Inequality across cohorts of households: evidence from Italy

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Abstract

We examine the evolution of household equivalent income for "cohorts of households" over the last fifteen years, using Italian SHIW data. The descriptive and econometric analysis reveals a deterioration in the economic conditions of young cohorts due to the poor performance of the economy and its adverse effects on white and blue collars, the piecemeal deregulation of the labour market, pension system reforms, and an exceptional increase in house prices and rents. Decreasing returns to education, the reduction in household size, and the increase in the number of income recipients are also found to have significant effects.

JEL: D12, D30, J01, J10.

Keywords: Household Income, Inequality, Cohort Analysis.

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Introduction

Worries about the deterioration of the economic conditions and prospects of young adults in comparison with older cohorts are supported by empirical evidence from various countries on both individual wages and household incomes. With respect to the latter, a worsening situation for young cohorts has been documented for a number of countries, mainly on the basis of LIS data (see Smeeding and Sullivan, 1998, and Osberg, 2003). For Italy, there are no recent studies on household equivalent income by cohort, but the evidence available suggests a deterioration in the performance of the young relatively to the old heads of household (see Brandolini and D'Alessio, 2003; Berloffa and Villa, 2007a).

Although household equivalent income depends on a large number of factors (household composition, number of earners, real and financial capital, etc.), by far the most important components are individual wages and/or pensions. Several studies document a deterioration in *individual earnings* for young workers in a number of countries (see Gosling, Machin and Meghir, 2000, for the UK; Beaudry and Green, 2000, and Grenier, 2003, for Canada; Fitzenberger et al., 2001, for Germany). For Italy, younger generations who entered the labour market in 1990s have experienced lower entry wages, lower wage growth along the life cycle, and an increasing share of them are in atypical employment (Biagi, 2003; Rosolia and Torrini, 2007).

Recent reforms of the pension system and the evolution of the housing market have also negatively affected young cohorts in Italy. Since their *pension benefits* will be entirely based on a notional defined-contribution scheme, they are required not only to have longer career lengths and to retire at an older age, but also to save a larger share of their current income in order to supplement their future pensions. *Housing prices* and *rents* have increased markedly in the last fifteen years. This has given rise to an increase in homeowner's wealth, but also to higher costs of housing services which are likely to have a major impact on the younger households, those in search of affordable accommodation.

This paper intends to document the differences across cohorts of households in terms of equivalent income for Italy. In Section 1 we discuss the reasons for choosing cohorts of households instead of cohorts of individuals as the units of analysis. In Section 2, the evolution of household equivalent income from 1989 to 2004 for five cohorts of households is described. In Section 3 we document how labour market conditions, social security rights and housing costs have affected different cohorts in the last fifteen years. In Section 4 we use a regression analysis to measure the impact of specific factors on the differences between and within cohorts. Section 5 concludes.

1. The unit of analysis: cohorts of households

This paper explores differences in economic well-being across cohorts of households in Italy over the 1989-2004 period. The unit of analysis is the household, and our main measure of economic well-being is equivalent disposable income, where total household (disposable) income is adjusted for differences in household size by means of standard equivalence scales.

In this paper, we are not interested in the degree of inequality between persons; rather, we want to assess trends in the economic conditions of different households, i.e. groups of individuals who choose (or are forced) to share living arrangements. The reason for this choice is mainly related to Italy's demographic trends, and the difficulties faced by the younger cohorts in the family formation process[1]. The delay in marriage and transition to parenthood, and the long permanence of young adults in the parental home, start with the cohorts born in the 1960s and they become more pronounced later on. The share of youngsters aged 20-30 cohabiting with their parents was 54% in 1977, around 65% at the end of the 1980s, and peaked at 75% in 2002 (Banca d'Italia, 2008, p. 8). On the other hand, between 1977 and 1995, the number of household heads aged under 30, already rather low, dropped from 8 to 5%, markedly below the proportions in other EU countries (Spain 7.5%, France and Germany around 13, UK 15, the Netherlands 17, Denmark 22, Sweden 25) (Brandolini d'Alessio, 2003: p. 183).

The emergence of a latest-late pattern of transition to adulthood is related to the deterioration in the economic conditions of young families. Brandolini and D'Alessio (2003: 169) show that the situation for heads of household aged under 40 worsened between 1977 and 1995, whilst it improved for heads aged over 65. Testifying to the economic difficulties in the family formation process for youngsters are the lower labour incomes earned by young adults cohabiting with their parents compared with those earned by heads of household of the same age (see fig. A1 in the appendix).

Given the difficulties experienced by youngsters in the family formation process, we prefer not to attribute the household equivalent income to all family members. Indeed, attributing to the cohabiting adult children the income earned by their parents (assuming an egalitarian intra-household distribution)[2] could veil the actual economic resources available to them[3]. Hence we prefer to focus our analysis on the group of families already established. In order to describe the evolution of household economic conditions over time, we group households according to the year of birth of the (male) household head (grouping households into ten-year cohort ranges)[4]. This implies that we attribute any positive income earned by adult children cohabiting with their parents to the group of households' heads. However, the reader should keep in mind that we are not interested in analysing individual inequality, but rather in describing differences in the economic well-being of households. Therefore our results should not be interpreted in terms of differences across cohorts of individuals, nor across "selected" individuals like household heads, but only in terms of differences across groups of households.

[1] As is well known, Italy is one of the countries in the world with the highest expectancy rates, the most marked ageing of the population, the lowest number of children born and the lowest-low fertility (GCD eds., 2007; Dalla Zuanna and Micheli, eds., 2004). A key component of Italian lowest-low fertility is the long residence of young adults in their parental homes.

[2] As shown by Haddad and Kanbur (1990), the assumption that intrahousehold distribution is egalitarian (implicit when equivalent income is obtained on the basis of an equivalent scale) implies that the degree of inequality between persons is underestimated by all the indices generally used.

[3] Manacorda and Moretti (2006) show that a rise in parents' income significantly raises the children's propensity to live at home.

[4] The choice of this criterion to identify cohorts of households is motivated by the need to use a characteristic that is as stable as possible over time. Therefore, we assigned a male head whenever the self-reported head was a female but had a male partner, and we excluded those households in which the head was a female and was not part of a couple.

It is clear from what has just been said that there are endogeneity problems in the analysis of the relationship between equivalent income and the household structure. On the one hand, access to employment and individuals' income levels affect family formation and reproductive decisions. On the other hand, the redistributive process within the household may induce some of its members to remain inactive, unemployed or in low-paid jobs. It should therefore be stressed that our focus is purely descriptive and that our results, especially those in section 4, should not be interpreted in terms of causal relationships.

In what follows, we use data from the Survey of Household Income and Wealth (SHIW), a nationally representative survey carried out by the Bank of Italy since 1965. Data are taken from the Historical Archive and refer to the period between 1989 and 2004[5], with two-year intervals except for 1995 to 1998. The definition of household income that we use is very broad, because it includes wages and salaries, income from self-employment, pensions, public and private transfers, income from financial (net of interest paid on mortgages) and non-financial assets, and imputed rental income from owner-occupied dwellings. All components are net of direct taxes and social security contributions. We obtain the real net household income by using the Household final consumption Expenditure Deflator (HED) available in national accounts. To obtain equivalent income, we use the OECD modified equivalence scale, which assigns value 1 to the first adult, 0.5 to any other person aged 14 or older, and 0.3 to any person younger than 14.

We construct five cohorts according to the year of birth of the (male) head: households whose heads were born between 1921 and 1930 (which will be named cohort 1), 1931-1940 (cohort 2), 1941-1950 (cohort 3), 1951-1960 (cohort 4), 1961-1970 (cohort 5); the sample size of these groups is reported in table A1 in the Appendix. These cohorts of households will be referred to as *h-cohorts*.

2. The evolution of equivalent income for different cohorts of households

If we look at the entire distribution, the evolution of household equivalent income in Italy over the last fifteen years has been characterised by two main phases: the recession of the early 1990s, in which all deciles except the top one experienced real losses, and a subsequent recovery, which was not enough to take the bottom decile back to its 1989 level (see tab. 1). As shown by Boeri and Brandolini (2004), different population subgroups – e.g. defined by the labour market position of the household's head - have been affected differently by these phenomena. Our conjecture is that the decomposition by "cohorts of households", as defined by the age of the household's head, may reveal significant differences in income dynamics across households, with younger ones losing ground to older ones.

Figure 1 shows the evolution of household equivalent income between 1989 and 2004 for the five cohorts of households defined in the previous section. The first striking feature is the different evolution of median income for the households whose head was born in the 1940s (cohort 3) compared to all other *h-cohorts*: their median income increases by about 20%, whereas for all other *h-cohorts* it remained roughly stable (with

[5] We do not consider years prior to 1989 because there have been changes in the sample design of the survey and in some characteristics recorded at the individual level which we use in our analysis.

variations ranging from –6.5% for the oldest to +5% for those whose head was born in the 1950s). The *h-cohorts* that experienced the greatest losses during the first half of the 1990s are the youngest ones; they both recovered towards the end of the decade and at the beginning of the new century, but this recovery was just enough to take them back to the 1989 level. Indeed, if we plot the median equivalent income of the various *h-cohorts* as a function of the head's mean age[6], positive cohort effects can be clearly identified only for the older *h-cohorts*, whereas the younger ones have gained over the previous cohorts only in the very last period of observation.

Table 1: Changes in various percentiles of equivalent income distribution (%)

	p10	p20	p25	p50	p75	p80	p90	Mean
1989-2004	-3.6	1.2	5.0	9.9*	8.8	9.1	13.0	11.6*
1989-1993	-16.3	-12.6	-10.4	-4.6*	-2.5	-2.7	1.1	-4.7*
1993-2004	15.3	15.8	17.3	15.2*	11.5	12.2	11.7	17.1*

* statistically significant differences at 5% (confidence intervals have been computed only for mean and median).
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Figure 1: Median real monthly equivalent household income by year (left, 1989=100) and by age (right, euros at 2003), for various cohorts of households

Notes: Cohorts are defined by the year of birth of the (male) household's head.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

The aim of the paper is to shed light on the phenomena that lie behind these differences. Since changes in family size affect household economic well-being, the first piece of evidence we consider regards family composition. The behaviour of equivalence scales by cohort of households in the period 1989-2004 mirrors the changes in households' size (tab. 2): cohorts 5 and 4, with heads born in the 1960s and 1950s, record an increase in the mean equivalence scale (associated with marriage and childbirth), whilst cohorts 1, 2 and 3 record a decrease (associated with children leaving home and death of a spouse.

[6] This is defined as the difference between the survey year and a single year of birth for each cohort: 1925 for cohort 1, 1935 for cohort 2, etc.

Table 2: Cohorts means of household equivalence scales, 1989-2004

	cohort 1 (1921-30)	cohort 2 (1931-40)	cohort 3 (1941-50)	cohort 4 (1951-60)	cohort 5 (1961-70)
1989	1.86	2.27	2.25	1.89	1.69
1991	1.87	2.23	2.27	1.92	1.74
1993	1.79	2.19	2.31	2.02	1.75
1995	1.73	2.08	2.31	2.07	1.77
1998	1.59	1.90	2.24	2.11	1.80
2000	1.56	1.82	2.19	2.12	1.83
2002	1.56	1.77	2.12	2.16	1.82
2004	1.54	1.67	2.05	2.13	1.85

Note: Cohorts are defined by the year of birth of the household's head.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

The family size for different cohorts at the same age decreased, as can be seen from table 2 by comparing the scale for cohort(*i*-1) in 1989-1991 with the one for cohort(*i)* in 2000-2002. This suggests that, *coeteris paribus*, there should be positive cohort effects for younger cohorts due to a reduction in family size. This effect is not evident in figure 1, implying that factors other than family composition must have played an important role: different weights of various households' income components across cohorts, different numbers of income recipients, structural changes in the age-earnings profile of different cohorts, or in pension benefits, etc. These factors will be analysed in the next section.

3. The evolution of different sources of income

Besides changes in family composition, trends in the household equivalent income depend on trends in the total family income, which is the sum of all earned and unearned incomes of each family member. Data on the composition of household income by cohort of households in table 3 show that cohort 1 relies mainly on pension income in all years but the initial ones; cohort 2 is characterised by the transition to retirement, with the median share of labour income ranging from 82% to 0%, and that of pension income from 0% to 68% over the years considered. For the other cohorts the main source of income is earnings, but whilst cohorts 4 and 5 have percentages that remain between 80% and 90%, for cohort 3 the transition to retirement starts in the late 1990s and the early years of the new millennium.

The share of non-financial capital income (i.e. received and imputed rents) ranges from 10% to 20%, with an increasing trend for all cohorts, which results in a larger share of capital income for younger cohorts at the same age. To sum up, although the composition of household income for the cohorts considered here is quite different, the main sources of household income are earnings and pension benefits. In order to understand differences across cohorts of households in terms of trends in equivalent income we now turn to trends in individual labour and transfer incomes.

Table 3: Median shares of various income components by cohort of households, 1989-2004

	1989	1991	1993	1995	1998	2000	2002	2004
Cohort 1 (1921-30)								
Labour income	0.14	0	0	0	0	0	0	0
Transfer income	0.51	0.62	0.66	0.71	0.71	0.74	0.74	0.74
Non-financial capital income	0.14	0.14	0.16	0.17	0.18	0.19	0.19	0.22
Cohort 2 (1931-40)								
Labour income	0.82	0.75	0.58	0.45	0.25	0	0	0
Transfer income	0	0	0.18	0.30	0.44	0.55	0.62	0.68
Non-financial capital income	0.11	0.12	0.14	0.17	0.17	0.18	0.19	0.20
Cohort 3 (1941-50)								
Labour income	0.86	0.84	0.79	0.77	0.74	0.71	0.67	0.55
Transfer income	0	0	0	0	0	0	0	0.22
Non-financial capital income	0.12	0.12	0.15	0.16	0.15	0.16	0.27	0.18
Cohort 4 (1951-60)								
Labour income	0.90	0.88	0.85	0.81	0.81	0.83	0.82	0.81
Non-financial capital income	0.10	0.11	0.13	0.16	0.15	0.15	0.16	0.16
Cohort 5 (1961-70)								
Labour income	0.93	0.86	0.86	0.83	0.83	0.81	0.82	0.83
Non-financial capital income	0.07	0.13	0.12	0.17	0.15	0.16	0.16	0.17

Notes: Cohorts are defined by the year of birth of the household's head. Median shares of transfer income for cohort 4 and 5 are 0 in all years.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

3.1 Individual labour income

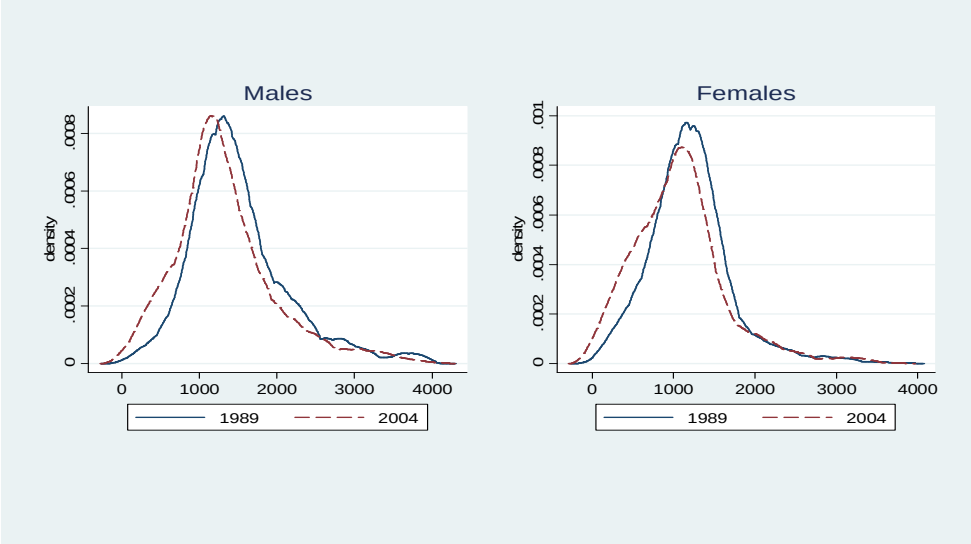
The distribution of *individual* labour income for male and female workers (employees and self-employed[7]) moved leftwards from 1989 to 2004, with a significant increase in the share of people in the low part of the distribution (see fig. 2). The latter is mainly the result of the recession in the early 1990s, but the reduction in average labour income is a phenomenon that persisted over the entire period. Table 4 shows a significant reduction for all percentiles of the distributions from 1989 to 2004, with the exception of the top deciles. The bottom decile decreased by more than 30% in 15 years! The overall picture does not change if we consider only employees (data are available form the authors).

This poor performance of individual labour incomes is due partly to the moderate growth of economic activity and productivity slowdown, and partly to the changes in institutional arrangements. As far as wages are concerned, the tripartite income policy agreements of 1992 and 1993, which abolished the wage indexation mechanism (*scala mobile*) and reformed the collective bargaining system[8], halted the wage inflation spiral and initiated a long period of wage moderation (Brandolini *et al*., 2007). At the same

[7] We are aware of the measurement problems that characterise labour income of the self-employed, but we include them in our analysis because of the large proportion that they represent in Italy. In any case, the main trends illustrated in this section are no different if we restrict the sample to employees.
[8] Contini and Trivellato (2005, p. 77) stress the role played by collective bargaining in the widening of wage differentials by age, which resulted in higher returns on work experience, to the advantage of older workers. Empirical analyses (Borgarello and Devicienti 2002; Devicienti and Maida 2005) support this interpretation.

time, a two-tier reform of the labour market was implemented.[9] This affected mainly new entrants, while sheltering the employment relationships of old incumbent workers, and favoured remarkable growth in employment (since 1995). However, as employment growth combined with a slowdown in productivity growth, the outcome was a fall in real wages (Tronti 2007).

Figure 2: Non-parametric density functions of individual monthly labour income for male and female workers in 1989 and 2004 (employees and self-employed; euros at 2003 prices)



Note: The sample includes individuals of all ages who received a non-zero labour income in the year of the survey.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Table 4: Percentiles of individual monthly labour income for male and female workers (employees and self-employed; euros at 2003 prices for the first row; index number in other rows)

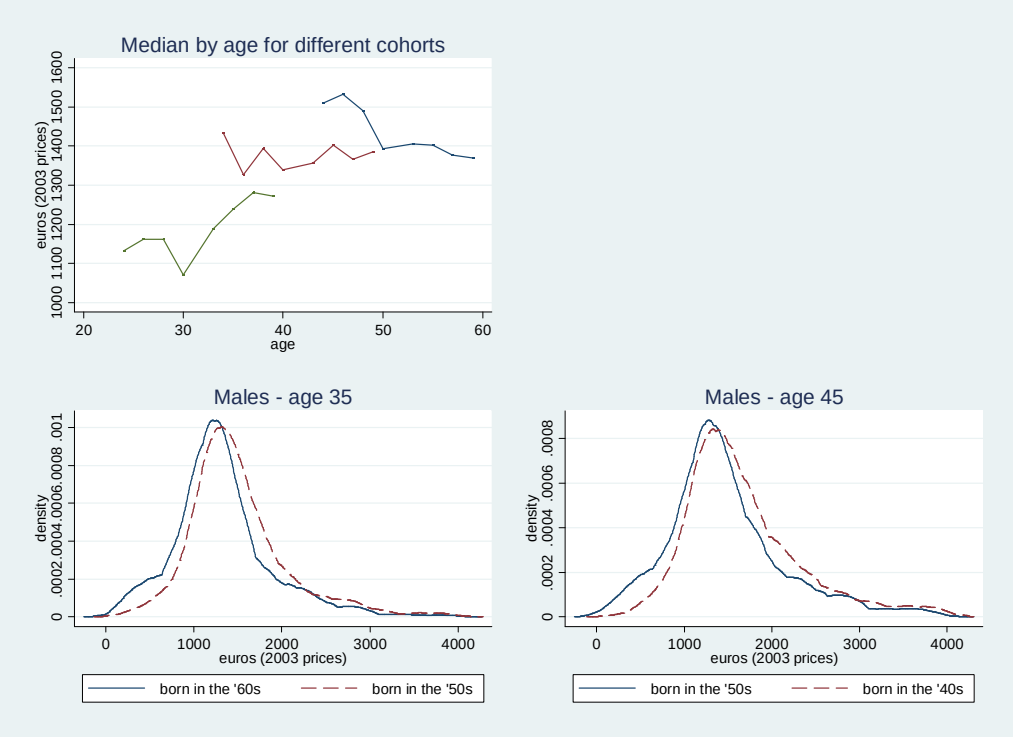
	Males					Females				
	p10	p25	p50	p75	p90	p10	p25	p50	p75	P90
1989	*905.5*	*1131.8*	*1373.3*	*1810.9*	*2490.1*	*603.6*	*905.5*	*1177.1*	*1433.7*	*1735.5*
1989	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1991	87.9	93.8	96.6	95.3	93.3	93.4	95.3	95.8	97.2	99.4
1993	52.7	81.9	94.2	95.3	95.7	49.4	67.1	88.6	95.6	96.2
1995	53.2	75.7	85.8	88.7	86.0	49.7	65.1	81.9	89.7	92.6
1998	54.3	82.5	89.5	86.8	86.8	48.8	70.5	83.5	89.1	88.9
2000	61.9	82.6	88.5	90.3	93.8	61.9	77.4	87.4	91.3	94.3
2002	66.0	83.0	90.2	94.3	102.9	70.8	75.5	87.1	93.0	98.4
2004	63.0	86.4	89.0	90.0	98.2	67.5	75.6	90.0	91.0	103.3

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

[9] A major regulatory change was the introduction in 1984 of the work-and-training contract (*contratto di formazione e lavo*ro, CFL), a fixed-term contract with reduced social contributions, a lower entry wage and no firing costs to be used for the hiring of young unemployed persons. In 1991 some limitations were imposed on the incentives attached to CFL, but the reduction in the diffusion of CFL has been more than off-set by the use of other forms of atypical employment contracts (fixed-term contracts, temporary agency work, employer-coordinated freelance work).

In order to show how the general decline in labour income affected different cohorts of individuals, figure 3 plots the age profile of median earnings for males born in the 1940s, 1950s and 1960s, as well as the difference in the distribution of these earnings for different cohorts at the same age. Although over the period considered, median earnings increased for the youngest cohort, remained stable for those born in the 1950s and decreased for those born in the 1940s, the negative cohort effect for younger cohorts is striking. The size of the effect for both males and females is reported in table 5: the reduction in the percentiles for younger cohorts is between 7% and 30%, with a somewhat lower loss for the top decile and quartile of females born in the 1960s.[10]

Figure 3: Age profile of median monthly labour income for male workers and its distribution for different cohorts of individuals at the same age (employees and self-employed; euros at 2003 prices)



Source: Authors' calculations on data from the SHIW-HA (release 3.0).

In order to illustrate these differences better, table A2 in the Appendix presents some information on the five cohorts considered here: cohort size, educational levels, labour market conditions at the time of entry into the labour market and in prime age, as well as the main changes in the labour market regulatory system. This information is not meant to be exhaustive; its purpose is instead to sketch the major differences across cohorts in order to give insights into their specific working life experiences.

[10] The size of these cohort effects are very similar if we consider only employees (data are available form the authors). This result is supported by other empirical analyses (see Biagi, 2003, and Rosolia and Torrini, 2007).

Table 5: Percentiles of monthly labour income for different cohorts of individuals at the same age
(employees and self employed; euros at 2003 prices)

	Males					Females				
	p10	p25	P50	p75	p90	p10	p25	p50	p75	p90
Age 45										
born '40s	1056.4	1244.0	1526.0	1990.5	2786.7	663.5	980.9	1207.3	1509.1	1857.8
born '50s	738.0	1121.7	1402.1	1799.4	2453.7	467.4	841.3	1121.7	1402.1	1635.8
Gap (%)	*-30.1*	*-9.8*	*-8.1*	*-9.6*	*-11.9*	*-29.6*	*-14.2*	*-7.1*	*-7.1*	*-11.9*
Age 35										
born '50s	980.9	1194.3	1388.0	1725.1	2263.7	664.0	947.8	1194.3	1459.7	1773.2
born '60s	701.1	1028.2	1238.5	1495.6	2103.2	446.5	701.1	1028.2	1374.1	1682.5
Gap(%)	*-28.5*	*-13.9*	*-10.8*	*-13.3*	*-7.1*	*-32.8*	*-26.0*	*-13.9*	*-5.9*	*-5.1*

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

3.2 Household labour income

The reduction in earnings for younger cohorts of individuals that we have just documented, does not imply *per sè* a reduction in household equivalent labour income because it may be compensated by an increase in the time supplied by the household to the paid labour market (i.e. increase in the number of earners in the household) and/or by a change in the household's size.

Table 6 shows the evolution of household equivalent labour income between 1989 and 2004 for the two youngest *h-cohorts* considered. In both cases there is a significant reduction in all percentiles except the top decile. It is interesting to note that this reduction occurs notwithstanding a significant increase in the proportion of households with more than two earners within these two *h-cohorts* (from 47 to 62% for cohort 4 and from 51 to 56% for cohort 5). This means that the increase in the time supplied by the household to the labour market simply compensated for the poor performance of individual labour incomes and the increase in household size[11].

As regards the difference between *h-cohorts* at the same age, table 7 shows the proportion of households with various numbers of earners for different *h-cohorts* at the same age. There are no significant differences between cohort 4 and 5 at the age of 35: in both cases around half are one-earner households, and the other half dual-earner households, which testifies to the endurance of the male breadwinner family model in Italy. But the comparison between cohort 4 and 3 at the age of 45 shows a significantly higher proportion of two-earner households for the younger cohort; this effect is large but not dramatic, reflecting the slow rise in female participation. Moreover, the proportion of three-earner households is significantly higher for cohort 3 (their children may be older and/or started to work when younger compared to cohort 4).

[11] Note that the increase in the number of earners implies a reduction in the quantity of leisure enjoyed at the household level, so that, if monetary income has not changed, household well-being may have reduced significantly.

Table 6: Percentiles of equivalent labour income for different cohorts of households (euros at 2003 prices)

	Cohort 4 (1951-60)					Cohort 5 (1961-70)				
	p10	p25	p50	p75	p90	p10	p25	p50	p75	p90
1989	*574.9*	*754.6*	*1056.4*	*1593.0*	*2012.2*	*553.3*	*804.9*	*1167.8*	*1572.0*	*2163.1*
1989	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1991	87.9	91.6	99.8	94.4	93.0	102.8	91.6	90.9	100.5	98.2
1993	67.6	82.1	88.4	89.1	98.7	75.4	79.0	83.6	91.0	91.8
1995	58.2	74.4	79.7	78.5	85.8	64.5	75.4	79.5	92.8	88.5
1998	68.4	78.1	88.4	81.0	88.2	71.9	81.4	81.8	87.5	86.0
2000	69.7	84.0	88.5	84.8	92.9	78.8	81.3	85.3	90.6	83.5
2002	74.3	83.0	90.7	89.6	94.7	80.9	78.4	85.3	90.6	90.8
2004	68.0	82.1	93.9	86.4	101.3	83.3	78.5	86.1	95.1	98.0

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Table 7: Household distribution by number of earners and age of the head

n.	Age 35		Age 45	
earners	Cohort 5*	Cohort 4**	Cohort 4*	Cohort 3**
0	1.50	1.05	1.34	1.18
1	47.23	49.16	40.83	44.92
2	51.04	49.27	52.47	44.89
3	0.16	0.46	4.16	7.57
4	0.00	0.08	1.11	1.39
	100.00	100.00	100.00	100.00

Note: *: proportion in 2000. **: Average proportion over the years 1989 and 1991. In this table we have considered only households in which couples are present.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

We have already seen that equivalence scales are somewhat lower for successive *h-cohorts*. However, this effect is not big enough to compensate for the loss in individual labour incomes, with the consequence that household equivalent labour income is on average 8% lower for younger *h-cohorts*, with much larger losses for the bottom decile (see tab. 8).

Table 8: Percentiles of equivalent household labour income for different cohorts of households at the same age (euros at 2003 prices)

	p10	p25	p50	p75	p90	mean
Age 45						
born '40s	521.3	707.7	995.2	1458.8	1967.9	1191.7
born '50s	400.6	634.3	934.7	1350.2	1869.5	1091.3
Gap(%)	*-23.2*	*-10.4*	*-6.1*	*-7.4*	*-5.0*	*-8.4*
Age 35						
born '50s	539.0	718.6	1056.4	1548.1	1976.2	1213.1
born '60s	435.9	654.3	995.7	1424.4	1807.2	1110.8
Gap(%)	*-19.1*	*-8.9*	*-5.7*	*-8.0*	*-8.6*	*-8.4*

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

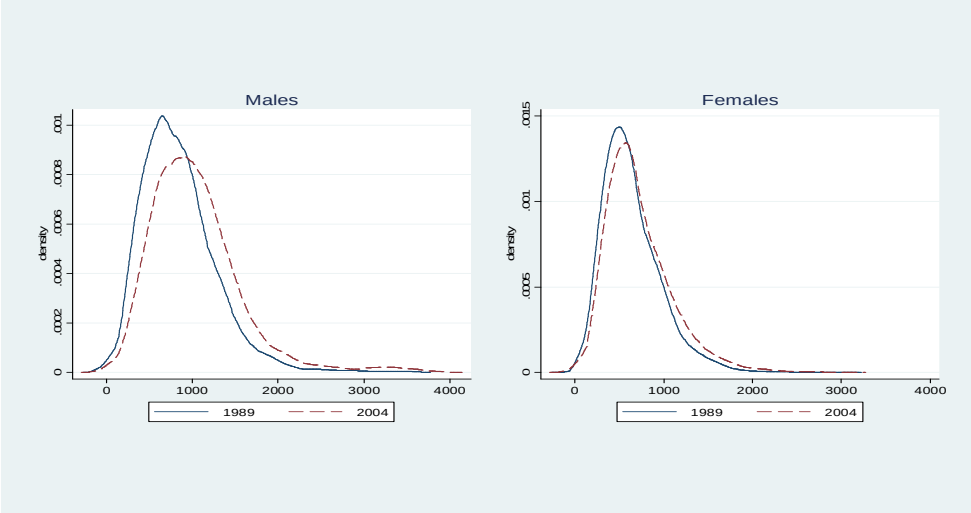
To sum up, the disappointing performance of individual labour incomes in 1989-2004 hit younger cohorts more severely than older ones, because they experienced not only a significant drop in entry wages but also a slower wage progression and an increasing

precarisation of employment conditions. This meant increasing difficulties for these cohorts in forming a family, and in having and raising children. Indeed, for successive cohorts, household size is lower (given the declining fertility rate) and average number of earners within the family is higher (given the rising female participation). But these two effects are not big enough to compensate for the loss in individual labour incomes. As a consequence, household equivalent labour income is about eight percent lower for younger cohorts of households.

3.3 Pension income

A completely different picture emerges if we look at the evolution of pensions. Figure 4 shows a clear rightward shift of the distribution of individual pension income from 1989 to 2004, for both males and females. As a result, all percentiles of these distributions have increased, by between 10% and 30%, with the sole exception of the lowest quartile for females (see tab. 9).

Figure 4: Non-parametric density functions of individual monthly pension income in 1989 and 2004 (euros at 2003 prices))



Note: The sample includes individuals of all ages who received a non-zero pension income in the year of the survey.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

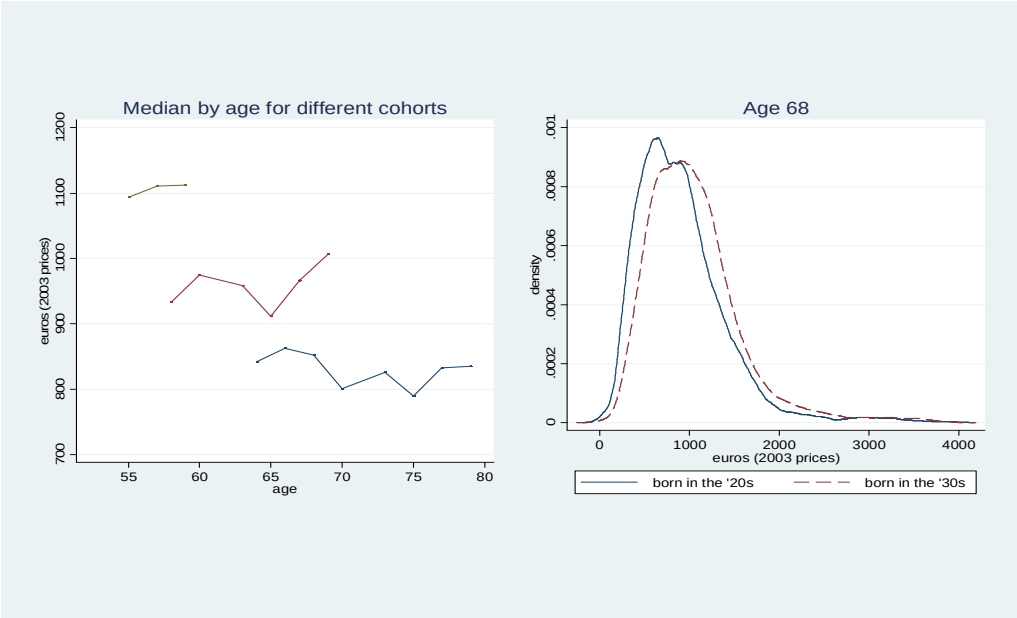
Table 9: Percentiles of individual monthly pension income (euros at 2003 prices for the first row; index number in other rows)

	Males					Females				
	p10	p25	p50	p75	p90	p10	p25	p50	p75	p90
1989	*421.8*	*510.1*	*784.7*	*1079.0*	*1373.3*	*343.3*	*441.4*	*539.5*	*791.5*	*1016.2*
1989	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1991	102.2	101.5	109.9	103.9	106.8	98.6	97.7	95.9	100.6	103.2
1993	101.0	97.2	103.7	107.7	107.2	88.5	96.5	89.0	97.9	99.1
1995	99.1	96.2	106.5	109.7	111.6	101.4	94.7	90.3	96.8	102.8
1998	106.0	112.7	109.9	112.5	116.3	93.8	98.4	96.9	96.9	108.2
2000	102.3	119.1	113.8	112.6	112.3	106.2	96.4	101.4	103.6	107.6
2002	109.8	120.6	116.0	114.0	121.1	113.2	100.6	109.1	106.6	109.3
2004	115.9	135.0	121.5	117.8	115.7	123.4	102.7	117.8	109.8	114.7

Note: The sample includes individuals of all ages who received a non-zero pension income in the year of the survey.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Clearly, this pattern may be the result of a constant increase in individual pensions over time, or of higher pensions for successive cohorts. The percentiles of individual pensions for males born in the 1920s - which are not affected by composition effects in terms of successive retirement - are almost constant over time (see table A3 in the Appendix). The shift in the distribution of pensions therefore seems due to higher pensions of successive cohorts of retirees. This is confirmed if we consider the age profile of median pension benefits for males and the difference between different cohorts at the same age[12]. As figure 5 and table 10 show, there are major positive cohort effects for individual pensions: at 68 years of age, males born in the 1930s can rely on individual pensions that are on average 16% higher than those of males born in the 1920s.

Figure 5: Monthly pension income (males; age profile by cohort; euros at 2003 prices)



Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Table 10: Monthly pension income of different cohorts of individuals at the same age (males; euros at 2003 prices)

	p10	p25	p50	p75	p90	mean
Age 68						
born '20s	429.1	516.8	852.3	1146.7	1472.2	918.3
born '30s	512.5	688.7	999.4	1271.5	1642.3	1066.4
Gap(%)	*19.4*	*33.3*	*17.3*	*10.9*	*11.6*	*16.1*

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

[12] Obviously, we can use only those years in which composition effects are likely to be small (i.e. those in which more than 50% of individuals are retired); for cohort 3 we have shown only median pension income for the latest years available, and we limit comparison of different cohorts at the same age to the two oldest cohorts.

The reason for these differences can be traced back to the time when the Italian pension system was constructed, and to the changes that occurred during the 1960s and 1970s. Construction of the public PAYGO (pay-as-you-go) pension system started in the second half of the 1950s, when individuals from cohort 1 had already been in the labour market for 10-15 years, whereas individuals from cohort 2 were just entering it. The pension schemes for public and private employees were frequently changed in the 1960s and early 1970s, the years of high economic growth, with the generosity of the system almost invariably being increased especially for core workers. These changes were seen as a major achievement in guaranteeing pensioners a high standard of living (preserving the standard of living enjoyed during active life).[13]

Individuals from cohort 2 and many from cohort 3 have been (or will be) able to enjoy the full generosity of the pension system. Since their labour income is higher than that of individuals belonging to previous cohorts, their pensions will also be higher. Even if only 34% and 43% of individuals from cohort 3 were retired in 2002 and 2004, the data suggest that their pensions are significantly higher than those for previous cohorts: at 58 years of age, pension benefits for males born in the 1940s were 19% higher than those for males born in the 1930s. Moreover, the reforms of the pension system that occurred in the 1990s (which will be described below) affected individuals from this cohort only marginally. Therefore, it is reasonable to expect that median pensions for cohort 3 will not be greatly different from what the data suggest for 2002 and 2004.

Major reform efforts were undertaken in the 1990s in order to stabilise public pension expenditure and to control the future spending dynamics.[14] They modified three key features of the pension system: (i) benefit computational rules (from earnings-related to contributions-related schemes); (ii) indexation rules (benefits are no longer indexed to real wage growth); (iii) retirement age and eligibility criteria (modified on actuarial bases). As a result, pension reforms have reduced expectations concerning the future level of pension benefit: the replacement rate (i.e. the ratio between the first pension benefit and last wage) has been reduced,[15] and the changes introduced in the indexation mechanism will reduce the dynamic of pension benefits after retirement. However, the implementation of the pension reforms is extremely gradual, with a very long transitional period. Individuals have been (will be) hit to different degrees by the pension reforms, mainly according to their seniority at the time of the 1995 reform, with considerable implications in terms of pension benefits for the cohorts that we constructed.

All individuals from cohort 3, and most of those from cohort 4, entered the labour market before 1977 (i.e. with at least 18 years of contributions at the end of 1995). These workers are covered by the previous defined-benefit system, as amended by the reforms. By contrast, workers from cohort 5 will either have only a small share of their

[13] For more details on the Italian pension system see Brugiavini (1999); Franco (2002); Brugiavini and Galasso (2003).

[14] These include the *Amato reform* in 1992, the *Dini reform* in 1995, and the *Prodi reform* in 1997. For a description of these reforms see Baldini, Mazzaferro and Onofri (2002); Franco (2002); Brugiavini and Galasso (2003). Another reform was enacted in 2004 (the *Maroni-Tremonti reform*), which raised the retirement age and tightened the minimum eligibility requirements for retirement in the transition period.

[15] Under the earnings-related scheme (pre-1992 reform) a representative employee, retiring at the age of 60 (with 37 years of contributions) was expected to have a replacement rate of around 75%; under the contributions-related scheme (post-1995 reform) the same individual is expected to have a replacement rate of around 58% (if an employee) and 35% (if self-employed) (Baldini, Mazzaferro and Onofri 2002).

future pensions computed on the old defined-benefit scheme (i.e. all entrants to the labour market before 1996) or they will have pension benefits computed exclusively on the new notional-defined contribution scheme (i.e. all entrants to the labour market after 1995). Therefore, these young workers will have to work longer to earn adequate pension rights. Moreover, they are required to pay high social contributions in order to award generous pension benefits to older cohorts, and they must earn enough to save a larger share of their current labour income to supplement their future meagre pension benefits.

To sum up, the implications of the pension reforms differ across cohorts. The performance of pension income is good for old cohorts (in our analysis, cohorts 2 and 3), because they have maintained benefit-defined pensions (earnings-related) and they have enjoyed better earning age profiles with respect to older cohorts (cohort 1). For younger cohorts (especially cohort 5 and future cohorts), the pension reforms have created significant drawbacks: in the current period, individuals and/or households are required to save more (to secure decent pension benefits in old age); for the future, pension incomes will be not only low (given the lower replacement rate) but also uncertain. Their contributions-defined pensions will be based exclusively on their working life histories, and for a non-negligible number, the work history will be characterised by non-standard, unstable and low-paid jobs.[16] Moreover, as will be shown in the next section, young cohorts also have to face increasing costs of housing services.

3.4 The role of housing rental costs

An important determinant of the evolution of household income is rental income from owner-occupied housing. Indeed, in Italy the vast majority of households live in owner-occupied housing, and only a low, and declining, share of households live in rental housing. The high proportion of households owning their dwelling is the outcome of a long-term trend recorded by census data: it was 59.2% in 1981, but 68% in 1991 and 71.4% in 2001. In the SHIW sample, in 2004 about 68% of all households owned the house they lived in, and another 10% could stay in the house without paying any rent (usufruct or free use). In 1989, these percentages were 63% and 8.5% respectively.

In the period considered here, the housing market underwent significant changes. Brandolini *et al.* (2004) report an increase in housing prices between 1989 and 2000 which exceeded by 40% that of consumer prices.[17] Nomisma (2005) documents that mean prices of new housing increased by 70.4% in the period 1998-2004 (by 46.1% in constant prices). Housing demand was boosted by the high market values of the housing stock, the expectations of further price increases, the liberalisation of the mortgage market, and the historically low interest rate experienced in the last decade. The upward trend in real property prices in the latest years was also related to the massive portfolio reallocation of institutional investors since 2000 and housing quality upgrading. A lack of housing policy (providing social rented housing and/or subsidies) resulted in a further

[16] Recent studies suggest that the probability of being caught in precarious and unstable jobs is on the increase (see Barbieri and Sherer, 2005, and Brandolini *et al*., 2007).

[17] According to recent estimates by Cannari *et al*. (2006), over the period 1962-1992 housing prices increased by around two and half times more than consumer prices; after a brief reduction during the recession of 1992-93, housing prices have reverted to a new phase of steep growth since 2000.

increase in the already large share of home ownership, as well as in further price increases.

Because movements in housing prices and rents are related, rents markedly increased as well. In the SHIW sample, paid rents increased dramatically: the median rose from about 190 euros per month in 1989 (2003 prices) to almost 300 euros per month in 2004, with a percentage increase of 58%. A somewhat lower but still remarkable increase can be observed for imputed rents,[18] which rose from about 350 euros per month in 1989 (2003 prices) to about 500 euros in 2004, with an increase of 36%. Even if we drop the latest year, for which the largest change has been reported, the increase in imputed rental income is still about 25%, far exceeding the growth of other income components.

The consequences of this phenomenon have been twofold. On the one hand, the difference between housing prices and rents has diminished (given the improvement in financial conditions for loans), favouring home ownership. On the other hand, households not able to afford a mortgage (for example, owing to a lack of a standard employment contract) face very high rents and a reduction in the supply of houses to rent.[19] Clearly, these changes in the housing market affect various cohorts in different ways. First of all the percentage of tenant households having to face the cost of rental housing is larger for younger *h-cohorts* in any given year (see tab. 11), which implies that in these cohorts a larger fraction of households have been affected by the increase in actual rents. Secondly, through time, the proportion of households living in rental housing has declined for all cohorts, but more noticeably for cohort 5, suggesting a much faster transition towards ownership with respect to older cohorts. Finally, although the percentage of households with rented accommodation is lower for successive cohorts at the same age, the magnitude of rents is generally higher.

Table 11: Households with rented house by cohort (%) **and mean of actual rents** (euros per month per household at 2003 prices)

	% with rented house					**Mean of actual rents**				
	Cohorts of households					Cohorts of households				
	1	2	3	4	5	1	2	3	4	5
1989	16	24	28	39	48	202.6	228.2	244.6	234.2	232.4
1991	17	20	25	32	33	209.5	223.1	241.8	243.3	261.4
1993	19	22	21	30	33	201.1	205.4	251.6	240.1	244.2
1995	17	18	21	26	29	209.9	211.7	239.3	240.5	262.4
1998	16	18	18	23	32	227.6	273.3	291.0	269.4	302.2
2000	16	13	16	23	29	253.7	237.0	278.9	314.8	315.4
2002	17	14	15	20	25	257.5	260.6	312.7	307.9	323.7
2004	13	14	16	21	25	259.5	238.2	334.5	336.8	370.8

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Figure 7 shows the consequences of these phenomena for the evolution of equivalent income net of housing rental costs (both imputed and actual rents) for different

[18] SHIW data contain a specific question about homeowners' subjective evaluations of the rent that they could obtain if they let the house. We use the answers to this question as our measure of "imputed rent".
[19] In recent years, there has been an increase in the supply of unrented properties, and the demand for low rents has gone largely unmet (Nomisma, 2005).

cohorts.[20] The only *h-cohort* for which equivalent income increased during the 1990s is again cohort 3 (with heads born in the 1940s); for this cohort, median equivalent income in 2004 was about 10% higher than in 1989, whereas all other cohorts experienced a significant decline in net income: around 4-5% for cohort 2 and 4, 11% for cohort 5 and 16% for cohort 1. The age-income profile confirms that this evolution is reflected in positive cohort effects only for the older *h-cohorts*, whereas the younger have gained over the previous cohorts only in the very last period of observation. Note that, if we discard year 1989 for the youngest cohort, the change in net equivalent household income between 1991 and 2004 is insignificant[21].

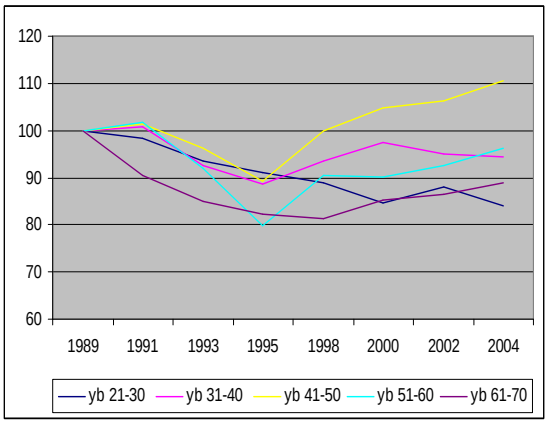
Table 12 compares differences across *h-cohorts* at the same age of the head in terms of gross and net (of actual and imputed housing rental costs) equivalent income. In the case of households whose head is 35 or 45, both gross and net equivalent income is lower for younger *h-cohorts*, but the difference is larger in the case of net income (the mean is 5% lower for gross income and 10% lower for net income; differences are similar for other percentiles). As regards the differences between cohort 2 and 3 at the age of 55, table 12 shows that cohort 3 gained in terms of gross income (except the bottom decile), but this gain disappears in terms of net income. Thus, when comparing equivalent income *net* of actual and imputed rents, the situation for successive *h-cohorts* is worse than in the case of gross income.

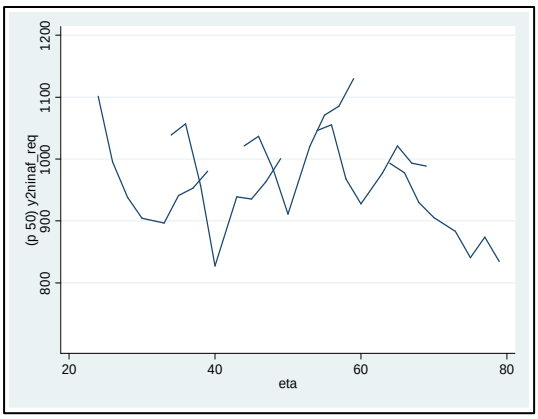
To sum up, the housing market has undergone significant changes that differently affect young and old cohorts. Housing prices and rents have markedly increased, while household average disposable income have stagnated. The changes that have occurred in the last fifteen years in the housing market, together with the liberalisation of the mortgage market, have resulted in a further increase in the already large share of home ownership, further limiting the supply of houses to rent. Increases in house prices have led to an increase in homeowners' wealth, but they have also given rise to higher costs of housing services, interest to be paid on loans, and rents. And the higher cost of housing services has resulted in a greater (negative) impact on the younger households, those in search of an affordable house tenancy.

[20] If we consider the whole sample, the median of household equivalent income net of both imputed and actual rents remained unchanged over the time period considered: the growth recorded after 1995 simply took the income back to its 1989 level (see Berloffa and Villa, 2007b).

[21] Since there may be problems of sample composition for this cohort in 1989, in the econometric analysis of the next section we exclude observations for this year-cohort pair.

Figure 7: Median monthly equivalent household income net of housing rental costs by year (left, 1989=100), and by age (right, euros at 2003), for various cohorts of households





Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Table 12: Equivalent household disposable income gross and net of actual and imputed rents: various percentiles for different cohorts of households and the same head's age.

	Gross of housing costs				Net of housing costs			
	p10	p50	p90	mean	p10	p50	p90	mean
Age 35								
Cohort 4	600.3	1230.6	2303.5	1414.8	501.9	1046.3	1956.8	1195.6
Cohort 5	527.1	1200.5	2347.6	1344.9	395.0	940.9	1878.5	1075.1
Gap(%)	*-12.2*	*-2.4*	*1.9*	*-4.9*	*-21.3*	*-10.1*	*-4.0*	*-10.1*
Age 45								
Cohort 3	618.7	1221.2	2436.9	1438.5	513.1	1030.1	2042.5	1224.2
Cohort 4	467.4	1165.0	2391.5	1363.5	365.8	935.3	2013.6	1106.0
Gap(%)	*-24.5*	*-4.6*	*-1.9*	*-5.2*	*-28.7*	*-9.2*	*-1.4*	*-9.7*
Age 55								
Cohort 2	617.4	1233.7	2297.0	1392.2	499.8	1048.4	2013.3	1181.8
Cohort 3	559.0	1328.5	2474.8	1517.0	426.5	1070.6	2043.3	1228.4
Gap(%)	*-9.5*	*7.7*	*7.7*	*9.0*	*-14.7*	*2.1*	*1.5*	*3.9*

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

4. Decomposing changes in household equivalent income

In this section we investigate the factors affecting differences across cohorts of households in the evolution of equivalent income over the last fifteen years, as well as differences across cohorts at the same age of the head. To this end, first we run a regression of household equivalent income on a set of demographic and economic variables. Because of the composition effects that characterize the dependent variable, we estimated a unique age profile for all cohorts, which should capture the average effect over different occupations of the head, labour market participation within the household, etc. [22], and attribute shifts in this profile to education-specific and occupation-specific cohort effects, and other changes to occupation-specific time effects. This last assumption is supported by the evidence that gains and losses of economic growth over the period considered have been distributed quite differently to the different occupational categories.

[22] In what follows we use the term "occupation" to indicate both the occupational status, i.e. working vs. retired, and the occupational category, i.e. blue collar vs. self employed, etc.

Table 13: OLS regression results with robust standard errors (dependent variable: logarithm of household equivalent income)

	Coeff	t		Coeff	T
Constant	6.805	234	heduc2_coh1	0.339	22.17
age_coh	0.003	7.69	heduc2_coh2	0.288	21.62
1991_bc	-0.033	-3.2	heduc2_coh3	0.162	15.05
1993_bc	-0.083	-6.09	heduc2_coh4	0.105	11.59
1995-2004_bc	-0.113	-10.82	heduc2_coh5	0.102	9
1991_wc	-0.042	-3.83	heduc3_coh1	0.634	26.1
1995-2000_wc	-0.084	-9.39	heduc3_coh2	0.533	21.91
2002-04_wc	-0.126	-11.03	heduc3_coh3	0.368	20.63
1993_self	-0.158	-7.61	heduc3_coh4	0.331	19.48
1995_self	-0.247	-11.62	heduc3_coh5	0.230	8.93
1998-2000_self	-0.101	-6.19	sped2_coh12	0.200	15.72
2002_self	-0.049	-2.31	sped2_coh3	0.151	13.63
1991_man	-0.042	-2.61	sped2_coh45	0.086	10.66
1993_man	0.111	5.18	sped3_coh12	0.310	12.4
1993-2002_un	-0.412	-5.92	sped3_coh3	0.248	14.15
ret_coh2	0.089	10.82	sped3_coh45	0.169	12.04
ret_coh3	0.163	13.18	spw_coh12	0.250	17.68
bc_coh12	0.214	17.33	spw_coh3	0.286	32.03
bc_coh345	0.261	16.76	spw_coh45	0.367	51.78
wc_coh2	0.292	17.95	Noth_earners	0.292	63.21
wc_coh3	0.352	22.72	Noth_ret	0.196	41.74
wc_coh45	0.399	24.51	Ncomp	-0.174	-52.94
man_coh2	0.383	16.74	Nchild	0.016	4.3
man_coh345	0.483	32.14	North	0.289	58.8
Unemp_coh2	0.404	29.31	Centre	0.193	34.35
Unemp_coh3	-0.299	-3.7	Rent	-0.294	-41.94
Unemp_coh45	-0.477	-6.52	Rent_1989-1991	0.100	10.15
self-emp	-0.799	-11.71	Rent 2004	-0.046	-2.79

Number of obs	39717
F(55, 39661)	849.17
Prob > F	0
R-squared	0.5922
Root MSE	0.39888

Since we could rely on a very large sample, we started by introducing a full set of year and cohort dummies, each interacted with occupational dummies, and then tested the restriction that a subset of them are actually zero.[23] Table 13 reports the final results of the OLS regression (with robust standard errors) of the logarithm of household equivalent income on a polynomial in age, the interaction of occupation with cohort and year dummies, other covariates such as regional dummies, number of household members and number of children, number of labour and pensions income recipients

[23] Since some households have been interviewed for two or more consecutive years, we assumed independence across households but not across observations for the same household. Initial results are available from the authors; the value of the F test for the joint restrictions that the interactions between occupation and year and cohort dummies not reported in table 13 can be set to zero, and that some other coefficients are equal, is F(50, 39611) =1.20, which corresponds to a P value of 0.15 (see the appendix for details).

(other than the head and the spouse), a dummy for the presence of a working spouse and for renting the house, and finally the interaction between educational dummies and cohort dummies for both the head and the spouse (for a more detailed description of the variables see table A4 in the Appendix)[24].

In table 13, the base household is from cohort 1 with a low-educated retired head. As can be observed, the interaction between year and occupational dummies displays some interesting patterns[25]. The recession of the early 1990s mainly affected households whose head was a blue-collar and self-employed. Households with blue or white collar heads experienced a constant loss in the second half of the 1990s and the early years of the new century (for the latter, the loss increased over time). Instead, households with self-employed heads experienced very large losses in the early 1990s, but they recovered quite quickly over the subsequent period, and in 2004 they were back to the initial levels. Households whose heads were managers experienced a small loss in 1991 and a significant gain in 1993, but then their situation remained similar to that of the late 1980s. No time effect can be identified for households with retired heads.

We allowed for educational and occupational specific cohort effects. As our previous analysis suggested, cohort effects for households with retired heads are positive (9% and 16% for cohort 2 and 3 respectively), whereas the gains of the youngest cohort over the previous ones are generally negligible. The only occupational category for which we do not observe cohort effects is self-employed heads; their household equivalent income is on average 40% higher than that of the reference household. For unemployed workers cohort effects are negative (i.e. the loss associated with unemployment is increasing with the year of birth of the head).

With respect to education, it is interesting to note that "returns" to education are positive but they decrease for younger cohorts: old *h-cohorts* have a 30% higher income if the head has a secondary-school diploma, and 55-60% for a university degree; these percentages reduce to 10% and 23-33% for cohorts 4 and 5. A similar decreasing pattern is associated with the educational level of the spouse, whereas the gain in equivalent income if she participates in the labour market is higher for younger cohorts. Equivalent income increases if there are other individuals with labour or pension incomes (even if the size of the gain is different in the two cases), and decreases with household size. Finally, households in the north or centre of the country may enjoy higher incomes, whereas the income of those who rent their houses is 30% lower than that of those who own them (note that at the beginning of the 1990s the loss was only 20%, and that it increased to 34% in 2004).

Since the mean of equivalent income for each cohort can be expressed as a weighted sum of the mean of the regressors, we can decompose the change in the mean of equivalent income both over time and across cohorts into changes of specific regressors and/or coefficients. It should be stressed that these results should not be interpreted as expressing any causal relationship, but are only a descriptive way to illustrate the

[24] We also estimated a more parsimonious specification by introducing a GDP index instead of the full set of year dummies. A J-test between the two models indicates that the t-value of the prediction of the "GDP model" in the "year-dummies model" is 0.87, whereas in the opposite case, the t-value becomes 12.85.

[25] In order to understand the results, it is necessary to bear in mind that, if the coefficient on some occupation dummies is the same for various cohorts or for various years, this means that the corresponding restrictions have been tested.

magnitude and direction of change of the various elements that affect households' equivalent incomes as they are captured by the OLS regression.

Let a cohort mean of the predicted equivalent income at time *t* be:

$$\bar{y}_{c,t} = \hat{\alpha} + \sum_{k=1}^{n} \hat{\beta}_{k,c} \bar{x}_{k,c,t}$$

where *n* is the number of regressors, $\hat{\alpha}, \hat{\beta}$ are parameter estimates, $\bar{x}_{k,c,t}$ is the (weighted) mean of variable k for cohort *c* at time *t*.

The first exercise is to decompose the change in the mean of equivalent income of each cohort between *t* and *t+k*, as:

$$\bar{y}_{c,t+k} - \bar{y}_{c,t} = \sum_{k=1}^{n} \hat{\beta}_{k,c} (\bar{x}_{k,c,t+k} - \bar{x}_{k,c,t})$$

The second exercise is to decompose the change in the mean of equivalent income of two different cohorts at the same age. Let *c1* and *c2* denote two different cohorts; let *c1* be at a certain age at time *t*, and let *c2* be at the same age at time $t+\gamma$. Then we have:

$$\bar{y}_{c2,t+\gamma} - \bar{y}_{c1,t} = \sum_{k=1}^{n} \hat{\beta}_{k,c2} \bar{x}_{k,c2,t+\gamma} - \sum_{k=1}^{n} \hat{\beta}_{k,c1} \bar{x}_{k,c1,t}$$

Table 14 reports the results of the decomposition of the change in each cohort's mean over time. In order to understand the results, one should bear in mind that even if some characteristics do not change over time at the individual/household level (e.g. education), one can still observe a positive or negative effect associated with these variables because the sample composition may change. Secondly, instead of presenting the effect of each variable separately, we have grouped some of them together and report only the "aggregate" effect. For example, "time" represents the sum of all the interactions between year dummies and occupational variables, "occupation" the effect of all the interactions between cohort and occupational dummies, "number of income recipients" includes the number of individuals with labour and pension income, etc.

Table 14: Decomposition of income differences in cohort means over time

	cohort 1	cohort 2	cohort 3	cohort 4	cohort 5
Age	3.1	3.1	3.1	3.1	3.0
Time	0.2	1.0	-2.7	-5.3	-3.7
Occupation	-5.0	-13.6	-7.6	-0.9	-0.4
Head education	0.2	-0.1	-0.1	0.6	1.8
Spouse education	-0.1	-0.4	-0.1	0.2	1.6
Spouse work	-2.3	-5.4	-2.3	1.3	0.0
N. other income recipients	-3.8	0.0	10.9	5.1	-0.1
Components	8.7	16.7	7.1	-4.1	-7.1
Rented house	-0.4	0.7	0.8	1.1	0.8
Region	-0.9	-0.3	-0.3	0.9	-1.2
Total	**-0.3**	**1.9**	**8.9**	**2.0**	**-5.4**
Actual	-0.4	5.5	10.4	0.8	-0.1

Notes: Averages over 2000-2004 minus averages over 1989-1993 (for cohort 5 only 91-93). For the definition of the various effects, see the text.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

The way in which economic growth affected different occupational categories is reflected in an average loss for cohorts 3, 4 and 5, and negligible time effects for cohorts 1 and 2. The transition to retirement explains the negative effect of "occupation" for the older cohorts, and especially for cohort 2, for which a large share of individuals underwent this transition during the last fifteen years. Similar effects can be observed for the labour market participation of the spouse. Education of both spouses has negligible effects for older cohorts, but positive and quite sizeable effects for the youngest cohort, because more educated individuals form independent households later in life and therefore enter the observed group in later years.

It is interesting to examine the size and sign of the effects associated with the household size and the number of other income recipients. For the older cohorts, household size decreases because children leave the house as they age, with strong and positive effects on household equivalent income, whereas for younger cohorts the effect is negative because children are born and household size increases over the period. This negative effect is compensated by an increase in the number of other income recipients only for cohort 4. The peculiarity of cohort 3 emerges quite clearly from the effects of these two variables: household size decreases with positive effects on household income, and at the same time the average number of earners and the number of pension income recipients also increases with similar positive effects.[26]

Table 15: Decomposition of income differences across cohorts at the same age

	coh2-coh1 about 65-66	coh3-coh2 about 55-56	coh4-coh3 about 45-46	coh5-coh4 about 35-36
Age	-0.2	-0.2	-0.2	0.4
Time	-2.0	-4.1	-5.8	-6.0
Occupation	5.5	1.6	-1.5	-1.7
Spouse works	0.2	3.2	6.4	1.6
Head education	0.6	0.1	-0.4	-1.3
Spouse education	0.8	1.9	-0.6	0.8
N. other income recipients	-0.3	-1.9	-2.9	-0.7
Components	1.2	2.2	3.1	2.1
Rented house	-0.6	0.2	-0.8	-0.3
Region	-0.5	0.1	-0.5	1.7
Total	**4.8**	**3.0**	**-3.2**	**-3.4**
Actual	5.2	7.0	-4.1	-0.4

Notes: Average over 1998 to 2004 for cohort (i+1) minus average over 1989 to 1993 for cohort (i). In the last column we considered the average of cohort 5 over 2000 to 2004 minus the average for cohort 4 over 1991 to 1993.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Table 15 reports a decomposition of the differences between the various cohorts at the same age averaged over the years for which data overlap.[27] The variables that are associated with larger differences across cohorts are occupation-specific cohort and time

[26] Indeed, the average number of sons or daughters decreased from 1.75 to 1.28, but at the same time the average number of sons or daughters who work increased from 0.21 to 0.49. The share of households with other earners (other than the head and the spouse) increased from 18% to 44%; and the share of households with other retired individuals (other than the head) increased from 11% to 16%.
[27] Berloffa and Villa (2007b), report also the decomposition for single years of age.

effects, household size, and the number of income recipients, especially spouse participation in the labour market.

Table 16: Household distribution by the occupational status of the head for different cohorts at the same age (%)

	35-36		45-46		55-56		65-66	
	cohort 5*	cohort 4**	cohort 4*	cohort 3**	cohort 3*	cohort 2**	cohort 2*	cohort 1**
Blue collar	37.3	32.7	30.3	31.8	16.9	22.0	3.3	2.4
White collar	22.0	29.1	26.6	25.7	17.4	12.6	1.9	2.4
Manager	5.9	8.6	8.6	11.8	6.6	7.9	1.2	1.5
Self-employed	29.6	26.6	28.6	26.1	23.2	27.7	8.4	12.3
Unemployed	3.6	2.3	3.7	1.8	4.7	1.9	2.9	0.3
Retired	0.3	0.4	1.8	2.4	31.0	27.6	81.9	80.6

Notes: * Average of the proportions for 1998, 2000, 2002 and 2004.
** Average of the proportions for 1989, 1991, 1993.
Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Occupation-specific cohort effects are positive for older cohorts and negative for younger ones. The main reason for this positive occupation effect for cohort 2 vs. 1 is the gain in terms of pension levels (which in the regression corresponds to a percentage increase in household equivalent income of about 9%), partly reduced by a larger proportion of households with unemployed heads and a lower proportion with self-employed heads (see table 16). The positive occupation effect for cohort 3 vs. 2 is again due to a higher level of pensions, reduced by various composition effects. Cohort 3 is characterized by a larger share of households with retired and unemployed heads (i.e. with lower "returns" compared to other occupational categories), and a lower share of self-employed. Note that these changes in composition are not big enough completely to outweigh the positive effect of higher pensions.

Since the coefficients on the interaction between cohort and occupational dummies are similar for cohort 3, 4 and 5, the negative sign of "occupation" for cohort 4 vs. 3 and 5 vs. 4 is mainly due to a difference in sample composition. In comparison with cohort 3, cohort 4 has a lower proportion of households whose head is a manager, and a higher share of self-employed and unemployed ones. The negative effect of these differences is partly overcome by the larger fraction of white-collars and the higher returns associated with them. Cohort 5, instead, is formed of a larger proportion of blue-collars and self-employed heads, and a lower share of white-collars and managers. Also in this case there is a larger fraction of households with unemployed heads. These composition effects also explain why occupation-specific time effects are negative in all cases, and larger for younger cohorts.

Differences across cohorts are also affected by household size and the number of income recipients. Since the former has diminished steadily over time, the equivalent income of subsequent cohorts at the same age would have increased by about 2-3%. This positive effect is coupled with the positive effect of the increase in female participation – especially for cohort 3 vs. 2 and 4 vs. 3 – but with the negative effect of a reduction in the number of other income recipients. Both the share of households with at least one labour income recipient other than the head or the spouse, and of those with at least one pension income recipient other than the head are lower in cohort 3 than in cohort 2, as well as in cohort 4 compared with cohort 3. It is worth noting that when the

head was aged about 45, 11% of households in cohort 3 had at least one retired individual other than the head, whereas this percentage decreased to 5% for cohort 4.

Other variables have minor effects: in particular, the educational level of the head has negative effects for younger cohorts (because "diminishing returns" prevail over larger shares of more educated heads), while educational level of the spouse has positive effects for older cohorts, especially cohort 3 vs. 2, and for the youngest. Renting the home has generally negative effects for younger cohorts, owing to the different coefficients estimated for the initial years compared to the subsequent ones, implying a larger loss from 1993 onwards. Had the proportion of tenants remained the same, the size of the effect would have been much larger.

To sum up, cohort 2 has gained over cohort 1 in terms of household equivalent income. The positive components of this gain are higher pension returns, more educated heads and lower household size. They have been partly offset by negative time-effects and a reduction in the number of income recipients. Cohort 3 has also gained over cohort 2; this positive cohort effect is the sum of higher pension returns, smaller household size, higher female education and participation. Again, these gains have been partly offset by negative time-effects and a reduction in the number of income recipients. Cohort 4 has lost compared to cohort 3; this loss is the result of the negative effects of time, head and spouse education, and the number of income recipients. The positive effects of smaller household size and female participation have not been enough to compensate for the negative ones. Finally, cohort 5 has also lost compared with cohort 4, and the composition of the loss is similar to the previous one; in this case, the gain from female participation is much lower, but is compensated by a positive effect of spouse education and regional composition.

5. Conclusions

In this paper we have documented a deterioration in the economic conditions and prospects of "young households" in comparison with older cohorts. We have considered the effects of household size, labour market conditions (in terms of both earnings profiles and participation), changes in social security rights, and housing costs.

Our analysis shows that monthly *individual labour income* is lower for younger cohorts of individuals, with a reduction that ranges from 5% to 33% according to the age and the percentile considered. This has meant increasing difficulties for these cohorts in forming families, and in having and raising children. Indeed, household size is lower for successive cohorts, but this effect – together with the increase in the number of earners within the family – is not big enough to compensate for the loss in individual earnings. As a consequence, *household equivalent labour income* is about eight percent lower for younger cohorts of households.

At the same time, *individual pensions* display a completely different pattern. Retired individuals from younger cohorts can rely on pensions much higher than those of the previous cohorts. But the reforms of the pension system introduced in the 1990s will completely reverse this trend in the future. Workers born after the mid-1960s will have pension benefits computed exclusively on the new notional-defined contribution scheme, with the result that their pension incomes will be not only low but also uncertain.

Young cohorts are also negatively affected by the changes that have characterised the housing market in the last fifteen years. *Housing prices* and *rents* have markedly increased; the liberalisation of the mortgage market, and the lack of housing policy have resulted in a further increase in the already large share of home ownership, further limiting the supply of houses to rent. These changes have led to an increase in homeowner's wealth, but also to higher costs of housing services, interest to be paid on loans, and rents. And the higher cost of housing services results in a greater (negative) impact on the younger households, those in search of an affordable house tenancy.

Using a regression analysis, we have identified the effect of these elements on household income. Cohort effects are positive and significant for households with retired heads, whereas they depend on the occupational category if the head is working, but the gains of the youngest *h-cohort* over the previous ones are generally negligible. Furthermore, education-specific cohort effects are negative, whereas the gain associated with the spouse's participation is higher for younger cohorts. Finally, as regards time effects, over the last fifteen years households headed by blue and white collars have experienced a worsening of their economic conditions, whereas the opposite has happened to households headed by self-employed, managers, and retired individuals.

Using a decomposition exercise, we have shown that the extraordinary performance of households whose heads were born in the 1940s over the period considered is mainly due to a reduction in the number of household members coupled with an increase in the number of income recipients. Since the transition to retirement of both the head and the spouse has occurred only for a small proportion of households, its negative effect has been less large than for previous cohorts. The poor performance of the two youngest *h-cohorts* is mainly the result of the increase in household size as new children are born, and the negative effect of economic growth on white and blue collars.

With respect to differences across *h-cohorts* at the same age, households whose heads were born in the 1930s and in the 1940s gained over the preceding cohorts because of higher educational levels, female participation, smaller household size, and higher pension benefits. These gains were partly offset by negative time effects, and a reduction in the number of income recipients. Households whose heads were born in the 1950s and 1960s lost compared to the preceding cohorts because of the negative time effect, a reduction in the "returns" to education, a larger share of heads in occupations with lower returns, and a reduction in the number of earners other than the head and the spouse. The positive effect of smaller household size and female participation, were not enough to compensate for the loss.

The analysis presented in this paper describes the economic difficulties faced by young generations which result from the joint occurrence of various events, like institutional changes to the labour market, the poor economic performance of the economy and its adverse effects on white and blue collars, the new rules introduced for the pension system, and an exceptional increase in house prices and rents. Since our analysis is purely descriptive, the first step for future research is clearly to explore the precise way in which these events affect, or are the result of, individual decisions. The low levels of individual wages, the higher costs of housing, and the need to save a larger share of income to ensure decent pension benefits for the future imply increasing difficulties in the family formation process, as well as an increase in the number of earners needed to provide a sufficient level of income within the household. The consequences of these

circumstances on marriages and fertility decisions, on the resources available for children's education and for public spending, as well as on the welfare costs associated with less time for both leisure and caring remain to be explored.

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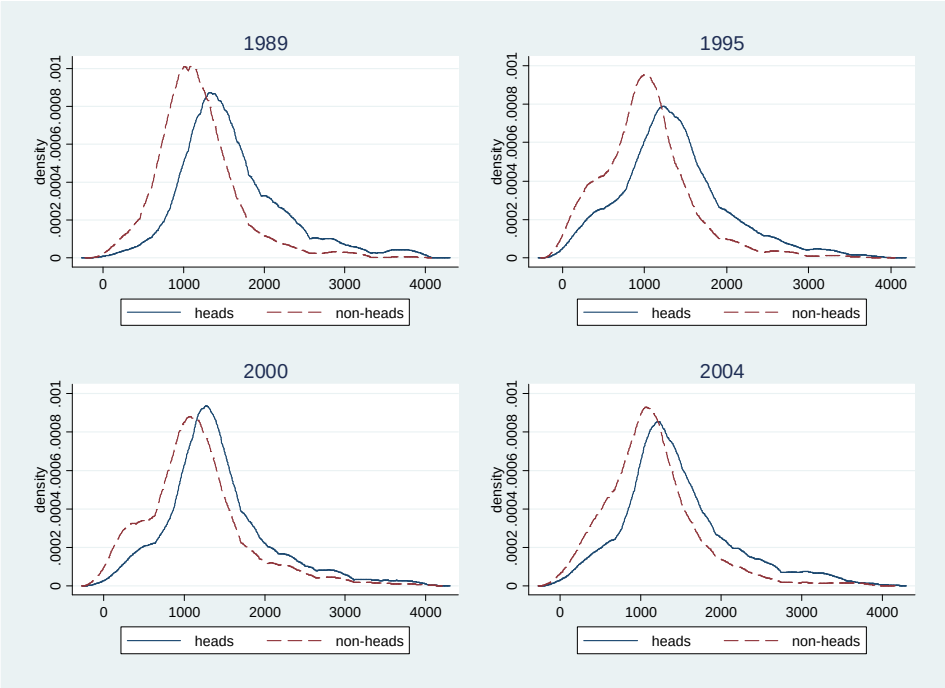
APPENDIX

Fig. A1: Non-parametric density functions of individual monthly labour income for males born in the 60s (heads of households and non-heads, selected years, euros at 2003 prices)



Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Table A1: Sample size of different cohorts of households by year

	cohort 1	cohort 2	cohort 3	cohort 4	cohort 5	Total
1989	1,219	1,615	1,646	1,339	363	6,182
1991	1,201	1,524	1,615	1,322	399	6,061
1993	1,117	1,407	1,504	1,340	556	5,924
1995	1,048	1,403	1,579	1,299	755	6,084
1998	741	1,119	1,491	1,342	825	5,518
2000	754	1,216	1,556	1,426	986	5,938
2002	737	1,212	1,441	1,355	990	5,735
2004	685	1,121	1,421	1,313	1,082	5,622
Total	7,502	10,617	12,253	10,736	5,956	47,064

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Table A2 - The five cohorts

Cohorts	Entry into the labour market (14-29 years old)	Prime age (30-49 yrs) and old age (50+)	Labour market regulation
Cohort 1 (1921-1930) representative cohort: 1926 Cohort size (MF, at the age of 56): 690,600	- In the 1940s and early 50s the labour market was characterised by underemployment, mass unemployment and large internal migration - Entry into the labour market occurred at a very early age (up until 1936, working life started at the age of 10) - Fuà (1976, p. 15) estimated that in 1936 the specific activity rate was almost 30% for men aged 10-14, and 87% for men aged 15-24	1955-74: - very high economic growth - high demographic growth - low (and decreasing) female participation Large numbers experienced employment in the underground economy (especially people employed in agriculture and construction) Employment (ERm): cohort 1921 at 56 (in 1977): 80.6% cohort 1926 at 56 (in 1982): 76.6%	Until the mid-1960s, the innovations introduced aimed at three major goals: (i) granting protection to the marginal and weak groups of the labour force (L. 25/1955 on apprenticeship, L. 860/1950 granting specific protection to working mothers; L. 7/1963 forbidding the lay-off of female employees at marriage); (ii) ensuring a minimum standard of protection for all employees (L. 264/1949 on the regulation of public employment services; L. 741/1959 on the possibility to apply to all employees the conditions established in national collective agreements); (iii) repressing illegal and fraudulent forms of employment (including the possibility of mediators in the recruitment of waged-labour, L. 1369/1960). Between 1957 and 1968: a very generous pension system was constructed as a public unfunded PAYG (pay-as-you-go) system, the system applied (with some differences in generosity) to private and public employees, as well as the self-employed
Cohort 2 (1931-1940) representative cohort: 1936 Cohort size (MF, at the age of 46): 725,260	- In the 1950s and early 60s labour market conditions improved, internal migration continued and unemployment fell - Education: low levels - Entry into the labour market occurred at an early age (it was common to start working life at the age of 14) Unemployment: Av. U rate (1961-71): 4,7%	1965-84: - high economic growth interrupted by the oil shocks of the 1970s - unemployment starts to increase - low and declining female participation (up until the early 1970s) Employment (ERm): cohort 1931 at 56 (in 1987): 72.3% cohort 1936 at 56 (in 1992): 71.3%	The decade 1965-75 was characterised by the great expansion of the degree of protection granted by law (*garantismo normativo*). 1969: pension benefits for private sector employees started to be computed on the basis of earnings (final salaries). 1970: approval of the Workers' Charter (*Statuto dei Lavoratori*, L. 30/1970), a sort of workers' bill of rights establishing principles for the protection of workers and union activists in the workplace, as well as the regulation of both industrial disputes and union organisation. Among other things, it regulated individual and collective dismissals.
Cohort 3 (1941-1950) representative cohort: 1946 Cohort size (MF, at the age of 36): 653,460	- In the 1960s and early 1970s the economy kept growing - The overall increase in labour demand was greater than labour supply - The majority entered active life by the age of 19. In 1964 the specific activity rate was 54% for men aged 14-19, and 75% for men aged 20-24 (Fuà 1976, p. 17). Unemployment: Av. U rate (1971-81): 6,1%	1975-94: - slowdown in economic growth - unemployment on the increase - increasing female participation - falling birth rate (since the mid-70s) Employment (ERm): cohort 1941 at 41 (in 1982): 97.0% cohort 1946 at 41 (in 1987): 95.7% cohort 1941 at 56 (in 1997): 57.1% cohort 1946 at 56 (in 2002): 59.4%	In 1975, a year of severe recession and rising inflation, two important interconfederal agreements reinforced the degree of protection granted by law. These two agreements ensured some protection against the two new major threats: inflation and collective dismissals (and/or short-time redundancy). (i) The first agreement modified the indexing system in use (*scala mobile*) establishing the full compensation in wages and salaries for increases in the cost of living (established as a flat-sum, equal for all employees). (ii) The second agreement (later incorporated in L. 164/1975) was concerned with the income maintenance for workers employed in firms in crisis, with consequent problems of overmanning. In such situations, the CIG (*Cassa Integrazione Guadagni*), a national fund by and large financed by the State, may intervene to pay workers made temporarily redundant.

Cohort 4 (1951-1960) representative cohort: 1956 Cohort size (MF, at the age of 26): 777,477	In 1962 lower secondary education was made compulsory (affecting cohorts born after 1952). Educational levels (M) in 1970/71: 34.6% students obtained the upper secondary diploma (at 19 yrs) 14.8% students enrolled at universities (at 19-25 yrs) Unemployment: Av. U rate (1981-91): 8,6% Youth U rate around 1977: 18% Employment (ERm): cohort 1951 at 21 (1972): na cohort 1956 at 21 (1977): 50.5%	1985-2004: - long expansionary cycle (1983-90) followed by a very severe recession (1991-94) with over one million job losses - moderate growth of real wage - introduction of greater flexibility in the use of labour - increasing female participation - low (and still falling) birth rate Employment (ERm): cohort 1951 at 31 (in 1982): 96.0% cohort 1956 at 31 (in 1987): 91.9% cohort 1951 at 41 (in 1992): 94.9% cohort 1956 at 41 (in 1997): 91.4%	1984: in order to ease the entry of young workers (15-29 yrs) into the labour market, CFL contract was introduced (D.L. 726/1984). Advantages for employers of CFL (with respect to open-ended contract): fixed-term, up to a maximum of 24v months; very generous fiscal benefits; lower entry wage; possibility to hire the worker directly, without going through the ranking arranged by the "Ufficio di Collocamento". 1991: direct hiring was extended to all firms (L. 223/1991). 1991: collective dismissals were made easier (L. 223/1991). 1993: income policy agreement (tripartite agreement): (i) abolition of the wage indexing system (*scala mobile*) in use since 1956; (ii) reform of the national collective bargaining system establishing a two-tier structure: industry-wide collective agreements set contractual minima with the objective of maintaining the purchasing power of wages; company-level agreements grant performance-related pay rises.
Cohort 5 (1961-1970) representative cohort: 1966 Cohort size (MF, at the age of 26): 954,437	Educational levels (M) in 1980/81: 41% students obtained the upper secondary diploma (at 19 yrs) 20.5% students enrolled at universities (at 19-25 yrs) Unemployment: Av. U rate (1991-2000): 10.4% Youth U rate (15-24 yrs) in 1985: 29.4% Employment (ERm): cohort 1961 at 21 (in 1982): 53.8% cohort 1966 at 21 (in 1987): 47.2%	1995- … - very low economic growth, with high job creation - deterioration in the quality of new jobs (low labour productivity and total factor productivity) - wage moderation continues - flexibility in the use of labour input is increased - falling unemployment rate - increasing female participation - low (and steady) birth rate Employment (ERm): cohort 1961 at 31 (in 1992): 89.9% cohort 1966 at 31 (in 1997): 84.4% cohort 1961 at 41 (in 2002): 92.3%	Pension reforms in the 1990s lead to a gradual shift from the defined-benefit scheme to a notional defined-contribution scheme. These reforms create a strong link between contributions and benefits, reducing expected pension benefits and introducing incentives to work longer. But they entail a very long transition period: they fully apply only to workers entering employment after 1995. The older cohorts keep the right to retire early, under the old rules. New measures introduced in 2004 raise the retirement age (for the old cohorts). 1995: A special pension scheme is introduced for those self-employed workers characterised by a close and continuous relation with a single company (co.co.co) (L. 335/1995) 1997: the so-called Pacchetto Treu (L. 196/1997) is enacted. Temporary agency work (lavoro *interinale*) is introduced for the first time in Italy. 2001: the regulation of fixed-term contract is modified (legislative decree 368/2001). A general principle for fixed-term contracts for all employees is established on the basis of "technical, productive, organisational or substitutive reasons", art. 1, comma 1). 2003: the so-called Legge Biagi (L. 30/2003 and legislative decree 276/2003) is enacted, enlarging the spectrum of atypical contracts.

Sources: Cohort size: Istat, *Ricostruzione intercensuaria della popolazione, 1982-1992 e 1992-2001*, www.demo.istat.it; GDP, GDP per head, unemployment rate: *European Economy*, Autumn 2006; Youth unemployment rate, employment rate by age: Istat, LFS 1977-2003.

Table A3: Percentiles of monthly pension income (males born in the 1920s; euros at 2003 prices)

	p10	p25	p50	p75	p90	mean
1989	*441.4*	*568.9*	*842.1*	*1177.1*	*1471.4*	*911.7*
1989	100.0	100.0	100.0	100.0	100.0	100.0
1991	97.7	101.6	102.4	98.1	99.7	101.3
1993	97.2	90.8	101.2	97.4	100.1	100.7
1995	97.8	91.8	95.1	94.9	104.1	99.6
1998	101.3	101.0	98.0	97.7	100.2	100.6
2000	99.1	96.1	93.8	96.8	99.1	99.1
2002	105.7	99.5	98.9	97.4	104.2	103.9
2004	105.4	102.4	99.1	99.0	108.0	104.0

Source: Authors' calculations on data from the SHIW-HA (release 3.0).

Tab. A4: Description of the variables used in the regressions

age_coh	Cohorts' age defined as year minus a single year of birth for each cohort (1925 for cohort 1, 1935 for cohort 2, etc.)
ret_coh2, ret_coh3	Households belonging to the specified cohorts whose head is retired (dummy variable)
bc_coh12	All households from cohort 1 whose head is neither retired nor self-employed, and households belonging to cohort 2 whose head is a blue collar (dummy variable).
bc_coh345	Households belonging to cohort 3, 4 or 5 whose head is a blue collar (dummy variable).
wc_coh2, wc_coh3, wc_coh45	Households belonging to the specified cohorts whose head is a white collar (dummy variable).
man_coh2, man_coh345	Households belonging to the specified cohorts whose head is a manager (dummy variable).
unemp_coh2, unemp_coh3, unemp_coh45	Households belonging to the specified cohorts whose head is unemployed (dummy variable).
self-emp	Households belonging to all cohorts whose head is self-employed or entrepreneur (dummy variable).
1991_wc	Interaction between a dummy variable for 1991 and a dummy variable for households whose head is a white collar.
1995-2000_wc	Interaction between a dummy variable for 1995, 1998 and 2000 and a dummy variable for households whose head is a white collar.
2002-04_wc	Interaction between a dummy variable for 2002 and 2004 and a dummy variable for households whose head is a white collar.
1991_bc, 1993_bc	Interaction between a dummy variable for the specified years and a dummy variable for households whose head is a blue collar.
1995-2004_bc	Interaction between a dummy variable for all years after 1993 and a dummy variable for households whose head is a blue collar.
1991_man, 1993_man	Interaction between a dummy variable for the specified years and a dummy variable for households whose head is a manager.
1993_self, 1995_self, 2002_self	Interaction between a dummy variable for the specified years and a dummy variable for households whose head is either self-employed or entrepreneur.
1998-2000_self	Interaction between a dummy variable for 1998 and 2000, and a dummy variable for households whose head is either self-employed or entrepreneur.
1993-2002_un	Interaction between a dummy variable for all years from 1993 to 2002, and a dummy variable for households whose head is either self-employed or entrepreneur.
Rent	Households with rented accommodation (dummy variable)
Rent_1989-1991; rent_2004	Interaction between Rent and a dummy variable for the specified years.
Ncomp	Number of household members
Nchild	Number of sons or daughters aged under 15
Noth_ret	Number of retired individuals in the household (other than the head)
Noth_earners	Number of earners in the household (other than the head and the spouse)
spw_coh12, spw_coh3, spw_coh45	Households belonging to the specified cohorts where the spouse is working.

sped2_coh12, sped2_coh3, sped2_coh45	Households belonging to the specified cohorts where the spouse has a secondary school diploma.
sped3_coh12, sped3_coh3, sped3_coh45	Households belonging to the specified cohorts where the spouse has a university degree
heduc2_coh1, heduc2_coh2, heduc2_coh3, heduc2_coh4, heduc2_coh5	Households belonging to the specified cohorts where the head has a secondary school diploma.
heduc3_coh1, heduc3_coh2, heduc3_coh3, heduc3_coh4, heduc3_coh5	Households belonging to the specified cohorts where the head has a university degree
North	Households living in the north (dummy variable)
Centre	Households living in the centre (dummy variable)