

Redistribution Through Public Employment: The Case of Italy

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This paper examines the regional distribution of public employment in Italy. It documents two facts. The first is that public employment is used as a subsidy from the North to the less wealthy South. About half of the wage bill in the South of Italy can be identified as a subsidy. Both the size of public employment and the level of wages are used as a redistributive device. The second fact concerns the effects of subsidized public employment on individuals' attitudes toward job search, education, "risk taking" activities, and so on. Public employment discourages the development of market activities in the South. [JEL H53, J31, J64]

Two key roles of government are to provide public goods and to redistribute income across individuals and regions. Often these two functions overlap since public goods provision may also be used to compensate for geographical income imbalances. Public employment, in particular, can be used to support poorer regions or those with higher unemployment. This paper documents the size of this type of redistribution between the North and South of Italy and attempts to evaluate the efficiency of this type of policy. Italy is an especially

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$MV = PY$
 $E_t PV(Q_{t+1} + X_{t+1})$
 $\varepsilon + \varepsilon^* >$
 $\bar{y} + \beta(p$
 $P = P^* S$
 $L(Y, i^*)$
 $Y, \frac{SP}{P}$
 $S_{t+1} - S$
 $\frac{F^*(1+i^*)}{S}$

interesting case because of the large income disparity between North and South and because of the large size of the public employment sector.

In this paper we first document the amount of geographical imbalance in the allocation of public jobs. Using survey evidence collected by the Bank of Italy, we then highlight various cultural and social consequences of an extensive reliance on public employment as a source of jobs and income. Third, we evaluate the amount of redistributive flows achieved with public employment.

Our results are striking. We conclude that *about half* of the public wage bill in the South of Italy can be defined as a “subsidy.” This effect is due to a combination of the size of public employment and of the wage premium for public employees relative to alternative occupations. We also show that the reliance on public jobs as a redistributive channel implies sizable and possibly undesirable sociological effects. Since public jobs in the South are more attractive and available than private sector jobs, educational and attitudinal choices are tilted toward the public sector. Also, individuals do not want to exit the public sector unless they are forced to, and this creates path dependence and rigidities.

In a nutshell, the argument is the following. The two “regions” of Italy (North and South) are bound by a unitary fiscal system, which implies that public wages are almost identical in nominal terms between the North and South. Since the cost of living is much lower in the South, real public wages are lower in the North than in the South. Also, opportunities in the private sector are better in the North, so public employment is comparatively more attractive in the South, relative to alternative opportunities. As a result, residents in the South seek more public employment in order to take advantage of a large income premium and a greater job security. Over time the South is caught in an equilibrium of dependency in which public jobs are a critical source of disposable income and in which private opportunities do not materialize.¹ This creates a culture that discourages private activities and entrepreneurship and that becomes self-fulfilling: the less individuals are prepared to “face the market,” the more they prefer public jobs.

But, if this is the case, why is this redistributive system chosen? One answer may be that this is simply a by-product of a centralized fiscal system and centralized union bargaining, which fixes equal nominal wages for the entire country. However, the lack of any attempt to diversify public wages between the North and South suggests that the implied redistribution might be politically desirable. The reason may be that redistribution through public employment is less visible than direct transfers, therefore it is politically less costly and may be more effective at creating patronage for local politicians. In fact, a model by Coate and Morris (1995), slightly modified by Alesina, Baqir, and Easterly (2000), clarifies this politico-economic argument. The idea is simple: suppose that a proposal that introduces a tax in region 1 (North) to finance a direct subsidy to region 2 (South)

¹See Raffa and Zollo (1993) for a discussion of the difficulties of small private innovative business ventures in the South.

would not pass because it is opposed by voters in the North. Further assume that the government wants to redistribute toward the South and assume that, say, several new teachers are hired and disproportionately placed in the South. This second redistributive policy is less transparent (although perhaps less efficient) and may win approval even in the North because of the uncertainty about the real needs of the public school system.

Public employment may also be used to correct labor market imperfections. When labor markets do not produce full employment, say, because of tax distortions and rigidities, it is politically rewarding to offer public sector jobs. This is particularly the case when the welfare system (as in Italy) is distorted and ineffective at protecting the temporarily unemployed. In fact, Rostagno and Utili (1997) and Boeri (2000) describe the shortcomings of the Italian system of social protection and conclude that the Italian “welfare state” is very skewed in favor of retirees and does not protect efficiently the temporarily unemployed. Obviously, while a temporary unemployment subsidy may create incentives for job search, a permanent employment in the public sector does not.²

Public bureaucracies, once established, become a major political force. In many countries, and certainly in Italy, public sector unions are particularly strong and capable of protecting job security, if not the level of real wages.³ This protection generates hysteresis: once public employment increases, it takes a long time to be reduced.

This is not the first paper that argues that public employment is used as a redistributive device. To begin with, there is an immense literature on public sector employment, most of which is focused on the United States. We refer the reader to the two excellent surveys by Ehrenberg and Schwarz (1986), and Gregory and Borland (1999). For our purposes, the latter paper, which focuses not only on the United States but on the evidence available for other member countries of the Organization for Economic Cooperation and Development (OECD) as well, concludes that “public sector employees generally have higher average earnings than private sector employees.” Furthermore, the authors write, “in most countries, some part of this difference is also attributable to higher rates of pay or rents for public sector employees.” Particularly interesting are the results of Borjas (1986), who examines wage variations in U.S. state public employment and attributes three-fourths of the interstate variation to political variables reflecting the demand of different constituencies. Also, Katz and Krueger (1991) find that in the United States, while local and state governments are responsive to local economic conditions, the market for federal employees is set outside the regional context.

²A related problem concerns the use of disability pensions in Italy. These pensions have been largely used especially in the South as permanent unemployment subsidy, with the obvious distortionary effects on incentives. See Boeri (2000).

³For a review of the literature on public unions, see Gregory and Borland (1999) and Freeman and Ichniowski (1988).

I. The Distribution of Public Employment in Italy

The Data

As a source for macroeconomic data on regional differences, we draw on various Italian government statistics. Data on regional production, population, and employment are taken from publications of Istituto Nazionale di Statistica (ISTAT), Italy's national statistical institute (ISTAT, 1996a and 1996b). Figures on the regional distribution of public employment are taken from *Il Conto Annuale* (Italian Treasury, 1995), an annual publication of the Italian Treasury. Our data for postal and railroad employees have been provided by the Italian Treasury.

The main data source for our empirical microanalysis is the Bank of Italy survey on *Household Income and Wealth (BIW)*. The *BIW* is a biannual household survey that covers all regions in Italy and contains a broad range of information on individual characteristics and economic performance. We use data from surveys in 1993 and 1995 that contain detailed information on socioeconomic factors relevant to our study.

The 1995 (1993) *BIW* survey provides information on 23,924 (24,013) individuals covering a total of 8,135 (8,089) households. A special feature of this survey is that it contains information on parents and children of the head of the household. This allows us to track intergenerational links (family ties) and relate them to public sector employment. In most of our analysis we restrict the sample to respondents between age 15 and 62 for men and 57 for women, the traditional standard age of retirement.⁴ Note that the *BIW* survey oversamples government employees by a factor of two, an issue that we discuss below.

Table 1 lists all the variables used in this paper and their sources. Table 2 provides sample statistics for some of the variables used in our empirical analysis of the 1995 *BIW* survey.

Imbalance in the Distribution of Public Jobs

For the purposes of discussion in this paper, we have divided Italy into three regions: North, Center, and South.⁵ As Table 3 shows, Italy has a pronounced mismatch between regional economic output and the use of its public resources. About 55 percent of total output is produced in the North, while only 44 percent of the total population resides there. Also, the South of Italy has considerably fewer labor force participants (51.5 percent compared with 62.5 percent in the North). The unemployment rate in the South (21.0 percent) is more than double

⁴Recent pension reforms have changed these age limits.

⁵Regions are composed as follows: North—Piedmont, Valle d'Aosta, Lombardy, Trentino, Alto Adige-South Tyrol, Veneto, Friuli-Venezia Giulia, Liguria, and Emilia-Romagna; Center—Tuscany, Umbria, Marche, and Lazio; South—Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria, Sicily, and Sardinia.

Table 1. Definitions of Variables

Variable	Description	Year	Source
Public employees	Total number of government employees including national and local employees	1995	Italian Treasury
Postal workers	Total number of postal workers	1995	Italian Treasury
Railroad workers	Total number of railroad workers	1997	Italian Treasury
Police	Total number of police employees	1995	Italian Treasury
Tax inspectors	Total number of tax inspectors	1996	Italian Treasury
Regional product	Regional state product	1995	ISTAT
Regional unemployment rate	Regional unemployment rate	1995	ISTAT
Regional public employment rate	Fraction of public employees in the regional labor force (excludes military, postal and railroad workers)	1995	ISTAT, Italian Treasury
Class size	Number of students per session	1995	ISTAT
Log hourly wages	Log of hourly disposable labor income	1995	<i>BIW</i>
High school degree	Highest degree: high school		
College degree	Highest degree: college	1995	<i>BIW</i>
Parent schooling	Years of schooling: head of household	1995	<i>BIW</i>
Business degree	Dummy: holding a business-type degree (for a definition, see section 4.3)	1995	<i>BIW</i>
Years work experience	Years of reported work experience	1995	<i>BIW</i>
Firm size: 20–99 employees	Dummy: reported number of employees	1995	<i>BIW</i>
Firm size: 100–499 employees	Dummy: reported number of employees	1995	<i>BIW</i>
Firm size: more than 500 employees	Dummy: reported number of employees	1995	<i>BIW</i>
White collar	Self-described employment type	1995	<i>BIW</i>
Teacher	Self-described employment type	1995	<i>BIW</i>

Table 1. (concluded)

Variable	Description	Year	Source
Mid-management	Self-described employment type	1995	<i>BIW</i>
Top management	Self-described employment type	1995	<i>BIW</i>
Big city	Lives in city with more than 500,000 inhabitants	1995	<i>BIW</i>
Father: manager	Dummy: father has/had managing position	1995	<i>BIW</i>
Father: self-employed	Dummy: father is/was self-employed	1995	<i>BIW</i>
Family ties	Dummy: indicates whether parent or other family member is/was employed in the public sector	1995	<i>BIW</i>
Dependency rate	Fraction of population younger than 15 and older than 65	1993 1995	<i>BIW</i>
Urbanization rate	Fraction of population living in city with more than 50,000 inhabitants	1993 1995	<i>BIW</i>

Sources: *BIW* (Bank of Italy, 1993 and 1995); Italian Treasury (1995 and 1997); and ISTAT (1996a and 1996b).

that in the Center (10.3 percent) and about three times higher than that of the North (6.7 percent).⁶

The regional differences in the distribution of public jobs are large. Public civilian employment per capita is higher in the South than in the North (about 61 public employees per thousand population in the South versus 51 in the North). As a share of total employment the difference is even more staggering: 12 percent of the employed in the North are in the public sector against 21 percent in the South. The comparison with the Center is clouded by the presence of the national capital in the Lazio region. Including this region, public employment is artificially high in the Center. For this reason we focus mostly on North-South comparisons.

Table 3 underestimates the differences between North and South for two reasons. First, it does not include employees of public and semipublic enterprises. Second, Wagner's Law implies that the size of government (and thus the number of public employees) increases with income per capita. Since the South is poorer than the North, Wagner's Law predicts a smaller government sector in this region.

⁶Regional differences are so large that it seems surprising that there is no significant labor mobility from South to North. Cannari, Nucci, and Sestito (2000) show that mobility costs (i.e., housing cost of relocation) are very large and make geographical relocation too costly despite large differences in income.

Table 2. Descriptive Statistics of *BIW*

Variable	Mean	Standard Deviation	Minimum	Maximum
Region				
North	0.448	0.497	0	1
Center	0.196	0.397	0	1
South	0.354	0.478	0	1
Household structure				
Parents (fraction)	0.640	0.479	0	1
Children (fraction)	0.337	0.473	0	1
Demographics				
Age	36.73	13.01	15	62
Male	0.520	0.499	0	1
Married ¹	0.589	0.491	0	1
Lives in city > 500,000	0.136	0.343	0	1
School	9.737	3.805	3	20
High school	0.363	0.480	0	1
College	0.071	0.257	0	1
Employment status				
Unemployed	0.165	0.371	0	1
Retired	0.227	0.418	0	1
Labor force participation	0.634	0.481	0	1

Source: *BIW* (Bank of Italy, 1995).

¹Also includes unmarried people living with a partner.

Differences in the age structure of the population in the North and the South may account for different levels of employment in two large sectors: education and health. In fact, the fraction of the population below age 14 is higher in the South than in the North (12.4 percent in the North versus 18.8 percent in the South). On the contrary, the share of the population above age 65 is higher in the North than in the South (18.2 percent versus 13.8 percent). This implies that one should expect more health care employees in the North and more teachers in the South. As Table 3 shows, health care employees are just slightly more evident in the North while teachers are far more numerous in the South. Note that the large number of teachers is able to keep class size as low as in the North. This is a form of redistribution, since poorer regions with more children receive the same number of teachers per capita than wealthier regions with fewer children. Also, employment in public universities is higher in absolute numbers (and, a fortiori, in per capita terms) in the South than in the North.

In all the other categories, such as federal and regional administration, public employment per capita is higher in the South. Note that for some of the points we make below, on the effects of public employment on labor market structure and social attitudes, what matters most is the share of public employment in the labor force or relative to private employment. Evaluated in this way, public employment in the South is much higher than in the North in all the categories of employment.

Table 3. Regional Economic Performance and Public Employment

	North	Center	Center Without Lazio	South
Regional product over national product (GDP)	55.1	20.5	10.6	24.3
Regional population over total population	44.4	19.2	10.1	36.4
Participation rate ¹	62.5	59.7	62.3	51.5
Unemployment rate	6.7	10.3	8.2	21.0
Public employees per 100 residents	5.1	6.9	6.1	6.1
Public administration	0.64	1.53	0.88	0.87
Education and research	1.67	2.14	2.02	2.43
Regional administration	1.12	1.27	1.38	1.30
Health care	1.31	1.22	1.39	1.08
Other	0.35	0.75	0.41	0.42
Public employees per 100 employed	12.4	18.6	15.4	22.1
Public employees per unit of regional product ²	124.0	194.4	155.0	275.1
Police officers per crime age population (15–65)	0.07	0.12	0.09	0.11
Police officers per 1000 crimes denounced ³	7.3	12.3	13.4	10.7
Tax inspectors per unit of regional tax yield ²	11.6	14.2	...	59.9
	72.9	122.5	134.1	108.3
Postal workers per 100,000 units of correspondence ⁴	179.3	566.2	...	1,782.7
Railways workers per 100,000 tons of goods shipped ⁵	71.2	186.9	121.9	327.9
Age structure: 15 and younger in population	12.4	13.2	12.1	16.1
Age structure: 65 and older in population	18.2	18.4	20.8	13.8
Class size ⁶ (primary school)	16.2	16.9	15.9	18.0
Class size ⁶ (secondary school)	20.7	20.5	20.5	21.0

Sources: ISTAT (1996a and 1996b); and Italian Treasury (1995).

Note: All data refer to 1995, unless otherwise indicated.

¹Employed and unemployed as a fraction of population between 15 and 65.

²Regional product and regional tax yield in Lit 100 billion. Taxes (collected in 1996) include value-added taxes, personal and corporate income tax, the so-called local tax on incomes (ILOR, abolished in 1997), and customs duties.

³Police officers in 1996 per 1,000 crimes denounced by the police in 1995.

⁴Number of post office employees per 100,000 letters and parcels sent in 1997.

⁵Railways workers in 1997 per 100,000 tons of goods shipped in 1996.

⁶Class size defined as students per session.

Other Factors: Productivity of Public Jobs and Quality of Public Service

Although it is difficult to measure the productivity of public employees, evidence suggests that the productivity of public employees in the South is lower than in the North.

Tax administration presents a striking picture. In 1996, about 25,000 tax inspectors in the North collected and administered Lit 213 trillion in taxes accruing to the central administration. While the number of staff devoted to the same tasks in the South was not significantly lower, taxes collected there amounted to only Lit 34 trillion. Hence, the average productivity of the staff employed in tax administration in the Northern regions was six times higher than in the South. Some of this striking difference can be explained by the fact that income per capita in the North is higher than in the South, so tax collected per number of taxpayers is higher. However, every indicator of tax evasion suggests that tax compliance is lower in the South, despite the large number of tax collectors.

Similarly, the regional concentration of personnel within the national post office and the railways cannot easily be attributed to differences in the demand for postal services and transportation.⁷ In the former sector, a Northern worker “produces” in a year ten times the annual output of her representative Southern colleague. In the transportation sector, the productivity gap—measured in manpower per units of goods shipped—while less extreme, is still large. We use goods rather than passengers because it is difficult to evaluate the role of transit passengers, traveling from a region to another through many other regions.⁸ Given the difficulties in measuring productivity in the public sector, care is needed in interpreting these data.

The indices of concentration of Italy’s police per macroeconomic area reported on Table 3 are rather inconclusive. The higher density of officers charged with law enforcement in the Southern regions—with generally poorer records in terms of safety maintenance—reflects the government’s objective to *prevent* criminal acts. The Southern ratio of police officers relative to the criminal age population is 51 percent higher than in the North. This higher ratio should therefore have a more significant deterrence effect on crime. The reported difference of law enforcement officers relative to reported crime, however, is only 47 percent larger in the South. This raises serious doubts about the effectiveness of a larger police force on crime deterrence. Also, aggregate ratios conceal remarkable disparities among single regions within the South that are nevertheless not easy to justify.

A different way of looking at productivity of public good provisions is to consider users’ satisfaction. In the 1993 survey of the *BIW*, the heads of house-

⁷We measure production of postal services in terms of the number of letters and parcels sent locally. If we were to include the number of withdrawals from and payments into postal checking and savings accounts, the productivity differentials would be even larger.

⁸The post office and the railways used to be administrations with the general government. The railway company became a stock company in 1992 and the post office was turned into an independent public agency in 1994. As a result the employees of both these entities are no longer employees of the general government.

holds were asked to report the use of local public services and to provide a qualitative evaluation of the services available.⁹ Table 4 compares the amount of public services used across regions. The residents in the North indicate a higher use of public transportation and health services. The Southerners, on the other hand, use more education and childcare facilities, which is consistent with the different age distribution in the two regions. Overall there appears to be no stronger reliance on public services in the South than in the North.

Table 5 reports the results from individual evaluations of different types of public services. In all the public functions (transportation, health services, education, and municipal services), residents in the North are more satisfied with the quality of local services. Obviously, these results should be taken cautiously given their qualitative nature. However, they are consistent with the evidence of Putnam (1993), who looks at several different measures of efficiency in different regions of Italy. For example, Putnam assessed the responsiveness and effectiveness of local bureaucracy in different regions of Italy by measuring processing time and quality in response to three specific information requests. In the most efficient regions (Emilia-Romagna and Valle d'Aosta, both in the North) two of three requests received thorough replies within a week. In the least efficient regions (Calabria, Campania, and Sardinia, all in the South), none of the requests received any attention and only direct inquiry and personal visits led to a response. A variety of other tests performed by this author reached similar conclusions. In fact, this widely cited book is entirely devoted to documenting and explaining the remarkable differences in public sector efficiency between the North and the South of Italy.

In summary, this evidence suggests that public employment is skewed in favor of the South without any benefit in terms of greater satisfaction for the public services provided or more frequent use of public services.

II. Socioeconomic Consequences of the Distribution of Public Employment

Wage Differentials

We begin by testing whether the public sector has a more equal payment structure across regions than the private sector. Data on earnings are taken from the *BIW* (Bank of Italy, 1995) and are based on reported monthly after-tax income. An important caveat is that since earnings are measured after tax, and given the progressivity of the tax system, this could understate the North-South wage differential. An additional potential problem with income data is underreported income from nonmarket activities. Italy has a rather large gray economy that primarily supplements income of households in the South. The omission of this income source leads to overestimation of the North-South income gap and could bias the

⁹These questions were not asked in 1995.

Table 4. Recent Use of Public Services
(1 = yes, 0 = no)

	Use of Public Services		
	North	Center	South
Use of public transportation services	0.56	0.53	0.39*
Use of public health services	0.22	0.21	0.20
Medical tests in public laboratories	0.62	0.67	0.49*
Medical examinations (public)	0.52	0.48	0.41*
Use of medicines	0.81	0.84	0.79*
Nursery school attending	0.05	0.06	0.08*
Public primary, secondary school attending	0.20	0.27	0.31*
Public university attending	0.09	0.11	0.12*

Source: *BIW* (Bank of Italy, 1993).

Note: * indicates statistically significant differences of group means at 1 percent level.

Table 5. Quality of Public Services
(subjective evaluation: 1 = worst, 10 = best)

	Quality Assessment		
	North	Center	South
Public transportation functioning	6.09	5.45	4.52*
Health services functioning	6.03	5.21	4.00*
University functioning	6.31	5.79	4.76*
Municipality offices functioning	6.27	5.57	4.60*
Municipality street cleaning	6.20	5.70	4.52*
Public parks and gardens availability	6.11	5.53	3.68*
Public water quality	5.01	4.54	3.91*
Safety and crime control	5.91	5.70	4.02*
Nursery school functioning	7.16	6.76	5.38*
Primary and secondary school functioning	6.97	6.68	5.65*

Source: *BIW* (Bank of Italy, 1993).

Note: * indicates statistically significant differences of group means at 1 percent level.

public-private income comparison. The latter problem may actually lead to an understatement of the public sector wage premium if public employees are more active in the gray market. This may be the case since reduced work hours and relaxed enforcement in public offices allow much time for second jobs in the gray economy.

In Table 6, column 1, we report estimates from standard wage regressions for public employees. In column 3 we run comparable regressions for the private sector. The dependent variable is the log of hourly earnings of fully employed workers and excludes self-employed workers (column 2). Hourly wages are obtained by dividing monthly earnings by 4.35, the average number of workweeks

Table 6. Wage Regressions for the Private and Public Sector
(dependent variable: log hourly earnings from full-time employment)

	Log Hourly Wages		
	Public sector (1)	(2)	Private sector (3)
Constant	4.480 (105.2)	4.163 (159.23)	4.180 (156.18)
High school degree	0.063 (3.50)	0.095 (6.73)	0.091 (6.51)
College degree	0.246 (10.3)	0.252 (8.23)	0.242 (7.93)
Years work experience	0.037 (8.37)	0.042 (13.11)	0.041 (12.97)
Years work experience	-0.001 (-5.96)	-0.001 (-9.41)	-0.001 (-9.24)
Female	-0.105 (-7.66)	-0.115 (-9.56)	-0.106 (-8.52)
Married	0.064 (4.04)	0.100 (7.60)	0.101 (7.70)
Center	0.011 (0.66)	-0.070 (-4.99)	-0.072 (-5.21)
South	-0.014 (-0.99)	-0.189 (-13.79)	-0.192 (-14.00)
White collar	0.032 (1.63)	0.165 (11.00)	0.149 (9.49)
Teacher	0.355 (13.94)		
Mid-management	0.116 (4.00)	0.288 (11.53)	0.259 (10.14)
Top management	0.292 (7.21)	0.616 (13.32)	0.588 (12.69)
Firm size: 20–99 employees		0.114 (7.94)	0.110 (7.54)
Firm size: 100–499 employees		0.190 (11.36)	0.177 (10.26)
Firm size: less than 500 employees		0.275 (17.64)	0.247 (15.03)
Industry dummies	No	No	Yes
Adjusted R ²	40.4	47.0	47.8

Source: *BIW* (Bank of Italy, 1995).

Note: *t*-statistics in parentheses. Excluded category for work qualification is blue collar workers. Excluded category for industry dummies is manufacturing. The additional controls included in the regressions are the following dummies: invalid worker, sick worker, and big city—all statistically insignificant.

a month. We then divide this number by reported weekly hours including overtime.¹⁰

Focusing on the regional effects (the category left out is North), we find that public sector wages are not statistically different between the South and the North. On the contrary the results for the private sector are quite different. In column three we estimate the same wage regression for private employees. We focus again on the regional factors. Southern residents earn on average about 18.9 percent less than their Northern counterparts. This result is robust even after we take worker qualifications and industry structure into account. The other controls in the regression appear quite reasonable. Education implies a wage premium; years of work experience increase wages but at a decreasing rate. Females receive a lower wage even controlling for education and years of experience, and being married implies a wage premium.¹¹

We now proceed to a more direct evaluation of the public sector wage premium in the North and South. Given the findings in Table 6, we expect that public employees in the South earn a sizable wage premium over private sector jobholders. Table 7 reports results from pooled (public and private) wage regressions of fully employed workers. Again we focus first on regional wage effects. Income from labor in the South is 13.6 percent lower than in the North. Also the first column of this table shows that at a national level public employment pays 19.0 percent more than the average private sector job.¹² We now examine whether this premium differs by region.

In columns 2 and 3, we decompose this effect by estimating the public sector premium for the North and South. The public employment premium in the North is still positive but considerably smaller at 12.5 percent. By contrast, in the South of Italy we observe a public employment *premium* in excess of 26.0 percent over local private sector employment. A direct comparison of these two figures suggests that the Southern public sector wage premium is 13.5 percent (= 26 – 12.5) higher in the South. One explanation is that the regional public wage premium may reflect a discrepancy in cost of living adjustments by the public and the private sector. While the private sector at least partly compensates for the lower cost of living, the public sector does not because of its nominal wage policy. Alternatively, the regional wage discrepancy between the private and public sector may be attributable to industry composition effects: the Southern private sector may predominantly operate in relatively low wage industries or in industries that do not negotiate wages at the national level. Part III of this paper contains a more detailed empirical analysis of the regional public wage premium. The key finding is that the public sector provides a substantial wage premium in the South, which is likely to have distortionary effects on the Southern labor market. The total effect is a combination of these two effects.

¹⁰The comparison between private and public sector wages may be slightly affected by the fact that overtime may be more widespread in the private sector.

¹¹A wage premium on being married is commonly found in the labor literature; see, for instance, Polachek and Siebert (1993). The labor literature has discussed various alternative explanations of this finding.

¹²This result is consistent with the findings of Gregory and Borland (1999).

Table 7. Pooled Wage Regression: Private and Public Sector
(dependent variable: log hourly earnings from full-time employment)

	Log Hourly Wages		
	All Regions (1)	North (2)	South (3)
Constant	4.168 (182.1)	4.238 (147.22)	3.85 (78.5)
High school degree	0.213 (21.2)	0.189 (14.35)	0.271 (12.9)
College degree	0.507 (30.9)	0.443 (19.54)	0.631 (20.62)
Years work experience	0.048 (18.0)	0.046 (13.12)	0.055 (9.63)
Years work experience	-0.001 (-11.9)	-0.001 (-8.24)	0.001 (-6.67)
Female	-0.099 (-10.3)	-0.088 (-7.06)	0.091 (-4.44)
Married	0.108 (9.9)	0.074 (5.26)	0.183 (7.99)
Mid-management	0.094 (5.3)	0.119 (5.18)	0.057 (1.46)
Top management	0.21 (7.2)	0.290 (7.56)	0.137 (2.16)
Center	-0.073 (-6.2)		
South	-13.1 (-12.2)		
Public sector	0.190 (18.1)	0.125 (8.69)	0.260 (12.56)
Adjusted R ²	44.3	41.6	50.9

Source: *BIW* (Bank of Italy, 1995).

Note: *t*-statistics are in parentheses. Additional controls included in the regressions are the following dummies: invalid worker, sick worker, and big city worker—all statistically insignificant.

Family Persistence of Public Sector Jobs

We now examine whether there is a tendency for members of the same family to be in the public sector: that is, we ask whether family ties to the public sector matter. This is interesting for two reasons. First, if family ties matter, they may indicate that a “culture” of public jobs is diffused in a family. A child raised in a culture of public job security may aspire to the same type of career. Furthermore, if these cultural effects are important, they may spill beyond the immediate family to a network of connected individuals. Second, if family connection matters, it could mean that it is easier to obtain a public job if a family member can help you get one through personal contacts, inside information, recommendations, or favors.

We begin by exploring the influence of the employment history of other family members on the likelihood of public sector employment. We compare the frequency of public sector employment between two groups of individuals:

workers with ties to the public sector, and workers without ties. Table 8 considers two types of family ties: between spouses and child-parent ties. In the latter category we can distinguish between two types of children-parents ties: ties between the head of the household and his or her parents, and the head of the household and his or her children. The spousal tie is affected by a serious problem of reverse causation and may therefore be biased; in fact, individuals may meet in the workplace and then marry.

Table 8 reveals how important family ties are for public employment. Children of public sector employees are almost twice as likely to end up in the public sector, relative to the others. The effect of spousal ties is strong, but perhaps not easily interpretable. Note that the effects of family ties are prevalent in the North, South, and Center.

In addition to being less prone to participate in the labor force in general, children of civil servants appear to have longer unemployment spells if unable to find a public position in the first place (see Table 9). The conditional probability of household members—aged 26 to 40—remaining unemployed if not hired by government tends to rise (by 5.9 percent¹³) with the number of close family relatives—parents and grandparents—who serve, or have served, as bureaucrats. In an earlier version of this paper, we also investigated school choices of public employees (and their children) relative to those employed in the private sector. We found weak evidence that children of public employees make choices that appear less “business oriented” than their counterparts in the private sector.

Job Search

Our hypothesis is that job searches in the South are mainly directed toward the public sector, but we cannot observe the direction of worker’s job search efforts. We can, however, observe the on-the-job search effort of different worker types, namely, public and private sector employees.

Table 10 (columns 1 and 3) reports Logit estimates of job search efforts controlling for the employing sector and regional level of the unemployment rate. The dependent is a dummy variable indicating whether a person has been looking for a job in the recent past.¹⁴ As shown in column 1, holding a job in the public sector (variable *Public*) significantly reduces the search effort. This suggests that public sector jobs are secure and provide a very high level of satisfaction. Several explanations for this finding are possible. The most obvious is that the high wage premium for public jobs in the South discourages anyone from looking elsewhere. Also, the workload may be even lower in the public sector than in comparable private sector jobs.

Finally, column 3 shows whether the Southern residents search less than Northerners when they hold a public sector job. The interaction variable *Public x South* is borderline (in)significant at the 10 percent level. This may suggest that Southerners are searching less on the job than their Northern counterparts. This

¹³This calculation is based on average marginal effect derived from Logit estimates.

¹⁴The sample is restricted to fully employed workers.

Table 8. Family Ties¹ in the Public Sector: Frequency of Public Employment with Family Ties to the Public Sector
(in percent of all employees)

Family ties	Child-Parent Ties		Children of		Spousal Ties	
	Head of Household and his/her Parents		Head of Household		Spouse of Head of Household	
	Yes	No	Yes	No	Yes	No
North	35.6	17.9	13.1	10.8	43.3	22.2
Center	42.8	25.1	21.9	12.9	52.4	23.2
South	48.8	23.9	33.9	14.9	63.4	29.5

Source: *BIW* (Bank of Italy, 1995).

¹Family ties to the public sector are defined as having one or more immediate family member (parent or spouse) who holds or held a job in the public sector. Sample weights applied. All group mean differences are statistically significant.

evidence, although not very strong, is consistent with the result that public sector jobs are particularly valued in the South.¹⁵

Entrepreneurship

Does a large dependence on public employment deter the development of entrepreneurial activity? This issue is particularly important for Italy, since its economy relies more than other OECD countries on small business activities.¹⁶ We identify four categories of entrepreneurial activity: (1) professionals; (2) business owners; (3) independent workers or craftsmen; and (4) owners or assistants in family businesses.

Table 11 reports the empirical results from Logit estimation where the dependent variable is a binary indicator, equal to 1 if a respondent pursues an entrepreneurial activity (as defined above) and zero otherwise.¹⁷ In regression 1, we estimate entrepreneurship as a function of the level of schooling, work experience, and two regional variables: the regional unemployment rate and the fraction of public employees in the labor force. We find that education increases the likelihood of entrepreneurship, while the regional variables have no significant impact. The level of public employment has a negative sign but its effect is insignificant. In column 2 we add information on the regional economic performance (regional output over regional population). We find that residents of a highly productive region are less likely to undertake an entrepreneurial activity. Probably, low economic activity encourages self-employment, owing to a lack of

¹⁵We have also explored whether the type of education of the workers—business or more business—affected their search effort. We did not find significant effects.

¹⁶An OECD study (1995) reports that Italy has a large number of small- and medium-sized firms in its core industries. About 36.8 percent of all employees in Italy work in firms with less than 200 employees compared with 20.8 percent in Germany, 25.8 percent in France, and 34.1 percent in Japan.

¹⁷The sample is limited to heads of households older than age 20.

Table 9. Unemployment of Young Italians (Age 25–40) and Family Ties¹ (Logit)
(dependent variable: unemployed,² 1 = yes, 0 = no)

	Unemployment Incidence ²
Constant	1.294 (1.9)
Family ties ¹	0.309 (2.1)
High school degree	-0.492 (-2.8)
College degree	-0.598 (-2.0)
Years work experience	-0.418 (-4.4)
Years of work experience	0.014 (3.9)
Center	0.805 (4.2)
South	1.670 (10.5)
Parent schooling	-0.014 (-0.7)
Female	0.140 (1.0)
Married	-0.519 (-1.2)
Log Lik	-683.6

Source: *BIW* (Bank of Italy, 1995)

Note: *t*-statistics are in parentheses.

¹Family ties to the public sector are defined as having one (or more) immediate family member (parent or spouse) who holds or held a job in the public sector. Children with a public job have been excluded from the sample.

²Incidence of unemployment conditional on not having been hired by the public sector.

alternative employment opportunities. More interesting in this model is the public employment effect. The estimated coefficient on public employment is negative and significant at the 5 percent level. Thus, even though a lower productivity level on average would tend to encourage entrepreneurship, the presence of a large public sector tends to offset this effect. This result is robust to controlling for the family background of the respondent, as shown in the last column of Table 11.

III. The Size of Regional Redistribution Through Public Employment

We now evaluate the size of the regional redistribution obtained through public employment. We distinguish between two components: the quantity effect (Q), namely, the “excess” number of public jobs; and the price effect (P), that is, the “wage premium” paid to public employees in the South, to be defined below. Our

Table 10. Job Search Activity in Private and Public Sector (Logit)
(dependent variable: job search: 1 = yes, 0 = no)

	Job Search		
	(1)	(2)	(3)
Constant	-0.955 (-4.27)	-1.250 (-5.00)	-1.286 (-5.12)
Years of schooling	0.005 (0.34)	0.005 (0.31)	0.006 (0.37)
Years work experience	-0.062 (-10.68)	-0.063 (-10.77)	-0.062 (-10.72)
Female	-0.093 (-0.87)	-0.079 (-0.74)	-0.077 (-0.72)
Public	-1.406 (-8.72)	-1.421 (-8.80)	-1.244 (-6.67)
Public x South			-0.531 (-1.65)
Center	-0.002 (-0.01)	-0.108 (-0.77)	-0.115 (-0.82)
South	0.193 (-1.18)	-0.393 (1.60)	-0.312 (-1.52)
Regional unemployment rate		4.442 (2.62)	4.451 (2.63)
Log Lik	-1408.1	-1404.5	-1403.1

Source: *BIW* (Bank of Italy, 1995).

Note: *t*-statistics are in parentheses. Model 4 restricted to workers with at least a high school degree.

estimate of the implicit interregional transfer (*TR*) through public employment is given by:

$$TR = (E_C - E_B)W_C + E_B(W_C - W_B) = QW_C E_C + PW_C E_B, \quad (1)$$

where, $Q \equiv (E_C - E_B)/E_C$ and $P \equiv (W_C - W_B)/W_C$.

In equation (1) *TR* is the implicit monetary value of the interregional transfer, E_C is the current number of public employees in the South, E_B a numerical benchmark to be specified below, W_C the average wage rate currently paid to public employees in the South, and W_B a benchmark wage to be defined below.¹⁸ We call the expression $Q = (E_C - E_B)/E_C$ the quantity effect and $P = (W_C - W_B)/W_C$ the

¹⁸When calculating *TR*, we multiply the excess wage payment ($W_C - W_B$) by the base employment level E_B and not by E_C . We leave out the amount $(E_C - E_B)(W_C - W_B)$ from this computation, since this part of the transfer payment is already accounted for in the first term $(E_C - E_B)W_C$.

Table 11. Model of Entrepreneurial Activity (Logit)
(dependent variable: *entrepreneur*: 1 = yes, 0 = no)

	Entrepreneur		
	(1)	(2)	(3)
Constant	-0.747 (-1.96)	1.644 (2.04)	1.364 (1.64)
Years schooling	0.035 (2.92)	0.037 (3.09)	0.023 (1.89)
Years work experience	-0.057 (-2.72)	-0.056 (-2.64)	-0.051 (-2.34)
Years work experience	0.001 (4.10)	0.001 (4.01)	0.001 (3.38)
Regional unemployment rate	0.959 (1.23)	-3.598 (-2.32)	-3.313 (-2.07)
Regional output/GDP		-63.656 (-3.37)	-60.625 (-3.11)
Regional public employment rate	-0.884 (-0.93)	-2.210 (-2.15)	-2.188 (-2.07)
Father: manager			0.469 (2.17)
Father: self-employed ¹			0.858 (9.89)
Log Lik	-1816.3	-1810.6	-1727.9

Source: *BIW* (Bank of Italy, 1995).

Note: *t*-statistics are in parentheses.

¹Father either professional, self-employed, owner of business, or entrepreneur.

price effect. After rearranging of terms and substituting for E_B we obtain the following expression for TR :

$$TR = W_C E_C (Q + (1 - Q)P). \quad (2)$$

The main task in determining the quantity effect is to construct a baseline rule for the level of public employment, which is to identify E_B . Since it is not obvious how to do this, we offer several different estimates for E_B . Also, to highlight the North-South comparison, we use only the characteristics of the North as the determinants for the baseline scenario for the South.

In order to estimate the price effect, P , we need to compute W_B , the “benchmark” salary for public employees in the South. This can be tackled from two angles. First, one can define the benchmark in terms of the wage rate payable if the public wage policy were to conform to the norm of equalizing regional public compensations in real terms. Second, one can construct an institutional counter-

factual and ask which wage rate would be paid in the South if Italy were not a unified country. A natural candidate for W_B would be, in this case, a measure of the nominal wage prevailing in the private sector to remunerate labor of comparable quality. We pursue both strategies below.

The Quantity Effect

One-dimensional baseline estimates

The simplest approach for the calculation of Q is to assume that the South should have the same level of public employment per unit of a particular characteristic, that is, regional attribute, as the North. We present four alternative attributes: the size of the labor force, employment, regional output, and the regional level of consumption. The baseline estimates for the North are then calculated as the ratio of northern public employment over the specific regional characteristics. It is not obvious what is the “best” measure, and therefore we present a menu of them. For example, from the point of view of economic efficiency alone, public employment should be roughly a constant fraction of the population across regions; in this case, the population weight is the correct one. If, instead, economic efficiency is seen to suggest that the public sector should be a certain fraction of GDP, then output weights or employment weights are preferable.

In Table 12 (first row) we report several different baseline estimates derived from northern regional observations. The baseline estimate in column 3, for example, is obtained by dividing the Northern public employment by total Northern employment, and it implies a baseline fraction of 12.1 percent of the employed population.

All Southern regions have excess public employment according to all four baseline rules. In the second row of Table 12 we report estimates of excess public employment for the South as a whole. Predicted excessive employment is measured as a fraction of the respective Southern regional public employment. The smaller estimates of excess employment are based on the population. Estimates are higher when we take the full economic disparities into account. The employment- and output-based rules imply that 43 percent to 55 percent of the public employment in the South is above the baseline limits. Two regions in South—Molise and Basilicata—have the highest “excessive” public employment.

Multidimensional estimates: Wagner regressions

The estimates just discussed do not take into account that different characteristics of the economies in the Northern and Southern regions may “require” different levels of public employment, purely for economic reasons. Any attempt to determine the “optimal size” of public employment on a regional base should be undertaken with caution. Here we estimate a regional model of public employment in the spirit of Wagner’s Law.¹⁹ We construct a provincial data set derived from residential informa-

¹⁹There is a rich empirical literature testing the time-series implications of this proposition. Relatively little research has been conducted using cross sectional information. One exception is Eberts and Gronberg (1992).

Table 12. One-Dimensional Baseline Rules and Excess Public Employment in the South

	Baseline Rules				
	Population (1)	Labor force (2)	Employment (3)	Regional product ¹ (4)	Regional consumption ¹ (5)
Baseline rule	0.05	0.113	0.121	1.636	2.331
Predicted excess public employment in South (percent)	19.6	32.2	43.5	54.9	37.6

Sources: Italian Treasury (1996); and ISTAT (1996a).

¹Measured in billions of Lire.

tion in the Bank of Italy survey (1993 and 1995). Each individual in the survey can be identified by his or her province of residence and reported sector of employment (that is, private versus public). This information allows us to develop provincial attributes by calculating provincial population averages. In total we obtain information on 99 provinces that can be mapped to the 20 main regions in Italy.²⁰ To maximize the degrees of freedom, we expand our data set and merge data from the 1993 survey with the 1995 survey. We end up with an average of 484 observations for each province: the lowest number of observations is 36, and the maximum is 3,135. All provincial characteristics are then derived by calculating weighted means of individual observations using population weights from the survey.²¹ Income variables are expressed in 1993 Lire. Given the data problems and the way we have to construct these provincial data, the results of these Wagner regressions should be taken as suggestive and indicative.

In Table 13, we report the regression results for the Northern provinces, where the dependent variable is the fraction of public employment over total employment. The model with the best fit is the more narrowly defined Northern model. All the control variables point in the expected direction even though standard errors are high. For instance, higher levels of income lead—albeit with weak evidence—to more public employment. As additional determinants of public employment, we used information on the employment structure of a province, the fraction of old (older than 65) and young residents (younger than 15), and the degree of urbanization. We also use as a control the fraction of employment in the service industries. In an earlier version of this paper, we explored alternative specifications, including restricting the definition of what is included in the Northern regions. The results do not change much; in fact, they often improve.

²⁰Among these provinces, 43 are part of the North and 35 are part of the South. The number of provinces in each region varies from 1 to 10.

²¹Since the 1993 and the 1995 surveys contain the same questions, we do not need to modify the variables of interest.

Table 13. Wagner Regression of Public Employment for Northern Provinces

	Public Employment Rate ¹ Northern Provinces
	-1.929 (-1.68)
Log of total income ²	0.1865 (1.62)
Service sector ³ employment among private sector	0.2102 (0.92)
Dependency rate ⁴	0.3323 (1.36)
Old people ⁵ living without family members	0.3055 (1.14)
Urbanization rate ⁶	0.0564 (1.8)
Adj. R ²	0.18
Number of observations	43

Source: *BIW* (Bank of Italy, 1993 and 1995) plus regional data from ISTAT.

Note: *t*-statistics are in parentheses. For definition of regions see text.

¹Public employment as a fraction of all provincial employment 1995 income has been deflated to 1993 using the CPI deflator.

²Disposable total income.

³Defined as bank insurance, real estate and personal services, and communication and transportation.

⁴Fraction of population younger than 15 and older than 65.

⁵Defined as 70 years and older.

⁶Defined as the fraction of provincial residents living in a city with more than 25,000 inhabitants.

We now turn to the estimation of public employment in the South relative to the benchmark. We obtain predicted levels of public employment by using the estimates from Table 13. Before we can derive these estimates, however, we need to tackle two issues. First, the level of income in the South has not been adjusted for differences in the cost of living. If we evaluate the Wagner model for the North at the nominal level of income in the South we would overestimate the real income differences and thus overestimate the level of excessive public employment. This is because the price level in the South is lower, and therefore the nominal income of the South underestimates the real income of the South relative to the North. We correct for this difference by increasing the level of income by 15 percent and, more extremely, by 25 percent.²² Note that these corrections will lead to *lower* estimates of excessive public employment. A second issue is the size difference of the Southern provinces. To obtain a combined estimate for total Southern exces-

²²In the next section we provide estimates of the difference in cost of living, which are consistent with the range of these adjustments.

sive public employment, we need to weight the provincial predictions before we can add them up. We do this by applying provincial weights derived from population weights from the *BIW* 1993 and 1995.

Table 14 summarizes the results of this exercise. The multivariate model predicts an excessive employment rate between 38 percent and 43 percent. The regions with the highest levels of excessive public employment according to this measure are Campania, Puglia, and Calabria, and they differ from the one-dimensional estimates. Finally, regional per capita income and the rate of excessive public employment are negatively correlated with a coefficient of (-0.21) . This observation hints at the use of public employment as a redistributive device.

To sum up, one-dimensional estimates of excessive public employment lie between 20 percent–55 percent of total public employment in the South. The multivariate estimates have a smaller range and lie between 38 percent and 43 percent.

The Price Effect

Price Effect 1: cost of living adjustment

First we estimate by how much the public sector would have to reduce wages in the South in order to equalize pay in real terms, between the North and the South. This is a simple measure of the implicit subsidy that is due to the higher real wage for public employees in the South.

Our estimates for regional price differences are derived from cost of living data for Italian cities. As mentioned above, *ISTAT*, the Italian statistical agency, does not provide price level indices for different regions. We therefore use data of city price deflators for the period 1947–95 to calculate the cumulative price divergence between the North and the South. We assume that the cost of living difference between the North and the South was small at the beginning of the period. We use data from six northern and seven southern cities.²³ The accumulated difference of the average price index amounts to 14.3 percent by 1995. We also derived alternative measures of real income differences from wage regressions of the private sector. Our estimates are very similar and range between 15–18 percent. These regression results are available from the authors upon request. This measure of price level difference probably underestimates the extent of the higher cost of living in the North. Cannari, Nucci, and Sestito (2000), looking at real estate prices, suggest much larger differences between the North and South.

²³Cost of living data are available for the following cities: North: Turin (Piedmont), Genoa (Liguria), Trento (Trentino), Triest (Friuli), Bologna (Emilia-Romagna), and Venezia (Veneto); South: Campo Basso (Molise), Napoli (Campania), Bari (Puglia), Potenza (Basilicata), Reggio Calabria (Calabria), Palermo, and Catania (Sicily).

Table 14. Predicted Percentage of Excessive Public Employment in Southern Provinces Based on Northern Wagner Regression

	Northern Provinces (1)
Southern income adjusted ¹ by 15 percent	42.9
Southern income adjusted ¹ by 25 percent	38.5

Source: *BIW* (Bank of Italy, 1993 and 1995) plus regional data from ISTAT.

Note: Excess public employment is calculated as the difference between the average actual Southern public employment and predicted employment rate divided by the actual rate. Predictions are weighted and based on Southern evaluations of Northern Wagner regression. As weights we use provincial sums of analytical weights from *BIW*.

¹Southern income has been increased by 15 percent (25 percent) to adjust for regional differences in cost of living.

Price Effect 2: adjustment to public-private pay structure

An alternative way to calculate the price effect is to ask which wage rate would be paid in the South region if Italy were not a unified country. A natural determinant for the Southern baseline wage, W_B , would be the wage rate that generates the same public-private sector pay structure as in the North. This comparison would not only account for differences in the cost of living but also take into account regional differences in productivity.

We run two types of wage regressions, one for the North in order to determine the base public-private sector wage structure, and one for the South (see Table 15 for the results). We assume that public sector work is similar to the service sector, and therefore that the public-private sector wage comparison should focus on the service sector. We use the following service sector industries: banking and insurance, real estate, and personal services. However, since wages in the banking and insurance sector are to a large extent set on the national level, the Southern public-private sector comparison is somewhat biased. For this reason we run a separate set of regressions specifically controlling for the banking and insurance sector from the private service sector.

To determine the Northern pay structure, we run a pooled (public and private) wage regression for fully employed Northern residents only. We use the same control variables as above but also include a dummy for employment in the private service sector. We exclude public sector employment. We find that in the North the private service sector pays on average 7.2 percent (column 1) less than the public sector. When we leave out the banking sector the differential is substantially larger at 18.0 percent. We can now compare this finding with estimates from the South (Table 12, columns 3 and 4). The wage differential between public and private service sector employees is much larger. On average, public employees earn about 24.9 percent more than their private sector counterparts if we include the banking sector, and a stunning 40.5 percent more if we exclude the banking sector.

By what amount would the Southern wage have to be adjusted to achieve the Northern pay structure? If the Northern public-private pay structure were to

Table 15. Wage Regressions for the North and South: Public-Private Pay Structure
(dependent variable: log hourly earnings from full-time employment)

	Log hourly wages			
	North		South	
	(1)	(2)	(3)	(4)
Constant	4.373 (128.4)	4.382 (126.6)	4.109 (75.3)	4.133 (75.4)
High school degree	0.184 (13.9)	0.174 (12.9)	0.269 (12.8)	0.245 (11.5)
College degree	0.438 (19.3)	0.427 (18.3)	0.629 (20.5)	0.602 (19.2)
Years work experience	0.045 (13.1)	0.045 (12.9)	0.054 (9.6)	0.052 (9.2)
Years work experience	-0.001 (-8.3)	-0.001 (-8.1)	-0.001 (-6.6)	-0.00 (-6.3)
Female	-0.094 (-7.5)	-0.081 (-6.3)	-0.092 (-4.4)	-0.074 (-3.6)
Married	0.075 (5.3)	0.072 (5.0)	0.183 (7.9)	0.185 (8.0)
Mid-management	0.111 (4.8)	0.099 (4.0)	0.055 (1.4)	0.025 (0.6)
Top management	0.283 (7.4)	0.265 (6.6)	0.136 (2.1)	0.135 (2.0)
Nonservice sector	-0.139 (-9.3)	-0.141 (-9.4)	-0.263 (-11.7)	-0.270 (-12.1)
Service sector	-0.072 (-3.4)		-0.249 (-7.9)	
Service sector without banks and insurance		-0.180 (-7.2)		-0.405 (-10.8)
R ²	41.9	41.3	50.9	52.4

Source: *BIW* (Bank of Italy, 1995).

Notes: *t*-statistics are in parentheses. Excluded industry category is public employment. The service sector consists of banking and insurance, real estate, and personal services. The nonservice sector consists of agriculture, manufacturing, telecommunications, construction, and transportation. Additional controls included in the regressions: invalid worker, sick worker, and big city worker—all statistically insignificant.

prevail in the South, our estimates indicate that public wages would have to adjust downward by 17.7 percent. These estimates are slightly lower than the cost of living estimates. If we drop the banking sector from our comparison, the wage gap increases to 15.6 percent. Again we find that the estimated wage adjustments are similar to our previous results.

The Total Cost of Excessive Public Employment

We are now able to provide an estimate of the cost of excessive public employment. We recall from earlier that interregional transfer cost is defined as:

$$TR = W_C E_C (Q + (1 - Q)P), \quad (3)$$

where $W_C E_C$ is the current expenditure on public employment in the South and Q and P are the quantity and price effects, respectively. The earlier results indicate that the excessive rate of public employment in the South, Q , lies between 20 to 55 percent with a more narrow range of 38–44 percent from the Wagner estimates. On the other hand, the price effect, P , which measures the excessive payment levels, ranged roughly from 11 to 18 percent. We can use these two pieces of information and calculate the combined effect as described in equation (3) above. The total effect ranges between a minimum at 30 percent and a maximum at 65 percent of the public sector wage bill for the South. Taking the middle range of the Wagner estimates and the middle range for the price effect, we get a value of almost exactly 0.5.

IV. Conclusion

The allocation of public employment in Italy is an important source of geographical redistribution between regions, in particular between the North and the South. About half of the wage bill of the South can be thought of as redistributive, that is, in excess of what it “should be” relative to various ways of calculating a benchmark. This amount is the result of a quantity and a price effect. The former is due to the fact that there are many more public employees in the South relative to the North; the second arises because, while public wages are very similar across regions, the price level instead is lower in the South, so that real wages are higher in the South.

The heavy reliance on attractive public jobs in the South leads to a vicious circle in which private sector jobs are not sought after. This also implies that for private entrepreneurs it is expensive to offer jobs as attractive as those offered by the public sector. The result is that the economy in the South is overly dependent on public jobs that are of the nature of permanent welfare. The problem is compounded by the use (and misuse) of disability pensions, which are also concentrated in the South and are in many cases another source of permanent unemployment compensation.

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