



Net fiscal flows and interregional redistribution in Italy: A long-run perspective (1951–2010)



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ABSTRACT

This paper carries out a long-run reconstruction of a discontinuous time series of net fiscal flows for Italian regions and macro-regions from 1951 to 2010. This evidence is the basis to put forward an assessment on the intensity of interregional redistribution operated by public sector. The main result of the paper is that even if the amount of resources transferred to Southern Italy from the rest of the country has been significant and increasing over time (at least up to the end of the 1990s), redistribution cannot be judged disproportionately large, in the light of income differences among regions, the public commitment in regional policies and the constitutional principles of equal access of citizens to the basic public services. Secondly, historical analysis of data and inspection of facts indicate that the relationship between the intensity of interregional redistribution and the financial effort of regional policies is weak. This supports the view that increasing NFFs have little served the purpose of regional convergence; rather, the rise of imbalances seems to be mainly connected to the overall escalation of public expenditure, following the institutional break occurred in mid-1970s with the establishment of Regional Governments.

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1. Introduction

The dualistic structure of the Italian economy is unique among the countries of the European Union, for both the width of the gap between rich and poor regions and the geographic size of the relatively underdeveloped area, the so-called Mezzogiorno, which accounts for more than 40% of national territory.¹ Despite more than 60 years of regional policies, in 2014 Southern regions still show values of GDP per capita and GDP per worker at respectively 53.7% and 75.6% of Centre-North, and an unemployment rate nearly twice as much as the national average, i.e., 20.5% versus 12.7% (SVIMEZ, 2015).

The presence of large and long-lasting differences between North and South of Italy in many indicators of economic and social

development has urged public intervention and a strong financial commitment by central and local governments for the implementation of policies sound to promote regional convergence and territorial rebalancing, at least since the 1950s. Characterized over time by different strategies, intermediate objectives and financial constraints, any public policy designed to fill the economic gap and apply the constitutional precepts of citizens' equality in accessing essential public services and progressivity criteria in income taxation has to some extent involved an inevitable redistribution in favour of Mezzogiorno from the more affluent Northern regions. This has originated an ongoing debate on the size of the Southern Net Fiscal Flow (NFF), i.e., the difference between public revenues raised from Southern regions and total public expenditures targeted to that area,² as well as on the burden imposed on contributing regions, its economic sustainability and even possible consequences on country stability, territorial conflict and incentives to secessions.

The relevance of this issue is clearly not restricted to the Italian case, which is both a particularly controversial one and peculiar

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¹ Mezzogiorno includes the Southern peninsular regions of Abruzzo, Molise, Campania, Apulia, Basilicata and Calabria and the islands Sicily and Sardinia. In this paper we use the words Mezzogiorno and South as synonyms. Also, following the literature, we employ the typical geographical aggregation of Italian regions in the four macro-regions named North-West (Piedmont, Aosta Valley, Lombardy, Liguria), North-East (Veneto, Trentino Alto Adige, Friuli Venezia Giulia, Emilia Romagna), Centre (Tuscany, Umbria, Marche, Lazio) and Mezzogiorno.

² Postponing details on the definition of NFF to Section 3, it is however the case to recall here that in the literature NFF takes on a variety of other names, such as fiscal residuum, fiscal balance, net fiscal transfer and so on.

since Italy is not even a federal country. A flourishing literature on the interregional redistribution operated through fiscal flows (see for example Bayoumi and Masson, 1995; Barberán et al., 2000; Bosch et al., 2002; Rodden et al., 2003; Bosch et al., 2010) has pointed out how the issue is multifaceted and contentious in many countries, especially for the difficulty to single out how much of vertical (from central to local governments) and horizontal (from rich to poor local governments) transfers are worth (i.e., can be actually ascribed to the genuine purpose of offsetting geographical disparities) or instead unjustified and due to other motivations (political interests, lobbying, corruption and inefficiencies in the provision of local public services).

The subject of this paper is closely connected to this debate. Our main objective is to carry out a historical reconstruction of regional NFFs in Italy throughout six decades (1951–2010), with the purpose of supplying an evaluation of the size of interregional redistribution operated by the public sector. To the best of our knowledge, it is an unprecedented attempt, since the existing literature has dealt with short time spans so far.³ The main result of our investigation is that the amount of resources transferred to Southern Italy from the rest of the country has been significant and increasing over time (at least up to the end of the 1990s). Nevertheless, comparisons with the results of the extant literature on a number of other countries point out that redistribution among Italian regions cannot be judged disproportionately large, when taking into account actual inequalities among regions, the public commitment in regional policies and the constitutional principles of equal access of citizens to the basic public services.

Moreover, we address the issue of the reasons behind the rise of Southern NFF, in order to understand whether the observed dynamics of regional unbalances are actually explained by the need to finance development policies. Since available data do not permit to single out the determinants of NFFs through an econometric investigation and even to make a fully reliable assessment of statistical correlation among relevant variables, we proceed to a scrutiny of facts and data by adopting a mainly historical approach. This allows us to argue that increasing NFFs have little served the purpose of regional catching up; rather, the rise of imbalances seems to be mainly connected to the overall escalation of public expenditure, following the institutional break occurred in mid-1970s with the establishment of Regional Governments.

After this introduction, Section 2 is devoted to a brief survey on the long standing debate about interregional redistribution in Italy, from its origins to recent contributions. Section 3 deals with the long-run reconstruction of regional NFFs, carried out by building up discontinuous time series of public revenues and expenditures for regions and macro-regions. Section 3.1 presents methodology and data; Section 3.2 comments on the results of NFFs reconstruction; Section 3.3 supplies an assessment on the intensity of the redistributive effort in favour of Mezzogiorno, by applying some techniques proposed by the literature. Section 4 investigates on the most likely causes of the observed dynamics of regional NFFs. Section 5 concludes the paper. Finally, Appendix A shows the series of regional per capita public revenues and expenditures as yearly averages on 11 periods between 1951 and 2010, and gives further details on the methods used for reconstruction.

2. The North-South interregional redistribution: a long standing discussion

The discussion on interregional redistribution operated by public sector in Italy has developed since national unification in 1861 and proceeded in parallel with the debate on the North-South gap.⁴ Early empirical studies on the issue date back to Pantaleoni (1891) and Nitti (1900). According to these studies, unification led to increased fiscal pressure in the provinces of the South, due to the extension of the fiscal system of the former Kingdom of Sardinia – approximately consisting of present Liguria, Piedmont and Sardinia – to the other pre-unitary states. As a consequence, Southern regions of the newborn country were called to contribute to financing national public budget to a higher extent than the North, despite their lower per capita income and population. On the other hand, the governments of the time targeted the North with relatively high levels of public investment for infrastructures aimed to support the ongoing industrial take off of local economies, while for the South an agricultural-based model of development was preferred. Thus, in the post-unitary period (1861–1900), the South suffered from a substantial drain of resources.⁵

After Nitti (1900), due to the difficulty of getting a reliable evaluation of the regional distribution of public spending, most of effort was devoted to the estimation of fiscal pressure at the regional level, and the debate focused on size and direction of the implied fiscal redistribution among the macro-regions of the country (Bernardino, 1928; Zingali, 1933). Later on, the availability of data allowing for more appropriate regional sharing of fiscal burdens (in particular, regional data on consumption were released permitting to estimate the geographic distribution of indirect taxes) stimulated new interest. Employing this additional information, but using different methods to evaluate the regional incidence of taxes, De Meo (1955) and Stamatati (1955) found starkly different results, respectively for years 1952–53 and 1953–34. According to De Meo, Northern regions, accounting for 62% of national income, contributed about 60% of total tax revenues while Central and Southern regions respectively paid 21% and 19% of total taxes, producing 20% and 18% of national income. Conversely, Stamatati (1955) concluded that the North contributed to national tax revenues by more than its own fiscal capacity.

Some years later, an attempt to supply regional estimates of both tax revenues and public expenditure is made by Tarquinio (1969). This study, using cash-flow data on revenues (collected taxed) and payments (public spending) registered by Provincial Treasuries and reported in the *Conto Riassuntivo* (Summary Statistics) of the Ministry of Treasury from 1951 to 1965, suffers from a major drawback. Indeed, Tarquinio (1969) only considers the payments settled by Provincial Treasuries, leaving out those made by the Central Treasury. Moreover, it takes into account only a share of the payments settled by the Provincial Treasury of Rome. According to Geri and Volpe (1985), omitted items imply that only 45% of total public expenditure is actually attributed to regions, while the remaining 55% is left out of the picture. On the other hand, Tarquinio (1969) presents important merits. Unlike previous investigations, it uses *actual* public finance data, rather than data *estimated* from the distribution of personal income, personal wealth or other macroeconomic variables available at the regional level. Also, considering

⁴ Historical roots and structural changes of the North-South divide characterizing the Italian economy are spelled out in Malanima and Zamagni (2010). The debate on the origins and determinants of the gap is still animated and controversial (see, for instance, Daniele and Malanima (2014a,b) and Felice (2013, 2014)).

⁵ Pantaleoni (1891) provides the first attempt to evaluate regional fiscal pressure relative to the regional distribution of national wealth for years 1884–1889. Nitti (1900) is the first to deliver regional estimates of the distribution of both tax burden and public expenditure for years 1893–94 and 1897–98.

³ The only exception is the recent paper by Buiatti et al. (2014) where the ratio of Government Surplus to GDP is estimated for North, Centre and South for the period 1963–2007. However in that case the estimation method is based on an indirect reconstruction operated from national account data, and results only partially coincide with ours.

a remarkably long span of time, it is able to clearly outline that between 1951 and 1965 Northern regions have benefited from a relatively higher level of public expenditure, while the South has enjoyed a slight relative advantage in terms of fiscal pressure. More generally, the collected evidence leads the author to conclude that between 1951 and 1965 ordinary public resources have been allotted to territories on the basis of political motivations and economic weight of regions, more than according to the rebalancing goals of the ongoing policies of *Intervento Straordinario* (Special Aid Program, henceforth SAP) for the development of the South.

The onset of Regional Governments in the early 1970s represents a structural break to the national tradition of strong centralization of the public sector. Fiscal decentralization and the presence of different levels of government bring about additional difficulties for a correct imputation of revenues and expenditures to different regions. Forte et al. (1978) and Geri and Volpe (1985) try to cope with such difficulties in two alternative ways, and reach very different conclusions: Forte et al. (1978) find a strong redistribution from North to South, while Geri and Volpe (1985) identify in the regional distribution of public spending the source of a relative advantage for the North.⁶

More recently, the political discussion on regional fiscal imbalances has been characterized by claims on a presumed excess in transfers of public resources from the North to the South, with some advocates of the federalist reform⁷ conceiving fiscal decentralization as a tool to empower Central-Northern regions to retain their own resources otherwise allegedly wasted in Mezzogiorno. The need to offer documented research about this issue, on which the debate has been often distorted by partisan attitudes, has spurred a resurgence of interest on the topic of interregional redistribution, also favoured by the great improvement in the quality and quantity of data. Since 1996, the Italian Economic Development Ministry has started to systematically collect data on public revenues and expenditures at a regional level, providing the publicly available dataset of *Conti Pubblici Territoriali* (Regional Public Accounting).⁸ These data represent a valuable source of information and have been indeed extensively used in a number of studies for the purpose of estimating regional NFFs or other aspects of the North-South redistribution.

The main recent contributions include Pisauro (2009), Staderini and Vadalà (2009), Ambrosanio et al. (2010), Arachi et al. (2010), Grasso and Garganese (2010), Ferrario and Zanardi (2011a,b), Giannola et al. (2011), Arachi et al. (2013), Cerea (2013), Piperno (2013). Although these studies are heterogeneous for objectives, approaches, covered time spans (within the period 1996–2010) and even for data and computation methods, they share the common conclusion that a substantial amount of resources is transferred

every year from Centre-North to Southern Italy, in the face of a persistent gap in per capita income and the endowment of socio-economic infrastructures, which at least partly justifies differences in per capita public revenues and outlays originating NFFs.

3. Estimating regional net fiscal flows and evaluating interregional redistribution

3.1. Methodology and data

In this section we preliminarily give account of some methodological issues related to our reconstruction of the series of regional public revenues, expenditures and NFFs in Italy throughout the period 1951–2010. Going back in time to six decades, a major difficulty of this task is connected to the lack of primary data from direct sources, at least for years prior to 1996. This problem obliges to resort to secondary data available from indirect sources, i.e., studies that provide estimates of regional tax revenues and public expenditures, with reference to different spans of time. In particular, we employ data drawn from Tarquinio (1969) for years 1951–1965, Forte et al. (1978) for years 1971–1973, ISTAT (1996) for years 1983–1992, and Fondazione Agnelli (1998) for the year 1995. To integrate the series with the data of the last two decades, we consistently select the studies by Arachi et al. (2010) for years 1996–2002, Staderini and Vadalà (2009) for years 2004–2006 and Arachi et al. (2013) for years 2007–2010, which supply the most homogeneous data with those of the previous years.

In order to deal with the multiplicity and heterogeneity of our sources, we conduct a careful screening of all the items included and excluded in the calculation of aggregate variables and the methods employed for computation/estimation in each study. Then, we make a number of adjustments needed to make consistent our dataset and sensible the comparisons among different periods: details on these adjustments are given in Appendix A and Notes to Tables A1–A6. We are aware of limitations due to the quality of information on Italian territorial accounts, which especially before 1996 is often deemed to be only partly reliable, also because of the national tradition of extreme centralization of the public sector. Nevertheless, we believe that our exercise is worthwhile and significant, considering that on one hand the previous literature has acknowledged the overall trustworthiness of our sources (even the oldest ones), and on the other hand the results we work out from our analysis are sufficiently neat to support at least qualitative (if not quantitative) conclusions on the dynamics of the examined variables. A further implication of the lack of primary data is that the time series we obtain are discontinuous, since many observations are only yearly averages over longer periods, while for some years data are missing. The nature of data, together with the small sample size, makes our data not suitable for time series analysis and suggests to interpret empirical evidence by adopting an economic historical perspective rather than a strictly statistical and econometric approach.

Another important methodological point concerns the exact definition of our main variable, i.e., the NFF. It is worth mentioning that there are several more or less similar ways to compute NFF.⁹ The definition that we and most of our source papers adopt considers NFF as the difference between what the residents of a region or a macro-region contribute to the general (central, local and social security) government and what they gain from it in terms

⁶ Forte et al. (1978) estimate regional fiscal imbalances for years 1971–1973 and document the existence of a significant drain of resources from the North to Mezzogiorno, occurring through both a lower tax pressure and (especially) a higher expenditure in the South. Notably, redistribution is found to be more effective in reducing current disposable income differences than filling the infrastructural and production gap between the two areas. Geri and Volpe (1985) estimate regional public expenditure flows in 1970s and find that the share of public expenditure received by the South is lower than the share of population but higher than its contribution to national GDP. More importantly, the richer Northern regions benefit from higher per capita levels of current public spending while, consistent with the territorial cohesion objective of regional policies, per capita public investment turns out to be higher in the South, although this relative advantage progressively declines over time.

⁷ After the introduction of Regional Governments between 1972 and 1977, since 1992 a reform process aiming at adopting a more decentralized fiscal framework has got under way. In 2001 the Constitution was changed to recognize a wider scope to local governments' action. More recently, fiscal autonomy has been enhanced by law 42/2009.

⁸ More detailed information can be found at the websites <http://www.dps.tesoro.it/cpt/cpt.asp> and <http://www.rgs.mef.gov.it/>.

⁹ The methodological problems connected to measuring NFFs are addressed for instance by the papers in Part I of Bosch et al. (2010); for a survey, see in particular Ruggeri (2010).

Table 1
Regional net fiscal flows in Italy, average values, 1951–2010, billions of 2010 Euros.

Regions	1951–57	1958–61	1962–65	1971–73	1983–85	1986–89	1990–92	1995	1996–02	2004–06	2007–10
Piedmont	2.050	2.062	3.555	5.957	5.321	7.433	8.127	7.509	6.719	4.409	6.292
Aosta Valley	0.000	-0.019	-0.032	-0.009	-0.331	-0.358	-0.274	-0.522	-0.624	-0.560	-0.087
Lombardy	8.341	10.699	12.751	16.964	27.242	31.307	35.609	42.145	45.235	43.550	24.222
Trentino A.A.	-0.204	-0.082	-0.154	0.016	-1.591	-0.950	-1.434	-3.013	-1.669	-1.901	-1.128
Veneto	0.593	0.063	0.066	0.716	5.244	5.622	7.398	12.986	11.149	9.054	3.585
Friuli V.G.	-0.137	-0.042	0.272	-0.669	-0.479	-0.655	0.012	-1.373	-0.143	-0.474	0.869
Liguria	2.837	3.243	3.646	1.510	-0.793	-0.798	-0.870	-3.178	-2.117	-2.460	2.714
Emilia Romagna	0.826	1.478	0.598	1.092	4.555	5.078	6.130	9.758	11.493	9.551	8.610
Tuscany	0.301	-0.167	0.000	-0.164	2.639	1.438	1.411	1.142	0.973	2.595	2.491
Umbria	-0.233	-0.416	-0.492	-0.719	-0.955	-1.188	-1.286	-1.868	-1.663	-1.905	0.029
Marche	-0.066	-0.203	-0.028	-0.653	-0.479	-0.734	-0.624	-0.326	-0.514	-0.168	-0.552
Lazio	-7.150	-2.929	-7.666	3.092	4.542	8.456	8.283	11.045	9.225	11.861	13.604
Abruzzi	-0.423	-0.871	-0.764	-1.956	-3.044	-2.310	-2.236	-2.659	-2.520	-2.191	-1.600
Molise	-	-	-	-0.681	-1.101	-1.069	-1.156	-1.348	-1.331	-1.342	-0.639
Campania	-1.053	-2.542	-2.195	-4.332	-10.043	-13.377	-13.996	-16.060	-19.574	-16.715	-18.345
Apulia	-1.135	-2.405	-1.990	-5.547	-6.385	-6.938	-7.854	-10.802	-12.625	-11.412	-9.737
Basilicata	-0.302	-0.540	-0.500	-1.432	-2.657	-2.683	-2.665	-2.391	-2.796	-2.663	-1.735
Calabria	-0.821	-1.351	-1.304	-3.722	-5.969	-7.080	-8.223	-11.835	-10.786	-9.231	-6.988
Sicily	-2.432	-4.096	-3.957	-6.413	-11.169	-15.167	-17.312	-22.691	-22.979	-17.684	-17.221
Sardinia	-0.822	-1.667	-1.858	-3.042	-3.880	-4.016	-4.494	-6.531	-6.994	-5.696	-4.384

Source: Own elaboration on Tarquinio (1969), Forte et al. (1978), ISTAT (1996), Fondazione Agnelli (1998), Arachi et al. (2010), Staderini and Vadalà (2009) and Arachi et al. (2013).

of public spending targeted to that (macro-)region.¹⁰ Concerning in particular expenditure, the approach adopted by all our sources and ourselves is the one known as the benefit approach (for alternative approaches, see Ruggeri, 2010) which focuses on the actual beneficiary of spending. As it is known, the real recipient is not always residing in the region where expenditure is formally recorded, like in the case of general public services which accountancy concentrates in Lazio, the region of the capital Rome, but actually regard all residents throughout the country.

Our notion of NFF is therefore quite comprehensive and in principle meant to include all public revenues and (current and capital) expenditures relevant to a given territory. However, following most of the empirical literature on regional NFFs, we do not include computations of interests on public debt. This omission is usually motivated by the practical problems involved in the allocation of interests among regions. Several authors also argue that interest payments should be kept out of NFFs calculation because they do not bestow additional benefits on the recipients, who would have otherwise purchased private securities. As pointed out by Ruggeri and Yu (2000), this argument is little convincing since the cost of servicing public debt is borne by taxpayers often dwelling outside the region where interests are paid and/or public debt accumulated because primary outlays were not financed by current taxes. Although the payment of interests constitutes an additional component of interregional redistribution (see Giannola and Scalera, 1995 for more detail on the Italian case), we will not include it in NFFs, given the difficulty of evaluating this item. For the same reason, revenues and expenditures of public enterprises are also excluded.

An additional issue we deal with concerns the possible adjustment of regional NFFs to account for aggregate public surplus or deficit. In fact, when the purpose of reckoning NFFs is that of representing the intensity of regional redistribution operated through

¹⁰ The opposite definition (i.e., public expenditure minus taxation) is also common. More generally, in federal contexts, NFF is alternatively calculated as the payments made by residents and regional government to other (federal or regional) governments minus what a region receives through direct spending and intergovernmental transfers (Ruggeri, 2010). A partly different approach distinguishes between vertical and horizontal fiscal imbalances (e.g., Bird and Tarasov, 2004); Arachi et al. (2010) evaluate NFFs for Italian regions and then break them down in their vertical and horizontal components.

the public sector, it seems sensible to cleanse regional balances from the amount accounting for the regional share of the overall surplus or deficit (McCracken, 1993; Mansell and Schlenker, 1995; Ambrosanio et al., 2010; Arachi et al., 2013). To do that, we amend original data by allocating surplus or deficit to regions on a per capita basis, so as to have a zero aggregate net fiscal flow (i.e., national aggregate NFF=0 and therefore national per capita NFF=0).

3.2. Estimating NFFs

As expected, data reported in Tables A1–A6 in Appendix A show that the sharp economic regional differentials reflect in the size of both per capita revenues due to different fiscal capacity by taxpayers and public expenditures, which come out to be rather different among Italian regions. Socio-economic factors and fiscal policy decisions also impact on the distribution of public revenues and expenditures among different categories in each region. For the same reasons, the evidence of very different regional NFFs cannot surprise. These latter are summarized in Table 1, built up from Tables A1–A6, which reports yearly averages of regional NFFs in Euro 2010 values, adjusted for aggregate budget surpluses or deficits (i.e., modified as explained above to make aggregate surplus/deficit equal to zero). A view on NFFs of the four macro-regions North-West, North-East, Centre and South is supplied by Table 2 and Figs. 1 and 2. Table 2 shows the values of NFFs in absolute Euro 2010 values, per capita terms, and as ratios to local GDP. Figs. 1 and 2 display the time paths of macro-regional NFFs respectively in 2010 billion Euros absolute and per capita values.

The evidence presented allows to argue that the evolution of NFFs over time is characterized by the following major features:

- despite the multiplicity and heterogeneity of sources, NFFs of all macro-regions follow a consistent and relatively smooth pattern throughout the whole period;
- a strong and continuous (at least until the end of the 1990s) increase in absolute and per capita values of NFFs in favor of the South takes place, with a clear deepening of unbalances;
- North-West and South increasingly assume opposite roles as structural donor and recipient, while North-East and Centre are initially neutral and turn out to appreciably contribute from mid-1980s onwards. More precisely, both absolute and per capita

Table 2
Macro-regions' net fiscal flows in Italy, averages, 1951–2010.

		1951–57	1958–61	1962–65	1971–73	1983–85	1986–89	1990–92	1995	1996–02	2004–06	2007–10
Billions of Euros (2010 prices)	North-West	13.227	15.986	19.921	24.421	31.439	37.584	42.591	45.955	49.213	44.940	33.141
	North-East	1.079	1.417	0.782	1.156	7.729	9.095	12.106	18.357	20.830	16.229	11.936
	Centre	-7.148	-3.715	-8.185	1.557	5.747	7.972	7.784	9.993	8.020	12.384	15.572
	Mezzogiorno	-6.989	-13.470	-12.566	-27.125	-44.249	-52.640	-57.936	-74.316	-79.605	-73.797	-60.649
Per capita Euros (2010 prices)	North-West	1096	1248	1466	1625	2070	2484	2850	3066	3263	2918	2152
	North-East	114	149	81	114	742	875	1167	1756	1967	1474	1084
	Centre	-805	-402	-848	150	527	728	714	909	724	1103	1387
	Mezzogiorno	-387	-729	-669	-1424	-2150	-2515	-2821	-3561	-3811	-3561	-2927
Ratios to regional GDP	North-West	12.97	10.78	11.19	9.62	9.23	10.12	10.37	10.92	11.10	9.57	7.43
	North-East	1.72	1.63	0.71	0.74	3.31	3.63	4.32	5.92	6.30	4.58	3.56
	Centre	-12.65	-4.77	-8.16	1.05	2.66	3.38	3.03	3.58	2.68	3.87	5.13
	Mezzogiorno	-9.65	-13.13	-9.70	-14.00	-15.45	-16.94	-17.65	-22.26	-22.16	-19.70	-16.98

Source: Own elaboration on Tarquinio (1969), Forte et al. (1978), ISTAT (1996), Fondazione Agnelli (1998), Arachi et al. (2010), Staderini and Vadalà (2009) and Arachi et al. (2013).

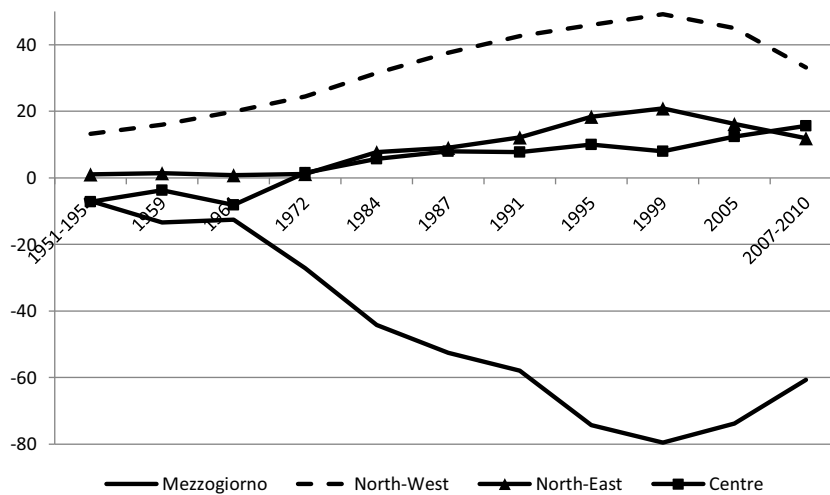


Fig. 1. Macro-regions' NFFs (2010 billion Euros), 1951–2010.

Source: Own elaboration on Tarquinio (1969), Forte et al. (1978), ISTAT (1996), Fondazione Agnelli (1998), Arachi et al. (2010), Staderini and Vadalà (2009) and Arachi et al. (2013).

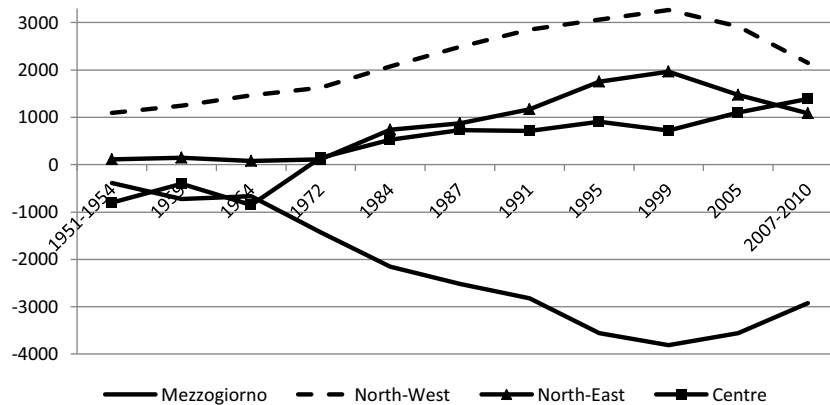


Fig. 2. Macro-regions' per capita NFFs (2010 Euros), 1951–2010.

Source: Own elaboration on Tarquinio (1969), Forte et al. (1978), ISTAT (1996), Fondazione Agnelli (1998), Arachi et al. (2010), Staderini and Vadalà (2009) and Arachi et al. (2013).

values of Southern NFFs follow a U-shaped curve with the trough in the second half of the 1990s, while North-West shows a symmetrically opposite evolution. For the other two macro-regions, the variability of NFF indicators is definitely lower. North-East initially exhibits NFFs close to zero in terms of both absolute and per capita values, while later on, between 1984 and 1999, the trend is increasing. Since 1999 the NFF of this macro-region

again shrinks in both absolute and relative terms. Finally, for the regions of Centre, the NFF is negative and close to the figures of South up to the beginning of the 1970s; then it turns to be positive and increases steadily throughout the period. Finally, in the last four years (2007–2010), the NFF becomes greater in Centre than in the North-East.

3.3. Assessing the extent of redistribution

In order to provide an overall assessment on the intensity of the interregional redistribution occurred in Italy between 1951 and 2010, in this section we use some indexes and analytical procedures which allow to make a meaningful judgment on the extent of redistribution, i.e., one taking into account actual inequalities among regions, the public commitment to reduce regional disparities and the constitutional principles of equal access of citizens to the basic public services to be supplied by government. In performing this task, we consider redistribution carried out in other countries through public finance flows (as estimated by other studies) as a benchmark against which to compare our estimations, although aware that these comparisons always require great caution, due to heterogeneity in defining and measuring redistribution (Lambert et al., 2011).

The importance of interregional redistribution is first evaluated through a simple econometric exercise by which regional per capita NFFs and regional per capita disposable income are in turn regressed on per capita regional GDP. In particular, we estimate the regression equations

$$\text{NFF}_{it} = \alpha_1 + \beta_1 \text{GDP}_{it} + u_{1it} \quad (1)$$

and

$$\frac{y_{it}}{y_{at}} = \alpha_2 + \beta_2 \frac{\text{GDP}_{it}}{\text{GDP}_{at}} + u_{2it}, \quad (2)$$

where $y = \text{GDP} - \text{NFF}$ is per capita regional disposable income (i.e., after that public revenues have reduced and public expenditures increased initial regional GDP), subscripts i and t respectively denote region and time, and variables in Eq. (2) are normalized (i.e., divided respectively by average country values y_{at} and GDP_{at}).

Estimated values of both parameters β_1 and β_2 can be employed to evaluate the intensity of redistribution. Indeed, β_1 is a direct measure of redistribution, and precisely of the impact of an increase in regional income on regional NFF. The more NFF soars in response to a rise in income, the higher is the contribution requested to the rich and the stronger redistribution.¹¹ The idea to estimate Eq. (2) was originally due to Bayoumi and Masson (1995). Their simple approach is based on the idea that the government propensity to modify initial regional GDP through public financial flows reveals its attitude toward interregional redistribution: the less disposable income y is determined by regions' own GDP, the stronger the redistributive stance of government. More precisely, the estimated value $\hat{\beta}_2$ can be considered as an inverse indicator of the redistributive impact of public finance, while $1 - \hat{\beta}_2$ supplies a direct measure of such redistribution. Notably, $0 \leq 1 - \hat{\beta}_2 \leq 1$: if an increase in $\text{GDP}_i/\text{GDP}_a$ involves a proportional increase in y_i/y_a , then $\hat{\beta}_2 = 1$, and $1 - \hat{\beta}_2 = 0$, i.e., disposable income is entirely determined by GDP and the redistributive impact of fiscal flows is zero; conversely, when changes in $\text{GDP}_i/\text{GDP}_a$ do not lead to any change in y_i/y_a , we get $\hat{\beta}_2 = 0$, and redistribution is $1 - \hat{\beta}_2 = 100\%$. Finally, redistribution is assessed at intermediate levels when the response of y_i/y_a to changes in $\text{GDP}_i/\text{GDP}_a$ is strictly positive and less than one-to-one.

Since most of the literature finds that Special Statute regions often record higher NFFs than Ordinary Statute regions,¹² for robustness purposes, Eqs. (1) and (2) are also estimated control-

ling for some possible heterogeneity among regions connected to regional (ordinary or special) constitutional statute. To do that, we include the dummy SSR taking the value 1 for Special Statute regions and 0 otherwise.

Table 3 summarizes the results of our estimations of Eqs. (1) and (2) for both the whole period 1951–2010 and the sub-period 1984–2010, characterized by relatively higher NFFs (see Tables 1 and 2 and Figs. 1 and 2). Over the entire span of time 1951–2010, the estimation of Eq. (1) indicates that an increase of 1 Euro in regional per capita income on average involves an increase of about 10 cents in per capita NFF. In terms of Eq. (2), the extent of redistribution – i.e., $(1 - \hat{\beta}_2)$ – can be evaluated around 34.4%. When only the last 25 years are taken into consideration, the size of estimated redistribution looks more substantial: an increase of 1 Euro in regional per capita income involves an average increase of more than 35 cents in per capita NFF, while the extent of redistribution rises to around 43.4%. In any case, the hypothesis of no redistribution (i.e., $\hat{\beta}_2 = 1$) is always rejected at very high level of significance (Table 3, row 6). Controlling for regions' constitutional status implies only minor effects: while the dummy SSR shows always the expected sign with strong statistical significance, the estimated coefficients $\hat{\beta}_2$ stay almost unaltered so that redistribution to be ascribed to Special Statute turns out to be not higher than 1–2%. Our estimations are consistent with previous results of the literature on the Italian case. By estimating various versions of the Bayoumi and Masson (1995) equation, Decressin (2002) and Arachi et al. (2010) assess the extent of redistribution carried out by the public sector respectively for the periods 1983–1992 and 1996–2002: the former finds that the redistributive power of fiscal flows is about 25–38%, while for the latter interregional redistribution amounts to 28%. For Ferrario and Zanardi (2011b), redistribution achieved by all public sector programs amounts to 36.6% of GDP between 1996 and 2005.

Although comparisons with other countries require the due circumspection, weighing our results against most of the existing literature points out that the overall intensity of interregional redistribution operated in Italy seems not very different from the one recorded in many other countries, and relatively higher (even if still not disproportionately elevated on a comparative basis) only for the sub-period 1984–2010. Among the studies evaluating redistribution through the estimation of the Bayoumi and Masson (1995) or similar equations, MacDougall (1977) estimates redistribution through public fiscal flows around 40% (average over several countries); Castells et al. (1981) 30% for Spain; Bayoumi and Masson (1995) 39% for Canada and 22% for the United States; Méliitz and Zumer (1998) 38% in France, 26% in UK, 18% in Canada and 16% in the USA; Duboz and Nicot (1998) 40% for Germany; Castells (1998) 45% on average in several European countries. More recent contributions are the ones by Barberán et al. (2000), assessing the redistributive power of the activity of the Spanish central public administration between 32% and 38% in 1991–96; Bosch et al. (2002), according to which redistribution is around 28% in Australia (1985–1999), 33% in Spain (1991–1996) and 18% in the United States (1981–1998); Espasa (2001) estimating the redistributive power in the European Union at 5% (1986–1999)¹³; Rodden (2010), for which the redistributive power of public grants between 1990 and 2005 is: less than 10% in Argentina, Brazil, India, United States and European Union; between 10% and 20% in Australia, Germany and Spain; around 23% in Canada. Finally, it is also possible to evaluate interregional redistribution in Italy by contrasting our evidence

¹¹ Estimations of different versions of Eq. (1) are supplied for example by Domenech et al. (2000) and Mattila (2006).

¹² The Republican Constitution recognized a special statute to the islands Sardinia and Sicily and border regions with relatively large linguistic minorities (i.e., Aosta Valley, Trentino Alto Adige and Friuli Venezia Giulia). Thanks to the special statute, these regions enjoy broader spending powers and receive larger financial transfers from central government.

¹³ “However, if we consider that the relative size of the European Union budget in terms of GDP is quite small (...), the redistributive power is in fact very high” (Espasa, 2001, p. 31).

Table 3
Assessing the extent of redistribution.

	1951–2010		1984–2010	
	Equation (1)	Equation (2)	Equation (1)	Equation (2)
$\hat{\beta}$	0.1021*** (0.0367)	0.6557*** (0.0366)	0.3583*** (0.0351)	0.5661*** (0.0110)
SSR	0.0929*** (0.0343)	0.0416*** (0.0096)	0.6741*** (0.0398)	0.3452*** (0.0357)
Constant	-1369*** (142.630)	0.3240*** (0.0420)	-780.4*** (136.350)	-780.4*** (136.350)
Adjusted R ²	-1817.6** (751.510)	0.3499*** (0.0373)	-8670*** (888.146)	0.4395*** (0.0127)
F	0.2316	0.8929	0.7247	0.9262
$\hat{\beta} = 1$	34.010***	1826.9***	366.82***	1744.9***
Observations	220	220	140	140
		-9.396***		-39.33***
		-8.177***		140
		220		140

Source: Own elaboration on Tarquinio (1969), Forte et al. (1978), ISTAT (1996), Fondazione Agnelli (1998), Arachi et al. (2010), Staderini and Vadaia (2009) and Arachi et al. (2013).

Note: Robust standard errors in parentheses; (*), (**), (***) denote statistical significance respectively at confidence levels of 10%, 5% and 1%.

on per capita regional or macro-regional NFFs (Tables 1 and 2 and Figs. 1 and 2) with other countries' data. Even in this case, the figures of Mezzogiorno imbalance do not look disproportionately large with respect to other European regions.¹⁴

Additional information is conveyed by Fig. 3, concerning the *real* (i.e., relative to regional GDP) burdens (benefits) imposed to (enjoyed by) residents of contributing (benefited) regions. Fig. 3 shows the time evolution of NFF/GDP ratios in the four macro-regions, highlighting that especially in the last 20–25 years those ratios show a rather moderate dynamics, despite the fact that absolute and per capita NFFs remarkably increase. In particular, while not surprisingly, and in accordance with the progressivity of the Italian fiscal system, North-West turns out to be again the macro-region with the most significant contribution to inter-regional transfers relative to its own GDP, its role in nourishing the redistribution toward the South appears to be declining over time. As a matter of fact, from 1980s onward (and particularly in 2007–10) the GDP-weighted contribution of North-West to transferring resources to the South comes out to be less than in 1950–1960s. For what concerns North-East, the weight of NFF on its own GDP remains always rather low, less than 6%, even in the 1980s and 1990s, when absolute and per capita transfers significantly increase. Finally, regarding Centre, from 1972 onward its NFF/GDP ratio is always very close to North-East and at the end of the period it is about 5.13%, not much lower than the value of North-West (7.43%).

To complete our assessment of the magnitude of interregional redistribution, we separately consider the evolution of public outlays and revenues (Figs. 4 and 5). Fig. 4 shows the relative values of per capita public expenditures in the four macro-regions between 1971 and 2006. The graph highlights that while in the 1970s per capita public expenditure is higher in the South than in all the other macro-regions, from the beginning of the 1980s, it is steadily below the national average, with the difference increasing over time (in 2004–06, more than 5% with respect to Italy and about 8% with respect to the North). Conversely, per capita public expenditure in North-West and North-East is almost always above the national average, whereas in the Centre it is increasing throughout the period: lower than in all the other macro-regions until the end of the 1990s but higher in 2004–06.

To set up Fig. 5, we resort to a notion of regional *normal* per capita tax revenue, meant as the personal income tax (IRPEF) payment owed by a resident earning an income equal to average regional GDP,¹⁵ and then build up the ratio of actual to normal per capita tax revenues for each macro-region. By setting the value of this index equal to 1 for Italy, we can state that regions with values higher than 1 are contributing comparatively too much to overall public revenues. Fig. 5, depicting the time path of this index between 1971 and 2006, points out that except in the 1970s the

¹⁴ In the UK, according to recent estimates (Northern Ireland Department of Finance and Personnel, 2014), in 2011–12 Northern Ireland per head NFF was about 6700 Euros, i.e., 4000 Euros net of UK aggregate per capita deficit; in 2009–10 the same figures were respectively 7500 and 4500 Euros respectively. Wales and North-East England show smaller but still significant and long-lasting imbalances (Economic Outlook, 2008; Eden, 2011). In Germany, some Länder display large per capita differences between received and disbursed payments (considering both horizontal and vertical transfers; see Deutsche Bank Research, 2011). Throughout the period 1995–2010, this aggregate, similar to NFF, amounts to about 1800 Euros and 1600 Euros per year respectively for Bremen and Berlin.

¹⁵ To reckon macro-regional normal tax revenues, we assume that the taxpayer is a household with two children and both parents employed, with income equal to the average macro-regional income. Then, by making use of the procedure implemented at the website <http://www.dossier.net/irpef/calcolo-irpef.htm>, we calculate her tax bill. Tax rates and family tax credits refer to fiscal year 2012. For example, the taxpayer of North-West in 1971–73 has a taxable yearly income of 16,891 Euros, a tax credit of 677 Euros and a theoretical tax bill of 3284 Euros.

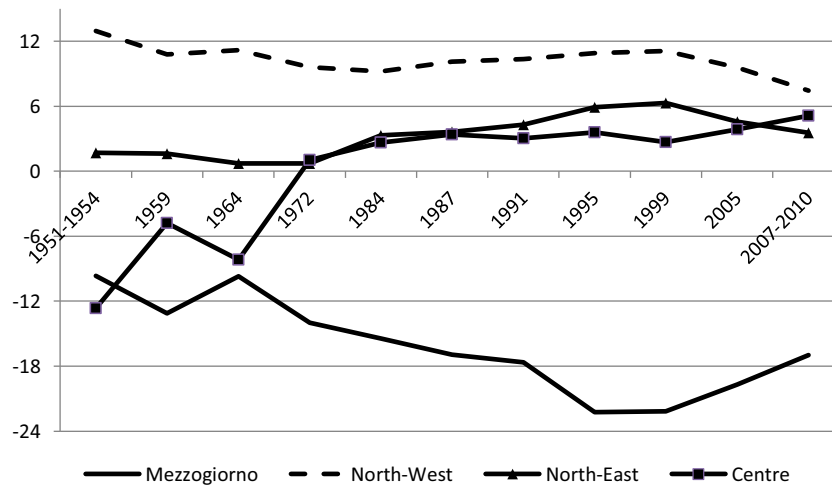


Fig. 3. NFF/GDP ratios (%) in macro-regions, 1951–2010.

Source: Own elaboration on Tarquinio (1969), Forte et al. (1978), ISTAT (1996), Fondazione Agnelli (1998), Arachi et al. (2010), Staderini and Vadalà (2009) and Arachi et al. (2013).

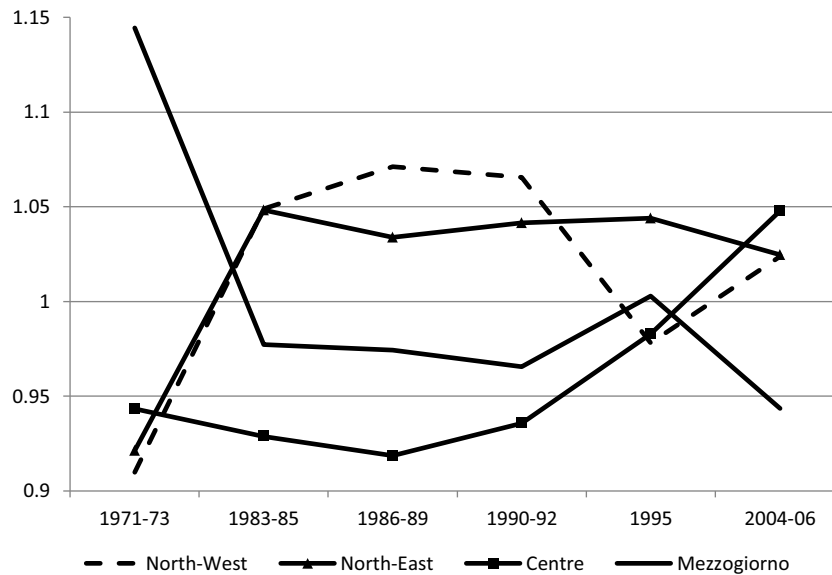


Fig. 4. Per capita public expenditures in macro-regions, 1971–2006 (Italy = 1).

Source: Own elaboration on Forte et al. (1978), ISTAT (1996), Fondazione Agnelli (1998), Arachi et al. (2010), Staderini and Vadalà (2009) and Arachi et al. (2013).

value of actual to normal per capita revenues is in the South always well above the national average (at least 5% up to 15% higher from 1990s onward). In North-West and Centre the ratio is steadily close or just above the average (around 4% higher in North-West), while in North-East it is permanently lower (about 15% lower from 1995 onward). This evidence confirms that while in absolute terms per capita values of tax revenues in the South are always significantly lower than in other macro-regions, because of the lower income of this area, the Southern citizens end up with paying considerably more than they would if overall fiscal revenues were shaped by the same progressivity involved by IRPEF personal income tax.

Finally, it is important to recall that our data on NFFs do not include the payment of interests on public debt. Over the whole period 1951–2010 the share of public bonds held by residents in Mezzogiorno has been much lower than the one belonging to Northern residents, so that Southern regions have permanently received much lower interest payments by the State than other macro-regions. According to Magnani (1997), per capita interest payments on public debt going to Southern residents are around 20% of the corresponding figure in the Centre-North in years

1970–1992. As a consequence, omitting public outlays connected to interest payments substantially affects our results: with the inclusion of interest expenditure the size of interregional unbalances and redistribution from Centre-North to South would be reduced in a significant way (Giannola and Scalera, 1995).

Summarizing, the evidence shown above seems to supply little ground for extreme judgments on the extent of interregional redistribution in Italy over the considered span of time. While in fact in absolute terms the amount of transferred resources is significant and increasing over time (at least up to the end of the 1990s), many indicators show that the impact of redistribution can be deemed to be rather moderate, when considering the severity of differences in regional incomes.

4. Why have regional NFFs increased so much?

Even if the evidence shown in the previous section indicates that interregional redistribution can hardly be judged too large, the increase of regional NFFs (in both absolute and per capita terms) has been certainly remarkable, raising a question on the reasons

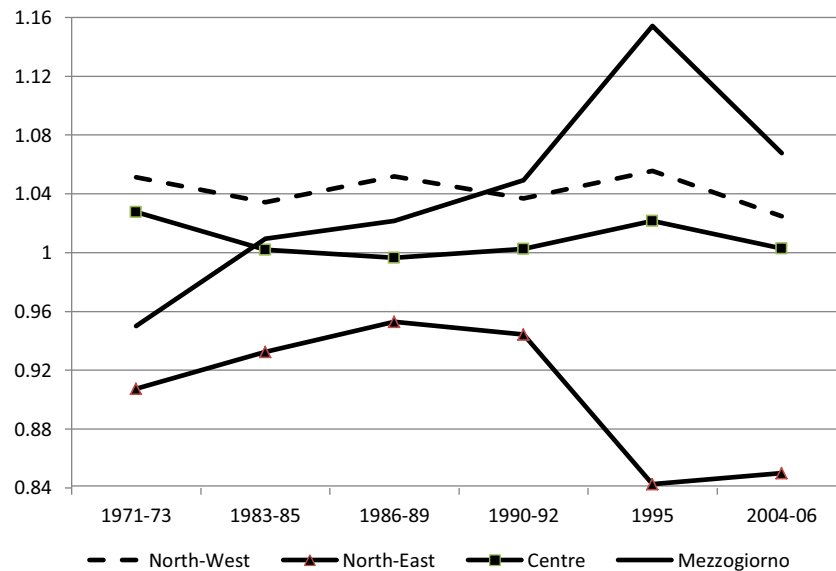


Fig. 5. Per capita actual/normal revenues in macro-regions, 1971–2006 (Italy = 1).

Source: Own elaboration on Forte et al. (1978), ISTAT (1996), Fondazione Agnelli (1998), Arachi et al. (2010), Staderini and Vadalà (2009) and Arachi et al. (2013).

behind its observed dynamics. A first natural candidate explanation is supplied by the existence itself of the historical North–South gap and regional policies aimed at filling that gap. Indeed, implementing policies to promote development of lagging regions may often involve a rise in NFFs. In particular, for the Italian case, one could argue that the needed increase in Mezzogiorno total investment expenditure had to be backed by increases in domestic (i.e., Southern) or/and outside saving, this latter including private (mainly, direct investments by Northern firms and financial flows by Northern banks) and public (NFFs) components. So, to the extent that domestic and private outside saving fell short of total investment, public transfers from outside were needed.¹⁶ In this view, the Southern imbalance is a consequence of regional policies and to some extent an unavoidable cost to pay in order to fuel the development of lagging regions. An alternative explanation worth being explored emphasizes the possible impact on NFFs exerted by the reform of the Italian local government financing system occurred in the second half of 1970s. This implied a deep overhaul, leading to more centralized revenues from municipalities to the national government, and a strong decentralization of expenditure (in particular health and transportation expenditures) due to the establishment of Regional Governments. According to many observers (Bordignon, 2000; Giarda, 2011), this reform significantly softened the public budget constraint, favoring a sharp increase in the overall primary public expenditure. In the face of a massive expansion of public expenditure and a soft budget constraint, the growth of Southern NFFs (rising *only* from 10–13% of local GDP in the 1950–1960s, to 22% in the 1990) could have been an unavoidable effect, in the light of differences in regional income and the progressivity of taxation system.

We are aware that the paucity of data makes it impossible to single out the determinants of NFFs through an econometric investigation and even to make a fully reliable assessment of statistical correlation among relevant variables. Thus, in what follows, by adopting a mainly historical approach, we proceed to a scrutiny of facts and data to contrast the two hypotheses sketched above as possible explanations for the rise of NFFs. Firstly, we look at

the time path of relative Southern per capita GDP between 1951 and 2010, to check whether the empirical evidence provides any support to the conjecture that NFFs deepening has been functional to financing regional policies and filling the North–South gap. In accordance with a large body of literature,¹⁷ Fig. 6 depicts a pattern of convergence, divergence and stability taking place in the three sub-periods covering years (a) from 1950s to early 1970s, (b) from mid-1970s to mid-1990s, and (c) from mid-1990s on.

4.1. From 1950s to early 1970s: convergence

In these years, a relatively long period of substantial regional convergence takes place. Between 1951 and 1973 the Italian per capita GDP grows at sustained rates, about four times more than in 1936–1951: the North grows at an yearly averaged rate of 4.3%; Mezzogiorno does even better, with an average growth rate of 5.8% (Daniele and Malanima, 2007). Concerning regional and development policies, the inception of SAP intervention allows Southern Italy to start industrialization and significantly reduce its gap by allotting substantial and increasing resources to this purpose (see Table 4). The policy stance is characterized by a centralized governance and a top-down supply-based approach, mainly implemented by the *Cassa per il Mezzogiorno* (Southern National Agency), established in 1950 to design and finance investment programs and projects targeted to the Southern economy. As a result of this intervention, an intense process of accumulation takes place largely due to the localization in the area of large (often state-owned) manufacturing plants operating mainly in heavy industry (see Table 5).

4.2. From mid-1970s to mid-1990s: stability and then divergence

After the Southern relative GDP reaches its highest value in 1972–74, the following decades see first a stage of stability in regional disparities coinciding with a nationwide economic slow-

¹⁶ An application of national accounting methodologies to the case of Southern Italy imbalance is carried out by Savona (2010).

¹⁷ There is a wide consensus on the evolution of regional convergence in Italy, in particular on the evidence that “per capita income inequality has decreased over the period 1960–75, but (...) it has started to increase again from the mid-1970s” (Paci and Saba, 1997, p. 1). Among other references, see for example Iuzzolino et al. (2013), Dow et al. (2012), Di Liberto et al. (2008), Terrasi (1999), Mauro and Podrecca (1994).

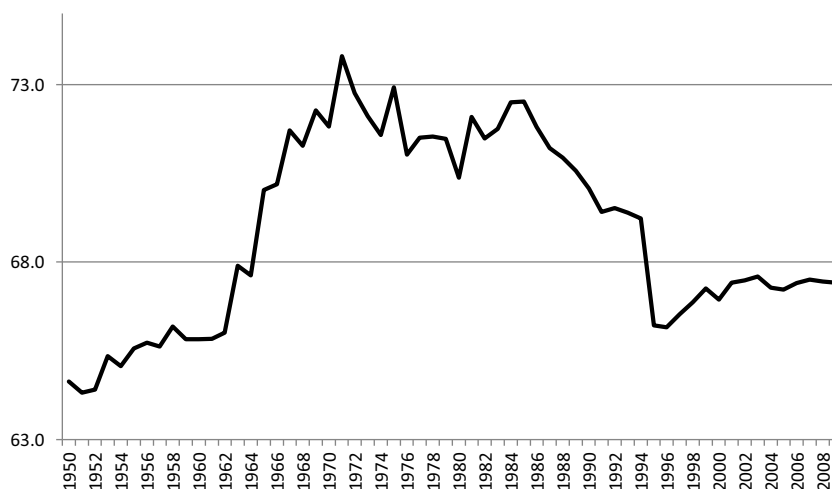


Fig. 6. Mezzogiorno per capita GDP (Italy = 100), 1951–2010.

Source: Own elaboration on Vecchi (2011)

Table 4
Financial resources devoted to regional policies in Southern Italy, 1951–1998.

Years	Public investment and business incentives (a)		Payroll tax reductions (b)		Total	
	in 2008 million Euros	as % of Italian GDP	in 2008 million Euros	as % of Italian GDP	in 2008 million Euros	as % of Italian GDP
1951–1957	1519	0.73	–	–	1519	0.73
1958–1965	2321	0.74	–	–	2321	0.74
1966–1970	2329	0.74	361	0.13	3607	0.80
1971–1975	5808	0.90	1969	0.33	7777	1.27
1976–1980	7119	0.90	3643	0.46	10,762	1.32
1981–1986	5974	0.65	5089	0.55	11,063	1.19
1987–1993	6305	0.57	6215	0.55	12,521	1.10
1994–1998	6081	0.49	3331	0.26	9412	0.74

Source: Bianchi et al. (2012).

Notes: From 1951 to 1993: total expenditure for the SAP in the Southern regions by Southern National Agency plus total payments by central government for other programs. Data include expenditure for: general infrastructures, sector-specific infrastructures, support to private investment in the form of both capital and interest subsidies. From 1994 to 1998: total payments by central government for intervention in all depressed areas of the country (data do not include programs financed by European funds); (b) introduced from 1968 onward.

Table 5
Productivity, accumulation rate and industrialization rate in Mezzogiorno (Italy = 100).

Years	Productivity (Euros)	Accumulation rate (%)	Industrialization rate (%)
1951	64.2	120.0	48.7
1961	65.7	156.4	45.0
1971	93.7	219.6	49.6
1981	89.7	145.1	50.1
1991	88.5	170.6	49.6
2001	85.8	133.1	50.4
2009	83.9	128.4	51.2

Source: SVIMEZ (2011).

Notes: Productivity is the ratio value added/units of labor $\times 1000$; the accumulation rate is the ratio gross physical investment/value added; industrialization rate is the ratio units of labor employed in industry/population.

Table 6
Households in poverty (% of total population).

	1931	1967	1971	1978	1981	1991	2008
Italy	29.7	17.9	20.1	7.2	4.5	3.4	4.4
Centre-North	26.9	12.5	14.4	4.2	3.2	1.5	2.2
Mezzogiorno	35.0	32.8	32.8	12.7	8.7	7.3	9.2

Source: Vecchi (2011).

down, and then a phase of growing divergence. The South goes through a progressive rundown of industrial investments and a fall in relative productivity (see Table 5), while the regional policy effort significantly shrinks (see Table 4), as the objectives pursued by SAP are weakened by the new priorities of industrial policy

driven by the appearance of the district systems of small and medium enterprises in the so-called “Third Italy”, i.e., the North-East and some central regions of the country. The approach of regional policies gradually switches from supply-side interventions

Table 7
Human Development Index.

	1951	1961	1971	1981	1991	2001	2007
Italy	0.631	0.709	0.778	0.817	0.850	0.883	0.899
Centre-North	0.659	0.726	0.792	0.828	0.860	0.894	0.909
Mezzogiorno	0.574	0.671	0.749	0.794	0.831	0.862	0.877
Mezzogiorno/Centre-North	0.87	0.92	0.95	0.96	0.97	0.96	0.96

Source: Felice and Vasta (2015).

Note: The synthetic HDI index, varying between 0 and 1, is constructed so as to capture three variables salient to human life quality (i.e., longevity, knowledge and income).

to demand-targeted measures¹⁸ (fiscal subsidies to firms, income support for households and job creation measures in the public sector), as shown by the sharp increase in the share of public funds assigned to payroll tax reductions (Table 4). In 1986, Law 64 abolishes the Southern National Agency; between 1992 and 1995 (Law 488/1992, Decree 96/1993 and Law 104/1995), the SAP is abolished and replaced by ordinary regional policies, operating for all depressed areas of the country and more consistent with the European Cohesion Policy framework. However the new policy strategy, based on the idea that “endogenous” development may be triggered by active participation of local agents in the policy programs, is not successful since supporting local demand, far from stimulating local supply, brings about increased imports from the North, crowding out local industrial activities (Del Monte and Giannola, 1997; D’Acunto et al., 2004) and contributing to enlarge the gap.

4.3. From mid-1990s on: stability (again)

The last sub-period corresponds to a stage of stability in the North–South gap. In the last decade, the rate of growth of the national economy closely approaches zero, and the South is not able to do better than Centre–North (Erбетта and Petraglia, 2011). Regional policies aim at a self-sustaining development process to be created through improvements of the socio-economic and institutional context of Mezzogiorno. Interventions are therefore designed to improve market competition, to promote innovation, communication, training of human resources, social infrastructures, externalities from agglomerations of entrepreneurial activities, accessibility to natural and cultural resources (Barca, 2003, 2006; for a survey, Felice, 2007). On the other hand, the public financial commitment for the development of the South, hampered by budgetary difficulties, is further reduced: according to official data by Italian government,¹⁹ between 2001 and 2010, in Southern regions capital public expenditure decreased by more than 30% in real terms (business incentives by 46%).

Summarizing, two points can be made. First, while the Southern convergence and the intensity of regional policies seem to follow somewhat similar patterns, the link with the dynamics of NFFs looks definitely faint: indeed, in the first phase the sustained process of regional convergence of the 1950–1970s was achieved at the cost of moderate interregional transfers, whereas the gap widened in the 1980s, just in correspondence to larger and increasing NFFs. Finally, from the mid-1990s, onwards, a stable or slightly decreasing gap has been matched by shrinking NFFs.²⁰ Second, six

decades of regional policy do not seem to have been able to significantly impact on the Italian North–South gap. This conclusion holds not only for strictly economic aspects (Fig. 6 and Table 5) but also for social facets of the dualism, on which Tables 6 and 7 report, by respectively showing that in 2008 the share of households in poverty was still significantly higher in the South than in the rest of the country, and that even the convergence of the Human Development Index came to a halt in the 1980s.

Alternatively, NFFs dynamics may be connected to the escalation of public expenditure occurred with the reform of local government financing system and the establishment of Regional Governments. According to Ministero dell’Economia e delle Finanze (2011), between 1950 and 1999, the total public expenditure soars from 30 to 721 billion Euros (real values at 2009 prices) then declining to 699 billion in 2009. As a ratio to GDP, public expenditure is around 25% in 1950, 30% in 1960, 33% in 1970 and then 41% in 1980, up to 56% in 1993, to reduce just below 50% after 2000. Based on the same source, Giarda (2011) estimates that primary expenditure is 22.5% of GDP in 1951, 27.6% in 1960, 31.8% in 1970, 36.9% in 1980, 43.2% in 1990, 41% in 2000 and 46.7% in 2010. Calculations by ISTAT (2010) indicate that primary government expenditure increases from 37% to 44% of GDP between 1980 and 1993, then declines to 40%, to increase again in the years of the crisis (44% in 2008 and 48% in 2009).

While several factors may have contributed to public expenditure rise (changes in pension plan design, for example), the highest rates of increase in public expenditure correspond to the first decade after the implementation of the reform of local government financing system occurred since mid-1970s. This is based on centralization of revenues from municipalities to the national government and the establishment of Regional Governments, involving a strong decentralization of expenditure (in particular health and transportation expenditures). As a consequence, the weight of local administrations’ expenditure increases from 19% of total expenditure in 1951, to 29% in 1980, 31% in 1984 and 35% in 2008 (ISTAT, 2010; Giarda, 2011).²¹ To the extent that the rise of public expenditure in each region is likely to be proportional to population, while revenues are collected by central government in accordance with regional income, the new setting of local finance may have significantly favored the climb of NFFs.

In addition, the trend of current and capital components of public expenditure displays other important changes. For the six decades we consider, Ministero dell’Economia e delle Finanze

¹⁸ For an interesting discussion on the major circumstances which drove this change in the policy stance, see Martinelli (2012).

¹⁹ See Dipartimento Sviluppo e Coesione Economica, Sistema Conti Pubblici Territoriali (Regional Public Accounting), <http://www.dps.gov.it/cpt/index.html>.

²⁰ Despite data limitations, statistical analysis on the relationship between the dynamics of NFFs and the time path of regional convergence/divergence provides insightful evidence. As a result of many different attempts, we found that the coefficients of linear correlation between absolute or percentage changes in regional relative output and regional NFFs are never significant at the threshold of 5% confidence, considering (current values, lags and leads of) NFFs in absolute per capita terms, as ratios to regional GDP, and as natural logarithms of that ratio. Moreover,

we also sought to detect a possible influence of NFFs on convergence of Italian regions. We never found significant effects of Southern regions imbalances on β and σ convergence. Calculations are available from the authors upon request.

²¹ The hypothesis that the institutional break connected to the establishment of Regional Governments be among the causes of the escalation of public expenditures and deficit is consistent with a wide literature (Weingast et al., 1981; Persson and Tabellini, 2000; Velasco, 2000; Pisauro, 2001; Rodden et al., 2003; Rodden, 2006) arguing that the blend of decentralized expenditure decisions and a centralized financing is often detrimental for fiscal discipline. In particular, the well-known common-pool argument points out that in this case the budget constraint is softened and regional governments are induced to overspend (specifically on the Italian case, see Bordignon, 2000; Giarda, 2011; Padovano, 2012; Buiatti et al., 2014).

Table A1
Regional public revenues, expenditures and net fiscal flows in Italy, 1951–1965, per capita yearly averages in 2010 Euros.

Regions	1951–1957			1958–1961			1962–1965		
	Revenues	Expenditures	NFFs	Revenues	Expenditures	NFFs	Revenues	Expenditures	NFFs
Piedmont	1297	1407	–110	1861	2001	–140	2528	2150	379
Aosta Valley	591	3000	–2410	641	3633	–2993	909	2763	–1853
Lombardy	1599	1236	363	2176	1767	408	2784	1752	1033
Trentino A.A.	706	1788	–1082	852	2029	–1177	1121	2138	–1017
Veneto	982	1597	–615	1307	2010	–703	1473	2049	–576
Friuli V.G.	331	1078	–747	913	1888	–974	1695	2110	–415
Liguria	2605	2264	341	3199	2763	436	3810	2881	929
Emilia Romagna	867	1741	–874	1200	2107	–907	1521	2043	–522
Tuscany	877	1710	–833	1140	2236	–1096	1416	2091	–675
Umbria	260	1178	–918	330	1554	–1225	435	1767	–1332
Marche	499	1682	–1183	685	1769	–1084	980	1662	–681
Lazio	2325	5160	–2835	3555	5379	–1824	3843	6283	–2439
Abruzzi-Molise	281	1614	–1333	363	2157	–1793	479	1759	–1280
Campania	615	1690	–1075	784	2149	–1364	1006	2023	–1017
Apulia	435	1450	–1015	508	1782	–1274	656	1717	–1061
Basilicata	115	2091	–1976	145	2825	–2681	187	2254	–2067
Calabria	186	1200	–1013	258	2192	–1934	312	2025	–1712
Sicily	231	1586	–1355	305	2156	–1850	377	1718	–1340
Sardinia	257	2477	–2220	322	3214	–2892	409	2497	–2087

Source: Own elaboration on Tarquinio (1969).

Notes: Original data (in current Liras values) were first transformed in current euro values and then converted in constant 2010 Euros using a national-wide GDP deflator. Regional revenues are constituted by cash inflows to Provincial Treasuries of the Ministry of Economy and Finance, i.e. taxes on personal income, business activities, production, consumption and customs; revenues from lotteries and public monopolies. Expenditures are calculated as the regional sum of the payments made by Provincial Treasuries of the Ministry of Economy and Finance. Data are also adjusted to take into account the payments settled by the Central Treasury of the Ministry of Economy and Finance and capital expenditures.

(2011) reports a clear decrease in the share of capital to total public expenditure in the South, which dramatically falls from 47% (1950) of total expenditure (net of interests and debt reimbursements) to 39% (1960), 19% (1970), 17% (1985), 11% (1995), 10% (2009), while the local governments' share of capital expenditure rises in the same period from 20% to 60%.²² Since capital expenditure is the component of public outlays most relevant to development and regional policies, its reduction over time corroborates the statement that interregional redistribution has been little functional to the purpose of territorial rebalancing.

Summarizing, the nature of data on NFFs imposes caution in drawing conclusions on the determinants of the large regional unbalances observed in Italy in 1951–2010. However, the evidence supplies a number of hints which suggest that the need of financing regional policies explains only partially the path of NFFs. Rather, the deepening of Mezzogiorno imbalance after mid-1970s can be reasonably associated to the introduction of a “decentralization without responsibility” model in the Italian local finance system plus a strong propensity of policy makers to inflating public expenditure.

5. Concluding remarks

This paper carries out a reconstruction of the long-run pattern of regional fiscal imbalances and interregional redistribution oper-

²² These figures show both the reduction and the reallocation at a regional level of capital public expenditure consistent with decentralization in the responsibilities in design and financing of regional policies operated through Laws 853/1971, 183/1976 and 64/1986. Scalera and Zazzaro (2010) highlight that this reallocation may have been unfavorable to growth, due to poor skills of local bureaucracies. In the same vein, Mauro and Pigliaru (2013) argue that the effectiveness of public investment is related to the local endowment of social capital: if this latter is lower than the national average level (as it happens in the South), a project managed by central government institutions is more productive and conducive to growth than one managed by local institutions. This statement is in line with the empirical evidence on the role of government quality in shaping the relationship between fiscal decentralization and regional disparities: fiscal decentralization will promote regional convergence only in high government quality settings, while it will magnify regional disparities in contexts with poor governance (Kyriacou et al., 2015).

ated through the public sector in Italy between 1951 and 2010. In particular, by resorting to different sources, a (discontinuous) time series of NFFs for Italian regions and macro-regions is built up for the first time. The evidence collected is the basis to put forward an assessment on the intensity of redistribution: although the amount of transferred resources to Southern Italy from the rest of the country has been significant and increasing over time (at least up to the end of the 1990s), comparisons with the results of the extant literature on a number of other countries point out that redistribution among Italian regions cannot be judged disproportionately large, considering income differences, the public commitment in regional policies and the constitutional principles of equal access of citizens to the basic public services. Secondly, the analysis of data and the inspection of facts indicate that the relationship between the intensity of interregional redistribution and regional convergence is weak. This supports the view that increasing NFFs have little served the purpose of regional catching up; rather, the rise of imbalances seems to be mainly connected to the overall escalation of public expenditure, following the institutional break occurred in mid-1970s with the establishment of Regional Governments. This conclusion should not be used as an argument against interregional redistribution. Rather, we believe that interregional redistribution can be better sustained and accepted when it is aimed at making lagging regions more productive and competitive. In this sense, the analysis of the reasons which impaired the ability of regional policies implemented in the last decades to activate a virtuous process of convergence among Italian regions needs certainly further careful quantitative investigation.

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Table A2

Regional public revenues, expenditures and net fiscal flows in Italy, 1971–1973, per capita yearly averages in 2010 Euros.

Regions	Revenues			Expenditures			NFFs		
	Tax revenues (1)	Social security contributions	Total (2)	Social security payments	Exp. for collective goods (3)	Capital exp. (4)	Total (5)	Total (2) – (5)	Net of Social Security (1) – (3) – (4)
Piedmont	2898	2064	4962	2286	828	549	3658	1303	1521
Aosta Valley	2748	2052	4800	2230	1235	1452	4918	–118	61
Lombardy	3109	2208	5317	2099	733	548	3381	1935	1828
Trentino A.A.	2086	1512	3598	1609	1481	523	3614	–16	82
Veneto	2008	1399	3407	1800	983	487	3270	137	538
Friuli V.G.	2234	1703	3937	2321	1695	505	4520	–583	34
Liguria	3010	1980	4990	2443	1227	540	4211	779	1243
Emilia Romagna	2450	1614	4064	2294	946	577	3817	247	927
Tuscany	2340	1471	3811	2214	1140	539	3893	–82	661
Umbria	1867	1268	3136	2320	1068	703	4091	–955	96
Marche	1851	1131	2982	1825	1057	612	3495	–512	182
Lazio	3027	1652	4679	1809	1645	608	4062	617	774
Abruzzo	1438	816	2254	1736	1090	1129	3954	–1700	–781
Molise	1135	668	1803	1860	1162	936	3959	–2156	–963
Campania	1408	926	2334	1585	963	667	3215	–881	–222
Apulia	1311	944	2256	1649	1171	1001	3822	–1566	–861
Basilicata	1189	773	1962	1692	1065	1607	4364	–2402	–1483
Calabria	1003	750	1754	1543	1216	890	3649	–1895	–1103
Sicily	1390	986	2375	1642	1066	1060	3770	–1394	–736
Sardinia	1475	933	2408	1617	1520	1347	4482	–2074	–1392

Source: Own elaboration on Forte et al. (1978).

Notes: Original data (in current Liras values) were first transformed in current euro values and then converted in constant 2010 Euros using a national-wide GDP deflator.

Table A3

Regional public revenues, expenditures and net fiscal flows in Italy, 1983–1985, per capita yearly averages in 2010 Euros.

Regions	Revenues			Expenditures			NFFs		
	Tax revenues (1)	Social security contributions	Total (2)	Social security payments	Current exp. (3)	Capital exp. (4)	Total (5)	Total (2) – (5)	Net of social security (1) – (3) – (4)
Piedmont	5354	3504	8857	4420	3229	775	8424	434	1350
Aosta Valley	6106	3287	9393	4780	4362	3936	13078	–3685	–2192
Lombardy	6191	3857	10048	3807	3196	751	7754	2294	2244
Trentino A.A.	5114	3253	8367	3808	4193	2952	10953	–2586	–2031
Veneto	4806	3103	7909	3286	3393	801	7480	429	612
Friuli V.G.	5126	3449	8575	4448	3916	1374	9739	–1163	–164
Liguria	5344	3216	8561	4781	3887	1110	9779	–1218	347
Emilia Romagna	5655	3437	9092	4107	3651	952	8710	382	1052
Tuscany	5254	3253	8507	4140	3596	805	8542	–35	853
Umbria	4016	2892	6907	4014	3752	1086	8852	91944	–822
Marche	4301	2972	7273	3680	3707	995	8381	–1108	–401
Lazio	5407	3350	8756	3760	3366	1508	8634	122	533
Abruzzo	3576	1603	5178	3385	3474	1537	8397	–3218	–1435
Molise	2824	1888	4712	3281	3498	2017	8796	–4083	–2691
Campania	2946	1902	4847	2935	3217	1258	7410	–2563	–1529
Apulia	2847	1875	4722	3007	3220	871	7099	–2377	–1244
Basilicata	2651	1768	4419	3167	3574	2755	9496	–5077	–3678
Calabria	2496	1552	4047	2940	3415	1285	7640	–3592	–2204
Sicily	2863	1718	4581	3134	3251	1179	7564	–2983	–1567
Sardinia	3126	2005	5131	3245	3556	1484	8286	–3154	–1914

Source: Own elaboration on ISTAT (1996).

Notes: Original data (in current Liras values) were first transformed in current euro values and then converted in constant 2010 Euros using a national-wide GDP deflator.

Appendix A.

This Appendix A is meant to give further details on the reconstruction of series of regional per capita public revenues and expenditures used for analysis of Section 3, and show data, in particular yearly averages on 11 periods between 1951 and 2010. The figures reported in Tables A1–A6 are derived from original data supplied by source papers, and converted from Liras current values into constant 2010 Euros values through a national-wide GDP deflator.

The data shown in Table A1 for the period 1951–1965 are drawn from Tarquinio (1969). They are definitely the most difficult to be made homogeneous with other available information. Regional

revenues are originally constituted by cash inflows to Provincial Treasuries of the Ministry of Economy and Finance, i.e., taxes on personal income, business activities, production, consumption, customs, revenues from lotteries and public monopolies. Similarly, expenditures are calculated as the regional sum of the payments made by Provincial Treasuries of the Ministry of Economy and Finance. As revenues and expenditures pertaining to the Central Treasury of the Ministry of Economy and Finance are left out, we correct the original data by adding a proportional (to the population residing in the region) share of the overall amount revenues and expenditures of Central Treasury to revenues and expenditures of Provincial Treasuries. In addition, since Tarquinio (1969) omits capital expenditures, we proceed to a further adjustment by esti-

Table A4
Regional public revenues, expenditures and net fiscal flows in Italy, 1986–1989, per capita yearly averages in 2010 Euros.

Regions	Revenues			Expenditures			NFFs		
	Tax revenues (1)	Social security contributions	Total (2)	Social security payments	Current exp. (3)	Capital exp. (4)	Total (5)	Total (2)–(5)	Net of social security (1)–(3)–(4)
Piedmont	6142	3738	9880	4405	3470	816	8691	1189	1856
Aosta Valley	7278	3580	10857	5305	5060	4130	14496	–3638	–1912
Lombardy	7155	4120	11276	4107	3407	748	8262	3014	3000
Trentino A.A.	5816	3475	9291	3957	4525	2396	10878	–1586	–1105
Veneto	5492	3347	8839	3563	3630	870	8063	776	992
Friuli V.G.	5677	3643	9320	4731	4179	1460	10370	–1050	38
Liguria	5777	3426	9203	5210	4037	920	10168	–965	820
Emilia Romagna	6389	3634	10023	4505	3854	880	9239	785	1655
Tuscany	5622	3344	8966	4460	3810	801	9072	–106	1011
Umbria	4552	3001	7553	4412	4049	1053	9514	–1961	–550
Marche	4813	3113	7926	4000	3981	967	8950	–1023	–135
Lazio	6074	3673	9747	3904	3514	1192	8611	1137	1368
Abruzzo	4014	2308	6323	3709	3633	1325	8668	–2345	–944
Molise	3235	2100	5335	3407	3770	1862	9039	–3704	–2397
Campania	3172	1965	5137	3085	3476	1419	7980	–2843	–1723
Apulia	3159	1980	5139	3240	3396	727	7364	–2225	–964
Basilicata	2880	1929	4809	3305	3855	2476	9636	–4826	–3451
Calabria	2683	1662	4345	3143	3626	1383	8151	–3807	–2326
Sicily	3141	1833	4975	3513	3624	1297	8433	–3459	–1780
Sardinia	3499	2179	5678	3402	3856	1361	8619	–2941	–1718

Source: Own elaboration on ISTAT (1996).

Notes: Original data (in current Liras values) were first transformed in current euro values and then converted in constant 2010 Euros using a national-wide GDP deflator.

Table A5
Regional public revenues, expenditures and net fiscal flows in Italy, 1990–1992, per capita yearly averages in 2010 Euros.

Regions	Revenues			Expenditures			NFFs		
	Tax revenues (1)	Social security contributions	Total (2)	Social security payments	Current exp. (3)	Capital exp. (4)	Total (5)	Total (2)–(5)	Net of social security (1)–(3)–(4)
Piedmont	7057	4283	11341	4955	3873	864	9693	1648	2320
Aosta Valley	8607	3973	12579	5542	6218	3423	15183	–2604	–1034
Lombardy	8445	4578	13023	4683	3786	774	9243	3780	3885
Trentino A.A.	6758	4047	10805	4651	5249	2758	12657	–1852	–1249
Veneto	6564	3859	10423	4110	4024	841	8975	1447	1699
Friuli V.G.	6860	4221	11081	5353	4577	1384	11313	–232	899
Liguria	6936	3836	10771	5934	4517	1082	11533	–762	1337
Emilia Romagna	7543	4124	11667	5185	4371	784	10340	1327	2388
Tuscany	6569	3771	10340	5004	4255	923	10182	158	1391
Umbria	5392	3401	8793	5003	4572	1043	10619	–1826	–223
Marche	5637	3496	9133	4542	4414	856	9812	–679	367
Lazio	7127	4188	11315	4461	3997	1488	9947	1369	1642
Abruzzo	4790	2719	7509	4247	4073	1221	9541	–2032	–504
Molise	3859	2440	6298	4021	4300	1715	10036	–3738	–2156
Campania	3719	2242	5962	3446	4008	1235	8690	–2728	–1524
Apulia	3723	2287	6010	3755	3737	707	8200	–2190	–721
Basilicata	3383	2148	5532	3687	4260	2188	10135	–4603	–3065
Calabria	3138	1866	5004	3757	4135	1327	9219	–4215	–2324
Sicily	3779	2211	5990	4097	4351	1271	9718	–3728	–1843
Sardinia	4225	2597	6822	3847	4456	1487	9791	–2969	–1718

Source: Own elaboration on ISTAT (1996).

Notes: Original data (in current Liras values) were first transformed in current euro values and then converted in constant 2010 Euros using a national-wide GDP deflator.

inating the missing items. To do that, we use data from [Ministero dell'Economia e delle Finanze \(2011\)](#) and [Picci \(2002\)](#): in particular, we retrieve from the former (Table 22, p. 50) the shares of current and capital public expenditure for the years 1950–1970, so as to estimate the total capital public expenditure, and then attach to each region a share of it according to the estimated allocation of public investments among Italian regions in years between 1948 and 1969 ([Picci, 2002, pp. 32–34](#)). This procedure yields reasonably reliable estimates of total regional revenues and expenditures, including those related to the Special Aid programme in favor of Southern regions.

Table A2 reports data relative to years 1971–73 originally presented in [Forte et al. \(1978\)](#). Tables A3–A5 summarize the same kind

of data for years 1983–85, 1986–89 and 1990–92 retrieved from [ISTAT \(1996\)](#). Unlike [Tarquinio \(1969\)](#), the more refined detail of information allows in these cases to distinguish not only between current and capital expenditures but also to single out social security revenues and expenditures. As a consequence, Tables A2–A5 show both total regional NFFs (total revenues minus total expenditures) and “Net of social security” regional NFFs (tax revenues minus the difference between total expenditures and social security payments). For example, in Table A5, relative to early 1990s, the yearly average value of per capita NFF in Lombardy is equal to 3780 Euros in 2010 values (see the second last column), as a result of the difference between 13,023 Euros of total revenue (8445 Euros of tax revenues plus 4578 Euros of social security contributions) and 9243

Table A6

Regional public revenues, expenditures and net fiscal flows in Italy, 1995–2010, per capita yearly averages in 2010 Euros.

Regions	1995			1996–2002		2004–2006			2007–2010
	Revenues	Expenditures	NFFs	NFFs		Revenues	Expenditures	NFFs	NFFs
Piedmont	11821	10915	906	2581		14187	12649	1539	1458
Aosta Valley	13031	18272	–5241	–4175		16887	20922	–4034	–708
Lombardy	13293	9410	3883	6014		16361	11196	5164	2585
Trentino A.A.	11723	15874	–4151	–776		13220	14655	–1435	–1158
Veneto	11350	9260	2090	3492		13137	10690	2446	764
Friuli V.G.	11272	13269	–1997	894		13957	13834	123	722
Liguria	11201	13957	–2756	–285		13050	14077	–1027	1703
Emilia Romagna	12676	11032	1644	3908		15122	12299	2824	2080
Tuscany	10895	10414	–519	1289		13458	12219	1239	693
Umbria	9248	11357	–3109	–980		11643	13346	–1702	34
Marche	9501	9570	–1069	661		11857	11451	406	–364
Lazio	13217	10935	1282	2768		15118	12346	2772	2586
Abruzzo	7817	10755	–2938	–957		9932	11248	–1316	–1234
Molise	6860	11767	–4907	–3037		8418	12522	–4104	–1987
Campania	5998	9632	–3634	–2368		7675	10340	–2665	–3174
Apulia	6473	9964	–3491	–2076		7692	10266	–2574	–2398
Basilicata	6326	11088	–4762	–3593		7840	12275	–4435	–2912
Calabria	5208	11752	–6544	–4228		7266	11844	–4578	–3479
Sicily	6188	11490	–5302	–3498		7902	11282	–3380	–3437
Sardinia	7044	11821	–4777	–3217		9504	12799	–3295	–2658

Source: Own elaboration on [Fondazione Agnelli \(1998\)](#) for 1995, [Arachi et al. \(2010\)](#) for 1996–2002, [Staderini and Vadalà \(2009\)](#) for 2004–2006 and [Arachi et al. \(2013\)](#) for 2007–2010.

Notes: Original data (in current Liras values) were first transformed in current Euro values and then converted in constant 2010 Euros using a national-wide GDP deflator. Since [Fondazione Agnelli \(1998\)](#) does not supply data on social security payments, these are supposed to be equal in per capita terms to the values of 1990–1992. [Arachi et al. \(2010\)](#) presents only data on net fiscal flows. Data provided by [Arachi et al. \(2013\)](#) regard only net fiscal flows as well.

Euros of total expenditure (4683 Euros of social security payments plus 3786 Euros of current expenditure plus 774 Euros of capital expenditure). The per capita NFF net of social security shown in the last column amounts to 3885 Euros, corresponding to the difference between tax revenues (8445 Euros) and Current plus Capital expenditure (Euros 3786 + 774). In the same period, per capita NFF in Campania is negative and equal to –2728 Euros, as a result of the difference between 5962 Euros of total revenue (3719 Euros of tax revenues and 2,242 Euros of social security contributions) and 8690 Euros of total expenditures (3446 Euros of social security payments, 4008 Euros of current expenditure and 1235 Euros of capital expenditure).

Table A6 collects data from [Fondazione Agnelli \(1998\)](#) for the year 1995, [Arachi et al. \(2010\)](#) for years 1996–2002, [Staderini and Vadalà \(2009\)](#) for 2004–2006 and [Arachi et al. \(2013\)](#) for 2007–2010. Since [Fondazione Agnelli \(1998\)](#) does not supply data on social security payments, these are supposed to be equal in real per capita terms to the values of 1990–1992. In Table A6 no distinction is made between social security and other items for both payments and revenues, since the source papers do not supply these details. Finally, following [Arachi et al. \(2010, 2013\)](#), only data on NFFs are shown for 1996–2002 and 2007–2010.

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