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RESERVATION WAGES: EXPLAINING SOME PUZZLING REGIONAL PATTERNS

by Paolo Sestito[°] and Eliana Viviano^{*}

Abstract

We use the Italian Labour Force Survey and the European Household Panel Survey to analyse the distribution of the reservation wages reported by jobseekers. In Italy, reservation wages appear to be higher in the South - the low income and high unemployment area of the country - than in the North and Centre. A similar, rather counterintuitive, pattern, however, can also be found in Finland, France and Spain. First, we show that the way in which these data are commonly collected generates double selection bias. Second, we show that this bias has a strong effect on the estimation of the geographical pattern of reservation wages in many countries. The size of this bias is substantial in Italy. When controlling for it, reservation wages are 10 per cent higher in the North and Centre than in the South.

JEL classification: J64, J22, R23

Keywords: reservation wages, sample selection, regional differentials.

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1 Introduction¹

The reservation wage is the minimum compensation that individuals are willing to accept for work. While often considered and treated as an unobservable variable, various surveys collect direct measures of reservation wages by asking jobseekers to report it.²

But how reliable is this observed variable in gauging the labour supply behaviour of individuals? Schmidt and Winkelmann for Germany (1993) and Boheim (2002) for the UK compare the self-reported reservation wage distribution in a sample of jobseekers at a given time with the reservation wage distribution indirectly estimated for the same individuals on the basis of the wages they accept in subsequent periods. As the two distributions turn out to be not statistically different on average, the authors conclude that self-reported reservation wages are generally consistent with the theoretical concept of economists. In spite of these results, however, the empirical literature on labour supply behaviour has been reluctant to use this information: rather, the reservation wage distribution has usually been derived through restrictions on other variables, such as accepted wages, the rate at which job offers are accepted or rejected, etc.

The reluctance to use direct information on self-reported reservation wages may stem from some puzzling features often observed in the data. As a consequence economists have maintained their position, believing what people do more than what people say. For instance, Addison *et al.* (2004, 2005), using the European Community Household Panel (ECHP) data, find unsurprisingly that reservation wages are positively associated with the generosity of unemployment insurance systems, the wage offer distribution and the job offer arrival rate, but also, contrary to expectations, with the long-term unemployment rate and re-employment

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² See, for instance, the European Community Household Panel (ECHP), the German Socio-Economic Household Panel (GSOEP), the British Household Panel Survey (BHPS) and the Italian Labour Force Survey (LFS) in Europe; the Current Population Survey (CPS) and the National Longitudinal Youth Survey (NLYS)

probabilities. Among possible explanations, they admit that self-reported reservation wages may be “...all rather fuzzy: no more than a ‘guesstimate’ of the prevailing wage, with the true reservation wage only being revealed after the individual actually encounters a wage offer...” (Addison *et al.*, 2005).³

The problem of reliability is evident in Italy, where self-reported reservation wages appear to be systematically higher for people living in the South (*Mezzogiorno*) than for people residing in the northern and central regions, in spite of the fact that the unemployment rate is three times higher and the GDP per capita is almost 50 per cent lower in the South than in the North and Centre. Explaining such a geographical pattern, hereafter dubbed the “reservation wage paradox”, is of intrinsic interest. It might be interpreted as a sign of the unreliability of the variable, but it might reflect a more widespread “laziness” in the South, which, whatever its social or historical roots, could be among the possible causes of the high unemployment in the area (see, for instance, Boeri and Garibaldi, 2002).

We do not limit our analysis to Italy and by the use of the ECHP we consider also the following countries: Austria, Finland, France, Germany, Greece, Portugal, Spain, and the UK. For each country we have identified two groups of regions, labelled “low unemployment” and “high unemployment”, composed of the regions where the unemployment rate is respectively lower and higher than the national average.

In this paper we provide an explanation for the “reservation wage paradox”. After showing that the paradox is not specific to the LFS, but can also be found in the ECHP (we use wave 1) - and that it is found in other countries too, such as Finland, France and Spain - we demonstrate that the Italian paradox is entirely determined by two types of selection bias, which originate in the data collection procedure. Second, we show that the same conclusion partly holds for the other EU countries analysed. More precisely, reservation wages are usually collected only for people who report they are seeking work. However, people look

in the US.

³ A positive association between the unemployment rate and reservation wages is also found by Boeri and Garibaldi (2002), who use data from various European LFSs. They find that in high unemployment areas like the southern part of Spain and the southern part of Italy, plagued during the Nineties by a persistent two-digit unemployment rate, reservation wages are on average higher than in low unemployment regions. They conclude that this result can be explained by both labour supply rigidities and large shadow activities, which

for a job only if the utility of searching is higher than the utility associated with alternative activities. It follows that the pool of jobseekers is composed of people who, among non-employed individuals, have a lower value of leisure and a lower reservation wage. As a consequence, if we consider the whole population and not only jobseekers, we do not observe the upper part of the reservation wage distribution (selection driven by labour supply).

The selection of non-employed individuals seeking work, however, is not the only source of selection bias affecting the data. Since people with lower reservation wages are *ceteris paribus* more likely to become employed, jobseekers are also - among the people willing to work – the ones with the highest reservation wages (selection driven by labour demand). Thus, we do not observe the left tail of the reservation wage distribution either, and standard estimators of the reservation wage differential (e.g. the OLS) provide biased estimates.

To get consistent estimates of the “true” (reported) regional reservation wage differential (i.e. the difference between the average reservation wage in the low unemployment regions and the average in the high unemployment regions), we use two different estimation strategies. First, for Italy, for which we have larger samples, we consider a sub-sample of individuals who, reasonably, are not affected by the two types of selection bias described above (as everyone in the sub-sample is willing to work and has not yet become employed). Within this sub-sample the North-South reservation wage differential is close to zero for men and positive for women (around 10 per cent). The advantage of this strategy is that we do not rely on parametric assumptions about the selection processes. The disadvantage is that, in order to credibly identify people who have not passed through any selection process of the sort described above, we need to consider a very limited section of the population. We therefore obtain estimates for the whole Italian population by resorting to a standard model for selection bias based on a general two-step procedure, which thus relies on very strong assumptions about the exclusionary restrictions and the functional form specification. In the first stage we model the double probability of selection. We then

constitute a source of income for the self-declared unemployed workers.

estimate two “adjusted” inverse Mill’s ratios which are included in the second-stage equation. We find that the estimated reservation wage differential is also non-negative for the whole population.

The two strategies are broadly consistent (both in general and when applied to the same sub-sample). Our conclusion is therefore that the second strategy, notwithstanding its reliance upon un-testable assumptions, may still provide a reasonable summary measure of labour supply behaviour. This second exercise is also repeated for all the nine ECHP countries, obtaining rather similar results.

The paper is organized as follows. Section 2 summarizes the main findings of the theory, the characteristics of the data, and the evidence about reservation wages in Italy. In Section 3 we discuss the issue of double selection. Section 4 presents our empirical strategies. Section 5 concludes.

2 Observed reservation wages: data and evidence

2.1 Data

According to economic theory the reservation wage w^* is the wage level which makes people indifferent between accepting a job offer paid exactly w^* and not being employed.

In the absence of frictions people may locate the available wage offers instantly and without cost and the reservation wage is a function of only the taste for leisure and unearned income (i.e. income flow from the availability of assets and wealth or, simply, non-employment benefits). In the presence of search frictions, individuals have to spend time and resources locating a job and, having done so, must decide whether to accept it or to continue looking. In two-state models, i.e. models where individuals can only be employed or jobseekers, reservation wages are defined as the wage level that makes people indifferent between the utility they get from a job offer paid w^* and the utility they get from continuing to look for a better-paid job. In three-state models where people can be employed, jobseekers, or out-of-the-labour-force, an individual’s decision is summarized by two reservation values: a reservation wage w^* having the features described above and the

reservation value of searching for a job instead of being out-of-the-labour-force (see Pissarides, 2000, for a review).

In both the two- and the three-state models, reservation wages positively depend on the expected utility from employment. As the latter depends on the market conditions faced by the individuals, the reservation wage will depend on the probability of receiving a job offer and the shape of the wage offer distribution. As a consequence, one should expect lower reservation wages among individuals having lower personal assets, living in areas with higher unemployment rates, and whose human capital (and local market conditions) would command lower salaries.⁴

The reservation wage featuring in search models is not observed. Nevertheless, various surveys provide proxies of its value. In this paper we mainly focus on data collected in the Italian Labour Force survey, although we also provide evidence based on the ECHP.

The LFS has been conducted on a quarterly basis since 1959. Until 2003, people were interviewed in a given week of each quarter (in January, April, July and October, see Istat 2001, for details); since 2004 all weeks are sampled, even if only quarterly averages of the weekly figures are made available. The Italian LFS has also a longitudinal dimension that is based on a rotating scheme of the “2-2-2” type: respondents are interviewed for two consecutive quarters, are then out of the sample for the next two quarters, and are finally re-interviewed for two further quarters.

Questions concerning the reservation wage have been inserted since October 1992. Before 2004 the sample comprised almost 80,000 households and 200,000 individuals. Now

⁴ Notice that the main features of the shape of the wage offer distribution are not limited to its average – which is related to local economic conditions as well as to the human capital endowment of the individual – but that other moments of the distribution may also matter. Individuals facing a more disperse distribution would rationally choose to wait longer in the hope of receiving very high offers in the future. Furthermore, several additional features of the available jobs and of the search technology become relevant: if accepting a job provides access to future wage rises and job opportunities – because of the possibility of on-the-job search and the accumulation of relevant work-experience – the reservation wage will be lowered. At the outside, if the job search is possible and equally profitable when unemployed as well as when employed, the reservation wage shrinks to the reservation value prevailing in a costless scenario (in which only wealth, benefits and taste for leisure matter). Vice versa, when jobs do not last for ever – as they only provide a temporary income opportunity with precarious contractual arrangements – the individual loses much less when rejecting them and the reservation wage may be correspondingly higher.

it amounts to roughly 100,000 individuals. Because of changes in the sample design and in the questionnaire, surveys from 2004 onwards are not fully comparable with the previous ones. Possibly because the transition year 2003 saw several organizational changes that affected the survey,⁵ in this paper we focus on cross-section (April wave only) and longitudinal data from 1993 to 2002.

In the LFS all individuals (both employed and non-employed) aged at least 15 are asked the question “Are you looking for work?”. If they answer yes, they are also asked whether they are looking for salaried employment or trying to set up on their own account,⁶ whether they are looking for a position in the public sector, for full-time or part-time work,⁷ and whether they are looking for a job located within a daily commuting distance or are willing to move within Italy or abroad.⁸ Finally, they have to state what is the minimum net monthly wage they would accept for a job that fulfils their requirements. This information is commonly interpreted as the individual’s (conditional) reservation wage.

In this paper, similarly to most of the empirical literature on self-reported reservation wages, we focus only on non-employed jobseekers, since the reservation wage of the employed also depends on the current wage level, information that is not available in the LFS. We also exclude people trying to set up on their own account since, unlike salaried workers, their reservation wage presumably includes the risk premium associated with profit variability. Our sample amounts each year to around 8,000 individuals.

The ECHP is a fully harmonized annual longitudinal survey conducted by national statistical offices from 1994 to 2001 under Eurostat coordination (see Eurostat, 2003, for details). The survey focused on household income and standard of living, but it also collected information on demographic characteristics and job-search behaviour. Importantly

⁵ The problems were particularly pronounced in the case of the reservation wage variable under scrutiny here. For instance, in 2000 missing data on the reservation wage amounted to 2.0 per cent. In 2003 the proportion was more than 4 times higher. For this reason, in this paper we drop year 2003 from the analysis.

⁶ Possible answers are: (1) permanent payroll employment; (2) temporary position (3) (temporary) training programme ; (4) any type of payroll employment; (5) trying to set up on their own account.

⁷ Possible answers are: (1) only full-time; (2) only part-time; (3) preferably full-time; (4) preferably part-time; (5) any type.

⁸ People are asked whether they are looking for a job (1) in the same town; (2) in the same region (3) in Italy; (4) in Italy or abroad.

for our purposes, the format of the questions concerning reservation wages closely resembles that available in the LFS. Even if in principle we have access to eight waves of the survey, in this paper we focus only on wave one. There are several reasons for this. First, wave one (which corresponds to the year 1994 for almost all the countries except Austria and Finland, which joined in 1995 and 1996 respectively) is the one with the largest sample size, because of the large depletion of the ECHP sample due to explicit refusal to respond, failure to follow up the unit, or break-up of the household (see Lehmann and Wirtz, 2003, pp. 2-3, and Peracchi, 2002). Alternative strategies, such as pooling together all the ECHP waves to increase substantially the size of our sample of jobseekers (and using time trends to control for time variability), may bias the results, as the condition of being a jobseeker for many subsequent waves is endogenous to reservation wages.

The ECHP also asks the reservation wages of people who previously declared they were looking for work. Detailed desired job characteristics, however, are not collected, but people are asked how many hours there are willing to work for the declared reservation wage. (This information is not collected by the Italian LFS). We focus on the following countries: Austria, Finland, France, Germany, Greece, Italy, Portugal, Spain, and the UK. The size of the samples of jobseekers ranges from 200 for Austria to 2,000 for Spain. We have excluded Belgium, Denmark, Luxembourg, the Netherlands, and Sweden because of their smaller sample size.

2.2 *Evidence*

Since reservation wages are observed conditional on various desired job characteristics, we report conditional estimates of the reservation wage regional differentials; however, we must stress that the use of unconditional means, i.e. means calculated without controlling for job characteristics, gives stronger results, as shown also by Bettio and Mazzotta (2002). First, we divide all the countries considered into two sets of regions (not necessarily bordering on each other), labelled “low unemployment” and “high unemployment” regions respectively. The first group is composed of regions where the unemployment rate is below the national average; the second group is defined symmetrically. In the ECHP, regions are defined according to the NUTS regional

classification. In Italy, the low unemployment regions are all located in the northern and central part of the country, whereas the high unemployment regions are located in the *Mezzogiorno*. For each country the list of regions constituting each sub-area is reported in Appendix 1.

Table 1 reports the unemployment rate and the average (log-)reservation wage differentials observed in Italy from 1993 to 2002.⁹ The differential corresponds to the OLS estimated coefficients of a dummy equal to 1 if the person lives in the North and Centre and to 0 otherwise.¹⁰ The averages are conditional on a set of dummies for the desired job characteristics (type of job, preferred working times, preferred location, private or public sector¹¹) and individual characteristics (potential experience and its square, i.e. the difference between age and years of schooling, educational attainments, number of household members, marital status, past work experience, dummies for students and housepersons). The estimated reservation wage differentials are almost always negative and significant or null in all the years considered, in spite of the fact that in the North and Centre the unemployment rate is always below 10 per cent, while in the South the same statistics are at least 13 percentage points higher.

In Table 2 the statistics of Table 1 are extended to Germany, France, UK, Greece, Spain, Portugal, Austria and Finland (and Italy, to compare ECHP and LFS data). As in Table 1, estimates of the regional differential are conditional on individual characteristics (potential experience and its square, educational attainments, number of household members, marital status, past work experience, dummies for students and housepersons), the desired number of working hours and its square, and a dummy equal to 1 for people who

⁹ The unemployment rates for the two areas are slightly higher than the official rates because they are calculated as the ratio between the number of people who declare they are looking for work and the sum of jobseekers and employed workers, whereas the official unemployment rate is calculated only on those who have actively sought work in the 4 weeks preceding the reference period.

¹⁰ Other coefficients are available upon request.

¹¹ One might argue that reservation wages are also affected by the preference of people living in the two parts of Italy for a job in the public sector. It is well known that the Italian public sector is particularly large, especially, in relative terms, in the southern part of the country. Furthermore, the wage level in the public sector is the same all over the country in spite of the fact that labour demand is considerably lower in the South (Alesina *et al.*, 2001). As a consequence, jobseekers in the South are expected to have a higher propensity towards public sector positions, with a positive effect also on reservation wages. The OLS

want to work less than 35 hours a week. By including this last dummy we assume that desired working hours not only have a direct linear effect on reservation wages but also a sort of scale effect.

A negative reservation wage differential is found in Finland, France and Spain. In Italy and Portugal it is negative but not significant. For Italy, this result is probably affected by the smaller size of the ECHP sample compared with the LFS one. The differential is positive but not significant in the UK, positive in Germany and Greece. Thus, in 7 out of 9 countries reservation wage differentials are negative or not different from zero even in the presence of regional differences in unemployment rates.

In the next sections, we focus mainly on Italy, because the Italian LFS has a larger sample size than the ECHP and allows one to control for a wider set of individual variables that may affect the reservation wage distribution. Nevertheless, we will show that interest in understanding the “reservation wage paradox” is not limited to Italy.

3 Selection into unemployment

As widely discussed in Section 2, data on reservation wages are collected only for unemployed jobseekers. This way of collecting data may generate a selection process, whose features are described by the following two examples.

Example 1. Consider a population of size 1 equally composed of two types of non-employed individuals, $type_0$ and $type_1$. They have the same socio-demographic characteristics but different value of leisure l_i , $i=0,1$, with $l_1 > l_0$. l_i represents also the value of all non-market activities, like for instance child care, as well as the value of amenities of a geographical area. Assume that individuals are wealth maximizers. Denote their reservation wages w_i^* . Since $l_1 > l_0$, also $w_1^* > w_0^*$. Consider two types of firms: half of them offers a wage

estimates control therefore also for the preferred employment sector (private sector or public sector).

¹⁵ From 1999 onwards, the LFS reports the age at which individuals obtain their university degree. The data suggest that roughly 95 per cent of people attending Italian universities graduate at between 23 and 32 years old. Because of the structure of the Italian school system, it is very unlikely that people will graduate before the age of 22. At 22 less than 5 per cent of students have a degree. On average Italian university students

$w_1 > w_1^* > w_0^*$, the other half offers a wage w_0 , with $w_1^* > w_0 > w_0^*$. Each worker receives a job offer with probability q . Assume that the expected value of employment $E(w) = (w_1 + w_0)q/2 > w_1^*$, so that both types of individuals search for a job, but *type*₁ individuals accept only job offers paid w_1 . *Type*₀ individuals find employment with probability q and *type*₁ individuals find employment with probability $q/2$. The pool of people without a job is then composed of $(1-q)$ *type*₀ individuals and $(1-q/2)$ *type*₁ individuals. Since data on reservation wages refer only to job seekers, they allow one to estimate $\tilde{w}^* = \frac{(1-q)}{(1-q) + (1-q/2)} w_0^* + \frac{(1-q/2)}{(1-q) + (1-q/2)} w_1^*$, which is higher than the average reservation wage in the population, $\bar{w}^* = (w_1^* + w_0^*)/2$.

Example 2. Once again there are two types of non-employed individuals, *type*₀ and *type*₁ with $l_1 > l_0$, but now all job offers are identical and all individuals receive a job offer. Let w be the current wage level, with $w < w_1^*$. *Type*₁ individuals have then no incentive to search for a job, since their reservation wage is higher than the (expected) value of employment. Since *type*₁ individuals do not report their reservation wage, the average observed reservation wage is equal to $\tilde{w}^* = w_0^*$, which is lower than the average reservation wage in the population, equal to $\bar{w}^* = (w_1^* + w_0^*)/2$.

The first example shows that people with higher reservation wage have a lower probability to find a suitable job offer and so are more probable to remain job seekers. In this case the selection process is driven by labour demand and the reservation wage distribution observed among job seekers is biased upwards.

As for the second example, rational agents search for employment only if the expected utility of searching for employment is higher than the utility from leisure (pure leisure, child and family care, studying, etc.). Since leisure is a normal good and job search is a time-consuming activity, more wealthy people are less probable to participate to the labour market. Selection is driven by the labour supply behaviour of individuals and job seekers are

those, among the non-working individuals, with a lower value of leisure (and a lower reservation wage). Hence, the observed reservation wage distribution is truncated also from above.

Both selection processes may bias the estimates of average reservation wages and of the reservation wage differential. Can they also explain the reservation wage paradox? Consider Italy. Since it is well known that the southern part of Italy is poorer, one would expect a higher presence of $type_0$ jobseekers in the total population. As a consequence, the average observed reservation wage (calculated only on the pool of self-reported jobseekers) should be lower in the South than in the North and Centre. Assume now that in the South the probability of receiving a job offer q is lower than in the North and Centre (because of a higher number of jobseekers relative to the available vacancies). Once again one would expect a lower observed reservation wage in the South, since, as q decreases, the relative weight of $type_0$ jobseekers in total unemployed population increases more than the weight of $type_1$ jobseekers. However, if the observed reservation wage distribution is contemporaneously affected by both types of selection processes, the final effect on the average observed reservation wage can be of any sign. For instance, assume that in the South –which is a poorer area- the share of highly productive firms offering higher wages is lower than in the North and Centre. In this case the share of $type_1$ individuals - those more likely to be non-employed - is higher in the South than in the North and Centre. This effect is strengthened if in the South $type_1$ individuals continue to look for a job because their wealth l_1 is lower than in the North and Centre, while in the North and Centre $type_1$ individuals withdraw from the market (and their reservation wages are not observed).

In what follows we define this double selection process as “selection into unemployment” and we verify whether the estimation of the reservation wage regional differentials are affected by this type of selection.

4 The estimation strategies

4.1 The regional reservation wage differentials

Ideally, given a sample of I individuals living in area A , ($A=L$ if they live in the low unemployment regions, H if they live in the high unemployment ones), we would like to estimate the following reduced-form model

$$(1) \quad w_A^* = X_{1A}^T \beta_1 + X_{2A}^T \beta_2 + X_{3A} \beta_3 + \varepsilon$$

where X_1 are individual characteristics, X_2 are preferences about the job, X_3 are the characteristics of the labour market where the i -th individual lives, such as the local unemployment rate. If reservation wages were observed for the whole population, equation (1) would allow us to estimate consistently the reservation wage differential $E(w_L^* - w_H^*)$.

Let P be an index equal to 0 if a person is non-employed and 1 otherwise. Consider the pool of non-employed individuals and let S be an index equal to 1 if the person is a jobseeker and equal to 0 if the person does not look for work. We then observe a non-employed person who looks for a job with probability $\Pr(P = 0, S = 1)$. Given the sample of jobseekers we can estimate the empirical counterpart of:

$$(2) \quad E(w_L^* - w_H^* \mid P = 0, S = 1).$$

If the probabilities of being non-employed and a jobseeker differ between geographical areas, the data allow us to estimate

$$(3) \quad E(w_L^* \mid P_L = 0, S_L = 1) - E(w_H^* \mid P_H = 0, S_H = 1),$$

where P_A and S_A , $A = L, H$, are now indexed by area.

Problems arise from the presence of sharp differences in the P_A and S_A across the two areas. Table 3 reports the share of non-employed people in the total population ($P_A = 0$) and the share of people who look for a job as a percentage of the total non-working population ($S_A = 1$), by geographical area, in Italy from 1993 to 2002. First, as suggested also by Table 1, in the South a larger share of the non-employed population looks for employment than in

the North and Centre: this difference is sizeable and ranges from 13 percentage points in 1993 to 17 points in 2002. Second, the probability of being non-employed is considerably higher in the South than in the other part of the country (almost 12 percentage points during the period). Table 4 reports the same statistics for the ECHP samples. With the exception of Italy, in all the other countries the share of non-working individuals is much more similar across areas. Instead, the share of jobseekers differs across areas and ranges from 1 percentage point in Greece to 15 per cent in Italy and Germany (6 percentage points in Spain, Portugal and the UK, 3 in Austria, Finland and France).

In Italy the evidence presented in Table 3 supports the hypothesis of differences in both the selection processes considered here. In the other EU countries, the relevance of selection process driven by the demand side of the market is smaller, whereas that of the other type of selection considered here, i.e. selection from the supply side, if any, might be much greater. In the next two sections we present two estimation strategies to obtain consistent estimates of the geographical reservation wage differential.

4.2 *Estimation strategy 1*

Assume that it is possible to find two variables K and Z , such that when K and Z take particular values, say $K=1$ and $Z=1$, the probabilities of selection in both areas are equal, i.e. $\Pr(P_L, S_L | K=1, Z=1) = \Pr(P_H, S_H | K=1, Z=1)$. In this case we can offset the effects of the differences in the selection process by estimating the following equation:

$$(4) \quad E(w_L^* - w_H^* | P=0, S=1, K=1, Z=1).$$

Since it is estimated conditional on specific values of K and Z , equation (4) provides a consistent estimate of the differential only for the subgroup of individuals for which $K=1$ and $Z=1$. While valid only for that subgroup of individuals, such a strategy provides an attractive benchmark as one does not need to introduce any functional form restrictions on the shape of $\Pr(P_A = 0, S_A = 1)$.

Consider first the probability of being in the labour force (either employed or job-seeker). As stressed before, people decide to start looking for a job only if the utility associated to other non-market activities is lower than the utility of searching. Since we

would like to control for the selection bias due to self-selection into job search, a possible strategy is to find a subset of individuals who look for a job because they do not have other convenient non-market activities. We then select a sample of individuals aged between 23 and 32 with a university degree.¹⁵ In Italy, post-graduate courses are not very developed (today only 3 per cent of Italian university students attend a post-graduate course, a percentage that was even lower during the period considered), which eliminates an important reason for graduates to stay out of the labour force. Leaving aside family and child-care choices, it is very unlikely that young graduates will stay out of the labour force after this sizeable investment in education. This suggests that attention should be limited to the sub-sample of young, unmarried, childless, and (recent) graduates to single out a group of intensive jobseekers. The LFS data support this assumption. Table 5 reports the share of jobseekers in the total non-employed population for this sub-sample by geographical area and gender. Within this group the probability of being a jobseeker is around 90 per cent for both men and women, 25 percentage points higher than the national average. More importantly, the probabilities are similar in both the North and Centre and the *Mezzogiorno*, the low and the high unemployment regions respectively.

To limit the effects of selection into employment ($P=1$), we would like to find a subset of individuals looking for a job but who have not received any job offers yet. Since firms typically need time to screen jobseekers' applications, it is reasonable to assume that a person entering unemployment has a nil probability of finding a job instantaneously. We then further select the set of unmarried graduate jobseekers whose job search lasts no longer than one month. Table 6, which reports the probability of a graduate getting a job within one month, supports our hypothesis:¹⁶ the probability of getting a job within one month is close to zero for all the subgroups considered.

Summing up, we focus on a sample of jobseekers aged between 23 and 32 with a university degree who are unmarried and childless and who have been looking for a job for not more than one month. Since this sample is expected not to be severely affected by selection into unemployment, we estimate equation (1) by OLS. We also include a dummy

¹⁶ Data are from the longitudinal version of the LFS, April 2000-April 2001.

equal to 1 if the person lives in the North and Centre and 0 otherwise. Since each year only a very small fraction of jobseekers satisfy our criteria, we pool the data of all the surveys from January 1993 to October 2002 and include seasonal and year dummies. Reservation wages are expressed in real terms and in logs (CPI deflators, euros, base year: 2000). Estimates are carried out separately for men and women.

The coefficients of the regional dummy “low unemployment” (i.e. the “North and Centre versus South” dummy) are presented in Table 7 (the other estimated coefficients are available upon request). When limiting the effects of sample selection no appreciable difference exists for men. The reservation wage of women living in the North and Centre is instead 10 per cent higher than in the South. To appreciate the effects of multiple selection into unemployment, the table also reports the estimated coefficients of alternative samples, obtained by relaxing our sample criteria. We then present estimates for: (1) a sample of all unmarried job-seekers with a university degree (no constraints on search duration, i.e. selection bias from below, or from the demand side), (2) a sample of jobseekers with a university degree looking for a job for not more than one month (both married and unmarried, i.e. selection bias from above, or from the supply side) and, finally, for a sample of jobseekers with a university degree (no restriction on marital status, search duration, both types of selection). These additional estimates confirm that for both men and women the introduction of possible sources of heterogeneity in the selection processes determines a reduction in the reservation wage differential, which becomes negative and significant when the sample is affected by both types of selection processes.

4.3 Estimation strategy 2

As already mentioned, the estimates presented in the last section are valid only for the specific values of X and Z . To estimate a reservation wage equation for the whole population of unemployed, we also need to model the process of double selection into unemployment.

We assume that $\Pr(P = 0, S = 1) = F(\gamma_1 K, \gamma_2 Z, \rho)$ is a standard cumulative bivariate normal distribution with correlation coefficient ρ . We estimate

$$(5) \quad w_A^* = X_{1A}^T \beta_1 + X_{2A}^T \beta_2 + X_{3A} \beta_3 + \theta_1 M_1 + \theta_2 M_2 + \varepsilon$$

where M_1 and M_2 are two inverse Mill's ratios “adjusted” to take into account that the underlying selection process is a bivariate normal distribution (see Maddala, 1983, pp. 282-284 for the formulae). We use a standard two-stage procedure: at the first stage we estimate the probability of observing a jobseeker (i.e. a person who is not employed and is looking for a job), and at the second stage we estimate equation (5).¹⁷ We prefer the two-stage procedure instead of a more efficient ML approach because it allows us to appreciate the effects of the terms M_1 and M_2 on reservation wages. In fact, M_1 represents the probability of being non-employed (selection from below) and M_2 the probability of being a jobseeker (selection from above).

In a model like (5) the coefficients γ_1, γ_2 and β_1, β_2 and β_3 can be identified by relying on the functional form imposed on the model, or by the use of exclusionary restrictions, i.e. of variables that affect the probabilities of selection, with no effect on reservation wages. Since it is not easy to find such variables, we rely only on functional-form identification.

We first present two sets of estimates for Italy. First, we estimate the model separately for people living in low and high unemployment regions. This allows high flexibility in the model as both the joint probability of selection $\Pr(P_A = 0, S_A = 1)$ and the reservation wage equation (5) vary across areas. The reservation wage differential is estimated as the difference of the predicted values calculated for each area. The estimates, for the year 2000 only, are presented in Table 8. Second, since the differential of Table 8 is not directly comparable with the ones presented in Table 2, we have also carried out estimates for the entire sample of jobseekers and, as in the model of Table 2, we have included a dummy equal to 1 for jobseekers living in the low unemployment areas and 0 otherwise. These estimates are less flexible than the previous ones as they assume that the selection processes and the reservation wage equation are similar except for a dummy. For all the other aspects, the two sets of estimates are identical.

¹⁷ Since we observe $S = 1$ only if $P = 0$, this is a model with partial observability (see Maddala, 1983, p. 282). We have estimated this probability by applying the Stata command: `heckprob`.

The first stage equation $\Pr(P = 0, S = 1) = F(\gamma_1 K, \gamma_2 Z, \rho)$, used to estimate M_1 and M_2 , includes standard socio-demographic variables such as gender, potential experience (age – years of schooling) and its square, educational attainment (primary, secondary, high school, university), the presence of past work experience, the number of household members (both a linear and a squared term), the position of individuals within the household (single living alone, household head, spouse of the head, son/daughter, other), and province dummies. The estimates, carried out separately for the North and Centre and the *Mezzogiorno* are available upon request.¹⁸

In Table 8 (i.e. models distinct by area) we estimate 3 model specifications. All models include the correction terms M_1 and M_2 , and dummies for the characteristics of the desired job, as in the OLS estimates presented in Table 2. Model 2 and 3 include also the socio-demographic characteristics and household background variables already used in stage 1 estimation. As expected the coefficient of the term M_1 is positive: non-employed people have higher reservation wages than the employed.¹⁹ The coefficient of selection term M_2 , related to the probability of looking for a job, has a negative sign: within the pool of non-employed individuals, non-working people who are looking for a job are expected to have a lower value of non-market activities.

Finally, the last rows of the Table report the predicted reservation wages in the North and Centre and in the South. These terms are equal to $\bar{X}_A^T \hat{\beta}$, where $\bar{X}_A$ is the vector of the average independent variables in the sub-sample A , $A = L$ if the individuals live in the North and Centre (low unemployment area), $A = H$ if they live in the *Mezzogiorno* (high unemployment area). Again, when controlling for selection, the average estimated reservation wage is higher in the North and Centre than in the South, from a minimum of 2 percentage points in model 3 to a maximum of 8 percentage points in model 2. Even agreeing that the estimated differentials might be not statistically different from zero,

¹⁸ We estimate the probability that a non-employed person looks for a full-time salaried job. People looking for self-employment or part-time jobs are set $S=0$.

¹⁹ Consistently with Giraldo and Trivellato (2006), we have that part of the North-South differential is due to differences in tastes about the desired job. However, their impact is very modest when compared with the effect of the selection terms.

possibly because the two-stage procedure is inefficient, these results go against the reservation wage paradox.

We have also calculated the reservation wage differential for unmarried people with a university degree who have been looking for a job for not more than one month, i.e. for the same sub-sample used for the estimation strategy 1 (see Section 4.1). We find a 10 per cent North-South differential for both men and women. The two estimation strategies therefore produce very similar results, at least for women, which is reassuring about the validity of the (non-testable) identification assumptions used in this second strategy. We have replicated the same estimates for all the other years from 1993 to 2002, getting similar findings, which are available upon request.

The second-stage results of the model with the regional dummy are presented in Table 9. The reservation wage is positive and significant in the years 1993, 1997 and 1999, positive and not significant in 1996 and 1998 and from 2000 to 2002, and negative and significant only in 1994 and 1995. Note, however, that in all the years in the period the estimated differential is greater than the one presented in Table 2.

Estimates based on the ECHP are reported in Table 10. Since the sample size of the ECHP is smaller than that of the LFS, for each country we have carried out estimates on the whole sample of jobseekers and we have used the regional dummy for the estimation of the reservation wage differential. These estimates are fully comparable with those of Table 3. As in the LFS, the reservation wage is now positive and significant in Italy and the UK (at 10 per cent). Unlike Table 3, the differential is nil in Finland, France and Spain, instead of negative. In Germany and Greece it is larger than the one presented in Table 3. An exception is Austria, where the reservation wage differential becomes negative and smaller than in Table 3. These results confirm the importance of the issue of selection into unemployment in other EU countries as well. Note that the term M_2 , representing the probability of being a jobseeker, is always negative. The term M_1 , when significant, is positive, as found in Italian LFS data.

For Italy we further explore the low-high unemployment differential, adapting Oaxaca's decomposition to the case of sample selection and replicating it for the period 1993-2002. This exercise aims to disentangle the reservation wage differential into three

components: one due to differences in population composition, one to differences in the determinants of the underlying reservation wage, and one due to selection into unemployment.

When data are not affected by selection, the average reservation wage differential $(\bar{w}_L^* - \bar{w}_H^*)$ would decompose into two parts, i.e.

$$(6) \quad \bar{w}_L^* - \bar{w}_H^* = (\bar{X}_L - \bar{X}_H)' \hat{\beta}_L + (\hat{\beta}_L - \hat{\beta}_H)' \bar{X}_H$$

where $\bar{w}_A^*$ is the average (log) reservation wage in area $A=L,H$, $\bar{X}_A$ is the vector of the average independent variables in area A and $\hat{\beta}_A$ is the vector of estimated OLS coefficients, obtained by separated regressions for the North and Centre and the *Mezzogiorno*.²⁰ The first term of the right-hand side is the contribution of the observed characteristics to the reservation wage differential (for instance, the fact that in the overall population people in a region have better human capital endowment). It is the second term that captures the effect of differences in labour supply behaviour in the two areas. This is calculated using the coefficients of jobseekers living in the North and Centre along with the mean characteristics of jobseekers living in the South and by subtracting from this value the average value observed in the South. Following Holzer's study of the black-white youth differential (1986), we label it a measure of the jobseekers' "willingness" differential even if – particularly in this context – it captures not only tastes (the fact that people in one area may put more or less value on leisure, i.e. "laziness") but also the presence of differences in wealth, unemployment risk, expected wages (for given human capital endowment), etc. Note that for these very reasons we would expect such a component to be positive as, besides tastes (which might go either way), most of the other "economic" determinants of the reservation wage should be more relevant in the North than in the South.

It is straightforward to show that, when data are affected by selection, the average differential can be decomposed into three terms, one related to observed characteristics, one to differences in job search behaviour, and one imputed to selection. More formally, the

²⁰ To improve labour market flexibility the double selection process has also been estimated separately for the North and Centre and the South.

standard Oaxaca formula becomes:

$$(7) \quad \bar{w}_L^* - \bar{w}_H^* = (\bar{X}_L - \bar{X}_H)' \hat{\beta}_L + (\hat{\beta}_L - \hat{\beta}_H)' \bar{X}_H + (\bar{\Lambda}_L - \bar{\Lambda}_H)$$

where $\bar{\Lambda}_A = \sum \frac{\hat{g}_{1Aj} M_{1Aj} + \hat{g}_{2Aj} M_{2Aj}}{n_A}$ and n_A is equal to the number of observations in area A , $A=L,H$ ($\bar{\Lambda}_A$ is simply the sample mean of the estimated selection terms). The decomposition allows us to estimate the relative importance of the three factors in determining the reservation wage differential. This exercise is not replicated for the ECHP samples because the small sample size does not allow us to split the sample by area and get reliable estimates of the reservation wage equation.

Table 11 reports the Oaxaca decompositions for both a standard OLS model without selection correction and for a model which includes M_1 and M_2 . For each area we use the specification of model 3 presented in Table 5. When selection is not taken into account the term $(\hat{\beta}_L - \hat{\beta}_H)' \bar{X}_H$ (the “willingness”-“laziness” term) often explains most of the reservation wage differential. Instead, when the multiple selection terms are included in the regression, the negative reservation wage raw differential is entirely explained by the double selection term in all cases. More importantly, the term $(\hat{\beta}_L - \hat{\beta}_H)' \bar{X}_H$ is always positive, coherently with the fact that most economic determinants of the reservation wage are expected to raise it more in the North than in the South. We cannot disentangle the weight of taste shifters in the two regions, i.e. whether people in the South are lazier than those in the North, but we can rule out the paradox and the simple story of Southerners’ laziness behind it.

5 Conclusions

In Italy, as in other EU countries, the average of self-reported reservation wages are systematically higher (or not lower) in the regions with higher unemployment rates than in the other parts of the country. In Italy, this result has been interpreted either as evidence of a “laziness” explanation of unemployment prevailing in the southern regions or as a hint of the unreliability of the self-reported reservation wage data.

In this paper we show that data on self-reported reservation wages provided by the unemployed sampled in the LFS and in the ECHP are affected by a double selection process. In Italy, when reservation wages are purged of all possible sources of selection bias, we find that reservation wages are roughly 10 per cent higher in the North and Centre -regions with lower unemployment - than in the South. The estimates for the other EU countries confirm that selection into unemployment reduces the estimated differentials as well.

Because the shape of selection is determined by numerous factors, such as wealth distribution, firms' productivity, and the related wage offer distribution, we cannot find a direct relationship between the size of the unemployment rate differential, the entity of the selection, and the reservation wage differential. Nevertheless, the paper shows how existing data can be purged of these biases in order to derive a summary picture of labour supply behaviour. Finally, since the selection process is mainly due to the survey questionnaire, our results call for a reconsideration of how such data should be collected.

Tables

Table 1

Italy: unemployment rates and OLS estimate of the (log) reservation wage differentials from 1993 to 2002. Dummy equal to 1 for people living in the low unemployment regions (North and Centre)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Unemployment rates (1)										
Low unemployment regions (North, Centre)	8.89	9.44	9.44	9.44	9.42	9.21	8.69	7.79	6.46	5.96
High unemployment regions (<i>Mezzogiorno</i>)	22.26	25.10	27.20	27.94	27.90	27.54	27.16	26.51	23.65	22.46
Estimated reservation wage differential (OLS) (2)										
Dummy: the person lives in a low unemployment region (North, Centre)	-0.012	-0.036	-0.028	-0.015	0.005	-0.021	0.018	-0.014	-0.094	0.009
(p-value)	0.067	0.000	0.000	0.083	0.692	0.015	0.183	0.049	0.000	0.363
Sample size	6,480	7,086	5,309	7,538	7,506	7,658	7,263	9,797	5,985	5,602
R2	0.148	0.202	0.127	0.101	0.049	0.113	0.049	0.137	0.050	0.115

Source and notes: authors' calculations based on Istat data. (1) The unemployment rates do not fully coincide with the official Istat data as they include people looking for work but not in the four weeks preceding the interview. (2) The estimated differentials are the OLS coefficients of a dummy equal to 1 for people living in the low unemployment regions. The models also include gender, potential experience (age-years of schooling), and potential experience squared (both interacted with gender), dummies for the characteristics of the desired job (type, location, desired working time, whether in the private or public sector), whether the person has previous job experience, household background variables (number of household members and dummies for the role of the person within the household, i.e. whether the person is single living alone, household head, spouse, child, other), dummies for housepersons and students.

Table 2

OLS estimate of the (log) reservation wage differentials in nine EU countries: wave 1. Dummy equal to 1 for people living in the low unemployment regions

	Austria	Finland	France	Germany	Greece	Italy	Portugal	Spain	UK
Unemployment rates (1)									
Low unemployment regions	5.87	15.45	11.60	6.06	15.41	11.66	5.87	20.59	8.41
High unemployment regions	11.21	24.26	14.09	15.91	16.67	32.89	11.21	33.97	14.31
Estimated reservation wage differential (OLS) (2)									
Dummy: the person lives in a low unemployment region	0.007	-0.034	-0.070	0.096	0.082	-0.009	-0.008	-0.024	0.091
(p-value)	0.850	0.063	0.000	0.002	0.001	0.628	0.737	0.056	0.218
Sample size	216	683	874	670	1,066	1,886	426	2,099	235
R2	0.621	0.280	0.534	0.234	0.227	0.268	0.230	0.288	0.308

Source and notes: authors' calculations based on Eurostat data. (1) The unemployment rates do not fully coincide with the official Eurostat data as they include people looking for work but not in the four weeks preceding the interview. (2) The estimated differentials are the OLS coefficients of a dummy equal to 1 for people living in the low unemployment regions (see Appendix 1 for definitions). The models also include gender, potential experience (age-years of schooling), and potential experience squared (both interacted with gender), the desired working time expressed in hours and its square, whether the person has previous job experience, household background variables (number of household members and dummies for the role of the person within the household, i.e. whether the person is single living alone, household head, spouse, child, other), dummies for housepersons and students.

Table 3

Share of non-employed people in total population and share of jobseekers in total non-working population in Italy (1993-2002)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	Share of non-working individuals in total population									
Low unemployment regions (North, Centre)	43.51	43.87	43.81	43.22	43.04	42.58	41.57	40.60	39.44	38.49
High unemployment regions (South)	56.63	58.20	59.69	59.88	59.57	58.92	58.73	58.04	56.93	56.05
Total	50.07	51.03	51.75	51.55	51.30	50.75	50.15	49.32	48.19	47.27
	Share of jobseekers in total non-working population									
Low unemployment regions (North, Centre)	12.67	13.34	13.36	13.69	13.77	13.69	13.38	12.36	10.61	10.14
High unemployment regions (South)	21.93	24.07	25.24	25.97	26.26	26.51	26.21	26.09	23.44	22.71
Total	17.30	18.70	19.30	19.83	20.01	20.10	19.79	19.22	17.02	16.42

Source: authors' calculations based on Istat data.

Table 4

Share of non-employed people in total population and share of jobseekers in total non-working population in nine EU countries

	Austria	Finland	France	Germany	Greece	Italy	Portugal	Spain	UK
Share of non-working individuals in total population									
Low unemployment regions	45.54	42.03	52.87	35.99	54.62	49.05	45.62	59.81	48.5
High unemployment regions	45.51	36.24	51.5	37.76	52.83	60.09	49.14	59.81	49.07
Total	45.53	40.11	51.98	36.57	53.62	53.76	46.45	59.81	48.86
Share of jobseekers in total non-working population									
Low unemployment regions	5.52	22.29	11.8	10.91	15.32	13.00	8.23	17.95	10.63
High unemployment regions	8.98	24.75	15.25	26.31	16.92	28.42	13.84	24.14	16.67
Total	6.98	23.03	14.03	16.07	16.2	20.35	9.64	20.73	14.51

Source: authors' calculations based on Eurostat data.

Table 5

Share of jobseekers in total non-working population. Unmarried graduates aged between 23 and 32

	Men		Women	
	Mean	St. err.	Mean	St. err.
Low unemployment regions (North, Centre)	0.90	0.02	0.88	0.02
High unemployment regions (South)	0.90	0.02	0.90	0.01
Source: authors' calculations based on LFS data.				

Table 6

Probability of finding a job within one month. Unmarried graduates aged between 23 and 32

	Men		Women	
	Mean	St. err.	Mean	St. err.
Low unemployment regions (North, Centre)	0.02	0.12	0.03	0.18
High unemployment regions (South)	0.02	0.14	0.02	0.15
Source: authors' calculations based on LFS longitudinal data.				

Table 7

Estimation strategy 1: reservation wage differentials.
(standard deviations within brackets)

	Men		Women	
	Coefficient	St.err.	Coefficient	St.err.
	All unmarried graduates looking for a job for no more than one month			
Dummy: the person lives in a low unemployment region (North, Centre)	0.00	0.02	0.10	0.05
Sample size	575		829	
R2	0.11		0.23	
	All unmarried graduate jobseekers (no restriction on search duration)			
Dummy: the person lives in a low unemployment region (North, Centre)	-0.03	0.01	-0.03	0.01
Sample size	6,244		8,740	
R2	0.10		0.17	
	All graduates looking for a job for no more than one month (no restriction on marital status) (1).			
Dummy: the person lives in a low unemployment region (North, Centre)	0.01	0.02	0.05	0.05
Sample size	599		945	
R2	0.11		0.25	
	All graduate jobseekers (no restriction on marital status or search duration)			
Dummy: the person lives in a low unemployment region (North, Centre)	-0.03	0.01	-0.04	0.01
Sample size	6,540		10,327	
R2	0.10		0.17	

Source and notes: authors' calculations based on LFS data. All models include dummies for the desired location of the job, the preferred working time, the type of job sought, a dummy for people with past work experience, a dummy for looking for employment in the four weeks preceding the reference period, year dummies, quarterly dummies and age. (1) The model dummies for marital status: single, married, other.

Table 8

Estimated reservation wage equation with sample selection corrections (1)						
	Model 1		Model 2		Model 3	
	Coeff.	St. err	Coeff.	St. err	Coeff.	St. err
Sample: people living in a low unemployment region (North, Centre)						
Constant	6.75	0.03	6.90	0.04	6.87	0.05
M1 (Probability of not being employed)	0.04	0.01	0.01	0.01	0.01	0.01
M2 (Probability of looking for work)	-0.05	0.01	-0.04	0.01	-0.03	0.01
Job location: within a daily commuting distance (2)	-0.16	0.02	-0.12	0.02	-0.12	0.02
Job location: in Italy	-0.11	0.02	-0.08	0.02	-0.09	0.02
Type of job: permanent (3)	0.10	0.02	0.10	0.02	0.10	0.02
Type of job: temporary (4)	0.01	0.08	0.02	0.08	0.02	0.08
Sector: public	0.07	0.02	0.04	0.02	0.05	0.02
Socio-demographic characteristics			Yes		Yes	
Household background variables					Yes	
Number of observations	2,010		2,010		2,010	
R2	0.08		0.11		0.11	
Predicted value	6.75		6.78		6.77	
Sample: people living in a high unemployment region (South)						
Constant	6.67	0.02	6.76	0.03	6.82	0.03
M1 (Probability of not being employed)	0.07	0.01	0.05	0.01	0.01	0.01
M2 (Probability of looking for work)	-0.05	0.01	-0.02	0.01	-0.01	0.01
Job location: within a daily commuting distance (2)	-0.12	0.01	-0.10	0.01	-0.10	0.01
Job location: in Italy	-0.09	0.01	-0.08	0.01	-0.08	0.01
Type of job: permanent (3)	0.07	0.01	0.07	0.01	0.07	0.01
Type of job: temporary (4)	0.03	0.06	0.04	0.06	0.02	0.06
Sector: public	0.03	0.01	0.00	0.02	0.01	0.02
Socio-demographic characteristics			Yes		Yes	
Household background variables					Yes	
Number of observations	4,615		4,615		4,615	
R2	0.08		0.09		0.10	
Predicted value	6.71		6.70		6.75	

Source and notes: Authors' calculations based on LFS data. April 2000. (1) Includes only people who are looking for a full-time salaried job. People looking for a part-time job are not included as we do not have information on the desired working time and it is not possible to calculate a "full-time-equivalent" reservation wage. (2) Dummy equal to 1 for people who declare they are willing to work in the same town or region. (3) Dummy equal to 1 for people who declare they are looking exclusively for a permanent position and for people who declare they are looking preferably for a permanent position. (4) Dummy equal to 1 for people who declare they are looking for a temporary position and for people who declare they are looking for a (temporary) training programme.

Table 9

Estimation strategy 2. (Log) Reservation wage differentials in Italy with selection: 1993-2002. Dummy equal to 1 for people living in the low unemployment regions (North and Centre) (1)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Dummy: the person lives in a low unemployment region (North and Centre)	0.014	-0.016	-0.015	0.016	0.042	0.011	0.045	0.000	0.028	0.010
(p-value)	0.098	0.040	0.002	0.189	0.013	0.396	0.014	0.960	0.300	0.515
M1 (Probability of not being employed)	0.070	0.044	0.025	0.118	0.088	-0.038	0.025	0.065	-0.345	0.004
(p-value)	0.000	0.002	0.002	0.000	0.053	0.413	0.557	0.024	0.000	0.929
M2 (Probability of looking for work)	-0.076	-0.057	-0.037	-0.089	-0.115	-0.099	-0.081	-0.056	-0.288	-0.003
(p-value)	0.000	0.000	0.000	0.001	0.002	0.004	0.038	0.016	0.000	0.929
Sample size	6,480	7,086	5,309	7,538	7,506	7,658	7,263	9,797	5,985	5,602
R2	0.148	0.203	0.130	0.103	0.050	0.115	0.049	0.140	0.059	0.115

Source and notes: authors' calculations based on Istat data. (1) The estimated differentials are the OLS coefficients of a dummy equal to 1 for people living in the low unemployment regions. The models also include gender, potential experience, and potential experience squared (both interacted with gender), dummies for the characteristics of the desired job (type, location, desired working time, whether in the private or public sector), whether the person has previous job experience, household background variables (number of household members and dummies for the role of the person within the household, i.e. whether single living alone, household head, spouse, child, other), dummies for housepersons and students.

Estimation strategy 2. (Log) Reservation wage differentials in nine EU countries: wave 1. Dummy equal to 1 for people living in the low unemployment regions. (1)

	Austria	Finland	France	Germany	Greece	Italy	Portugal	Spain	UK
Dummy: the person lives in a low unemployment region	-0.076	-0.027	0.016	0.130	0.118	0.068	0.021	0.008	0.140
(p-value)	0.189	0.136	0.606	0.053	0.000	0.093	0.870	0.649	0.091
M1 (Probability of not being employed)	-0.243	0.093	-0.026	0.342	0.239	0.049	0.164	-0.027	0.163
(p-value)	0.364	0.047	0.887	0.010	0.064	0.571	0.340	0.654	0.625
M2 (Probability of looking for work)	-0.029	-0.018	-1.440	-0.427	-0.078	-0.287	-0.101	-0.095	-0.755
(p-value)	0.906	0.667	0.000	0.051	0.720	0.022	0.798	0.234	0.039
Sample size	216	683	874	670	1,066	1,886	426	2,099	235
R2	0.634	0.295	0.571	0.248	0.232	0.271	0.238	0.288	0.328

Source and notes: authors' calculations based on Eurostat data. (1) The estimated differentials are the OLS coefficients of a dummy equal to 1 for people living in the low unemployment regions (see Appendix 1 for definitions). The models also include gender, potential experience, and potential experience squared (both interacted with gender), the desired working time expressed in hours and its square, whether the person has previous job experience, household background variables (number of household members and dummies for the role of the person within the household, i.e. whether single living alone, household head, spouse, child, other), dummies for housepersons and students.

Table 11

Oaxaca decomposition of the reservation wage differentials: standard OLS model and model with selection correction

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	Standard OLS Model (1)									
Low unemployment regions (North, Centre)	6.52	6.57	6.58	6.64	6.65	6.66	6.69	6.74	6.77	6.81
High unemployment regions (South)	6.57	6.62	6.65	6.66	6.68	6.69	6.69	6.76	6.81	6.83
Difference	-0.05	-0.05	-0.07	-0.02	-0.03	-0.03	-0.01	-0.02	-0.03	-0.02
$(\bar{X}_N - \bar{X}_S)' \hat{\beta}_N$	-0.03	-0.03	-0.02	-0.02	-0.01	-0.01	0.01	0.01	-0.02	0.02
$(\hat{\beta}_N - \hat{\beta}_S)' \bar{X}_S$	-0.02	-0.03	-0.05	-0.001	-0.02	-0.02	-0.01	-0.03	-0.02	-0.04
Selection	No	No	No	No	No	No	No	No	No	No
	Model with selection corrections (2)									
Low unemployment regions (North, Centre)	6.52	6.57	6.58	6.64	6.65	6.66	6.69	6.74	6.77	6.81
High unemployment regions (South)	6.57	6.62	6.65	6.66	6.68	6.69	6.69	6.76	6.81	6.83
Difference	-0.05	-0.05	-0.07	-0.02	-0.03	-0.03	-0.01	-0.02	-0.03	-0.02
$(\bar{X}_N - \bar{X}_S)' \hat{\beta}_N$	-0.03	-0.01	-0.002	-0.002	0.01	0.01	0.03	0.04	0.03	0.06
$(\hat{\beta}_N - \hat{\beta}_S)' \bar{X}_S$	0.05	0.05	0.04	0.13	0.002	0.07	0.03	0.02	0.02	0.02
Selection	-0.07	-0.09	-0.11	-0.15	-0.04	-0.11	-0.07	-0.08	-0.09	-0.1

Source and notes: authors' calculations based on Istat data. (1) Except for the sample split by geographical area, the models fully coincide with those of Table 1. (2) Except for the sample split by geographical area, the models fully coincide with those of Table 9.

Appendix 1: High unemployment regions. (1) Nuts aggregates and names.

Austria	Finland	France	Germany	Greece
AT1: Ostösterreich	FI12: Etelä (incl. Åland)	FR3: Nord - Pas-de-Calais	DE4: Brandenburg	GR3: Attiki
AT2: Südösterreich	FI13: Itä	FR6: Sud-Ouest	DE5: Bremen	
	FI14: Väli	FR8: Méditerranée	DE8: Mecklenburg-Vorpommern	
	FI15: Pohjois		DED : Sachsen	
			DEE: Sachsen-Anhalt	
			DEG: Thüringen	
Italy	Portugal	Spain	UK	
IT7: Abruzzo-Molise	PT13: Lisboa e Vale do Tejo	ES1: Noroeste	UK11: Cleveland, Durham	
IT8: Campania	PT14: Alentejo	ES4: Centro	UK13: Northumberland, Tyne and Wear	
IT9: Sud		ES6: Sur	UK73: West Midlands (County)	
ITA: Sicilia			UKA1: Borders-Central-Fife-Lothian-Tayside	
ITB: Sardegna			UKA2: Dumfries and Galloway, Strathclyde	
			UKA3: Highlands, Islands	
			UKA4: Grampian	
			UKB: Northern Ireland (UK)	
Notes: High unemployment regions are those with an unemployment rate above the national average. Low unemployment regions are defined symmetrically.				

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