

**EUROPEAN UNIVERSITY INSTITUTE, FLORENCE**  
**DEPARTMENT OF POLITICAL AND SOCIAL SCIENCES**

EUI Working Paper **SPS** No. 2003/19

**The Impact of Changes in Household Forms  
on Income Inequality  
The Case of Italy 1977-2000**

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Printed in Italy in December 2003  
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**THE IMPACT OF CHANGES IN HOUSEHOLD FORMS  
ON INCOME INEQUALITY  
THE CASE OF ITALY 1977-2000**

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The source of the data used in this article is the Bank of Italy, Survey of Household Income and Wealth. But the author and not the Bank of Italy, is personally responsible for the research.

## **Introduction**

There is a wealth of literature which explores factors affecting differences, between countries, in income inequality levels. Furthermore, there is also a lot of research which analyses what makes income inequality vary over time in different countries. Hence, a long list of factors affecting inequality trends and differences can be drawn from the existing literature. Nonetheless the role of changes and differences in family forms (i.e. the combination of family's economic and demographic characteristics) in affecting inequality levels is something to which studies of income inequality pay relatively little attention. The study of this topic appears to be particularly relevant in the case of Italy; as a matter of fact, in the literature on welfare regimes, it is often stressed the great relevance of family in southern Europe in ensuring individuals against low-income risks (see for example: Guerrero and Naldini, 1996; Saraceno, 1997; Esping-Andersen, 1999; Bentolila and Ichino, 2000). Aim of the paper is to explore the role of the household demographic and economic characteristics in determining the individuals' position in the income distribution. Moreover, it will be analysed how the redistributive role of the family has changed in the last decades in Italy. Finally, I will try to assess how much and in which direction (boosting vs. containing) changes in household forms have affected the level of income inequality in Italy.

### **Factors affecting income inequality levels and previous studies on the effects of changing family forms**

In the literature on income inequality it has been identified a relevant number of factors affecting income inequality levels. As an example, in their review of the different approaches adopted to explain variations in income inequality, Gustafsson and Johansson (1997) identified the following list of explanatory factors utilised in previous research: (i) economic development and/or the sector structure of the economy; (ii) the international division of labour; (iii) the macroeconomic performance; (iv) reasons outside a strictly defined market sphere: union density, democracy, the size of public sector; (v) demography; (vi) gender distribution of paid labour. However, this list of different approaches is probably far from being complete; as a matter of fact, there are many other factors affecting income inequality which were mentioned in the literature. A relevant number of authors, for example, explicitly stressed the role of the welfare state in shaping the income distribution; therefore, they clearly underlined the importance of variations across welfare regimes to explain differences and changes in inequality levels. Moreover, there are other examples of factors not included in the list of Gustafsson and Johansson, e.g.: Mahler (2002) argued that the electoral turnout is an important factor to explain differences in income inequality; next Davies and Wooton (1992) stressed the effect of international migration on the income distribution; finally, the role of the

basic normative principles governing the relation of the state to the citizens was stressed by Rothstein (1998).

The distribution of income across the population is the result of a complex pattern of actions and interactions between numerous and different actors and institutions such as, for example: individuals, firms, households, trade unions, governments, etc.. Furthermore, it is important to note that explanations of differences in inequality across countries and periods differ according to which end of the income distribution one is addressing (Smeeding, 2002). It is because of this complexity that one could think to an almost infinite number of causes, both at the macro and at the micro level, to explain differences and changes in income inequality levels. As a consequence causal explanations are not very easy to pin down and, in addition, the difficulty to explain differences and trends in inequality increases when household disposable incomes, and not earnings, are taken into account (Gottshalk and Smeeding, 1997: 634-635).

Such a complexity, however, can be significantly reduced. As a matter of fact, schematising it is possible to identify three main institutional actors which strongly affect the distribution and redistribution of incomes between individuals; these three actors are: (i) the state; (ii) the market; and (iii) the household. How incomes are (re-)distributed across the population strongly depends on the structures and behaviours of these institutions. The way in which family, market and state deal with the adequacy, stability and security of personal incomes has much to do with how they deal with the equalisation and distribution of economic resources. Thus, the inequality level of the distribution of the economic resources between individuals depends on the interactions between these three actors, and on the redistributive processes which take place within and between them (Gottshalk and Smeeding, 1997: 668). Therefore, it can be argued that the level of income inequality is the outcome of the complex interplay between these institutions.

It comes from what was argued above that when we compare household income inequality in different countries/periods we need to pay attention to three major areas of potential difference<sup>2</sup>:

- i. Inequality in the distribution of individual market earnings – and, more in general differences and changes related to the market sphere, such as differences in sources of capital and returns to capital.
- ii. Household form and the within-household correlation of incomes among individual incomes receivers.
- iii. The state's treatment of different household types according to their form and income (i.e. the way in which taxes and transfers shape household incomes).

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<sup>2</sup> Similar schemes have been already proposed in the literature on income inequality, see for example (Fritzell, 1993:52; Breen, 1999:4; Gottshalk and Smeeding, 2000:262).

As it was argued by Breen (1999) the first and the last of these items are the usual focus in studies of inequality; by contrast there are relatively few studies which concentrates on the second of these three areas of potential difference. Thus, there are many studies on the redistributive effects of differences in national political economies and in the distribution of labour earnings; whereas, the effects of the substantial differences in patterns of family formation and in the distribution of household types are something to which studies of income inequality pay relatively little attention. However, some exceptions are the study by Fritzell (1993); Kangas and Ritakallio (1998); Karoly and Burtless (1995); Breen (1999); Jenkins (1995); and, for what regards Italy D'Alessio and Signorini(2000), and Brandolini and D'Alessio (2001).<sup>3</sup>

The study by Fritzell (1993) looks at the impact of demographic changes in five OECD countries (Canada, Germany, Sweden, United Kingdom and USA) between early and mid 1980s; namely, it concentrates on changes in age structure and family composition. It results from this analysis that had the age structure remained constant, the inequality level would have been higher in 4 of the 5 countries considered, while it would have remained at the same level in Sweden. Furthermore, it also emerges that had the family composition remained constant, inequality would have been higher in USA, equal in Germany, but lower in the other three nations. Nevertheless, since in all these countries the actual and the hypothetical change in the inequality level are almost equal, the author concluded that 'the changes in inequality that have occurred can be attributed neither to changes in age distribution nor to changes in family composition' (Fritzell, 1993: 53).

In his decomposition analyses for the United Kingdom (1971-86), Jenkins studied the effect of changes in some demographic and economic characteristics of the households (i.e. age of the household head, household type, household earnings status, and employment status of the household head). He concluded that 'the explanations of inequality trends founded on changes in the age distribution and in household composition are definitely called into question' (Jenkins, 1995: 45), whereas there are some – very small – effects attributable to changes in the household earning status and heads employment status.

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<sup>3</sup> It is important to note that all these studies utilised a similar approach to the study of the redistributive role of the household. As a matter of fact, they mainly concentrate on the economic and demographic characteristics of the family. However, schematising, we can identify at least two other different approaches: (i) a first stream of the research concentrates on the redistributive role of unpaid work within the family (see for example Bryan and Zick, 1985; Bonke, 1992; Bruy-Hundt, 1996). This approach to the study of the relation between family and inequality has been mainly developed in the framework of gender studies. (ii) A second approach to the study of redistributive role of the household is based on the assumption that economic resources are not equally redistributed within the family. Thus, it pays attention to factors affecting this unequal distribution between family members; in particular, it concentrates on the relation between the power structures within the households and the redistribution of members' incomes (Curtis, 1986).

The study by Karoly and Burtless, which concentrates on United States (1959-1989), shows that the demographic change and changes in family forms had a considerable effect on the income distribution. They found that ‘the increase in the proportion of single headed families tended to boost inequality over the entire period’ (1995: 379). Moreover, the results indicate that, since 1979, the increasing female participation to the labour market led to an increase in inequality because of the increasing positive correlation between the earnings of the male and of the female head of the family.

The study by Kangas and Ritakallio tries to assess the impact of differences in family economic and demographic characteristics on the differences in poverty rates in France and Scandinavia. What they found is that ‘the effect of social policies are strongly dependent on socio-demographic factors, especially so on the labour force participation patterns (...) big differences in the French and Scandinavian actual poverty rates are not mainly explained by income transfer programs but differences in the family structure in labour market behaviour’ (1998: 26).

Finally, the works of D’Alessio and Signorini (2000), and of Brandolini and D’Alessio (2001) look at the impact of changing family structures on income inequality in Italy. In the first study it was found that the redistribution of income within the household is able to compensate for between 70 and 90 percent of income inequality among individuals, but it also emerges that the equalising effect of household redistribution is declining. In the second article - which examines the effects of the demographic changes on the evolution of inequality in Italy from 1977 to 1995 – it was argued that ‘the effect of demographic changes on distributive trends was almost negligible, except for a slight bias towards greater inequality imparted by the increase in the share of female heads of household’ (Brandolini and D’Alessio, 2001: 21). Moreover, when Italy is compared with other countries ‘it does not seem that differences in the levels of inequality can be attributed to any great extent to the different demographic structures’, thus ‘to sum up, neither the changes in inequality experienced by Italy from 1977 to 1995, nor its position in relation to other countries appear to depend on the composition of its population’ (2001: 32).

It emerges from this brief review of previous studies that the impact of changes in household forms on income inequality has not been deeply studied in the Italian case. Moreover, the few existing studies often disregard the economic characteristics of the family – which, as it results from the analysis of Jenkins (1995), Karoly and Burtless (1995), and Kangas and Ritakallio (1998) seem to be the most relevant. In addition, they often consider only the economic and/or the demographic characteristics of only one of the two components of the main couple – i.e. the self declared head of the household. In the present analysis I will take into consideration the characteristics of both the family heads (female and male head) and the characteristics of the other family’s members.

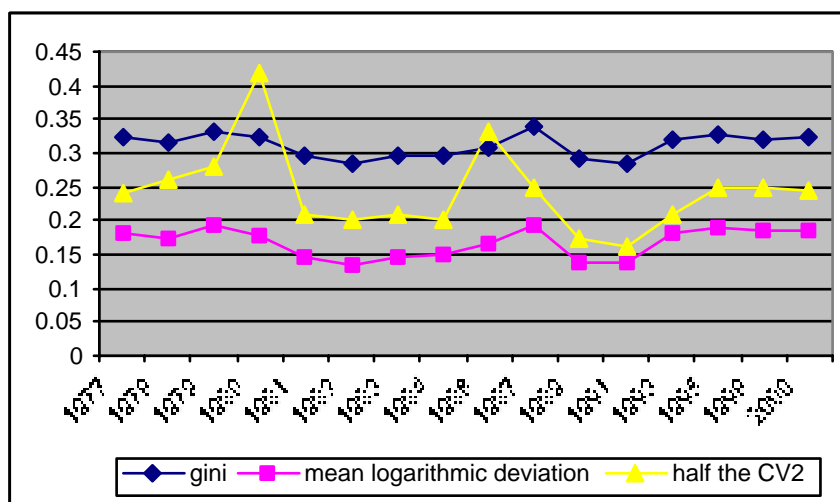
In the following part of the paper I will analyse the evolution of inequality in Italy from 1977 to 2000; second, it will be examined how it is changed the capacity of household of equalising economic resources between individuals; third, the changing relation between family's characteristics and individuals' position in the income distribution will be studied; finally, I will try to asses how and to what extent family forms did affect the level of income inequality and the trends in inequality in the last decades.

### The evolution of inequality in Italy

The pattern of inequality in the distribution of income shows considerable fluctuations in the period considered (1977-2000); however, without taking into consideration fluctuations from one year to the next, it seems that there is not a particular medium-term trend (Brandolini, 1999; Brandolini and D'Alessio, 2001). Figure 1 shows some indexes of inequality, described in the appendix, calculated on disposable equivalent incomes net of interest on financial assets.

The trend of the Gini index and of the mean logarithmic deviation (MLD) are similar<sup>4</sup>, and they also coincide with results of previous studies. On the other hand, the trend of inequality as measured by half the squared coefficient of variation (CV2) shows some differences. In particular, the two peaks of the distribution in 1980 and in 1986 do coincide neither with what was registered in previous studies, nor with the trends of the two other indexes. This discrepancy may be due to the particular sensitivity of the CV2 to the top part of the distribution and to the fact that incomes have not been bottom and top coded.

Figure 1: Income inequality in Italy, 1977-2000



Sources and notes: author's calculation on data from the Historical Archive of the Bank of Italy's Survey of Households' Income and Wealth (SHIW-HA, Version 2.0 February 2002). Measures calculated for the distribution of equivalent disposable income between persons; equivalence coefficients equal to  $N^{0.5}$ , where  $N$  is the number of household members.

<sup>4</sup> It is worth remembering that the MLD is not defined for zero and negative values of the income, thus this index has been calculated only on positive incomes.



It emerges from the data that inequality augmented between 1977 and 1979; as a matter of fact, this increase marked the end of the sharp fall which had characterised the 1970s (Brandolini, 1999). Then, income dispersion declined during the first part of the 1980s, and it reached the lowest level in 1982. In the mid-1980s income inequality showed some tendency to growth; this increasing trend reached its peak in 1987. A decline was registered in the following period (1989-1991), but it was soon reversed. Thus, the level of inequality increased from 1991 to 1995 and then it remained more or less stable until 2000.

In a comparative perspective it has to be noted that while in Italy from the early/mid 1970s to the early mid/1980s it was registered a remarkable decrease in income inequality, in most of the other industrialised countries, in the same period, inequality remained stable or decreased modestly – it even increases in the US and in the UK; furthermore, the level of inequality in Italy during the 1980s was lower than in most of the other nations. By contrast, the increasing trend registered between the mid/late 1980s and the mid/late 1990s is one of the strongest which have been registered in OECD countries (Atkinson, Smeeding and Rainwater, 1995; Atkinson, 2000; Gottshalk and Smeeding, 1977, 2000; Smeeding and Grodner, 2000).

As it was argued before the potential causes of these fluctuations in the income inequality level are almost infinite; we also know, from previous literature, that changes in population's composition in terms of households demographic types has generally a very low impact on these fluctuations. On the other hand, some changes in household economic characteristics seem to have a significant effect on the inequality level. In the next part of the paper it will be examined how the redistributive role of the family has changed in the last decades in Italy; how family characteristics affect individuals' position in the income distribution; and to what extent (and in which direction) the changes in family forms affected changes in income inequality levels.

### **The changing redistributive role of the family**

As it has been argued above the household is one of the three main institutional actors responsible for distributing and redistributing resources between individuals. Thus, family does redistributed resources between its members and it performs this task through two mechanisms: (a) pooling resources<sup>5</sup> and (b) generating economies of scale.

First, family pools economic resources of its members and, as a consequence, incomes are redistributed between (income) receivers and not-

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<sup>5</sup> Here the usual assumption that incomes are equally redistributed between all family members is adopted. For an alternative approach see, for example, Curtis (1986). It is important to note that this is an “extreme” assumption, as it will be “extreme” to assume that family members neither share their incomes, nor they generate any economy of scale. It is also worth remembering that the sharing of incomes is one of the criteria usually adopted in income surveys to define the household.

receivers and between members who enjoy different amounts of resources. The second mechanism regards the household's ability to transform economic resources into welfare. Thus, considering the levels of consumption of family's members, it is reasonable to assume that, by sharing many living costs, households do generate economies of scale. As a consequence, via shared consumption, families affect the redistribution of economic resources among individuals.

The easiest way of studying how the redistributive power of the family has changed is to compare the trends of inequality indexes calculated on individuals' equivalent incomes with the trends in inequality of two different distributions: (a) the distribution of individuals' incomes and (b) the distribution of per capita incomes.

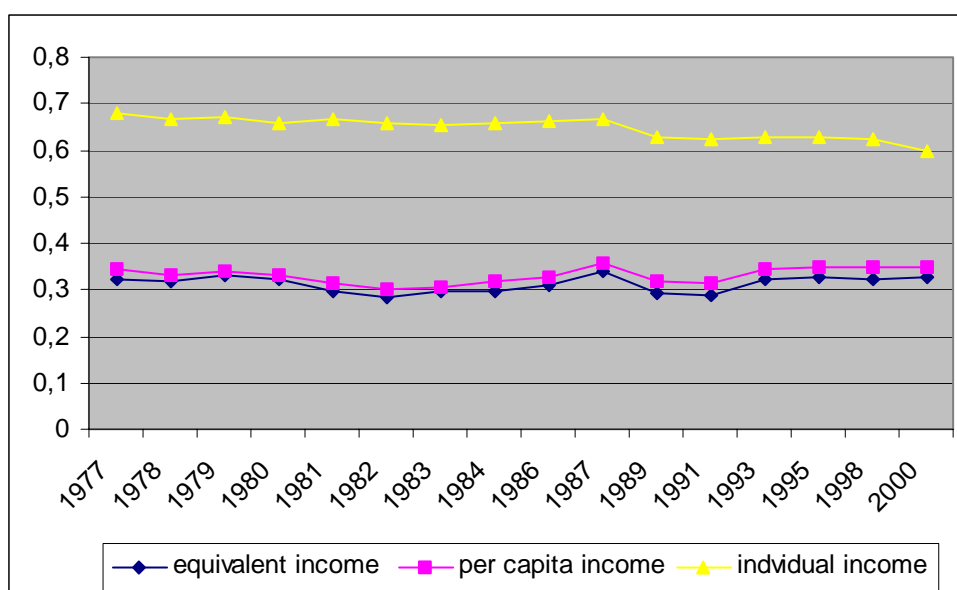
The inequality indexes presented in fig. 1 are calculated on equivalent incomes; by this it means that a perfect pooling and redistribution of resources is assumed and, in addition, it is also assumed that economies of scale are taken into account.<sup>6</sup> If it is assumed that family members pool their incomes, but we think that family's shared consumption does not generate any economy of scale, then inequality indexes have to be calculated on per capita income. That is to say that total household income has to be divided by the exact number of family's members, without adopting any equivalence scale. If, on the other hand, it is assumed that household members do not pool their incomes, then *each individual has to be attributed only of his/her own incomes*. Figure 1 shows the comparison of inequality trends measured on these three different income distributions.

It emerges from this analysis that the trend in inequality of the distribution of per capita income is very similar to that of equivalent income, whereas some interesting differences do emerge when comparing the inequality of equivalent income with the inequality of individual income. As a matter of fact, the trend of the Gini index calculated on individual incomes shows some tendency to decrease all along the period considered and, in addition, it seems that its fluctuations do not coincide very much with fluctuations registered in inequality of equivalent incomes. As a consequence the difference between the inequality levels of the two distributions tend to diminish.

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<sup>6</sup> Here the "equivalence" of incomes is obtained by dividing total household income by the coefficient  $N^{0.5}$ , where  $N$  is the number of household members. However, many different equivalence scales have been utilised in the scientific literature; moreover, there are also very different equivalence scales – which typically consider also the age of the household members – adopted by national statistics offices and by policy institutions. (Buhmann et al., 1988).

Figure 2: Trends in inequality of the distribution of equivalent income/per capita income/individual income. Gini index



Sources: author's calculation on data from the Historical Archive of the Bank of Italy's Survey of Households' Income and Wealth (SHIW-HA, Version 2.0 February 2002).

This very simple analysis seems to indicate that, in the last decades, Italian families have lost part of their power of equalising the individuals' level of economic resources. One of the possible explanations of the decreasing distance between the inequality of the equivalent income and the inequality of individual incomes is the increasing number of income receivers within the Italian families. The average ratio of the number of income receivers to the number of family's members increased from .5365 in 1977 to .6698 in 2000, indeed.

This analysis, however, does not tell us anything on the changing relation between families' characteristics and individuals' position in the income distribution. Furthermore, it does not clarify how and to what extent inequality between individuals was affected by the changes in the economic and demographic characteristics of the Italian families. In the next sections, after introducing a typology of family forms, these two aspects will be examined.

### **The changing relation between household's characteristics and the position of individuals in the income distribution**

There are many possible households' economic and demographic characteristics which can be utilised to built up a typology of household forms. Thus, for example, in the literature on social mobility and on income inequality it is possible to find an almost infinite number of different typologies utilised to classify households. Here, with the aim of considering both economic and demographic characteristics of the family, the following criteria have been used

to identify thirty different types of household forms (plus the “residual” category: other):

- a. Number of household heads: families have been classified in two categories: those where the main couple (a male head plus a female head) is present: “couple families”; and the so-called single headed families, where only one member of the main couple is present.
- b. Age of the female head: depending on the age of the female head, families have been classified in two categories “young” ( $\leq 65$ ) and “elderly” ( $> 65$ ). The age of the male head is considered when the female head is absent.
- c. Presence and age of other family members: different family forms have been identified according to the presence/absence of other family members beside the main couple. Moreover, they have been also distinguished depending on the presence of at least one minor member, or, subordinately, on the presence of at least one elderly member. However, this distinction has been made only for “young families”.
- d. Income status (income receiver vs. not-receiver): first, single headed families have been distinguished according to the presence of at least one other income receiver beside the head; second, “two heads” households have been distinguished according to the income status of the two heads and to the presence of at least one other income receiver beside the heads.

This typology of household forms is a useful tool to explore how has evolved the relation between family’s characteristics and individuals’ position in the income distribution. Thus, table 1 shows in which decile, on average, are located individuals, according to the type of household in which they live.<sup>7</sup>

The most interesting results of the analysis are the following.

First, it emerges from the data that the relative position of “single elderly” families – whose proportion in the population increased quite a lot in the last decades – improved significantly in the period considered; namely, in 1977 they were located, on average, between the second and the third decile whereas, in 2000, the average decile of the group was 4.16. Nevertheless, it has also to be noted that, despite of this improvement, they were still located in the lower half of the distribution. On the other hand, people living in families with one elderly head enjoy a better location in the distribution when there is at least one other member, beside the head, who does receive an income. The average location of these people was a little bit lower than the sixth decile in 1977 and in 1989, and it was between the sixth and seventh decile in 2000.

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<sup>7</sup> Here and in some of the following analyses, to avoid a confusing presentation of thousands of numbers, I only presented the data of three years (1977, 1989 and 2000). Data of the other years can be obtained from the author.

Second, the relative position of “single young” families – which is between the fifth and the sixth decile – remained more or less stable all along the period considered; it is also interesting to note that, in the same period, their proportion in the population doubled. By contrast, the average location of single parent families with minor children – both with and without other income receivers beside the heads – shows some tendency to worsen. At the end of the period, in 2000, both these types of families are located, on average, between the fourth and the fifth decile. It has also to be noted that during the last decades the percentage of people living in these types of families has slightly decreased.

Third, the relative economic position of people living in “elderly couple” families, both with one and two income receivers, improved considerably between the end of the 1970s and the year 2000. As a matter of fact, in the 1977, these people were located around the third decile, whereas 23 years later they were located around the fifth decile. Even though they were still in the lower half of the distribution this improvement was very important, particularly because of the increasing proportion of the “elderly couple” families in the Italian population.

Fourth, while, as we shown, the economic position of “elderly couple” families does not depend very much on the number of income receivers (one or two), this last characteristic is particularly relevant to determine the location of “young couple” families. People living in “young couple” households with only one income receiver – whose proportion has diminished during the period considered – were located, in all the three years, between the fourth and the fifth decile. Furthermore, their relative position has slightly worsened in the last decades. On the opposite, the location of “young couple” families with two receivers improved significantly from 1977 to 2000. Their average decile, indeed, grew from 6.37 to 7.49 and, in addition, it should be noted that it increased their proportion in the population.

Fifth, between 1977 and 2000 the proportion of people living in “young couple plus minor” families decreased considerably; namely these people made up 54 percent of the Italian population in 1977, but they form only 40 percent of the population 23 years later. In particular, it is quite impressive the decreasing proportion of individuals living in “young families”, with children, and with only one income receiver head and no any other income receiver beside the heads. This group represented almost 29 percent of Italians in the late 1970s, but less than 10 percent of the population in 2000. As a matter of fact, this type of family can be considered the “typical” household form of the mid-century compromise societies: i.e. a family based on the male breadwinner model (Crouch, 1999). On the opposite, in the same period, it increased significantly the number of people living in families characterised by more complex income packages. Thus, it increased from 5 to 9 percent the proportion of “young couple plus minor” families, with two heads who receive an income plus other income receiver members. What emerges from the analysis of the relative positions of “young

couple plus minor” households is a general, but slight, worsening of their location in the income distribution; in particular, it worsened the position of those families with only one income receiver head. However, it has to be noted that, in all the three years, there were relevant differences between the location of families with two heads who receive an income and the location of families with only one income receiver head. As a matter of fact, the first subgroup was generally located around the seventh decile and, thus, it was steadily positioned in the upper part of the income distribution; whereas, on the opposite, the second subgroup was generally placed around the fourth decile.

Sixth, during the period considered, contrary to what observed for “young couple plus minor” families, it has increased the percentage of people living in “young couple plus adult” households (from 16 to 19 percent). The analysis of changes in the relative positions of these four family types shows that, depending on the number of heads who receive an income, there were two different tendencies. On the one hand, households with only one head who receives an income lost some positions in the income distribution. This worsening regards in particular families with no any other income receiver beside the heads and, in addition, it should be noted that the average decile of this family type, in all the three years, was much lower than that of families with other income receivers. On the other hand, there was a slight improvement in the relative position of people living in “young couple plus adult” families with two income receiver heads. Furthermore, it has to be noted that both these family types were very well placed in the income distribution; in fact, depending on the presence or absence of other income receiver members, they were located around the eight or the seventh decile.

Table 1: Average income decile where are located individuals living in the specified type of household. Figures within parentheses are the proportion of people living in the specified type of household.

	<i>1977</i>	<i>1989</i>	<i>2000</i>
Other	3.55 (.39)	2.92 (.63)	2.51 (3.77)
Single elderly	2.66 (1.6)	3.53 (3.57)	4.16 (4.74)
Single elderly + other / R	5.98 (2.04)	5.66 (2.2)	6.38 (2.12)
Single elderly + other / NR	3.15 (.29)	2.97 (.36)	3.10 (.72)
Single young	5.15 (1.5)	5.74 (2.4)	5.94 (3.03)
Single young + minor / R	5.54 (1.27)	4.88 (.87)	4.80 (.89)
Single young + minor / NR	5.80 (1.09)	3.13 (1.09)	4.19 (.83)
Single young + elderly / R	6.37 (1.34)	6.58 (1.56)	6.51 (1.64)
Single young + elderly / NR	2.66 (.11)	3.35 (.05)	6.04 (.11)
Single young + adult / R	6.99 (1.9)	7.32 (2.17)	6.93 (1.97)
Single young + adult / NR	4.44 (.72)	3.93 (.85)	4.52 (1.02)
Couple elderly – one receiver	3.46 (.63)	3.73 (1.02)	4.66 (2.04)
Couple elderly / two receivers	3.19 (2.95)	4.27 (3.36)	4.98 (4.46)
Couple elderly + other / 1R + R	6,64 (.38)	6.14 (.37)	6.28 (.69)
Couple elderly + other / 1R + NR	- (-)	1.51 (.13)	2.83 (.29)
Couple elderly + other / 2R + R	5,67 (1.37)	7.11 (1.36)	6.69 (1.23)
Couple elderly + other / 2R + NR	5,44 (.55)	2.71 (.49)	4.91 (.45)
Couple young / 1R	4,98 (5.22)	4.54 (3.34)	4.62 (3.54)
Couple young / 2R	6,37 (3.69)	6.75 (5.34)	7.49 (5.36)
Couple young + minor / 1R + R	5,42 (9.95)	4.24 (13.45)	3.88 (11.06)
Couple young + minor / 1R + NR	4,28 (28.59)	3.39 (13.9)	3.56 (9.95)
Couple young + minor / 2R + R	7,23 (4.98)	7.03 (8.8)	6.81 (9.39)
Couple young + minor / 2R + NR	6,62 (10.51)	6.98 (9.98)	6.65 (9.78)
Couple young + elderly / 1R + R	6,42 (1.77)	6.58 (1.34)	4.83 (.64)
Couple young + elderly / 1R + NR	5,56 (.09)	1 (.03)	6.32 (.08)
Couple young + elderly / 2R + R	7,38 (.89)	7.74 (.77)	7.70 (.92)
Couple young + elderly / 2R + NR	- (-)	1 (.006)	8.39 (.02)
Couple young + adult / 1R + R	7,22 (5.72)	6.92 (7.25)	6.70 (6.85)
Couple young + adult / 1R + NR	5,46 (5.07)	4.06 (3.97)	3.93 (3.93)
Couple young + adult / 2R + R	8,08 (3.33)	8.04 (5.22)	8.18 (5.47)
Couple young + adult / 2R + NR	6,80 (2.02)	6.98 (4.13)	7.06 (3.04)

Sources: author's calculation on data from the Historical Archive of the Bank of Italy's Survey of Households' Income and Wealth (SHIW-HA, Version 2.0 February 2002).

So far I have explored two main issues concerning the relation between household and inequality: first, it was analysed the strength of the family's redistributive role and its change over the last two decades; second, it was briefly explored the changing relation between family's economic and demographic characteristics and the individuals' position in the income distribution. In the next

paragraph, by using the technique of inequality indexes decomposition, I will analyse how and to what extent family forms did affect the level of income inequality.

### **How and to what extent family forms did affect the level of income inequality and the trends in inequality**

The role of family forms in determining income inequality level can be studied by using the technique of decomposition of inequality indexes. However, it has to be noted that only some measures of inequality satisfy the property of decomposability.<sup>8</sup> Two of the indexes of inequality utilised above – namely the mean logarithmic deviation and half the squared coefficient of variation – belong to the family of generalised entropy measures of inequality. Therefore, they can be additively decomposed in two basic components: between groups and within groups inequality (Shorrocks, 1984; Cowell, 1995; Jenkins, 1991). There are also other indexes of inequality, different from GEF measures, that can be decomposed, but they are not *additively* decomposable. Thus, for example, Pyatt's decomposition of the Gini index makes it possible to decompose this measure in a between component, plus a within component, plus an "overlap" term (Pyatt, 1976). Of course, not only the interpretation of the levels of this last term is quite difficult, but also its existence makes it difficult to interpret the values of the other two terms. As a consequence, in the following analyses the mean logarithmic deviation and half the squared coefficient of variation will be utilised. Tables 3 and 4 show four different statistics for the two indexes: (i) the trend in (total) inequality of the distribution of equivalent incomes; (ii) the trend in the within component of inequality;<sup>9</sup> (iii) the trend in the between component of inequality; (iv) the value of the ratio of the between component to total inequality.

What does emerge from the results of the inequality indexes decomposition is that: (a) as it might be expected from the results of previous studies, the differences in household characteristics can explain only a small part of the overall income inequality; (b) the percentage of overall inequality due to differences in family's economic and demographic characteristics has increased in the last decade.

The proportion of inequality explained by the differences in family's characteristic was quite low, in Italy, in all the years taken into consideration. The between component of inequality can also be interpreted as the level of inequality that would exist if all individuals living in the same type of household had exactly the same amount of (equivalent) income. Hence, differences in the amount of individual income would be only attributable to differences between

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<sup>8</sup> Here, following the approach of Cowell (1995), by "property of decomposability" I mean that an index has to be additively decomposable.

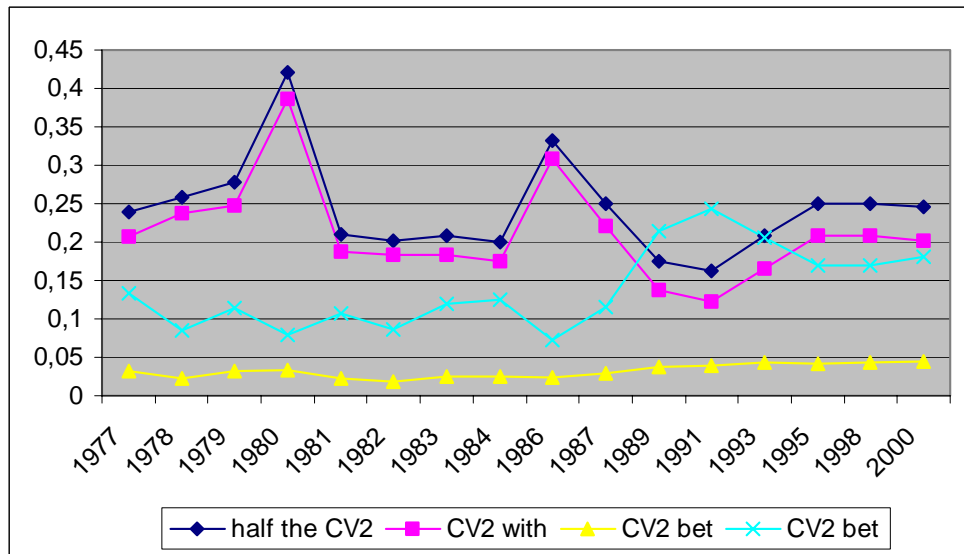
<sup>9</sup> It is worth remembering that here, and in the following analyses, the subgroups correspond to the different types of household forms, as described in table 1.



subgroups. It does emerge from figures 3 and 4 that the values of the between component are much smaller than the correspondent values of the within component. As a matter of fact, between group inequality does represent, depending on the year and the index considered, between 7 and 30 percent of the overall income inequality. Therefore, it is clear that differences in individual incomes depend much more on factors not included in my typology of household forms than on economic and demographic characteristics of the family.

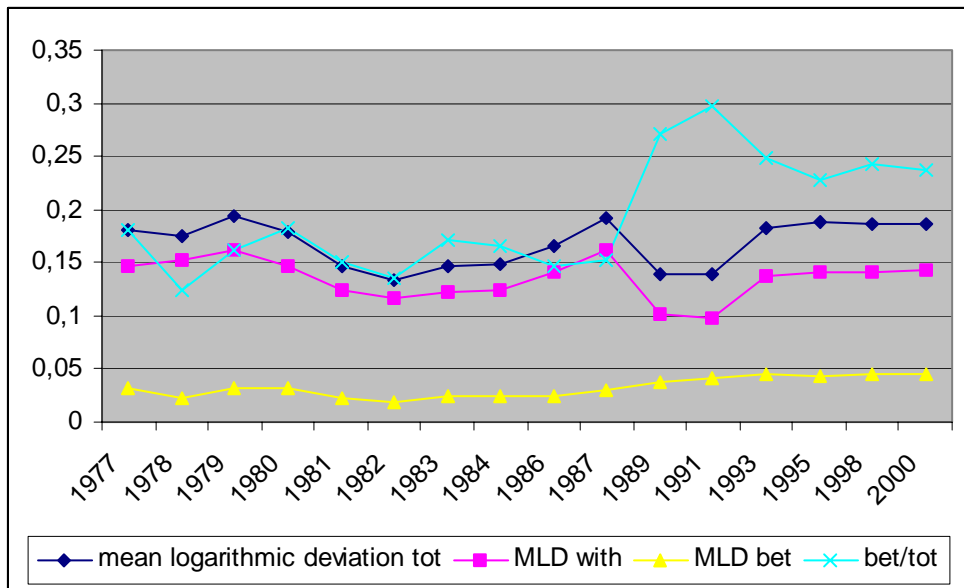
Even if, as it was argued before, the role of household forms in explaining the levels of inequality is smaller than that of other factors, on the other hand, it has to be noted that this role has significantly increased in the last decades. The analysis of the trend in the value of the ratio of the between component to total inequality (between ratio) enlightens the marked increase of this value registered in the late 1980s. As a matter of fact, it emerges that, until 1987, the value of the between ratio fluctuated around 15 and 10 percent – using, respectively, the MLD or the CV2. The trend reached a peak in 1991, and then it fluctuated around values which are significantly higher than those registered in the previous period; after 1991 the values of the between ratio fluctuated around 25 and 20 percent, indeed. Thus, while in the late 1970s and during the 1980s the elimination of income differences between individuals of the same subgroup would have led to a decrease of about 85/90 percent in the inequality level, a similar transformation in the late 1980s, or during the 1990s, would have led to a reduction of “only” 75/80 percent of the registered income inequality. As a consequence it can be argued that, in the last decades, it has significantly increased the role of household forms in determining income inequality levels. However, the results of this analysis do not explain how and to what extent the change of population composition in terms of household forms has contributed to the change in income inequality levels; in the last section of the paper I will try to answer this question.

Figure 3: Decomposition analysis of the CV2.



Sources: author's calculation on data from the Historical Archive of the Bank of Italy's Survey of Households' Income and Wealth (SHIW-HA, Version 2.0 February 2002).

Figure 4: Decomposition analysis of the MLD.



Sources: author's calculation on data from the Historical Archive of the Bank of Italy's Survey of Households' Income and Wealth (SHIW-HA, Version 2.0 February 2002).

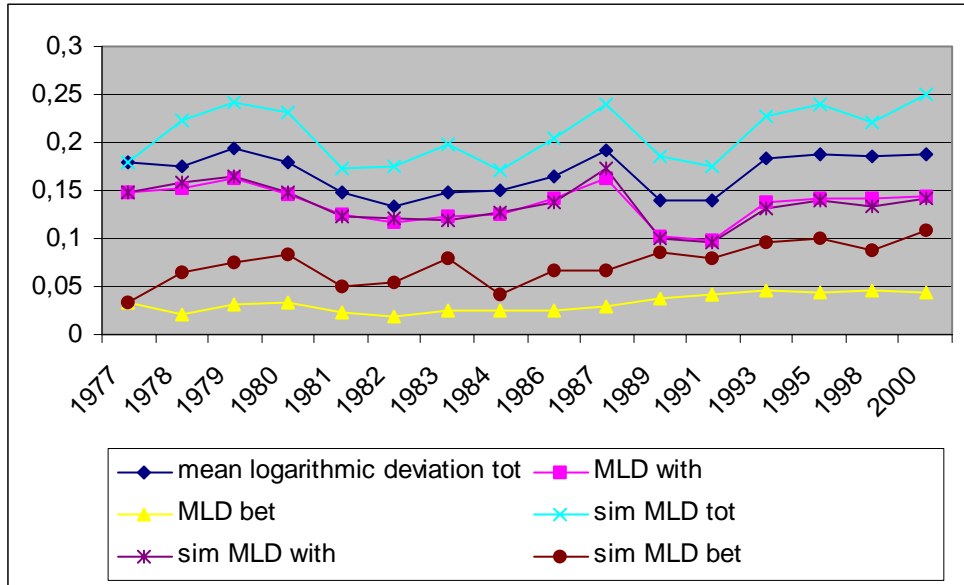
The results of the analyses presented above show that, on the one hand, families lost part of their power of “equalising” individuals’ economic resources and that, on the other hand, the role of differences between household forms in determining income inequality has significantly increased since the end of the 1980s. In particular, considering the decomposition formulae (see appendix), it is clear that the last of these results may be the consequence of different changes.

As a matter of fact, an increase in the between component of inequality can result both from an increase in the population share of the subgroups located at the extremes of the distribution and from a change (towards more inequality) of subgroups' mean incomes (relative to population income). Thus, the observed changes in the between component of inequality can result both from changes in the numbers of different subgroups and from changes in the relative incomes of different subgroups. Similarly, variations in the value of the within component of inequality depend both on the size of the different subgroups and on the level of inequality within these subgroups. Here, I am interested in studying how and to what extent the change of population composition in terms of household forms has contributed to the change in income inequality levels; to put it in another way, I want to answer the following question: "what would have happened to inequality in the 1980s and 1990s if the composition of Italian population, in terms of household forms, had remained as it was in the late 1970s?". Thus, I will concentrate on the effects of the changes in the numbers of different subgroups. Technically, to answer this question, I utilised the decomposition formula of the mean logarithmic deviation and for each year I substituted the values of the population share of the different subgroups with the correspondent values in 1977 (see appendix). Of course, the results of this exercise should be interpreted with caution. It is quite hazardous to assume, as it is done in this simulation, that changes in population composition lead neither to a change in average income of the different subgroups, nor to a change in the inequality of income distribution within the subgroups. It is much more realistic to think that the structure of inequality does depend on the population composition.

Figure 5 shows the same data of figure 4 plus the trends in the simulated total, within and between inequality. It emerges from these results that inequality in the last two decades would have been much higher than it was if the population composition had remained the same as it was in 1977. The percentage difference between actual and hypothetical inequality (shown in figure 6) ranges from +14 to +34 percent of the real value - depending on the year taken into consideration. It has also to be noted that while the simulated within component is not very different from the real one, the actual between component is much lower than the hypothetical one.

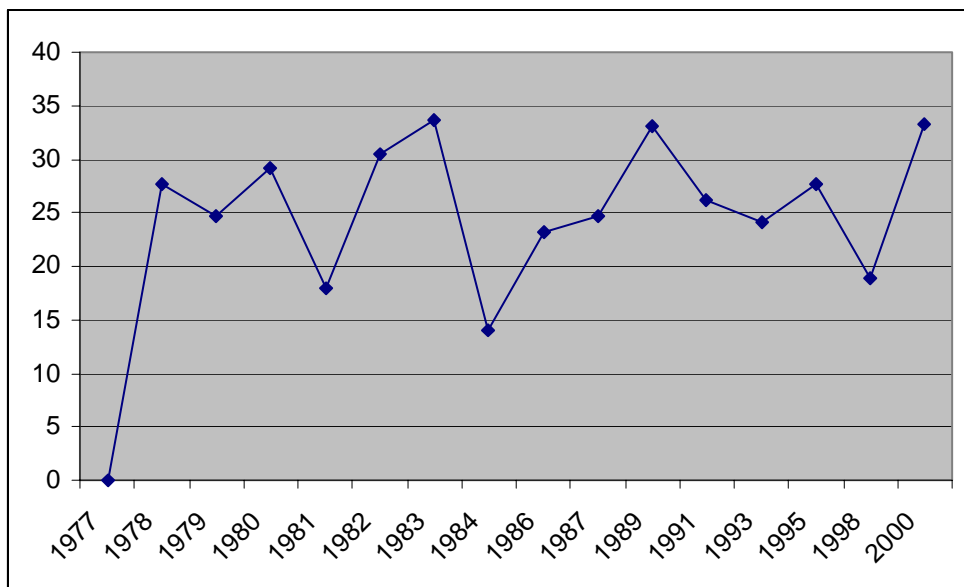
The results of this simple simulation are quite striking: it seems that the changes in population composition, in terms of household forms, have led to a lower level of inequality than it would have been had not changed the composition of the Italian population. Thus, for example, while the level of inequality decreased significantly from 1977 to 1989 (-23 percent), the trend would have been slightly on the increase if the structure of the population had remained constant. Similarly the value of the mean logarithmic deviation increased of about 4 percent from 1977 to 2000, but the increase would have been much more marked (+39 percent) if the population composition had remained the same as it was in 1977 (see table 2).

Figure 5: Trends in actual and hypothetical MLD.



Sources: author's calculation on data from the Historical Archive of the Bank of Italy's Survey of Households' Income and Wealth (SHIW-HA, Version 2.0 February 2002).

Figure 6: Percentage difference between actual and hypothetical MLD.



Sources: author's calculation on data from the Historical Archive of the Bank of Italy's Survey of Households' Income and Wealth (SHIW-HA, Version 2.0 February 2002).

Table 2: Actual and hypothetical changes in MLD values.

	1977/1989	1977/2000	1989/2000
Real change – absolute value	-.04078	+.00705	+.04783
Real change – percentage value	-22,64%	+3,91%	+34,33%
Hypothetical change – absolute value	+,00519	+,06948	+,06429
Hypothetical change – percentage value	2,88%	38,58%	34,70%

Sources: author's calculation on data from the Historical Archive of the Bank of Italy's Survey of Households' Income and Wealth (SHIW-HA, Version 2.0 February 2002).

### Summary

The paper explores different aspects of the relation between family economic and demographic characteristics and the inequality in the distribution of incomes. First, it explores on the changes, from 1977 to 2000, in the redistributive power of the Italian families. The results indicate that the equalising power of families has diminished since the end of the 1980s. Thus, the efficacy of the family as redistributive actor seems to be on the decrease. Second, the paper explores the changing relation between family characteristics and individuals' location in the income distribution. It emerges that, in the last decades, it has significantly improved the relative position of "single elderly" and "elderly couple" families. Next, it also emerges that the economic status of "young single" families has remained more or less the same. Finally, the analysis indicates that the relative position of "young couple plus minor" families has remarkably worsened, whereas it has improved the situation of those people living in "young couple plus adult" families with two income receiver heads. Third, the analysis concentrates on how and to what extent family forms affected income inequality levels. Thus, the decomposition analysis shows that, in the last decades, it has significantly increased the role of differences in family forms in explaining income differences between individuals. Finally, simulating a counterfactual situation, it has been shown that if the composition of Italian population, in terms of household forms, had remained as it was in 1977, inequality levels in the following years would have been higher than they were. Thus, it can be argued that changes in household forms, *per se*, has led to a decrease in inequality levels.

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## Appendix

Definition of Gini index

$$G = \frac{1}{2n^2\mu} \sum_{i=1}^n \sum_{j=1}^n |y_i - y_j|$$

Definition and decomposition formulae of MLD ( $I_0$ ) and CV2 ( $I_2$ ).

$$I_0 = (1/n) \sum_i \log(\mu/y_i)$$

$$I_0 = \sum_k v_k I_{0k} + \sum_k v_k \log(1/\lambda_k)$$

$$I_2 = (1/n) \sum_i \left[ \left( y_i / \mu \right)^2 - 1 \right] / 2 = \sigma^2 / 2\mu^2$$

$$I_2 = \sum_k v_k (\lambda_k)^2 I_{2k} + \sum_k v_k [(\lambda_k)^2 - 1]$$

$v_k \equiv n_k/n$ , the population share of group  $k$

$\lambda_k \equiv \mu_k/\mu$ , group  $k$ 's mean income relative to population mean

Example of simulation: population composition of 1977 imposed to year 2000.

$$I_0 = \sum_k v_{k1977} I_{0k2000} + \sum_k v_{k1977} \log(1/\lambda_{k2000})$$