

Appendix A – Data description

The analysis is based on three data sources: Territorial Public Accounts (source: Italian Ministry of Economics), Consolidated local government debt (source: Bank of Italy), Net lending (+) /net borrowing (-) of local governments (source: Eurostat) (see Table A1).

Table A1: Dataset used in the analysis

Description of the dataset	Dataset	Source
Regionalized expenditures and revenues	Territorial Public Accounts (TPA)	Italian Ministry of Economics
Regionalized variation in local governments debt	Consolidated local government debt	Bank of Italy
Local government Fiscal Balance at national level	Net lending (+) /net borrowing (-) of local government	Eurostat

Within TPA, expense items are broken down according to the principle of localization of the intervention of the public operator while for revenues the principle followed is that of the location of taxpayers. This means that expenses related to the production of goods and services such as personnel spending, the purchase of goods and services and investments, are regionalized on the basis of the physical location of the inputs used. Financial expenses are instead allocated according to the beneficiary. This choice is consistent with the TPA's objective of monitoring public intervention across territories, but risk to be inconsistent if the objective is to estimate fiscal residua, since tax revenues and expenses are distributed according to different criteria. Some corrections on the expenditure side are therefore necessary in order to regionalize expenditures using a criterion closer to the benefit principle (Arachi et al., 2010). In particular (Table A2), the Central Administration expenses related to services of a collective nature (e.g. Defense or Public Security) have been allocated according to the resident population, a criterion that is closer to the principle of benefit. If we consider, for example, the location of a military station, it is clear that, according to the criterion TPA criterion, all expenses made will be attributed to the region in which the station is located. However, being the military services for the benefit of the entire nation, a distribution of expenditure based on the resident population is more correct in this context. In some "mixed" sectors such as building or culture, spending was instead "split" using, in the same proportion, both criteria. A further correction has been applied to health expenditure: in this case, to better approach the principle of benefit of residents, health care costs are adjusted to take into account interregional mobility of patients. Another important drawback in using TPA concerns the fact that revenues and expenditures are collected on a cash basis, rather than on an accruals basis.

Table A2: Corrections adopted to TPA for expenses of Central Administrations

Type of expenditure	Method of allocation
General Administration, Defence, Public Safety, Justice, Health, Environment, Waste Disposal, Other sanitary interventions, Non-distributable charges	Benefit
Research and Development, Cultural and recreational services, Housing and urban planning, Integrated water service, Other transport, Roads, Telecommunications, Agriculture, Sea fishing and Aquaculture, Tourism, Commerce, Industry and Craft, Energy, Others in the economic field	Mixed
Education, Training, Social Intervention, Labor, Welfare and Wage Integration	TPA

Appendix B – Redistribution and risk-sharing in Ordinary Statute Regions

Table B1: Models run on Ordinary Statutory regions

		MG	DFE	PMG - xtpmg	PMG - xtdcce	DCCE cr_lags(0)	DCCE cr_lags(1)
NEW FISCAL RESIDUA	1- <i>b</i>	0.001 ***	0.023 *	-0.105 ***	0.023 *	0.022	0.035 *
	(s.e.)	0.029	0.392	0.021	0.392	0.612	0.409
	1- <i>d</i>	0.073 ***	0.071	-0.12 ***	0.055 ***	-0.039 ***	-0.134 ***
	(s.e.)	0.104	0.122	0.07	0.096	0.116	0.179
	<i>f</i>	-0.802 ***	-0.508	-0.71 ***	-0.498	-0.477	-0.457
	(s.e.)	0.0565	0.381	0.087	0.38	0.569	0.398
	Obs.	180	180	195	180	180	165
OLD FISCAL RESIDUA	CD	-0.384	-1.000		-0.828	-1.727	-1.155
	CD- TEST	0.701	0.317		0.407	0.0843	0.248
	1- <i>b</i>	-0.008 ***	0.025 *	0.051 ***	0.023 *	0.015	0.018
OLD FISCAL RESIDUA	(s.e.)	0.025	0.418	0.019	0.424	0.601	0.577
	1- <i>d</i>	-0.031 ***	0.016 ***	0.011 ***	-0.025 ***	-0.162 ***	-0.287 ***
	(s.e.)	0.107	0.166	0.075	0.092	0.144	0.162
	<i>f</i>	-0.807 ***	-0.488	-0.718 ***	-0.472	-0.47	-0.456
	(s.e.)	0.053	0.402	0.061	0.407	0.548	0.521
	Obs.	180	180	195	180	180	165
	CD	-0.815	-1.294		-1.185	-1.941	-1.311
OLD FISCAL RESIDUA	CD- TEST	0.415	0.196		0.236	0.0522	0.19

Note: special statute regions (Aosta Valley, Trentino-Alto Adige, Friuli-Venezia Giulia, Sicily and Sardinia) have been omitted from this analysis