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Keywords: wage penalty, part-time job, sample selection model.
JEL codes: J31, J22, C2

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This paper studies the evolution of full-time/part-time wage differential among Italian women for the period 1993-2004 by adopting an extension of Heckman procedure. For each wave under analysis, we estimate a four-outcome employment status model in the first step, and full-time and part-time wage equations corrected for selectivity in the second step. Our results show a decreasing trend of part-time wage penalty across waves. Using Oaxaca decomposition technique we find that part-time workers are constantly, but in a decreasing way, over-paid according to observable characteristics. This is because, Interestingly, discrimination and selection components (the adjusted differential) take, in turns, similar and opposite values contributing to create an observed overall wage premium.

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Introduction

The spate of flexibility introduced into European labour markets in the last ten years has raised much interest into the various form of contracts which legislation has disciplined; particular attention have received contracts geared at increasing the labour market participation of categories of people largely outside the labour market. Part time is among the instruments particularly sought after for the sake of increasing the labour force participation of women.

The studies dealing with part time have concentrated on the real side, i.e. assessing the variation in female participation rates; and on the financial side, assessing the wage differentials between part timers and full timers.

Observation provides evidence of wage penalty between full time and part time workers; explanations of this penalty varies considerably. Some authors claim that once differences among workers and among jobs and selection into type of employment are taken into account, the observed wage penalty vanishes, as it is fully explained by the covariate considered. Using data from the Current Population Survey for the years 1995-2002, Hirsch (20054) shows that in the USA personal characteristics of workers and jobs explain much of the wage penalty between full timers and part timers, that much of the remaining unexplained difference is due to worker heterogeneity, and that the observed full time part time wage difference is particularly low for women.

Using data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, Rodgers (2004) shows that in Australia there are not statistically significant adjusted wage differences between full timers and part timers once selection for type of employment and for characteristics of workers and jobs are taken into account.

Other authors claim that there is still an unexplained part in the wage penalty which can only be explained in terms of discrimination. So Jepsen and others (2005) using the 1995 data from Structure of Earnings Survey show that part of the observed wage penalty between full timers and part timers can only be explained in terms of discrimination, once characteristics of the workers and of the jobs have been controlled for.

Bardasi and Gormick (2000) using LIS data for five western countries, find that in four of these countries, including Italy, wage penalties are associated with characteristics of workers and jobs, but also, in Canada, the US and Italy, with the "selection effect" which only in Germany can be assessed as "discrimination".

According to the predictions of the theory, observed full time part time wage differential is explained by several factors: in a dual labour market, segmented between individuals who prefer to work full or part time, individuals who prefer to work part time accept a lower wage for the privilege of doing so. However, for the wage difference to persist, it is necessary that full time and part time workers are not perfect substitutes for the firm, which would otherwise adjust the composition of its labour costs, in so doing equalising the wages of the two groups. Reasons of not perfect substitution between the two groups of workers can be attributed to two main set of factors: hydiosincratic characteristics of the workers, and different sources of costs for the firm. With respect to this last factor, other things equal, fixed labour costs make one hour worked by part timers dearer to the firm than one hour worked by full timers; therefore the firm employs part timers only if it can either reduce non monetary benefits to part timers, or if it can pay them a lower wage, or if it can implement a combination of both.

In this paper we investigate the observed wage gap between full timers and part timers in Italy, concentrating on women who are the preponderant part of part time employees in Italy. Following the authors quoted above, we specify a model which explains the wage equations in terms of personal and job characteristics, and we test it using with a two step approach adopting an extension of the Heckman selection model to six waves of SHIW data, from 1993 to 2004; we assess the wage gap with the Oaxaca decomposition technique. Our purpose is to explore how the situation has evolved over the years considered, taking into account that over the period considered considerable changes in labour market legislation took place in Italy, in the direction of creating o variety of atypical contracts, i.e. contracts in several aspects different from the "traditional" full time, permanent job. According to our findings, the observed wage penalty full time part time actually reveals a wage premium for part timers, which tends to decrease over the period considered.

Econometric Analysis

Our econometric analysis consists in a two-step approach adopting an extension of the Heckman selection model. Specifically, a generalized selection-correction technique is used applying the Lee's method (Lee, 1983), that models selectivity as a multinomial logit (MNL) model. Hence, in the first stage we estimate the labour market status choice (or selection equation) of working age women, applying a MNL model that allows the

allocation of individuals among out of labour force (*OLF*), unemployment (*U*), full-time work (*FT*) and part-time work (*PT*). In the second stage we estimate two wage equations, one for full-timers and one for part-timers, that include a correction factor to solve the problem of biased estimates due to non random selection of individuals into the employment categories. To calculate the magnitude and the sources of wage penalty between full-time and part-time workers we use the Oaxaca-Blinder decomposition (Oaxaca, 1973).

The MNL model consists in a reduced form approach in which both supply and demand side factors contribute to produce estimated coefficients. Let *j* index the *J* possible categories of the polychotomous response variable; it is convenient to think of these categories as alternatives and the response among alternatives even if the response does not strictly represents a choice. The multinomial probabilities associated with each response can be derived by assuming that an unobserved utility V_{ij}, for each agent *I* and choice *j*, is associated with each alternative, and that the alternative with the highest utility is selected.

The probability that the choice *j* is made is the following:

$$\theta_{ij} = \Pr(Y_i = j) = \Pr(V_{ij} > V_{ik} \ \forall j \neq k)_i \qquad (1)$$

the utility of choice *j* is modelled as:

$$V_{ij} = z_i \gamma_j + \varepsilon_{ij} \quad \forall j \quad \text{where } j = OLF, U, FT, PT \qquad (2)$$

where $z_i\gamma_j$ is called a linear predictor and ε_i is a random term. Specifically, z_i is a vector of explanatory variables including individual, family and job-related characteristics as well as a macro-economic indicator, that potentially explain labour market status choices, and γ_j is a vector of unknown parameters. The MNL model can be derived assuming that the ε_i's are independent and identically distributed with a type I extreme-value distribution for all *i*:

$$f(\varepsilon_{ij}) = \exp(-\varepsilon_{ij} - \exp(-\varepsilon_{ij})) \qquad (3)$$

In the setting of standard multinomial logit models the probability of *j*th alternative may be specified as follows:

$$\theta_{ij} = F(\eta_{ij}) = \frac{\exp(z_i' \gamma_j)}{1 + \sum_{j=2}^{J} \exp(z_i' \gamma_j)} \qquad (4)$$

where the $j = 1$ (the outcome OLF) is selected as base-category and the $\gamma_1 = 0$ condition is imposed for identification purposes.

The selection equation is estimated by maximum likelihood for each year under investigation. The estimated coefficients identify the relative effect of the covariates in the predicted probabilities with respect to a woman staying in the reference category. Finally, the Huber-White sandwich estimator is used to calculate standard errors.

The MNL model results are used to construct the selection correction term, the inverse Mills ratio, for individuals selecting into employment status. The inverse Mills ratio reads:

$$\hat{\lambda}_{ij} = -\frac{\phi\left\{\Phi^{-1}\left[F\left(\eta_{ij}\right)\right]\right\}}{F\left(\eta_{ij}\right)} \tag{5}$$

where φ and Φ denote, respectively, the probability density function and cumulative distribution function of the standard univariate normal distribution.

As anticipated, in the second stage of our analysis we estimate two log-wage equations for each year under analysis, one for full-timers and one for part-timers. To make simpler our notation we indicate log wage as *w*. The original log-wage equations read:

$$w_{ij} = x_i^{'}\beta_j + u_{ij} \qquad \text{where } j = FT \text{ or } PT \tag{6}$$

When the selection-correction term is included in the log-wage equations a consistent estimate of estimated coefficients is obtained. The inclusion of selection-term allow us to catch the difference between the wage received by individuals self-selected into the job *j* (the conditional wage) and the potential wage received by individuals randomly employed into the job *j* (the unconditional wage). The log-wage equation may be expressed as follows:

$$w_{ij} = x_i^{'}\beta_j + \left(\sigma_j \rho_j\right)\hat{\lambda}_{ij} + v_{ij} = x_i^{'}\beta_j + \delta_j \hat{\lambda}_{ij} + v_{ij} \tag{7}$$

The dependent variable (w_{ij}) is expressed in logarithmic hourly terms. The independent variables (x_i) of previous equations includes personal and job-related characteristics that potentially explain wage levels, while β_j is a vector of unknown parameters to be estimated. σ_j is the standard error of the utility function error term ε_{ij}, ρ_j is the correlation between u_j and η_j, δ_j is the lambda coefficient to be estimated ($\delta_j = \sigma_j \rho_j$) and v_j is a zero mean error. Robust standard errors are estimated.

To uncover the magnitude and sources of full-time/part-time differential we use the Oaxaca-Blinder procedure, assuming that part-timers are paid according to the full-time wage coefficients:

$$\underbrace{\overline{w^{FT}} - \overline{w^{PT}}}_{\text{wage gap}} = \underbrace{\sum_k \hat{\beta}_k^{FT}\left(\overline{x}_k^{FT} - \overline{x}_k^{PT}\right)}_{\text{explained}} + \underbrace{\underbrace{\left[\left(\hat{\beta}_0^{FT} - \hat{\beta}_0^{PT}\right) + \sum_k \overline{x}_k^{FT}\left(\hat{\beta}_k^{FT} - \hat{\beta}_k^{PT}\right)\right]}_{\text{discrimination}} + \underbrace{\left(\hat{\delta}^{FT}\overline{\lambda}^{FT} - \hat{\delta}^{PT}\overline{\lambda}^{PT}\right)}_{\text{selection}}}_{\text{adjusted differential}} \qquad (8)$$

The left-hand side of the specification above, shows the unadjusted differential between full-timers and part-timers, that is measured by the absolute difference between the average of the log-wage of full-time workers and the average of the log-wage of part-time workers. The right-hand side show its decomposition in three different sources: explained, discrimination and selection. The latter two components represent the adjusted wage differential. The explained term indicates the share of the wage gap attributable to differences in observable characteristics, and constitutes the "fair" differential. In other words, it informs us about the magnitude of wage penalty if both full-timers and part-timers were remunerated at the full-time wage level, so that the only differences between workers are imputable to individual characteristics. The discrimination term (or returns component, or price effect) is the part not explained by observable characteristics and captures the differential due to the employer or other economics reasons. It informs us how much individuals with part-time characteristics gain from being employed in a full-time rather than in a part-time job. Finally, the selection component is the part attributable to sample selection effect.

Data

The empirical analysis has been conducted using six waves (1993, 1995, 1998, 2000, 2002 and 2004) of the Survey of the Italian Households' Income and Wealth (SHIW). The SHIW is a nationally representative survey performed by the Bank of Italy. Table 1 provides information about the number of households and individuals composing the six waves of data analyzed. Our analysis focused on working age women, since part-time work men only represents a residual phenomena. Therefore only women aged 15-60 are included in our samples, excluding self-employed that are structurally different from salaried workers. Individuals with lack of information about one or more explanatory variables were excluded. With reference to wage analysis sub-samples, we clean the wage distributions

of outliers by dropping the top and the bottom 3rd percentile groups. Moreover, we also exclude "marginal" part-time workers, i.e. individuals working less than six hours per week. This selection leaves us six samples for women participation analysis and six sub-samples for employed (full-timers and part-timers) individuals, as showed by table 1.

In the labour market participation analysis we allow for four possible status: out of labour force, unemployed, full-timers and part-timers. As it is well known the Italian labour market is characterized by the highest non-activity rates for women and by very low employment rates among European countries. Table 2 and graph 1 illustrate the evolution of the labour market status of Italian women during the period 1993-2004, with respect to SHIW data. Except for the unemployed, other labour market statuses show very clear trends. It is important to note that the proportion of women out of the labour force, even though it represents the largest value among the possible statuses (over a dramatic fifty percent of working age women), is constantly decreasing, even if slightly, across the investigated period (with a very slight increase in the year 2000). Specifically, our data show that the proportion of women out of the labour force decreases from about 59% to 53%. Women in unemployment status present a non linear trend during 1993-2004, but the average level is decreased since 2000, in accordance with official Italian labour market statistics. Full-timers have also increased from 27% to 32% and the percentage of part-timers has doubled, raising from 3.41% to 6.94%. Consequently the employment rate among Italian women has increased from 30% to 40%. Among employed women, part-timers represent an increasing percentage, raising from 11% to almost 18%. Finally, the unemployment rate has strongly reduced, from 25% to 16%.

Descriptive statistics of the variables included in participation analysis are reported in table 3. It is interesting to note that changes in labour market status which take place during the analyzed period may be explained, at least partially, by the evolution of personal and family characteristics of working age women. For example, the reduction of the average number of children, the higher educational level and the positive trend of the business cycle, all favor labour market participation and the probability of employment. Variables introduced in MNL analysis all potentially explain labour market status. They include: age (controlled with a non linear specification), marital status, number of children aged 0-2, number of children aged 3-5, number of children aged 6-14, number of elderly people not receiving disability benefits, number of disabled people[1], four dummies controlling for area

[1] Disabled people are pragmatically defined, as individuals receiving disability benefit. For a discussion about the problems deriving from this definition see Parodi and Sciulli (2007).

of residence (north-west, north-east, centre and south-islands), four educational level dummies (no education or elementary level, middle school, professional or high school and university degree or more), not labour income level in the household, labour income in the household excluding personal labour earnings and, finally, an indicator of the business cycle, that we assume to be the yearly expected employment growth among women at regional level[2].

In the second step of our analysis we estimate wage penalty for part-timers with respect to full-time workers. As anticipated, the dependent variable of the wage equations is the logarithm of the hourly wage rate. However, the hourly wage is not available in SHIW data, hence we construct hourly wages using information about annual earning (net of taxes, but including overtime and benefits), worked months, and weekly hours of work (including overtime). In order to compare across the years observed monetary variables like wages, labour and not labour incomes, we transform lira values into euro values, applying the euro/liras exchange rate. To identify part-time workers we use information from SHIW data, in which individuals declare to be full-timers or part-timers. Explanatory variables introduced in the wage equations partially differ from explanatory variables used in the selection equation[3]. However, they always include age (defined in non linear way), marital status, four dummies for area of residence, and dummies controlling for educational level. In contrast with the participation equation, in the wage equations we add covariates for professional dummies (blue-collars, white-collars and managers), permanent job relationship (when the information is available), nine economic-sector dummies (public administration is the base-category), four firm-size dummies which refer to the public sector as well (0-4, 5-19, 20-99 and more than 100 employees), years of worker's experience introduced in a non linear way and calculated as the difference between the worker's age and the age in which the worker began her first job relationship. Finally, as explained, we control for selectivity introducing the inverse Mills ratio estimated by the MNL model. Descriptive statistics of the wage equation explanatory variables are reported in table 4, distinguishing between full-time workers and part-time workers. We highlight some preliminary and interesting facts: on average, part-timers are younger than full-timers; part-time is less used in southern regions; part timers are more

[2] We assume rational expectations, therefore expected employment growth at time t is the actual employment growth at time t+1.

[3] Obviously this difference is due to at least to two reasons. The first one is that phenomena are affected by different variables. The second one is for identification purposes: the selection equation needs to include at least one variable that only impacts individual's participation choice but not wage level.

likely to be blue-collar workers, work in agricultural-fishing sector and, overall, in commerce and domestic services, and more likely to work in smaller firms. Interestingly, during the analyzed years the percentage of workers with high educational level increases faster among part timers than among full-timers.

Table 5 show the observed log-wage evolutions across investigated years. Full-time wages are always larger than part-time wages, even if differentials displays a non-linear trend. Lowest absolute gap was found in 2000, year in which full-timers only gained 5% more than part-timers. However, the year 2000 seems to represent an outlier value, since other observed differentials always are larger than 11%, with a peak in the 1995 when wage differential was nearly 20%. However, non linear trend of full-time/ part-time wage gap seems to be explicable in terms of the part-time wage evolution side. In fact, on the one hand, full-time log-wage is increased quite constantly (2.7%-3.0%), considering the average incremental per year, over the analyzed period, with the exception of the 1998-2000 years. On the other hand, part-time log-wage evolution displays strong outliers for the period 1993-1995 and for the period 2000-2002, contributing to explain the non linear wage gap trend.

Results

Labour market participation

Estimation results of the MNL model are reported in table 6. Out of labour force status is the reference category, hence estimated coefficients of the others possible status must be interpreted as the relative difference in the effect of a specific covariate on one of the presented outcome with respect to the effect of the same covariate on the reference group. Personal characteristics all show the expected signs and most of the times they are statistically significant. The age variable affects in a non linear way the participation to the labour market, i.e. full-timers, part-timers and unemployed, since it show the typical inverted U shape effect. The magnitude of the effect is quite similar on employed women (both full-time and part-time), and nearly constant across the analyzed period. A smaller effect is found for women looking for a job, and the magnitude of the effect seems to be decreasing. To be married reduces the probability of participating to the labour market of Italian women. Reasonably, this result may be correlated with the home-care activities that characterize the life of women in Italy. However, to be more specific, we find that the effect is stronger for the unemployed with respect to employment status. Besides, on the

one hand we find that the negative effect has, on average, become smaller for part-timers, while on the other hand in the last year the negative effect has increased for full-timers. With reference to educational dummies estimates, we adopt compulsory schooling as the base-category dummy. On the one hand, lower education always reduces the probability of participating. The magnitude is stronger for full-time outcome. On the other hand, having higher level of education increases the probability of participating to the labour market. Most estimates are statistically significant. The positive effect is very strong for women with educational levels higher than compulsory schooling .

With regard to household characteristics, we control for the number of children (three variables), number of elderly persons and number of disabled people. We also control for possible effects from monetary variables (non-labour income and labour income, excluding the labour income of the investigated woman). Estimated coefficients, when significant, show the expected signs. The presence of children reduces the probability of participating to the labour market. This evidence is consistent with previous empirical evidence: child care is normally delegated to the females in the household if suitable caring services are lacking. A similar explanation may be proposed for the negative effect deriving from the presence of disabled people (overall among full-timers), with some aggravating circumstances. In fact disability is not predictable and it may also involve foregone incomes, overall among working age individuals (see Parodi and Sciulli, 2007). On the contrary, the number of elderly people not receiving disability benefits positively affects the probability of participating to the labour market. It may indicate the presence of a substitution effect in home-care activities between women in working age and capable elderly persons. It is also indicative of the fact that, when "substitutes" are available, whether deriving from public services, from private services or from "family solidarity", the probability of participating increases for Italian women. With reference to monetary variables, we always find a negative effect on the probability of participating to the labour market, indicating the presence of a significant income effect.

Macro-regional dummies also show well known characteristics of the Italian labour market, with some exception for the unemployment status, likely to be explained by specific characteristics of local labour markets. However, with regard to the probability of employment, we find a very clear and positive effect for women living in northern regions and a strong negative effect for women living in southern regions. This evidence represents the other side of the coin, with respect to the "substitution" effect in home-care activities, and consists in the discouraged worker type of behaviour, i.e. the negative

demand-driven effect that characterizes southern labour markets. Besides, we find that this negative effect seems to be more important for part-timers. Finally, in our MNL model analysis we introduce a macro-economic indicator, i.e. the expected employment growth at regional level (rational expectations are assumed), in order to avoid correlation problems with other covariates. Even though we find some exception, significant estimates show the expected positive signs, meaning that the probability of finding a job increases with the upswing of the business cycle .

Wage Equations

Table 7 reports wage equation estimates obtained using OLS regression model and robust standard errors. Estimated inverse Mills ratio was introduced to control for selectivity. We control for personal, job related, firm and demand side effects. When significant, personal characteristics show the expected signs. Age variable affects with an inverted U effect, but the coefficients are statistically significant in the full-time log-wage equations only in the years 1993, 1995 and 2002. We find that one year more increase the log-wage by 2%-3%; estimates are never significant for part-timers. To be married only affects in a significant way the part-time log-wage equation in two years, moreover coefficients show an unclear effect, since we find a negative effect in 1995 and a positive effect in 2002. Macro-area dummies highlight the usual duality existing in the Italian labour market, i.e. higher wages in northern regions with respect to central regions (our base-category dummy) and lower wages in the southern regions. Across the waves, and when estimates are significant, we find some evidences of an increasing duality among regions. Moreover, the duality seems to be higher for part-timers. To be lower educated reduces log-wages, while higher education increases them. Full-timers women with a bachelor, a master or a Ph.D. are paid between 30% and 50% more than middle educated ones. However we find clear evidences that high education returns are decreasing, and that wage differentials among full-timers explained by educational levels are compressing. Among part-time workers, educational levels are less likely significant, but when they are, a similar trend of full-timers is found. However, we highlight that in 2004 higher educational level show the highest positive effect on part-time wages with respect to other waves (+35% for women with B.A. or more education and +15% for women with compulsory schooling). Moreover we highlight that, at least for the highest educational level, full-timers get a higher return to their human capital, even if return differentials seems to show a decreasing trend.

Blue-collar women workers have lower earnings than white collars women workers (our base-category); moreover, across the years a non-linear worsening of the position of full-

time blue-collars is observed, i.e. in 1993 they are paid 9% less than white-collars and in 2004 16% less. On the contrary, full-time managers show an increasing trend of the positive differentials with respect to the base-category in the latest years (+5% in 2000 and +9% in 2004). Both findings show increasing inequality at professional level for full-timers, as widely debated in recent years. However, we also find a non clear trend among part-timers, since in the latest years negative effect for blue-collars seems to be reduced. Finally, negative effects for blue-collars seem to be higher for full-timers than part-timers. To be employed with a permanent job (the information is only available since 2000) increases log-wages, in accordance with previous studies on wage differential between permanent and temporary workers (see Picchio, 2006, for the Italian case). Estimates are always significant among full-timers, while only in 2004 they are significant for part-time workers. Years of experience was introduced in a non linear way. The coefficients, when significant, affect log-wages in the expected way, i.e. positively but with a decreasing rate. Among full-timers, one year more of job experience increases by 1.0%-1.8% log-wages. Among part-timers we find a stronger marginal effect, since it increases by 1.8%-2.6% the dependent variable. The raising effect suggests the presence of a positive effect of human capital accumulation from job experience.

Expected signs are found with reference to sector and firm variables, that were introduced to describe the demand-side effects. Public sector is the base-category dummy among economic sector variables. Full-time women not working in the public sector display lower log-wages than women employed in public administration (with the exception of women employed in credit-insurance sector in the year 1998). Specifically, on average, stronger negative effects are found for the sectors of domestic services, business services, and agriculture and fishing (the magnitude of the negative effect is, on average, larger than 10%). Also women employed in industry and building sectors show a quite strong negative effect. Moreover, the disadvantage of industry workers seems to have increased in the latest years. Among part-timers, sector differences do not display a clear trend, since few coefficients are significant and their magnitude seems to be rather erratic. The firm size effect is caught introducing four dummies (firm size larger than 100 and public enterprises are the base-category), and it displays a negative relationship between log-wages and firm size. Women (full-timers and part-timers) working in smallest firm size display the strongest negative effect, that is included between 14% and 30% for full-time jobs and between 10% and 30% among part-timers. An intermediate position in terms of loss-gains is found for women employed in firms with 5 to 19 employees??? The negative effect is included between 11% and 21% among full-timers and between 15%

and 28% among part-timers. Employment in middle-size firms (20-99 employees) with a full-time job, reduces log-wages between 4% and 12%. No significant effect is found for part-time workers. Both evidences arising from economic sector and firm size variables may be explained, at least partially, in terms of unionization, i.e. workers employed in the public sector and in large firms are more likely to be enrolled in unions, and this is likely to imply higher wages. Finally, the selectivity variable (namely Lambda or inverse Mills ratio) that controls for selection bias always displays a positive sign even if they are significant only in 1993, 1995 and 2002 for full-timers and in 2002 for part-timers[4]. The positive sign of the lambda variable indicates a positive correlation between the error terms of selection and outcome equations[5]; this could suggest that unobservable variables that increase the utility deriving from one possible participation status also increase the log-wage.

Oaxaca Decomposition

Table 8 and graph 2 inform us about the evolution and sources of part-timers wage gaps, that is the focus of our paper. The first row of table 8 provide the absolute values of the magnitude of the part-time wage penalty (unadjusted differential), with respect to full-time wage. As explained in the data section, wage gap displays a non linear trend even if, by average, the evolution seems to be slightly decreasing, i.e. part-timers disadvantage in wage terms is slightly reducing over the observed period. Oaxaca decomposition procedure allow us to uncover the components of wage differential, i.e. explained component, discrimination component and selection component. One of the more interesting results, as the graph 2 clearly show, is that part-timers wage gap is over-explained by observable characteristics i.e., accordingly to observable characteristics, part-timers, do not only receive a fair wage, but they are over-paid with respect to full-timers[6]. However, we highlight that the "over-payment" displays a decreasing trend, overall in the last years. Moreover, and more interestingly, the explained wage penalty, i.e. the fair penalty or the penalty that part-timers should "deserve" accordingly to their observable characteristics, also show a decreasing evolution. We propose two explanations of this finding . The first one consists in the change of characteristics of part-timers with respect to full-timers; for example, in latest years, the proportion of women with high educational level has increased more among part-timers than among full-timers. The second one is that, over the analyzed period, a relative reduction of full-timers return has

[4] The not significant effect from the lambda variable indicates that no selection bias problem exists.
[5] The equivalence between lambda and correlation term signs derives from $\sigma_\varepsilon>0$ by definition.
[6] Similar results are found if we consider the part-time/full-time wage gap, i.e. assuming that full-timers are paid according to the part-time wage coefficients.

been observed; for example, once more, higher education returns for full-timers have decreased in the latest years.

We find that the joint effect of discrimination component and selection component (the adjusted differential) takes a negative sign, contributing to reduce the wage penalty for part-timers, i.e. a part-time wage premium exists. The part-time wage premium displays a non linear trend, but in sum the magnitude of adjusted differential is rather small. We highlight that discrimination and selection components display opposite and quite alternating pattern, and very similar absolute values[7] with a compensative total effect. However, the discrimination component is more likely to display negative values decreasing in absolute magnitude. On the contrary, the selection component is more likely to display positive values of the decreasing magnitude. Therefore, with the exception of the year 1993 and of the year 2002, when strong outliers are observed[8], non-explained components show a compressing trend, even if discrimination seems to be slightly stronger than selection. Evidences on the premium nature of the discrimination component indicate that, on average, part-time workers get a higher relative return to their characteristics. Alternatively, we can interpret it as evidence that workers with part-time characteristics and employed with full-time relationships are under-paid, probably, on the basis of employees' decisions. The selection component identifies the distance between the advantage of full-timers to be self-selected into a specific job, even if randomly selected, with respect to the same advantage of part-timers. The full-time selection component is rather stable[9], while the part-time selection components display a quite "sclerotic" pattern. A positive sign of this differential's source may indicate that to be selected into full-time job is more profitable than to be selected into a part-time job. Nevertheless, because of the "sclerotic" pattern of part-time selection component, our result may be also explained in terms of greater profitability of being randomly selected into a part-time job rather than of being self-selected.

[7] The unique exception is the year 2000, when both components were negative and wage gap took the smallest value.

[8] The outlier value of discrimination component found in the year 2002, may explained in terms of the change in some estimated coefficient. For example the constant term is lower for part-timers than full-timers, differently from other waves.

[9] Results about this finding are available on request.

Concluding Remarks

Our analysis shows that, over the period considered, the mutual relationship between full time and part time wages has maintained the same sign, even though it has altered quantitatively. A wage premium for part timers is observed throughout the period considered: given similar personal and job characteristics, part timers are paid a higher rate. However, this premium is decreasing over time. Two kinds of reflections are called for, one on the reason why the premium appears to be decreasing, the other on the very nature of a premium.

The decreasing premium over time can be explained by two factors, i.e. characteristics of part time workers, and different rewards to education. The number of part timers with education above compulsory schooling has increased over the years; on the other hand, the financial rewards to education have decreased over time; the two effects, combined, explain the tendency of the wage premium to disappear.

The notion of a premium is in contrast with the prediction of the theory outlined in the introduction, according to which fixed costs make firms hire part timers only if their salaries and /or non monetary compensations are lower than full timers. However, the part time premium can be explained by two sorts of considerations: from an institutional point of view, the premium can be seen as the tendency of the overall economic system to settle for a universal minimum wage, which has been much under discussion in Italy in recent years, which would be above what part timers ought to paid in "fair" terms . From a human capital point of view, the premium can be interpreted as a compensation for a lack of career mobility associated with part time; because of the short number of hours worked by part timers, firms are not inclined to invest in this group of employees, who have therefore no prospect of improving their qualifications in the labour market, even though the demand for qualified workers continues to increases with respect to that for not qualified workers. For the typical part timer there is no difference between the short term and the long term horizon, and the part time premium can be interpreted as a compensation for this.

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TABLES

Table 1. Sample compositions

	1993	1995	1998	2000	2002	2004
Households	8089	8135	7147	8001	8011	8012
Individuals	24013	23924	20901	22268	21148	20581
Participation Equation	7126	7041	6250	6431	6000	5848
Wage Equations	2175	2244	2122	2309	2260	2298

Source: our elaboration using SHIW data

Table 2. Evolution of the labour market status of Women

Year	Full-Time (FT)	Part-Time (PT)	Unemployed (U)	Out Labour Force (OLF)	Labour Force (LF)	Employed (E)
1993	1932	243	720	4231	2895	2175
1995	1943	301	674	4123	2918	2244
1998	1803	319	674	3454	2796	2122
2000	1899	410	496	3626	2805	2309
2002	1879	381	486	3254	2746	2260
2004	1892	406	440	3110	2738	2298

Year	Full-Time (FT)	Part-Time (PT)	Unemployed (U)	Out Labour Force (OLF)	Unemployment Rate	Employment rate	PT/LF	PT/E
1993	27.11%	3.41%	10.10%	59.37%	24.87%	30.52%	8.39%	11.17%
1995	27.60%	4.27%	9.57%	58.56%	23.10%	31.87%	10.32%	13.41%
1998	28.85%	5.10%	10.78%	55.26%	24.11%	33.95%	11.41%	15.03%
2000	29.53%	6.38%	7.71%	56.38%	17.68%	35.90%	14.62%	17.76%
2002	31.32%	6.35%	8.10%	54.23%	17.70%	37.67%	13.87%	16.86%
2004	32.35%	6.94%	7.52%	53.18%	16.07%	39.30%	14.83%	17.67%

Source: our elaboration using SHIW data

Table 3. Participation analysis: descriptive statistics

	1993		1995		1998		2000		2002		2004	
	mean	*s.d.*	mean	*s.d.*	mean	*s.d.*	mean	*s.d.*	mean	*s.d.*	mean	*s.d.*
Age	36.737	*13.459*	37.180	*13.410*	37.652	*13.150*	38.287	*13.028*	38.792	*13.087*	39.040	*13.144*
Married	0.588	*0.492*	0.596	*0.491*	0.600	*0.490*	0.602	*0.489*	0.593	*0.491*	0.584	*0.493*
Nchild 0-2	0.078	*0.280*	0.074	*0.278*	0.073	*0.280*	0.077	*0.283*	0.066	*0.264*	0.070	*0.268*
Nchild 3-5	0.091	*0.305*	0.091	*0.304*	0.084	*0.295*	0.084	*0.293*	0.076	*0.281*	0.074	*0.277*
Nchild 6-14	0.349	*0.640*	0.351	*0.635*	0.371	*0.658*	0.343	*0.630*	0.313	*0.607*	0.314	*0.614*
Nelderly	0.247	*0.561*	0.253	*0.578*	0.209	*0.519*	0.218	*0.539*	0.249	*0.566*	0.228	*0.537*
Ndisabled	0.072	*0.289*	0.081	*0.305*	0.068	*0.282*	0.061	*0.267*	0.052	*0.244*	0.032	*0.181*
North-west	0.219	*0.414*	0.212	*0.409*	0.211	*0.408*	0.215	*0.411*	0.233	*0.422*	0.221	*0.415*
North-east	0.176	*0.381*	0.192	*0.394*	0.164	*0.371*	0.193	*0.394*	0.189	*0.392*	0.204	*0.403*
Centre	0.207	*0.405*	0.208	*0.406*	0.210	*0.407*	0.195	*0.396*	0.200	*0.400*	0.196	*0.397*
South-Islands	0.397	*0.489*	0.388	*0.487*	0.414	*0.493*	0.398	*0.489*	0.378	*0.485*	0.379	*0.485*
Education 0-5	0.278	*0.448*	0.265	*0.442*	0.204	*0.403*	0.199	*0.399*	0.171	*0.377*	0.151	*0.358*
Education 8	0.346	*0.476*	0.316	*0.465*	0.316	*0.465*	0.334	*0.472*	0.348	*0.476*	0.359	*0.480*
Education 11-13	0.317	*0.465*	0.354	*0.478*	0.392	*0.488*	0.380	*0.486*	0.394	*0.489*	0.392	*0.488*
Education over 13	0.060	*0.237*	0.065	*0.246*	0.088	*0.283*	0.086	*0.280*	0.087	*0.282*	0.097	*0.296*
Non labour income	8709.89	*12327.52*	9771.16	*13442.40*	10537.03	*12668.98*	10627.25	*12458.38*	11147.40	*12727.67*	11519.24	*12874.57*
Labour income	12545.55	*11211.44*	13088.86	*13799.09*	14153.25	*12812.11*	15769.98	*16443.50*	16545.03	*16372.96*	17134.67	*21969.68*
Expect Empl Growth	-0.015	*0.019*	0.018	*0.022*	0.027	*0.024*	0.045	*0.024*	0.013	*0.040*	0.021	*0.035*

Source: our elaboration using SHIW data

Table 4. Wage equations: descriptive statistics

	1993				1995				1998				2000				2002				2004			
	Full-time		Part-time		Full-time		Part-time		Full-time		Part-time		Full-time		Part-time		Full-time		Part-time		Full-time		Part-time	
	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
Age	37.12	10.1	35.64	9.6	37.52	10.1	36.98	9.4	38.81	10.0	36.66	9.7	39.02	10.0	37.07	9.5	39.79	10.2	38.43	9.2	40.38	10.0	39.67	8.9
Married	0.61	0.5	0.65	0.5	0.62	0.5	0.68	0.5	0.64	0.5	0.65	0.5	0.61	0.5	0.66	0.5	0.57	0.5	0.70	0.5	0.56	0.5	0.73	0.4
North-West	0.28	0.4	0.32	0.5	0.27	0.4	0.24	0.4	0.29	0.5	0.24	0.4	0.29	0.5	0.22	0.4	0.32	0.5	0.23	0.4	0.29	0.5	0.26	0.4
North-East	0.23	0.4	0.25	0.4	0.26	0.4	0.31	0.5	0.23	0.4	0.28	0.5	0.26	0.4	0.31	0.5	0.24	0.4	0.33	0.5	0.26	0.4	0.33	0.5
Centre	0.24	0.4	0.27	0.4	0.22	0.4	0.24	0.4	0.23	0.4	0.27	0.4	0.22	0.4	0.27	0.4	0.22	0.4	0.25	0.4	0.23	0.4	0.23	0.4
South-Islands	0.26	0.4	0.16	0.4	0.25	0.4	0.21	0.4	0.25	0.4	0.20	0.4	0.22	0.4	0.20	0.4	0.22	0.4	0.19	0.4	0.22	0.4	0.18	0.4
Education 0-5	0.11	0.3	0.22	0.4	0.09	0.3	0.19	0.4	0.08	0.3	0.11	0.3	0.06	0.2	0.13	0.3	0.06	0.2	0.09	0.3	0.05	0.2	0.09	0.3
Education 8	0.27	0.4	0.37	0.5	0.24	0.4	0.37	0.5	0.20	0.4	0.31	0.5	0.22	0.4	0.32	0.5	0.24	0.4	0.32	0.5	0.25	0.4	0.33	0.5
Education 11-13	0.47	0.5	0.37	0.5	0.51	0.5	0.41	0.5	0.52	0.5	0.49	0.5	0.53	0.5	0.46	0.5	0.53	0.5	0.51	0.5	0.54	0.5	0.49	0.5
Education over 13	0.15	0.4	0.05	0.2	0.15	0.4	0.03	0.2	0.20	0.4	0.09	0.3	0.19	0.4	0.10	0.3	0.18	0.4	0.08	0.3	0.17	0.4	0.09	0.3
Blue-collars	0.31	0.5	0.52	0.5	0.34	0.5	0.55	0.5	0.31	0.5	0.50	0.5	0.31	0.5	0.52	0.5	0.32	0.5	0.50	0.5	0.32	0.5	0.52	0.5
White-collars	0.65	0.5	0.46	0.5	0.60	0.5	0.40	0.5	0.64	0.5	0.49	0.5	0.61	0.5	0.45	0.5	0.63	0.5	0.48	0.5	0.62	0.5	0.46	0.5
Manager	0.04	0.2	0.02	0.1	0.06	0.2	0.04	0.2	0.06	0.2	0.02	0.1	0.08	0.3	0.03	0.2	0.05	0.2	0.02	0.1	0.06	0.2	0.02	0.1
Perm. Contract	-	-	-	-	-	-	-	-	-	-	-	-	0.92	0.3	0.72	0.4	0.93	0.3	0.79	0.4	0.91	0.3	0.73	0.4
Agriculture-Fishing	0.02	0.2	0.07	0.3	0.02	0.1	0.04	0.2	0.03	0.2	0.03	0.2	0.02	0.1	0.06	0.2	0.03	0.2	0.05	0.2	0.03	0.2	0.05	0.2
Industry	0.21	0.4	0.18	0.4	0.24	0.4	0.19	0.4	0.24	0.4	0.18	0.4	0.23	0.4	0.21	0.4	0.23	0.4	0.17	0.4	0.21	0.4	0.17	0.4
Building	0.01	0.1	0.01	0.1	0.01	0.1	0.02	0.1	0.01	0.1	0.01	0.1	0.01	0.1	0.01	0.1	0.01	0.1	0.01	0.1	0.02	0.1	0.01	0.1
Commerce	0.11	0.3	0.25	0.4	0.10	0.3	0.24	0.4	0.09	0.3	0.23	0.4	0.12	0.3	0.24	0.4	0.13	0.3	0.22	0.4	0.15	0.4	0.22	0.4
Transp.-Communic.	0.01	0.1	0.00	0.1	0.01	0.1	0.02	0.1	0.02	0.1	0.03	0.2	0.02	0.1	0.02	0.1	0.02	0.1	0.03	0.2	0.02	0.1	0.02	0.1
Credit-Insurance	0.04	0.2	0.02	0.2	0.03	0.2	0.03	0.2	0.04	0.2	0.03	0.2	0.05	0.2	0.02	0.1	0.04	0.2	0.04	0.2	0.04	0.2	0.05	0.2
Business services	0.04	0.2	0.05	0.2	0.03	0.2	0.09	0.3	0.04	0.2	0.09	0.3	0.05	0.2	0.06	0.2	0.05	0.2	0.07	0.2	0.05	0.2	0.05	0.2
Domestic services	0.05	0.2	0.23	0.4	0.05	0.2	0.28	0.4	0.03	0.2	0.18	0.4	0.05	0.2	0.19	0.4	0.06	0.2	0.22	0.4	0.05	0.2	0.18	0.4
Public administr.	0.51	0.5	0.18	0.4	0.52	0.5	0.10	0.3	0.51	0.5	0.22	0.4	0.46	0.5	0.19	0.4	0.44	0.5	0.19	0.4	0.43	0.5	0.24	0.4
Firm-size 0-4	0.09	0.3	0.30	0.5	0.09	0.3	0.33	0.5	0.07	0.3	0.33	0.5	0.08	0.3	0.26	0.4	0.10	0.3	0.27	0.4	0.12	0.3	0.23	0.4
Firm-size 5-19	0.17	0.4	0.27	0.4	0.15	0.4	0.28	0.4	0.18	0.4	0.23	0.4	0.19	0.4	0.27	0.4	0.17	0.4	0.28	0.4	0.20	0.4	0.27	0.4
Firm-size 20-99	0.13	0.3	0.11	0.3	0.11	0.3	0.13	0.3	0.19	0.4	0.16	0.4	0.19	0.4	0.17	0.4	0.20	0.4	0.20	0.4	0.20	0.4	0.22	0.4
Firm-size over 100	0.61	0.5	0.32	0.5	0.65	0.5	0.26	0.4	0.56	0.5	0.29	0.5	0.55	0.5	0.29	0.5	0.52	0.5	0.26	0.4	0.48	0.5	0.28	0.4
Experience	16.06	10.3	15.44	10.4	17.07	10.4	18.08	11.3	17.66	10.5	16.12	11.1	17.85	10.7	16.45	10.8	18.62	10.9	17.67	10.7	18.84	10.9	18.94	10.5
Lambda	0.92	0.4	2.03	0.3	0.92	0.4	1.96	0.3	0.90	0.4	1.90	0.3	0.89	0.4	1.81	0.3	0.87	0.4	1.79	0.3	0.84	0.4	1.73	0.3

Source: our elaboration using SHIW data

Table 5. Log-wage evolutions

	1993	1995	1998	2000	2002	2004
wFT	1.7108	1.7670	1.8523	1.8766	1.9297	1.9858
wPT	1.5814	1.5915	1.7353	1.8271	1.7811	1.8794
Δw (%)	13.82%	19.19%	12.42%	5.07%	16.02%	11.22%
ΔwFT (%)	-	5.78%	8.90%	2.45%	5.45%	5.77%
ΔwPT (%)	-	1.02%	15.46%	9.62%	-4.50%	10.34%
average ΔwFT (%)	-	2.89%	2.97%	1.23%	2.73%	2.89%
average ΔwPT (%)	-	0.51%	5.15%	4.81%	-2.25%	5.17%

Source: our elaboration using SHIW data

Table 6. Participation analysis results

	1993			1995			1998			2000			2002			2004		
Covariates	b	R.s.e.		b	R.s.e.		b	R.s.e.		b	R.s.e.		b	R.s.e.		b	R.s.e.	
									Full-time									
Age	0.570	0.024	***	0.572	0.024	***	0.545	0.025	***	0.521	0.024	***	0.540	0.025	***	0.625	0.027	***
Age square	-0.007	0.000	***	-0.007	0.000	***	-0.007	0.000	***	-0.006	0.000	***	-0.007	0.000	***	-0.008	0.000	***
Married	-0.812	0.101	***	-0.878	0.099	***	-0.778	0.103	***	-0.762	0.099	***	-1.082	0.105	***	-1.115	0.114	***
Nchild 0-2	-0.445	0.120	***	-0.221	0.119	*	-0.174	0.128		-0.447	0.127	***	-0.253	0.148	*	-0.191	0.145	
Nchild 3-5	-0.196	0.112	*	-0.091	0.104		-0.333	0.117	***	-0.302	0.116	***	-0.304	0.127	**	-0.619	0.138	***
Nchild 6-14	-0.433	0.056	***	-0.365	0.055	***	-0.215	0.056	***	-0.292	0.059	***	-0.424	0.063	***	-0.439	0.066	***
Nelderly	0.168	0.069	**	0.177	0.067	***	0.306	0.076	***	0.145	0.076	*	0.132	0.080	*	0.044	0.086	
Ndisabled	-0.569	0.164	***	-0.283	0.132	**	-0.126	0.159		-0.293	0.159	*	-0.492	0.164	***	-0.831	0.256	***
North-west	0.184	0.098	*	0.362	0.101	***	0.435	0.106	***	0.264	0.101	***	0.381	0.105	***	0.099	0.106	
North-east	0.337	0.102	***	0.388	0.103	***	0.558	0.115	***	0.453	0.108	***	0.394	0.111	***	0.115	0.109	
South-Islands	-0.855	0.092	***	-0.615	0.101	***	-0.799	0.116	***	-1.176	0.101	***	-1.095	0.101	***	-1.236	0.113	***
Education 0-5	-1.199	0.101	***	-1.201	0.105	***	-0.829	0.119	***	-0.965	0.123	***	-0.971	0.130	***	-1.100	0.138	***
Education 11-13	1.050	0.081	***	1.019	0.082	***	1.234	0.088	***	1.166	0.083	***	1.039	0.084	***	1.139	0.090	***
Education over 13	2.606	0.183	***	2.273	0.158	***	2.699	0.153	***	2.534	0.154	***	2.431	0.160	***	2.031	0.152	***
Non labour income	-3.3E-05	4.4E-06	***	-2.8E-05	4.3E-06	***	-2.8E-05	4.2E-06	***	-2.1E-05	4.9E-06	***	-3.3E-05	4.5E-06	***	-3.1E-05	4.4E-06	***
Labour income	-2.9E-05	3.5E-06	***	-2.2E-05	3.4E-06	***	-2.1E-05	3.2E-06	***	-1.6E-05	2.6E-06	***	-1.5E-05	3.1E-06	***	-1.5E-05	6.7E-06	**
EEG	-0.335	1.858		7.238	1.859	***	2.532	1.928		4.111	1.648	**	-1.549	0.914	*	2.501	1.176	**
Constant	-9.603	0.426	***	-10.239	0.439	***	-10.116	0.452	***	-9.578	0.443	***	-9.515	0.466	***	-11.037	0.551	***
									Part-time									
Age	0.539	0.049	***	0.632	0.050	***	0.559	0.047	***	0.531	0.043	***	0.586	0.047	***	0.646	0.048	***
Age square	-0.007	0.001	***	-0.008	0.001	***	-0.007	0.001	***	-0.007	0.001	***	-0.008	0.001	***	-0.008	0.001	***
Married	-0.817	0.196	***	-0.719	0.188	***	-0.703	0.186	***	-0.619	0.161	***	-0.485	0.177	***	-0.641	0.170	***
Nchild 0-2	-0.139	0.213		0.077	0.191		0.054	0.194		-0.091	0.158		-0.118	0.187		0.184	0.190	
Nchild 3-5	0.197	0.194		0.103	0.172		0.106	0.173		-0.061	0.163		0.049	0.162		-0.211	0.184	
Nchild 6-14	-0.020	0.106		-0.214	0.104	**	-0.253	0.097	***	-0.076	0.086		-0.161	0.085	*	-0.028	0.085	
Nelderly	0.245	0.142	*	0.153	0.115		0.099	0.144		0.081	0.120		0.097	0.122		-0.233	0.153	
Ndisabled	-0.502	0.348		-0.408	0.275		-0.238	0.246		-0.066	0.222		-0.569	0.304	*	-0.362	0.414	
North-west	0.348	0.189	*	0.175	0.183		0.088	0.175		-0.212	0.160		-0.137	0.170		0.004	0.163	
North-east	0.411	0.203	**	0.512	0.173	***	0.597	0.177	***	0.450	0.153	***	0.535	0.158	***	0.382	0.160	**
South-Islands	-1.586	0.215	***	-0.945	0.214	***	-1.112	0.203	***	-1.561	0.161	***	-1.442	0.173	***	-1.450	0.187	***
Education 0-5	-0.389	0.192	**	-0.626	0.180	***	-0.535	0.208	***	-0.153	0.180		-0.322	0.209		-0.456	0.208	**
Education 11-13	0.513	0.168	***	0.315	0.149	**	0.578	0.144	***	0.584	0.129	***	0.637	0.131	***	0.681	0.131	***
Education over 13	1.218	0.357	***	0.284	0.355		1.409	0.261	***	1.539	0.230	***	1.264	0.251	***	0.993	0.232	***
Non labour income	-4.7E-05	1.2E-05	***	-2.2E-05	7.9E-06	***	-2.0E-05	7.0E-06	***	-2.6E-05	6.3E-06	***	-2.3E-05	5.9E-06	***	-2.6E-05	6.7E-06	***
Labour income	-3.2E-05	8.0E-06	***	-2.6E-05	6.8E-06	***	-2.1E-05	6.6E-06	***	-1.2E-05	4.5E-06	***	-1.3E-05	4.8E-06	***	-6.8E-06	4.9E-06	
EEG	-9.653	3.884	**	7.014	4.033	*	7.144	3.408	**	5.854	2.814	**	-2.073	1.573		1.360	1.997	
Constant	-10.512	0.845	***	-12.390	0.912	***	-11.107	0.827	***	-10.343	0.790	***	-11.412	0.873	***	-12.860	0.918	***
									Unemployed									
Age	0.423	0.038	***	0.386	0.035	***	0.347	0.031	***	0.320	0.041	***	0.363	0.040	***	0.298	0.034	***
Age square	-0.007	0.001	***	-0.006	0.001	***	-0.005	0.000	***	-0.005	0.001	***	-0.006	0.001	***	-0.004	0.000	***
Married	-2.032	0.171	***	-1.531	0.169	***	-1.463	0.143	***	-1.641	0.179	***	-1.922	0.182	***	-1.639	0.182	***
Nchild 0-2	-0.190	0.189		-0.491	0.195	**	0.021	0.159		-0.339	0.209		-0.062	0.216		0.095	0.216	
Nchild 3-5	-0.364	0.174	**	-0.139	0.172		-0.388	0.179	**	-0.414	0.211	**	-0.186	0.208		-0.550	0.242	**
Nchild 6-14	-0.338	0.086	***	-0.370	0.087	***	-0.193	0.080	**	-0.292	0.102	***	-0.483	0.108	***	-0.281	0.105	***
Nelderly	0.326	0.095	***	0.374	0.084	***	0.268	0.094	***	0.317	0.105	***	0.222	0.113	**	0.161	0.104	
Ndisabled	-0.210	0.156		-0.203	0.162		0.173	0.142		-0.150	0.193		-0.251	0.224		-0.116	0.293	
North-west	0.200	0.153		0.041	0.154		-0.223	0.161		-0.411	0.209	**	0.069	0.188		0.003	0.193	
North-east	-0.004	0.172		-0.627	0.184	***	-0.873	0.217	***	-0.285	0.214		-0.586	0.229	***	-0.562	0.217	***
South-Islands	0.377	0.128	***	0.160	0.135		0.165	0.141		0.287	0.147	*	0.200	0.149		-0.015	0.165	
Education 0-5	-0.404	0.167	**	-0.317	0.180	*	-0.345	0.175	**	-0.164	0.217		-0.087	0.227		-0.672	0.239	***
Education 11-13	0.002	0.110		0.166	0.108		0.181	0.107	*	0.377	0.127	***	0.100	0.129		0.208	0.132	
Education over 13	2.322	0.251	***	1.772	0.223	***	1.699	0.206	***	1.957	0.234	***	1.813	0.225	***	1.443	0.199	***
Non labour income	-5.1E-05	1.0E-05	***	-3.8E-05	6.4E-06	***	-1.9E-05	5.5E-06	***	-2.8E-05	7.3E-06	***	-4.6E-05	8.2E-06	***	-2.0E-05	6.1E-06	***
Labour income	-3.4E-05	5.5E-06	***	-2.5E-05	5.4E-06	***	-3.0E-05	4.7E-06	***	-3.0E-05	5.5E-06	***	-3.1E-05	5.2E-06	***	-2.8E-05	5.1E-06	***
EEG	2.949	2.247		-0.754	2.242		1.134	2.085		0.626	1.935		2.091	1.474		-1.451	1.528	
Constant	-5.791	0.542	***	-5.564	0.521	***	-5.325	0.496	***	-5.097	0.635	***	-5.311	0.623	***	-4.816	0.568	***
Log pseudo-likelih	-5416.37			-5561.14			-5271.71			-5226.62			-4930.85			-4833.45		
Pseudo R2	0.2476			0.2317			0.2178			0.2307			0.2349			0.2352		
Observations	7126			7041			6250			6431			6000			5848		

Source: our elaboration using SHIW data

Table 7. Wage equation results

	1993			1995			1998			2000			2002			2004		
Covariates	b	R.s.e.		b	R.s.e.		b	R.s.e.		b	R.s.e.		b	R.s.e.		b	R.s.e.	
								Full-time										
Age	0.027	0.011	**	0.020	0.011	*	0.004	0.011		0.012	0.010		0.020	0.010	*	0.004	0.009	
Age square	0.000	0.000	*	0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000		0.000	0.000	
Married	0.026	0.019		0.018	0.019		0.023	0.018		0.025	0.017		-0.014	0.021		-0.001	0.018	
North-west	0.032	0.016	**	0.048	0.019	***	0.062	0.018	***	0.017	0.017		0.041	0.020	**	-0.012	0.016	
North-east	0.044	0.018	**	0.031	0.018	*	0.030	0.019		0.029	0.017	*	-0.004	0.019		-0.004	0.017	
South-Islands	0.000	0.023		-0.019	0.023		0.000	0.024		-0.041	0.026		-0.050	0.026	**	-0.081	0.024	***
Education 0-5	-0.164	0.029	***	-0.115	0.034	***	-0.108	0.033	***	-0.034	0.036		-0.115	0.037	***	-0.062	0.031	**
Education 11-13	0.195	0.023	***	0.157	0.024	***	0.130	0.026	***	0.104	0.025	***	0.111	0.023	***	0.083	0.020	***
Education over 13	0.516	0.034	***	0.426	0.038	***	0.372	0.041	***	0.282	0.040	***	0.384	0.040	***	0.313	0.031	***
Blue-collars	-0.091	0.018	***	-0.143	0.019	***	-0.101	0.018	***	-0.149	0.016	***	-0.131	0.017	***	-0.164	0.017	***
Manager	-0.026	0.032		0.000	0.025		0.017	0.031		0.050	0.025	**	0.069	0.040	*	0.088	0.031	***
Permanent Contract	-	-		-	-		-	-		0.089	0.029	***	0.089	0.030	***	0.057	0.030	*
Agriculture-Fishing	-0.138	0.052	***	-0.095	0.068		0.008	0.055		-0.015	0.054		-0.073	0.042	*	-0.091	0.045	**
Industry	-0.076	0.020	***	-0.077	0.019	***	-0.064	0.019	***	-0.083	0.019	***	-0.032	0.022		-0.105	0.019	***
Building	-0.116	0.048	**	-0.024	0.080		-0.150	0.051	***	-0.096	0.042	**	-0.040	0.047		-0.094	0.059	
Commerce	-0.010	0.025		-0.028	0.029		-0.050	0.023	**	-0.082	0.022	***	-0.023	0.026		-0.076	0.021	***
Transport-Communication	-0.052	0.051		-0.050	0.056		-0.082	0.045	*	-0.072	0.039	*	-0.001	0.056		-0.052	0.053	
Credit-Insurance	0.035	0.033		0.040	0.029		0.075	0.040	*	0.046	0.031		0.036	0.036		0.047	0.036	
Business services	-0.085	0.038	**	-0.116	0.040	***	-0.113	0.032	***	-0.084	0.034	**	-0.081	0.038	**	-0.137	0.031	***
Domestic services	-0.083	0.031	***	-0.124	0.033	***	-0.163	0.048	***	-0.128	0.034	***	-0.052	0.032	*	-0.136	0.033	***
Firm-size 0-4	-0.305	0.030	***	-0.204	0.031	***	-0.188	0.029	***	-0.170	0.027	***	-0.198	0.026	***	-0.141	0.026	***
Firm-size 5-19	-0.212	0.021	***	-0.170	0.023	***	-0.122	0.021	***	-0.122	0.019	***	-0.155	0.023	***	-0.116	0.019	***
Firm-size 20-99	-0.125	0.020	***	-0.086	0.023	***	-0.056	0.018	***	-0.037	0.018	**	-0.110	0.021	***	-0.057	0.019	***
Experience	0.010	0.003	***	0.012	0.003	***	0.018	0.003	***	0.016	0.003	***	0.017	0.003	***	0.016	0.003	***
Experience square	-2.4E-04	7.6E-05	***	-2.3E-04	7.6E-05	***	-3.6E-04	7.7E-05	***	-3.3E-04	7.2E-05	***	-3.2E-04	7.9E-05	***	-3.1E-04	7.8E-05	***
Lambda	0.087	0.041	**	0.088	0.046	*	0.070	0.046		0.037	0.045		0.101	0.043	**	0.038	0.032	
Constant	0.848	0.235	***	1.061	0.245	***	1.364	0.251	***	1.958	0.224	***	1.137	0.230	***	1.670	0.190	***
R2	0.5809			0.5113			0.4644			0.4578			0.4447			0.4580		
Observations	1932			1943			1803			1899			1879			1892		
								Part-time										
Age	0.048	0.033		0.011	0.048		0.019	0.033		-0.003	0.048		0.020	0.034		-0.026	0.030	
Age square	-0.001	0.000		0.000	0.001		0.000	0.000		0.000	0.001		0.000	0.000		0.000	0.000	
Married	-0.099	0.062		-0.097	0.057	*	0.032	0.054		0.032	0.054		0.148	0.054	***	-0.026	0.044	
North-west	0.042	0.060		0.079	0.057		0.016	0.059		0.118	0.066	*	0.059	0.051		-0.065	0.048	
North-east	0.082	0.061		0.121	0.056	**	0.034	0.064		0.115	0.054	**	0.139	0.045	***	0.058	0.051	
South-Islands	-0.169	0.122		-0.050	0.116		-0.138	0.107		0.031	0.137		-0.133	0.104		-0.041	0.076	
Education 0-5	-0.156	0.079	**	-0.086	0.068		-0.089	0.073		0.015	0.098		-0.129	0.068	*	-0.041	0.067	
Education 11-13	0.019	0.055		0.091	0.056	*	0.069	0.056		-0.006	0.051		0.029	0.046		0.150	0.048	***
Education over 13	0.346	0.152	**	0.135	0.184		0.292	0.128	**	0.210	0.106	**	0.139	0.088		0.350	0.095	***
Blue-collars	-0.113	0.063	*	-0.087	0.060		-0.068	0.054		-0.154	0.056	***	-0.080	0.046	*	-0.044	0.048	
Manager	0.114	0.208		0.062	0.080		-0.191	0.230		-0.018	0.108		-0.089	0.148		0.147	0.108	
Permanent Contract	-	-		-	-		-	-		-0.046	0.060		0.010	0.044		0.119	0.046	***
Agriculture-Fishing	0.112	0.179		0.335	0.182	*	-0.101	0.129		-0.142	0.113		-0.041	0.079		0.003	0.110	
Industry	-0.027	0.085		0.075	0.102		-0.023	0.069		-0.028	0.078		0.025	0.062		0.060	0.066	
Building	0.325	0.248		0.181	0.178		-0.100	0.150		-0.054	0.188		-0.082	0.293		0.104	0.178	
Commerce	-0.040	0.084		0.095	0.107		-0.004	0.067		-0.034	0.074		-0.020	0.064		0.040	0.061	
Transport-Communication	-0.440	0.120	***	-0.003	0.242		0.120	0.170		0.259	0.178		0.051	0.092		-0.023	0.103	
Credit-Insurance	0.212	0.153		0.057	0.136		0.020	0.160		0.192	0.145		0.138	0.098		0.226	0.070	***
Business services	-0.114	0.156		0.075	0.121		-0.092	0.084		-0.026	0.097		-0.036	0.093		-0.097	0.095	
Domestic services	-0.024	0.092		0.037	0.104		-0.028	0.076		-0.047	0.084		-0.111	0.064	*	-0.019	0.068	
Firm-size 0-4	-0.265	0.066	***	-0.300	0.064	***	-0.202	0.058	***	-0.059	0.062		-0.171	0.058	***	-0.103	0.052	**
Firm-size 5-19	-0.209	0.064	***	-0.280	0.067	***	-0.151	0.055	***	0.005	0.059		-0.159	0.055	***	-0.070	0.050	
Firm-size 20-99	-0.106	0.091		-0.093	0.070		-0.082	0.065		-0.064	0.059		-0.070	0.049		-0.064	0.050	
Experience	0.007	0.013		0.004	0.010		0.018	0.010	*	0.012	0.011		0.021	0.008	**	0.026	0.009	***
Experience square	-2.3E-04	2.9E-04		-9.5E-05	2.5E-04		-3.7E-04	2.4E-04		-4.7E-04	2.8E-04	*	-4.9E-04	1.9E-04	***	-4.9E-04	2.1E-04	**
Lambda	0.104	0.148		-0.116	0.218		-0.009	0.181		0.035	0.249		0.342	0.170	**	-0.009	0.133	
Constant	0.632	0.757		1.553	1.156		1.310	0.795	*	2.376	1.177	**	0.672	0.851		1.959	0.720	***
R2	0.3183			0.2721			0.2591			0.1559			0.2448			0.2763		
Observations	243			301			319			410			381			406		

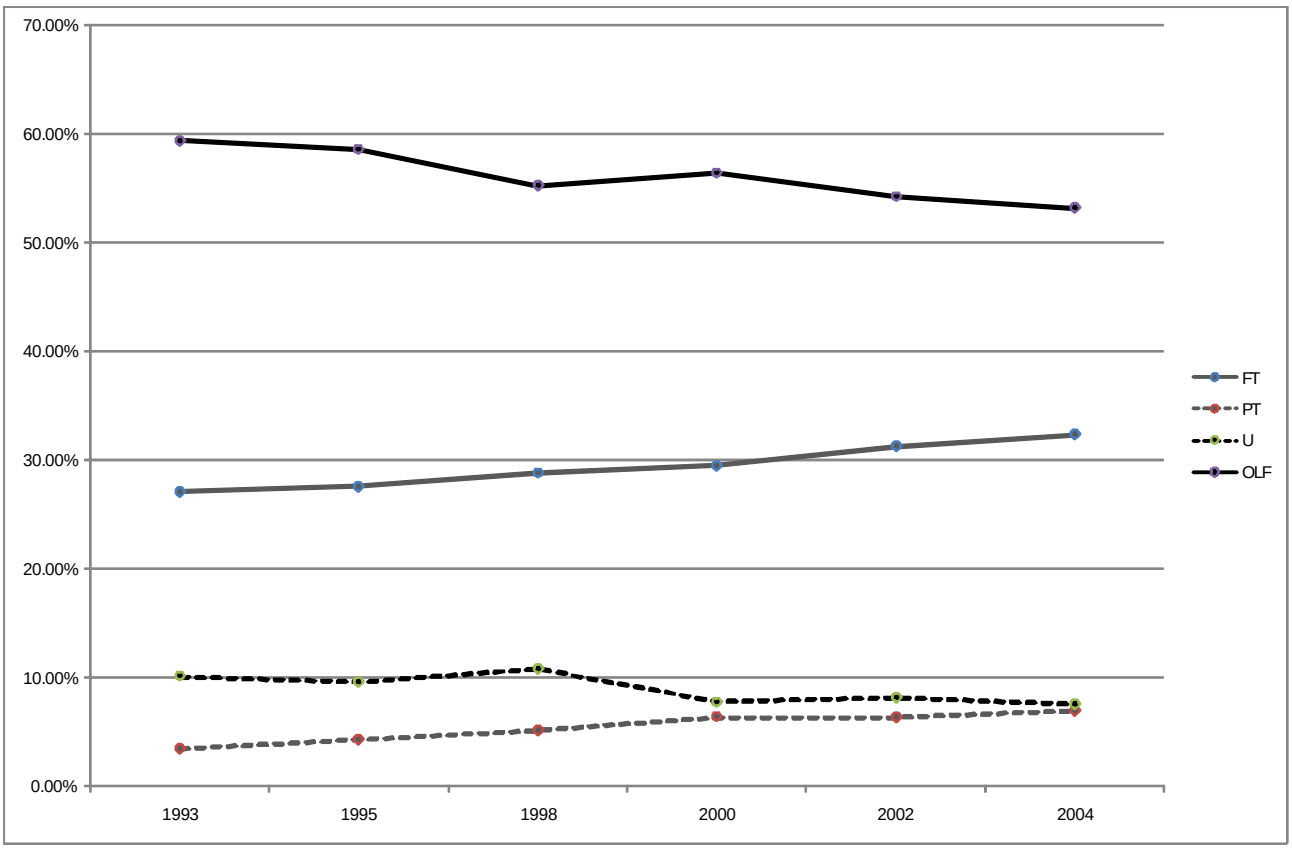
Source: our elaboration using SHIW data

Table 8. Oaxaca decomposition

	1993	1995	1998	2000	2002	2004
Unadjusted Differential	0.1294	0.1755	0.1375	0.0493	0.1487	0.1063
Explained	0.2263	0.2197	0.1856	0.1744	0.1536	0.1207
Discrimination	0.0350	-0.3522	-0.1297	-0.0943	0.5179	-0.0615
Selection	-0.1319	0.3081	0.0816	-0.0308	-0.5228	0.0471
Adjusted Differential	-0.0968	-0.0441	-0.0481	-0.1251	-0.0049	-0.0144

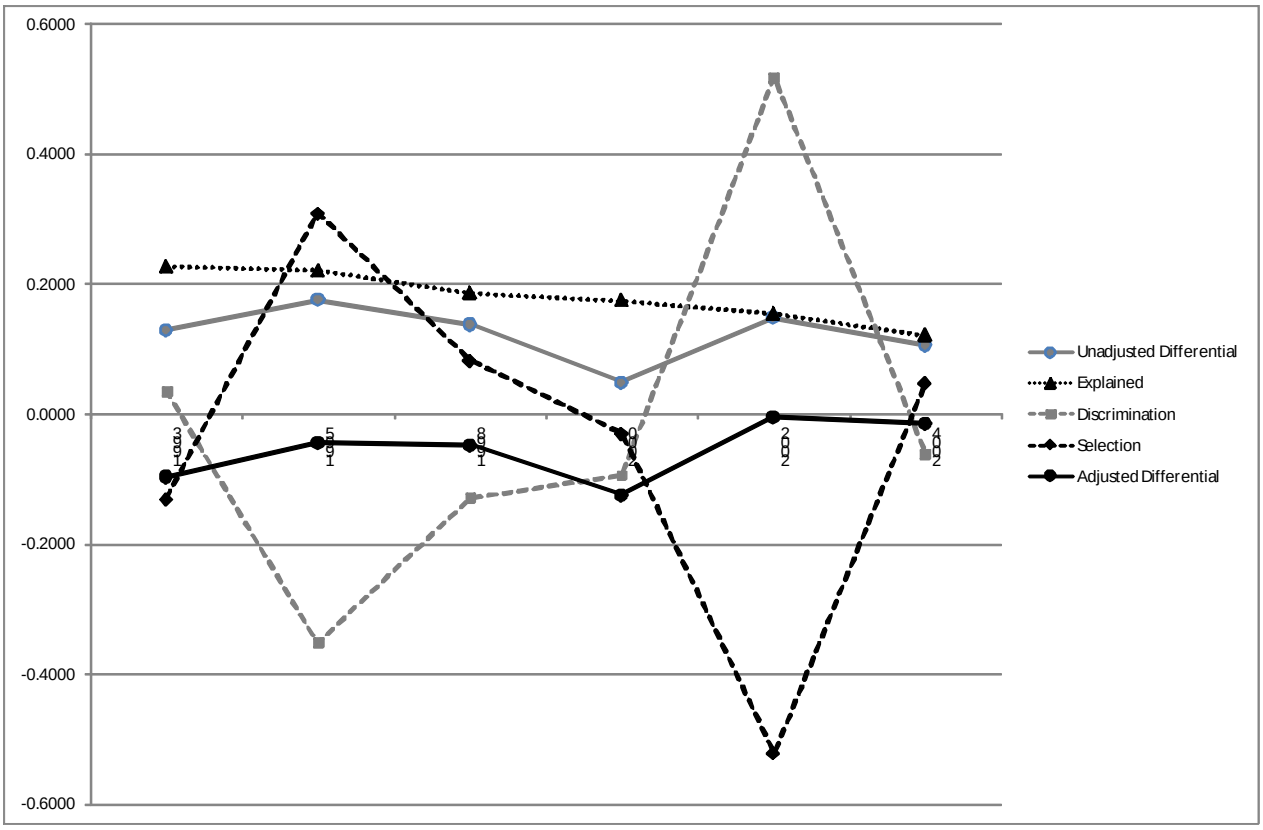
Source: our elaboration using SHIW data

Graph 1. Participation analysis



Source: our elaboration using SHIW data

Graph 2. Oaxaca decomposition



Source: our elaboration using SHIW data