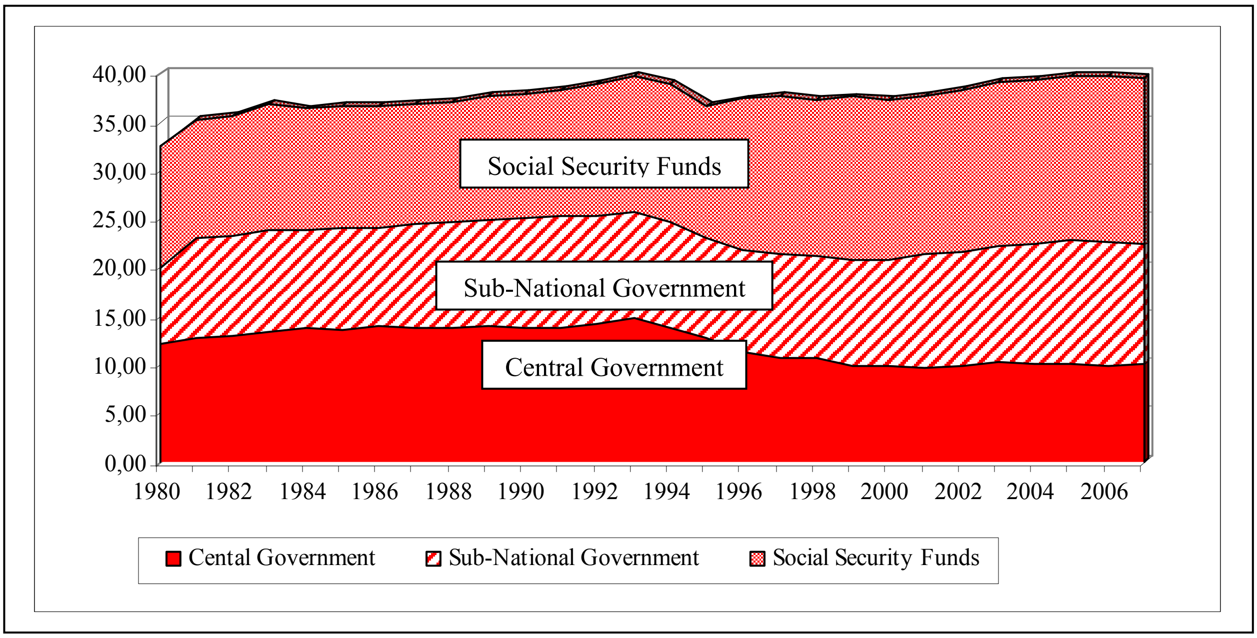
Expenditure by function, 1990	Central government	Sub-national goverments	Social security funds
General public services	86,75%	13,25%	0,00%
Defence	100,00%	0,00%	0,00%
Public order and safety	88,12%	11,88%	0,00%
Economic Affaire	61,15%	38,85%	0,00%
Environment protection	13,30%	86,70%	0,00%
Housing and community amenities	17,37%	70,45%	12,18%
Health	1,95%	97,66%	0,38%
Recreation, Culture and Religion	29,56%	70,44%	0,00%
Education	77,19%	22,81%	0,00%
Social protection	16,92%	3,78%	79,30%
Total	48,85%	26,76%	24,39%
Expenditure by function, 2000	**Central government**	**Sub-national goverments**	**Social security funds**
General public services	73,7%	26,3%	0,0%
Defence	100,0%	0,0%	0,0%
Public order and safety	87,2%	12,8%	0,0%
Economic Affaire	61,8%	38,2%	0,0%
Environment protection	15,3%	84,7%	0,0%
Housing and community amenities	9,4%	90,8%	-0,2%
Health	1,4%	98,5%	0,1%
Recreation, Culture and Religion	35,0%	65,0%	0,0%
Education	72,7%	27,3%	0,0%
Social protection	1,9%	3,6%	94,4%
Total	35,1%	30,8%	34,1%

Source: ISTAT; expenditures include also expenditure for interests on debt and it is included in general public service carried out by central government. Sub-national governments here include regions, provinces, municipalities plus other small local public entities endowed of their own budget (public universities, chamber of Commerce etc.).

Table 4 speaks for itself. In the given time interval, there has been a sharp reduction in the amount of expenditure attributed to the central government (which now accounts for only 35% of total expenditure, while it spent almost 50% in 1990), a moderate increase in the share of expenditure intermediated by local governments (from 27 to 31%), and a sharp increase in the share dedicated to social protection (from 24 to 34%). But looking more carefully at the single functions, we see that there is very scant evidence of decentralization on the expenditure side[4]. The sharp reduction in central government share was largely due to the fall of nominal interest rates granted by the admittance to the EMU (interest payments fell by almost 7 points of GDP in the period, from 12% to 5%), while the increase in social protection is the result of a quickly ageing population (20% of Italian population has now more than 65 years of age) and of a very generous pension system (see the next section). In terms of functions, the distribution of expenditure between the central and local level of government appears remarkably stable in the period (social security funds only finance social protection). The next graph also suggests that in percentage of GDP, public expenditure (net of interests) by the two levels of government has remained largely stable in the period, and all the increase in general government expenditure can be attributed to raising social protection outlays.

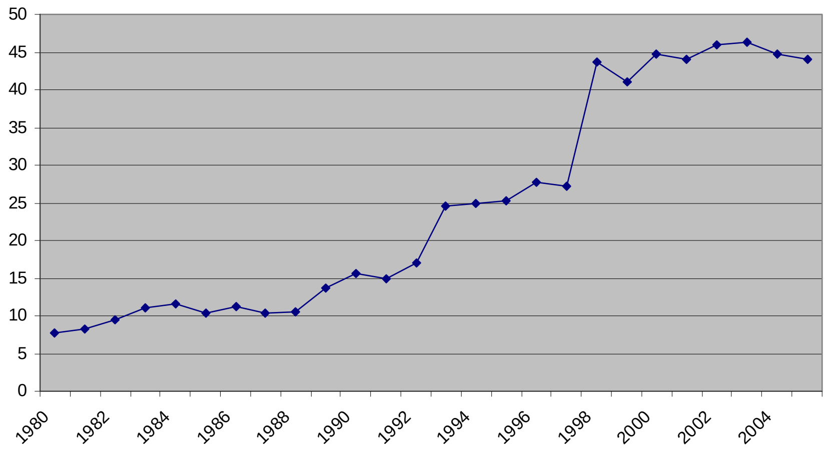
[4] Notice that expenditure by level of government is a very imprecise way to measure decentralization, as it does not say much on the level of autonomy of local governments in determining their own expenditure. For the reasons spelled out in the previous section, on these grounds, there was more decentralization on the expenditure side that the number in Table 4 suggests.

Graph 1 - Current public expenditure by levels of government (in % of GDP, years: 1980-2007, net of transfers and interests on public debt)

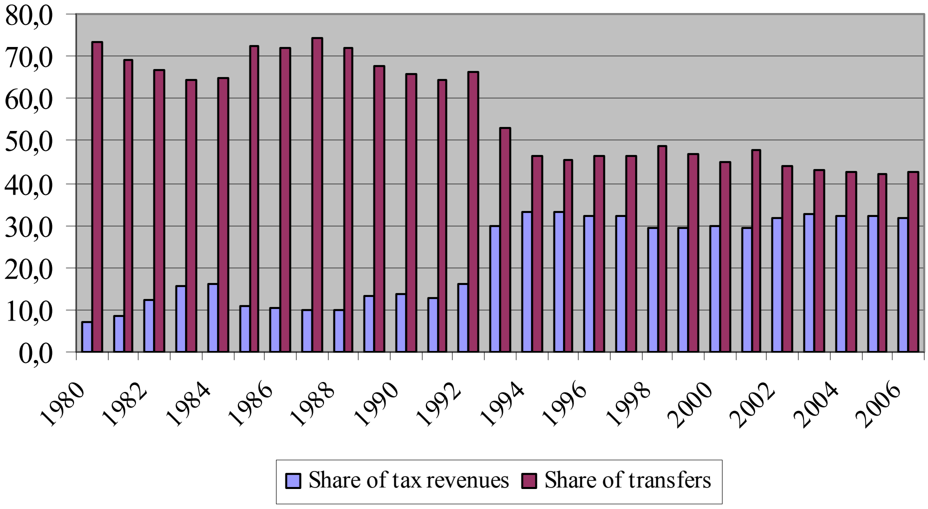


As anticipated, the evidence for decentralization is instead much more robust on the financing side. Graph 2, which plots the evolution of the share of tax revenue on total revenue of sub-national governments, shows a sharp increase of local governments' "fiscal autonomy" along the period. This ratio increased from just about 7% in 1980 to over 45% in 2006. Splitting this figure for the two main levels of local governments (regions and municipalities), we see that this implied a sharp reduction in grant financing and a corresponding sharp increase in tax financing (see Graphs 3 and 4). Regions in particularly moved from being financed by tax revenue for only about 15% in 1990 to over 50% of their budget. Of course, these numbers have to be taken with care as they mix up own taxes (where local governments can at least vary the rates) with local shares of central taxes (where autonomy is none). But the main jumps in the pictures do coincide with the introduction of two main own taxes for local governments; the property tax for Municipalities (ICI,1993) and a tax on value added raised at the firm's level (IRAP, 1998) for Regions.

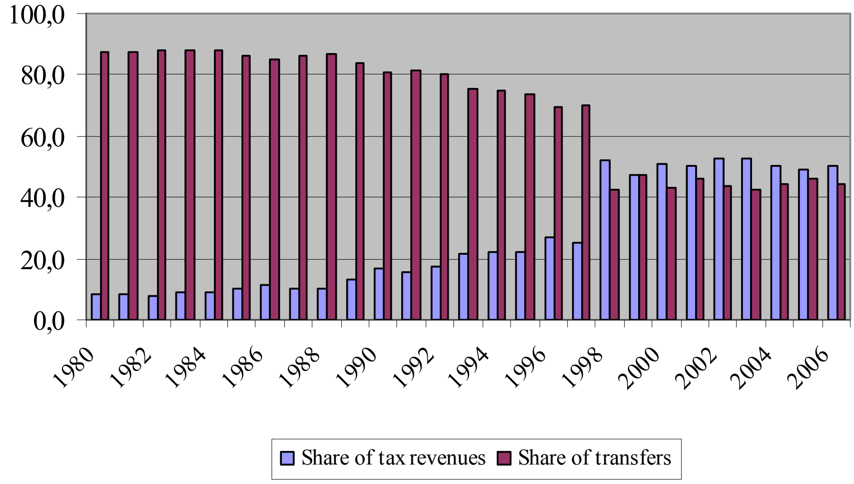
Graph 2 - Fiscal autonomy of local governments
(share of tax revenue on total revenue)



Graph 3 - Fiscal autonomy of municipalities



Graph 4 - Fiscal autonomy of regions



2.2 Implementing the new Constitution

A related question is how much more decentralization is implicit in the 2001 Constitution, since, as we argued above, most of it is still waiting to be implemented. To be sure, nobody knows the exact answer, as there is still a lot of debate going on between lawyers and constitutional experts on the exact meaning of the Constitution, on whether for instance the devolution of legislative powers in a given function to regions also implies a corresponding devolution of resources, and to what extent. But there are a few estimations, a sample of which is offered in the tables below. ISAE (a Treasury institution for economic research) for instance, estimated in 2003 that a full implementation of the Constitution in the same year would have meant devolving to regions about 70 billions euro (5% of GDP), a figure similar to the one estimated by other studies (Bordignon and Cerniglia 2004). Notice that according to these estimations, education is the main function to be devolved to regions (expenditure in education is nowadays only 27,3% of total expenditure for sub-national governments, see table 4)[5], plus some other functions related to social protection and to the management of the territory. 5% of GDP is quite a large number, but it should be noticed that it is

[5] Education is indeed the main function to be devolved explicitly mentioned in the 2008 framework law on decentralization.

not entirely out of mark in an international context (after the devolution, Italy would become slightly more decentralized than, say, Spain).
But the catch is in the interregional distribution of this expenditure. As the next table makes it clear, by presenting the same data on a per capita basis, this central expenditure to be devolved to regions is unevenly distributed on the territory.
In the Southern regions, it is on per capita basis 50% higher than in the Northern ones. This is not surprising, as the functions to be devolved are strongly labor intensive, and it is well known that there are relatively more public employees in the South than in the North (according to ISTAT, 2002, for instance, there are 39 national public employees over 1,000 inhabitants in the South and 26 in the North). In turn, this distribution of public employment reflects both efficiency considerations and pure waste. For example, Southern regions are still slightly younger than Northern ones, (see Table 1) (although the difference is fading fast) and it is therefore obvious that there may be a need of more teachers in the South than in the North. On the other hand, this "difference in social needs" is hardly enough to explain the huge observed difference in the distribution of public employment. Mostly, this has to do with lack of private labor market opportunities, which has pushed public administrations in the South to hire more workers as a sort of (inefficient) unemployment benefits, and with uniformity of public salaries on the national territory, in face of sharp differences in the cost of living[6], which has triggered a large mobility of public employees from the North to the South (e.g. Southern workers entering in the Public Administration of the North and then exploiting seniority and generous labor conditions to go back home).
Be this as it may, the result is however a serious obstacle to the implementation of the Constitution. As Table 5 shows, for instance, if all this devolved expenditure were to be financed entirely out of local resources, the rich Northern regions would only need a devolution of tax resources equal to about 4% of their GDP, while a figure almost three times higher (around 10% of regional GDP) would be needed in the poorer Southern regions. And indeed, it is easy to show that some of poorest regions of the South would be unable to finance their total expenditure (current plus devolved) even with a full devolution of all national and local taxes raised in their territory. Of course, as we document in the next section, the simple fact that these functions are currently financed implies that there are already huge transfers going through the central public budget from the North to South.

Table 5 - Implementing the new Constitution: devolution of new resources across areas of the country

Regions	New expenditure after devolution		
	Millions euro	Euro per capita	% of regional GDP
Centre- North	37.991	1.087	4,2
South	20.478	1.461	9,4
Total Ordinary regions	58.469	1.194	5,2
Total Special regions	10.584	1.185	6,3
All regions	69.053	1.193	5,3
Centre- North	39.584	1.063	4,1
South	29.469	1.426	9,1

Source: ISAE, 2003

And, as we recalled above, the Constitution does predict the maintenance of interregional redistribution. But, of course, on political grounds, it is not the same to redistribute funds trough the central public budget to finance *national* functions, and to redistribute the same sums across territories to finance *regional* ones. And if this interregional redistribution fund had the

[6] According to ISTAT, 2007, for instance, the cost of living in Milan is about 30% higher than in, say, Palermo.

characteristics envisaged by the Constitution (see above), maintaining the same flows of resources might turn out to be utterly impossible.

3. Towards the computation of net fiscal flows in Italy

3.1 Methodology problems and lack of reliable data

Despite the fact that fiscal federalism has been on the fore of the public debate for more than 15 years, one serious problem in discussing regional distribution of public funds in Italy is due to the poor quality of available data. This does not mean that attempts have not already been made to compute "fiscal flows" across Italian regions; on the contrary, as we will illustrate in section 5, these computations abound, are continuously discussed in the local or national press, and therefore certainly inform the public debate. But the quality of these exercises is poor, and they are mostly produced in order to be cast in the political arena, rather than as serious attempts to understand causes and effects of interregional redistribution. A few academic exercises have also been produced in the past but, affected as they are by lack of data, they too can only be considered as very rough approximations of the existing situation. We comment on them in section 5.

Notice that there may be (or may have been) some very good reasons behind this poor quality of local data. Traditionally, Italy has always been a very centralized country, and it was therefore never felt the need to compute precise numbers on local taxes and expenditure, as well as on the localization of central public expenditure, which is largely determined by personal (e.g. across individuals) rather than territorial (e.g. across level of governments) redistribution. Possibly, this lack of transparency might also have been functional to support on political grounds the huge amount of interregional redistribution which is carried on by the public sector (see Bordignon and Minelli, 2001). It is only in the most recent years that the main statistical Italian bodies[7], pressed by the on going decentralization process, have started producing data on the regionalization of (some items of) public expenditure and revenues.

A very promising start in this direction is represented by the CPT (*Conti Pubblici Territoriali)* database, a project supported by the Department of Development Politics (a Treasury department), which has attempted to provide information (for the 20 Italian regions) about revenues and expenditure levied in each region by each level of government (Central Government, Regional Governments and other local governments). Besides, expenditure for any level of governments is presented according to both a functional and an economic classification, and budgetary data are consolidated, by eliminating intergovernmental financial flows (such as transfers among different levels of government). One limitation is that CPT data are cash flow data (which may be a problem for some applications) and cover only the period since 1996 up to the year 2006. But in spite of these limitations, it is clear that if the CPT data set were entirely reliable, the task of producing analysis on interregional redistribution in Italy would have been enormously facilitated. Unfortunately, our close scrutiny of the CPT data and a detailed comparison with data deriving from other sources has shown the existence of severe pitfalls, so severe that they did not allow us to use the CPT directly in the exercises which follow.

The main source of distortion seems to derive from the fact that CPT use the accounts of the Regions themselves in determining the revenue and expenditure classification. Regional accounts are notoriously unreliable, because of the Regions' habit, permitted by an excessively vague accounting legislature, to classify differently the different items of expenditure and revenue[8].

[7] In particular, the *Ragioneria Generale dello Stato* (the main administrative staff of the Treasury), ISTAT, (the national institute of statistics) and more recently, the Bank of Italy.

[8] For instance, a Region might classify the regional tax sharing on VAT as a transfer or a tax revenue, and regional main expenditure, health care, (mainly, transfers to the regional health units) is often hidden in different parts of the budget.

Besides, CPT researchers seem to have had considerable problems in decentralizing, for some particular year, tax revenue and expenditure, excessively expanding compensatory labels - such as *poste correttive e compensative di entrate o spese* - to the effect of making comparisons across time periods difficult even inside the same CPT data set. Finally, the estimated levels of total (general government) public expenditures and revenues in the CPT conflict with other sources of data (for example, the amount of total revenues is larger than it results from General Government accounting), probably because tax revenues have been computed gross and not net of tax refunds.
Faced with these difficulties, our own choice has been to try to build a more reliable picture of the Italian situation by making reference to several data sources (mainly, ISTAT and budgetary data form Treasury) at the same time, mixing them up accordingly, and using CPT data only when was no possible to do otherwise. The exercise involves some amount of educated guess and discretionary choice, but it is probably the best it can be done in Italy given the present quality of data. We will provide a detailed description of the steps we made when presenting our own results in the sections to follow. One unfortunate consequence of this state of affairs is that as the process of building up a reliable data set at regional level is slow and painful, we were able to produce data for one year only, the 2005, the most recent year where a complete set of data is available. This does not allow us to make comparisons across time periods, as would have been in principle desirable. In future work, we plan to extend our computations to another year at least.

3.2 Net fiscal flows

As is well known, there is no universally accepted way to compute fiscal flows **(**see for instance Ruggeri 2008). The choice depends on what one wishes to measure, (e.g. the localization of expenditure or its benefits to population), the public sector aggregate one chooses to consider (General Government or some broader notions including for instance, service production by public firms), the time period, and so on. In our case, we decided to compute net fiscal flows as the difference between what the residents of a region pay and what they get from the *General* Government (central + local + social security), making reference to a benefit notion for public expenditure[9] (see below). Concerning data, we only consider *current* revenues and *current* expenditures. So, among revenues, we include direct and indirect taxes, social security contributions and revenues from sales of some public services; we do not include transfers from European Union and capital revenues. On the expenditure side, we do not include capital payments and transfers to the European Union; we also do not include interest payments on public debt. There are a number of justifications for our choices.
First, we decided not to consider transfers from the EU (mostly for agriculture and capital investments) because they are not resources coming from internal sources, and therefore they do not involve a flow of funds from the residents of a region to the residents of another. As we do not consider transfers from the EU, we also do not to consider outlays to the EU. Second, capital expenditure (approximately, about 9% of total expenditure) has been excluded because it presents a large component of cyclicality (and so it may distort the results relative to the particular year we consider), it is affected by special events (e.g. natural calamities) and it is in part financed by funds from the European Union, especially in the Southern regions. We comment below of the likely

[9] We did not, however, consider hypotheses of tax incidence *across regions* in determining the regional burden of taxation (issues of tax incidence *inside a region* are of course irrelevant in our context, because our exercise implicitly assumes the existence of a representative consumer in each region). We could have done some tentative computations, as Italian regions differ in both external trade and technological specialization, and especially for corporate taxation and VAT, issues of tax incidence are likely to be relevant. But upon reflection, we felt that our empirical knowledge of tax incidence is too shaky to allow us sensible corrections of data on this front, and therefore preferred to avoid the issue altogether.

effect of re-introducing capital expenditure in our computations (see also the discussion in section 5).
Third, we also decided to eliminate interest payments on public debt from the analysis (a large component of current public expenditure in Italy, about 10% of general government expenditure, because of the large size of public debt) for a number of reasons. First, because it is unclear the localization of these payments (half of the holders of the Italian public debt are not Italian residents), although the CPT use banks' regional deposits to approximate the regional distribution of the remaining half (concluding that most of this expenditure is located in the richer North). But, mostly, because interest payments raise some subtle dynamic issue which is difficult to address convincingly. Current interest payments are in fact the results of the funding of some past expenditure; and in an analysis of the distributional effects of the public sector on the territory, one would also wish to consider which regions were benefited by this original expenditure. But this is extremely difficult, at least in the Italian context. Should we consider the primary deficits of the Southern regions which was responsible for the initial accumulation of the debt in the 70's? Or should we rather consider the self accumulation of debt in the 80's – triggered by high and positive real interest rates - which certainly benefited more the Northern regions where most Italian public debt holders were located? As is impossible to answer these questions convincingly, we prefer to simplify the matter by eliminating interest payments altogether.
As for the localization of expenditure, we use a *benefit approach*. That is, in considering items of public expenditure whose benefits clearly go beyond the residents of one region, we ignore the localization of this expenditure and simply assume that the money is spent proportionally to the population in each region. This means in particular redistributing across the territory the administrative expenditure for general public services (mostly concentrated in Lazio, where Rome, the Capital, is located), defence (mostly concentrated in the smaller regions at the borders and in the two main islands), and public order and safety (which also presents a larger concentration in the Southern regions, where organized crime is still rampant). For items of public expenditure that instead have a clear localization of benefits, such as Education, Health, local services, transfers to the private sector etc., we use the localization of expenditure as a measure of the benefits accruing to local residents.
Finally, we isolate Social Protection (mostly, public pensions payments), whose regional localization of both payers and percipients is known, from the other sources of public expenditure, because both the origin and the functioning of this source of expenditure is different from the others. By and large, in the Italian context, this is a form of "forced saving", where the current working population pays a large amount of its gross income (about 34% for dependent workers) to current pensioners in exchange of a "promise" to receive this money back once this population reaches the old age. As the current Italian pension system is actuarially unfair (pensions are above the capitalized contributions paid), the age composition and the working career of the population across regions is different, and the deficit of the Social Security system is financed by tax revenue, the Social Protection system involves in fact a huge amount of redistribution, both across regions and across generations. Notice also that Social Protection system also finances "social pensions" (minimum outlays for people who did not work or did not accumulate enough contributions to finance a full pension) and "inability pensions" (pensions for people with handicaps), although their amount is much smaller than the pensions for retired workers. Finally note that because of the peculiar characteristics of the Italian welfare system, there are very little transfers in favour of the younger generation (no minimum social wage for example, and unemployed benefits cover only a small part of the population), and most of the other items of social expenditure (e.g. social housing, nurseries, etc.) are a direct responsibility of local governments, and are therefore directly computed in the local expenditure.
A final limitation of the Italian data is that we do not have specific information about tax expenditures (reduction in tax payments for households or firms in specific conditions) which are

mandated by the Central government. Again, they tend to be mostly concentrated in the South and so they also affect the computation of the fiscal flows.
Finally note that since we eliminate interest payments and capital expenditure from our computations, we end up with a slight surplus in the current (net of interest) public budget, in coherence with the results of general government accounting (while the deficit of the General government in Italy in 2005 was 60 billions euro or 4,2% of GDP). In our computations, total current revenues overcome total current public expenditure by 43 billions euro and to simplify the exposition, when computing fiscal flows, we eliminate this surplus (subtracting it on a per capita basis from total revenue), by just assuming that it goes to finance the expenditure we do not consider in our computations. As a result, the net fiscal flows measure exactly the excess of expenditure over tax payments in any specific regions.
In presenting our computations, we prefer to discuss separately first the localization of expenditure, then the localization of revenue, to end up with our computations of fiscal flows.

3.3 Regional distribution of expenditures

We start our analysis by decomposing total current public expenditure (central and local expenditure) – net of interests on public debt - in a few main functions, as follows:

1. national public goods (central government spending for defence, public order and safety, and general public services);
2. social services (health, education);
3. social protection;
4. all other functions (local pure public goods, economic affairs, environmental protection, housing and community amenities, recreation, culture and religion).

Each of these expenditures has then been regionalized on the basis of different sources of data and according to different methods. The expenditures for national pure public goods (according to the data provided by ISTAT, the National Statistics Institute) have been attributed to the different regions on a per capita basis, whereas the expenditure for local pure public goods is what results from regional, provincial and municipal balance sheets (according to CPT data). As far as health and education expenditure is concerned, we use data from the Minister of Health and the Minister of Education, which provide a regional distribution of expenditure. For social protection, we use another database (Central Government Regional Expenditure, *Spesa Statale Regionalizzata*), which provides social protection spending in each region. Finally, for the remaining functions, we use CPT data, meticulously corrected to account of some particular item, such as *poste correttive e compensative delle entrate* and *oneri non ripartibili*[10].
Graph 5 shows the average composition of public expenditure. Social protection represents the main component, about 47% of total expenditure, followed by health and education, which absorb 25%, whereas national public goods and all other functions together amount to 28% of the total.

[10] *Poste correttive e compensative delle entrate* should be expenditure items to be compensated by corresponding revenue items (for example, tax rebates), but often it is unclear which kind of expenditures it is included under this label. *Oneri non ripartibili* should be expenditure items difficult to share out among the different functions, but sometimes they also include interests on public debt.

Graph 5 - Composition of public expenditure, 2005

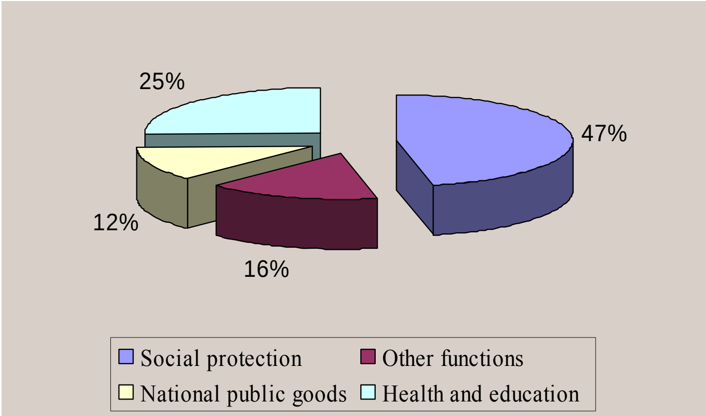


Table 6 shows the regional distribution of public expenditure (total spending per capita in increasing order).

Table 6 - Regional distribution of public expenditures (per capita, euro 2005)

Regions	National public goods	Health and education	Social protection	Other functions*	Total expenditure
Puglia	1160	2199	3474	1201	8033
Campania	1160	2447	3062	1415	8084
Calabria	1160	2298	3386	1503	8347
Basilicata	1160	2342	3436	1551	8489
Sicilia	1160	2434	3354	1694	8641
Veneto	1160	2256	4209	1167	8791
Abruzzo	1160	2511	4100	1375	9146
Molise	1160	2683	3729	1664	9235
Lombardia	1160	2229	4819	1236	9444
ITALIA	**1160**	**2400**	**4432**	**1496**	**9488**
Marche	1160	2316	4595	1432	9502
Sardegna	1160	2399	3944	2123	9626
Piemonte	1160	2303	5239	1524	10226
Emilia Romagna	1160	2407	5307	1382	10256
Toscana	1160	2447	5143	1526	10276
Umbria	1160	2488	5164	1791	10602
Lazio	1160	2797	5113	1727	10796
Friuli Venezia Giulia	1160	2457	5518	1930	11065
Liguria	1160	2490	6239	1703	11592
Trentino Alto Adige	1160	2991	4775	2877	11803
Valle d'Aosta	1160	2888	5449	4587	14083
Mean	1160	2362	4331	1722	9502
Standard deviation	0	216	904	754	1495
Coefficient of variation	0	0,09	0,21	0,44	0,16

* It include local pure public goods, economic affairs, environmental protection, housing and community amenities, recreation, culture and religion

As we said, the (current) expenditure for national pure public goods has been attributed to each region on a per capita basis and it amounts to 1160 euro; the expenditure for health and education amounts on average to 2400 euro per capita and ranges between 2199 euro in Puglia and 2991 in Trentino Alto Adige; social protection, 4432 euro on average, varies between 3062 euro per capita in Campania and 6239 in Liguria; finally, the expenditure for all other functions amounts on average to 1496 euro per capita, with a minimum of 1201 euro in Puglia and a maximum of 4587 euro in Valle d'Aosta. As for the total per capita expenditure, the minimum level is in Puglia (8033 euro) and the maximum in Valle d'Aosta (14083 euro). Most of the regions in the South of Italy receive an amount of public spending under average; on the contrary, in four special statute regions (Sardegna, Friuli Venezia Giulia, Trentino Alto Adige and Valle d'Aosta), which are benefited by an overly generous financing system, public expenditure is well above the average.
More precisely, the regional distribution of expenditure for health and education is more uniform than social protection and other functions, as shown by the low coefficient of variation (0,09). These are items largely mandated by the Central government (as discussed above, education is mostly a national function, while on health care, regions have a higher autonomy) so they are provided uniformly on the national territory, depending on the characteristics of the population.
Besides, the higher expenditure for health in some regions (the Northern regions) is partially compensated by the higher expenditure for education in the other regions (the Southern regions, which are younger (Table 6).
Much more variability is observed for social protection expenditure (the coefficient of variation is equal to 0,21). This is due to the different structure of population by age and by working conditions. Liguria is the region with the highest per capita social protection expenditure and it also is the region with the highest rate of ageing; all the Southern regions show a social protection expenditure under average and this fact reflects both the lower rate of employment and the higher incidence of irregular labour in these regions (recall Table 1). A much more relevant variability concerns the other functions (coefficient of variation equal to 0,44), where regional and local governments have more autonomy and which are more affected by the availability of local resources. Notice however that this large variability is mostly due to the special regions, which are clearly outliers in term of expenditure; ordinary regions present a much lower variability.

3.4 Regional distribution of revenues

The analysis of regional distribution of general government revenues was more complicated than that of the regional distribution of expenditures. As explained above, we have been forced to use different sources of data and different methods to assign revenues to different regions. We considered all central government taxes, local taxes, social contributions and revenues from sales of some public services. As far as central government taxes are concerned, we regionalized personal income tax, corporation income tax, value added tax, interest dividend and capital gains taxes, oil and gas taxes, cigarettes taxes and other excises, registration mortgage and cadastral taxes[11]. We based our analysis on data from Minister of Finance and ISTAT. As for local taxes, we considered IRAP (a regional tax on productive activities), ICI (a municipal property tax), regional and municipal income tax surcharges and other minor local taxes. For IRAP, ICI and regional and municipal income tax surcharges, we used a database provided by Minister of finance, that already

[11] In regionalizing national taxes we basically follow the methodology already used in our sources. According to this methodology, a national tax is attributed to the region where the economic transaction which creates the tax burden takes place. Thus, for instance, residence of the taxpayer is used to regionalize the personal income tax, the location of production (already legally used to share IRAP revenue across regions) is used to regionalize the corporation income tax (IRPEG) as well, final consumption is used for VAT revenues, and so on. Gasoline tax, tobacco tax, games and other local taxes are attributed according to regional consumption of the same items. As already said, we ignore entirely tax incidence issues.

regionalizes tax revenues; for all other local taxes and revenues, we directly collected data from regional, provincial and municipal balance sheets (provided by ISTAT). Finally, for social contributions, we used the CPT database, which however seems reliable on these grounds.
Table 7 shows the regional distributions of total current revenues, net of per capita current surplus (see next section).

Table 7- Regional distribution of public revenues (per capita, euro)

Regions	Total current revenues, net of current surplus	Tax revenue per capita euro	Social contributions per capita euro
Calabria	5531	4299	1738
Campania	5773	4488	1816
Puglia	5977	4734	1815
Sicilia	5979	4840	1675
Basilicata	6175	4645	2081
Molise	6725	5001	2215
Sardegna	7264	5547	2228
Abruzzo	7753	5870	2405
Umbria	8817	6581	2732
Marche	9356	6800	3046
ITALIA	**9488**	**6952**	**3036**
Liguria	10206	7889	2805
Toscana	10436	7626	3270
Veneto	10627	7635	3503
Piemonte	10695	7795	3391
Friuli-Venezia Giulia	11278	8181	3573
Lazio	11534	8237	3792
Emilia-Romagna	12006	8666	3813
Trentino Alto Adige	12191	8954	3600
Lombardia	13097	9255	4320
Valle d'Aosta	13194	10274	3358
Mean	9231	6866	2859
Standard deviation	2633	1832	814
Coefficient of variation	0,29	0,27	0,28

The per capita average is 9488 euro and varies between the 5531 euro in Calabria and about 13000 euro in Lombardia and Valle d’Aosta (see also Graph 6). Between the richest and poorest region, the difference in per capita revenue is therefore about 250%. More generally, all Southern regions exhibit per capita revenues under average and all the Center-North ones per capita revenues above average, a fact which fits well with the regional income distribution of Table 1. The picture does not change much if we use different components of total revenues, such as tax revenues or social contributions. Notice that tax revenues are on average 60% higher than social contributions.

Graph 6 - Total current revenues, net of current surplus (per capita, euro)

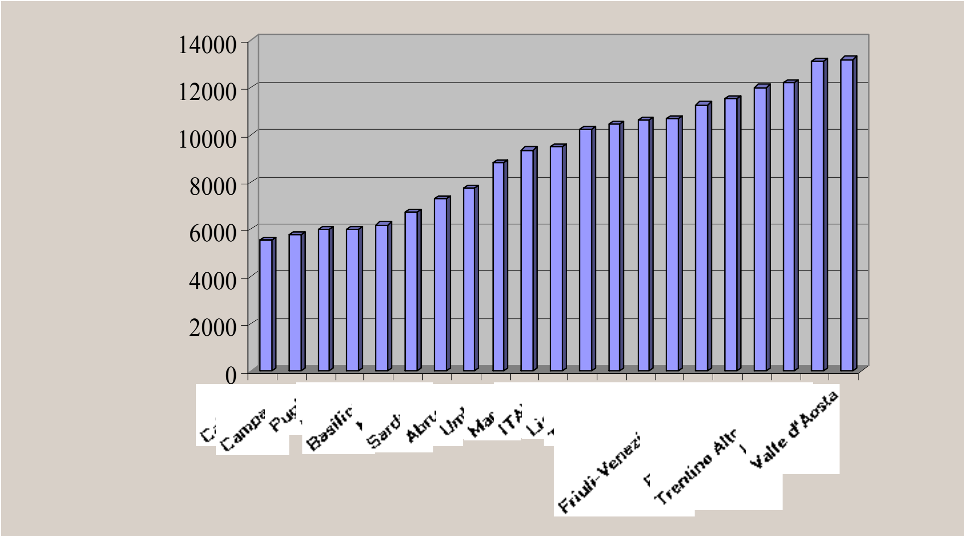


Table 8 - Tax revenue in % of GDP

Regions	Tax revenue in % of GDP	Central tax revenue in % of GDP	Local tax revenue in % of GDP
Piemonte	29,1	23,7	5,3
Valle d'Aosta	32,3	22,5	9,8
Lombardia	29,3	24,0	5,3
Trentino Alto Adige	29,4	22,2	7,3
Veneto	26,8	21,8	5,0
Friuli-Venezia Giulia	30,3	24,0	6,3
Liguria	31,7	25,6	6,0
Emilia-Romagna	29,0	23,7	5,2
Toscana	28,6	23,3	5,3
Umbria	28,8	23,4	5,3
Marche	27,8	22,2	5,6
Lazio	28,1	22,7	5,3
Abruzzo	29,2	23,5	5,7
Molise	28,2	22,9	5,3
Campania	28,3	23,1	5,3
Puglia	29,7	24,3	5,4
Basilicata	27,6	22,4	5,1
Calabria	27,3	22,4	4,8
Sicilia	30,0	23,0	7,0
Sardegna	29,1	23,3	5,8
ITALIA	28,5	23,3	5,1

Table 8, that computes regional tax revenues in percentage of regional GDP, suggests that the national tax system as a whole is approximately proportional to GDP; the effective tax rate is almost constant across regions, and it is only slightly higher in the richest (Lombardia: 24%) with respect to the poorest region (Calabria, 22,4%). Special regions seem to tax slightly more their taxpayers that ordinary regions, but this figure should be taken with care. The special financing system of these regions may somewhat also affect the distribution of national tax revenue, which in theory is computed on the basis of uniform criteria across regions. A slightly higher variation we observe in local taxation (where regions and other local governments have some amount in discretion), but once again, once we take special regions out of the picture, we see that the difference is limited, ranging form 4,8% to GDP in Calabria to 6% in Liguria (that had to raise local taxation in order to finance a particularly high health expenditure). The next table **(**Table 9**)** suggests that this must be due to consumption taxes and other taxes working regressively, as the main Italian tax, the personal income tax, is strongly progressive, with the average tax rate (on a tax base which is approximately 60% of the Italian GDP) being almost six points higher in Lombardia (19,8%) than in Calabria (14,2%).

Table 9 - IRPEF tax base, revenue and average tax rate, 2005

	Irpef tax base	Net revenue	Average tax rate
Piemonte	59.968.558	11.014.760	18,4
Valle d'Aosta	1.818.425	336.119	18,5
Lombardia	142.408.577	28.242.389	19,8
Liguria	22.271.907	4.096.825	18,4
Trentino Alto Adige	14.114.829	2.598.838	18,4
Veneto	62.582.951	11.145.864	17,8
Friuli Venezia Giulia	17.029.576	3.042.264	17,9
Emilia Romagna	62.108.918	11.462.334	18,5
Toscana	47.795.874	8.521.879	17,8
Umbria	10.310.904	1.719.189	16,7
Marche	18.278.587	2.973.907	16,3
Lazio	71.501.115	14.128.779	19,8
Abruzzo	13.412.747	2.103.184	15,7
Molise	2.951.253	437.091	14,8
Campania	44.870.944	7.006.346	15,6
Puglia	34.084.323	5.050.696	14,8
Basilicata	5.032.102	711.172	14,1
Calabria	15.261.555	2.160.907	14,2
Sicilia	40.204.464	6.183.627	15,4
Sardegna	15.594.221	2.476.210	15,9
Italia	701.601.828	125.412.377	17,9

4. Net fiscal flows: our computation

As we noticed already, current revenues exceed the items of general government current expenditures we consider in this work. This is unsurprisingly, and indeed the figure we obtain it is entirely consistent with the current surplus net of interest which is exhibited by the General Government consolidated accounting. But as our purpose here is to capture the distributive effect of the public sector across regional territories, we prefer to eliminate this surplus on a per capita basis, subtracting it from tax revenue, so as to have a zero net fiscal flow on average. Subtracting total current revenues (net of current surplus) from total regional expenditure, we finally get the net fiscal flows presented in Table 10 below (see also graph 7).

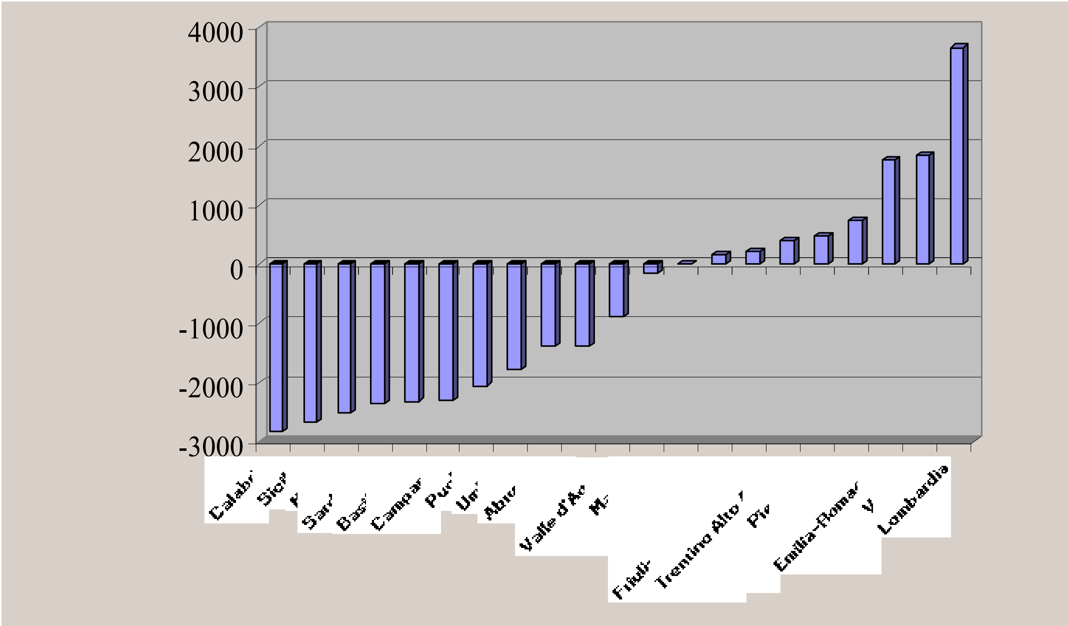
Not surprisingly, since as shown above, current expenditure is much more uniformly distributed than total revenue, all Southern regions turn out to be net recipients, while Northern regions are net payers. To exemplify: through the public budget, each resident of Lombardia transfers about 3,600 of euro of the taxes and contributions she/he pays (or around 30% of the total taxes and contribution she/he pays) to the other regions. On the contrary, each resident of Calabria receives through the public budget 2,800 euro from the other Regions, or about 55% more resources than the total taxes and contributions she/he pays. To a lesser extent, this is also true for any resident of the North versus any resident in the South. The only exceptions are Liguria (a smaller region with a disproportional share of elderly population, see Table 1) and Valle d'Aosta (a very small special region with an extraordinary amount of current expenditure), two Northern regions that also appear to be net recipient of funds. Trentino and Friuli (two other small special rich regions of the North) turn out to be net payers, although it should be recalled that we are not considering here capital expenditure, which is well known to be particularly high in these two regions (and in the Southern regions). Probably, if we had considered capital expenditure as well, the general picture would not have changed much, with the only difference that the distance between net payers and net recipients would have become even more pronounced and some regions (the two special regions mentioned above) would have moved from the net payers to the net recipients category. Our comparisons with other studies which instead also consider capital expenditure confirms this intuition (see section 5). Notice that size also plays a role; possibly because of unexploited returns to scale in the provision of services, smaller regions are consistently higher spenders than larger regions.

Table 10 - Net fiscal flows (per capita, euro)

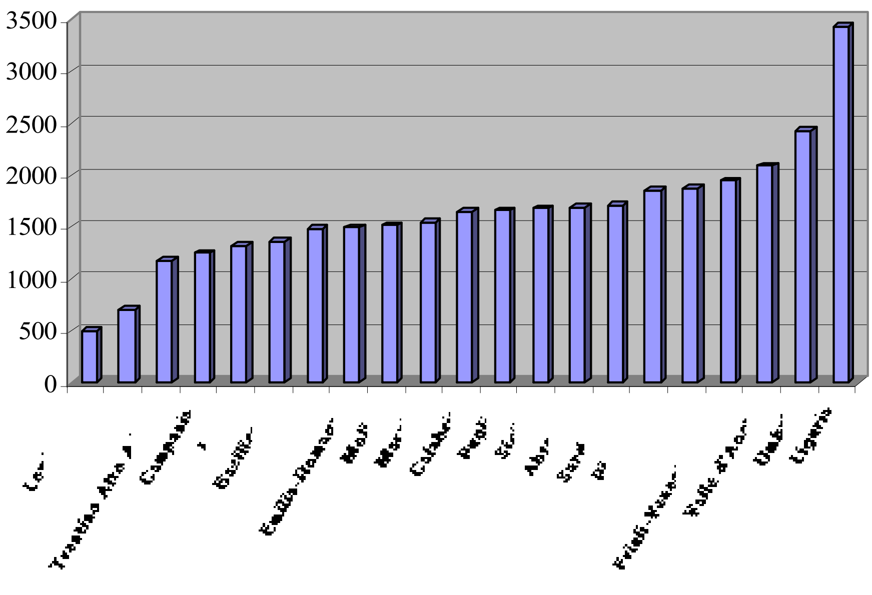
Regions	Net fiscal flows
Calabria	-2817
Sicilia	-2661
Molise	-2510
Sardegna	-2361
Basilicata	-2313
Campania	-2311
Puglia	-2056
Umbria	-1785
Abruzzo	-1394
Liguria	-1386
Valle d'Aosta	-890
Marche	-146
ITALIA	**0**
Toscana	160
Friuli-Venezia Giulia	212
Trentino Alto Adige	388
Piemonte	469
Lazio	737
Emilia-Romagna	1751
Veneto	1836
Lombardia	3653

An interesting question to raise is what causes this redistribution of resources across the territory, if this is due to a deliberate effort by the centre to equalize the provision of essential services (such as Health or Education) or as if the result of the working of some "automatic" mechanism, such as the social security system. To address this issue, we compute a measure of regional social protection "imbalance" by subtracting social protection expenditure from social contributions by region.
The result is shown in Graph 8. Notice that as the social protection system is in disequilibrium (current payments overcome current revenues and the difference is paid out of tax revenue), all regions now appear to be net receivers from the system. But of course this imbalance now depends largely on the features of the population, and in particular on the share of elderly population on the total.

Graph 7 - Net fiscal flows



Graph 8 - Social protection imbalance



Thus, the region more benefited by the social security redistribution system turns out to be Liguria, the oldest Italian region, and many other Northern regions (Toscana, for example, another relatively old region) also appear among the regions that benefit most from the redistribution system implicit in the social security mechanism. However, age (e.g. retirement pensions) is clearly not the only explanatory factor, as many Southern regions too, in spite of being relatively "younger" than the others, also appear among the ones most benefited by the system. Clearly, income support mechanisms (e.g. social pensions and minimum pensions) also play a role in leading the regional redistribution. As a final exercise, we then compute fiscal flows net of the social protection system, that is, subtracting contributions payments from total tax revenues and social security outlays from total expenditure, and computing the difference between the two residuals.

Graph 9 - Net fiscal flows, net of social protection

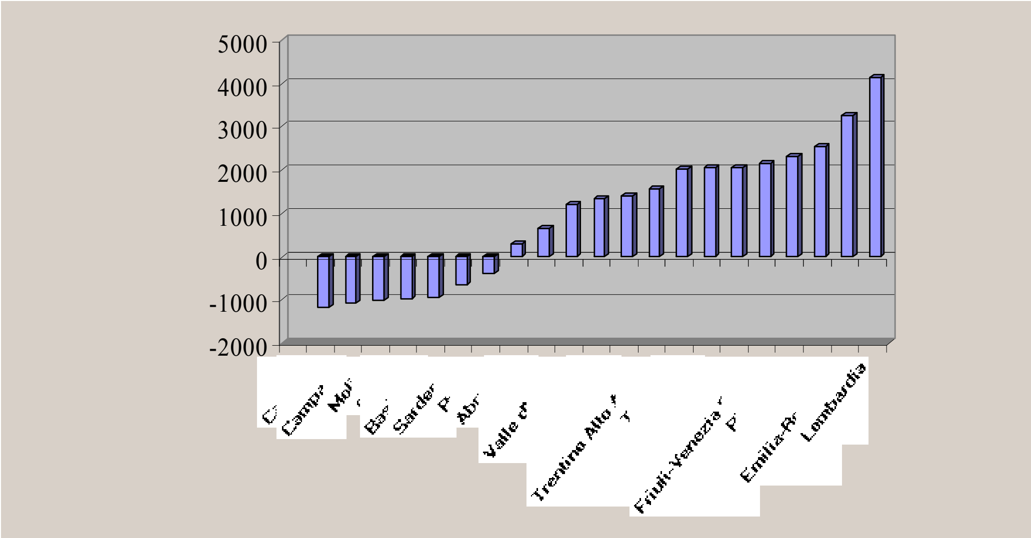


Table 11 - Composition of net fiscal flows

Regions	Net fiscal flows (total)	Social protection imbalance	Central	Local
Calabria	-2817	-1648	2059	-3228
Sicilia	-2662	-1679	2277	-3260
Molise	-2510	-1514	2682	-3679
Sardegna	-2361	-1716	3076	-3721
Basilicata	-2313	-1355	2370	-3328
Campania	-2311	-1245	2223	-3289
Puglia	-2056	-1659	2431	-2828
Umbria	-1785	-2432	4088	-3442
Abruzzo	-1394	-1695	3425	-3124
Liguria	-1386	-3434	5180	-3132
Valle d'Aosta	-890	-2090	6120	-4920
Marche	-146	-1548	4299	-2897
ITALIA	**0**	**-1475**	**4666**	**-3191**
Toscana	160	-1873	5061	-3028
Friuli-Venezia Giulia	212	-1945	5394	-3237
Trentino Alto Adige	388	-1175	5746	-4183
Piemonte	469	-1849	5225	-2908
Lazio	737	-1321	5693	-3635
Emilia-Romagna	1750	-1494	6068	-2824
Veneto	1836	-706	5128	-2586
Lombardia	3653	-499	6696	-2544

Results are shown in Graph 9 which suggests that by eliminating social security the fiscal flows are somewhat diminished in size, and that the security system on average works against the fundamental redistribution flows from the North to the South of the country. Regions such as Calabria and Campania are now closer to the national average (with 1,000 euro of "excess" revenue) than in the computation considering all revenue and all expenditure. On the other hand, regions like Lombardia and Veneto, which in addition of being richer, are also relatively younger than the others, turn out to be more penalized in this case. Table 11, which disentangles further fiscal flows in its three basic elements, social security, central and local, confirms this intuition[12].

5. Comparison with previous literature

As we said already, we are certainly not the first to compute interregional fiscal flows in the Italian context. On the contrary, computations abound, although their average quality may be questioned. Among serious academic research, we list in the tables below the previous studies we were able to find. These studies differ in terms of the reference year, the data used, and the purpose of the exercise. For instance, Arachi et al (2006) use CPT data, only excluding interest payments on public debt (and therefore considering capital expenditure as well), a mixed criteria for regionalizing public expenditure (benefit approach and cash flow approach), and instead of a year the average for the years 1996-2002. They also get a surplus for Italy of 811 euro per capita, which they do not correct in their computations of fiscal flows. Brosio and Revelli (2003) in an older study, use a cash flow principle (expenditure is allocated on the basis of the location of the actual disbursement), also regionalize interest payments, and, lacking further information, use approximation methods to regionalize tax revenue, considering tax shifting hypotheses as well. They also do not correct for the overall deficit. Finally, Maggi and Piperno (1998), in an even older study, use the benefit principle, include interest payments as well but on a per capita basis at the national level, and consider tax shifting hypotheses in regionalizing tax revenue.

In spite of all these differences, the results do not end up to be very different from ours, thus pointing out to some underlying robustness in the basic phenomenon all these works intend to measure. A simple correlation analysis shows that the closest estimate to ours is that of Arachi et al. (2006), (correlation index, 0.93) possibly because it is the most recent work and use (partly) the same data. The most far is the study of Brosio and Revelli (2003), with a correlation coefficient of 0.47, probably because they do not use a benefit principle but a cash flow one to regionalize public expenditure. In terms of a ranking of the different regions, from the most benefited to the more harmed by regional redistribution, results are also not too different from ours. In all studies, Lombardia, Veneto and Emilia Romagna turn out to be the highest net payers, while in three studies over four, Calabria turns out to be the region most benefited by redistribution. Interestingly, while in our case two special regions of the north (Trentino and Friuli) turns out to be net payers, in all the other studies ,these regions are instead net benefited by interregional redistribution, and in the work of Brosio and Revelli (2003), all special regions turn out to benefit more than Calabria. The most plausible explanation is that all these different studies also consider capital expenditure (which we instead exclude), which is well known to be particular high in all special regions (and in the South), and in the case of Brosio and Revelli they also use a cash flow principle, so for instance, attributing defence expenditure where is spent (mostly in the three special regions and in Sardegna) and administrative expenditure to Lazio (which in fact turns out to benefit from redistribution). On the whole, therefore, all these studies provide support to our basic computations and the main difference can be easily explained in terms of the methodology used.

[12] In Table 11, national net fiscal flows are computed as difference between central government revenues and the expenditure for national pure public goods; local net fiscal flows are computed as difference between local governments revenues and the expenditure which benefit in a different measure the residents in different regions (health, education and all other functions).

Table 12 – Net fiscal flows comparisons (1)

	Our net fiscal flows 2005	Arachi, Ferrario and Zanardi (years: 1996-2002)	Brosio, Revelli (1997)	Maggie e Piperno; Fondazione Agnelli (year 1995)
Piemonte	469	2.083	950	1255
Valle d'Aosta	-890	-3.301	-2568	-2633
Lombardia	3653	4735	1426	2788
Trentino Alto Adige	388	-614	-2648	-2288
Veneto	1836	2731	2070	1673
Friuli-Venezia Giulia	212	715	-1488	-154
Liguria	-1386	-232	23	-305
Emilia-Romagna	1751	3064	1252	1802
Toscana	160	1028	1124	694
Umbria	-1785	-772	54	-696
Marche	-146	518	799	249
Lazio	737	2219	-1467	226
Abruzzo	-1394	-763	95	-769
Molise	-2510	-2492	-407	-1996
Campania	-2311	-1911	-233	-1276
Puglia	-2056	-1688	-177	-1074
Basilicata	-2313	-2954	-1237	-2205
Calabria	-2817	-3487	-844	-2736
Sicilia	-2661	-2841	-1050	-1967
Sardegna	-2361	-2615	-1748	-2123
ITALIA	0	811	197	193
Correlation coefficient	1	0.93	0.47	0.85

But, as we said above, academics are not the only ones to produce data on fiscal flows in Italy. Political parties and interest groups are also continuously producing numbers, which are thrown in the political debate to support specific positions and particular requests. For instance, Table 14 presents a selected sample of the numbers on fiscal flows which appeared in the media during the last electoral campaign. Obviously, in most cases, neither the data source nor the criteria behind these numbers were specified. A quick look at the data is enough to understand how poor the political debate has been. For instance, according to the Northern League, Lombardia has a net positive fiscal flows of 5380 euro per capita whereas Campania has -133 and Basilicata -1232. The other estimations also do not make much more sense. But as we said already, an excuse for these poor numbers lies in the lack of transparency on regional data in Italy. The political debate would certainly benefit by a improved quality of data and by official estimations, based on clear and transparent methodology, of regional fiscal flows.

Table 13 – Ranking of regions
Net fiscal flows in increasing order
from highest net receiver to highest net payer

Regions	Our net fiscal flows (2005)	Arachi, Ferrario and Zanardi (years: 1996-2002)	Brosio, Revelli (1997)	Maggie e Piperno; Fondazione Agnelli (year 1995)
Calabria	1	1	8	1
Sicilia	2	4	7	7
Molise	3	6	9	6
Sardegna	4	5	3	5
Basilicata	5	3	6	4
Campania	6	7	10	8
Puglia	7	8	11	9
Umbria	8	9	13	11
Abruzzo	9	10	14	10
Liguria	10	12	12	12
Valle d'Aosta	11	2	2	2
Marche	12	13	15	15
Toscana	13	15	17	16
Friuli-Venezia Giulia	14	14	4	13
Trentino Alto Adige	15	11	1	3
Piemonte	16	16	16	17
Lazio	17	17	5	14
Emilia-Romagna	18	19	18	19
Veneto	19	18	20	18
Lombardia	20	20	19	20

Table 14 – Net fiscal flows comparisons (2)

	Our net fiscal flows 2005	Lega Lombarda	Union Camere Veneto 2003	PD Lombardia 2008	Confartigianato 2006
Piemonte	469	n.a.	316	1372	18
Valle d'Aosta	-890	n.a.	-4.767	- 4363	-6.094
Lombardia	3653	5380	3.292	3971	2.121
Trentino Alto Adige	388	n.a.	-2.208	n.a.	n.a.
Veneto	1836	n.a.	2.513	3267	2.061
Friuli-Venezia Giulia	212	n.a.	-2.615	- 574	-2.611
Liguria	-1386	n.a.	-2.285	- 530	-2.307
Emilia-Romagna	1751	n.a.	2.643	3625	2.020
Toscana	160	n.a.	180	1351	-145
Umbria	-1785	n.a.	-2.379	- 598	-2.323
Marche	-146	n.a.	120	1432	190
Lazio	737	n.a.	-1.430	682	-1.419
Abruzzo	-1394	n.a.	-1.155	- 872	-2.356
Molise	-2510	n.a.	-2.232	- 2121	-3.281
Campania	-2311	-133	-2.013	- 1137	-2.121
Puglia	-2056	n.a.	-2.204	- 1404	-2.267
Basilicata	-2313	-1232	-3.060	- 2322	-3.583
Calabria	-2817	-570	-3.473	- 2607	-3.881
Sicilia	-2661	n.a.	-2.854	- 2648	-3.922
Sardegna	-2361	n.a.	-3.186	- 1415	-3.160
ITALIA	0	n.a.	-266	777	-715

6. Concluding comments

In this paper we discussed at length the issue of fiscal federalism in Italy and presented a few results in terms of computing fiscal flows across regions. Our basic conclusions can be summarised as follows. Fiscal flows in Italy are huge and are mostly driven by the large difference in economic development between the different areas of the country, and in particular between the rich North and the poor South, although social protection (e.g. the public pension system) also plays an important and separate role in determining interregional redistribution. The public sector generally works in the direction of equalizing per capita (current) public expenditure across regions, at least for fundamental services, although this equalization is far from being complete (and it would certainly be much lower if we had considered the quality of public services too). However, the distance in economic development, and therefore in tax revenues among regions, is so large that even this partial equalization is enough to generate consistent fiscal flows across the national territory. With the deepening of the economic crisis and the need of more resources to be invested in the North, one may actually wonder if these financial flows are still sustainable by the country. Despite the new Constitution, these territorial difference are also so large to put in jeopardy the continuation of the decentralization process. Clearly, fiscal federalism has some chances of success in Italy only if it works in the direction of reducing the distance between territorial areas, starting again that convergence process which stopped more than thirty years ago. One problem is that the Italian debate on fiscal federalism is rich in ideology and poor in facts. It would certainly benefit by an improved quality of regional data and by official estimations, based on clear and transparent methodology, of regional fiscal flows.

References

AcoFF - Alta Commissione di Studio per la definizione dei meccanismi strutturali del federalismo fiscale, Relazione sull'attività svolta, Roma, Ministero dell'Economia e delle Finanze, 2005

Ahmad E., Brosio (eds) (2006), Handbook of Fiscal Federalism, Cheltenham and Northampton: Edward Elgar.

Ambrosanio M.F., Bordignon, M. (2004) *Il Federalismo in pratica*; il benchmarking delle Regioni Italiane, CIFREL, Milano.

Ambrosanio M.F., Bordignon, M. (2006) *Normative versus Positive Theories of Revenue Assignments in Federations* in Ahmad E., Brosio (eds) *Handbook of Fiscal Federalism*, Cheltenham and Northampton: Edward Elgar.

Ambrosanio M.F., Bordignon, M. (2006) *Il federalismo fiscale in Italia: fatti e problemi in Italia* «Osservatorio Monetario» n.1, Università Cattolica del Sacro Cuore, Laboratorio di Analisi Monetaria

Ambrosanio M.F., Bordignon, M. (2008) *Il federalismo fiscale in Italia*, Il Mulino, Bologna, forthcoming.

Ambrosanio M.F., Bordignon, M., Turati, G. (2008) *La stima degli effetti della proposta di legge al parlamento n. 0040 approvata dal Consiglio regionale della Lombardia*, Milano, Università Cattolica, mimeo.

Arachi G., Ferrario, C. and Zanardi A. (2006), *Redistribuzione e ripartizione del rischio fra territori regionali in Italia: il ruolo dei diversi livelli di governo,* in Barca F., Cappiello F., Ravoni L., Volpe, M. (eds.), *Federalismo, equità, sviluppo, I risultati delle politiche pubbliche analizzati e misurati dai Conti pubblici territoriali*, Il Mulino, Bologna.

Barca F., Cappiello F., Ravoni L., Volpe, M. (edrs.) (2006), *Federalismo, equità, sviluppo, I risultati delle politiche pubbliche analizzati e misurati dai Conti pubblici territoriali*, Il Mulino, Bologna.

Bordignon M. (2000) "Problems of Soft Budget Constraints in Intergovernmental Relationships: The case of Italy", Inter-American Development Bank, working Paper, November 2000 (R-398).

Bordignon M., Cerniglia F. (2001a), *L'aritmetica del decentramento: devolution all'italiana e problematiche connesse*, in Temi di Finanza Pubblica, Verde A. edr., Cacucci Editore, Bari.

Bordignon M., Cerniglia F. (2001b) *Riforme costituzionali e decentramento fiscale*, «Economia Italiana, 3

Bordignon M., Cerniglia F. (2004) *I nuovi rapporti finanziari fra Stato ed autonomie locali alla luce della riforma del Titolo V della Costituzione*, in Rivista di Politica Economica, n. IX-X, settembre-ottobre 2004

Bordignon M., Turati G. (2008) "Bailing Out Expectations and Health Expenditure in Italy: an empirical approach", (with Gilberto Turati), February 2005 - Revised version

Brosio, G., Revelli, F. (2003) *The political economy of regional opting our: distributive implications of a prospective Europe of Regions*, in Economics of Governance, n.4

Dipartimento per le politiche di sviluppo (several years), *I conti pubblici territoriali*

Dreze J. (2003) *Regions of Europe: A feasible Status, to be discussed* in Economic Policy

Fondazione Agnelli (1994) *Una proposta di federalismo fiscale*, G. Brosio, G. Pola e D. Bondonio eds., Contributi di ricerca, Torino.

Fondazione Agnelli (1998) *Il residuo fiscale nelle Regioni italiane: confronto 1989-1995*, M. Maggi e S. Piperno eds., Contributi di Ricerca, Torino

Giarda P. (2004), *Decentralization and intergovernmental fiscal relations in Italy: a review og past and recent trends*, in Rivista di diritto finanziario e scienza delle finanze, LXIII, n. 4

Isae (2005) *Rapporto annuale sull'attuazione del federalismo*, febbraio 2005

Isae (2006) *Rapporto annuale sull'attuazione del federalismo*, marzo 2006

ISTAT, *Spesa delle Amministrazioni pubbliche per funzione 1990-2006*, 7 febbraio 2008

ISTAT, *Conti ed aggregati economici delle AP*, 12 giugno 2007

Ministero dell'Economia e delle Finanze (several years), *Relazione generale sulla situazione economica del Paese*

Oates W. (1999) *An essay on Fiscal Federalism,* in Journal of Economic Literature, vol. 3

OECD (1999) *Taxing powers of state and local government,* OECD tax policy studies, No. 1

OECD (2003) Fiscal relations across government levels.

Ragioneria Generale dello Stato (2007), *La spesa statale regionalizzata. Anno 2005*

Ruggeri J. (2008) *Regional fiscal flows: measurement tools*, paper prepared for the Symposium on Fiscal Federalism organized by IEB, Barcellona, June 2008

Ruggeri J and Yu W. (2000) *Federal fiscal balance and redistribution in Canada, 1992-1997*, «Canadian Tax Journal», vol. 48, n. 3, pp. 392-412.

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