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THE GENDER WAGE GAP IN ITALY

by Roberta Zizza*

Abstract

The paper estimates the gender wage gap in Italy, taking into account two salient features of the economy: the low rate of women's labour market participation and the high share of self-employment. It exploits the Bank of Italy's survey on household income and wealth, which contains information making it possible to control for several socio-economic characteristics and provides valid exclusion restrictions for the choice of working versus not working and for the choice of salaried employment versus self-employment. The wage gap is found to be increasing over time; in 2008 it was equal to 13 per cent. The paper also exploits newly available data from the Eurostat Structure of Earnings Survey to investigate to what extent the performance-pay component of the wage (i.e. bonuses) explains the total gap. Both the overall gap and that in bonuses are found to be significant, even for workers with the same occupation in the same firm. However, the contribution of the gap in bonuses to the overall gap is negligible, given the small share of bonuses in total earnings.

JEL Classification: J16, J30, J71.

Keywords: female employment, occupational choice, performance pay, productivity.

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1. *Motivation of the work and key findings*

In recent decades women's participation in the labor market has increased in all industrialized countries. Italy, despite major improvements in this area, lays well behind in the European comparison. The employment rate of women in the age group 15-64 years was in 2007 equal to 46.6 per cent, 8 percentage points higher than in 1996, but 24 points lower than the corresponding figure for men and 12 points lower than the average across EU-27 countries. At the same time, in Italy as in many other countries, there is a persistent wage gap between men and women, despite a growing "similarity" of the two genders, for example in terms of human capital accumulated or tasks carried out in the workplace. The European Employment Strategy defined among its targets the reduction of the gender pay gap by 2010, with a view to its elimination.

After providing an overview of the available empirical evidence on the extent of the gender pay gap in Italy and a brief description of the reasons discussed in the economic literature for the existence of this gap, the paper presents new estimates of the gap based on the Surveys of Household Income and Wealth (SHIW) carried out by the Bank of Italy on Italian households between 1995 and 2008. The estimates are related to wages and salaries of employees - public and private - and are obtained on the basis of different specifications, taking into account both the characteristics of the worker and of the job/employer. Taking into account two main features of the Italian case - the significant role of self-employed work and the high rate of non-participation of women in the labor market - the paper contributes to the existing literature by controlling for the presence of selection effects in employment and specifically in the sector of dependent employment. The availability of surveys run over a sufficiently wide time interval also allows to check for any changes over time of the role played by the different factors explaining the gender pay gap.

The main results can be summarized as follows. Ignoring the differences in all other individual characteristics, between 1995 and 2008 women were earning about 5-8 per cent less than men. Controlling either for the worker's characteristics, or also for the characteristics of the job/employer, or even correcting for the fact that the sample is restricted to employees only, the wage gap is not only larger, but increasing over time, reaching in 2008 a value of 13 per cent.

A second exercise is devoted to assess if, and to what extent, the component of pay linked to productivity explains the gender pay gap, using data on productivity bonuses available in the Istat *Structure of Earnings Survey* of 2002. Also from this source we can confirm the presence of a significant gender wage gap. The survey also shows a very uneven distribution of productivity premia by sector, size class and qualification. The probability of perceiving them is for women 6-9 percentage points lower, all other conditions being equal. Depending on the specification of the wage equation, the total wage gap is found to range between 12 and 18 per cent, whereas it is between 8 and 22 per cent in the performance-pay related component; the gap remains significant even considering workers having the same occupation in the same firm. Taking into account the fact that only 36 per cent of workers receive these awards, and their low share on total earnings,

we estimate that the contribution of the gap in the performance-related pay to the overall gap is negligible.

2. *How large is the gender pay gap in Italy? A review of the literature*

The recent literature offers various estimates of the gender pay gap for Italy, which vary depending on the type of the reference pay (annual, monthly, hourly, gross or net of taxes and social contributions), the methodology and the underlying data source.

International comparisons usually report the so-called “raw” gap, obtained by comparing the average wages of men and women. According to estimates by Eurostat (2008), based on gross hourly earnings of workers aged between 15 and 64 years who have worked at least 15 hours per week in 2005, the raw gap was 9 per cent in Italy, against 15 per cent on average in the EU (Chart 1)¹. The value for Italy is among the lowest when compared to the other EU countries. This comparison is however biased by a (positive) selection effect of the sample, since employed women are relatively more endowed with characteristics that are rewarded by the market with respect to not employed women (typically, they are more educated). The wage gap is therefore attenuated by the low rates of female employment in our country: women who would be offered, on the basis of their characteristics, relatively low pay are not employed and hence their wages cannot be observed².

Properly correcting for the selection, the wage gap (*selection-corrected wage gap*) changes substantially: compared with a raw difference of 7 per cent in 1999, Olivetti and Petrongolo (2008), adopting various techniques for imputing salaries to non-occupied people, estimate it equal to 26 per cent, or to 16 per cent when taking into account individual characteristics. Similar estimates are reported by Pissarides *et al.* (2005), who calculate a raw gap and a gap corrected for a *sample selection* equal respectively to 8 and 16 per cent, and by Isfol (2005), with values ranging between 16 and 25 per cent depending on the data, the definition of income and the estimation technique. For example, based on SHIW data, Isfol estimates an average differential of 23 per cent in 2002. This differential is higher in the private than in the public sector; with at least one child under school age in the household; for senior managers, directors, managers. In medium-low positions

¹ European Commission (2006) reported much larger values for 2002 in almost all European countries, ranging from 11 per cent in Slovenia to 30 per cent of the United Kingdom; the differential is equal to 19 per cent for Italy and 25 per cent for the average EU-25. These discrepancies highlight the importance of methodological issues. Apart from the different reference year, the estimates contained in European Commission (2006) differ in terms of source (a survey among firms, the Structure of earnings survey, rather than among families, the EU Survey on Income and Living Conditions, EU-SILC) and of reference population (only employees of private firms with at least 10 employees instead of the total number of employees aged between 15 and 64 years who have worked at least 15 hours per week).

² The different impact of the selection effect among countries may descend from differences in labour supply behaviour (household composition and social norms); from mechanisms of labour demand (e.g. attitudes towards female employment); from institutional differences (e.g. maternity protection laws).

wages show less variability within the same sector, due to the fact that the most part of the wage is set by collective agreements.

The gap is amplified by omitting variables such as ability, commitment/effort, risk aversion, which are likely to affect wages but are hardly observable. Using panel data it is possible to mitigate the risk of endogeneity of the estimates: using a random effects model applied to INPS data over the 1990-2002 period, Isfol has identified a 16 per cent gap in 1990, which gradually reduced to 14 per cent in 2002.

The gender pay gap is due to horizontal segregation (the concentration of women in badly paid jobs or in less strategic areas within companies or in atypical types of contracts) and vertical segregation (very few women in senior positions); to differences in the amount of paid work (even using the hourly wage, the comparison may be biased by the greater number of overtime performed by men); to different human capital endowment. But differences persist even keeping into account the characteristics of the worker, of the job/employer and the job performance (e.g. in terms of working time) being equal. According to Isfol (2005), only 4.9 of the estimated gap of 16 percentage points for the private sector in 2002 is due to occupational segregation (the so-called endowment or composition effect), while the rest is due to wage discrimination (compensation effect). It should be noticed that many of these composition factors may in turn be affected by discrimination, such as the education choice and the under-representation of women in top positions (the so-called “glass ceiling”).

3. *Why is there a gender pay gap?*

The literature offers several explanations for the existence of the gender wage gap.

3.1 *Different preferences on labour supply and different productivity*

Different preferences of men and women in the division of labor both within the family and on the market may depend on different investments in human capital and therefore on different productivity. However in the last few years girls show a better education performance if compared with their male peers, and educational segregation is dramatically shrinking, since girls are moving from the so-called disciplines of “consumption” to the disciplines of “investment”. Among other forms of human capital accumulation, women might accumulate lower actual experience on the labor market, due to interruptions in employment for maternity and child care. According to Isfol (2005) wages for men increase with age by 0.8 per cent per year, whereas for women they only increase by 0.5.

3.2 *Discrimination*

It may happen that, even in the face of equal productivity, employers or workers prefer not to work with women. To accommodate this preference (*taste for discrimination*), employers might be willing to accept lower profits, since male wages are higher the

more negative is the attitude towards women. However this should not constitute a long-term equilibrium, since businesses that discriminate will be crowded out by those that, not discriminating, realize higher profits.

In the theory of statistical discrimination stereotypes influence income differentials, due to asymmetric, incomplete and costly information. Without a reliable measure of individual productivity, firms use gender as an indicator. If an employer expects that women are less present, less attached to work, less reliable, he will offer them a lower salary, slower career paths, less skilled jobs, or even prefer not to hire them. In this way a vicious circle emerges: if women know they cannot aspire to certain positions and their wages are low, it is rational for them to invest less in education, to allocate a greater share of their time to domestic and care work and in general to behave consistently with the expectations of employers (lower availability of time, lower commitment and continuity, greater absenteeism). Expectations become self-fulfilling³.

3.3 Theories related to job search

According to Del Bono and Vuri (2006), in Italy in the nineties the gender pay gap was usually low when entering the labor market. It widened, becoming significant, after the first three years of experience; after ten years the salaries of men and women were respectively 37.4 and 27.6 per cent higher⁴. The authors claim that the differential in the early years of career paths depends heavily on mobility, as wage growth is similar between men and women within the same firm, but significantly different in case of change of employer. In particular, the premium for mobility is positive or zero for men, while it is negative for women. The main reasons explaining the different impact of job-to-job transitions are statistical discrimination and the different preferences of women which, in line with the theory of compensating wage differentials, may assign a higher value to non-monetary aspects (e.g. protection, distance to work, time flexibility, access to part-time) against which they are willing to sacrifice part of their salary. The extent of a gender gap in wage growth due to mobility might depend on the characteristics of the employer: women usually suffer the greatest disadvantage in moving toward large companies, as these firms are more likely to offer jobs whose non-monetary characteristics are considered attractive by women.

³ Among the observable characteristics that the employer can use to set wages, there is absenteeism in the workplace. A higher absenteeism for women is a stylized fact found in many Western countries. Ichino and Moretti (2006), using data on the employees of a large Italian bank, show that the greater absenteeism of women is largely due to absences that occur with a monthly period, related to the menstrual cycle. Removing this additional source of absenteeism, and other things being equal, the pay gap would be reduced from 13.5 to 11.9 per cent.

⁴ Also according to the latest survey of the Interuniversity Consortium AlmaLaurea (2008) the gap grows over time: one year after graduation, compared to a difference in the number of hours worked between men and women of 22 per cent, men earn 28 per cent more of their female colleagues; 5 years after graduation, the gap rises to 30 per cent.

3.4 Psychological theories

More recently it has been suggested that women are less effective than men in highly competitive environments, but have similar performances in non-competitive ones. Laboratory experiments (Gneezy, Niederle and Rustichini, 2003, Gneezy and Rustichini, 2004) and studies based on the scores of sports tournaments (Paserman, 2007) show that women achieve worse results in competitive environments. Niederle and Vesterlund (2007), while finding no gender differences in performance, observe that women are less prone to competition, self-excluding from experiments in which the remuneration is based on the *winner-takes-all* principle. This holds even when the comparison is restricted to men and women with similar performance: thus, given a same level of ability, women are less competitive than men. This might contribute to explain the wage gap.

An experiment conducted by Gneezy, Leonard and List (2008) on two groups - a highly patriarchal (the Masai in Tanzania) and a matrilinear one (the Khasi in India) - confirms the evidence by Niederle and Vesterlund (2007) for the Masai, while showing that the Khasi women choose the competitive environment as much as men, and much more than Masai women. Along the same lines, an experiment conducted on British students shows that girls coming from only-female schools, as opposed to those enrolled in mixed schools, have on average an attitude to competition similar to that of boys (Booth, 2009). Despite the obvious caution in extending these results to the labor markets of advanced societies, they suggest that cultural factors and not (only) nature contribute to form the biological attitude towards competition. The fact that also gender differences in risk aversion are not necessarily innate, therefore, suggests the relevance of appropriate policy actions aimed at changing environmental conditions that can drive these behaviors (Booth, 2009).

4. *The evolution of the gender gap in the second half of the nineties*

4.1 *Data and methodology*

Wage regressions have been estimated using data from all waves of SHIW over the period 1995-2008. For each year about 6,000 observations referred to employees are available. The dependent variable is the natural logarithm of average hourly earnings, net of taxes and social contributions⁵.

We estimate both the raw gap, obtained by regressing wages on a dummy for gender and on a constant, and more complex specifications, which take into account both composition effects and the presence of a selection of workers into employment and into

⁵ We use this measure rather than monthly or annual pay to get rid of the effect of the different number of hours worked by men and women. Nearly 40 per cent of women work less than 36 hours, compared with less than 10 per cent of men; apart from individual preferences, this gap reflects the occupational segregation in sectors, occupations and types of contract characterized by shorter working hours (Lucarelli and Ricci, 2007).

dependent work. The estimation of different models is useful not only to ensure the robustness of our results, but also in light of the lack of consensus in the literature on the relevant explanatory variables to be included in the wage equation. Some of these variables might be endogenous: the level of education or the type of employment, which affect the wage differential, may in turn reflect pre-market discrimination (for example, at the family level, parents influencing their children's school choices).

In a first specification, apart from gender and region of residence, we introduce several worker's characteristics accounting for accumulated human capital as determinants of the hourly wage. Specifically, we include the level of education, measured by the highest degree achieved; the potential experience and its square; the number of work experiences, which may partly substitute for the unavailability of a measure of actual experience, accounting for the continuity of employment histories.

In the second specification also the characteristics of the job and of the employer have been added. Specifically, we include the qualification, the sector of economic activity, company size, whether the contract is part-time, information on the provision of overtime⁶. We have already mentioned the possible risk of endogeneity of the qualification held by the worker, also depending on the sector of activity, since the wage gap might be associated to segregation of women into typically female activities. In the literature this problem has been solved by explicitly modeling the probability of having a typically female job women (see Sorensen (1989) and Centra and Cutillo (2009)). Unfortunately information available in the SHIW about qualification and sector of economic activity does not permit to replicate this exercise, as it is not sufficiently detailed to effectively discriminate between female and non-female occupations. Variables representing valid exclusion restrictions, such as the non-wage characteristics of employment (physical strength required, environmental conditions, distance from home, satisfaction, stability and level of social protection, compatibility with the family) are also missing. These estimates are therefore to be considered with caution⁷.

Finally, it was estimated a variant of the model with sample selection *à la* Heckman, needed for the presence of a two-stage selection, which is particularly relevant in the Italian setting, due to a low rate of female participation in the labor market and a significant share of self-employment. Given the discrete nature of the two decisions - to work versus not to work and to be self-employed versus dependent worker - we use a probit model with sample selection (Van de Ven and van Praag, 1981).

In the first stage we model the probability of being employed, where the dependent variable equals 1 if the individual is employed and zero otherwise; this probability is explained by individual and household characteristics: gender, age, education level, region of residence, marital status, number of components and number of income earners in the household (excluding self), number of children in the age groups 0-5 and 6-14 years,

⁶ The share of overtime over total hours worked is included to account for the fact that on average the salary earned during overtime is higher.

⁷ In many papers the characteristics of the job/employer have been voluntarily ignored.

and a dummy indicating whether the individual receives income other than from work. The latter variable, together with marital status and those that describe the characteristics of the household (as in Chzhen and Mumford (2009), using the presence of children to identify the selection effect, or in Tanda (2010), which also considers marital status), represent our exclusion restrictions.

In the second stage, conditional on being employed, we model the probability of being a dependent worker (dependent variable equal to 1); the exclusion restriction is the self-employed status of the parents⁸, in the light of the high intergenerational persistence of occupational choices (Mocetti, 2007). Another individual characteristic that according to the theoretical literature can explain the choice between employment and self-employment, and may therefore serve as exclusion restriction, is the degree of risk aversion⁹. The SHIW, however, offers a measure of risk aversion only for some of the years examined.

The two equations are estimated simultaneously using a maximum likelihood approach. Finally, the two inverse Mills Ratios obtained from the bivariate probit are included as regressors in the wage equation together with the worker's characteristics.

4.2 Results

The gender dummy is significant (at 1 per cent level) in all regressions. The raw differential is about 6 per cent, ranging from a minimum of 4.9 per cent in 2000 to a maximum of 7.7 in 2002 (Table 1). The specifications that include as controls the worker's characteristics provide estimates of the gap not only larger, but increasing over time: from 10.3 per cent in 1995 to 13.8 in 2008 (Table 2). The widening of the gap compared to raw estimates emerges even when information on the job and on the employer are considered (Table 3): from 9.4 per cent in 1995 to 10.2 in 2008. Even taking into account the selection of the sample, the wage gap is wider and equal to about 13 per cent at the end of the last decade (Table 4).

The analysis of the contribution of different factors related to human capital to the level of hourly wages shows results in line with the literature. The return to education is higher the higher the level of education; the return to experience is positive but at a decreasing rate, since the coefficient of the squared variable is negative. The coefficient of the number of work experiences has a negative sign, although significant only in some years; it seems to capture the effect of involuntary mobility, related to the depreciation or non-transferability of skills gained or to preference for non-monetary features of the job, rather than that of a voluntary mobility aimed at improving the remuneration.

The contribution of these factors remains essentially unchanged if we add the characteristics of the job/employer. Among these, as expected, doing overtime, as a ratio of

⁸ This variable is equal to one if at least one of the two parents is/was self-employed.

⁹ Evidence for Italy in this regard was provided by Guiso and Paiella (2005).

total hours worked, has a positive effect on average hourly earnings, since overtime hours are usually paid more than the regular salary. Hourly wages are higher if the worker has a qualification higher than blue collar (or assimilated worker); larger companies offer higher wage levels. The effect of part-time contract is not uniform over time.

In the probit equation that describes the propensity to work most of the explanatory variables, including the exclusion restrictions, are significant and with the expected signs (Table A1 in Appendix). This propensity is higher for men, for people in middle age classes, for the most educated, for those who are or have been married, and grows with increasing family size; it decreases with the number of earners in the household and in the presence of an income source different from work. The coefficient for the presence of children in the two age groups is usually negative, but often not significant, sometimes even taking a positive sign¹⁰. The choice of a dependent work, modeled in the second stage, is less common among men and, most importantly since it is our exclusion restriction, among those who had at least one self-employed parent. On the basis of the likelihood test the correlation between the error terms is significantly different from zero only in two of the seven years considered, indicating the independence of the two equations in the remaining years. The coefficients of the inverse Mills ratios in the wage equations are often not statistically distinguishable from zero. Using the measure of risk aversion as an exclusion restriction, when it is available, does not alter the substance of the results.

5. *Which part of the remuneration is differentiated by gender?*

Recent contributions in the literature show that the part of the salary with a supplementary nature, more related to merit and productivity (*performance pay*, PP), exhibits significant gender differences and provides a relevant contribution in explaining the overall wage gap (de la Rica, Dolado and Vegas (2010) for Spain, Munoz-Bullon (2010) for the United States). A *gender wage gap* concentrated in the variable part of the salary would explain at least partly why in many European countries the gender gap is greater among higher qualifications and in the last deciles of the wage distribution.

As argued by de la Rica, Dolado and Vegas (2010), there are two opposing hypotheses for the existence of a gender gap in the PP. On the one hand, assuming that this component is determined on the basis of competition and merit, that is linked to the actual worker productivity, it is reasonable to assume that the gap in the PP should be lower than in the remaining part of the salary. On the other hand, however, if the commitment to work is negatively influenced by the commitment made in the care of family and home, the PP of women may be lower than that of men due to an asymmetry in the distribution of these duties, as in the Italian case (Burda *et al.* 2007; Sabbadini, 2005). One can also argue that access to job positions that provide a return linked to performance is not entirely "free"; for example, women may self-select into occupations in which the PP

¹⁰ Using SHIW for 2008 Rondinelli and Zizza (2010) show that, in the long term and *ceteris paribus*, maternity has not a causal effect on female labour supply.

is poor or absent, because they anticipate that they are more compatible with care-giving, or employers may be more reluctant to put women in a *fast-track jobs*, which generally involve PP, because they expect their lower attachment to work.

In the Italian context secondary level bargaining, which may take place at company or local level, is not widespread; in 2001-02, about half of workers in firms with at least twenty employees and almost all those in smaller firms did not perceive any additional pay with respect to that established by national contracts (Casadio, 2010). However with-in the salary defined on the basis of national bargaining, there may be forms of remuneration distributed unequally across genders (overtime, shift allowance, missions).

Ricci (2010) shows that the higher the share of female workers, the lower the likelihood that the company adopts additional remuneration schemes, other observable factors being equal; the result is robust especially for industry. The author argues that female workers are less involved in union activity, have a less conflicting and assertive behavior in the workplace, are less willing to accept offers from outside; this decreases their probability of receiving additional forms of remuneration. At the same time, women are concentrated in small firms and in the service sector, less exposed to external competition, with lower incentives to introduce premia to increase efficiency.

Our exercise is based on the Structure of Earnings Survey, carried out by ISTAT in 2002 as part of an Eurostat initiative aimed at producing accurate and harmonized information on wages and hours worked in the EU Member States. The reference population consists of companies with at least 10 workers belonging to industry and private services (sections C to K of NACE classification). The sample includes more than 19,000 companies, out of more than 150,000 in the reference population, and nearly 82,000 workers (55,000 men and 27,000 women). The sample excludes employees of smaller companies and those in the agriculture, the public and personal services sectors; a comparison with data from the *European Community Household Panel* (Eurostat, 2009) shows, however, that the effect of these two truncations is modest and in some countries null.

The survey includes the characteristics of workers and firms, the gross annual salary and the details of bonuses and premia. The latter are divided into

- bonuses paid regularly but not in all months of the year (for example, the thirteenth and fourteenth, compensation for overtime): these amounts are known in advance by the employee and do not depend by the performance of either the employee of the firm;
- annual bonuses linked to productivity;
- annual profit-sharing bonuses¹¹.

¹¹ The survey was carried out also in 2006, but for that year the total amount of annual premia is the only information available, and not just those related to productivity. For 2002 only the total amount of bonuses and the detail of those related to productivity are available.

The descriptive statistics are reported in Table 5, which shows that men earn more than women throughout the whole distribution of wages and that perceivers of bonuses linked to productivity earn more than those who do not receive them. Among those who receive them, premia account on average for less than 4 per cent of total earnings, reaching almost 5 per cent in the right tail of the distribution. Table 6 shows the high degree of heterogeneity by size, sector and qualification in the diffusion of productivity bonuses. The share of workers receiving them, on average equal to 36 per cent, ranges from 4 per cent in construction to 91 in the energy, gas and water sector; from 14 per cent among workers with basic activities of sales and services to 60 per cent for stationary plant operators; increases from 8 to 63 per cent with firm size. Probit estimates show that the probability of receiving bonuses is greater in the North-West, in larger companies, among men, among those better educated or with higher tenure or employed with permanent contracts; all other conditions being equal, the probability of receiving bonuses linked to productivity is higher for men by 6-9 percentage points, depending on the specification (Table 7).

Using as a measure the (natural logarithm of) hourly total wage, we estimate in 2002 a raw gap equal to 17.8 per cent, higher than what previously found on SHIW data (7.7 per cent), plausibly due to differences in reference population and income definition. Controlling for other characteristics of the worker (age, education level, geographic area) or also for the characteristics of the job/firm (industry, size class, form of economic and financial control, qualification, tenure and its square, type of contract – full-time or part-time, temporary or permanent or apprenticeship - and the share of overtime) it amounts to 15-16 per cent, closer to the estimate based on SHIW (10-14 per cent). Selecting the sample of those receiving bonuses linked to productivity only, and controlling for the entire set of characteristics, the gap amounts to 13 per cent (compared to 18 among those not receiving them). Similarly to what was found by de la Rica et al. (2010), the returns of the characteristics of the worker tend to be higher among those receiving premia, while, in turn, returns of the characteristics of the job are higher among those who do not receive them. The performance pay is thus more related to the worker, and in particular to his/her human capital endowment, while the non-PP components of the pay are more related to the type of work and to the firm. Within-firm estimates show a further reduction to 12-13 per cent, but show that even controlling for firm unobservables the gender wage gap is still significant (Table 8).

If we consider productivity bonus (either taking into account the hours worked among the determinants, or constructing a hourly measure, apart from the usual set of controls) the gender gap takes values in a wider range. If firm fixed effects are excluded the gap is equal to 15-16 per cent (21-22 if sampling weights are used); within the same company, all other conditions being equal, the gap is smaller but still significant, between 8 and 10 per cent (Table 9). Taking into account the fact that only 36 per cent of workers receive the PP income component, and given its low impact on total earnings, we estimate that the contribution of PP to the overall gender gap is negligible (approximately equal to 0.1 percentage points). Among those who receive productivity bonuses this contribution is approximately 0.8 percentage points, 6 per cent of the gap of this sub-

sample.

The comparison between the coefficients of the ‘Man’ dummy in the different specifications in Table 9 is instructive about the underlying reasons for the presence of a gap in the PP component. In particular, as in de la Rica, Dolado and Vegas (2010), the “occupational segregation” hypothesis is tested against the “monopsonistic” hypothesis, related to women’s lower job mobility due to family responsibilities. It is well known (Manning, 2003) that, when choosing a job, women are less than men moved by pecuniary considerations, giving instead more weight to non-wage aspects, such as distance or working time.

If the “occupational segregation” hypothesis holds the gap from the within-occupation regression should be much lower than that from the pooled regression, since we are comparing men and women with the same occupation. Conversely if the “monopsonistic” hypothesis plays a role, the within-firm gap should be much lower than the pooled one, since we are now comparing men and women working in the same firm. Finally, if both explanations apply then the joint within-firm-and-occupation gap should be lower than both within-firm and within occupation gaps which, in turn, should be lower than the pooled coefficient.

Since the within-firm gap is by far lower than that obtained by the pooled specification, while the within-occupation gap is lower but close to that from the pooled setting, the explanation related to monopsonistic aspects in the segment of PP-jobs seems to have more support than the existence of occupational segregation. The joint within-firm-and-occupation gap is even lower but close to the within-firm one.

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Table 1 – Regression of (log) net hourly wages in Italy on a gender dummy

Explanatory variables	1995	1998	2000	2002	2004	2006	2008
Man	0.067 [0.012]***	0.056 [0.013]***	0.049 [0.012]***	0.077 [0.013]***	0.058 [0.013]***	0.057 [0.013]***	0.062 [0.012]***
Constant	1.736 [0.009]***	1.832 [0.010]***	1.864 [0.009]***	1.887 [0.010]***	1.966 [0.010]***	2.043 [0.009]***	2.067 [0.009]***
No. Observations	6,112	5,595	6,084	5,782	5,767	5,697	5,777
R square	0.005	0.003	0.003	0.006	0.004	0.004	0.005

Source and notes: elaboration on Bank of Italy's SHIW data. Standard errors in parenthesis. The symbol *** indicates a level of significance equal to 1 per cent.

Table 2 – Determinants of (log) net hourly wages in Italy, years 1995-2008. Worker’s characteristics only.

Explanatory variables	1995	1998	2000	2002	2004	2006	2008
Man	0.103 [0.010]***	0.100 [0.011]***	0.0972 [0.010]***	0.144 [0.011]***	0.124 [0.011]***	0.137 [0.011]***	0.138 [0.010]***
Primary school	0.011 [0.046]	-0.0288 [0.061]	0.0306 [0.055]	0.0555 [0.063]	0.0364 [0.077]	0.153 [0.102]	0.132 [0.084]
Lower secondary school	0.214 [0.0470]***	0.152 [0.0627]**	0.205 [0.0550]***	0.194 [0.0628]***	0.157 [0.0773]**	0.286 [0.101]***	0.253 [0.0825]***
Diploma	0.537 [0.0473]***	0.426 [0.0629]***	0.475 [0.0553]***	0.464 [0.0632]***	0.389 [0.0777]***	0.559 [0.101]***	0.532 [0.0829]***
Degree	0.942 [0.0489]***	0.803 [0.0644]***	0.828 [0.0565]***	0.862 [0.0647]***	0.779 [0.0789]***	0.917 [0.102]***	0.858 [0.0837]***
Post-lauream	1.154 [0.123]***	0.733 [0.143]***	0.870 [0.136]***	1.093 [0.147]***	1.007 [0.131]***	1.177 [0.139]***	1.092 [0.0962]***
Potential experience (in years)	0.0422 [0.00155]***	0.0391 [0.00183]***	0.0388 [0.00171]***	0.0380 [0.00188]***	0.0378 [0.00187]***	0.0383 [0.00184]***	0.0351 [0.00165]***
Potential experience (in years) squared	-0.0005 [3.18e-05]***	-0.0005 [3.82e-05]***	-0.0005 [3.54e-05]***	-0.0005 [3.84e-05]***	-0.0005 [3.78e-05]***	-0.0005 [3.73e-05]***	-0.0004 [3.26e-05]***
No. Work experiences	-0.00294 [0.00298]	-0.00212 [0.00344]	0.00218 [0.00459]	-0.0117*** [0.00322]***	-0.0192*** [0.00356]***	-0.0236*** [0.00358]***	-0.00904*** [0.00214]***
No. Observations	6,111	5,594	6,084	5,782	5,766	5,697	5,777
R squared	0.408	0.299	0.314	0.284	0.262	0.294	0.337

Source and notes: elaborations on Bank of Italy’s SHIW. Standard errors in parenthesis. The symbols ** and *** indicate a level of significance equal to 5 and 1 per cent respectively. Dummies by region and the constant are omitted for the sake of brevity. Omitted category for education: no formal education.

Table 3 – Determinants of (log) net hourly wages in Italy, years 1995-2008. Worker's characteristics and characteristics of the job/employer.

Explanatory variables	1995	1998	2000	2002	2004	2006	2008
Man	0.0943*** [0.00992]	0.0745*** [0.0117]	0.0944*** [0.0110]	0.103*** [0.0120]	0.0937*** [0.0117]	0.111*** [0.0112]	0.102*** [0.0101]
Primary school	-0.0642 [0.0447]	-0.0763 [0.0586]	-0.0165 [0.0526]	-0.00453 [0.0596]	0.0197 [0.0734]	0.126 [0.0959]	0.104 [0.0782]
Lower secondary school	0.0442 [0.0461]	0.0124 [0.0602]	0.0591 [0.0530]	0.0392 [0.0604]	0.0548 [0.0736]	0.170* [0.0954]	0.151* [0.0774]
Diploma	0.218*** [0.0477]	0.149** [0.0616]	0.186*** [0.0545]	0.158** [0.0619]	0.144* [0.0749]	0.294*** [0.0963]	0.290*** [0.0784]
Degree	0.519*** [0.0504]	0.400*** [0.0642]	0.432*** [0.0569]	0.433*** [0.0647]	0.406*** [0.0770]	0.508*** [0.0978]	0.496*** [0.0798]
Post-lauream	0.632*** [0.117]	0.286** [0.137]	0.428*** [0.131]	0.569*** [0.141]	0.525*** [0.126]	0.727*** [0.135]	0.646*** [0.0918]
Potential experience (in years)	0.0318*** [0.00151]	0.0285*** [0.00179]	0.0311*** [0.00169]	0.0285*** [0.00185]	0.0288*** [0.00183]	0.0305*** [0.00177]	0.0268*** [0.00158]
Potential experience (in years) squared	-0.0004*** [3.03e-05]	-0.0004*** [3.64e-05]	-0.0004*** [3.43e-05]	-0.0004*** [3.70e-05]	-0.0004*** [3.63e-05]	-0.0004*** [3.53e-05]	-0.0003*** [3.07e-05]
No. Work experiences	-0.00326 [0.00286]	7.74E-06 [0.00326]	0.00266 [0.00440]	-0.00802*** [0.00308]	-0.0136*** [0.00339]	-0.0171*** [0.00341]	-0.00690*** [0.00201]
Share of overtime	0.346*** [0.0662]	0.416*** [0.0729]	0.135** [0.0640]	0.479*** [0.0765]	0.267*** [0.0703]	0.404*** [0.0680]	0.449*** [0.0624]
Clerk or teacher	0.116*** [0.0131]	0.125*** [0.0148]	0.150*** [0.0142]	0.128*** [0.0154]	0.139*** [0.0144]	0.138*** [0.0141]	0.125*** [0.0126]
Officer/senior officer	0.143*** [0.0202]	0.217*** [0.0254]	0.209*** [0.0223]	0.214*** [0.0274]	0.322*** [0.0269]	0.258*** [0.0235]	0.230*** [0.0235]
Manager	0.295*** [0.0325]	0.419*** [0.0354]	0.438*** [0.0327]	0.468*** [0.0390]	0.485*** [0.0387]	0.486*** [0.0354]	0.460*** [0.0316]
Firm with 5-19 employees	0.0836*** [0.0172]	0.0916*** [0.0204]	0.111*** [0.0186]	0.0817*** [0.0198]	0.0724*** [0.0186]	0.105*** [0.0182]	0.102*** [0.0157]
Firm with 20-49 employees	0.154*** [0.0206]	0.163*** [0.0228]	0.157*** [0.0211]	0.126*** [0.0225]	0.114*** [0.0210]	0.125*** [0.0204]	0.118*** [0.0226]
Firm with 50-99 employees	0.192*** [0.0245]	0.223*** [0.0259]	0.221*** [0.0231]	0.153*** [0.0250]	0.131*** [0.0238]	0.149*** [0.0234]	0.140*** [0.0196]
Firm with 100-499 employees	0.239*** [0.0212]	0.228*** [0.0247]	0.184*** [0.0221]	0.210*** [0.0247]	0.167*** [0.0245]	0.193*** [0.0230]	0.189*** [0.0223]
Firm with at least 500 employees	0.323*** [0.0186]	0.270*** [0.0212]	0.255*** [0.0196]	0.282*** [0.0214]	0.219*** [0.0205]	0.258*** [0.0197]	0.248*** [0.0159]
Part-time	0.0611*** [0.0188]	-0.0218 [0.0200]	0.0685*** [0.0179]	-0.0521*** [0.0194]	-0.0815*** [0.0191]	-0.0357** [0.0179]	-0.00607 [0.0151]
No. Observations	5,966	5,591	6,005	5,703	5,699	5,694	5,776
R square	0.49	0.377	0.383	0.36	0.34	0.377	0.426

Source and notes: elaborations on Bank of Italy's SHIW. Standard errors in parenthesis. The symbols ** and *** indicate a level of significance equal to 5 and 1 per cent respectively. Dummies by region, by sector and the constant are omitted for the sake of brevity. Omitted category: no formal education (for education), blue collar (for qualification), firm with up to 4 employees (for firm size).

Table 4 – Determinants of (log) net hourly wages in Italy, years 1995-2008. Worker's characteristics only. Models with sample selection.

Explanatory variables	1995	1998	2000	2002	2004	2006	2008
Man	0.101*** [0.00993]	0.0973*** [0.0121]	0.0918*** [0.0113]	0.132*** [0.0125]	0.118*** [0.0119]	0.131*** [0.0116]	0.126*** [0.0108]
Primary school	0.009 [0.0460]	-0.0456 [0.0630]	0.00838 [0.0567]	0.0153 [0.0639]	-0.00149 [0.0785]	0.145 [0.102]	0.115 [0.0837]
Lower secondary school	0.214*** [0.0470]	0.137** [0.0639]	0.186*** [0.0563]	0.154** [0.0641]	0.12 [0.0783]	0.278*** [0.101]	0.233*** [0.0827]
Diploma	0.538*** [0.0473]	0.412*** [0.0641]	0.455*** [0.0568]	0.422*** [0.0647]	0.352*** [0.0789]	0.550*** [0.101]	0.506*** [0.0833]
Degree	0.942*** [0.0489]	0.789*** [0.0659]	0.806*** [0.0585]	0.811*** [0.0670]	0.731*** [0.0809]	0.902*** [0.103]	0.823*** [0.0844]
Post-lauream	1.145*** [0.123]	0.706*** [0.145]	0.834*** [0.138]	0.985*** [0.151]	0.951*** [0.132]	1.147*** [0.141]	1.046*** [0.0974]
Potential experience (in years)	0.0424*** [0.00159]	0.0399*** [0.00188]	0.0391*** [0.00174]	0.0375*** [0.00191]	0.0379*** [0.00188]	0.0380*** [0.00186]	0.0352*** [0.00167]
Potential experience (in years) squared	-0.000516*** [3.31e-05]	0.000516*** [4.00e-05]	0.000493*** [3.68e-05]	-0.000478*** [3.91e-05]	0.000513*** [3.83e-05]	0.000469*** [3.78e-05]	0.000426*** [3.31e-05]
No. Work experiences	-0.00259 [0.00302]	-0.00227 [0.00345]	0.00324 [0.00465]	-0.0106*** [0.00326]	-0.0185*** [0.00359]	-0.0233*** [0.00359]	-0.00918*** [0.00214]
No. Observations	6,111	5,594	6,084	5,782	5,766	5,697	5,777
R squared	0.406	0.299	0.312	0.279	0.261	0.291	0.33

Source and note: elaborations on Bank of Italy's SHIW. Standard errors in parenthesis. The symbols ** and *** indicate a level of significance equal to 5 and 1 per cent respectively. Dummies by region, the constant and the *inverse mills ratios* are omitted for the sake of brevity. Omitted category for education: no formal education.

Table 5 – Descriptive statistics

All									
	All			Men			Women		
	Annual bonuses		Annual bonuses		Bonuses'	Annual bonuses		Bonuses'	
	Annual gross	based on	Annual gross	based on	share (%)	Annual gross	based on	Bonuses'	
	total wage	productivity	total wage	productivity		total wage	productivity	share (%)	
Average	23,141	382	25,329	453	1.8	18,592	235	1.3	
p10	10,995	0	13,858	0	-	7,869	0	-	
p25	15,607	0	17,121	0	-	12,524	0	-	
p50	20,123	0	21,621	0	-	17,068	0	-	
p75	27,186	435	29,282	593	2.0	22,704	165	0.7	
p90	37,315	1,183	40,135	1,354	3.4	30,221	865	2.9	
Observations	81975		55860			26115			

Receiving PP									
	All			Men			Women		
	Annual bonuses		Annual bonuses		Bonuses'	Annual bonuses		Bonuses'	
	Annual gross	based on	Annual gross	based on	share (%)	Annual gross	based on	Bonuses'	
	total wage	productivity	total wage	productivity		total wage	productivity	share (%)	
Average	27,265	1,071	28,671	1,151	4.0	23,165	836	3.6	
p10	14,985	226	16,236	258	1.6	11,646	156	1.3	
p25	18,869	400	19,694	407	2.1	16,225	308	1.9	
p50	24,196	774	25,129	821	3.3	21,118	605	2.9	
p75	32,523	1,272	33,887	1,371	4.0	28,202	1,063	3.8	
p90	42,134	2,159	43,887	2,196	5.0	36,586	1,755	4.8	
Observations	33536		24271			9265			

Not receiving PP									
	All			Men			Women		
	Annual bonuses		Annual bonuses		Bonuses'	Annual bonuses		Bonuses'	
	Annual gross	based on	Annual gross	based on	share (%)	Annual gross	based on	Bonuses'	
	total wage	productivity	total wage	productivity		total wage	productivity	share (%)	
Average	20,853	-	23,161	-	-	16807	-	-	
p10	9,408	-	12,555	-	-	6,947	-	-	
p25	14,343	-	15,954	-	-	11,365	-	-	
p50	18,348	-	19,688	-	-	15,815	-	-	
p75	24,009	-	25,976	-	-	20,508	-	-	
p90	32,663	-	35,857	-	-	26,527	-	-	
Observations	48439		31589			16850			

Source: elaborations on the Structure of Earning Survey.

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Table 6 – Share of workers receiving bonuses linked to productivity

Percentage receiving PP	0.36		
By firm size		By type of occupation	
10-49 employees	0.08	Legislators and senior officials	0.38
50-249 employees	0.34	Corporate managers	0.29
250-999 employees	0.53	Managers of small enterprises	0.33
At least 1000 employees	0.63	Science professionals	0.27
		Life science and health professionals	0.23
By sector of economic activity		Teaching professionals	0.37
Mining	0.17	Other professionals	0.42
Manufacturing	0.43	Science associate professionals	0.52
Energy, gas and water	0.91	Life science and health associate profession:	0.58
Building	0.04	Teaching associate professionals	0.57
Trade and repairs	0.20	Other associate professionals	0.41
Hotel and restaurants	0.14	Office clerks	0.43
Transports and communica	0.36	Personal services workers	0.16
Financial intermediation	0.77	Salepersons and demonstrators	0.21
Business services	0.21	Skilled agricultural and fishery workers	0.27
		Extraction and building workers	0.19
		Metalworkers	0.44
		Precision and related trades workers	0.19
		Other craft workers	0.26
		Stationary plant operators	0.60
		Machine operators and assemblers	0.45
		Sales and services elementary occupations	0.14
		Labourers in agriculture and fishery	0.21
		Labourers in mining, construction, manuf.	0.28

Source: our elaborations on the Structure of Earning Survey.

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Table 7 – Probability of receiving bonuses linked to productivity

Variables	Marginal effects	
	With weights	Without weights
North-east	-0.0137* [0.00713]	-0.0201*** [0.00472]
Centre	-0.106*** [0.00842]	-0.0700*** [0.00522]
South and Isles	-0.199*** [0.00714]	-0.223*** [0.00491]
50-249 employees	0.345*** [0.0104]	0.333*** [0.00597]
250-999 employees	0.524*** [0.00825]	0.527*** [0.00467]
1000 employees and beyond	0.600*** [0.00933]	0.596*** [0.00448]
Manufacturing	0.180*** [0.0374]	-0.0415** [0.0198]
Energy, gas and water	0.572*** [0.0284]	0.285*** [0.0245]
Building	-0.216*** [0.0220]	-0.306*** [0.00874]
Trade and repairs	-0.0112 [0.0382]	-0.205*** [0.0154]
Hotel and restaurants	-0.107*** [0.0349]	-0.200*** [0.0176]
Transports and communication	-0.0425 [0.0406]	-0.243*** [0.0134]
Financial intermediation	0.307*** [0.0443]	0.0687*** [0.0218]
Business services	-0.0850** [0.0343]	-0.222*** [0.0147]
Private control	-0.0157 [0.0211]	-0.123*** [0.00966]
Neither private nor public	0.109*** [0.0274]	-0.0308** [0.0147]
Man	0.0943*** [0.00757]	0.0637*** [0.00440]
Between 20 and 29 years	-0.0519 [0.0552]	0.00862 [0.0346]
Between 30 and 39 years	-0.0442 [0.0577]	0.0301 [0.0349]
Between 40 and 49 years	-0.0614 [0.0563]	0.021 [0.0351]
Between 50 and 59 years	-0.0578 [0.0557]	0.00832 [0.0355]
60 years and beyond	-0.0206 [0.0625]	0.0293 [0.0409]
Lower secondary school	0.00 [0.0118]	0.0092 [0.00824]
Diploma	0.0176 [0.0132]	0.0391*** [0.00888]
Degree and beyond	0.0582*** [0.0220]	0.0532*** [0.0110]
Tenure	0.0156*** [0.00123]	0.0178*** [0.000693]
Tenure squared	-0.000350*** [3.39e-05]	-0.000394*** [1.98e-05]
Part-time	-0.0199 [0.0140]	-0.0555*** [0.00631]
Temporary contract	-0.0722*** [0.0151]	-0.0999*** [0.00987]
Apprentice	-0.0583 [0.0441]	-0.113*** [0.0225]
Other type of contract	0.166*** [0.0485]	0.224*** [0.0352]
No. Observations	81,975	

Source and notes: our elaborations on the Structure of Earning Survey, Year 2002. Standard errors in parenthesis. Marginal effects for the kind of occupation are omitted for the sake of brevity. *** p<0.01, ** p<0.05, * p<0.1

Table 8 – Determinants of hourly wage

Variables	Pooled with weights			Pooled with weights	Pooled without weights	Within occupation	Within firm	
	PP=1	PP=0	All				Within firm	& occup
North-east	-0.01 [0.00412]	-0.0279*** [0.00359]	-0.0281*** [0.00343]	-0.0149*** [0.00276]	-0.0265*** [0.00271]	-0.0202*** [0.00244]		
Centre	0.0133*** [0.00467]	-0.0885*** [0.00386]	-0.0879*** [0.00369]	-0.0471*** [0.00301]	-0.0602*** [0.00307]	-0.0483*** [0.00277]		
South and Isles	-0.0932*** [0.00771]	-0.138*** [0.00406]	-0.139*** [0.00388]	-0.127*** [0.00350]	-0.138*** [0.00328]	-0.120*** [0.00296]		
50-249 employees	0.0194*** [0.00666]	0.0774*** [0.00345]	0.0775*** [0.00329]	0.0825*** [0.00289]	0.0800*** [0.00312]	0.0744*** [0.00282]		
250-999 employees	0.0541*** [0.00657]	0.130*** [0.00440]	0.130*** [0.00420]	0.125*** [0.00322]	0.116*** [0.00288]	0.110*** [0.00261]		
1000 employees and bey	0.0187*** [0.00655]	0.0805*** [0.00465]	0.0804*** [0.00443]	0.0669*** [0.00324]	0.0980*** [0.00327]	0.105*** [0.00297]		
Manufacturing	-0.01 [0.0356]	0.0711*** [0.0184]	0.0685*** [0.0176]	0.0520*** [0.0163]	-0.0442*** [0.0103]	-0.0265*** [0.00976]		
Energy, gas and water	-0.01 [0.0365]	0.233*** [0.0330]	0.231*** [0.0315]	0.128*** [0.0183]	0.0506*** [0.0125]	0.0486*** [0.0117]		
Building	-0.07 [0.0407]	0.119*** [0.0189]	0.114*** [0.0180]	0.0846*** [0.0168]	0.01 [0.0121]	0.0045 [0.0110]		
Trade and repairs	0.05 [0.0361]	0.0655*** [0.0186]	0.0623*** [0.0178]	0.0615*** [0.0165]	-0.0490*** [0.0108]	-0.0463*** [0.0103]		
Hotel and restaurants	-0.154*** [0.0378]	-0.02 [0.0193]	-0.03 [0.0184]	-0.0502*** [0.0171]	-0.138*** [0.0125]	-0.128*** [0.0126]		
Transports and communi	-0.187*** [0.0360]	0.128*** [0.0189]	0.124*** [0.0180]	0.0015 [0.0166]	0.0205* [0.0109]	0.0180* [0.0104]		
Financial intermediation	0.312*** [0.0359]	0.424*** [0.0205]	0.421*** [0.0196]	0.394*** [0.0168]	0.254*** [0.0110]	0.225*** [0.0104]		
Business services	0.0813** [0.0361]	0.0032 [0.0187]	-0.00237 [0.0178]	0.02 [0.0165]	-0.0697*** [0.0108]	-0.0793*** [0.0102]		
Private control	-0.199*** [0.00666]	-0.0355*** [0.00657]	-0.0383*** [0.00626]	-0.130*** [0.00475]	-0.0580*** [0.00503]	-0.0515*** [0.00454]		
Neither private nor public	-0.236*** [0.0125]	0.0788*** [0.0141]	0.0760*** [0.0134]	-0.0531*** [0.00961]	0.0358*** [0.00874]	0.0168** [0.00788]		
Man	0.129*** [0.00393]	0.176*** [0.00310]	0.176*** [0.00295]	0.158*** [0.00246]	0.166*** [0.00245]	0.157*** [0.00227]	0.135*** [0.00232]	0.122*** [0.00208]
Between 20 and 29 years	0.0927*** [0.0325]	0.0764*** [0.0163]	0.0786*** [0.0156]	0.0753*** [0.0145]	0.0721*** [0.0164]	0.0741*** [0.0147]	0.0593*** [0.0148]	0.0638*** [0.0129]
Between 30 and 39 years	0.231*** [0.0326]	0.189*** [0.0165]	0.195*** [0.0157]	0.200*** [0.0146]	0.184*** [0.0165]	0.176*** [0.0148]	0.156*** [0.0149]	0.151*** [0.0130]
Between 40 and 49 years	0.347*** [0.0328]	0.265*** [0.0166]	0.272*** [0.0158]	0.294*** [0.0147]	0.269*** [0.0166]	0.239*** [0.0149]	0.240*** [0.0150]	0.210*** [0.0131]
Between 50 and 59 years	0.379*** [0.0331]	0.315*** [0.0172]	0.317*** [0.0165]	0.341*** [0.0151]	0.325*** [0.0169]	0.271*** [0.0152]	0.297*** [0.0153]	0.241*** [0.0134]
60 years and beyond	0.473*** [0.0367]	0.354*** [0.0213]	0.343*** [0.0203]	0.390*** [0.0181]	0.390*** [0.0196]	0.296*** [0.0176]	0.368*** [0.0177]	0.274*** [0.0154]
Lower secondary school	0.0695*** [0.00716]	0.0560*** [0.00527]	0.0572*** [0.00503]	0.0638*** [0.00430]	0.0702*** [0.00435]	0.0454*** [0.00393]	0.0716*** [0.00435]	0.0426*** [0.00380]
Diploma	0.256*** [0.00724]	0.243*** [0.00546]	0.245*** [0.00521]	0.255*** [0.00442]	0.270*** [0.00444]	0.150*** [0.00425]	0.228*** [0.00447]	0.113*** [0.00412]
Degree and beyond	0.335*** [0.00814]	0.501*** [0.00679]	0.502*** [0.00648]	0.415*** [0.00523]	0.526*** [0.00529]	0.262*** [0.00524]	0.453*** [0.00531]	0.196*** [0.00504]
Tenure	0.00852*** [0.000626]	0.0161*** [0.000464]	0.0138*** [0.000385]	0.0140*** [0.000375]	0.0147*** [0.000376]	0.0127*** [0.000340]	0.0127*** [0.000375]	0.0110*** [0.000327]
Tenure squared	-0.000136*** [1.77e-05]	-0.000378*** [1.29e-05]	-0.000308*** [1.04e-05]	-0.000308*** [1.05e-05]	-0.000342*** [1.06e-05]	-0.000288*** [9.60e-06]	-0.000291*** [1.03e-05]	-0.000247*** [9.00e-06]
Part-time	0.01 [0.00574]	0.0462*** [0.00421]	0.0450*** [0.00402]	0.0201*** [0.00342]	0.0490*** [0.00353]	0.0463*** [0.00320]	0.0500*** [0.00345]	0.0398*** [0.00301]
Temporary contract	0.01 [0.0113]	-0.0369*** [0.00715]	-0.0441*** [0.00679]	-0.0187*** [0.00607]	-0.0334*** [0.00595]	-0.0271*** [0.00540]	-0.0661*** [0.00569]	-0.0538*** [0.00497]
Apprentice	-0.295*** [0.0286]	-0.192*** [0.0116]	-0.195*** [0.0110]	-0.205*** [0.0106]	-0.188*** [0.0114]	-0.171*** [0.0102]	-0.191*** [0.0101]	-0.170*** [0.00961]
Other type of contract	0.0652** [0.0272]	-0.02 [0.0293]	-0.03 [0.0280]	0.03 [0.0207]	-0.01 [0.0188]	0.03 [0.0170]	0.03 [0.0284]	0.000136 [0.0248]
Overtime	-0.265*** [0.0288]	0.0593** [0.0254]	0.0597** [0.0242]	-0.0641*** [0.0195]	-0.117*** [0.0195]	0.02 [0.0176]	-0.218*** [0.0195]	-0.0556*** [0.0171]
Constant	1.890*** [0.0493]	1.575*** [0.0261]	1.584*** [0.0249]	1.687*** [0.0228]	1.706*** [0.0204]	2.629*** [0.0346]	1.822*** [0.0384]	2.772*** [0.0417]
Receiving PP			0.301*** [0.0588]					
Man * receiving PP			-0.0491*** [0.00517]					
No. Observations	33,536	48,439			81,975			
R square	0.41	0.395	0.436	0.411	0.427	0.535	0.267	0.445

Source and notes: our elaborations on the Structure of Earning Survey, year 2002. Standard errors in parenthesis. Coefficients for the other interactions are not reported for the sake of brevity.

*** p<0.01, ** p<0.05, * p<0.1

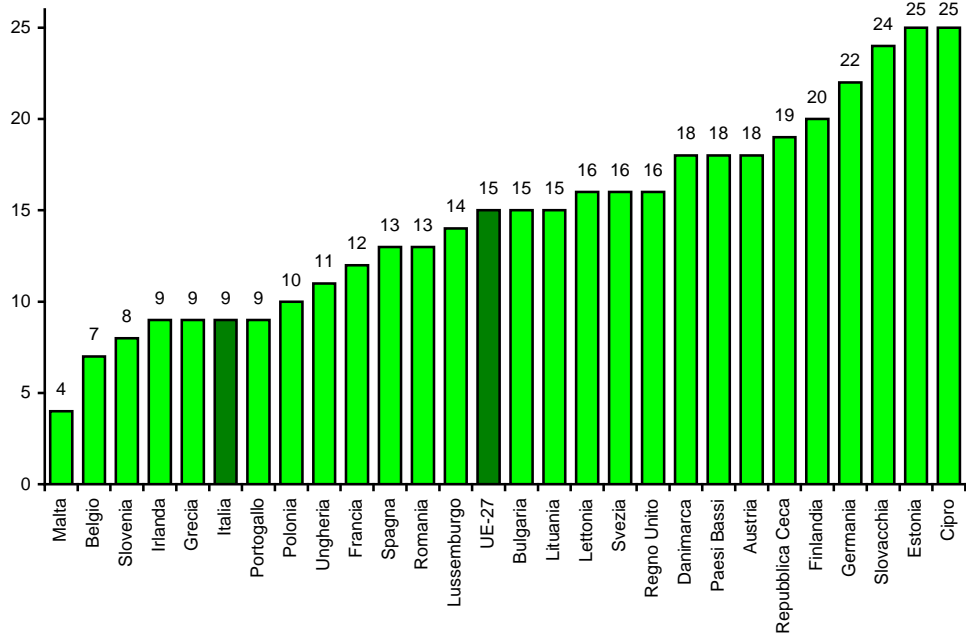
Table 9 – Determinants of bonuses linked to productivity

Variables	Pooled with weights		Pooled without weights		Within occupation		Within firm		Within firm&occup	
	Bonuses	Hourly bonuses	Bonuses	Hourly bonuses	Bonuses	Hourly bonuses	Bonuses	Hourly bonuses	Bonuses	Hourly bonuses
North-east	-0.141*** [0.0113]	-0.139*** [0.0113]	-0.0232** [0.0109]	-0.0188* [0.0109]	-0.0265** [0.0107]	-0.0220** [0.0108]				
Centre	-0.0564*** [0.0128]	-0.0501*** [0.0128]	0.02 [0.0130]	0.02 [0.0130]	0.02 [0.0128]	0.02 [0.0129]				
South and Isles	-0.153*** [0.0211]	-0.155*** [0.0212]	-0.0919*** [0.0188]	-0.0933*** [0.0188]	-0.0739*** [0.0185]	-0.0759*** [0.0186]				
50-249 employees	0.0394** [0.0182]	0.0382** [0.0183]	0.0837*** [0.0203]	0.0825*** [0.0204]	0.0867*** [0.0200]	0.0855*** [0.0201]				
250-999 employees	0.124*** [0.0180]	0.126*** [0.0180]	0.194*** [0.0186]	0.193*** [0.0186]	0.199*** [0.0183]	0.197*** [0.0184]				
1000 employees and beyond	0.170*** [0.0180]	0.184*** [0.0180]	0.283*** [0.0191]	0.291*** [0.0192]	0.287*** [0.0189]	0.295*** [0.0189]				
Manufacturing	-0.325*** [0.0974]	-0.325*** [0.0976]	-0.130** [0.0627]	-0.128** [0.0629]	-0.100 [0.0629]	-0.0992 [0.0631]				
Energy, gas and water	-0.115 [0.100]	-0.126 [0.100]	-0.108 [0.0665]	-0.103 [0.0667]	-0.087 [0.0667]	-0.081 [0.0670]				
Building	-0.602*** [0.111]	-0.586*** [0.112]	-0.235*** [0.0823]	-0.224*** [0.0825]	-0.244*** [0.0814]	-0.231*** [0.0817]				
Trade and repairs	-0.260*** [0.0987]	-0.258*** [0.0990]	-0.324*** [0.0651]	-0.317*** [0.0653]	-0.277*** [0.0659]	-0.264*** [0.0661]				
Hotel and restaurants	-0.690*** [0.103]	-0.674*** [0.104]	-0.647*** [0.0766]	-0.622*** [0.0768]	-0.749*** [0.0849]	-0.714*** [0.0851]				
Transports and communication	-0.192* [0.0987]	-0.173* [0.0989]	-0.276*** [0.0658]	-0.273*** [0.0660]	-0.261*** [0.0662]	-0.254*** [0.0664]				
Financial intermediation	0.580*** [0.0984]	0.587*** [0.0986]	0.589*** [0.0639]	0.604*** [0.0640]	0.581*** [0.0643]	0.599*** [0.0645]				
Business services	-0.283*** [0.0988]	-0.284*** [0.0991]	-0.163** [0.0651]	-0.163** [0.0653]	-0.157** [0.0653]	-0.154** [0.0655]				
Private control	0.155*** [0.0183]	0.133*** [0.0183]	-0.0433** [0.0200]	-0.0482** [0.0200]	-0.0561*** [0.0197]	-0.0611*** [0.0198]				
Neither private nor public	-0.114*** [0.0342]	-0.147*** [0.0342]	0.0575* [0.0331]	0.05 [0.0332]	0.05 [0.0326]	0.04 [0.0327]				
Man	0.224*** [0.0107]	0.213*** [0.0107]	0.165*** [0.0106]	0.155*** [0.0106]	0.151*** [0.0107]	0.140*** [0.0108]	0.104*** [0.00716]	0.0960*** [0.00718]	0.0872*** [0.00719]	0.0776*** [0.00721]
Between 20 and 29 years	0.275*** [0.0890]	0.219** [0.0891]	0.09 [0.109]	-0.02 [0.109]	0.11 [0.107]	-0.01 [0.107]	0.200*** [0.0704]	0.11 [0.0706]	0.203*** [0.0688]	0.11 [0.0690]
Between 30 and 39 years	0.294*** [0.0893]	0.237*** [0.0895]	0.17 [0.109]	0.06 [0.109]	0.18 [0.107]	0.07 [0.108]	0.250*** [0.0706]	0.155** [0.0708]	0.244*** [0.0690]	0.151** [0.0692]
Between 40 and 49 years	0.325*** [0.0898]	0.270*** [0.0899]	0.225** [0.109]	0.12 [0.110]	0.212** [0.108]	0.11 [0.108]	0.299*** [0.0709]	0.204*** [0.0711]	0.277*** [0.0692]	0.183*** [0.0694]
Between 50 and 59 years	0.380*** [0.0907]	0.325*** [0.0908]	0.245** [0.110]	0.14 [0.110]	0.216** [0.109]	0.11 [0.109]	0.326*** [0.0714]	0.231*** [0.0716]	0.287*** [0.0697]	0.194*** [0.0699]
60 years and beyond	0.491*** [0.101]	0.434*** [0.101]	0.368*** [0.118]	0.261** [0.119]	0.290** [0.117]	0.18 [0.117]	0.408*** [0.0764]	0.312*** [0.0767]	0.317*** [0.0747]	0.222*** [0.0749]
Lower secondary school	0.0629*** [0.0196]	0.0625*** [0.0196]	0.02 [0.0193]	0.02 [0.0194]	0.01 [0.0191]	0.01 [0.0192]	0.0230* [0.0130]	0.02 [0.0131]	0.01 [0.0127]	0 [0.0128]
Diploma	0.266*** [0.0198]	0.263*** [0.0199]	0.228*** [0.0195]	0.222*** [0.0196]	0.160*** [0.0204]	0.158*** [0.0133]	0.120*** [0.0133]	0.112*** [0.0133]	0.0701*** [0.0137]	0.0672*** [0.0138]
Degree and beyond	0.596*** [0.0223]	0.588*** [0.0223]	0.429*** [0.0226]	0.423*** [0.0227]	0.259*** [0.0242]	0.258*** [0.0243]	0.272*** [0.0156]	0.263*** [0.0157]	0.128*** [0.0165]	0.124*** [0.0166]
Tenure	0.0258*** [0.00172]	0.0245*** [0.00172]	0.0216*** [0.00173]	0.0198*** [0.00174]	0.0211*** [0.00171]	0.0193*** [0.00171]	0.0169*** [0.00122]	0.0154*** [0.00122]	0.0169*** [0.00119]	0.0154*** [0.00119]
Tenure squared	-0.000652*** [4.85e-05]	-0.000619*** [4.86e-05]	-0.000524*** [4.91e-05]	-0.000482*** [4.92e-05]	0.000517*** [4.84e-05]	0.000474*** [4.85e-05]	0.000372** [3.39e-05]	0.000335** [3.40e-05]	0.000374** [3.31e-05]	0.000337*** [3.32e-05]
Part-time	-0.02 [0.0212]	0.170*** [0.0158]	-0.0811*** [0.0223]	0.125*** [0.0171]	-0.0942*** [0.0220]	0.117*** [0.0169]	-0.01 [0.0149]	0.163*** [0.0116]	-0.02 [0.0146]	0.147*** [0.0114]
Temporary contract	-0.212*** [0.0314]	-0.146*** [0.0311]	-0.255*** [0.0319]	-0.177*** [0.0315]	-0.256*** [0.0317]	-0.177*** [0.0314]	-0.357*** [0.0215]	-0.290*** [0.0213]	-0.353*** [0.0211]	-0.287*** [0.0209]
Apprentice	-0.323*** [0.0783]	-0.272*** [0.0784]	-0.328*** [0.0832]	-0.304*** [0.0834]	-0.309*** [0.0820]	-0.293*** [0.0822]	-0.264*** [0.0610]	-0.274*** [0.0613]	-0.250*** [0.0598]	-0.250*** [0.0601]
Other type of contract	-0.502*** [0.0745]	-0.479*** [0.0747]	-0.418*** [0.0708]	-0.385*** [0.0709]	-0.356*** [0.0700]	-0.324*** [0.0702]	-0.09 [0.110]	-0.06 [0.111]	-0.14 [0.108]	-0.1 [0.109]
Yearly hours worked	0.664*** [0.0255]		0.620*** [0.0266]		0.610*** [0.0262]		0.666*** [0.0183]		0.668*** [0.0179]	
Constant	0.646*** [0.232]	-1.837*** [0.135]	1.152*** [0.233]	-1.626*** [0.129]	1.296*** [0.230]	-1.564*** [0.128]	0.924*** [0.151]	-1.509*** [0.0718]	1.852*** [0.171]	-0.568*** [0.111]
No. Observations					33536					
R square	0.275	0.243	0.208	0.171	0.16	0.122	0.151	0.057	0.191	0.101

Source and notes: our elaborations on the Structure of Earning Survey, year 2002. Standard errors in parenthesis.

*** p<0.01, ** p<0.05, * p<0.1

Chart 1 – Gender wage gap in EU countries, 2005 (as a per cent of average male wage)



Source: Eurostat (2008), EU-SILC. Gross hourly wages of dependent workers aged between 15 and 64 who have worked for at least 15 hours per week.

Appendix

Table A1 – Determinants of the probability of being employed, year 1995-2008. Marginal effects.

Explanatory variables	1995	1998	2000	2002	2004	2006	2008
Man	0.480*** [0.00980]	0.469*** [0.0105]	0.415*** [0.0108]	0.404*** [0.0114]	0.381*** [0.0116]	0.372*** [0.0116]	0.350*** [0.0118]
Between 31 and 40 years	0.322*** [0.0164]	0.361*** [0.0172]	0.354*** [0.0149]	0.359*** [0.0142]	0.343*** [0.0141]	0.325*** [0.0138]	0.302*** [0.0141]
Between 41 and 50 years	0.425*** [0.0155]	0.449*** [0.0163]	0.418*** [0.0140]	0.419*** [0.0139]	0.394*** [0.0140]	0.378*** [0.0139]	0.398*** [0.0132]
Between 51 and 65 years	0.214*** [0.0210]	0.219*** [0.0230]	0.216*** [0.0215]	0.206*** [0.0226]	0.192*** [0.0225]	0.212*** [0.0216]	0.282*** [0.0198]
Primary school	0.0669** [0.0332]	0.176*** [0.0424]	0.0482 [0.0443]	0.0574 [0.0469]	0.144*** [0.0534]	0.108 [0.0705]	0.0958 [0.0694]
Lower secondary school	0.230*** [0.0319]	0.293*** [0.0404]	0.155*** [0.0426]	0.153*** [0.0451]	0.263*** [0.0528]	0.238*** [0.0692]	0.273*** [0.0694]
Diploma	0.330*** [0.0304]	0.426*** [0.0370]	0.290*** [0.0398]	0.279*** [0.0422]	0.386*** [0.0480]	0.356*** [0.0644]	0.354*** [0.0554]
Degree	0.417*** [0.0223]	0.489*** [0.0194]	0.380*** [0.0226]	0.347*** [0.0238]	0.378*** [0.0220]	0.344*** [0.0311]	0.338*** [0.0288]
Post-lauream	0.392*** [0.0836]	0.467*** [0.0366]	0.418*** [0.0123]	0.380*** [0.0167]	0.356*** [0.0167]	0.333*** [0.0144]	0.322*** [0.0120]
Single	-0.226*** [0.0176]	-0.201*** [0.0200]	-0.205*** [0.0197]	-0.193*** [0.0207]	-0.179*** [0.0211]	-0.201*** [0.0206]	-0.0955*** [0.0206]
Separated/divorced	0.163*** [0.0317]	0.141*** [0.0313]	0.142*** [0.0275]	0.172*** [0.0254]	0.154*** [0.0235]	0.146*** [0.0218]	0.153*** [0.0205]
Widow	0.105*** [0.0313]	0.121*** [0.0345]	-0.00225 [0.0360]	0.0703** [0.0340]	0.0522 [0.0334]	0.0342 [0.0350]	0.0843*** [0.0314]
No. Household members	0.00904 [0.00584]	0.0180*** [0.00651]	0.0265*** [0.00660]	0.0413*** [0.00696]	0.0276*** [0.00704]	0.0450*** [0.00687]	0.0426*** [0.00686]
No. Perceivers	-0.174*** [0.00741]	-0.208*** [0.00837]	-0.226*** [0.00844]	-0.284*** [0.00937]	-0.290*** [0.00957]	-0.282*** [0.00940]	-0.309*** [0.00982]
Children 6-14 years old	-0.0151 [0.0175]	-0.0509*** [0.0182]	-0.0273 [0.0187]	-0.0752*** [0.0202]	-0.0499** [0.0205]	-0.0912*** [0.0211]	-0.0560*** [0.0205]
Children 0-5 years old	0.0733*** [0.0214]	0.0269 [0.0237]	0.0299 [0.0234]	-0.0105 [0.0255]	-0.0197 [0.0260]	-0.0610** [0.0263]	0.0393* [0.0237]
Earning income not from work	-0.758*** [0.00558]	-0.745*** [0.00609]	-0.747*** [0.00567]	-0.751*** [0.00585]	-0.727*** [0.00613]	-0.708*** [0.00649]	-0.713*** [0.00640]
No. Observations	16,970	14,898	15,624	14,540	13,939	13,085	13,117

Source and note: elaborations on Bank of Italy's SHIW. Standard errors in parenthesis. The symbols ** and *** indicate a level of significance equal to 5 and 1 per cent respectively. Dummies by region and the constant are omitted for the sake of brevity. Omitted category for education: no formal education (for education), up to 30 years (for age), married (for marital status).

Table A2 – Determinants of the probability of being a dependent worker, year 1995-2008. Marginal effects.

Explanatory variables	1995	1998	2000	2002	2004	2006	2008
Man	-0.0515*** [0.0101]	-0.0684*** [0.00953]	-0.0845*** [0.00936]	-0.0811*** [0.00957]	-0.0666*** [0.00920]	-0.0665*** [0.00880]	-0.0641*** [0.00898]
Primary school	-0.0419 [0.0418]	-0.259*** [0.0791]	-0.378*** [0.0863]	-0.294*** [0.0916]	-0.354*** [0.133]	-0.087 [0.107]	-0.0734 [0.0984]
Lower secondary school	-0.00498 [0.0413]	-0.212*** [0.0708]	-0.293*** [0.0766]	-0.251*** [0.0795]	-0.299*** [0.110]	-0.0635 [0.0920]	-0.0925 [0.0835]
Diploma	0.051 [0.0399]	-0.186*** [0.0675]	-0.290*** [0.0745]	-0.246*** [0.0776]	-0.289*** [0.107]	-0.0621 [0.0908]	-0.12 [0.0935]
Degree	0.0402 [0.0398]	-0.240*** [0.0864]	-0.387*** [0.0923]	-0.350*** [0.0989]	-0.440*** [0.136]	-0.139 [0.118]	-0.210* [0.120]
Post-lauream	-0.209 [0.127]	-0.424*** [0.148]	-0.607*** [0.111]	-0.608*** [0.106]	-0.502*** [0.167]	-0.316* [0.172]	-0.294** [0.147]
Potential experience (in years)	-5.77E-05 [0.00168]	0.000899 [0.00160]	0.000313 [0.00157]	0.00560*** [0.00163]	-0.00367** [0.00156]	-0.00333** [0.00150]	-0.00390** [0.00153]
Potential experience (in years) squared	-7.04e-05** [3.32e-05]	-8.24e-05** [3.28e-05]	-9.19e-05*** [3.19e-05]	4.26E-06 [3.25e-05]	-1.29E-05 [3.11e-05]	1.36E-06 [2.99e-05]	-1.38E-05 [3.01e-05]
No. Work experiences	0.0113*** [0.00327]	0.0016 [0.00281]	0.0139*** [0.00453]	0.00902*** [0.00319]	0.00894*** [0.00338]	0.00197 [0.00291]	8.33E-05 [0.00188]
At least one self-employed parent	-0.235*** [0.0116]	-0.229*** [0.0123]	-0.241*** [0.0122]	-0.240*** [0.0131]	-0.258*** [0.0136]	-0.237*** [0.0134]	-0.268*** [0.0163]
No. observations	8,154	7,296	7,870	7,406	7,268	7,092	7,061

Source and notes: elaborations on Bank of Italy's SHIW. Standard errors in parenthesis. The symbols ** and *** indicate a level of significance equal to 5 and 1 per cent respectively. Dummies by region and the constant are omitted for the sake of brevity. Omitted category for education: no formal education.