

EARNINGS LEVELS AND EARNINGS INEQUALITY IN TWO ITALIAN PROVINCES THROUGH THE PERIOD 1976-1996

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I. Introduction

Much work has been recently made on the distribution of wages in Europe and the United States. The international analyses show that countries with decentralised labour markets and systems of wage setting had exceptional increases in earnings inequality during the 1980s due to changes in the supply of and demand for skills (the United States and the United Kingdom). Nevertheless, countries with less increase in wage inequality suffered from much slower employment growth.

With regard to Italy, there is evidence that during the 1970s Italy experienced an impressive compression of wage differences, compression that stopped around 1982-1983. Many are the facts explaining this trend: the institutional change in the form of the escalator clause in Italian union contracts, the slowdown in inflation, the technological change and the loss of support for unions and their egalitarian pay policies. The work by Erickson and Ichino (1995) shows in particular how the 'scala mobile' increased the pay of low-paid workers faster than that of high-paid workers throughout much of the 1980s; between 1975 -year in which the fully egalitarian escalator was negotiated- and 1983 wage compression became a reality. They show that the trend toward a less unequal distribution came to a stop during the 1980s but it did not rise back to pre-1980s levels, despite the reforms of the mid-1980s. Erickson and Ichino explain the trend toward a less unequal distribution also in terms of the shift away from blue-collar and industrial jobs and towards white-collar and public administration jobs among both men and women.

In a recent work Brandolini et al. (2001) use the Historical Archive of the Bank of Italy's Survey of Household Income and Wealth to show that inequality in the distribution of net earnings decreased from late 1970s until the end of the 1980s and increased in the first years of the 1990s. This trend is confirmed also when measuring inequality within sub-groups of the population.

In this article we analyse the distribution of wages in two Italian provinces -Treviso and Vicenza- from 1976 to 1996. We use the main archives of the Italian Social Security Institute (I.N.P.S.) which collect data on both employers and individual employees.

Our aim is to investigate the trend in earnings levels and inequality in order to enlighten possible explanations in terms of changes in between- and within-group dispersion.

After a first investigation of the overall wage distribution and of the year-round full-time earnings distribution we will spend some time in the analysis of the tails of the distributions in order to measure the incidence of low-paid work. The second part of the paper focuses on measuring inequality and decomposing wage dispersion in its within- and between-group components.

II The level of earnings

Before measuring inequality we briefly look at the evolution of the level of earnings during the considered period, trying to underline the peculiar behaviour of the distributions by gender, age and working category and comparing the overall distribution with the distribution of year-round full-time earnings (YRFT) ¹.

Table 1 reports the mean and the median values of the overall distribution and of the YRFT distribution from 1976 to 1996.

Table 1. *Median and mean Earnings of all workers and full-time workers (1990 Lira)*

	Mean All Workers	Median All Workers	Mean Full Time	Median Full Time
1976	10770	10393	16731	15588
1977	12875	13525	18379	17190
1978	14241	15394	19025	17826
1979	14617	16164	19982	18817
1980	14306	15357	20031	19077
1981	15479	16846	20944	19961
1982	15663	17040	20779	19844
1983	15866	17110	20946	19984
1984	15974	17306	21397	20228
1985	16056	17168	22156	20482
1986	15639	16967	21607	20382
1987	15698	16526	22429	20972
1988	15459	15596	23036	21331
1989	15356	15371	23447	21545
1990	15533	15566	23605	21830
1991	16352	16633	24322	22718
1992	16650	17003	24506	22683
1993	17067	17669	24435	22615
1994	16606	17096	24520	22672
1995	16335	16487	24678	22627
1996	16639	16843	24920	22652

Source: author's elaboration on data from I.N.P.S.

Both the overall and the YRFT distribution moved rightwards between 1976 and 1996 with mean and median values increasing in the long run. The overall distribution increased more than the YRFT one with the mean and the median rising respectively by 54% and 62% against growth rates of 49% and 45% for the mean and the median of YRFT earnings. Although this higher increase in the long run, the overall distribution experienced a rest in the second half of the 1980s while the distribution of YRFT earnings did not; both values stopped rising and slightly decreased from 1985 till 1990.

These results confirm what other works found at national level; the moments of the distributions rose until the end of the 1980s and then declined for some years, with the overall

¹ Year-round full-time workers are individuals who worked full time for at least one day every month of the year.

earnings decreasing more than the YRFT earnings. Some of this difference between the two distributions was due to the spread of part-time work and to the reduction of the average number of months worked [Brandolini et al. (2001)].

This first look however, suggests a strong difference between the two distributions with regard to the evolution of inequality. The mean of the YRFT distribution increased more than the relative median with the difference between the two values increasing from seven percentage points to ten; in the case of the overall distribution the mean became lower than the median value. It seems that inequality pulled up the mean relative to the median of YRFT earnings, while the overall distribution experienced decreasing inequality.

We are looking more deeply at inequality in next paragraphs and we will try to find explanations to this first result.

When disaggregating by gender, working category and age these differences emerge only in some cases. First let us see the evolution of the mean and the median values for men and women considering both distributions (figure 1).

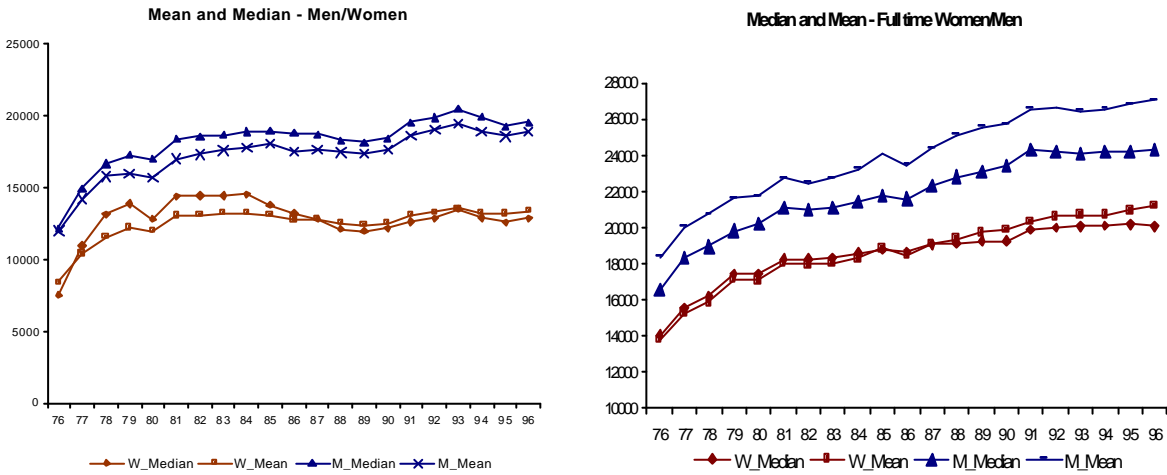


Figure 1. Median and mean by gender

With regard to the overall distribution of wages, until 1984 male and female earnings followed the same path, increasing throughout the period with a rest in the first years of the 1980s. Since 1984 female earnings moved back to last 1970s values with the median sharply declining and the mean slightly overtaking the median and pulling up inequality; only in the first years of the 1990s the female distribution recovered a little. Male earnings, despite a slight rest in the second half of the 1980s, kept on rising until the beginning of the 1990s and only in the last years of the series declined; the two moments, moreover, moved together and inequality does not seem to have experienced sharp changes.

While the first years of the 1980s were characterised by decreasing gender inequality, since the middle of the same decade these gains cancelled out, likely because of the sharp rise of women participation with part-time or temporary contracts as shown also by [(Brandolini et al. (2001)].

With regard to the YRFT distributions the mean increased more than the median both for men and for women; female earnings increased less than male earnings and the distribution became more unequal and more similar to the distribution of male workers. Our data confirm the results of other analyses on wage discrimination. There is a quite stable discrimination between women and men, as result from the work of the Ministero del Lavoro (2001) and from Brandolini et al. (2001).

Further interesting results emerge when considering earnings distributions by working category (figure 2).

Looking at all contracts, both white-collar and blue-collar earnings experienced a sharp increase during the last years of the 1970s and the first years of the 1980s; this rising trend came to a stop around the middle of the 1980s when wages started to decrease. They recovered between 1989 and 1993 and slightly decreased in the last available years. The level of earnings in 1996 was back to the levels of the first years of the 1980s.

The gap between blue and white collars did not close up; inequality within white-collars seems to have increased due to the rise of the mean respect to the median.

Even in this case, the distribution of YRFT presents a steady rising trend for both white and blue collars and a slight increase of the difference between the mean and the median of both distributions, confirming the push toward higher inequality among YRFT workers.

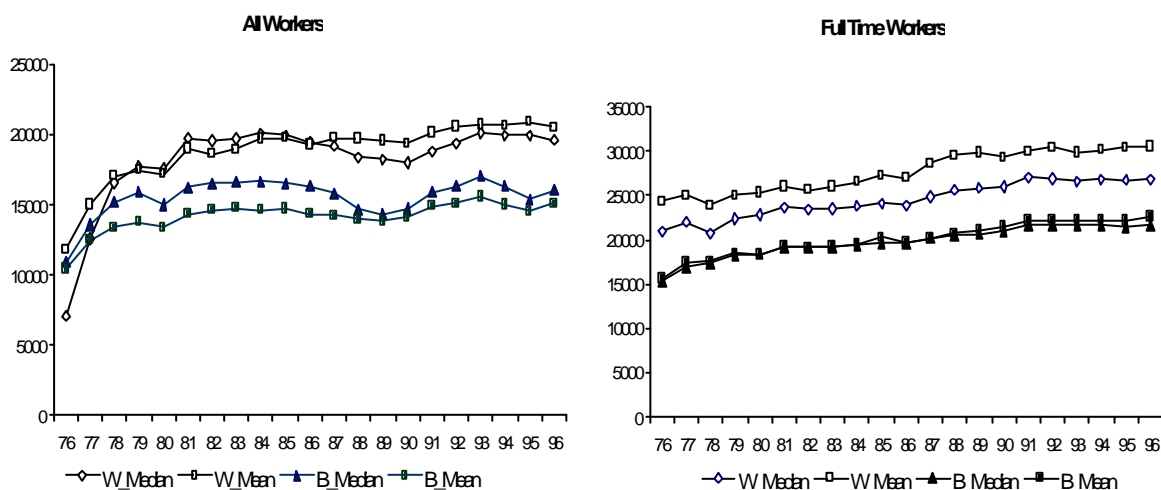


Figure 2. Median and mean by working category

Figure 3 presents the level of earnings (always the overall and the YRFT distributions) by age. During the 20 years YRFT earnings increased for all age groups but the earnings of younger workers increased less than the earnings of older employees. When considering all contracts the increase in inequality between age groups is more evident; earnings of younger employees (aged 15-24) increased till 1983 and steadily decreased from that time onwards, turning back to the levels of the last 1970s. The same path characterised the evolution of earnings for workers aged 25-34. At the same time earnings of older workers kept on increasing stopping to rise only at the beginning of the 1990s. From these first figures it appears that in the considered period experience became a more important component in the definition of earnings.

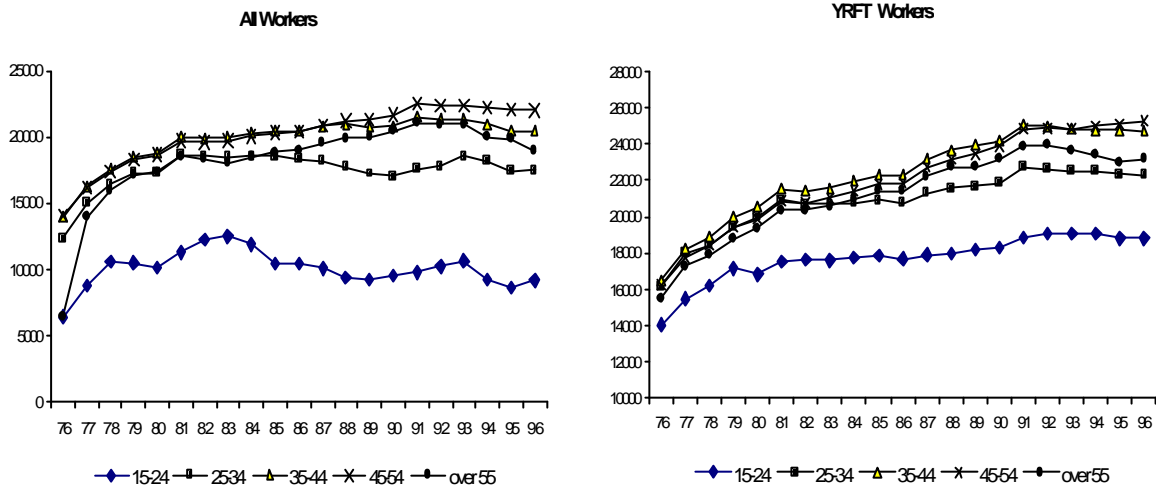


Figure 3. Mean and median of earnings by age

This trend in the levels of earnings of younger workers seems to confirm the impact of the ‘contratti formazione lavoro’, introduced in 1984. The number of young workers hired under these contracts -which require employers to provide some training in return for lower wages and social contributions- grew particularly between 1986 and 1987. Only in 1990 the number of workers hired under these contracts decreased and actually we see a recover of the level of earnings in that year.

III. The middle class jobs and the tails of the distributions

Before proceeding in the analysis of inequality we spend some time in measuring the density of the tails of the distributions; this analysis is not alternative to the inequality approach because growing inequality not necessarily takes the form of polarisation². In Brandolini (2001) the gains at the bottom of the distribution for all job positions were rather substantial in the 1980s and the incidence of low-paid workers halved from 16.9 per

² Moreover we can observe that none of the inequality measures we are using in next paragraphs are appropriated to evaluate the polarisation of the earnings distribution as observations move from the middle of the distribution to both tails.

cent in 1977 to a minimum of 8.1 per cent in 1989. The proportion rose to 15.7 in 1993 and, after a fall in 1995, reached a peak 18.3 per cent in 1998. The incidence of low-paid employment was less among full-time workers but tended to move as in the full sample until mid-1990s. The rise in low-paid jobs between 1993 and 1998 was fully accounted for by the spread of part-time work, as the incidence among full-time workers remains around 12 per cent.

We define middle class workers as those employees earning between 50% and 200% of the median value [Harrison and Bluestone (1986)] and we separate the change in the density of low- and high-paid workers in its two components: the change in distribution and the change in levels.

Table 3 presents the density of the tails and the density of the middle class jobs for both the overall and the YRFT distributions; in part 3.a we measure employment shares with reference to the 1990 median value while in part 3.b we use the current median (isolating in this way the distribution effects).

Table 3. *Employment shares by wage category based on 1990 median values (a) and current year medians (b)*

	Distribution (%)					Point change 1976-1996
	1976	1981	1986	1991	1996	
(3.a)						
All workers						
Low	42.20	25.79	26.3	28.65	28.17	-14.03
Mid	56.1	70.45	69.1	63.59	63.39	7.29
High	1.70	3.76	4.6	7.76	8.44	6.74
Total	100	100	100	100	100	
Full Time workers						
Lo	9.2	4.46	4.8	3.66	2.5	-6.7
W						
Mid	89.77	94.1	93.37	92.58	92.69	2.92
High	1.03	1.44	1.83	3.76	4.81	3.78
Total	100	100	100	100	100	
(3.b)						
All Workers						
Low	33.65	27.14	28.02	30.04	29.78	-3.87
Mid	58.99	70.21	68.76	64.2	64.07	5.08
High	7.36	2.65	3.22	5.76	6.15	-1.21
Total	100	100	100	100	100	
Full-Time Workers						
Low	3.68	3.58	3.69	4.02	2.72	-0.96
Mid	93.09	94.39	93.89	92.72	92.98	-0.11
High	3.23	2.03	2.42	3.26	4.3	1.07
Total	100	100	100	100	100	

Source: author's elaboration on data from I.N.P.S.

When considering the employment shares in terms of the 1990 median value (table 3.a) it is shown that between 1976 and 1996 both distributions were characterised by a sharp decrease in the density of the low-wage tails compensated by a shift toward the middle class and the high-tail jobs. However, comparing the total change with the change due to distribution effects we find that distribution changes explain very few of the total effect; the total decrease in the share of low wages is largely explained by the change in the median value of the distribution and not by redistribution. The same happens for the high-wage share.

The important result emerging from the second part of the table is a long run trend toward lower polarisation. When considering the overall earnings distribution the low-tail density decreased from more than 33% to less than 30% and the high-tail fell from 7.36% to 6.15% with the middle class widening by 5 percentage points. In the long run we can affirm that the distribution went toward less polarisation with a decrease in the low-wage share which was higher than the decrease in the high-wage share.

In the short run we can distinguish two sub-periods: the overall distribution experienced a rise in middle class jobs, a lower low-wage share and a higher share of high-wages till mid 1980s; the trend reversed since the second half of the 1980s till recent years. The impression is that last years caused an increase in the proportion of both low- and high-wages, taking to higher earnings inequality.

What happened in the long run for YRFT earnings was different; the low-wage share diminished from 3.68% in 1976 to 2.72% in 1996 compensated by a high-tail increase of one percentage point, at the expense of the middle class which did not change. Even in this case we can distinguish two sub-periods. Until the middle of the 1980s the low-wage share decreased, the middle class jobs rose and the high-wage share narrowed; from the middle 1980s onwards polarisation increased accompanied by a narrowing middle class and a low-wage share increasing more than the density of high wages. Fortunately the beginning of the 1990s was characterised by a sharp decrease in the proportion of low wages which cancelled out the high increase of the second half of the 1980s.

Disaggregating by gender and working category (only YRFT earnings) some important differences emerge (table 4).

The total effect is different between men and women; low-wage women density decreased at the advantage of both the middle class and the high-wage tail while the distribution of men became less unequal with both the high-wage share and the low-wage share decreasing and the middle class increasing. In both cases the distribution effect counts for a small part of the change in employment share; moreover, when considering male earnings the distribution effect measures a different trend with the middle class narrowing and the low and high-wage tails increasing. That means that the distribution impact caused higher inequality which was compensated by the change in the median value.

When considering blue- and white-collars the total effect was alike: the low-wage tail narrowed and the middle and high share of both distributions widened. However the distribution impact was different; the white collar distribution experienced a trend toward lower inequality with the low- and high-wage share narrowing and the middle class widening. Differently, the distribution effect for blue-collar workers was in the same direction of the total change with a narrowing low-wage tail and widening middle class and high-wage tail. When comparing these results with the total YRFT distribution it emerges the stronger impact of the distribution of blue-collars in determining the sign of change of the employment shares.

Table 4. Tails of the distribution by gender and working category. Only full time workers

	1976	1981	1986	1991	1996	Point Change	1976	1981	1986	1991	1996	Point change
	<u>Current median</u>						<u>1990 Median</u>					
Women												
Low	6.88	5.97	5.05	6.17	3.80	-3.08	12.99	6.79	5.58	5.98	3.58	-9.41
Mid	92.26	93.58	94.17	92.37	94.19	1.93	86.82	92.89	93.75	92.31	94.03	7.21
High	0.85	0.44	0.77	1.45	1.99	1.14	0.17	0.30	0.66	1.70	2.38	2.21
Total	100	100	100	100	100		100	100	100	100	100	
Men												
Low	1.64	1.49	2.61	2.51	1.87	0.23	6.78	2.09	3.72	2.21	1.72	-5.06
Mid	94.65	96.02	94.54	93.80	93.28	-1.37	92.04	96.20	94.09	93.60	98.22	6.18
High	3.70	2.48	2.84	3.67	4.83	1.13	1.16	1.69	2.18	4.18	0.05	-1.11
Total	100	100	100	100	100		100	100	100	100	100	
White Collars												
Low	7.15	5.05	4.03	6.53	3.33	-3.82	12.18	6.20	4.94	6.44	3.28	-8.9
Mid	84.30	90.85	90.94	87.34	89.85	5.55	84.12	90.63	90.97	86.59	89.25	5.13
High	8.54	4.09	5.01	6.12	6.80	-1.74	3.68	3.15	4.08	6.96	7.45	3.77
Total	100	100	100	100	100		100	100	100	100	100	
Blue-Collars												
Low	3.48	3.22	3.42	2.70	2.23	-1.25	8.23	4.03	4.58	2.45	2.05	-6.18
Mid	95.94	96.55	96.11	96.79	96.26	0.32	91.66	95.84	95.22	96.91	96.28	4.62
High	0.57	0.22	0.45	0.50	1.50	0.93	0.09	0.11	0.19	0.63	1.65	1.56
Total	100	100	100	100	100		100	100	100	100	100	

Source: author's elaboration on data from I.N.P.S.

IV. Inequality: comparing different measures

In this section we compare different measures of inequality; the first step is the analysis of the overall earnings distribution and of the distribution of YRFT earnings. Then we focus on between and within group inequality in order to verify the trend in gender discrimination, the path of the experience premium and the different inequality trend between and within working categories.

We make use of standard measures of inequality as the Gini coefficient, the standard deviation of logarithms, the coefficient of variation and the Theil entropy index; moreover we add the Atkinson index. The Atkinson index adopts a welfare function approach; that means he employs the social welfare function directly³.

The problem with using the standard inequality measures is that they can give conflicting results; for example the Gini coefficient and the standard deviation of logarithms are sensitive to transfers at all income levels but at different income levels the relative sensitivity changes.

Briefly reviewing the properties of these inequality measures we can use an exercise suggested by Levy and Murnane (1992) and evaluate the change in each inequality index when we suppose a transfer of X money from the person with a higher earnings to the individual with a lower earnings. The Gini coefficient will always register a decrease in inequality which will be higher if the transfer is done in the middle quintile instead of in the poorer or richer quintile; in general the variance of the natural log of earnings will measure reduced inequality and the decrease in inequality will be greater if the transfer occurs in the distribution's poorest quintile; the decrease in inequality as measured by the coefficient of variation is independent of the quintile in which the transfer occurs; the Theil entropy index measures a decrease in inequality which will be greatest when the transfer is made in the distribution's poorest quintile.

IV.1 Inequality measures for the aggregate distributions

The main result (table 5) is that in the long run inequality for the overall distribution followed a decreasing trend whatever inequality measure we use. In the short period most of the indexes show a common trend with only few exceptions. From 1976 to 1982 inequality decreased with a short rest in 1980; then from 1983 till 1989 all inequality measures experienced an increasing trend with a resting point in 1986. Then the trend was upwards untill 1989 and downwards from 1989 to 1993.

In the last years they recovered and only in 1996 they slightly fell.

³ The hypotheses on the welfare function are restrictive. It is supposed that it is symmetric, homothetic and additively separable in individual incomes. The index depends on the measure of the degree of inequality-aversion ϵ , the relative sensitivity to transfers at different income levels. As ϵ arises more weight is given to transfers at the lower end of the distribution and less weight to transfers to the top.

Table 5. *Inequality indexes – All workers and YRFT earnings*

10	All Workers					YRFT Workers				
	Gini Coeff.	St.Dev. of logs	Coeff. of Variation	Theil Entropy Index	Atkinson Index	Gini Coeff.	St.Dev. of logs	Coeff. of Variation	Theil Entropy Index	Atkinson Index
1976	0.417	1.241	1.6	0.334	0.379	0.186	0.379	0.443	0.074	0.067
1977	0.377	1.184	1.295	0.28	0.339	0.184	0.382	0.424	0.07	0.066
1978	0.341	1.082	0.667	0.222	0.299	0.181	0.395	0.427	0.07	0.068
1979	0.342	1.087	0.652	0.221	0.3	0.167	0.356	0.388	0.06	0.057
1980	0.353	1.082	0.664	0.229	0.304	0.174	0.383	0.384	0.061	0.062
1981	0.337	1.042	0.641	0.213	0.285	0.17	0.367	0.386	0.06	0.059
1982	0.324	1.016	0.614	0.198	0.27	0.167	0.372	0.372	0.057	0.058
1983	0.326	1.02	0.62	0.2	0.271	0.173	0.364	0.383	0.061	0.059
1984	0.335	1.042	0.645	0.212	0.283	0.173	0.358	0.399	0.063	0.059
1985	0.36	1.078	0.969	0.266	0.309	0.192	0.395	0.74	0.106	0.078
1986	0.351	1.058	0.675	0.227	0.295	0.178	0.394	0.411	0.066	0.064
1987	0.366	1.071	0.713	0.244	0.307	0.185	0.397	0.428	0.071	0.067
1988	0.384	1.095	0.744	0.263	0.323	0.193	0.446	0.443	0.077	0.077
1989	0.39	1.104	0.753	0.27	0.329	0.192	0.54	0.445	0.078	0.088
1990	0.388	1.126	0.74	0.266	0.331	0.191	0.63	0.431	0.077	0.099
1991	0.387	1.17	0.739	0.267	0.341	0.2	0.776	0.447	0.086	0.129
1992	0.379	1.128	0.725	0.256	0.326	0.194	0.67	0.436	0.079	0.106
1993	0.368	1.141	0.698	0.244	0.321	0.189	0.676	0.418	0.074	0.103
1994	0.382	1.142	0.723	0.26	0.333	0.191	0.638	0.422	0.076	0.1
1995	0.397	1.174	0.758	0.28	0.35	0.203	0.724	0.45	0.087	0.12
1996	0.391	1.151	0.743	0.271	0.339	0.2	0.639	0.439	0.082	0.103

Source: author's elaboration on data from I.N.P.S.

From these figures it seems clear that the labour market from 1976 to 1996 was characterised by frequent changes in the structural variables which induced different distributions of wages.

All inequality measures, even though in different proportions, show an upwards path from 1982/83 till the end of the 1980s, a rest in the first years of the 1990s and increasing dispersion from 1993 onwards. These results are different from what Brandolini et al. (2001) find with respect to the national context; that is likely due to the fact that we work on gross earnings while they use net earnings.

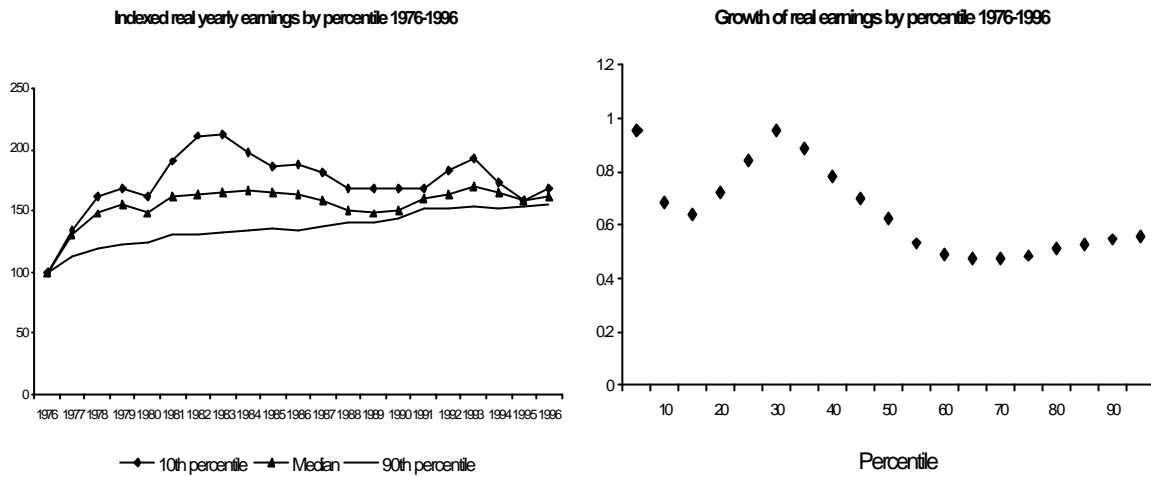


Figure 4. Percentile levels and growth rates 1976-1996

Figure 4 on the left draws the median, the tenth and the ninetieth percentiles of the overall distribution; for ease of comparison wages are indexed to an average of 100 in 1976. The wages of the least skilled, proxied by the tenth percentile, sharply increased till 1983 and then declined through the following years losing much of the gain; only in the first years of the 1990s they slightly recover. Also the median followed a similar path but much more smoother than the 10th decile. The highest percentile steadily increased throughout the whole period. In the long run the lower deciles increased slightly more than the higher ones, as confirmed by the right-hand graph of figure 4; that result justifies the lower inequality measures we find in year 1996 with respect to year 1976. The short-term changes in the inequality measures are still due to the strong differences in the growth rates of the percentile values through the years.

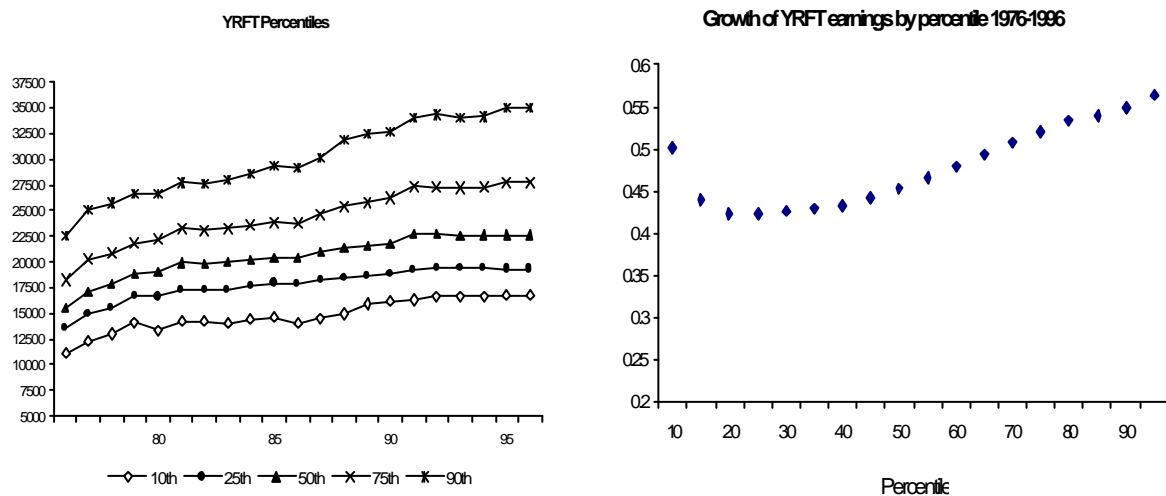


Figure 5. Percentile levels and growth rates 1976-1996

The inequality measures for YRFT workers tell us some interesting facts. All indexes, but the coefficient of variation, increased in the long run⁴. Most of them show a decreasing trend between 1976 and 1982 and an increasing path through the middle of the 1980s and the beginning of the 1990s; in 1991 all measures start decreasing. Alike the overall distribution (previous table) year 1985 presents an isolated pick.

The deciles of the YRFT distribution (figure 5) were increasing throughout the entire period with the upper decile gaining more than 50% and the lower decile increasing slightly more than 40%; however, the right-hand side of the figure shows that there was increasing divergence in earnings along the entire distribution.⁵ The relation between each percentile and the relative growth rate is linear, meaning that the higher the percentile the higher the 1976-1996 growth rate.

This result confirms what we already observed looking at the median and the mean of the distribution. Inequality among YRFT workers increased in the long run.

IV.2 Between group inequality: gender differences and the role of experience

In this section we try to interpret previous section results in terms of wage differentials between younger and older workers, among individuals with the same levels of experience, between women and men belonging to the same working category and between employees of different working categories.

Table 6 presents the ratios of median earnings in 1976, 1981, 1986, 1991 and 1996, grouped by age, gender and working category; changes in these ratios show changes in different aspects of between group earnings inequality.

The female/male earnings ratio presents strong differences between white- and blue-collar workers. Since 1976 till the end of the considered period gender earnings differences followed an opposite trend with respect to the two categories. The gender wage gap increased throughout the entire period and for all age groups –but the over 55- in the case of blue-collars while steadily closed up among white collars.

Dispersion between individuals of different working categories reduced in the long run at all ages and for both men and women, except for the younger female blue-collar workers (aged 15-24) who were strongly penalised during the whole period. However the long run trend hides strong differences between the two sub-periods 1976-1986 and 1986-1996; in fact the decrease in wage dispersion between working categories which characterised the first ten years of the series was followed by an opposite trend which reopened the gap. Thus, between group inequality in the considered twenty years generally fell between working categories but increased between men and women belongin to the blue-collar category.

⁴ And even in this case the measure of inequality is not much lower than in 1976.

⁵ If we accept the percentile values as proxies of the remuneration of different skill levels, we can affirm that skill differentials have increased at all points in the skill distribution. This picture explains why the inequality measures adopted increased in the considered period.

Table 6. *Earnings ratios for year-round full-time workers*

	1976	1981	1986	1991	1996	1976	1981	1986	1991	1996
Female/Male Earnings ratio by age										
Age	Blue-Collars					White-Collars				
15-24	0.926	0.944	0.935	0.885	0.866	0.832	0.875	0.926	0.941	0.931
25-34	0.853	0.872	0.885	0.819	0.818	0.723	0.860	0.812	0.785	0.796
35-44	0.853	0.854	0.867	0.804	0.806	0.678	0.805	0.788	0.744	0.745
45-54	0.886	0.876	0.883	0.816	0.795	0.667	0.756	0.768	0.738	0.737
over 55	0.472	0.815	0.858	0.817	0.844	0.182	0.660	0.644	0.586	0.625
Blue/White Collar Earning Ratio by Age										
	Women					Men				
15-24	0.912	0.870	0.879	0.831	0.844	0.820	0.807	0.871	0.883	0.907
25-34	0.811	0.825	0.871	0.818	0.817	0.687	0.813	0.799	0.784	0.795
35-44	0.716	0.787	0.813	0.742	0.748	0.569	0.742	0.739	0.687	0.692
45-54	0.697	0.822	0.841	0.744	0.722	0.525	0.708	0.732	0.673	0.669
over 55	1.342	0.854	0.937	0.921	0.838	0.517	0.692	0.703	0.661	0.621
Earnings ratio between age groups										
White Collars										
	Women					Men				
15-24/25-34	0.845	0.871	0.907	0.904	0.882	0.734	0.856	0.795	0.755	0.755
25-34/35-44	0.875	0.945	0.901	0.862	0.868	0.820	0.885	0.876	0.817	0.813
35-44/45-54	0.957	1.042	1.029	0.990	0.952	0.942	0.979	1.003	0.982	0.942
Blue-Collars										
	Women					Men				
15-24/25-34	0.950	0.919	0.915	0.919	0.911	0.876	0.849	0.866	0.850	0.861
25-34/35-44	0.992	0.991	0.966	0.950	0.948	0.991	0.970	0.946	0.932	0.934
35-44/45-54	0.983	0.998	0.994	0.988	0.987	1.022	1.025	1.012	1.002	0.974

Source: author's elaboration on data from I.N.P.S.

We now turn to the analysis of the evolution of the earnings premium associated with age, which we take as a proxy of labour market experience. Table 6 presents the ratio of earnings between different age groups by gender and working category.

With regard to white collar workers the premium associated with experience increased very slightly in the long run for both women and men; in contrast, remuneration of the younger workers sharply rose. In 1996 the younger white collars were paid proportionally more than the older ones. However, as already seen in previous paragraphs, the trend in the long run is different from the short period experience; even in this case data show that till 1986 the path was toward a decreasing experience premium at all age levels.

Blue-collar workers present a different situation; wage differentials between younger and older workers expanded throughout the whole period and for both women and men.

Concluding, we can say that in the twenty considered years the only category which lost in the labour market in terms of remuneration was the group of blue-collar women who

experienced an increasing discrimination with respect to both their white-collar colleagues and male workers. Gender discrimination, however, decreased among white-collar workers.

Wage dispersion decreased between blue- and white-collar workers with the exception of young women.

The experience premium in general increased for both genders and working category. An interesting fact emerged: the wage of young white-collar workers increased relative to their older colleagues for both men and women.

These results do not permit to affirm that there was a trend toward less between-group discrimination and suggest the importance of disaggregate as much as possible.

Table 7. *Within group inequality by age, gender and working category*

		Point Change		
		Gini coefficient	Coefficient of Variation	Theil Entropy Index
White-Collars				
Female	All	-0.04	-0.03	-0.01
	15-24	-0.05	-0.09	-0.02
	25-34	-0.04	-0.06	-0.01
	35-44	-0.06	-0.06	-0.03
	45-54	-0.08	-0.08	-0.06
	over 55	-0.13	-0.29	-0.15
Male	All	-0.02	-0.07	-0.01
	15-24	-0.06	-0.07	-0.02
	25-34	-0.01	-0.01	0.00
	35-44	-0.02	-0.05	-0.01
	45-54	-0.04	-0.12	-0.04
	over 55	0.04	-0.06	0.04
Blue-Collars				
Female	All	0.01	0.03	0.01
	15-24	0.01	0.03	0.01
	25-34	0.01	0.05	0.01
	35-44	-0.01	0.01	0.00
	45-54	-0.02	0.00	-0.01
	over 55	-0.14	-0.25	-0.11
Male	All	0.01	0.04	0.01
	15-24	0.01	0.02	0.01
	25-34	0.00	0.02	0.00
	35-44	0.01	0.05	0.01
	45-54	0.02	0.02	0.01
	over 55	0.04	0.08	0.04

Source: author's elaboration on data from I.N.P.S.

IV.3 Within group inequality with respect to age, gender and working category

Table 7 presents the point change⁶ of various inequality measures between 1976 and 1996, calculated by gender, age and working category. First of all it is clear the difference between white and blue collars; inequality within blue-collar workers increased while within white-collars decreased, for both genders. Moreover, while the fall in wage dispersion within white-collar female workers was higher than within white-collar male workers the increase in inequality within men blue-collars was higher than within the female group. Women contributed less than men when inequality increased and more than men when it decreased.

The trend is similar among different age groups.

This result confirms what Brandolini et al. (2001) find in their work: inequality among women and men separately followed different paths with the female distribution experiencing a sharper decrease in inequality than men.

The age disaggregation shows a common trend between all age groups; in general, within age inequality decreased for both men and women white-collars and increased for all age groups of male and female blue-collars with the exception of the older female workers. In this case the inequality measure slightly diverges with some of them representing a different trend.

Table 8 reports the decile ratios by gender, age and working category. The results confirm what the inequality indexes already showed.

⁶ In appendix I report the levels of the inequality indexes

Table 8. *Percentile ratios by age, gender and working category*

		90-10 percentile ratio					75-25 percentile ratio				
		1976	1981	1986	1991	1996	1976	1981	1986	1991	1996
Women	Age										
White-Collars	15-24	2.050	1.823	1.578	1.621	1.453	1.310	1.229	1.202	1.250	1.198
	25-34	2.496	1.864	1.835	2.547	1.713	1.453	1.239	1.239	1.352	1.306
	35-44	6.012	2.619	2.12	2.244	2.143	1.691	1.334	1.273	1.382	1.403
	45-54	7.772	5.412	4.537	4.204	2.121	1.872	1.459	1.488	1.401	1.410
	over 55	6.777	5.526	4.761	5.825	4.999	3.464	4.335	3.569	4.005	2.243
Blue-Collars	15-24	1.692	1.622	1.846	1.757	1.722	1.243	1.251	1.372	1.263	1.249
	25-34	1.659	1.751	1.558	1.540	1.560	1.232	1.215	1.185	1.215	1.229
	35-44	2.311	2.362	1.922	1.693	1.787	1.287	1.277	1.217	1.244	1.276
	45-54	2.809	2.446	2.277	1.817	1.786	1.324	1.308	1.274	1.252	1.267
	over 55	4.835	5.246	3.864	3.849	2.688	3.607	2.255	1.888	1.620	1.407
Men											
White-Collars	15-24	2.296	1.715	1.666	1.809	1.649	1.550	1.319	1.245	1.320	1.265
	25-34	2.322	1.849	1.89	2.152	2.085	1.591	1.418	1.459	1.485	1.498
	35-44	2.797	2.177	2.3	2.504	2.672	1.728	1.506	1.529	1.623	1.673
	45-54	3.558	2.618	2.53	2.482	3.003	1.864	1.549	1.569	1.591	1.696
	over 55	3.646	2.969	3.573	4.219	6.293	2.021	1.654	1.662	1.741	2.042
Blue-Collars	15-24	1.781	1.647	2.042	2.004	1.805	1.284	1.304	1.348	1.336	1.285
	25-34	1.631	1.482	1.471	1.588	1.619	1.271	1.211	1.213	1.262	1.282
	35-44	1.706	1.537	1.56	1.662	1.732	1.304	1.234	1.242	1.298	1.333
	45-54	1.732	1.579	1.596	1.675	1.792	1.306	1.244	1.250	1.301	1.355
	over 55	1.828	1.626	1.705	1.675	1.900	1.305	1.241	1.275	1.290	1.329

Source: author's elaboration on data from I.N.P.S.

V Conclusions

In general the level of earnings increased throughout the whole period; however some important differences emerge especially when separating by age and gender. The younger workers together with women have been experiencing the lower increase (or the higher decrease, in the case of the overall distribution) in the level of wages and the stronger rest after the middle of the 1980s. Some explanations could be found in the high increase in part-time participation of women and the sharp increase of young employment under 'contratti formazione lavoro'.

Inequality measures and the ratios between distribution percentiles again show a different path for the overall earnings distribution and the distribution of YRFT earnings; during the considered period the former measured a decrease in inequality while the latter experienced an increase in wage dispersion. However, the trends in the sub-periods are similar, with changes less pronounced for the YRFT distribution;

inequality followed in general a decreasing trend until the beginning of the 1980s and an increasing path since that year toward the beginning of the 1990s. The beginning of the last decade measured a decreasing path in inequality with some recovering between 1995 and 1996.

Decomposing inequality in its within-group and between-group components enlightens important facts.

First of all between-gender inequality increased throughout the entire period within blue-collars and steadily decreased within white-collars; wage differences between white and blue-collars (by gender) narrowed with the exception of the younger female workers; finally the age/experience premium increased within each working category and gender, rising inequality between younger and older workers.

Within-group inequality shows a different story for white and blue-collars; the former category showed a decrease in inequality among both women and men of whatever age while the latter experienced an increase in wage dispersion among all the age groups and for both genders. That means that the category of blue-collars underwent increasing inequality between men and women together with increasing inequality within each gender group. Given the narrowing wage dispersion among white-collar workers, this result suggests that the increase in inequality among YRFT workers was mainly due to changes within the category of blue-collars.

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Appendix

Table A. 1
Median Earnings of Full Time Workers, by Gender, Age and Qualification Groups

			1976	1981	1986	1991	1996	g 76-96
Gender	Qualification	Age						
Female	White-Collar	15-24	14796	19120	19172	20936	20110	
		25-34	17501	21946	21136	23149	22791	
		35-44	20004	23228	23449	26845	26245	
		45-54	20910	22286	22781	27105	27560	
		over 55	5500	19276	19265	20784	22905	
	Blue-Collar	15-24	13496	16634	16843	17395	16967	
		25-34	14201	18107	18405	18926	18615	
		35-44	14320	18275	19056	19930	19639	
		45-54	14567	18308	19162	20179	19888	
		over 55	7381	16465	18044	19143	19185	
Male	White-Collar	15-24	17780	21850	20695	22253	21601	
		25-34	24215	25525	26042	29489	28628	
		35-44	29514	28858	29743	36081	35231	
		45-54	31331	29491	29660	36730	37406	
		over 55	30256	29214	29898	35443	36637	
	Blue-Collar	15-24	14581	17630	18017	19656	19598	
		25-34	16645	20755	20803	23113	22750	
		35-44	16791	21407	21982	24793	24367	
		45-54	16436	20889	21712	24735	25013	
		over 55	15638	20212	21022	23443	22734	

Source: author's elaboration on data from I.N.P.S.

Table A.2.
Inequality indexes by gender, age and qualification

		Gini coefficient	St.Dev.of logs	Coefficient of Variation	Theil Entropy Index	Gini coefficient	St.Dev.of logs	Coefficient of Variation	Theil Entropy Index
White-Collars		1976	1976	1976	1976	1996	1996	1996	1996
Female	All	0.22	0.48	0.42	0.09	0.18	0.92	0.39	0.08
	15-24	0.15	0.34	0.30	0.04	0.10	0.65	0.21	0.03
	25-34	0.19	0.44	0.36	0.07	0.15	0.93	0.30	0.06
	35-44	0.27	0.66	0.49	0.13	0.21	1.07	0.43	0.10
	45-54	0.29	0.73	0.53	0.15	0.21	0.81	0.45	0.09
	over 55	0.44	0.76	0.91	0.33	0.31	1.00	0.62	0.18
	Male	All	0.26	0.47	0.55	0.12	0.24	0.76	0.49
15-24		0.18	0.34	0.33	0.05	0.12	0.47	0.25	0.03
25-34		0.19	0.36	0.35	0.06	0.18	0.68	0.34	0.06
35-44		0.24	0.45	0.48	0.10	0.23	0.74	0.43	0.09
45-54		0.29	0.53	0.60	0.15	0.25	0.68	0.49	0.11
over 55		0.33	0.61	0.76	0.20	0.36	1.46	0.70	0.24
Blue-Collar									
Female	All	0.14	0.36	0.26	0.04	0.14	0.52	0.30	0.04
	15-24	0.11	0.27	0.21	0.02	0.12	0.49	0.24	0.03
	25-34	0.12	0.30	0.23	0.03	0.13	0.52	0.27	0.04
	35-44	0.16	0.43	0.30	0.05	0.15	0.48	0.31	0.05
	45-54	0.17	0.47	0.32	0.06	0.15	0.55	0.32	0.05
	over 55	0.35	0.67	0.64	0.19	0.20	0.81	0.39	0.09
	Male	All	0.13	0.27	0.27	0.03	0.15	0.48	0.31
15-24		0.12	0.27	0.23	0.03	0.13	0.61	0.25	0.04
25-34		0.12	0.24	0.22	0.02	0.12	0.41	0.25	0.03
35-44		0.13	0.25	0.26	0.03	0.14	0.36	0.31	0.04
45-54		0.14	0.27	0.31	0.04	0.15	0.48	0.33	0.05
over 55		0.15	0.34	0.31	0.04	0.19	0.90	0.39	0.08

Source: author's elaboration on data from I.N.P.S.