BANCA D'ITALIA

EUROSISTEMA

Temi di Discussione

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ISSN 1594-7939 (print)
ISSN 2281-3950 (online)

Printed by the Printing and Publishing Division of the Bank of Italy

PUBLIC-PRIVATE WAGE DIFFERENTIALS IN EURO AREA COUNTRIES: EVIDENCE FROM QUANTILE DECOMPOSITION ANALYSIS

by Domenico Depalo*, Raffaela Giordano* and Evangelia Papapetrou°

Abstract

We evaluate the public-private wage differential in ten euro area countries for men in the period 2004-2007. Using the most recent methodologies on a Mincerian equation, we assess how much of the pay differential between public and private sector workers depends on differences in endowments and how much on differences in the remuneration of such skills. For the first time, we look at the contribution of specific covariates at different quantiles of the wage distribution and decompose the variance into an explained and an unexplained component. We find that the pay gap is often decreasing over the distribution, and it is mostly determined by higher endowments in the upper tail of the wage distribution and by higher returns of such endowments at the low tail, with considerable heterogeneity across countries. We further find that the wage distribution in the public sector is more compressed than in the private sector in some countries but not in all countries. This is the results, for all countries, of more dispersed distributions of endowments in the public sector and of returns in the private sector.

JEL Classification: H50, J31, J45, J50.
Keywords: public employment, wage differentials, wage determination.

Contents

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1 Introduction[1]

Governments in many advanced economies, especially in Europe, currently face the challenge of fiscal consolidation with the need to sustain potential growth. Against this backdrop, the determination of public sector wages has drawn renewed interest in view of its implications for public finances and potential consequences for the efficiency of the public sector and possibly of the whole economy.

Various factors can be adduced to explain public wage-setting behaviour and its relationship with private sector wages. While the public sector is subject to political constraints, the private sector is subject to profit constraints. In most cases, the public sector wants to be a good employer and may be willing to pay higher wages to its employees, especially its lower-skilled workers. By contrast, the government might be reluctant to award higher wages to high-skilled workers, as the public opinion might not want to see public servants earning more than comparably trained and experienced private sector counterparts (Katz and Kruger 1993; Bender and Elliott 1999; Bender 1998).

Public sector wage-setting can have a serious impact on labour market efficiency and macroeconomic outcomes. From an economic perspective, if the government rewards its employees with higher remuneration than in the private sector, prospective workers may decide to queue for these relatively high-paying jobs, with private sector employment crowded out unless private sector wages increase. Furthermore, such a policy could lead to higher budget deficits, push up taxes and/or divert public resources from productive uses. If, instead, the public sector pays lower wages than the private sector, it might find it difficult to recruit and retain skilled employees. The result could then be substandard public services.

In Figure 1 we plot the ratio between compensation per employee in the public and private sectors, obtained using national accounts data, in ten euro-area countries (Austria, Belgium, Germany, Spain, France, Greece, Ireland, Italy, Portugal and Slovenia) since 1999. With the exception of France, Portugal and Slovenia, compensation per employee in the public sector is higher than in the private sector and has been growing faster than in the private sector. Significantly diverging dynamics are observed in Ireland, Spain, Greece, and, to a lesser extent, Italy.

The existing literature investigating the public-private wage gap documents the existence of significant pay differentials in most industrialized countries. Part of the differential is explained by differences in

[1]Domenico Depalo and Raffaela Giordano, Bank of Italy; Evangelia Papapetrou, Bank of Greece and University of Athens. We would like to thank Francesco Caprioli, David Card, Stephen Hall, Francesco Manaresi, Franco Peracchi, Pietro Rizza, Alfonso Rosolia and Emmanuel Saez for helpful comments and suggestions. All the routines will be available at the webpage: http://sites.google.com/site/domdepalo/ The views expressed in this paper are those of the authors and do not imply any responsibility of their institutions. Corresponding author: Raffaela Giordano, Banca d'Italia, Research Department, Via Nazionale, 91 - 00184 Roma, Tel.: 39-06-4792 4124, Fax: 39-06-4792 2324, e-mail: raffaela.giordano@bancaditalia.it

observed individual characteristics of the employees. Recently, Giordano et al. (2011) found for the ten euro-area countries a conditional pay gap in favour of the public sector, even after controlling for differences in employment characteristics between the two sectors. That analysis highlighted substantial heterogeneity across countries, with Greece, Ireland, Italy, Portugal and Spain exhibiting the highest public sector premia.

In this study we investigate the public-private wage differentials for men in the ten euro-area countries for the years 2004-2007, at the mean and along the wage distribution. We use data from the European Union Statistics on Income and Living Conditions (EU-SILC). In particular, using Oaxaca (1973) and Blinder (1973) decomposition techniques, we assess how much of the pay differential between public and private sector workers in various countries depends on differences in endowments, with particular attention to standard measures of job characteristics (such as education and job experience), and how much is attributable to differences in the remuneration of those endowments (in what follows, the latter is called the unexplained component of pay differential or premium/penalty in the public sector). We look at different parts of the wage distribution using the recent techniques proposed by Firpo, Fortin, Lemiuex (2009 and 2011) and Chernozhuckov, Fernandez-Val and Melly (2013). Improving on the existing literature, these techniques allow us also to study the contribution of specific covariates. The results show that the public sector wage premium is statistically and economically significant only at the medium-low tail of the distribution but generally disappears at the 90th percentile. Furthermore, the role played by specific covariates differs notably along the distribution. Finally, we are able for the first time (to the best of our knowledge) to analyse wage compression in these countries by estimating the difference in the variance, of both explained and unexplained components, between the two sectors.

The paper is organized as follows. In Section 2 we present some empirical evidence on the public-private wage gap, focussing on ten euro-area countries considered in this study, and offer a brief review of the methodologies that have been applied so far. In Section 3 we discuss our empirical approach. Sections 4 presents the data and some descriptive statistics. The results obtained from the mean and the quantile decomposition analyses and from a robustness analysis are presented and discussed in Section 5. Some concluding remarks are set out in Section 6.

2 Public-private wage differentials: empirical evidence

Most of the early research on the wage gap between the private and public sectors focussed on the US; only a few studies were carried out for non-US countries, and they were mainly based on macro data. At

the beginning of the 1990s began to address wage differentials in Europe, Australia and some developing countries. Bender (1998) and Gregory and Borland (1999) provide extensive surveys of these studies in a range of countries.

The evidence on public-private wage differentials in Europe is mixed. In Table 1 we report the main results of the empirical studies of the public-private pay gap in the euro-area countries which we focus on; for a comprehensive review of the literature on the public-private wage gap in these countries, see Giordano et al. (2011).

Most of these studies concentrate on a single country. They use micro-level data to control for the characteristics of public employees relative to private employees. The wage differential is generally found to be higher for women than for men, for low-skilled workers and at the bottom tail of the wage distribution. While the magnitude varies with the econometric specification and across countries, typically the pay gap is found to be insignificant or small for Austria, Belgium, France and Germany, and relatively large for the remaining countries. Taking a single country perspective generally guarantees homogeneity in data collection, availability of detailed information and a rather accurate identification of the public sector. However, a proper comparison across countries cannot be made on the basis of these studies, as the definition of significant aspects (such as how compensation is measured or what comprises the public sector), the reference period or the methodology may vary across them. This, in turn, also makes it difficult to assess the impact on wage differentials of different institutions, wage-setting schemes, macroeconomic and labour market conditions or culture.

Several different econometric techniques have been adopted in the literature to investigate the issue. One approach envisages the estimation of a single earning equation augmented with a dummy variable indicating whether the worker is employed in the public sector or not, which captures the return to sector of employment. The return to the other characteristics is imposed to be the same across the two groups of workers.

Following the seminal papers by Oaxaca (1973) and Blinder (1973), another econometric specification allows the coefficients to vary across sectors by estimating two wage equations, one for each sector, in order to capture different returns to observable worker characteristics. The main merit of this approach is that it makes it possible to disentangle the impact of differences in worker endowments from the effects associated with unexplained factors (usually interpreted as the 'rent to public sector'). Also, it permits decomposition with respect to a specific (subset of) covariate(s).

Further improvements seek to account for the possibility of sample selection bias due to the fact that

sorting of employees between sectors may be not random, but occurs on the basis of unobserved characteristics. This problem is typically addressed by jointly estimating two equations, one for the worker's sector of employment and one for earnings, when appropriate instruments are available, or by using longitudinal data. Estimated wage gaps obtained by means of sample selection corrections are generally found to be larger than those not conditioned on these corrections (among others, see Bargain and Melly, 2008, and Beffy, 2010, for France, and Depalo and Giordano, 2011, for Italy).

More recently, the increasing interest in quantile regressions has led to the comparison of wages in the public and the private sectors along the entire wage distribution. However, few studies have applied quantile decomposition methods to investigate the source of the public-private differential along the wage distribution. In these studies the decomposition between the wage structure and the endowments across quantiles is performed using the method proposed by Machado and Mata (2005) (see Lucifora and Meurs, 2006, Melly, 2005a, for Germany, and Papapetrou, 2006, for Greece).[2] Still, no research has analysed the contribution of each covariate for functional other than the mean.

Quantiles have also been used, together with the variance, to investigate wage compression in the two sectors; the analyses have generally found a higher compression in the public sector (see, among others, Melly, 2005a, for Germany, and Bargain and Melly, 2008, for France). Although Juhn, Murphy and Pierce (1993) proposed a variance decomposition that makes it possible to disentangle the contribution of endowments and returns, their method has only been applied to compare wage compression between the public and private sectors in the UK (Blackaby, Murphy and O'Leary, 1999).[3]

Only recently two contributions by Fortin et al. (2009) and Chernozhuckov et al. (2013) have provided a comprehensive approach to study the entire distribution function. We use these techniques, detailed in Section3, to explain the public/private pay gap. With respect to the existing literature, they allow us to make two steps forward: i) to investigate the contribution of endowments and returns of specific covariates; ii) to provide a more accurate characterization of wage compression by analysing the variance as well as quantiles.

[2]This method is based on quantile regressions (Koenker and Bassett, 1978) for each possible quantile and a simulation procedure. It does not allow for a covariate specific composition effect. An additional drawback is that this method is slow. However, Melly (2005b) has suggested a faster algorithm.

[3]A limit of this approach is related to the (strong) assumption of rank preserving of the individuals across the two groups (e.g., an individual who ranks 3rd in the observed group 0 will rank 3rd in the counterfactual group 1).

3 Methodology

The interest of economists in understanding the driving forces of differences in earnings goes back at least to the early 1970s. In two seminal works Blinder (1973) and Oaxaca (1973) investigated the relative contributions of different factors to observed gender and race differences in average earnings. To address this issue, a fully flexible model that allows the coefficients to be different across the groups of interest is required. Let s denote the group ($s = \{0, 1\}$) and y_s the earning of an individual in group s. Then, for a randomly chosen person in group s, y_s is distributed according to a distribution function F_{y_s}

$$y_s = g_s(x_s, u_s) \sim F_{y_s} \tag{1}$$

with $g_s(\cdot)$ an unknown function, x_s a set of observable covariates and u_s a random noise. In general notation, let ν be a functional of the conditional joint distribution of $(y_1, y_0)|S$. We can decompose the overall difference in the variable y (Δ_y^ν) across the two groups as

$$\Delta_y^\nu = (\nu_1 - \nu_c) + (\nu_c - \nu_0) = \Delta_\beta^\nu + \Delta_x^\nu, \tag{2}$$

where the subscript c denotes the counterfactual, ν_c is obtained by imposing the structure ($g_s(x_s, u_s)$) of group 0 on the characteristics of group 1, Δ_β^ν is the difference in the coefficients (or, depending on the context, discrimination or premium/penalty) and Δ_x^ν is the difference in the endowments. In the simplest case, where $g_s(x_s, u_s)$ is linear (i.e. $y_s = x_s\beta_s + u_s$) and ν is the average, we get

$$\begin{aligned} y_1 - y_0 &= x_1(\beta_1 - \beta_0) + \beta_0(x_1 - x_0) \\ \Delta_y &= x_1\Delta_\beta + \beta\Delta_x, \end{aligned} \tag{3}$$

i.e., the well-known Oaxaca (1973) and Blinder (1973) decomposition.

A comprehensive review of the literature in this field can be found in Firpo et al. (2009) and the references therein. We focus here on the recent advances that make it possible to extend the analysis to functionals other than the mean. In particular, two recently proposed methods make it possible to recover the whole distribution for the counterfactual by estimating $F_{y_0^c} = \int F_{y_0|x_0}(y|x)dF_{x_1(X)}$, that is the wage structure of group 0 with distribution of characteristics as in group 1.

The idea underlying the first method, introduced by Chernozhuckov, Fernandez-Val and Melly (2013), is

to manipulate $F_{y_0|x_0}(y|x)$ and integrate over $s=1$. The conditional distribution $F(y|x_0)$ can be estimated by regressing each possible value of the dependent variable through a link function $\Lambda(\cdot)$, while the counterfactual $\hat{F}_{y_0^c}(y)$ is obtained as $\hat{F}_{y_0^c}(y) = \frac{1}{N_1}\sum_{i\in 1}\Lambda(x_i\hat{\alpha_0(y)})$, where $\hat{\alpha_0(y)})$ is the vector of coefficients that allows us to estimate proportions (i.e., the CDF). If the interest is in quantiles rather than in proportions, one needs to invert the estimated distribution function, to obtain $\hat{Q}^c_{0,\tau} = F^{-1}_{y_0^c}(y)$.

The second method, proposed by Fortin, Lemieux and Firpo (2009, 2011), manipulates the variable of integration (as in Di Nardo, Fortin and Lemieux, 1996) and exploits the recentered influence function (RIF), which provides a local approximation to a (non-linear) functional of the distribution. The idea is to weight characteristics of individuals in $s=1$ so that they become as if they were in $s=0$. Under the assumptions of ignorability and overlapping condition $(y_0|s=1) \sim F_{c|x}$ – i.e. the counterfactual distribution that would have prevailed under the wage structure of s=0, with unobserved characteristics of s=1 – can be identified. The method is based on the influence function (IF) for various functionals of interest (Fortin, Lemieux and Firpo, 2009).[4] The recentered influence function is defined as RIF=$\nu(F)$+IF, from which we can calculate the integral, i.e. $\int RIF\, dF(y) = \int(\nu(F) + IF)\, dF(y) = \nu(F)$, and the expectations. In terms of equation 2, we can recover

$$\begin{aligned}\Delta^\nu_\beta &= E[m^\nu_1|s=1] - E[m^\nu_c|s=1]\\ \Delta^\nu_x &= E[m^\nu_c|s=1] - E[m^\nu_0|s=0]\end{aligned}$$

where $m^\nu_s = x'\,\gamma^\nu_s$, $\gamma^\nu_s = (E[x\,x']|s=S)^{-1}E[RIF(y_s;\nu_s)\,x|s=S]$ for $S\in\{0,1\}$ and $\gamma^\nu_c = (E[x\,x']|s=1)^{-1}E[RIF(y_s;\nu_0)\,x|s=1]$. After substitutions, it follows that

$$\begin{aligned}\Delta^\nu_\beta &= E[x|S=1]'\,(\gamma^\nu_1 - \gamma^\nu_c)\\ \Delta^\nu_x &= E[x|S=1]'\,\gamma^\nu_c - E[x|S=0]'\,\gamma^\nu_0.\end{aligned}$$

If Δ^ν_x is linear, the system is a standard Oaxaca-Blinder decomposition. Hence, Fortin, Lemieux and Firpo (2009, 2011) suggest imposing the linear approximation and interpreting the results in terms of the classical decomposition. However, in the presence of non-linearities this approximation yields a remainder. While we follow the suggestion of imposing the linearity, in the empirical application we have implemented both strategies. To recover semiparametrically the density that would have prevailed if individual attributes had been those of sector 1 and workers had been paid according to the wage schedule observed in s=0 (Di Nardo, Fortin and Lemieux, 1996), i.e. ν_c, and preserve representativeness of the γs and the functionals, the method

[4] The influence function is defined $IF = IF(y;\nu,F) = \lim_{\to\epsilon_0}(\nu(F_\epsilon) - \nu(F)))/\epsilon$, hence by definition $\int \mathrm{IF}\, dF(y) = 0$.

uses a system of weights, which are equal to

$$\begin{aligned}\omega_0(s) &= \tfrac{s}{\hat{p}} \\ \omega_1(s) &= \tfrac{1-s}{1-\hat{p}} \\ \omega_c(s) &= \tfrac{1-s}{\hat{p}}\,\tfrac{\hat{p}(x)}{1-\hat{p}(x)}\end{aligned}$$

where $\hat{p}(x)$ is the conditional probability model.

While the last two methods are closely related, Chernozhukov, Fernandez-Val and Melly (2013) globally inverts quantiles and proportions, whereas the analysis by Fortin, Lemieux and Firpo (2009, 2011) is performed locally. Hence, when the relationship between counterfactual proportions and counterfactual quantiles is locally linear, the two methods are equivalent. Furthermore, the RIF may give a poor approximation at extreme quantiles. But then, the covariate specific decomposition by Chernozhukov, Fernandez-Val and Melly (2013) is path dependent (i.e., it is done for one covariate at the time, and changing the order of covariates gives different results). For this reason we try both approaches, but in Section 5 we focus only on the methodology proposed by Fortin, Lemieux and Firpo (2009, 2011).[5]

A recent contribution by Rothe (2012) offers a further decomposition method based on copula theory. It helps to better identify the contribution of a single covariate by disentangling its direct contribution from that due to the interplay with other covariates (i.e., "higher order interaction effects"). However, it only allows decomposition of the endowment effect. In an attempt to assess the size of the higher order interaction, we have augmented our model specification with the interaction between schooling and labour market experience. The results are similar to those presented later in the paper.

4 Data and descriptive statistics

We use data for the period 2004-2007 for ten European countries: Austria, Belgium, Germany, Spain, France, Greece, Ireland, Italy, Portugal and Slovenia. Data are taken from the European Union Statistics on Income and Living Conditions (EU-SILC), which collects timely and comparable cross-sectional and longitudinal multidimensional microdata on income, poverty, social exclusion and living conditions. For both the cross-sectional and the longitudinal components, the data are based on nationally representative probability samples of the population residing in private households aged 16 and over, irrespective of language, national-

[5] The results using the alternative method, as well as other results mentioned but not presented in this paper, are available from the authors upon request.

ity or legal residence status. To make the sample representative of the whole population, EU-SILC provides sample weights that are used throughout the analysis that follows. We exclude self-employed persons and, to avoid possible bias arising from self-selection in the labour market participation, we focus on men in the age range 25–65 (as, inter alia, in Dustmann and Van Soest, 1997).[6]

We define a public sector worker as one employed in one of the following sectors according to the NACE (REV 1.1) classification: "Public administration and defence, compulsory social security", "Education" and "Health and social work". Such an approximation tends to overestimate the share of public sector workers in total employees, as some of the employees included in "Education" and "Health and social work" are involved in activities classified as market/private services (e.g., private hospitals and private schools). The share of such activities varies across countries. For Germany, where health services are mainly provided by the private sector, health sector workers are excluded from our definition of public sector. In our sample, the share of public sector employees ranges between 19 per cent (Germany) and 38 per cent (Belgium; Table 2). As for the private sector, manufacturing and retail account for the largest shares in all countries, representing altogether about half of the total. Other peculiarities are country-specific.

The dependent variable of the analysis is the (natural logarithm of) the hourly wage.[7] We consider "gross monthly earnings of employees", which refers to the monthly amount of money received by the employee in his main job. For Germany and France, for which this variable is not available, we use employee "cash or near cash income"; in this case, as the variable is the sum of earnings from all jobs in the reference period, we restrict our analysis to individuals who have only one job in order to avoid spurious relations. The hourly wage is calculated by dividing the employees' gross monthly earnings by the hours they usually work each week (multiplied by 4).[8] The hourly wage for "employee cash or near cash income" is calculated accordingly. Table 3 reports the average wage levels at the mean and at the 10th, 50th and 90th percentiles of the wage distribution by sector for all countries. On average, public sector employees earn higher wages than private sector employees. The public-private wage gap, measured by the difference in log wages between the public and the private sectors, is about 10 per cent or less in Belgium and France, 15 per cent in Austria and Germany, about 30 per cent in Italy, Ireland and Slovenia; the difference is about 36 per cent in Spain

[6] While the overall employment rate for men is about 75 per cent, it is just 60 per cent for women and displays marked cross-country differences (ranging from below 40 per cent in France to 80 per cent in Slovenia). This suggests that the bias arising from self-selection in the labour market participation for women could be significant.

[7] Recent contributions suggest that logarithm can be misleading in the presence of heteroscedasticity (see Blackburn, 2007 and Falk, 2012). We have estimated the same models with the level of wage rather than its logarithm. While numerical differences arise, the ratio between the unexplained part and the overall difference is rather stable across the two definitions. The results are available from the authors upon request.

[8] To assess how the results are affected by disomogeneity across countries, we also considered "cash or near cash income" as a measure of earnings in a regression with all countries. The results, available from the authors upon request, are not qualitatively different from those presented in this paper.

and Greece and 43 per cent in Portugal. A differential in favour of the public sector is observed along the entire wage distribution for all countries, as described by the cumulative distribution functions depicted in Figure 2, where the curve referring to private sector workers always lies to the left of the curve for public sector workers. Apart from Austria, Belgium and Slovenia, the average pay differential is either larger or smaller than the median pay gap by 2.5–5.5 percentage points. This reflects a different pattern along the distribution, which supports our choice of the quantile approach.

The existing literature documents for some countries a more compressed wage distribution in the public sector than in the private sector. We investigate that by looking at the variances (Table 3). In some countries the variance in the public sector is indeed smaller than in the private sector. This is true of Germany, France, Greece and Slovenia. By contrast, more compressed wage distributions in the private sector are found in Ireland, Spain, Austria, Italy and Portugal (in Belgium the variance is the same in the two sectors). The difference in the variances between the two sectors is generally small, with the exception of Germany and Portugal, where it exceeds 0.10. This evidence also emerges when we analyse the interquantile ranges.

Looking at the unconditional differences can be misleading if the endowments of the groups are different. Therefore, we investigate how individual characteristics, such as educational attainment, labour market experience, marital status, managerial status (i.e., supervising other workers), type of work (i.e., part/full-time), distribute across workers in the two sectors. For Germany, Greece and Ireland, experience is not available and we use age instead. There are notable differences in the characteristics of public and private sector employees that also vary across countries. On average, public sector employees are older (the average age difference ranges from 1.7 years in Slovenia to 5.1 years in Ireland) and generally more likely to be married and to have a high level of education. The difference in educational attainment is particularly large in Greece, Spain and Slovenia, where the incidence of highly educated employees in the public sector is 30 percentage points greater than in the private sector.

5 Estimation and decomposition

In order to decompose the differences between the public and the private sectors along the wage distribution into differences in the workers' characteristics (endowment effect, or explained component of the wage differential) and differences in coefficients (price effect, unexplained component of the wage differential, or public sector premium/penalty), we apply the methodology described in Section 3. We augment the Mincerian equation (Mincer, 1974), which expresses the wage as a function of educational attainment and potential

labour market experience only,[9] with marital status, part-time status and managerial status. We proxy labour market experience as the difference between current age and age at first job, ignoring whether the worker has been unemployed at times during his working life.[10] A set of dummies captures the time trend and regional (NUTS2) specificities. The choice of the set of adjusting covariates is not inconsequential. Indeed, "a researcher's choice of control variables implicitly reveals his or her attitude toward what constitutes discrimination in the labor market" (Oaxaca, 1973, p. 699) as the two possible extremes are to control for nothing or to control for everything: in the former case there would be the maximum discrimination, in the latter the entire wage difference would be function of something, i.e. no discrimination would be found. Thus, a reference theoretical background for the interpretation of the results is extremely important. We consider our specification a fair compromise between the established theoretical background and agnosticism towards discrimination.

For an easier interpretation of the coefficients, we have normalized the intercept, which refers to a 47-year-old worker with 29 years of labour market experience (or, equivalently, who started working when he was 18 years old), with intermediate education and no supervisory duties. He works full time.

The control for educational attainment entails a second choice, because when there are more than two categories, as opposed to standard OLS, the selection of the reference group is not neutral for interpretation of the decomposition, at least when one attempts to understand the contribution of a specific set of characteristics (Jones, 1983). Possible solutions can be viewed as "obtain[ing] estimates of the [...] effects for every possible specification of the reference groups and tak[ing] the average of the estimates of the [...] effects with various reference groups as the "true" contributions of individual variables to wage differentials" (Yun, 2005, p. 766; see also Gardeazabal and Ugidos, 2004). We exploit these techniques for the key variable of education, while for experience, a continuous variable for which there is no obvious way out, we use various reference values, namely the mean and the median.

We present the decomposition analysis initially at the mean and then along the entire wage distribution.

5.1 Mean decomposition analysis

On average, the overall wage gap is positive for all the countries (upper part of Table 4). However, its size varies considerably across countries: in Austria, Belgium, Germany and France, it ranges between 6 and

[9] The Mincerian equation is based on a theoretical model of investment in human capital, whose solution provides a parsimonious but generally powerful empirical specification

[10] This should solve a possible endogeneity problem owing to the fact that greater experience could be the result of being a public employee, since it is very unlikely one will be unemployed after have been hired in the public sector.

16 per cent; in Italy, Ireland and Slovenia, it is around 30 per cent, while in Greece, Spain and Portugal it is above 35 per cent. These statistics do not consider significant differences in workers' characteristics. Once these are taken into account, we explain more than two thirds of the overall gap in Austria, France, Slovenia and Germany, slightly more than one half in Portugal, but only between 45 and 32 per cent in Ireland, Greece, Italy and Spain. Differences in wages that are explained by different levels of endowment can be justified as a return on investment. The unexplained component of the overall pay gap can instead be viewed as a premium or a penalty. The price effect is greater than the endowment effect in Spain, Greece, Ireland and Italy. Belgium is the only country where the unexplained component of the wage differential is negative, implying a penalty for working in the public sector. In Austria, France, Germany and Slovenia we estimate a premium of about 6 per cent or less. In the other countries the premium is higher: in Italy, Ireland, Greece and Portugal it ranges from 17 to 20 per cent, while in Spain it reaches 24 per cent.

We further decompose both the explained and the unexplained components of the pay gap by looking at the contribution of each individual characteristic (covariate). Higher educational levels and longer work experience of public sector workers account for most of the explained component of the wage gap. In particular, without exceptions across countries, schooling endowments represent the largest contributor of the explained component of the wage differential.

As for the unexplained component of the pay differential, there is no clear-cut evidence about the importance of each factor. Investment in education is rewarded significantly more in the public sector only in Austria, Spain and Ireland. In Belgium, Italy and Portugal, the price effect associated with education is actually slightly negative and significant. As for experience, in most countries its contribution is either not statistically significant or negative. Indeed, the largest part of the public sector premium comes from the intercept. If we run region-specific regressions, the differences in the intercept decrease significantly, suggesting that local labour market conditions might explain differences in pay between the two sectors.

5.2 Quantile decomposition analysis

Until recently the severe limitations of the available techniques restricted the use of decomposition methods beyond the mean analysis. Machado and Mata (2005) considered quantile analysis but they did not allow for the investigation of covariate specific contributions. Only recently did Chernozhukov et al. (2013) and Firpo et at. (2009, 2011) address these difficulties. The present study exploits these contributions in order to: (i) investigate the wage gap along specific portions of the wage distribution, and (ii) provide additional information about wage compression, through analysis of the variance.

In Table 4 we report the decomposition results at the 10th, 50th and 90th percentiles by country. In Figure 3 we break down the overall wage gap between the two sectors of the economy into the endowment and the price (premium) components over the whole wage distribution.

In Austria the overall wage gap is (almost) flat as both components remain constant along the entire wage distribution. For a large part of the wage distribution the overall wage gap remains flat in most of the other countries (Belgium, France, Slovenia, Spain and Greece); it is decreasing in Germany, and somewhat increasing in Ireland, Italy and Portugal. In almost all countries the gap is much lower at the far right tail of the distribution. A striking regularity in all countries is that the overall wage gap is the result of a combination of the explained part, which increases along the wage distribution, and of decreasing returns. This is seen as one moves from the upper to the lower panels of Table 4, where the ratio of the premia to the total wage gap decreases in all the countries: the premium in Germany explains 82 per cent of the total gap at the 10th quantile, 12 per cent at the median; a substantial penalty is instead estimated at the 90th quantile. Even in Belgium, the country with the lowest premium at the 10th quantile (1/4 of the total gap), the unexplained component decreases along the wage distribution and becomes negative from the median onward.

Finally, let us note that for Spain, Greece, Ireland, Italy and Portugal the explained part of the wage differential exceeds the unexplained part above the 60th percentile of the wage distribution, whereas for Germany, France and Belgium this happens well below the 40th percentile of the distribution (Figure 3). For Slovenia and Austria this point can be located around the 40th percentile of the wage distribution.

The wage gap in favour of public sector employees can thus be attributed to larger premia (price effect) at the bottom tail of the wage distributions (where no advantage in terms of individual characteristics is observed) and, at high wage levels, to better endowments that compensate for smaller premia or even penalties from working in the public sector.

Furthermore, we account for the rate of change of the pay gap along the distribution. As a measure of the symmetry of the gap we calculate the interquantile range of the decomposition, i.e. the difference between the coefficients at the 90th and the 50th and between the 50th and the 10th quantiles. Comparing these two differences, a larger negative number in the 90–50th quantile difference on the unexplained part than in 50–10th difference implies that the fall in the premium when moving from lower to higher wage levels is larger at the right end of the distribution than at the left end. In all the countries, except Germany and Italy, the premium decreases faster from the median onward than below the median. By contrast, the contribution of the explained factors increases faster at the right side of the distribution than at the left.

Table 5 presents the results of the decomposition analysis for two measures of wage dispersion, the variance and the Gini coefficient. Previous studies of the public-private wage gap based on the observation on selected quantiles have found a wage compression in the public sector for some countries, but, to the best of our knowledge, a systematic analysis of the variance has never been presented.

According to the evidence shown in Table 5, a more compressed distribution of wages in the public sector is found in some countries (Belgium, Germany, France, Greece and Slovenia) but not all of them. In all countries workers' characteristics appear more dispersed in the public than in the private sector. This is especially true in Portugal, Slovenia and, to a lesser extent, Greece, Ireland and Italy. By contrast, the variance of the unexplained component of the wage is greater in the private sector in all countries and especially so in Slovenia, Germany and France. As a consequence, if workers' endowments were the same in both sectors, a wage compression in the public sector would be observed in all the countries. However, as in some countries (Austria, Spain, Ireland, Italy and Portugal) the explained part of the variance is larger than the unexplained part, the overall observed variance is greater in the public sector. The same indications come from the Gini concentration index.

Using the methodology described in Section 3, we further decompose the endowment effect and the price effect into the contribution of each explanatory variable.[11]

We focus on the basic explanatory variables of the Mincerian equation. The specific contributions (of both the explained and unexplained components) of education and work experience to the overall gap are presented in Table 4.[12]

For both education and experience, the endowment effect is generally larger than the premium (with some exceptions for some countries, above all at lower quantiles). As for the endowment effect, education represents the largest portion at all quantiles and for all countries.

In Figure 4 we therefore give a graphical representation of the contribution of education. The comparison across quantiles shows that the impact of the endowment effect is much greater at the top than at the bottom of the wage distribution; the interquantile difference between the 90th and the 50th percentiles is significantly larger than that between the 50th and the 10th. This asymmetry may reflect the presence of legal constraints, the requirement that public sector workers in well-paid managerial positions hold a university degree. With respect to the price effect, the premia from education are positive up to the median or so in Austria, Spain,

[11] We also employed other decomposition methodologies described in Section 3. The results (not shown here, but available upon request) do not significantly differ from those discussed here.

[12] We also analyze the contribution of each single covariate. Although the overall contribution of the unexplained components of the covariates dominates the explained at the lower part of the distribution in all countries, with the exception of Germany and France, the pattern of the single covariates differs across countries and quantiles. For this reason, we do not present them here.

Greece, Ireland, Italy and Slovenia, whereas they are negligible in Belgium and France and negative in Portugal. At the highest part of the wage distribution, the contribution of education to explaining the public-private unexplained wage gap is much smaller and even negative in almost all the countries. These outcomes suggest that workers with little education and low wages enjoy a higher premium from educational attainment than workers with long education and high wages from public sector. In fact, the latter enjoy the reward from their investment in human capital (which is greater for public than for private sector workers) at the right tail of the distribution. A possible explanation of this finding is compulsory schooling up to a certain age, which provides skills that may be not useful (and go thus unrewarded) for some low-paid jobs in the private sector (e.g., in agriculture or construction). Similarly, at the right tail of the wage distribution education may not entirely capture the skills required in the job.[13]

Turning to labour market experience, the contribution from the endowment effect is relatively flat along the distribution in Austria, Germany, Spain and France, whereas it is increasing in Belgium, Greece, Ireland, Italy. In Slovenia and Portugal it is negative along the entire distribution. As for the price effect, there is no clear-cut evidence about its sign, which is positive or negative depending on the country and on quantiles under study.

All in all these results suggest that low-wage public sector workers get a premium from educational attainment and only in some cases a small penalty from labour market experience, although the net effect is always positive. For high-wage workers, instead, the return from education is almost always higher in the private sector; in some countries this also holds for labour market experience. Therefore, the net effect is negative, except in Ireland and Portugal. However, thanks to better endowments in the public sector than in the private sector of both education and experience (with the only exception of Portugal and Slovenia for experience), the overall contribution to the wage gap of these two determinants is always positive.

5.3 Robustness analysis

In what follows we perform some robustness analyses focusing on mean regressions only.

[13]To address this issue, we performed two alternative analyses (the results are available upon request): (i) we excluded from the sample workers who dropped out of school at 16 years of age; (ii) we run an additional regression in which the private sector is defined as homogeneously as possible to the private sector (excluding from private sector agriculture and construction and focusing on large firms only). In both cases the premium, although lower, remains.

5.3.1 Alternative private and public sector definitions

To satisfy the condition of "overlapping" covariates imposed for the decomposition, we have not controlled for the composition of the private sector. In our context this control may be important. Is there a specific economic activity within the private sector where wages can be compared more appropriately with the public sector? What if the premium differs across private activity and the aggregate premium reflects just a composition effect? Furthermore, in the provision of some services the private sector is a direct competitor of the public sector.[14]

So our first robustness check consists in splitting the private sector into various economic activities and running separate regressions for each one of them. The results reported in Table 6 show that, with the exception of the financial sector, workers in all private activities earn lower wages than public sector workers with similar observable characteristics. Notably large pay gaps (and larger than the average) are estimated against workers in agriculture, construction and retail trade. Compared with the average private sector worker, those employed in transport are better off in Austria, Belgium, Germany, Ireland and Slovenia, and worse off in the other countries. Compared with real estate and manufacturing, the advantage from working in the public sector is below the average in all countries.

In all countries the penalty for public sector workers with respect to financial sector employees is entirely attributable to the unexplained component of the gap, indicating that given individual endowments are typically rewarded much more (about 19 per cent on average) in the financial sector than in public sector. In an attempt to better qualify this result, we investigate the contribution of specific covariates, with particular attention to education (the results are not reported): only in France and Spain do public sector workers enjoy a premium related to the educational attainment; in all the other countries they get a (not always significant) penalty. With respect to manufacturing, transportation and real estate, the public sector premium is 2–5 percentage points smaller than that estimated for the average benchmark; with respect to workers in manufacturing, it becomes negative in Germany and France.

We also consider a restricted definition of the public sector, which excludes workers in education. In many countries teachers in the public sector have no comparable counterpart in the private sector, as many of them, above all among older cohorts, do not hold a university degree, so their educational level may be the same as that of private sector workers carrying out very different (e.g. administrative or secretarial) tasks. Furthermore, the number of hours worked per week in education is significantly lower than that reported in

[14] This is the case of transportation and some social services. The latter, when provided by the private sector, are included in the category "other". See Table 2 $http://epp.eurostat.ec.europa.eu/cache/ITY\_OFFPUB/KS-RA-07-015/EN/KS-RA-07-015-EN.PDF$ for detailed documentation about the definitions.

other sectors (both public and private), partly because overtime is not recognized, and some mis-reporting on this cannot be excluded. Using this restricted sample of public sector employees, the premium diminishes slightly, but does not vanish.

5.3.2 Alternative wage definition

It can be argued that the monthly wage is a more appropriate measure of pay than the hourly wage, as the working time may not be chosen by the employee.

When we use the monthly wage (see Table 7 for this and the following checks), the pay gap generally decreases, on average by 8 percentage points, reflecting the fact that private sector employees generally work more hours per week than public sector workers. The only exception is in Germany, where public and private sector employees work on average the same number of hours per week (40). The largest correction is in Portugal, where the differential goes from 0.430 to 0.257, while in Spain, Greece and Italy the correction is about 12 percentage points. Apart from Austria, Greece and Ireland, the bulk of the correction is on the unexplained factor (for Slovenia the correction is almost equally split between the two components). Given this evidence, we cannot rule out that in some countries the unexplained component of the pay gap, when measured on monthly wages, may disappear or even become negative at some quantiles. This may indeed be the case for Spain, Greece and Ireland, where in the benchmark specification the unexplained differential at the 90th quantile was found to be only marginally positive. Interestingly, while for the explained component the correction mainly come from the adjusting covariates other than education or experience (e.g. marital status, type of job, etc.), for the unexplained part there is no clear-cut evidence.

For a better understanding of these results we have also augmented the set of regressors with hours worked per week. Under this specification the unexplained component is always larger than the one we find when we do not control for hours and slightly smaller than in our benchmark. This is symptomatic of an omitted variable bias in the absence of a control for hours worked. Moreover, the contribution of the adjusting covariates other than education or experience decreases, as there is a non-trivial negative correlation between being married or working part-time and the number of worked hours, which differs across sector. We also find some evidence that hours affect the wage quadratically (for example, Moffitt, 1984, shows that the presence of fixed costs of labour to the firm yields non linear wage-hours schedules), so that when a quadratic polynomial in hours is included in the regression, the discrepancy in the unexplained component of the pay gap between hourly and monthly definitions of wage diminishes.

All in all, these results suggest that our main qualitative conclusions are not significantly affected by the

definition of wage.

5.3.3 Alternative age range

We restrict the analysis to individuals aged 35–65 years (instead of 25–65). Indirectly, this addresses possible forms of dualism in the private sector labour market that may hurt younger workers.

With respect to the benchmark, the overall pay gap decreases significantly only in Greece, Ireland and Italy. In the other countries it either remains broadly stable or increases. Furthermore, while in Italy most of the difference with respect to the benchmark comes from a reduction in the unexplained component of the differential (i.e., the premium), in Greece it is mostly explained by worse individual endowments; in Ireland the change is equally due to both factors. This is an indication of the presence of a dual labour market in Italy but not in the other countries.

5.3.4 Focus on large firms

Another form of dualism may arise between small and large firms (Belman and Heywood, 1990), as large firms' employees may be more unionized and benefit from better conditions. Although the breakdown of the variable in EU-SILC is rather poor and can be subject to large measurement error in the answers to the questionnaire, controlling for firm size can be helpful to overcome some mis-specification in the model (due to some unobservable factors) and is consistent with the hypothesis of more qualified workers in larger firms (Evans and Leighton, 1989). As public sector workers are by definition in large firms, we drop workers in private firms with fewer than 50 employees from the sample.

When we focus on this restricted sample, the overall pay gap decreases by 10.5 percentage points on average. It ranges from 2 per cent (France) to 28 per cent (Portugal), except for Belgium, where it is not statistically significant. Apart possibly from Greece, the contribution of the individual characteristics to the overall gap is approximately the same as in the benchmark (only 1 percentage point can be attributed to the observable characteristics on average), whereas the largest part of the correction comes from a lower premium.

For four countries a penalty from working in the public sector instead of in large private firms does emerge: Belgium (the only one that exhibited a penalty even in the benchmark case), Germany, France and Slovenia. In all the other countries we still find a public sector wage premium, which goes from a not really significant 2 per cent in Austria to 16 per cent in Spain; in Greece and Portugal, where the correction is largest (16.6 and 13.6 percentage points, respectively), the premium drops to 3 and 6 per cent, respectively.

It is possible that a penalty emerges also for (some of) these countries at some quantiles (more likely at higher quantiles) when the comparison is restricted to large firms only.

In all countries (in varying degree) part of the premium is thus attributable to the presence of small private firms where employees generally have worse economic conditions than employees of larger business.

5.3.5 Full-time workers only

It is not uncommon to look only at full-time employees when examining the public-private wage differentials (Moffitt, 1984). The results of the analysis when the sample is restricted to full-time employees are similar to those obtained using the benchmark specification. That is, there is a positive premium for workers in the public sector for all countries.

The overall gap is lower by 3 percentage points on average, as a result of a substantial downward shift, ranging from 8 percentage points in Greece to 4.7 percentage points in Italy, and a basic invariance in Slovenia. The endowment effect outweight the price effect in Austria, Belgium, Germany, France, Portugal and Slovenia, as in the benchmark, but also in Greece and Ireland. The premium accounts, on average, for 2.4 percentage points of the total decrease. For Belgium, Portugal, Slovenia and Spain the premium is broadly the same as in the benchmark specification, while in the other countries it decreases by 3 to 6 percentage points.

5.3.6 Sector sorting

Differences in public-private wage structures may be subject to significant bias due to endogenous selection, arising from the non-random way in which individuals select themselves into sectors of employment. In general, in these cases the ignorability assumption fails and a number of corrections are available (Vella, 1998). Basically they consists in adding to the set of regressors a control variable that helps to explain the probability of joining one sector but not the wage. In our case, defining the control variables λ_s (the inverse Mills' ratio) that includes an exclusion restriction, the decomposition for the average becomes

$$\Delta^{\nu} = (\beta_{1,0} - \beta_{0,0}) + \sum_{k=1}^{K} \overline{x_1} \, (\beta_{1,k} - \beta_{0,k}) + \overline{\lambda_1} \, (\sigma_1 - \sigma_0) + \sum_{k=1}^{K} (\overline{x_1} - \overline{x_0}) \, \beta_{0,k} + (\overline{\lambda_1} - \overline{\lambda_0}) \, \sigma_0, \tag{4}$$

where the selection rule follows a nonparametric approach (Das, Newey and Vella, 2003).

The only variable that we found in the survey to be used as exclusion restriction is the indicator of whether the worker owns a computer. This may capture special skills, attitudes or types of interest of the

worker that are not adequately measured by the variables observed by the researcher.

We report the new set of results in the bottom part of Table 7, although we are not convinced that this is a valid instrument. In fact, owning a computer may directly affect education and social relations, and it may be more likely that well-off individuals own a computer. If this were in fact the case and these effects were stronger for public (private) sector workers, our estimates would be upward (downward) biased.

When we control for possible sample selection, we find a smaller pay gap in all the countries.[15] The correction is about 3 percentage points in Greece, Ireland, Italy and Portugal, about 1 percentage point in Belgium, Spain and France, and negligible in the other countries.

These robustness checks clearly show that the definitions of wage (hourly or monthly) and of private sector (the whole sector or specific sub–sectors, all firms or only large ones), as well as the type of workers considered (older or younger, full-time only or all workers) are crucial to evaluating the size of the gap between private and public sector wages. At the same time, they support the qualitative conclusions from our benchmark regression analysis that point to the existence on average of a public sector premium in all countries (with the sole exception of Belgium), which is, independently of the specification of the model, higher in some countries than in others.

6 Conclusions

In this paper we evaluated the public-private wage differential in ten euro-area countries in the period 2004-2007. The results indicate that on average public sector employees earned more than private sector employees. The public-private wage gap, measured by the difference in log wages of male employees, ranged between 6 and 16 per cent in Belgium, France, Austria and Germany; it was around 30 per cent in Italy, Ireland and Slovenia, and above 35 per cent in Greece, Portugal and Spain. The extraordinary consolidation measures, including public sector wage freeze or cuts, undertaken in some countries in response to the increasing financial market tensions in the euro area (as in the cases of Italy, Ireland, Greece, Portugal and Spain) may have reduced these differentials.

The gap varies significantly along the wage distribution. For all countries, a wage differential in favour of the public sector is found at the lower part of the distribution. Results of the decomposition analysis of the wage differential show that, in all countries, at the low tail of the distribution the portion of the public sector

[15] The inspection of the full set of results is instructive, as the LR test for the importance of sample selection rejects the null hypothesis of independent processes (i.e., the sector choice equation and the wage equation) for the public sector but not for the private sector. As a consequence, the wage structure in the private sector is unaffected, but that in the public sector is shifted downward.

wage gap accounted by differences in the remuneration of the individual characteristics of the workers (price effect) outweighs that attributable to differences in their characteristics (endowment effect). By contrast, in all countries, in the upper part of the distribution wage differentials are mainly due to differences in employees endowments. We further decomposed the endowment effect and the price effect to account for the contribution of each explanatory variable. We found that differences in educational attainment and job experience constitute the largest portion of the endowment effect at all quantiles and for all countries. Comparing the composition effects at the 10th and 90th percentiles shows that the impact of the differences in education is much greater at the top than at the bottom of the wage distribution. As for the price effect, differences in the contribution of education are positive towards the lower end of the wage distribution for Spain, Greece, Ireland, Italy and Slovenia (whereas in Portugal the contribution of education is negative). In the upper part of the wage distribution the results suggest that only in Portugal does the public-private wage differential also come from a higher return to education in the public sector. In Belgium, Spain, Greece, Ireland, Italy and Slovenia the price effect on education is negative.

We also checked whether our results were robust to a number of alternative specifications. In particular, we found that the unexplained component of the wage differential tends to persist but diminishes when we consider the monthly wage (instead of the hourly wage), exclude education from the public sector or agriculture and construction from the private sector, and when we restrict our comparison to large firms only. In the latter case the unexplained differential decreases on average by about 9 percentage points and becomes negative in France, Germany and Slovenia.

Finally, our findings suggest that the wage distribution in the public sector is more compressed than in the private sector in some but not all countries. This is the result, for all countries, of less compressed distributions of individual characteristics in the public sector and more dispersed remunerations of those characteristics in the private sector.

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Table 1: Selected literature on public/private pay gap in euro-area countries

Country	Authors	Period	Source of data	Estimation technique	Findings
DE	Melly (2005a)	84–01	SOEP	Quantile decomposition (MM)	Total gap between 30% (10th quantile) and 0 (90th). Price differential explains a declyining part of the gap.
DE	Dustman & VanSoest (1997)	84–93	SOEP	Mean + selection	For men between -40% (for a 25-year-old worker with a medium edu) to -20% (for a 45-year-old)
DE	Jurges (2002)	84–96	SOEP	OB & Quantile	Always negative (2–6%) for men; always premium above 10% for women
DE,IT	Brunello & Dustmann (1997)	89 (DE), 93 (IT)	SOEP (DE), SHIW (IT)	Selection	Total gap in DE 0.067 (penalty about 0.07); total gap in IT 0.211 (premium about 0.08)
ES	Garcia-Perez & Jimeno (2005)	95–01	ECHP	Selection & OB (quantile as robustness)	In ES as a whole, larger premia for women (59.1%) than for men (39.7%).
FR	Bargain & Melly (2008)	90–02	LFS	Quantiles panel	0.02–0.04 for women; 0.03–0.05 for men
FR	Beffy & Kamionka (2010)	94–01	ECHP	Double selection (empl./sector)	In all the years, the premium is between 16% (10th) and 2% (80th); a penalty up to 4% at 90th.
FR,IT,UK	Lucifora & Meurs (2006)	98	EE (FR), SHIW (IT), LFS (UK)	Quantile decomposition (MM)	Men: FR from 0.086 (10th) to -0.055 (90th), IT from 0.081 (10th) to -0.019 (90th), UK from 0.058 (10th) to -0.033 (90th). Higher for women.
GR	Kanellopoulos (1997)	88	FES	Selection & OB	Penalty of about 18% while better characteristics account for 20% for men; premium of 31% for women
GR	Papapetrou (2003,2006)	97, 99	ECHP	Quantiles	Earnings differences are mainly attributed to the unobserved characteristics in the low quantiles and to the observed differences in the endowment characteristics in the highest quantiles.
IE	Boyle et al (2004)	94-01	ECHP	OB	From 13.1% with the richest specification to 25.4 with the smallest
IE	Kelly et al (2009)	03–06	NES	Propensity score matching	Overall, premium increasing over time from 14 (03) to 26 (06)
IE	Foley and O'Callaghan (2009)	07	NES	Quantiles	The public sector wage premium was highest at the lower end of the earnings distribution and higher for male employees
IT	Bardasi (1996)	91	SHIW	Selection & OB	9% men; 35% women
IT	Depalo & Giordano (2011)	98–08	SHIW	Quantiles sorting	From 11% (10th) to 45% (80th) for men and 0.34 on average for men & sorting. From 43% (10th) to 57% (80th) for women and 0.39 on average for women.
PT	Campos & Pereira (2009)	96–05	PACQP	Quantile decomposition (MM)	From -2.6% (96) to 6.2% (05) for men; from 19.4% (96) to 24.3% (05) for women
SI	Vodopivec (2004)	93–01	SAD	Mincerian wage equation	Depending on the year, penalty up to 10% or premium up to 40%.
cross country	Portugal and Centeno (2001)	95	ECHP	Mean	For all EU countries examined, the wage differential is almost always (except Belgium) more favourable for women than for men
cross country	Ponthieux & Meurs (2005)	00	ECHP	Mean + selection	For 15 EU countries examined, the public sector in general appears more favourable for women relative to men
cross country	Strauss & Maisonneuve (2007)	94–01	ECHP	Mean	Premium is relatively high in Portugal (20%), Ireland (17%), Greece (11%) and Italy (7%)
cross country	Giordano et al (2011)	04–07	EU-SILC	Quantiles	Higher for women and at the lower part of the wage distr.higher differentials for Greece, Ireland, Italy, Portugal and Spain

Name convention: ECHP: Europan Community Household Panel; EE=Enquete Emploi; FES= Family Expenditure Survey; LFS= Labor Force Survey; NES= National Employment Survey; PACQP= Public Administration Census & Quadros de Pessoas; SAD= Slovenian Administrative Database; SHIW= Survey on Household Income and Wealth; SOEP= Socio Economic Panel; MM: Machado & Mata (2005); OB: Oaxaca (1973), Blinder (1973);

Table 2: Distribution of workers by sector

Sector	Austria	Belgium	Germany	Spain	France	Greece	Ireland	Italy	Portugal	Slovenia
Public	21.1	37.6	19.1	23.3	31.0	29.5	28.7	26.9	25.0	22.7
Public ad.	33.6	34.3	68.1	43.4	43.5	45.2	34.1	36.2	35.6	33.8
Education	24.2	27.6	31.9	29.7	24.1	32.0	28.5	34.5	33.4	36.6
Health	42.3	38.1		26.9	32.3	22.8	37.4	29.3	30.9	29.7
Private	78.9	62.4	80.9	76.7	69.0	70.5	71.3	73.1	75.0	77.3
Agric. & Fish	1.8	1.7	1.6	4.3	2.9	2.0	2.2	4.9	3.4	1.3
Manifact.	33.6	33.0	26.1	25.6	26.0	22.3	19.0	35.8	31.7	44.7
Construction	9.0	8.2	6.4	15.2	12.2	11.6	13.6	9.6	15.5	7.4
Retail	15.9	14.0	17.4	16.1	19.4	24.2	19.8	14.5	18.2	16.7
Hotel	5.6	2.9	3.1	7.2	4.0	8.8	8.6	3.9	7.0	4.4
Transport	5.4	11.2	7.5	8.2	7.8	9.8	7.8	7.6	6.2	7.8
Financial	5.1	7.8	6.4	3.7	5.8	4.5	7.5	4.5	3.2	3.7
Real Estate	11.5	10.2	9.6	9.4	8.9	8.1	13.3	7.7	7.3	10.1
Health			13.3							
Other	12.1	11.0	8.6	10.3	12.9	8.8	8.1	11.5	7.4	3.9

Table 3: Descriptive statistics, by year and sector. R^2 is the explained variance from a Mincerian equation of (log) hourly wage as function of (second degree polynomial in) experience, (two dummy variables for) education, marital status, part-time and supervisory position.

Country	Variable	Private						Public					
		Mean	p10	Median	p90	Variance	R^2	Mean	p10	Median	p90	Variance	R^2
AT	Wage	2.583	2.133	2.551	3.096	0.175	19.8	2.741	2.246	2.708	3.291	0.188	32.9
	Experience	23.701	11.000	23.000	38.000	103.638		24.550	10.000	25.000	38.000	102.337	
	Age	40.841	28.000	40.000	54.000	87.418		43.939	31.000	44.000	56.000	82.211	
	Low ed.	0.126	0.000	0.000	1.000	0.110		0.052	0.000	0.000	0.000	0.050	
	high Ed.	0.167	0.000	0.000	1.000	0.139		0.391	0.000	0.000	1.000	0.238	
	Married	0.642	0.000	1.000	1.000	0.230		0.681	0.000	1.000	1.000	0.217	
	Hours p.w.	41.134	38.000	40.000	48.000	51.088		40.566	35.000	40.000	49.000	70.819	
BE	Wage	2.861	2.429	2.833	3.367	0.164	25.3	2.918	2.485	2.887	3.384	0.144	33.0
	Experience	20.248	7.000	20.000	34.000	105.858		21.890	7.000	22.000	36.000	112.284	
	Age	40.396	28.000	40.000	53.000	83.718		42.952	30.000	43.000	56.000	89.196	
	Low ed.	0.210	0.000	0.000	1.000	0.166		0.126	0.000	0.000	1.000	0.110	
	high Ed.	0.342	0.000	0.000	1.000	0.225		0.551	0.000	1.000	1.000	0.247	
	Married	0.613	0.000	1.000	1.000	0.237		0.623	0.000	1.000	1.000	0.235	
	Hours p.w.	41.760	37.000	40.000	50.000	59.192		39.655	35.000	38.000	50.000	60.567	
DE	Wage	2.730	2.020	2.813	3.398	0.407	21.0	2.871	2.458	2.931	3.322	0.260	27.5
	Experience	42.607	30.000	42.000	55.000	86.986		45.446	30.000	46.000	58.000	99.642	
	Age	42.607	30.000	42.000	55.000	86.986		45.446	30.000	46.000	58.000	99.642	
	Low ed.	0.087	0.000	0.000	0.000	0.079		0.023	0.000	0.000	0.000	0.023	
	high Ed.	0.300	0.000	0.000	1.000	0.210		0.550	0.000	1.000	1.000	0.248	
	Married	0.713	0.000	1.000	1.000	0.205		0.703	0.000	1.000	1.000	0.209	
	Hours p.w.	40.477	35.000	40.000	50.000	67.630		40.466	36.000	40.000	48.000	59.559	
ES	Wage	2.159	1.609	2.118	2.763	0.219	27.0	2.518	1.928	2.517	3.118	0.229	34.9
	Experience	21.808	8.000	20.000	39.000	134.416		22.303	7.000	22.000	38.000	127.606	
	Age	39.903	28.000	39.000	55.000	97.427		42.916	30.000	43.000	57.000	96.653	
	Low ed.	0.493	0.000	0.000	1.000	0.250		0.198	0.000	0.000	1.000	0.159	
	high Ed.	0.270	0.000	0.000	1.000	0.197		0.573	0.000	1.000	1.000	0.245	
	Married	0.661	0.000	1.000	1.000	0.224		0.706	0.000	1.000	1.000	0.208	
	Hours p.w.	43.022	40.000	40.000	50.000	58.122		38.252	30.000	38.000	45.000	61.350	
FR	Wage	2.530	2.008	2.541	3.148	0.361	14.0	2.637	2.149	2.623	3.180	0.283	23.1
	Experience	21.097	7.000	21.000	36.000	118.869		21.984	6.000	23.000	37.000	123.797	
	Age	40.400	28.000	40.000	54.000	88.965		42.290	29.000	43.000	55.000	93.876	
	Low ed.	0.257	0.000	0.000	1.000	0.191		0.183	0.000	0.000	1.000	0.149	
	high Ed.	0.231	0.000	0.000	1.000	0.178		0.398	0.000	0.000	1.000	0.240	
	Married	0.586	0.000	1.000	1.000	0.243		0.573	0.000	1.000	1.000	0.245	
	Hours p.w.	40.638	35.000	39.000	50.000	78.784		38.184	32.000	36.000	50.000	86.027	
GR	Wage	1.953	1.462	1.887	2.526	0.194	30.0	2.310	1.845	2.271	2.860	0.162	48.1
	Experience	39.622	28.000	38.000	54.000	95.802		43.442	31.000	43.000	57.000	89.291	
	Age	39.622	28.000	38.000	54.000	95.802		43.442	31.000	43.000	57.000	89.291	
	Low ed.	0.369	0.000	0.000	1.000	0.233		0.167	0.000	0.000	1.000	0.139	
	high Ed.	0.196	0.000	0.000	1.000	0.158		0.495	0.000	0.000	1.000	0.250	
	Married	0.644	0.000	1.000	1.000	0.229		0.767	0.000	1.000	1.000	0.179	
	Hours p.w.	42.171	38.000	40.000	50.000	53.774		37.699	25.000	40.000	48.000	79.555	
IE	Wage	2.852	2.263	2.821	3.485	0.282	23.4	3.170	2.513	3.193	3.811	0.286	38.3
	Experience	40.881	27.000	40.000	56.000	112.999		46.027	32.000	47.000	58.000	94.976	
	Age	40.881	27.000	40.000	56.000	112.999		46.027	32.000	47.000	58.000	94.976	
	Low ed.	0.347	0.000	0.000	1.000	0.226		0.258	0.000	0.000	1.000	0.192	
	high Ed.	0.313	0.000	0.000	1.000	0.215		0.530	0.000	1.000	1.000	0.249	
	Married	0.652	0.000	1.000	1.000	0.227		0.742	0.000	1.000	1.000	0.192	
	Hours p.w.	40.819	36.000	40.000	50.000	66.135		38.111	25.000	39.000	48.000	101.934	
IT	Wage	2.346	1.894	2.303	2.862	0.169	23.9	2.629	2.169	2.567	3.261	0.191	36.5
	Experience	22.028	8.000	21.000	37.000	111.305		23.826	9.000	24.000	37.000	106.773	
	Age	40.625	29.000	40.000	54.000	86.900		45.273	32.000	46.000	57.000	87.609	
	Low ed.	0.506	0.000	1.000	1.000	0.250		0.256	0.000	0.000	1.000	0.191	
	high Ed.	0.095	0.000	0.000	0.000	0.086		0.312	0.000	0.000	1.000	0.215	
	Married	0.635	0.000	1.000	1.000	0.232		0.730	0.000	1.000	1.000	0.197	
	Hours p.w.	41.506	36.000	40.000	50.000	50.781		37.224	28.000	36.000	46.000	61.655	
PT	Wage	1.544	0.979	1.462	2.247	0.282	34.0	1.974	1.217	1.946	2.865	0.389	58.9
	Experience	23.771	9.000	23.000	41.000	139.055		23.128	7.000	23.000	39.000	142.089	
	Age	40.125	28.000	39.000	55.000	101.477		42.094	28.000	42.000	56.000	102.617	
	Low ed.	0.770	0.000	1.000	1.000	0.177		0.470	0.000	0.000	1.000	0.249	
	high Ed.	0.083	0.000	0.000	0.000	0.076		0.328	0.000	0.000	1.000	0.221	
	Married	0.738	0.000	1.000	1.000	0.193		0.695	0.000	1.000	1.000	0.212	
	Hours p.w.	42.782	40.000	40.000	50.000	52.555		37.538	35.000	35.000	45.000	46.174	
SI	Wage	1.871	1.310	1.874	2.513	0.347	21.8	2.168	1.607	2.176	2.765	0.325	32.8
	Experience	20.610	7.000	20.000	35.000	99.003		20.151	6.000	20.000	35.000	103.721	
	Age	40.656	29.000	40.000	53.000	80.495		42.314	30.000	42.000	56.000	87.507	
	Low ed.	0.166	0.000	0.000	1.000	0.138		0.030	0.000	0.000	0.000	0.029	
	high Ed.	0.122	0.000	0.000	1.000	0.107		0.441	0.000	0.000	1.000	0.247	
	Married	0.532	0.000	1.000	1.000	0.249		0.549	0.000	1.000	1.000	0.248	
	Hours p.w.	42.281	40.000	40.000	50.000	42.035		40.917	40.000	40.000	48.000	41.977	

Table 4: Oaxaca Decomposition

Statistic	Austria	Belgium	Germany	Spain	France	Greece	Ireland	Italy	Portugal	Slovenia
Mean										
overall										
Overall	0.158***	0.056***	0.141***	0.359***	0.107***	0.357***	0.317***	0.283***	0.430***	0.297***
Explained	0.098***	0.100***	0.120***	0.118***	0.071***	0.160***	0.143***	0.110***	0.230***	0.235***
Unexplained	0.060***	-0.044***	0.021*	0.241***	0.036***	0.197***	0.174***	0.173***	0.200***	0.062***
explained										
Education	0.065***	0.067***	0.091***	0.107***	0.058***	0.078***	0.066***	0.098***	0.231***	0.223***
Experience	0.004***	0.017***	0.022***	0.005***	0.007***	0.040***	0.042***	0.014***	-0.006*	-0.004
Covariate	0.031***	0.019***	0.005	0.013***	0.009***	0.049***	0.032***	0.026***	0.006	0.015***
unexplained										
Education	0.025**	-0.023***	-0.026	0.038***	-0.001	0.000	0.030***	-0.003***	-0.008*	0.033
Experience	-0.014	0.004	-0.047***	-0.019***	-0.046***	-0.001	0.009	-0.003	-0.044***	-0.023
Covariate	0.029	0.022*	-0.030*	0.002	-0.028*	-0.004	-0.000	0.023**	0.049**	0.027
Intercept	0.019	-0.018	0.139***	0.294***	0.065**	0.276***	0.088**	0.064***	0.180***	-0.015
10th quantile										
overall										
Overall	0.119***	0.059***	0.431***	0.302***	0.135***	0.379***	0.243***	0.281***	0.237***	0.311***
Explained	0.041***	0.044***	0.075***	0.038***	0.016**	0.031***	0.012	0.003	0.047***	0.103***
Unexplained	0.077***	0.015	0.356***	0.264***	0.118***	0.348***	0.231***	0.278***	0.190***	0.208***
explained										
Education	0.036***	0.031***	0.050***	0.037***	0.033***	0.024***	0.014***	0.039***	0.052***	0.108***
Experience	0.002**	0.010***	0.017***	0.001**	0.005	0.009***	0.015***	0.009***	-0.001	-0.006
Covariate	0.004	0.005**	0.001	0.006***	-0.015***	0.002	-0.019***	0.007***	-0.003	0.002
unexplained										
Education	0.032	0.009	-0.050	0.065***	0.005	0.043***	0.037***	0.007***	-0.019***	0.313***
Experience	0.023	0.002	-0.118***	-0.033***	0.014	-0.062***	0.045**	-0.019***	-0.029*	-0.049
Covariate	0.053*	0.011	-0.011	0.116***	-0.029	0.182***	0.066	0.028**	0.075**	0.094*
Intercept	-0.065	-0.014	0.585***	0.221***	0.107**	0.220***	0.073	0.148***	0.100*	-0.072
50th quantile										
overall										
Overall	0.157***	0.065***	0.117***	0.404***	0.081***	0.383***	0.365***	0.232***	0.486***	0.300***
Explained	0.080***	0.082***	0.103***	0.094***	0.064***	0.148***	0.125***	0.070***	0.144***	0.174***
Unexplained	0.077***	-0.018*	0.014	0.309***	0.018**	0.234***	0.240***	0.162***	0.341***	0.126***
explained										
Education	0.051***	0.056***	0.083***	0.089***	0.049***	0.065***	0.061***	0.062***	0.145***	0.165***
Experience	0.003***	0.012***	0.013***	0.004***	0.005**	0.044***	0.043***	0.011***	-0.003*	-0.003
Covariate	0.028***	0.016***	0.007***	0.009***	0.014***	0.046***	0.018***	0.020***	0.004	0.013***
unexplained										
Education	0.016	-0.007	-0.021	0.062***	-0.005	0.008	0.067***	-0.003**	-0.051***	-0.011
Experience	-0.022**	-0.011	0.003	-0.013	-0.042***	0.007	-0.033**	0.000	-0.048**	0.007
Covariate	0.027	0.027*	-0.002	0.008	-0.030**	-0.035	0.006	0.035***	0.148***	0.023
Intercept	0.059	-0.027	0.026	0.301***	0.051*	0.349***	0.181***	0.040**	0.360***	0.008
90th quantile										
overall										
Overall	0.197***	-0.009	-0.085***	0.291***	0.037*	0.321***	0.326***	0.401***	0.592***	0.374***
Explained	0.158***	0.236***	0.167***	0.208***	0.151***	0.296***	0.300***	0.265***	0.627***	0.525***
Unexplained	0.038*	-0.245***	-0.252***	0.084***	-0.113***	0.025	0.026	0.136***	-0.035	-0.151***
explained										
Education	0.101***	0.104***	0.121***	0.191***	0.087***	0.144***	0.135***	0.203***	0.624***	0.499***
Experience	0.006***	0.034***	0.031***	0.007***	0.007**	0.061***	0.101***	0.023***	-0.019*	-0.003
Covariate	0.053***	0.090***	0.016***	0.020***	0.054***	0.097***	0.060***	0.052***	0.022***	0.030***
unexplained										
Education	-0.002	-0.088***	-0.014	-0.050***	0.008	-0.045***	-0.055***	-0.018***	0.077***	-0.168*
Experience	-0.041**	0.012	-0.029*	0.026*	-0.068***	0.014	0.081***	-0.010	0.055**	-0.105**
Covariate	0.007	-0.048	-0.076***	-0.130***	-0.052*	-0.055	0.028	-0.011	-0.197***	0.064
Intercept	0.060	-0.037	-0.152***	0.262***	0.017	0.142**	-0.094	0.103**	-0.067	-0.070
Obs.	9576	8653	15068	22703	16505	7688	7074	32782	6961	5179

Table 5: Oaxaca Decomposition

Statistic	Austria			Belgium			Germany			Spain			France		
	Overall	Expl.	Unexpl.	Overall	Expl.	Unexpl.	Overall	Expl.	Unexpl.	Overall	Expl.	Unexpl.	Overall	Expl.	Unexpl.
90	0.197	0.158	0.038	-0.009	0.236	-0.245	-0.085	0.167	-0.252	0.291	0.208	0.084	0.037	0.151	-0.113
50	0.157	0.080	0.077	0.065	0.082	-0.018	0.117	0.103	0.014	0.404	0.094	0.309	0.081	0.064	0.018
10	0.119	0.041	0.077	0.059	0.044	0.015	0.431	0.075	0.356	0.302	0.038	0.264	0.135	0.016	0.118
Variance	0.013	0.040	-0.027	-0.020	0.046	-0.067	-0.147	0.019	-0.166	0.010	0.058	-0.048	-0.078	0.069	-0.148
Gini	-0.002	0.008	-0.010	-0.005	0.008	-0.014	-0.040	-0.000	-0.039	-0.013	0.010	-0.023	-0.015	0.009	-0.024
Statistic	Greece			Ireland			Italy			Portugal			Slovenia		
	Overall	Expl.	Unexpl.	Overall	Expl.	Unexpl.	Overall	Expl.	Unexpl.	Overall	Expl.	Unexpl.	Overall	Expl.	Unexpl.
90	0.321	0.296	0.025	0.326	0.300	0.026	0.401	0.265	0.136	0.592	0.627	-0.035	0.374	0.525	-0.151
50	0.383	0.148	0.234	0.365	0.125	0.240	0.232	0.070	0.162	0.486	0.144	0.341	0.300	0.174	0.126
10	0.379	0.031	0.348	0.243	0.012	0.231	0.281	0.003	0.278	0.237	0.047	0.190	0.311	0.103	0.208
Variance	-0.032	0.103	-0.135	0.003	0.117	-0.114	0.022	0.091	-0.069	0.107	0.212	-0.105	-0.022	0.178	-0.201
Gini	-0.028	0.020	-0.048	-0.005	0.016	-0.022	-0.004	0.021	-0.025	-0.005	0.044	-0.049	-0.028	0.025	-0.053

Table 6: Oaxaca Decomposition – Robustness checks

Statistic	Austria	Belgium	Germany	Spain	France	Greece	Ireland	Italy	Portugal	Slovenia
Benchmark										
Overall	0.158***	0.056***	0.141***	0.359***	0.107***	0.357***	0.317***	0.283***	0.430***	0.297***
Explained	0.098***	0.100***	0.120***	0.118***	0.071***	0.160***	0.143***	0.110***	0.230***	0.235***
Unexplained	0.060***	-0.044***	0.021*	0.241***	0.036***	0.197***	0.174***	0.173***	0.200***	0.062***
by Sector										
Agric. & Fish										
Overall	0.411***	0.268***	0.371***	0.681***	0.438***	0.692***	0.804***	0.594***	0.736***	0.282*
Explained	0.098**	0.147***	0.167***	0.272***	0.207***	0.295***	0.185***	0.228***	0.148*	0.375**
Unexplained	0.314***	0.122**	0.205***	0.409***	0.231***	0.397***	0.619***	0.365***	0.588***	-0.092
Manufact.										
Overall	0.121***	0.017	0.041***	0.293***	-0.002	0.322***	0.251***	0.245***	0.408***	0.281***
Explained	0.082***	0.087***	0.081***	0.093***	0.092***	0.135***	0.210***	0.108***	0.261***	0.262***
Unexplained	0.039***	-0.070***	-0.040***	0.200***	-0.094***	0.187***	0.041**	0.137***	0.147***	0.019
Construction										
Overall	0.230***	0.189***	0.339***	0.451***	0.225***	0.473***	0.332***	0.409***	0.565***	0.510***
Explained	0.110***	0.134***	0.170***	0.151***	0.092***	0.098***	0.152***	0.135***	0.308***	0.302***
Unexplained	0.120***	0.055**	0.169***	0.300***	0.133***	0.376***	0.179***	0.274***	0.256***	0.209***
Retail										
Overall	0.246***	0.131***	0.263***	0.454***	0.195***	0.426***	0.476***	0.359***	0.519***	0.337***
Explained	0.079***	0.087***	0.153***	0.093***	0.042***	0.184***	0.161***	0.120***	0.168***	0.222***
Unexplained	0.167***	0.045**	0.110***	0.360***	0.153***	0.242***	0.315***	0.239***	0.352***	0.114***
Hotel										
Overall	0.422***	0.301***	0.454***	0.528***	0.393***	0.478***	0.580***	0.493***	0.667***	0.430***
Explained	0.155***	0.082	0.221***	0.094***	0.001	0.196***	0.041	0.078***	0.001	0.227***
Unexplained	0.267***	0.218***	0.233***	0.434***	0.392***	0.282***	0.539***	0.415***	0.666***	0.203***
Transport										
Overall	0.199***	0.123***	0.258***	0.270***	0.099***	0.153***	0.341***	0.179***	0.227***	0.330***
Explained	0.098***	0.134***	0.161***	0.081***	0.088***	0.119***	0.139***	0.089***	0.173***	0.315***
Unexplained	0.101***	-0.011	0.097***	0.189***	0.011	0.034	0.202***	0.090***	0.054*	0.015
Financial										
Overall	-0.159***	-0.234***	0.017	-0.152***	-0.253***	-0.009	-0.077**	-0.148***	-0.319***	-0.325***
Explained	0.068***	-0.004	0.091***	-0.119***	0.014	0.101*	0.066*	0.023	-0.084**	0.059
Unexplained	-0.227***	-0.231***	-0.075***	-0.033	-0.267***	-0.110*	-0.143***	-0.170***	-0.235***	-0.384***
Real Estate										
Overall	0.076***	-0.030	0.215***	0.260***	-0.020	0.301***	0.166***	0.221***	0.217***	0.191***
Explained	0.081***	0.027	0.160***	0.027*	-0.041**	0.201***	0.038**	0.048***	-0.009	0.083***
Unexplained	-0.005	-0.057**	0.055***	0.233***	0.020	0.100***	0.129***	0.173***	0.226***	0.108**
Other										
Overall	0.205***	0.109***	0.280***	0.369***	0.302***	0.344***	0.546***	0.304***	0.316***	0.204***
Explained	0.103***	0.102***	0.178***	0.116***	0.096***	0.091***	0.202***	0.130***	0.119***	0.006
Unexplained	0.102***	0.006	0.101***	0.253***	0.206***	0.253***	0.344***	0.174***	0.196***	0.198**

Table 7: Oaxaca Decomposition – Robustness checks. ctd.

Statistic	Austria	Belgium	Germany	Spain	France	Greece	Ireland	Italy	Portugal	Slovenia
Benchmark										
Overall	0.158***	0.056***	0.141***	0.359***	0.107***	0.357***	0.317***	0.283***	0.430***	0.297***
Explained	0.098***	0.100***	0.120***	0.118***	0.071***	0.160***	0.143***	0.110***	0.230***	0.235***
Unexplained	0.060***	-0.044***	0.021*	0.241***	0.036***	0.197***	0.174***	0.173***	0.200***	0.062***
No teachers										
Overall	0.095***	0.031***	0.150***	0.305***	0.084***	0.260***	0.258***	0.251***	0.341***	0.268***
Explained	0.078***	0.057***	0.128***	0.096***	0.049***	0.121***	0.125***	0.090***	0.145***	0.186***
Unexplained	0.017	-0.026***	0.023**	0.209***	0.035***	0.139***	0.133***	0.162***	0.196***	0.082***
Monthly Wage										
Overall	0.129***	-0.005	0.147***	0.230***	0.032***	0.233***	0.235***	0.162***	0.257***	0.261***
Explained	0.075***	0.090***	0.111***	0.087***	0.051***	0.078***	0.084***	0.071***	0.200***	0.216***
Unexplained	0.054***	-0.096***	0.036***	0.143***	-0.019**	0.155***	0.152***	0.091***	0.057***	0.045**
Age range: 35–65										
Overall	0.162***	0.052***	0.144***	0.365***	0.124***	0.317***	0.301***	0.261***	0.452***	0.320***
Explained	0.102***	0.099***	0.116***	0.134***	0.071***	0.112***	0.134***	0.109***	0.247***	0.251***
Unexplained	0.060***	-0.047***	0.028***	0.230***	0.053***	0.205***	0.167***	0.152***	0.205***	0.069**
Large Firms										
Overall	0.123***	-0.005	0.027**	0.239***	0.023*	0.128***	0.255***	0.189***	0.284***	0.202***
Explained	0.102***	0.106***	0.105***	0.080***	0.074***	0.097***	0.167***	0.094***	0.220***	0.246***
Unexplained	0.021	-0.111***	-0.078***	0.158***	-0.051***	0.031*	0.088***	0.095***	0.064***	-0.044*
Only full time workers										
Overall	0.129***	0.032***	0.121***	0.341***	0.077***	0.276***	0.286***	0.236***	0.416***	0.288***
Explained	0.098***	0.080***	0.129***	0.116***	0.071***	0.140***	0.146***	0.097***	0.220***	0.227***
Unexplained	0.031***	-0.048***	-0.008	0.225***	0.006	0.136***	0.140***	0.139***	0.196***	0.061***
Sample Selection										
overall										
Overall	0.158***	0.056***	0.141***	0.359***	0.107***	0.357***	0.317***	0.283***	0.430***	0.297***
Explained	0.101***	0.108***	0.123***	0.127***	0.080***	0.187***	0.168***	0.143***	0.260***	0.231***
Unexplained	0.057***	-0.052***	0.018*	0.232***	0.027***	0.170***	0.149***	0.141***	0.170***	0.066***

Figure 1: The public/private pay gap

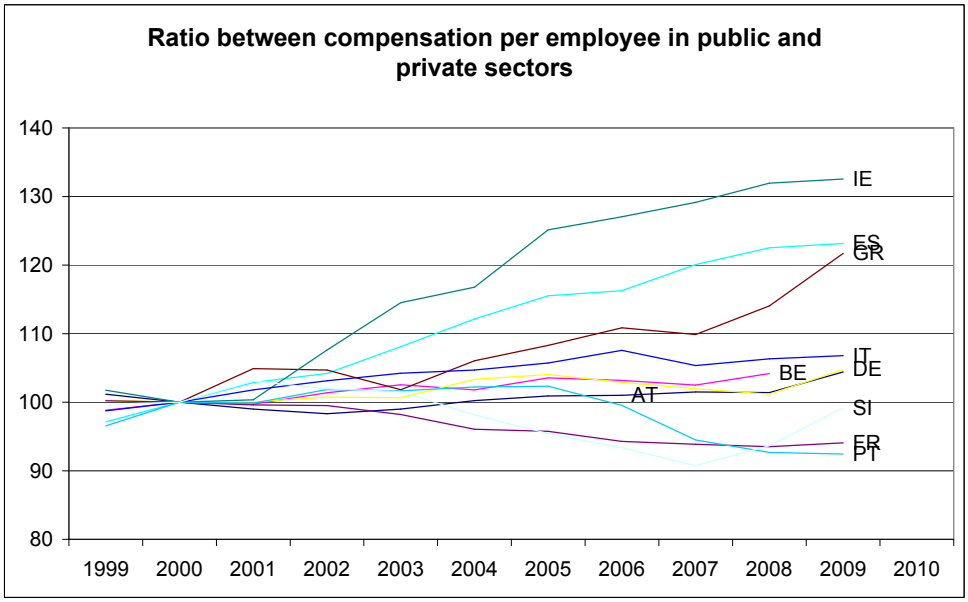


Figure 2: Cumulative wage distributions by sector

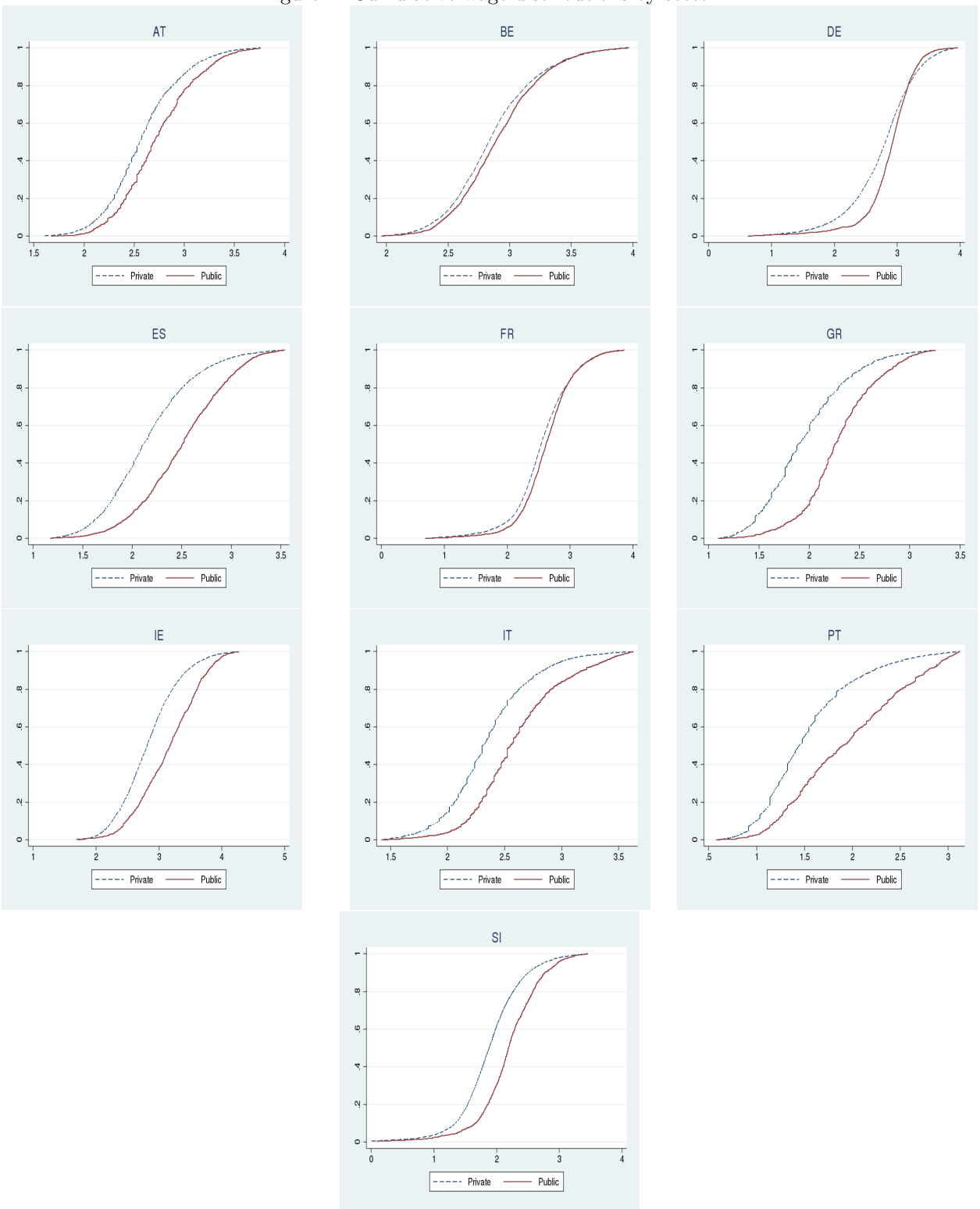


Figure 3: Oaxaca decomposition

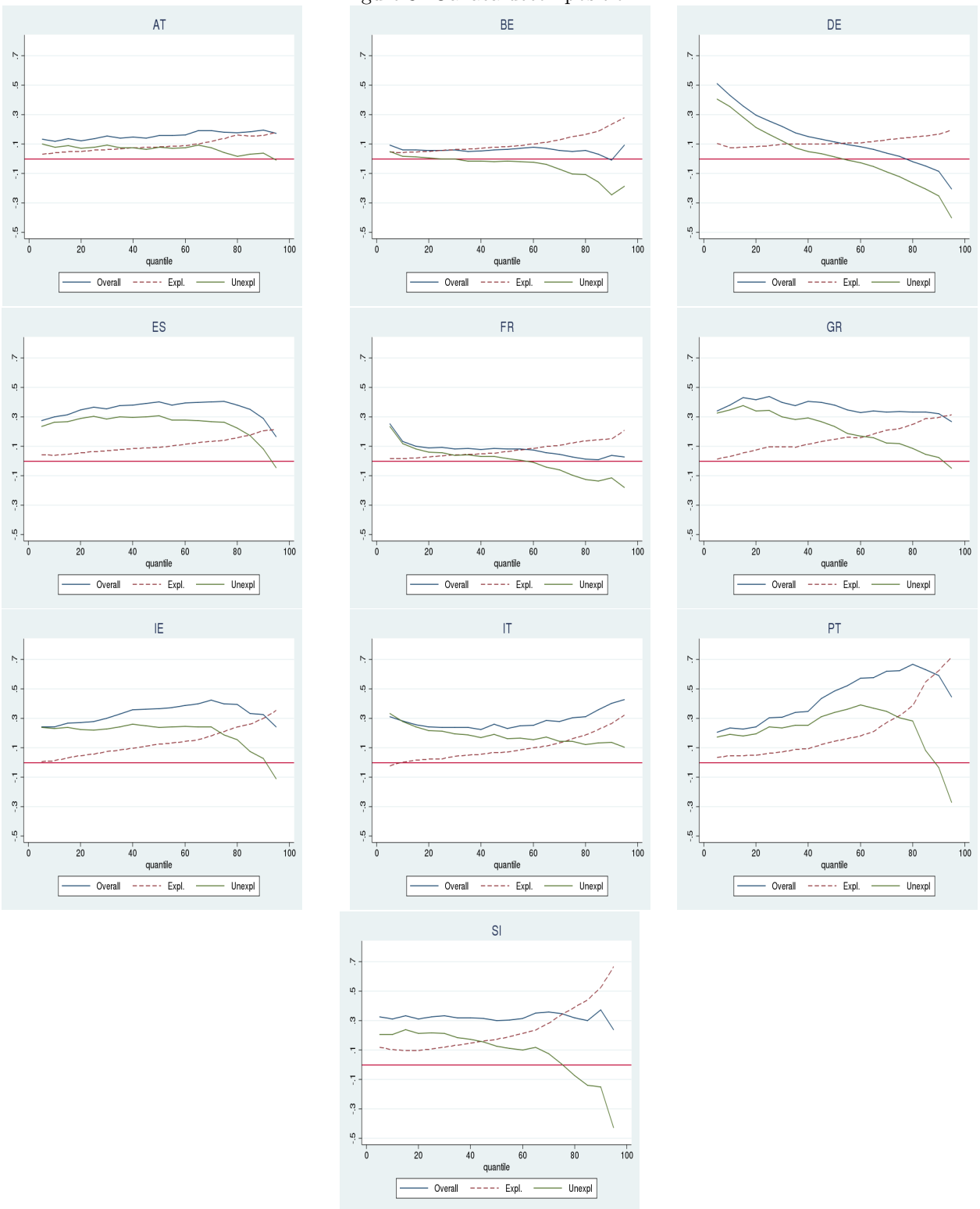
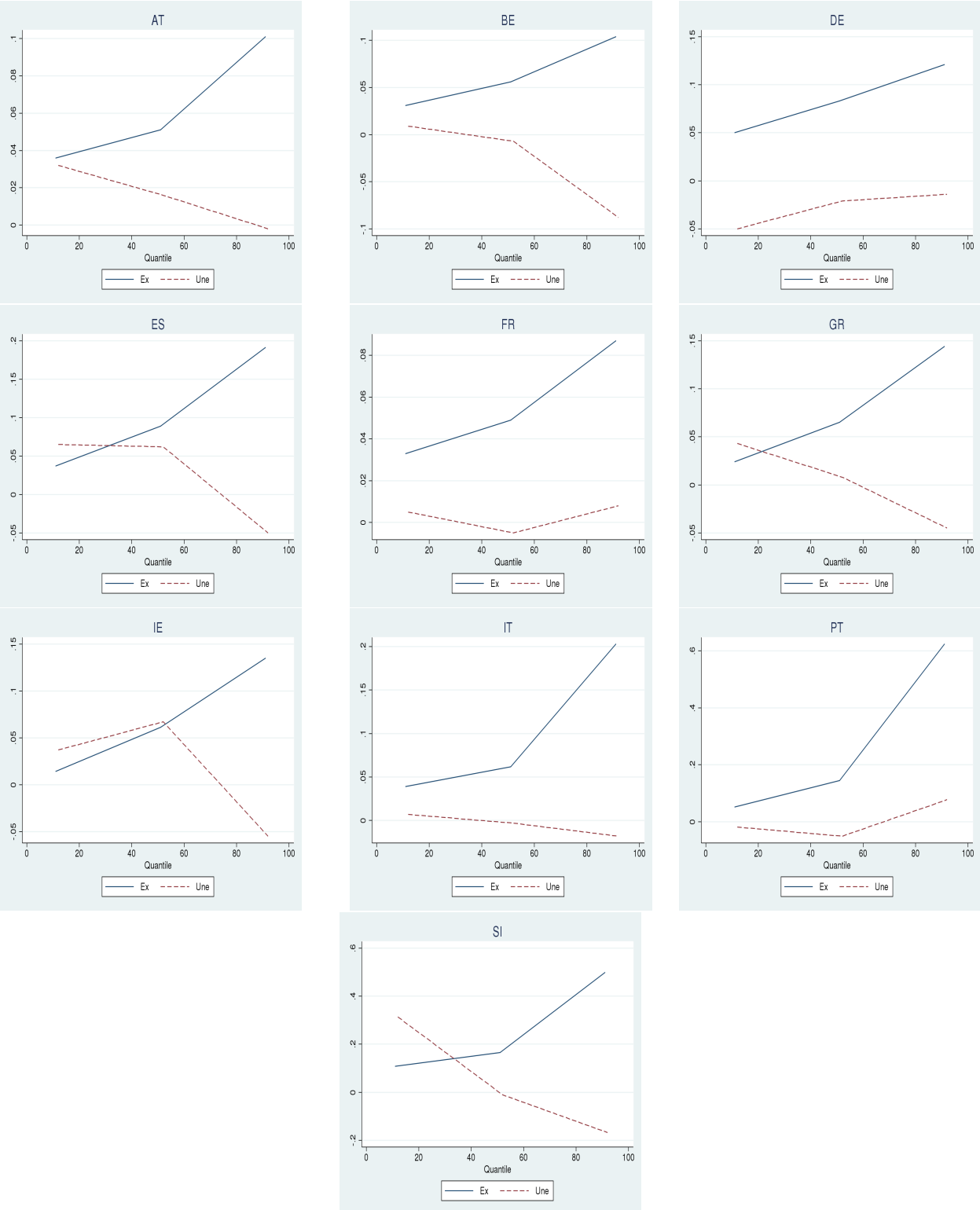


Figure 4: Oaxaca decomposition for education



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