

# **Tracing the Evolution of Pay Discrimination in Italy (2002-2014): the role of occupations.**

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## **Preliminary draft**

### **Abstract**

The paper aims to trace pay gap in Italy analysing differences over time (i.e. pre, during and after the onset of the crisis). We consider two dimensions namely, gender (male vs. female) and sector of activity (public vs. private). We apply two different methodologies the Oaxaca-Blinder decomposition and Ñopo decomposition. Moreover, consider the framework used in Goldin (2014) we analyse the unexplained component of both gender and sector gap taking into account the elasticity of hours worked in different occupations. We aim to test whether the total and unexplained gaps reduce when considering individual in different type of occupations. The underline hypothesis is that individual choosing occupations with similar contract risk, responsibilities, hours, competitive setting, time pressure and interaction with other should have very small unexplained gap. The data used are the Italian component of the European Structure of Earnings Survey.

### **Introduction**

Throughout the past century, the convergence in human capital investment of women relative to men, the women's employment prospects and the women's role in the economy, have fostered progress of women in labour markets (Goldin, 2014). However, while the gender gap in schooling has become closer, there are remaining gender differences in pay and employment levels, as well as in the types of activities that men and women perform in the labour market (OECD, 2018).

Women in the EU earn on average over 16 % less per hour than men. Considerable country heterogeneity can be observed among the EU Member States: the gender pay gap varies from 5.2% in Romania to 25.3% in Estonia, which also points to the current trade-off between low gender wage gaps and high female employment rates. In addition a significant portion of the international variation

in gender wage gaps (ranging from 10 percentage points in the United States, the United Kingdom, and Scandinavian countries to 15–25 points in northern and central Europe, up to 30–40 points in southern Europe and Ireland) may be explained by Unequal Employment (Olivetti and Petrongolo, 2008). Italy has found to have a low gender pay gap per hour if compared to other European countries (5.5% vs. 16.3% in 2015; Eurostat, 2017); however when considering a synthetic indicator, which includes the average earnings per hour, the number of hours worked per month, and the employment rate, the gender overall earnings gap rises to 43.7% for Italy (39.7% in Europe; Eurostat, 2017). In fact, if selection into employment is non-random, it may affect the resulting gender wage gap. In particular, employed women may have relatively high-wage characteristics, thus low female employment rates may become consistent with low gender wage gaps simply because low-wage women would not feature in the observed wage distribution. Moreover as Goldin (2014) point out an additional problem arise: firms reward individuals who differ in their desire for various amenities that are various aspects of workplace flexibility. Workplace flexibility incorporates the number of hours to be worked and also the particular hours worked. Thus, following the underlying notions of compensating differentials, differences in pay arise because of productivity differences in the workplace, not because of inherent differences in human capital across workers. Some workers want the amenity of flexibility or of lower hours and some firms may find it cheaper to provide. As a consequences in some occupations we have contract less risks, with less responsibilities, less hours, less competitive setting, less time pressure and less interaction with other, thus less payed job.

Thus the aim of paper is twofold: first we aim to trace pay gap in the North, Centre and South of Italy analysing differences over time, in 2002, 2006, 2010 and 2014 (i.e. pre, during and after the onset of the crisis). In order to analyse pay discrimination across Italy, we consider two dimensions namely, gender (male vs. female) and sector of activity (public vs. private). We apply two different methodologies to decompose the pay gap that is the Oaxaca-Blinder decomposition and Ñopo decomposition (Oaxaca, 1973; Ñopo, 2008). Thanks to these methods we are able to decompose wage gap in two different components: the explained gap that is the difference due to endowments and the unexplained gap that is the difference due to coefficients ( i.e. discrimination). Second, consider the framework used in Goldin (2014) we analyse the unexplained component of both gender and sector gap taking into account the elasticity of hours worked in different occupations. We aim to test whether in Italy the unexplained component reduce when considering individual in different type of occupation. The underline hypothesis is that individual choosing occupations with similar contract risk, responsibilities, hours, competitive setting, time pressure and interaction with other should have very small unexplained gap.

## 1. Theoretical Framework

The literature on the determinants of gender pay gaps has provided an extensive set of theories helping to explain the persistence of the phenomenon. Human capital theory addresses explanations at the individual level, i.e. which are rooted in gender differences in work biographies. The impact of motherhood on labour supply lies at the centre of this reasoning. In a direct manner, researchers refer to the wage penalty working mothers receive due to a birth- and childcare-related absence from the labour market. This temporary absence can entail a devaluation of their human capital compared to men of similar age, especially with respect to experience-related knowledge (Becker, 1985). Hence, a pay gap attributable to this channel is simply seen as a reflection of observed productivity differences. Moreover, Becker (Becker, 1965) and (Fuchs, 1989) speculate that most of the wage gap not attributable to experience is due to unmeasured differences between men and women in their commitment to parenting. One implication of a stronger commitment by mothers is a higher incidence of part-time jobs among female workers. For several reasons, part-time work is perceived as less efficient than full-time work from an employer's perspective. Dividing the same amount of work among more persons raises internal coordination costs. Moreover, training costs in relation to the actual workload are also higher. As a consequence, part-time workers are paid less than full-time workers with similar experience and education (Kalleberg, 2000). In the opinion of some Human Capital Theorists, another implication of gender roles in parenting could be a lower wage of mothers, as part of their energy has to be devoted to childcare. Finally, child-related effects also disseminate through potential repercussions on education decisions. Goldin and Polachek (1987) argue that the anticipation of future career interruptions lowers the returns and thus the incentives of young women to invest into education and job-related training. This, in turn, lowers their earnings perspectives even before starting a family. A second strand of theories focuses on the role of social norms and perceptions as explanations for a persistent gender gap. The most visible indicator for the presence of such norms in the workplace is occupational segregation. It describes the observation that women tend to cluster in specific occupations, a phenomenon common to all industrialised countries. These occupations are for the most part characterised by a lower pay than typical jobs for male workers, thereby contributing to a gender differential in earnings (Marini, 1989). The causes are however highly disputed. It is argued that the observed selection into certain occupations stems from differences in worker preferences. According to this view, female workers tend to have particularly strong preferences for jobs characterised by pleasant working conditions and/ or high degrees of time flexibility. These non-pecuniary rewards of working are considered in the wage negotiations,

reducing the average payment in these occupations. The part of the wage gap resulting from job selection thus neither represents a sign of market failure nor discrimination.

## **2. Empirical Framework**

A lot of empirical studies have analysed some of the most important standard explanations for the gender wage gap (see for instance Blau and Kahn, 2017). Additional explanations regard the differences in “soft” skills (Whelan and Maître, 2010) (see Bertrand, 2011; Azmat and Petrongolo, 2014). With regards to Italy the gender pay gap has been explained looking at low labour market participation of women (Olivetti and Petrongolo, 2008); differences in education level (Mussida and Picchio, 2012) and differences in the field of study (Piazzalunga, 2018), job mobility (Del Bono and Vuri, 2011) and economic downturn: the gender wage gap increased during the 2008-2012 (Piazzalunga and Di Tommaso, 2018). The economic crisis may affect the gender and sector wage gap through two different channels: structural changes of the labour market and austerity measures (i.e. for Italy law n.78/2010). With regards to the first channel studies have considered the added worker effect: women may enter in the labour market to compensate the job loss of their partners. These women are likely to have low wages (Bettio *et al.*, 2014). Other have analysed the composition effect: mainly low paid men lost their job during the crisis and those which remain have higher wage. Finally, we can consider changes in average characteristics (in Italy there is an increase in average age and education of workers after the crisis). With regards to austerity measures, Italy has seen a very tight replacement rate (low turnover), the reform of the pension system (increase of retirement age and reduction of the value) and specially the wage freeze for the public sector.

With regard to pay gap in public vs. private sector, most studies (Christofides and Michael, 2013; Ghinetti and Lucifora, 2013; Destefanis and Naddeo, 2018; Depalo and Giordano, 2011; Giordano et al. 2011) conclude that there exists a significant pay differential between public and private sectors with the wage gap in favour of public employees, the public premium is greater for women than for men. Some explanations found in differences in employees (Bonin et al, 2007; Dur and Zoutenbier, 2014) and in differences in the job (Cappellari, 2002; Destefanis and Naddeo, 2018) When analysing the wage premium in public sector some papers argue that public sector could represent a welfare support provision to overcome lack of opportunities in the labour market in poorer area (Alesina et al., 1999). The public sector wage premium higher in the South than in the North of Italy, this may be motivated with low wages in Southern private sector pay due to unfair competition, black economy and gender discrimination (DELL'ARINGA, LUCIFORA and ORIGO, 2007)

### 3. New Perspectives on Gender

Goldin (2014) highlighted a new reason for explaining the gender wage gap. She rely on the fact that in US there has been a decrease in the explained portion of the gender wage gap over time as human capital investments between men and women converged; differences in years of education and in the content of college narrowed; the accumulated labour market experience tightened. As a consequence, the residual portion of the gap rose relative to the explained portion. Some studies claimed that earnings differences for the same position are due to actual discrimination. Others called for women's lower ability to bargain and their lesser desire to compete. With regards to the last one, Goldin (2014) underlines that it is important to explain why different amounts of time out of the labour force and different numbers of hours worked per day or per week have a large effect on the time-adjusted earnings in some occupations but not in others. In fact some positions have a highly nonlinear (convex) pay structure with regard to hours worked and some are almost perfectly linear. According to Goldin (2014) the explanation will rely on labour market equilibrium with compensating differentials and endogenous job design: differences in pay arise because of productivity differences in the workplace, not because of inherent differences in human capital across workers. Some workers want the amenity of flexibility or of lower hours and some firms may find it cheaper to provide.

“As women have increased their productivity enhancing characteristics and as they “look” more like men, the human capital part of the wage difference has been squeezed out. What remains is largely how firms reward individuals who differ in their desire for various amenities. These amenities are various aspects of workplace flexibility. Workplace flexibility is a complicated, multidimensional concept. The term incorporates the number of hours to be worked and also the particular hours worked, being “on call,” providing “face time,” being around for clients, group meetings, and the like. Because these idiosyncratic temporal demands are generally more important for the highly-educated workers, I will emphasize the college educated and occupations at the higher end of the earnings distribution. Jobs for which bargaining and competing matter the most, I will demonstrate, are also positions that have the greatest nonlinearities (meaning convexity) of pay with respect to time worked. “

The framework just outlined can be viewed as the micro-foundations of a compensating differentials model. Individuals place different values on the amenity “temporal flexibility,” and firms or sectors face different costs in providing the amenity. The framework gives reasons why there are different costs and how they might change. As a consequences, these individual accept lower wage a front to better jobs in terms of flexibility. Then the workers of a firms are not perfect substitutes and that

explain that in some sector show a the greatest nonlinearities (meaning convexity) of pay with respect to time worked.

In Europe the system differently form the US system is a union characterize even if in a number of Anglo-Saxon countries, characterized by fragmented and un-coordinated bargaining, radical changes in the regulation of labour markets and in unionization and coverage of collective bargaining have taken place (OECD 2004: ch. 3). In these countries single-employer bargaining (SEB) is the most common form of bargaining, and the alternative to SEB is multi-employer bargaining (MEB) or, in most cases, no bargaining at all. In some of these countries, such as the UK, New Zealand and, to some extent, also Australia, wage dispersion has been high and increasing in the last decades (OECD 2004: ch. 3).<sup>1</sup> On the other hand, in a number of continental European countries, such as Italy, Belgium and Spain, coordination, unionism, coverage of collective bargaining and other wage-setting institutions have not changed in a radical way (OECD 2004: ch. 3). These countries are characterized by a multi-level system of bargaining where SEB has developed alongside MEB. At least in principle, this form of decentralization has been adopted with the idea of combining the benefits of some degree of centralization and/or co-ordination in terms of the internalization of various effects of wage negotiations with the benefits of greater relative-wage flexibility. (Dell'Aringa and Pagani, 2007)

This settings may helped us to explain both the gender gap and the public premium. With regards to gender gap, we can assume that when there is this form of decentralization the workers have the power to use their bargaining to stipulated contract more proper to their preferences. This translates for the women in contract less risks, with less responsibility, less hours, less competitive setting, less time pressure and less interaction with other, as a consequence less payed job. In fact in the private sector we can identify those occupations where is possible the decentralized bargaining and we can compare the differences between men and women at different class of hours supplied to check whether there is a linearity in the link between wage and hours. Thus, for the occupations in which there is more bargaining power, there have to be also more gender gap controlling for the standard characteristic: education, children,

With regards to public/private gap, Cappellari (2002), using administrative data, finds for Italy that “in the public sector the earnings distribution is characterized not only by lower dispersion, but also

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by lower chances of moving through the earnings hierarchy through time”. Earnings uncertainty and growth rates heterogeneity are lower in the public sector. It gives evidences that job security is higher in the public sector, but it could represent a disincentive to acquire more competences and skills, if the earning profiles appear independent on the characteristics of the public employees. Then we can argue that give that in the public sector there aren’t large margin to differentiate the wage, we can explain less gender “unexplained” wage gap. Moreover as demonstrated by Bell et al (2007) the incidence of trade unionism is much greater in the public sector than in the private sector. It therefore seems likely that the pattern of pay in the public sector will reveal a much flatter pay structure than in the private sector. Thus, even though average pay may be the same in the two sectors, where the private sector exhibits a much steeper profile respect the amenity grade of the specific job (Bell at al. 2007, the geographic collocation in a low or high amenity area) and the public sector will overpay in the low-cost high-amenity area (e.g. Cornwall) and underpay in the high-cost low-amenity area (e.g. London). The commitment to provision of a common standard of service for most publicly provided services means that the difference between the profiles has important consequences for service delivery.

#### 4. Data and analysis sample

The sample is drawn by the Italian component of the European Structure of Earnings Survey (SES henceforth) compiled by Eurostat, for the years 2002, 2006, 2010 and 2014 (referring to these same years). To make results comparable across hourly and monthly earnings, across public and private sector and across regions we include in the sample only: i) Full time employees (86% of total employees) ii) Private firms with more than 250 employees – defined Large Private Enterprise (LPE) (37% of total full employees) iii) Employees defined as *stayers*: reporting at least 48 working weeks and a tenure of at least one year (84% of total employees).

**Table 1: Number of observations by gender and sectors**

Year	Female	Male	LPE	Public	Total
<b>2002</b>	8,158	23,370	27,656	3,872	31,528
%	25.88	74.12	87.72	12.28	100
<b>2006</b>	25,273	46,703	50,229	21,747	71,976
%	35.11	64.89	69.79	30.21	100
<b>2010</b>	45,648	73,241	77,669	41,220	118,889
%	38.4	61.6	65.33	34.67	100
<b>2014</b>	25,654	42,487	30,641	37,500	68,141
%	37.65	62.35	44.97	55.03	100
<b>Total</b>	104,733	185,801	186,195	104,339	290,534
%	36.05	63.95	64.09	35.91	100

**Table 1: Number of observations by regions, gender and sectors**

Region	Female	Male	LPE	Public	Total
<b>North</b>	62,330	110,544	127,544	45,330	172,874
%	36.06	63.94	73.78	26.22	100.00
<b>Centre</b>	23,299	39,152	35,257	27,194	62,451
%	37.31	62.69	56.46	43.54	100.00
<b>South</b>	19,104	36,105	23,394	31,815	55,209
%	34.60	65.40	42.37	57.63	100.00
<b>Total</b>	104,733	185,801	186,195	104,339	290,534
%	36.05	63.95	64.09	35.91	100.00

## 5. Methodology

In order to analyse the first aim of this paper, i.e. describe gender discrimination and public premium in Italy, we use two different methodology, The first one is the method developed by Oaxaca (1973) and Blinder (1973). We estimate the following wage equations

$$\ln w = x\beta + z\alpha + w\gamma + \varepsilon$$

Where  $w$  is hourly gross earnings,  $x$  is vector of personal characteristics (gender, age, education),  $z$  is vector of job characteristics (permanent contract, occupations and tenure);  $w$  is vector of workplace characteristics (sector of activity and region);  $\varepsilon$  is random error.  $\beta$ ,  $\alpha$  and  $\gamma$  are vectors of coefficients for personal, job and workplace variables.

The wage equations is estimates separately for the two groups, for example males  $M$  and females  $F$  (Blinder, 1973; Oaxaca, 1973). To simplify the notation consider  $\mathbf{X}$  to include both  $x$ ,  $z$  and  $w$  variables. Thus wage equation become:

$$\ln w = \mathbf{X}\beta + \varepsilon$$

The total Gap between male and female wages is due to

$$\ln w_M - \ln w_F = (\mathbf{X}_M - \mathbf{X}_F) \beta_M + \mathbf{X}_F(\beta_M - \beta_F)$$

where the explained portion  $(\mathbf{X}_M - \mathbf{X}_F) \beta_M$  is due to differences in characteristics  $\mathbf{X}$ , while the unexplained (residual and/or discrimination  $\mathbf{X}_F(\beta_M - \beta_F)$ ) is due to differences in coefficient for given  $\mathbf{X}$ .

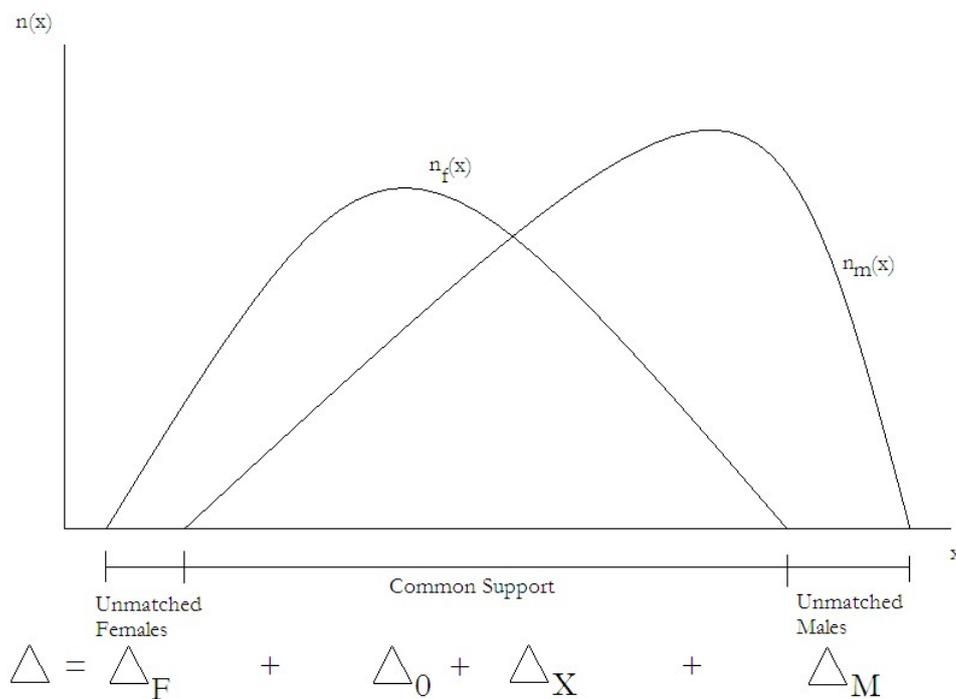
This is a parametric estimates that imply the estimation of a wage equation, we therefore also apply the methodology developed by Nopo (2008) that decomposes the gap in an outcome between two

groups using matching. Suppose the two groups are female (F) and Males (M). Consider  $n_F(x)$  and  $n_M(x)$  as the distribution of the female and male characteristics. The total gap  $\Delta$  is decomposed in:

$$\Delta = \Delta_F + \Delta_X + \Delta_0 + \Delta_M$$

where  $\Delta_X$  and  $\Delta_0$  as in Oaxaca are the explained and unexplained component for matched individuals. That is  $\Delta_X = (X_M - X_F)\beta_M$  is due to the difference in characteristics  $X$  for matched individuals, while  $\Delta_0 = X_F(\beta_M - \beta_F)$  is due to the difference in coefficient for given  $X$  for matched individuals. Finally,  $\Delta_F$  is the difference between matched and unmatched female and  $\Delta_M$  is the difference between matched and unmatched male.

**Figure 1: Nopo decomposition**



Finally we apply the Oaxaca decomposition of matched individual from Nopo. Section 6.1 provides results on all these decompositions.

The second aim of the paper is to analyse how the gaps previously estimated vary by occupation. In fact, the estimated gender and sector gap comes within occupation differences in earnings rather than from between occupation differences. It is then important to analyse what happens within each occupation. In order to investigate the gender and sector gaps within occupations, we have used several steps (following Goldin, 2014).

First we estimate log earnings equations, including various observables (such as age class dummies, education dummies, years, whether part time, whether with fixed term contract and sector of activity), we then include in the log earnings regression the log hours, the two-digit occupation dummies, a female dummy, and an interaction of these two. We look at the coefficient on female in the regression in order to analyse whether this is affected by the inclusion of occupation dummies. The coefficients of the interaction between female and occupations have to be interpreted as the penalty to being a woman relative to a man of equal education and age, given hours of work for each of the occupations. Second, to further understand differences by occupations, we follow the framework analysed by Goldin (2014) i.e. the compensating differentials model of pay with respect to the amenity job flexibility, that underlines that the nonlinear pay with respect to hours worked is responsible for the majority of the residual differences observed in earnings by gender. In fact, according to this framework, certain occupations impose heavy penalties on employees who want fewer hours and more flexible employment. The lower remuneration can result in shifts to an entirely different occupation or to a different position within an occupational hierarchy or to being out of the labor force altogether.

We therefore, estimate a log earnings equations considering both the log hours worked and the interactions between log hours worked and occupations. This allows to analyse the elasticity of labour supply within occupation. We then plot the coefficient against the gap (total and unexplained) for each occupation.

Finally, for each occupation we have the mean of hours overtime paid and the mean of earnings from overtime hours. We use those variables as a measure of job flexibility thus we plot the estimated gap by average overtime paid within occupations.

## **6. Results and Discussion**

### **6.1 Results from Decomposition**

The section present results from the estimate of gender and public gap. First we plot in the following figure the total gap distinguishing between the two methodology applied, i.e. Oaxaca-Blinder and Ñopo decomposition (se Fig. 2). Second we focus on the unexplained part of the gender and sector gap and we plot by years these gaps also considering the difference between the Oaxaca-Blinder and Ñopo decomposition allowing for a common support in the first one (see Fig.3-Fig.5).

With regards to the overall Gender gap, it has a U-shape over time: it decreases until 2010 whilst increases after the onset of the crisis. Sector gap, on the contrary, it has an inverted U-shape with the gap being almost equal to zero in 2014 (see Fig.2).

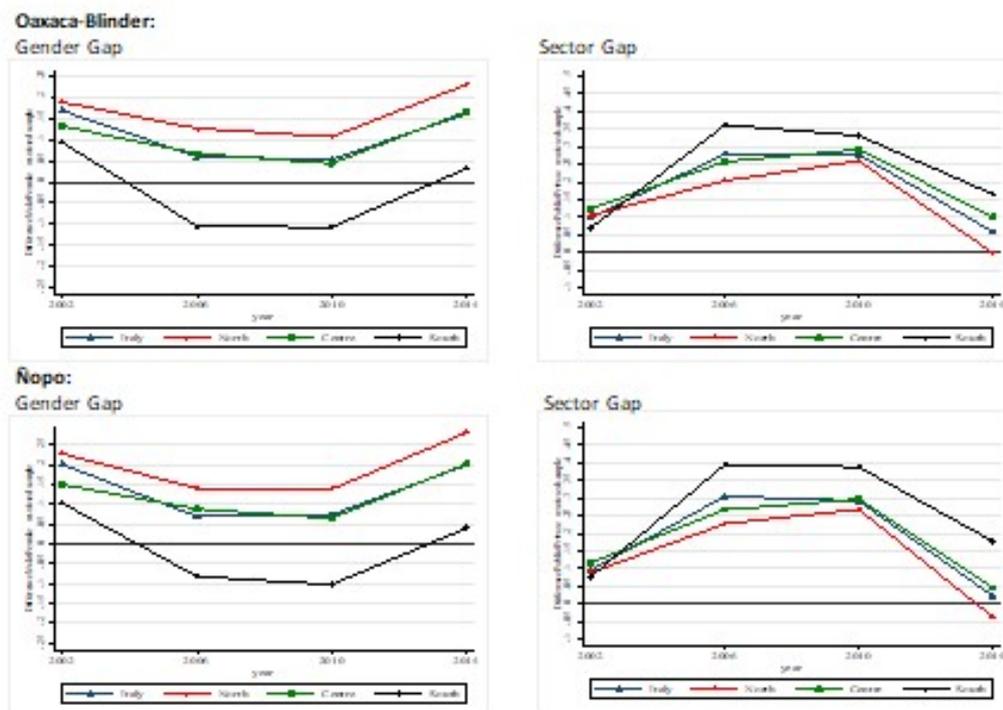
Figure 3 shows that Gender discrimination, overall, decreases over time with some differences: for public sector decreases above all in the South of Italy where it decreases also after the economic crisis; for the private sector, it is stable over time, higher in the North of Italy where it slightly increases over time

Figure 4 show that Public premium overall decreases after 2010 (except for the South), it is always higher for women

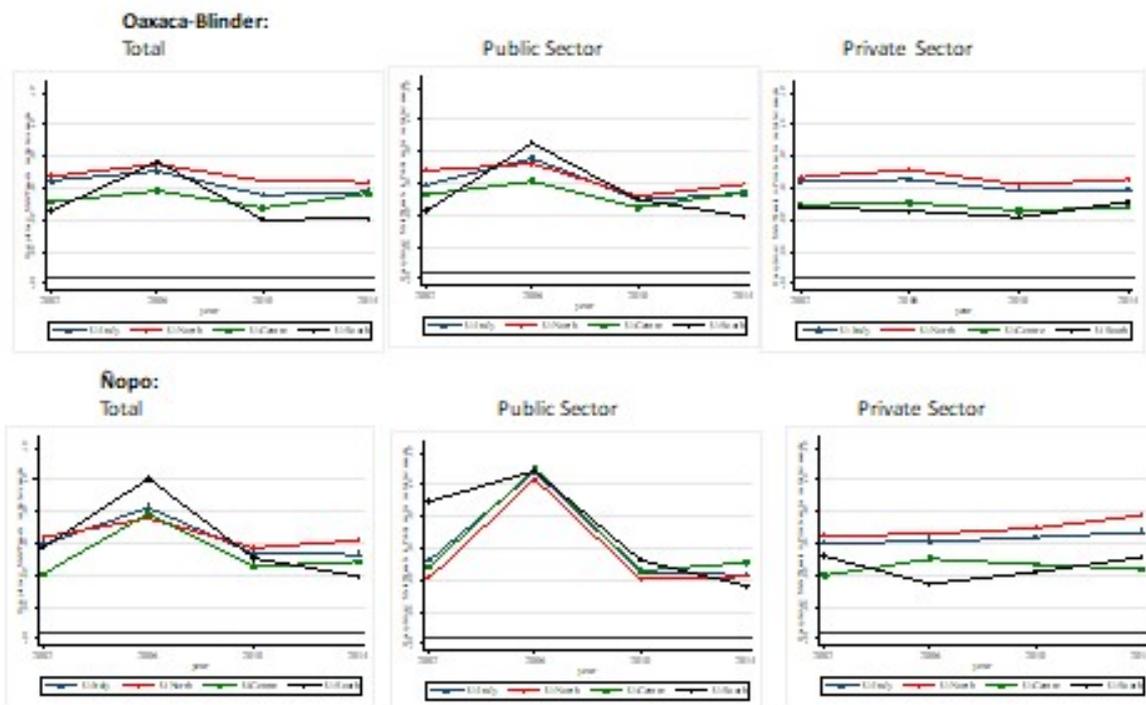
When considering matched procedure we find that the Traditional O-B Approach underestimates gender discrimination, in fact it is always lower than with  $\tilde{N}$ opo technique especially for the public sector, moreover it also underestimates public premium especially for females (see Figures 3 and 4)

When allowing for a common support: Gender discrimination peaks in 2006 (25%) and then decreases over time (around 9%), above all for the public sector. Public premium overall increases only in the South of Italy while it has an inverted-U shape in the Centre and in the North. However it decreases after 2010 for females. Like in other countries, the wage freeze penalized public sector workers, but in the South this was not true for males. (See Figures 5 and 6).

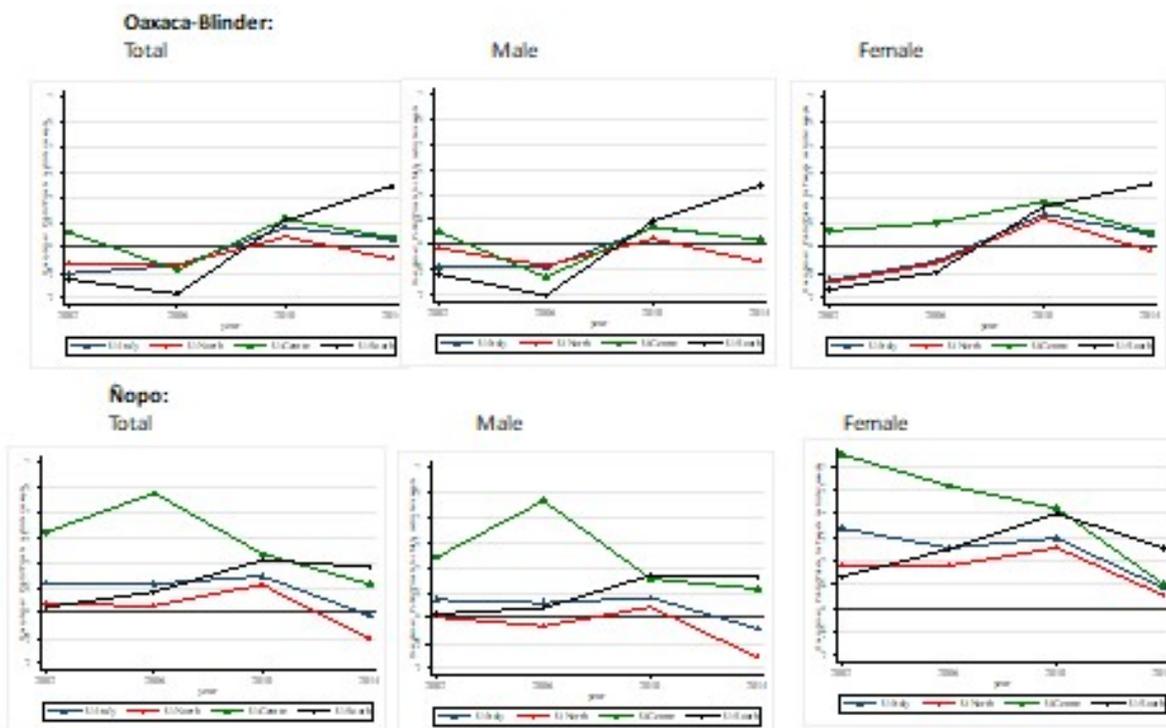
**Figure 2: Overall Gender and Sector Gap by regions, distinguish between Nopo and Oaxaca**



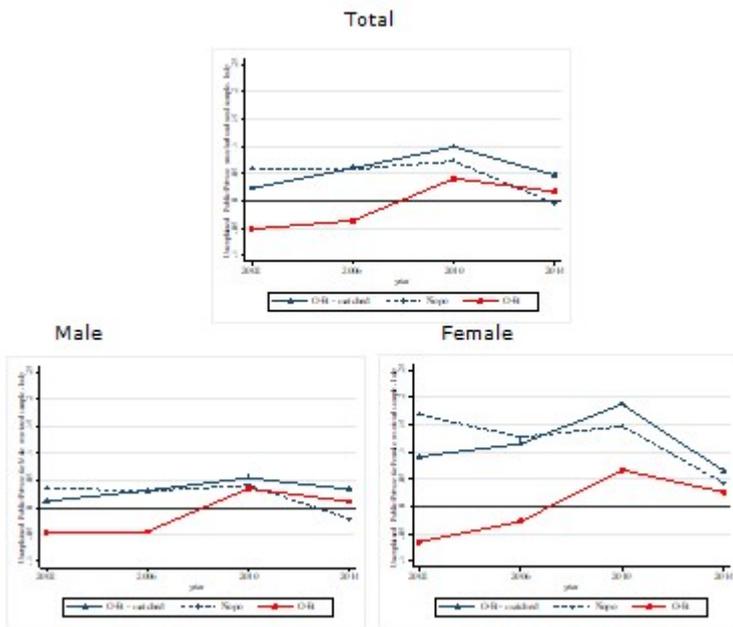
**Figure 3: Gender Unexplained Gap distinguish between Nopo and Oaxaca**



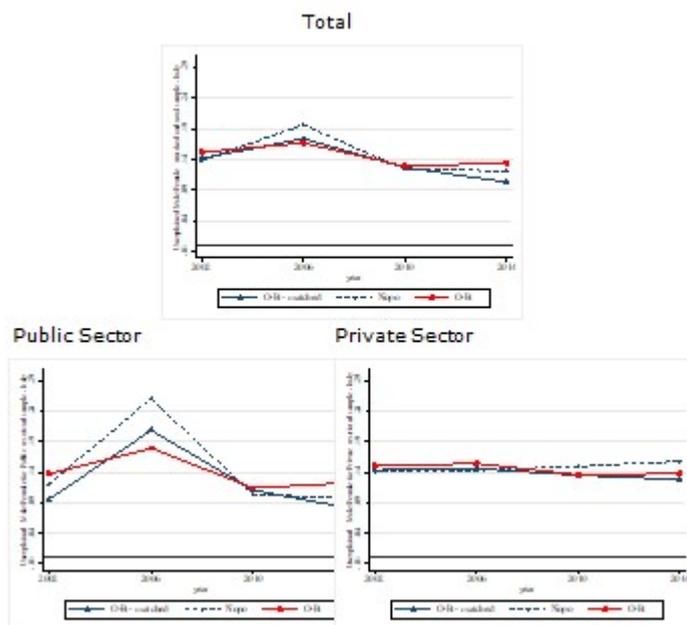
**Figure 4: Sector Unexplained Gap distinguish between Nopo and Oaxaca**



**Figure 5: Gender Unexplained Gap distinguish between Nopo and Oaxaca matched and unmatched**



**Figure 6: Sector Unexplained Gap distinguish between Nopo and Oaxaca matched and unmatched**



## 6.2 Results by occupations

The following section presents results by occupation. Table 1 reports estimated key coefficients for the log earnings equations. The three columns represents three different specification, in col. (a) the estimates include the female dummy and standard control (age class dummies, education dummies, years, whether part time, whether with fixed term contract, sector of activity) col. (b) adds log of hours, col. (c) log hours and occupation dummies, while col. (c) also the interactions. We can see that, when including all occupations the female coefficient decreases. In almost all cases the coefficient on female for each of the occupations is negative. That should not come as a surprise since it is a reflection of the lower earnings women receive relative to men in almost all occupations.

Figures 7 to 10 analyse how gender gap varies within occupation while figures 11-14 present the corresponding figures for sector gap. We plot both the total and the unexplained gaps with the elasticity of monthly earning with respect to monthly hours and with the average overtime paid within occupations.

There is a positive association between the gender earnings gap and the elasticity of monthly earnings with respect to hours both in 2010 and 2014. Occupations with higher elasticities have higher positive log earnings gender gaps. However when we plot the unexplained components of such gap we see that in 2014 the association between the unexplained component of gender earnings gap and the elasticity of monthly earnings is negative.

### ***Table 3: List of Occupations according to ISCO-08 two digit***

- 11 Chief executives, senior officials and legislators
- 12 Administrative and commercial managers
- 13 Production and specialised services managers
- 14 Hospitality, shop and related services managers
- 21 Science and engineering professionals
- 22 Health professionals
- 23 Teaching professionals
- 24 Business and administration professionals
- 25 Information and communications technology (ICT) professionals
- 26 Legal, social and cultural professionals
- 31 Science and engineering associate professionals
- 32 Health associate professionals
- 33 Business and administration associate professionals
- 34 Policing, legal, social, cultural and related associate professionals

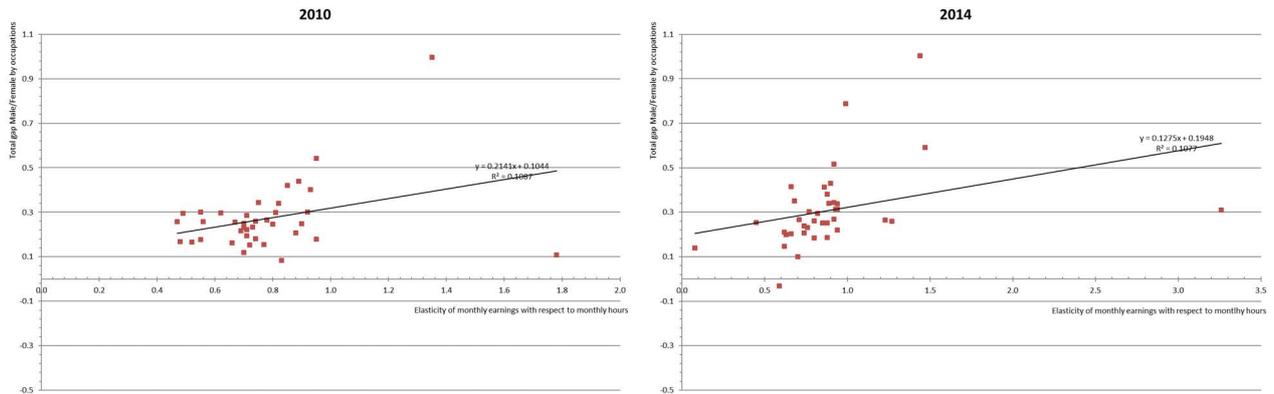
35 Information and communications technicians  
41 Office clerks  
42 Customer services clerks  
51 Personal and protective services workers  
52 Sales workers  
61 Market-oriented skilled agricultural and fishery, and forestry workers  
62 Subsistence farmers, fishers, hunters and gatherers  
71 Extraction and building trades workers  
72 Metal, machinery and related trades workers  
73 Precision, handicraft, printing and related trades workers  
74 Electrotechnology trades workers  
75 Food processing, wood working, textile and other craft and related trades workers  
81 Stationary plant and machine operators  
82 Assemblers  
83 Drivers and mobile-plant operators  
91 Cleaners and helpers  
92 Agricultural, fishery and forestry labourers  
93 Labourers in mining, construction, manufacturing and transport  
94 Food preparation assistants  
95 Street and related sales and service workers  
96 Refuse workers and other elementary service workers

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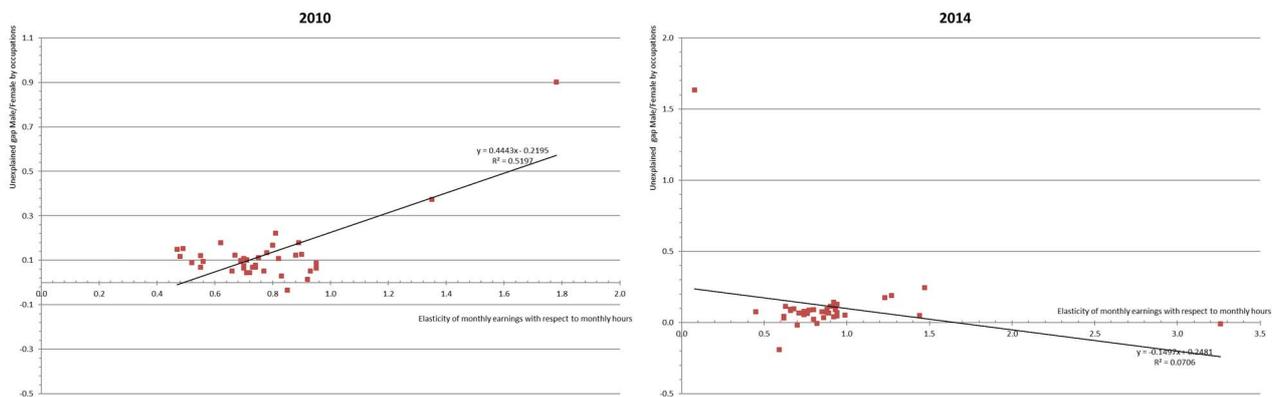
**Table 3: Estimates of log monthly earning equations.**

	col (a)	col (b)	col (c)	col (d)
Female dummy	-0.18***	-0.15***	-0.14***	-0.17***
Log hours paid		0.74***	0.79***	0.79***
Standar Controll	yes	yes	yes	yes
Occupation dummies			yes	yes
Interactions female*				
occ2_12				0.03
occ2_13				0.08***
occ2_14				0.27***
occ2_21				-0.05*
occ2_22				-0.07***
occ2_23				0.01
occ2_24				0.01
occ2_25				-0.06**
occ2_26				0.01
occ2_31				-0.02
occ2_32				-0.07***
occ2_33				-0.01
occ2_34				0.11***
occ2_35				-0.11***
occ2_41				-0.05*
occ2_42				-0.05**
occ2_43				-0.10***
occ2_44				-0.10***
occ2_51				-0.06**
occ2_52				-0.06**
occ2_53				-0.11***
occ2_54				-0.20***
occ2_61				-0.02
occ2_62				-0.36***
occ2_71				-0.05*
occ2_72				-0.05*
occ2_73				-0.02
occ2_74				0.03
occ2_75				-0.01
occ2_81				0.04
occ2_82				-0.03
occ2_83				-0.08***
occ2_91				-0.02
occ2_92				-0.16***
occ2_93				-0.04
occ2_94				-0.11***
occ2_95				-0.17*
occ2_96				-0.05**

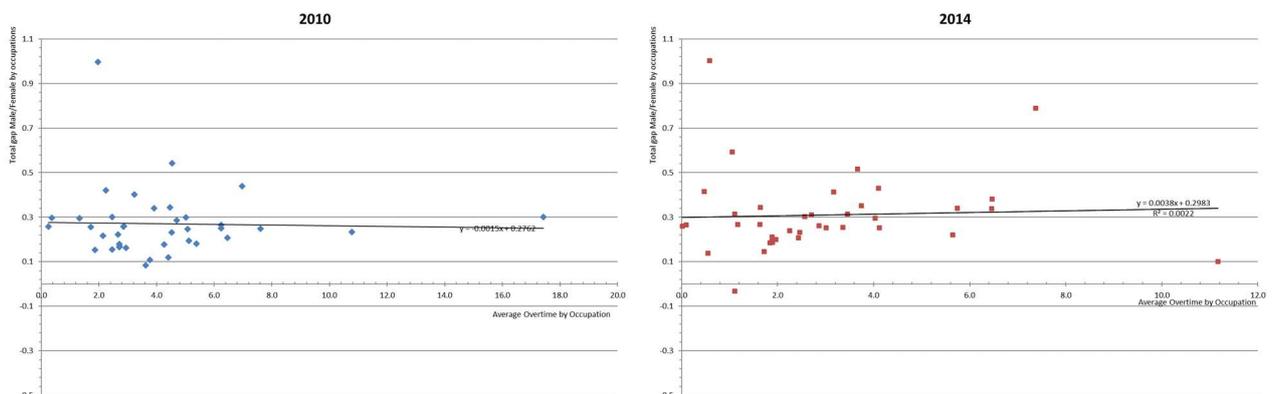
**Figure 7: Total Gender Gap and elasticity of monthly earning with respect to monthly hours by occupations (year 2010 and 2014).**



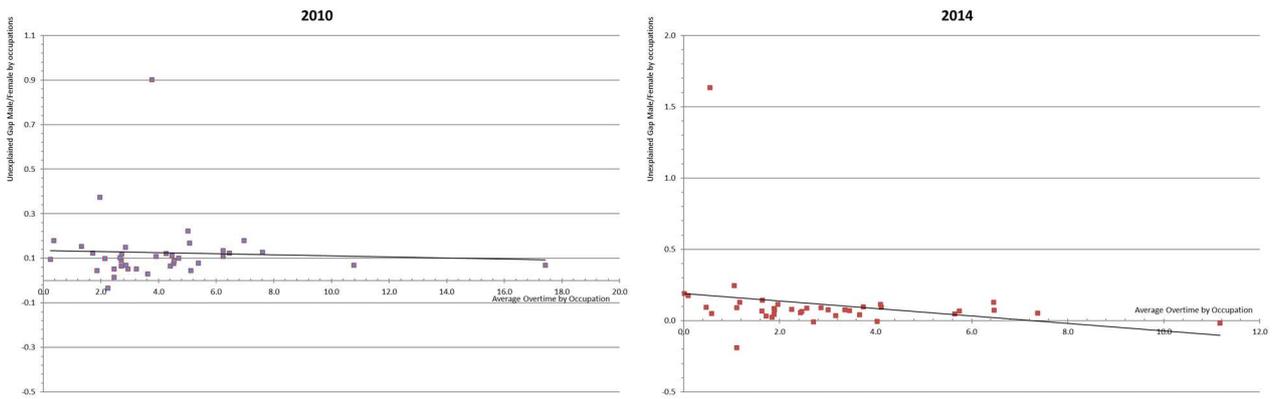
**Figure 8: Unexplained Gender Gap and elasticity of monthly earning with respect to monthly hours by occupations (year 2010 and 2014).**



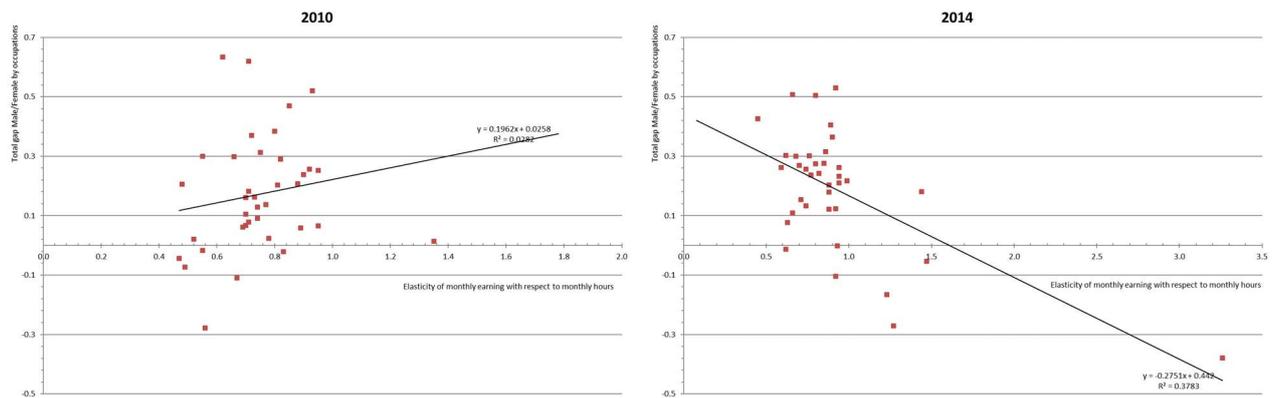
**Figure 9: Total Gender Gap and overtime hours average by occupations (year 2010 and 2014).**



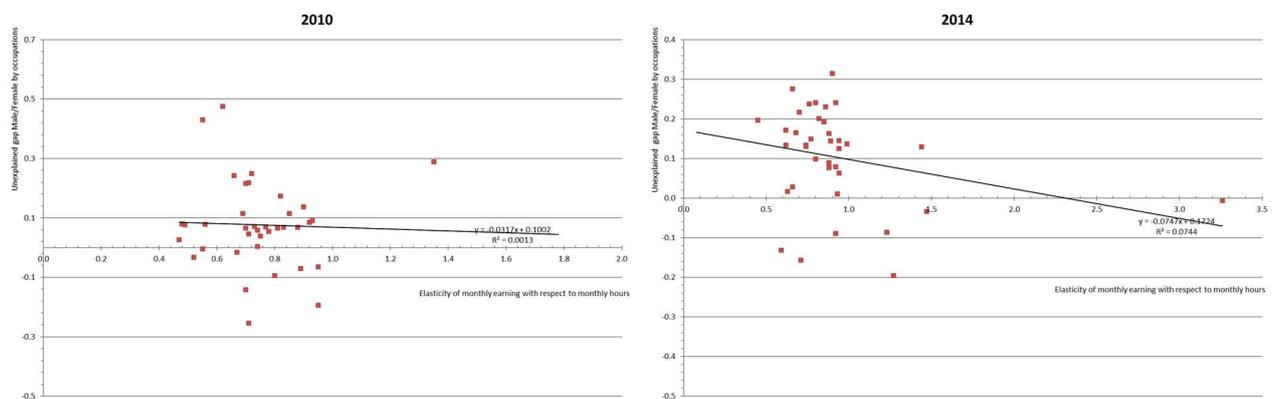
**Figure 10: Unexplained Gender Gap and overtime hours average by occupations**



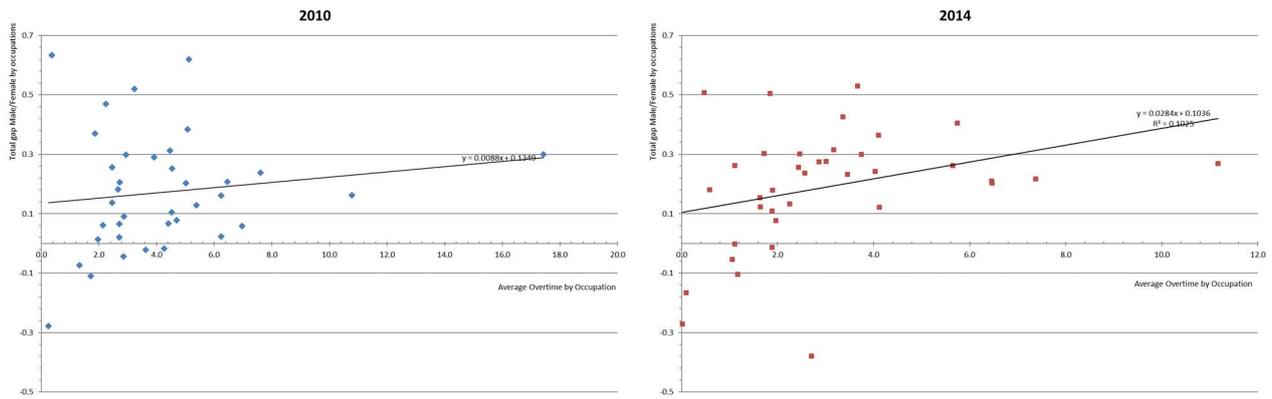
**Figure 11: Total Sector Gap and elasticity of monthly earning with respect to monthly hours by occupations (year 2010 and 2014).**



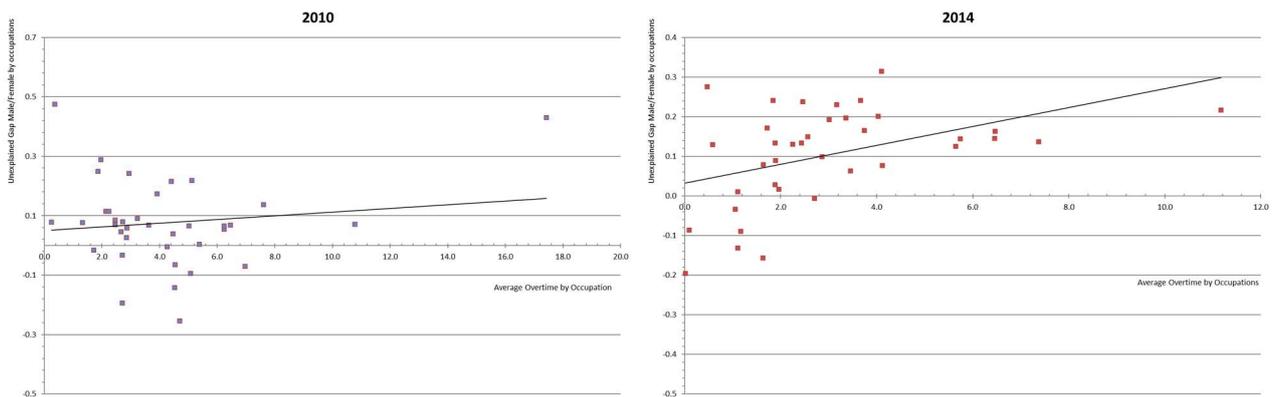
**Figure 12: Unexplained Sector Gap and eelasticity of monthly earning with respect to monthly hours by occupations (year 2010 and 2014).**



**Figure 13: Total Sector Gap and overtime hours average by occupations (year 2010 and 2014).**



**Figure 14: Unexplained Sector Gap and overtime hours average by occupations**



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