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Luxembourg Income Study Working Paper No. 254

**HOUSEHOLD STRUCTURE AND
INCOME INEQUALITY**

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Giovanni D'Alessio**

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HOUSEHOLD STRUCTURE AND INCOME INEQUALITY

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Abstract

This paper examines the effects of demographic structure on the evolution of inequality in Italy from 1977 to 1995, and on its inequality ranking relative to 11 of the other 14 European Union countries in the mid-1990s. The composition of Italian households was substantially different in 1995 both from that observed in the two preceding decades, and from that recorded in other EU countries. The distance between mean equivalent disposable household incomes in various demographic groups varied significantly over time and between countries. Nevertheless, demographic effects on inequality appear on the whole to be secondary. The following results hold, irrespective of the correction for demographic differences: (1) inequality in the distribution of equivalent disposable incomes between persons showed considerable fluctuations but no particular medium-term tendency in Italy; (2) in the mid-1990s Italy was, together with the United Kingdom, the EU country with the highest inequality, a result which is only partly explained by the regional dualism of the Italian economy.

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1. Introduction

There is a close link between the demographic characteristics of a population and the distribution of income among its members. The age structure matters because the size and composition of personal incomes (from work, property and transfer) vary during the lifecycle, as well as for the fact individual experiences reflect the different historical periods in which people live. Employment opportunities tend to vary between individuals born during a *baby-boom* and those belonging to smaller cohorts. The potential income and career opportunities of newly hired people depend on the macroeconomic and institutional conditions prevailing when they enter into the labour market; their pensions are affected by the conditions of the moment when they leave the market. Likewise, distribution of household income depends on the size and composition of the households and is influenced by the way in which decisions are made to leave the family of origin, to set up new families, and to procreate. On the other hand, the causal relationship is not unidirectional, since the resources available to people are themselves a determining factor behind these decisions.

The diversity of demographic structures may contribute as much to lessen as to amplify the differences observed in comparisons of economic inequalities across time or regions. The aim of this paper is to measure the influence of demographic variables on the distribution of income in Italy, based on its historical progression in the period 1977-1995, and on international comparisons with other countries in the European Union in the mid-1990s. The term demographic variables will be used to indicate the age and sex of the head of the household, and the size of the household unit, variables already examined by Simon Kuznets (1976, p. 1) in one of the first systematic studies on the subject:

“These characteristics of size and age of the family or household unit, changing in a systematic way through the lifetime span of the unit, are what we mean by the demographic aspects of the size distribution of income. They bear partly on the problem of the recipient unit (size) and partly on the time span over which income and its inequalities are to be considered (age of head, or age phases in general).”

The first part of the paper examines the relationship between demographic structure and income inequality, and describes the methodology used to break down the

latter into a component caused by the distance *between* homogeneous groups of the population, into one explained by dispersion *within* the groups, and into one ascribed to the *relative weight* of the groups. The second part provides documentary evidence of demographic and distribution trends in Italy over the years 1977-1995, on the basis of microdata from the Historical Archive (HA) of the Bank of Italy's Survey of Households' Income and Wealth (SHIW). In the third part, the level of income inequality in Italy is compared with those in 11 of the other 14 EU countries, using microdata from the Luxembourg Income Study (LIS), an international project for the collection and dissemination of information on the distribution of income.

The analysis conducted in this paper establishes two basic facts. Firstly, the inequality of "equivalent" (i.e. corrected for the household size) household incomes, net of interest and dividends, exhibited large fluctuations in Italy between 1977 and 1995, but no particular medium-term tendency. Secondly, in the early 1990s Italy was, together with the United Kingdom, the EU country in which total equivalent incomes were distributed in the most unequal manner.

Do these results depend on different demographic structure? The composition of Italian households in 1995 was indeed substantially different from that observed in the two previous decades and in other EU countries. Moreover, the distance between mean equivalent household incomes in various demographic groups varied significantly over time and between countries. For example, the situation for heads of household below the age of 40 worsened between 1977 and 1995, while it improved for heads aged over 65; and in no other EU country was the equivalent income of households of old people so high in relative terms. Yet, demographic differences played only a secondary role—both among the factors which caused the evolution of inequality in Italy, and among those that explain the deviations from the levels recorded in the other EU countries.

2. Demography and economic inequality

2.1 The relationship between demographic structure and economic inequality

The relationship between demographic structure and economic inequality can be examined from various points of view. The first level of analysis involves an assessment of the distance between homogeneous demographic groups: to what degree men have,

on average, higher levels of income than women, or older persons than young. A classic example is the analysis of gender pay differences, in order to determine whether there is discrimination in the labour market. Another example is the study of cohort effects. Typically, the income of an individual is hump-shaped over his or her life cycle: it tends to grow from the moment of entry into the labour market up to the age of about 60, later dropping when employment income is replaced by pension income. The exact form of the curve is, however, not fixed, and it responds to the redistribution between generations caused by changes in market relationships and in the orientation of economic policies.¹

The average gap between demographic groups adds to the dispersion within these groups: the degree of inequality measured for the distribution as a whole reflects the average differences between people in different stages of their lives as much as it does the variability between people who belong to the same cohort. The second level of analysis aims to separate these two components, evaluating the portion of the overall inequality which can be attributed to the gap between the average income of the demographic classes. All other conditions being equal, greater distance between the groups tends to increase the overall inequality,² but to a degree that depends on their relative weight: the greater the weight of groups with particularly eccentric (high or low) average values, the greater the overall inequality will be.

¹ In 1975 Paglin advanced the view that perfect equality is defined as "... equal incomes for all families at the same stage of their life cycle, but not necessarily equal incomes between different age groups" (1975, p. 602). In practice, Paglin suggested that measures of inequality be cleansed of the part which could be attributed to differences between the average incomes of the cohorts. Recalculating "corrected" Gini indices for the distribution of household income in the United States, Paglin found that the "true" degree of inequality had been overestimated by more than one-third, and that there had actually been a significant decline between 1947 and 1972, in contrast with the then prevalent opinion of basic stability. In the debate sparked off by Paglin's paper, critics questioned the normative foundations (is it right to ignore differences between cohorts when judging the equity of distribution?), the *cardinal* interpretation of the inequality index (considered as nonsense by Mookherjee and Shorrocks, 1982, p. 899) and the particular methodological solution (the inequality attributed by Paglin to variations in income throughout the life cycle depends on the arbitrary choice of age groups; the Gini index does not lend itself to an exact decomposition into between and within inequality, but it gives rise to a residual term which is difficult to interpret unambiguously). See the comments by Danziger, Haveman and Smolensky (1977), Johnson (1977), Kurien (1977), Minarik (1977), Nelson (1977) and Wertz (1979) and the responses from Paglin (1977, 1979); subsequently, Formby and Seaks (1980), Mookherjee and Shorrocks (1982), Atkinson (1983, pp. 70-6), Cowell (1984), Formby, Seaks and Smith (1989) and the reply by Paglin (1989), Asher and Defina (1995).

² This statement holds only for exactly decomposable measures of inequality; it is not true for the Gini index.

Coming back to the example of the cohorts, even if average incomes are supposed to develop at the same rate and to maintain relative gaps unaltered, the evolution of the population age structure is by itself sufficient to impart a specific long-term tendency to the distribution. On the theoretical level,³ von Weizsäcker (1989, 1994) has shown that the direct effect of the ageing of the population is, *ceteris paribus*, that of augmenting income inequality; the final outcome may be the opposite, once the indirect effects of the budget constraint of the government are taken into account. Other socio-demographic mechanisms can lead to similar results. For example, Rivlin (1975, p. 5) suggested that a drive towards a more unequal distribution was caused in the United States after the Second World War by the growing fragmentation of families: “Young people move out of the parental household sooner than they used to, old people are less likely to live with their children, and women—especially black women—are more likely to be family heads than they were a couple of decades ago”.

The third level of analysis attempts to identify the effect that different demographic composition has on the comparison of inequality between two or more societies. The exercise necessarily refers to hypothetical situations, responding to questions such as “how would inequality have evolved in Italy if the population had not aged?” or “what would the concentration of income be in Germany if the demographic structure of the country were the same as in Italy?” As in any counterfactual analysis, this too is not without its drawbacks; in particular, reconstructing the level of inequality in a country on the basis of the demographic composition of another means assuming, among other things, that the average incomes of the groups are not dependent on their number. In spite of its mechanical nature, the exercise is still useful for making an initial estimate of the extent to which differences in demographic structures matter in distribution comparisons.

³ Von Weizsäcker’s (1989, 1994) model describes a population consisting of workers of different ages and of pensioners. The former earn salaries that increase with age; the latter receive pensions proportional to the rights they have accrued, and paid on the basis of a pay-as-you-go system. The ageing of the population is registered by the increase in the share of pensioners and by the rise in the average age of the workers. For a more detailed model for the labour market alone, see von Weizsäcker (1988).

2.2 The decomposition of inequality

As seen above, our analysis of the impact of demography on inequality has three main objectives: (1) to assess the divergence in the mean incomes of homogeneous groups of households; (2) to measure how much of the overall inequality can be attributed to the distance between these groups rather than to inequalities within them; (3) to show how comparisons are influenced by differences in the underlying demographic structure. To achieve these objectives, we resort to an *exactly decomposable* measure of inequality that separates the effect of the *relative weight* of each group both from the distance *between* the groups, and from the inequality *within* the groups (see Appendix A). The measure used in this paper is the *mean logarithmic deviation*,

$$(1) \quad L = -\frac{1}{n} \sum_{i=1}^n \log \left(\frac{y_i}{\mu} \right),$$

where y_i indicates the income of unit i , μ the average income and n the total number of units. If the units are partitioned into K groups according to some demographic characteristic, the overall inequality as measured by (1) can be exactly decomposed into within-groups, L^W , and between-groups, L^B , as follows:

$$(2) \quad L = L^W + L^B = \sum_{k=1}^K w_k L_k - \sum_{k=1}^K w_k \log \left(\frac{\mu_k}{\mu} \right),$$

where w_k , μ_k and L_k are the share in population, the average income, and the mean logarithmic deviation of each group k , respectively. Since in spatial and temporal comparisons, all three of them may vary, it is worth rewriting (2) as

$$(3) \quad L = L^{\bar{W}} + L^{\bar{B}} + L^P = \sum_{k=1}^K \bar{w}_k L_k - \sum_{k=1}^K \bar{w}_k \log \left(\frac{\mu_k}{\bar{\mu}} \right) + L^P,$$

where the weights \bar{w}_k are those of the reference population and the total mean is duly recalculated at fixed weights, i.e. $\bar{\mu} = \sum_k \bar{w}_k \mu_k$.⁴ In (3) the within-groups and between-groups components are corrected for differences in the weight of each population group,

⁴ Unlike in other works which have used a similar methodology (Mookherjee and Shorrocks, 1982; Cowell, 1984; Tsakloglou, 1993; Jenkins, 1995) attention focuses here on relative average incomes (μ_k/μ) rather than on absolute ones (μ_k); this requires that the overall mean is recalculated with fixed weights.

and the effect of the demographic structure is taken up in the residual term L^P . In this paper, the reference situation coincides with the year 1995 in the historical analysis, and with Italy in the international comparison.⁵

2.3 *The hypotheses behind the measurement of inequality*

Demographic variables such as the size of the household and the characteristics of its components have a direct influence on the statistical measurement of inequality. To interpret the results correctly, it is thus necessary to focus on the definitional hypotheses below, ensuring they are as consistent as possible in their temporal and geographical contexts. Referring to Appendix B for a broader discussion of these issues, the following are the hypotheses adopted in this work. First of all, the *economic unit of aggregation*, i.e. the basic unit for sharing of resources, is the household. This is defined as a group of persons living together who, independently of their kinship, share their income wholly or in part. Generally speaking, all databases used in this paper conform to this definition, but for minor discrepancies. The only important exception concerns the Swedish data, which refer to a particularly restricted concept of the family, including only parents (as a couple or single) and children under the age of 18. Secondly, to take into consideration the economies of scale generated by cohabitation, aggregate incomes for each unit have been corrected using an *equivalence scale*. More precisely, equivalent incomes have been obtained by dividing household incomes by the number of equivalent persons $N^{0.5}$, where N is the number of members of the household and 0.5 is a value that accounts for economies of scale. Thirdly, it is assumed that *intra-household distribution* is egalitarian, i.e. that household incomes are placed together and shared equally among all members of the household. Lastly the *welfare unit*, i.e. the elementary unit for which the welfare is assessed using the equivalent income as *proxy*, is the person. Distribution is thus measured between individuals, attributing to each person the equivalent income of the household to which he or she belongs.

⁵ A shift-share analysis was used by Semple (1975) to evaluate the effect of changes in the composition of households on the evolution of income distribution in the United Kingdom in the period from 1961 to 1973, and by Danziger and Plotnick (1977), using data for the United States in 1965 and in 1974. Both papers focused on the Gini index.

3. Effects of demographic evolution on inequality from 1977 to 1995 in Italy

3.1 *Data: the Historical Archive of the Survey of Households' Income and Wealth*

The Bank of Italy has been surveying the budgets of Italian households since 1965, but only recently, in conjunction with much greater recourse to microeconomic data, have they become an important source for studying the behaviour of Italian households (see Brandolini, 1999, for a historical description and an overall assessment). In this paper we rely on data from the historical archive of the survey (version 1.1, released in October 2000; see Banca d'Italia, 2000), which includes information collected as from 1977, since individual data for previous surveys are no longer available.

The archive contains the historical series of elementary variables recorded on an ongoing and homogeneous basis, and the series of variables derived from them, such as household income and wealth, obtained using standardised methodologies. Two series of household incomes are used in this paper: the first, and longer, includes income from work (as employees or self-employed), pensions, public transfers, income from real properties, and the imputed rental income from owner-occupied dwellings; the second series also includes interest on financial assets, net of interest paid on mortgages, but only as from 1987.

The archive also contains two types of weights. The first type only takes into consideration the different probability of extraction of the households, and generates marginal distributions for the principal socio-demographic characteristics which present excessive variation compared with the values from various official sources, impairing the comparability of data from different surveys.⁶ The second type of weights is obtained by post-stratifying the samples: the marginal distributions of components by sex, age group, type of job, geographical area and demographic size of the municipality of residence, as registered in population and labour force statistics, are re-established by using iterative raking techniques. In order to provide greater stability to our estimates, in this paper we

⁶ In the case of surveys carried out after 1984, the original weights have been maintained unchanged. The original weights for previous surveys have been corrected to take into consideration the fact that the samples were then extracted from the electoral lists, entailing a probability of inclusion of a household which was proportional to the number of adult members.

use the latter weights, in the version re-scaled so that their sum add up to the total Italian population.

3.2 *Household structure*

The Italian population rose between 1977 and 1995 by over 2 per cent, from 56 to 57.3 million.⁷ The increase was concentrated almost entirely in the South (inclusive of Sicily and Sardinia; from 19.7 to 20.9 millions), while the population in the Centre was essentially stable (10.7 to 11 millions) and in the North it declined slightly (from 25.7 to 25.4 millions). The number of households, as defined by the SHIW, grew by about 16 per cent, from 17.4 to 20.2 million; contrary to what was observed in the population, the increase was greater in the North than in the Centre and the South. From 1977 to 1995, the population resident in the South grew in proportion to the total in terms of people, but declined in terms of households.⁸

The proportion of households consisting of a single person almost doubled over the same period (from 10 to 18 per cent), while that of households with five or more members declined from 16 to 10 per cent. Households consisting of two persons were the modal value in 1995. The average household size fell from 3.2 to 2.8 members. This drop was more noticeable in the North (from 3.1 to 2.6) than in the Centre (from 3.3 to 3.0) and in the South (from 3.4 to 3.1).

As concerns the characteristics of the head of the household,⁹ between 1977 and 1995, households with a female head rose considerably (from 12 to 28 per cent of the

⁷ Figures on distributions and relative mean incomes by household characteristics are reported in Appendix C for both Italy and other European countries.

⁸ The increase in the influx of immigrants over the past few years has become particularly significant in Italy. The SHIW can only partially take the phenomenon into account, both because extraction of the sample from population registers excludes foreign households without a residence permit, and because there is no specific demand concerning migratory movements. Using place of birth, registered only as from 1989, as a proxy, the SHIW-HA reports a modest increase between 1989 and 1995, both in the members and in the household heads born abroad (from 1.1 to 1.6 and from 0.9 to 1.3 per cent, respectively).

⁹ The definition of the household head reflects both statistical conventions and social customs. In the SHIW, the head is he or she who declares to be “responsible for the economic and financial choices of the household”. Recently, the Italian Central Statistical Office (Istat) has introduced the notion of the “reference person”, who is the “nominee on the household certificate in the registry office of the municipality of residence” (Istat, 1998, p. 7). In the European Community Household Panel the

total), with a similar trend in all geographical areas of the country. The process of ageing, which has involved the population as a whole, shows up in the rise in the share of heads over the age of 65 (from 23 to 29 per cent), who have become the modal group. Correspondingly—perhaps partly due to the greater difficulty encountered by the young in entering the jobs market—the number of household heads below the age of 30 drops from 8 to 5 per cent.

These trends can be summarised by classifying households in categories which combine various demographic characteristics, such as the sex and age of the head and the presence of the spouse, and of adult or younger children and other members. The increase in the share of lone people mentioned earlier concerns older women almost exclusively: in 1995 they account for one tenth of all Italian households. The increase for men is modest and almost nil for women under the age of 65. The weights of couples with no children or with one or two children remain fairly stable throughout the period, accounting for about three-fifths of the total. The proportion of households consisting of a single parent and one or more children exhibits an increase from 5 to 7 per cent of the total; the increase is almost entirely due to households with one adult child, while the share of those with a minor remains stable at a very low level (around 0.5 per cent). Lastly, the decline in large households can be seen in the reduction of the proportion of couples with three or more children (from 11 to 8 per cent of the total) and of the “other households”, i.e. those including other relatives or members in no way related to the household head (from 13 to 9 per cent).

3.3 The evolution of the overall inequality of incomes

Table 1 shows some indices of inequality, described in Appendix A, calculated on incomes net of interest on financial assets for the years 1977-1995, and on total incomes

definition of the head changes from one country to another. From the second wave of the panel, Eurostat adopted the notion of the reference person: “Where possible, the reference person was taken to be an economically active person in the following order of priority: the head if economically active, otherwise the head’s spouse or partner if economically active; otherwise the oldest economically active person. In a household not containing any economically active person, the head was automatically taken as the reference person” (Eurostat, 1996, p. 19). Calculations based on notions other than the one used by the SHIW, such as the definition of the reference person used by Eurostat or one that considers the head to be the person who has the highest level of income, do not modify our results to any significant degree.

for 1987-1995. The trends of the various measures from 1977 to 1995 are similar (Figure 1); the relative coefficients of simple correlation range from 0.91 to 1.

[Table 1 here]

[Figure 1 here]

The indices of inequality show some growth between 1977 and 1979, a sharp drop in the following three years and another rise between 1982 and 1987. In 1989 and 1991, they fall right down to the lowest levels of 1982 and then, in 1993 and 1995, return to the levels of 1977. The indices calculated on the total income confirm the growth of inequality between 1991 and 1993. The frequency of data, initially annual and then biennial as from the late 1980s, makes it difficult to pinpoint the link with the business cycle, but qualitatively the relationship seems to have been positive at least until the early 1990s: the dispersion of incomes tended to increase in periods of economic expansion and decrease during recessions. Without considering fluctuations from one year to the next, there would appear to be no particular medium-term trend.

3.4 Inequality between demographic groups

The mean values of equivalent incomes (net of interest on financial assets) vary significantly from one demographic group to another.¹⁰ One-person households have the lowest mean values, even though the gap narrowed slightly between 1977 and 1995. In particular, there has been a clear improvement, in relative terms, in the condition of older people who live alone: in 1977, women in this condition obtained 53 per cent of the average income, and men 71 per cent. Just short of 20 years later, the figures had risen to 71 and 82 per cent, respectively. Conversely, the situation of larger households has gradually worsened: their equivalent incomes have declined from values that were close to the average in the early 1980s to about one tenth below average in the 90s. As concerns gender differences, male heads of household receive equivalent incomes between 10 and 20 per cent higher than those of female heads. The gap does not show

¹⁰ Annual fluctuations should be considered with caution, because in several cases they are influenced by the low sample size of demographic groups.

any precise trend and at the end of the period it was virtually the same as at the beginning.

Mean equivalent incomes (net of financial earnings) of households classified by the age of their head show a typical hump-shaped curve in 1995: they rise up from the young to the intermediate groups and reach of a maximum in the 51-65 year segment, before declining for the older age group (Figure 2). This profile of incomes by age underwent important variations between 1977 and 1995: the situation for household heads below the age of 40 worsened considerably, while for those aged over 65, it improved. The gradual development of a more generous welfare system may have influenced this result as much as a growing concentration of unemployment in the younger sectors of the population. An inversion of the (average) position of households of older people in relation to young people points to the existence of important mechanisms for redistribution among generations. It would be inappropriate to exclude them from an assessment of economic inequality as proposed by Paglin (1975).

[Figure 2 here]

3.5 Demographic composition and inequality of incomes

The breakdown of the mean logarithmic deviation into homogeneous demographic groups makes it possible to measure how much of the total inequality can be attributed to the distances between the groups of households rather than to inequality within them.¹¹ On the basis of the results of the breakdown, demographic characteristics explain the total inequality only to a very small extent (Table 2). With the mean logarithmic deviation of total equivalent income in 1995 set at 100, cancellation of the differences in the average incomes would lead to a modest reduction of the index: from 0.6 per cent for the groups defined on the basis of the sex of the household head, to 3.3 per cent for those based on household type. The degree of inequality which can be attributed to the

¹¹ The results, which are not given, for other decomposable measures (namely the Theil index and half the squared coefficient of variation) give similar indications about the importance of the demographic effects. Generally speaking, the greater the number of groups into which the population is divided, the greater the weight of the between-group component will be in relation to the within-group. At the extreme, if each household formed a separate group, the latter component would be zero (Tsakloglou, 1992).

between-group component tends to be higher in the previous years, but the effect is still modest. The largest effect is obtained with the division by household type, which includes a number of demographic characteristics: if the various groups had had the same mean equivalent incomes, the mean logarithmic deviation would have been lower, especially at the end of the 1970s, but its trend over time would have remained substantially the same (Figure 3).

[Table 2 here]

[Figure 3 here]

Moving onto the impact of changes in the demographic structure on the evolution of inequality, the calculation of the mean logarithmic deviation with the weights of the demographic groups in 1995 brings about limited change in the index. The greatest change occurs in the classification by the sex of the household head. If the composition of the household heads had been the same in 1977 as it was in 1995, overall inequality would have been 3.3 per cent higher, mainly due to the greater weight attributed to women, among whom dispersion of incomes was higher. In the following years, there was some convergence both in average incomes and in the variability within the two types of household. The impact of the composition by the sex of the head also gradually attenuated (Figure 4). Decompositions by the other demographic characteristics are less informative. The drop in the number of members per household, the ageing of the population, and the evolution of household types do not appear to have influenced trends in inequality to any significant extent.

[Figure 4 here]

As a term of comparison and for the importance it has in the Italian context, the main logarithmic deviation has been broken down also by geographical area of residence of the households (Table 3). The gap between mean incomes in the main three areas explains a significant part of the overall inequality, about 12 per cent in 1995; this gap has tended to widen since the mid-80s. If no geographical differences had existed, the inequality measures in the years being examined would have shown fluctuations similar to those of the total index, but with a slightly declining overall trend (Figure 5). On the other hand, in spite of the different growth rate of the population in the various areas, changes in the relative weights did not influence the profile of the index over time.

Lastly, the degree of inequality proved to be generally higher in the South than the substantially similar levels reached in the central and northern regions. This difference increased slightly in the period 1977-1995.

[Table 3 here]

[Figure 5 here]

4. Inequality and demographic structures in selected EU countries

4.1 Data: the Luxembourg Income Study

The Luxembourg Income Study is an international project for the dissemination of information about the distribution of income. It was launched in 1983 under the joint sponsorship of the government of Luxembourg and the Centre for Population, Poverty, and Policy Studies. The LIS is based in Luxembourg and is funded on a continuing basis by national research councils and by other institutions of the member countries. The project has led to the creation of a database in which the economic microdata from national surveys are reclassified according to standardised criteria and are completed with full and detailed illustrative documentation. Since harmonisation is effected at a later stage, and not when drawing up the samples and drafting the questionnaires (as is the case, for example, for the European Community Household Panel), some national peculiarities remain. Despite the enormous progress made, they still make comparability of data between countries only partial.¹² At the end of February 2001, the LIS database contained over 90 surveys covering 25 countries, from which the most recent for 12 EU countries were chosen (Table 4).¹³ The data for Italy included in the LIS are those of the

¹² Factors of differentiation include: (a) the nature of the original data which, in some cases, are taken from sample surveys, while in other cases they come partly or entirely from administrative records; (b) the size of the national samples in relation to the population of each country (the relative exiguity of the German sample, in particular, is cause for some concern); (c) the ability of the original data to provide an accurate picture of the income available to the households. For further discussion, see chapter 3 of Atkinson, Rainwater and Smeeding (1995), where it is stressed that “complete comparability is impossible” (p. 26).

¹³ The LIS database does not include data for Greece and Portugal; data from the 1995 survey for Austria have not been used since they exclude incomes from self-employment and property.

SHIW for 1995.¹⁴ All the LIS estimates discussed in this paper were computed on 24 February 2001.

[Table 4 here]

As already pointed out, the definition of “household” is basically the same as that of the SHIW in all the surveys used, except for the one in Sweden, in which a particularly restricted notion is adopted (parents, together or singly, and children under 18). Compared with the original sources (including the SHIW), one important modification introduced during standardisation of the data, is the re-coding of the declared household head whenever it is a woman and her male husband or partner is present. This reclassification has significant effects on the estimate of income differentials according to the sex of the household head. As concerns income, we used the “disposable income” variable (*DPI*) contained in the LIS archive, which includes the entire household’s monetary income, net of tax and social security contributions. The definition of *DPI* differs from that used in the previous historical analysis in that it excludes in-kind labour earnings and imputed rental income from owner-occupied dwellings.¹⁵

4.2 Household structure

Household structure varies considerably from one European country to another. Households are more extended in Ireland and Spain, where the average size is about 3.5 persons per unit. They are smallest in Scandinavian countries, although the particularly low figure for Sweden also reflects the different definition of the household. In Germany, the Netherlands, the United Kingdom, France, and Belgium the average number of members is between 2.3 and 2.5, while Luxembourg and Italy exhibit a somewhat higher household size (Figure 6). The same differences can be seen in the percentage

¹⁴ The LIS figures for Italy reported below need not coincide with the corresponding SHIW-HA figures, because of the different sample weights used.

¹⁵ Comparison of mean incomes across countries is made particularly complex by the different representativeness of the sample data with respect to the corresponding aggregates of national accounts, both for the different years they refer to (from 1987 for Ireland to 1996 for Belgium). This problem is compounded by the choice of exchange rate necessary to adapt all the incomes to a common currency unit. For these reasons, and bearing in mind that this work focuses on measuring “relative” inequalities (i.e. independent of the level of income), we have chosen not to comment, nor to give the mean values.

composition: while in Ireland and Spain households with five or more members account for 31 and 22 per cent of the total respectively, in Denmark and Finland they are no more than 6 per cent; conversely, there are half as many one-person units in the first two countries as there are in the other two. Modal values are represented by households with five or more members in Ireland, and with four members in Spain; with a single member in Denmark, Finland, Germany and Sweden; and with two members in the other countries.

[Figure 6 here]

Differences by sex and age of household head are also considerable. The highest proportion of female household heads is to be found in northern European countries (between 27 and 31 per cent in Finland, Germany, Denmark and Sweden); while at the other extreme we have Ireland and Spain, with levels below 20 per cent; in Italy, the incidence of female heads is equal to 22 per cent.¹⁶ In composition by age, Italy is at an extreme: it has the highest proportion of heads aged over 65 (28 per cent, more than 4 percentage points higher than the average in other countries), but it has the lowest number of heads aged under 30 (5 per cent). Except in Spain (7.5 per cent), the incidence of young household heads is markedly below the levels in other countries (from 12 to 17 per cent, up to 22 in Denmark and 25 in Sweden).

The various household types tend to be distributed differently in the various countries. In Italy, the most common types are couples with one or two children (each accounting for about a fifth of the total); in Denmark, the most frequent are lone males aged under 65 and couples without children with a non-elderly household head (17-18 per cent); in France, Germany and the United Kingdom, the most common type is the couple without children, even though couples with one or two children are also frequent. Spain comes closest to the Italian profile even though with some characteristics accentuated: couples with two children are far more numerous than those with a single child, and couples with three or more children are also much more common (14 per cent).

¹⁶ This value is almost 7 percentage points below the SHIW-HA figure reported in section 3.2, due to the reclassification of the household head operated by the LIS.

There are important differences in single-parent households: incidence tends to vary between 5 and 7 per cent of the total, but it reaches 10 per cent in the United Kingdom. Single parents with one child under the age of 18 account for between 2 and 3 per cent in Germany, Scandinavian countries and the United Kingdom, while they are almost non-existent in Italy and Spain. On the contrary, Italy is the country with the greatest proportion (almost 4 per cent) of units consisting of a single parent and an adult child. Households consisting of a single parent and more than one child generally constitute between 2 and 3 per cent of the total, except in the United Kingdom where they account for 5 per cent.

“Other households”, which include relatives other than children, or unrelated persons, account for about 15 per cent of the total in Spain, between 7 and 10 per cent in Finland, Luxembourg and Italy, and less than 5 per cent in the other countries. In Denmark and the Netherlands the figure is below 1 per cent.

4.3 Comparison of overall inequality of incomes

The LIS is currently the best database for comparing the degree of inequality in the distribution of income in industrialised countries. However, the comparability of data remains imperfect and the results must be interpreted with caution. Another reason for caution comes from the fact that the comparison was carried out for a single year in each country and is thus affected by their individual economic conditions. This diversity is probably amplified by the fact that the latest surveys available for EU countries cover a period of a decade, from 1987 for Ireland to 1996 for Belgium, though in 9 out of 12 cases they refer to the years 1994-96.

The various indices practically all indicate the presence of a group of countries with lower levels of inequality (the Scandinavian countries and Luxembourg) and another group in which levels of inequality are decidedly higher (the United Kingdom and Italy). The remaining countries are in an intermediate position, with nations in central Europe somewhat closer to the Nordic ones (Table 5; Figure 7).

[Table 5 here]

[Figure 7 here]

Thus, as in previous studies based on the same source (e.g. Atkinson, Rainwater and Smeeding, 1995; Gottschalk and Smeeding, 1997), the equivalent disposable household incomes appear more equally distributed in Scandinavia and in the Benelux countries. However, a radical change in the ranking concerns Italy, which has joined the United Kingdom in having the most unequal income distribution among EU countries. This result—brought about by the sharp rise in inequality experienced in the early 1990s—depends only partly on the territorial dualism of the Italian economy: correcting for the gap in average incomes between the Centre-North and the South, the mean logarithmic deviation of household incomes would be lowered to that of Ireland (the third country in the ranking), below the level registered in the United Kingdom, but still well above those observed in the other continental economies.

4.4 Inequality between demographic groups

In all countries there are higher average values of equivalent income for male heads than for women. The most unfavourable differentials for women are found in the United Kingdom and in Denmark, while the opposite is true of Ireland, Luxembourg and Spain. Italy lies between these two groups.¹⁷ This ordering stems from the fact that only a minority of women, presumably those with higher levels of income, are independent in Ireland and Spain. As concerns household size, lone persons and, in most cases, large households obtain lower mean incomes than the national average. The best-off household types are generally non-elderly couples without children, or couples with one child; diminishing income levels are seen in couples with two or three children. The least privileged are old people living alone, especially women, and single parents with children under 18 (particularly in Germany and the United Kingdom). The situation of single-parent households with one or more children appears to be critical in the United Kingdom where, unlike in Italy, they are relatively common.

When compared with other countries, the profile of equivalent household incomes by age group in Italy is notable for the lower values in the central groups, especially in

¹⁷ The choice of who is the head of the household has important effects on estimates of the income differentials by sex. In Italy, equivalent household incomes of female headed households are about one tenth lower than those of male headed in the SHIW-HA data, as opposed to about a sixth in the LIS data.

the 31 to 40 year range, and for the near-average value of household heads aged over 65 (Figure 8).¹⁸ In no other EU country is the equivalent household income of old people so high in relative terms. The German profile is the closest to the Italian one, even though characterised by a less favourable situation for younger heads of household. In France and in the United Kingdom, the pattern is different from that of other countries since the highest average income is in the 41 to 50 year age group, rather than in the 51 to 65 group. Sweden and Denmark are at the other end of the spectrum from Italy and show a much more arched profile by age group.

[Figure 8 here]

4.5 Demographic composition and inequality of incomes

When the groups are identified on the basis of household size, between 10 and 31 per cent of the mean logarithmic deviation measured for Finland, Denmark, and Sweden can be attributed to the different composition of the population as compared with Italy (Table 6). This figure goes down to 8 per cent in Belgium and 5 in the Netherlands, and is no higher than 4 per cent in the other countries in which the average household size is lower than in Italy. Negative values suggest that, *ceteris paribus*, inequality would rise in Spain and Ireland (by 2 and 6 per cent, respectively) if the distributions of households by size were the same as that observed in Italy. The effects due to the different structure of the population are similar, even though more limited, for the other demographic variables. In most cases, alignment with the distribution in Italy would tend to widen the gap between Italy and the other countries. Significant corrections in the opposite direction would occur in the case of Ireland, by aligning household size, and, to a lesser extent, in the case of the Netherlands, Belgium, and France, by aligning the age groups of the heads (Figure 9).

[Table 6 here]

[Figure 9 here]

¹⁸ In addition to the reasons mentioned earlier (different weights and reclassification of the household heads), the profile of Italy by age group in Figure 8 is different from the one in Figure 2 also because the definition of income includes interest on financial assets and excludes imputed rental income from owner-occupied dwellings.

Once the differences in demographic structures are removed, comparisons with other European countries show that, in Italy, inequalities within groups tend to be greater than between groups. The difference is particularly great when the comparison is made with Scandinavian countries, where the groups are both more uniform internally, and more differentiated one from the other. In particular, the very arched age-group profile found in Finland, Denmark, and, Sweden is reflected in the high contribution of between-group inequality to the overall index at fixed weights—between 9 and 17 per cent, against 2 per cent in Italy.

The differences between Italian households and those of other European countries (particularly in terms of their size and the age of the head of the household) are very conspicuous in many cases. However, they are of little help to explain why inequality is greater in Italy: all other factors being equal, when the same demographic structure is imposed, the distribution of incomes in other countries is generally corrected in the direction of less inequality, including the case of the United Kingdom. The reasons for the higher level of inequality in Italy should thus be sought in the differences within demographic groups, which can only superficially be considered homogeneous.

5. Conclusions

Between 1977 and 1995, the average size of Italian households has fallen; the share of both female and elderly household heads has increased, whereas that of young household heads has declined; the number of lone persons and single-parent households with children has risen, while the number of households with other relatives or unrelated members has fallen. At the end of this process, the demographic structure of Italy was different from the prevailing one in the rest of the EU, and the differences between Italy and Nordic countries were even greater. Along with Ireland and Spain, Italy was distinguished by its larger households and lower proportion of female heads. It was at the end of the age spectrum, with a much higher proportion of older household heads than young.

What are the effects of these demographic differences on comparisons of economic inequality over time or across countries? This paper has attempted to respond to this question by decomposing the overall inequality—as measured by the mean logarithmic

deviation—into three component parts: the dispersion of incomes within groups defined on the basis of a particular demographic characteristic; the distance between the average incomes of these groups; the effect that can be attributed to their weight. The decomposition exercise was carried out using Italian data from the SHIW-HA for 1977-1995, together with European data taken from the LIS for the early 1990s.

From 1977 to 1995, there were significant fluctuations in inequality in Italy, but no particular medium-term trend. The frequency of data, initially annual and then biannual, makes it difficult to pinpoint a link with the business cycle, but qualitatively the relationship seems to have been positive, at least until the early 1990s: distribution tended to widen during periods of economic expansion and to narrow during recessions. In the same period, the trend of mean equivalent incomes by demographic group has led to an improvement, in relative terms, for households with a single member and for older heads of household, and to a gradual worsening for young heads and larger households. Gender differentials have not shown any precise trend and equivalent incomes of male heads of household remained between 10 and 20 per cent above those of female heads. 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.

During the 1990s, the dispersion of equivalent incomes between persons in Italy was the same as in the United Kingdom and higher than in other European nations, of which Nordic countries proved to be the most egalitarian; this result was only partly, although significantly, influenced by the territorial dualism of the Italian economy. In all countries, mean equivalent incomes were higher for non-elderly couples (without children or with a single child) and for male heads of household, while they were lower for large households or for those with a single member, and for aged female heads of household. These differentials varied from country to country: the gaps between the sexes were greater in the United Kingdom and in Denmark, and least pronounced in Ireland, Luxembourg and Spain, with Italy in an intermediate position. Italy was notable for the particular age profile of mean equivalent disposable household incomes: it was less arched than in other nations, and the relative disadvantage for households of old people was distinctly smaller. When 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. Nor would the inequality ranking of the various countries be substantially changed if all of them had the same household composition as in Italy. Bearing in mind its demographic diversity, Italy appears to be the country with the most unequal distribution, in many cases with gaps that would be even greater than those observed.

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. The secondary role played by demographic variables confirms the results obtained by other studies using similar methodologies (e.g. Danziger and Plotnick, 1977; Mookherjee and Shorrocks, 1982; Cowell, 1984; Tsakloglou, 1993; Goodman, Johnson and Webb, 1994; Jenkins, 1995; Asher and Defina, 1995; Rainwater and Smeeding, 1998). Even so, it is necessary to state the limits within which this conclusion is true.

First of all, the decomposition exercise tends to provide a mechanical view of demographic factors, which are artificially isolated from those of a different nature. On one side, demographic changes are not exogenous, but they respond to socio-economic circumstances: the growth in the number of old women who live alone in Italy, for instance, certainly reflects a lengthening of the average lifespan, but it is also caused by a modification of the parent-child relations, as well as by improved economic conditions and, in particular, improved social security. On the other side, demographic effects are identified under the assumption, admittedly unrealistic, that the distribution of incomes within and between groups is independent of the group size.

Secondly, the lesser influence of demographic variables registered in Italy may depend on a more composite household structure—where a number of generations and various sources of income often coexist—which makes the classification based on the simple variables used here that much less significant than in other countries. In any case, even in countries in which these classifications describe more or less homogeneous situations, the ability of demographic factors to provide explanations is limited, meaning that research into other causes of economic inequalities remains to be done.

Appendix A: Measures of inequality

As early as 1967, Theil had proposed some inequality measures based on the notion of entropy precisely because they can be exactly decomposed. Shorrocks (1980) and Cowell (1980) gave a full characterisation of the class of additively decomposable measures that satisfy some reasonable restrictions (differentiability and homogeneity of degree zero in income and population size) and have shown that it coincides with the family of the *generalised measures of entropy*:

$$(A1) \quad E_{\kappa} = \left(\frac{1}{\kappa^2 - \kappa} \left[\frac{1}{n} \sum_{i=1}^n \left(\frac{y_i}{\mu} \right)^{\kappa} - 1 \right] \right),$$

where κ is a free parameter comprised between $-\infty$ and ∞ : the index E_{κ} is more sensitive to the values in the upper (lower) tail of the distribution, the greater (lesser) is κ . Similar results were independently arrived at by Bourguignon (1979). The condition of additivity was removed by Shorrocks (1984), while a summary of the main results is contained in Shorrocks (1988).

The mean logarithmic deviation is obtained from (A1) with $\kappa=0$. Two other frequently used measures are the Theil index and half the squared coefficient of variation, which are obtained with κ equal to 1 and 2, respectively. All the indices of class (A1) vary between 0 (absolute equality) and ∞ (maximum inequality), with the exception of the Theil index and half the squared coefficient of variation, whose upper limits are $\log(n)$ and $(n-1)/2$, respectively. Exactly decomposable measures can be obtained through monotonic transformations of the Atkinson indices.

The Gini concentration index—which measures the mean distance of each income from all the other incomes, expressed in relation to the mean—is not exactly decomposable. Its decomposition into within-groups and between-groups components generates a residual, whose value depends on the degree of “overlapping” of groups over the variables being examined. Mookherjee and Shorrocks (1982) and Cowell (1988) discussed examples in which the residual has the “perverse” effect of generating an increase in inequality as it diminishes within groups, while relative weights and average incomes remain unchanged (for an interpretation of the residual, see: Pyatt, 1976; Silber, 1989; Lambert and Aronson, 1993). The Gini index is equivalent to twice the area included between the Lorenz curve and the 45° line, and varies, for non-negative values, between 0 (absolute equality) and 1 (maximum inequality).

The other measures used in this paper are the decile and quintile ratios. The former is defined as the ratio of the ninth to the first decile point, and the latter as the ratio of the fourth to the first quintile point. Both measures are independent of extreme values.

Appendix B: Aggregation unit, equivalence scales, intra-household distribution, and welfare unit

Distribution of individual incomes refers to the ability to procure economic means to satisfy one’s own needs through market transactions (salaries, wages, interest on financial assets, etc.) and public and private transfers (pensions, social assistance, alimonies, etc.). It is distinguished from the distribution of resources actually available to

people for the redistribution process carried out within the household: on the one hand, individual incomes are aggregated (entirely or partly) in an overall *household income*;¹⁹ on the other hand, the *welfare* of persons, for given income, depends on the number and nature of the household members and the way the resources are shared between them. Measuring inequality thus means to specify hypotheses about the basic unit for which the incomes are to be aggregated, the treatment of economies of scale generated by household life, the intra-household distribution, and the welfare unit.

The economic unit of aggregation – The definition of the basic unit for sharing resources is hardly unambiguous, since it can be differentiated on the basis of family ties, age, sharing of incomes and/or expenses, and on living together. Broadly speaking, the *family* may be defined as a set of people living together linked by partner status and/or parent-child relations, and the *household* as a set of persons who live together, independently of their family links (kinship, affectionate, or even friendship) and share their incomes wholly or in part; lodgers and persons who live together for economic reasons may or may not be considered part of the household. Alternative definitions may refer to the tax law or the register office rules rather than the *de facto* situations described above.

In this paper, the household, excluding lodgers, is the aggregation unit. Its definition in the SHIW has remained unaltered over time, so that a historical analysis of the SHIW data can be carried out on relatively homogeneous samples. Greater caution is required for comparisons at the international level: despite apparently similar definitions in most LIS surveys, some differences are likely to remain. These include, for example, the classification of young people who, for reasons of study or national service, live away from home. In one case (Sweden), the unit observed refers to a particularly restricted definition of the family unit, which includes only parents (single or couples) and children under the age of 18.

The broader the definition of household, the more the measure of inequality tends to decrease, since the dispersion of individual incomes is abated by their aggregation and supposedly egalitarian distribution (see below) among all members of the unit.²⁰ For example, examining equivalent incomes in the United Kingdom in 1983, Johnson and Webb (1983) calculated that the Gini index fell from 28.5 to 26.1 per cent, replacing the household for the family as aggregation unit. More recently, Redmond (1998) repeated the exercise for Australian data in 1995/96 and found that the corresponding variation was from 32.8 to 30.8 per cent.

Equivalence scale – The second problem is how to take into consideration the diversity of needs and the capacity for transforming income into welfare.²¹ It is normal practice to correct household incomes using an *equivalence scale*, i.e. a series of deflators which vary according to the type of unit. Many equivalence scales are referred

¹⁹ On the redistributive role played by the household in Italy, see D'Alessio and Signorini (2000).

²⁰ See Lam (1997, pp. 1024-31) for a brief review of the relationship between the distribution of combined incomes of couples and the distribution of incomes of spouses taken separately.

²¹ Brandolini and D'Alessio (1998) discuss the measurement of well-being with variables other than income (or consumption expenditure) and, in particular, attempting to apply the notion of *functionings* proposed by Sen (1985, 1987, 1993).

to in the literature: they vary both by method of derivation and by the number of variables they take into consideration. An effective way of summarising them is the parametric scale put forward by Buhmann et al. (1988), which defines equivalent income as the total household income divided the number of *equivalent persons* N^θ , where N is the number of members and θ is a parameter to be set measuring economies of scale. When θ equals 0, the equivalent income coincides with the household income, and it does not depend on the number of people who live on a given amount; when θ equals 1, the income is assessed in per capita terms, and it is assumed that the household does not generate economies of scale; there are other reasonable and acceptable values between these two extremes. Atkinson, Rainwater and Smeeding (1995, p. 19, Table 2.2) refer to over 50 values, from a minimum of 0.12 to a maximum of 0.91, implicit in the equivalence scales used by statistical institutes and government agencies in OECD countries. Repeating the exercise for five scales used in Italy, Brandolini and Sestito (1994, p. 344, Table C.1) obtain values of θ between 0.57 and 0.75.

To appreciate the extent to which the equivalence scale influences the degree of measured inequality, in Figure B1 we graphed the Gini indices calculated for different values of θ (applied to the same underlying income distributions) against the values of θ itself. As for the British data studied by Coulter, Cowell and Jenkins (1992a, 1992b), we too obtain a U-shape profile for the SHIW-HA. Comparison between the two curves for 1977 and 1995 shows that the distance between the two years varies with the value of θ , although the concentration is consistently higher in 1977. Bearing these observations in mind, in this paper we have followed the common practice to take θ equal to 0.5.

[Figure B1 here]

Intra-household distribution – The division of resources within the household takes place through complex mechanisms, which result from individual behaviours, social habits and legal regulations. The issue has been much debated for developing countries in relation to the different allocation of food among household members, particularly to the detriment of the female members (e.g. Sen, 1985, Appendix B). Its relevance is, however, more wide-ranging, and it may extend to the institutional design: examples include those clauses in measures of economic support drawn to protect the weakest members in a household (Haddad and Kanbur, 1992; Kanbur and Haddad, 1994). The importance of the issue does however contrast with the paucity of information. For this reason, the practice of assuming that household incomes are equally shared between all members of the household has been adopted here. As shown by Haddad and Kanbur (1990), this hypothesis means that the degree of inequality between persons is underestimated by all the indices generally used.

Welfare unit – While taking into consideration the distributive role of the household, the elementary unit for which the welfare is assessed (using the equivalent income as proxy) is the person (Danziger and Taussig, 1979; Ebert, 1997). Distribution is consequently measured between individuals, to whom the equivalent income of their household is attributed. This means counting the equivalent income of each household as many times as it has members. The effect on the Gini index of the modification of the reference unit from person to household is generally of considerable importance, as can be seen when comparing the continuous and broken curves in Figure B1.

Processing elementary data – Like other dispersion measures, the mean logarithmic deviation is particularly sensitive to extreme values, which are more likely to

contain measurement errors (Cowell and Victoria-Feser, 1996). It has also the problem of not being defined for non-positive income values. To obviate both problems, equivalent incomes below the 3rd percentile and above the 97th have been re-coded to equal the value of the corresponding percentile (*bottom-top coding*). This procedure allowed us to obtain more stable estimates, although at the cost of their being distorted.

Appendix C. Statistical tables

Table C1

DISTRIBUTION OF HOUSEHOLDS AND HOUSEHOLD MEMBERS BY GEOGRAPHICAL AREA OF RESIDENCE IN ITALY, 1977-1995

Year	Household members					Households				
	Percentage share				Total number (thousands)	Percentage share				Total number (thousands)
	North	Centre	South and Islands	Total		North	Centre	South and Islands	Total	
1977	47.5	18.5	34.0	100.0	55,973	47.5	18.5	34.0	100.0	17,380
1978	48.5	17.7	33.8	100.0	56,184	48.5	17.7	33.8	100.0	17,468
1979	49.0	17.3	33.7	100.0	56,344	49.0	17.3	33.7	100.0	17,875
1980	49.5	17.2	33.3	100.0	56,447	49.5	17.2	33.3	100.0	18,007
1981	49.6	19.0	31.5	100.0	56,514	49.6	19.0	31.5	100.0	18,153
1982	48.3	18.5	33.3	100.0	56,524	48.3	18.5	33.3	100.0	17,796
1983	47.7	19.8	32.5	100.0	56,563	47.7	19.8	32.5	100.0	18,209
1984	49.1	19.6	31.2	100.0	56,565	49.1	19.6	31.2	100.0	18,580
1986	48.4	19.3	32.3	100.0	56,598	48.4	19.3	32.3	100.0	18,701
1987	47.0	19.6	33.4	100.0	56,594	47.0	19.6	33.4	100.0	18,724
1989	47.9	19.3	32.9	100.0	56,649	47.9	19.3	32.9	100.0	19,504
1991	47.6	20.1	32.3	100.0	56,744	47.6	20.1	32.3	100.0	19,630
1993	49.1	18.7	32.1	100.0	56,960	49.1	18.7	32.1	100.0	19,675
1995	48.5	18.2	33.2	100.0	57,269	48.5	18.2	33.2	100.0	20,151

Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Figures may not add up to 100 because of rounding.

Table C2

DISTRIBUTION OF HOUSEHOLDS BY NUMBER OF MEMBERS IN ITALY, 1977-1995

Year	1 member	2 members	3 members	4 members	5 or more members	Total	Average number of members
1977	9.7	24.8	25.4	24.0	16.1	100.0	3.2
1978	9.8	23.8	26.3	23.8	16.3	100.0	3.2
1979	13.4	23.6	23.4	23.3	16.3	100.0	3.2
1980	11.8	25.4	25.0	21.8	16.0	100.0	3.1
1981	12.8	24.6	24.6	23.3	14.8	100.0	3.1
1982	10.4	25.5	24.2	23.9	16.0	100.0	3.2
1983	12.3	25.0	23.9	24.5	14.3	100.0	3.1
1984	14.3	24.0	25.2	22.9	13.7	100.0	3.0
1986	14.5	24.5	24.0	23.5	13.5	100.0	3.0
1987	14.8	23.8	23.8	25.2	12.5	100.0	3.0
1989	17.3	24.8	23.7	23.1	11.0	100.0	2.9
1991	18.2	23.7	23.9	23.6	10.6	100.0	2.9
1993	17.5	24.6	23.5	23.6	10.7	100.0	2.9
1995	18.3	25.4	23.5	22.9	9.9	100.0	2.8

Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Figures may not add up to 100 because of rounding.

Table C3

DISTRIBUTION OF HEADS OF HOUSEHOLD BY SEX AND AGE IN ITALY, 1977-1995

Year	Sex		Age					Total
	males	females	up to 30	from 31 to 40	from 41 to 50	from 51 to 65	over 65	
1977	88.2	11.8	7.7	17.8	21.3	30.3	22.8	100.0
1978	87.0	13.0	5.5	18.6	20.6	32.7	22.5	100.0
1979	86.3	13.7	6.8	17.7	22.6	30.6	22.3	100.0
1980	85.7	14.3	6.2	16.9	21.3	32.7	22.9	100.0
1981	84.8	15.2	8.2	18.2	20.1	28.5	25.0	100.0
1982	87.8	12.2	7.4	17.0	21.2	31.3	23.1	100.0
1983	85.2	14.8	6.0	17.6	21.7	31.8	22.9	100.0
1984	84.1	15.9	6.4	18.6	21.1	30.8	23.1	100.0
1986	81.8	18.2	6.3	18.9	20.4	30.1	24.3	100.0
1987	81.8	18.2	6.7	17.7	20.7	29.8	25.0	100.0
1989	80.5	19.5	7.4	16.8	21.0	28.6	26.2	100.0
1991	78.8	21.2	6.5	16.3	20.2	29.5	27.6	100.0
1993	71.9	28.1	6.5	18.3	20.0	27.3	27.8	100.0
1995	71.7	28.3	5.4	17.9	19.4	28.2	29.2	100.0

Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Figures may not add up to 100 because of rounding.

Table C4

DISTRIBUTION OF HOUSEHOLDS BY HOUSEHOLD TYPE IN ITALY, 1977-1995

Year	Singles		Couples		Couples with children			Single parents with children			Other house-holds	Total			
	male up to 65	female up to 65	male over 65	female over 65	house-head up to 65	house-head over 65	1 child	2 chil-dren	3 or more children	with child up to 17 years			up to 65 with child over 17	over 65 with child over 17	with 2 or more children
1977	1.8	2.9	1.4	3.6	10.3	9.7	20.8	20.5	11.3	0.2	0.9	1.0	2.6	13.0	100.0
1978	1.1	2.8	1.6	4.4	10.6	8.7	21.4	20.5	11.1	0.3	0.8	1.2	2.6	13.0	100.0
1979	3.0	3.4	1.8	5.2	10.1	8.8	19.4	19.9	11.1	0.5	1.2	0.7	2.1	12.7	100.0
1980	1.7	3.1	1.7	5.3	10.9	8.6	21.1	19.1	11.0	0.5	1.7	0.8	1.9	12.6	100.0
1981	1.1	3.9	2.4	5.3	9.5	9.6	21.0	20.4	11.1	0.5	1.2	1.6	2.4	9.8	100.0
1982	1.7	2.3	2.1	4.2	10.2	10.0	20.7	20.7	10.8	0.3	1.1	1.1	2.2	12.5	100.0
1983	1.5	3.9	1.7	5.2	10.2	9.4	20.1	21.2	10.5	0.5	1.2	1.0	2.3	11.2	100.0
1984	2.9	3.4	1.9	6.1	9.9	8.8	22.1	20.1	9.5	0.5	1.9	1.3	2.2	9.5	100.0
1986	2.0	3.6	1.7	7.2	10.5	8.8	20.3	21.1	9.8	0.5	1.6	1.0	2.3	9.6	100.0
1987	2.1	3.1	2.5	7.1	9.2	8.3	20.5	22.3	9.2	0.6	1.5	1.6	2.3	9.9	100.0
1989	3.5	3.5	2.2	8.2	10.1	8.9	20.4	20.9	8.0	0.6	1.6	1.5	2.2	8.6	100.0
1991	3.2	3.9	1.9	9.3	9.4	8.9	20.2	21.5	7.5	0.7	1.8	1.4	2.5	8.1	100.0
1993	3.1	3.1	1.7	9.6	8.7	9.4	19.0	21.2	7.9	0.6	1.8	1.6	3.0	9.2	100.0
1995	3.0	3.1	1.9	10.3	9.5	9.2	19.2	20.6	7.5	0.4	2.1	1.6	2.7	9.0	100.0

Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Figures may not add up to 100 because of rounding.

Table C5

RELATIVE MEAN INCOMES BY HOUSEHOLD CHARACTERISTIC IN ITALY, 1977-1995

Household characteristic	1977	1978	1979	1980	1981	1982	1983	1984	1986	1987	1989	1991	1993	1995
Number of members														
1	0.79	0.65	0.82	0.83	0.75	0.74	0.75	0.84	0.81	0.78	0.84	0.88	0.80	0.83
2	0.91	0.91	0.87	0.89	0.96	0.91	0.90	0.96	0.97	0.96	0.98	0.99	1.00	1.02
3	1.13	1.09	1.05	1.09	1.10	1.05	1.07	1.09	1.08	1.10	1.11	1.10	1.10	1.09
4	1.04	1.05	1.03	0.99	1.04	1.04	1.04	1.04	1.04	1.04	1.01	1.01	1.03	1.01
5 or more	0.92	0.96	1.02	1.02	0.92	0.99	0.99	0.91	0.94	0.91	0.91	0.91	0.89	0.91
Sex of household head														
male	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.02	1.02	1.02	1.02	1.01	1.03	1.02
female	0.90	0.82	0.82	0.91	0.88	0.88	0.83	0.81	0.85	0.82	0.88	0.91	0.87	0.92
Age of household head														
up to 30	1.05	1.00	0.95	0.92	0.95	0.96	0.87	0.93	0.88	0.86	0.97	0.94	0.92	0.91
from 31 to 40	0.96	0.93	0.96	0.99	1.00	1.00	0.99	0.95	0.97	0.98	0.96	0.93	0.94	0.92
from 41 to 50	0.98	1.04	1.01	1.01	1.01	1.01	1.02	0.98	1.05	1.00	1.04	1.04	1.02	1.00
from 51 to 65	1.11	1.08	1.12	1.09	1.08	1.06	1.08	1.12	1.07	1.09	1.07	1.07	1.10	1.10
over 65	0.84	0.87	0.80	0.82	0.86	0.86	0.84	0.88	0.87	0.91	0.87	0.92	0.91	0.95
Household type														
single male up to 65	1.21	0.93	1.21	1.07	1.07	0.92	1.07	1.30	1.23	1.22	1.17	1.29	1.11	1.15
single female up to 65	0.90	0.79	0.83	0.94	0.89	0.86	0.87	0.87	0.83	0.79	0.93	1.00	0.90	0.95
single male over 65	0.71	0.51	0.79	0.82	0.72	0.75	0.58	0.80	0.79	0.72	0.78	0.89	0.74	0.82
single female over 65	0.53	0.55	0.60	0.69	0.60	0.60	0.61	0.62	0.69	0.68	0.68	0.68	0.67	0.71
couple with household head up to 65	1.09	1.03	1.00	1.01	1.11	1.05	1.02	1.11	1.09	1.11	1.12	1.14	1.19	1.18
couple with household head over 65	0.71	0.71	0.70	0.72	0.81	0.73	0.76	0.77	0.81	0.84	0.79	0.81	0.88	0.90
couple with 1 child	1.13	1.13	1.08	1.10	1.11	1.05	1.06	1.09	1.09	1.10	1.13	1.09	1.12	1.10
couple with 2 children	1.01	1.03	1.00	0.97	1.02	1.03	1.03	1.03	1.01	1.02	1.00	1.00	1.03	1.00
couple with 3 or more children	0.85	0.89	0.92	0.91	0.88	0.94	0.94	0.84	0.89	0.84	0.85	0.88	0.85	0.89
single parent with child up to 17	0.51	0.94	0.98	1.03	0.72	0.72	0.80	0.84	0.76	0.62	0.85	0.81	0.77	0.99
single parent up to 65 with child over 17	1.03	1.07	0.91	1.06	1.24	1.03	0.92	1.08	0.98	0.90	1.11	1.19	0.95	0.99
single parent over 65 with child over 17	0.90	0.97	0.80	0.60	0.83	1.20	0.87	0.84	0.97	0.83	0.94	0.95	0.82	0.90
single parent with 2 or more children	1.15	0.83	0.88	1.10	1.06	0.98	0.93	1.00	0.96	0.90	0.91	1.07	0.80	0.96
other household	1.12	1.11	1.18	1.15	1.10	1.10	1.14	1.09	1.11	1.14	1.09	1.04	1.08	1.04
Area of residence														
North	1.15	1.14	1.09	1.09	1.09	1.10	1.09	1.09	1.11	1.15	1.13	1.13	1.15	1.16
Centre	1.03	1.10	1.26	1.25	1.13	1.10	1.08	1.13	1.09	1.09	1.08	1.07	1.11	1.09
South	0.80	0.77	0.75	0.75	0.81	0.82	0.84	0.82	0.82	0.78	0.79	0.80	0.77	0.75
Total	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Measures calculated for the distribution of equivalent disposable incomes between persons, where incomes are net of interest on financial assets; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members.

Table C6

**DISTRIBUTION OF HOUSEHOLDS BY NUMBER OF MEMBERS
IN SELECTED EU COUNTRIES**

Country	1 member	2 members	3 members	4 members	5 or more members	Total	Average number of members
Belgium	26.7	34.0	17.0	14.7	7.7	100.0	2.5
Denmark	44.0	29.8	12.5	10.5	3.2	100.0	2.0
Finland	36.8	31.5	14.0	11.7	6.0	100.0	2.2
France	28.3	31.9	16.7	14.6	8.4	100.0	2.5
Germany	33.2	31.4	16.4	13.8	5.3	100.0	2.3
Ireland	16.6	18.8	16.2	17.6	30.8	100.0	3.6
Italy	17.2	24.8	23.8	23.8	10.3	100.0	2.9
Luxembourg	23.0	27.8	20.8	19.4	9.0	100.0	2.7
Netherlands	29.9	34.7	13.5	15.1	6.7	100.0	2.4
Spain	10.0	22.3	20.8	25.0	22.0	100.0	3.4
Sweden	53.0	27.6	8.2	7.8	3.4	100.0	1.8
United Kingdom	26.1	35.7	17.0	14.5	6.7	100.0	2.4

Sources and notes: authors' calculations on data from the LIS (24 February 2001). Figures may not add up to 100 because of rounding.

Table C7

**DISTRIBUTION OF HEADS OF HOUSEHOLD BY SEX AND AGE
IN SELECTED EU COUNTRIES**

Country	Sex		Age					Total
	males	females	up to 30	from 31 to 40	from 41 to 50	from 51 to 65	over 65	
Belgium	77.6	22.4	10.9	19.1	20.4	23.6	26.0	100.0
Denmark	71.8	28.2	21.7	17.6	18.4	19.4	23.0	100.0
Finland	72.6	27.4	16.7	19.5	22.1	21.2	20.5	100.0
France	75.2	24.8	13.4	20.2	20.3	21.5	24.6	100.0
Germany	72.0	28.0	13.3	21.4	15.8	24.2	25.4	100.0
Ireland	81.4	18.6	12.1	23.2	17.4	25.6	21.7	100.0
Italy	78.5	21.5	5.0	18.0	20.2	29.1	27.7	100.0
Luxembourg	75.5	24.5	11.8	22.5	18.3	25.2	22.1	100.0
Netherlands	77.3	22.7	17.4	22.2	20.0	21.1	19.3	100.0
Spain	84.8	15.2	7.5	18.7	20.0	30.8	23.0	100.0
Sweden	69.2	30.8	25.0	16.2	16.8	19.4	22.5	100.0
United Kingdom	73.9	26.1	14.8	20.4	19.1	21.9	23.9	100.0

Sources and notes: authors' calculations on data from the LIS (24 February 2001). Figures may not add up to 100 because of rounding.

Table C8

DISTRIBUTION OF HOUSEHOLDS BY HOUSEHOLD TYPE IN SELECTED EU COUNTRIES

Country	Singles		Couples		Couples with children			Single parents with children			Other house-holds	Total			
	male up to 65	female up to 65	male over 65	female over 65	house-hold head up to 65	house-hold head over 65	1 child	2 chil-dren	3 or more children	with child up to 17 years			up to 65 with child over 17	over 65 with child over 17	with 2 or more children
Belgium	7.9	6.3	2.7	9.7	18.1	10.6	14.3	13.6	7.1	1.3	2.0	0.8	2.6	3.0	100.0
Denmark	17.0	12.3	3.8	10.9	17.7	7.9	10.5	10.1	3.1	2.8	0.9	0.1	2.2	0.7	100.0
Finland	13.0	11.7	2.3	9.8	19.0	6.8	9.5	10.0	4.9	2.2	1.0	0.5	2.1	7.1	100.0
France	8.1	8.6	2.5	9.1	15.9	10.2	14.2	13.7	7.5	1.8	1.3	0.7	2.4	3.9	100.0
Germany	9.6	8.7	1.9	13.0	17.8	8.7	14.3	13.2	4.7	2.2	1.4	0.6	1.9	2.1	100.0
Ireland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy	2.8	3.2	1.7	9.5	9.3	8.8	19.5	21.4	7.5	0.4	2.2	1.6	2.8	9.3	100.0
Luxembourg	5.6	5.8	1.4	10.2	16.2	6.7	17.5	17.3	6.0	1.2	1.3	1.1	2.0	7.7	100.0
Netherlands	9.6	9.9	2.2	8.2	24.0	7.6	11.6	14.7	6.5	1.2	1.1	0.4	2.1	0.8	100.0
Spain	1.7	2.2	1.1	5.0	8.1	8.9	16.5	21.3	14.3	0.5	1.0	1.3	2.7	15.4	100.0
Sweden	23.2	16.0	3.7	10.1	15.9	8.7	6.4	7.3	3.3	3.0	-	-	2.4	-	100.0
United Kingdom	7.4	7.0	2.9	8.9	19.5	9.2	12.6	12.6	5.6	3.0	1.0	0.9	4.9	4.6	100.0

Sources and notes: authors' calculations on data from the LIS (24 February 2001). Figures may not add up to 100 because of rounding.

Table C9

RELATIVE MEAN INCOMES BY HOUSEHOLD CHARACTERISTIC IN SELECTED EU COUNTRIES

Household characteristic	Belgium	Denmark	Finland	France	Germany	Ireland	Italy	Luxembourg	Netherlands	Spain	Sweden	United Kingdom
Number of members												
1	0.77	0.74	0.76	0.86	0.89	0.75	0.81	0.88	0.88	0.83	0.79	0.80
2	0.96	1.04	1.05	1.05	1.08	1.00	1.03	1.04	1.12	0.92	1.16	1.07
3	1.08	1.14	1.09	1.06	1.05	1.15	1.09	1.03	1.02	1.07	1.07	1.04
4	1.08	1.09	1.05	1.03	0.98	1.06	1.00	0.98	0.97	1.03	1.05	1.04
5 or more	1.01	0.98	0.99	0.91	0.92	0.96	0.91	1.00	0.91	0.98	0.94	0.88
Sex of household head												
male	1.04	1.06	1.04	1.04	1.04	1.00	1.02	1.01	1.03	1.01	1.06	1.07
female	0.77	0.71	0.77	0.79	0.80	0.97	0.84	0.92	0.78	0.91	0.78	0.69
Age of household head												
up to 30	0.92	0.86	0.83	0.82	0.84	1.02	0.91	0.92	0.95	0.98	0.77	0.88
from 31 to 40	0.98	1.04	0.99	0.98	0.95	0.91	0.88	0.95	1.00	0.98	0.99	0.95
from 41 to 50	1.10	1.14	1.11	1.10	1.08	0.98	1.00	1.05	1.05	0.99	1.12	1.18
from 51 to 65	1.09	1.14	1.10	1.06	1.11	1.15	1.11	1.09	1.07	1.08	1.20	1.10
over 65	0.80	0.73	0.83	0.94	0.94	0.93	0.98	0.93	0.85	0.89	0.91	0.80
Household type												
single male up to 65	0.88	0.82	0.82	0.95	0.97		1.07	1.06	0.99	1.21		1.00
single female up to 65	0.79	0.75	0.79	0.87	0.88		0.89	0.90	0.87	0.90		0.88
single male over 65	0.72	0.66	0.82	0.95	0.97		0.88	0.82	0.91	0.83		0.74
single female over 65	0.67	0.64	0.64	0.76	0.81		0.70	0.78	0.77	0.66		0.60
couple with household head up to 65	1.10	1.20	1.14	1.15	1.19		1.17	1.13	1.23	1.04		1.27
couple with household head over 65	0.80	0.79	0.95	1.02	1.00		0.92	0.90	0.89	0.77		0.84
couple with 1 child	1.11	1.22	1.13	1.10	1.08		1.10	1.03	1.06	1.06		1.17
couple with 2 children	1.09	1.10	1.06	1.04	0.98		1.00	0.96	0.97	1.02		1.07
couple with 3 or more children	1.01	0.98	0.97	0.92	0.91		0.87	1.00	0.91	0.94		0.88
single parent with child up to 17	0.62	0.76	0.78	0.70	0.57		0.90	0.79	0.66	0.77		0.58
single parent up to 65 with child over 17	0.86	1.03	0.97	0.96	0.99		0.99	0.97	0.84	0.98		0.97
single parent over 65 with child over 17	0.94	0.84	0.84	0.88	1.04		0.94	1.17	0.98	0.85		0.84
single parent with 2 or more children	0.82	0.73	0.86	0.71	0.70		0.93	0.83	0.68	0.95		0.58
other household	1.05	1.04	1.04	0.93	1.04		1.07	1.07	0.95	1.09		1.06
Total	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Sources and notes: authors' calculations on data from the LIS (24 February 2001). Measures calculated for the distribution of equivalent disposable incomes between persons; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members.

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Table 1

INEQUALITY OF EQUIVALENT DISPOSABLE INCOMES IN ITALY, 1977-1995

Year	Mean equivalent income	Mean logarithmic deviation	Theil index	Half the squared coefficient of variation	Gini index	Quintile ratio	Decile ratio
Incomes net of interest on financial assets							
1977	3,649	0.156	0.150	0.162	0.307	2.66	4.49
1978	4,288	0.149	0.143	0.155	0.299	2.55	4.32
1979	5,264	0.166	0.160	0.178	0.315	2.66	4.53
1980	6,517	0.134	0.131	0.142	0.287	2.50	3.91
1981	7,362	0.126	0.124	0.136	0.279	2.41	3.75
1982	9,122	0.116	0.114	0.122	0.269	2.36	3.65
1983	10,470	0.121	0.118	0.126	0.274	2.39	3.76
1984	12,004	0.130	0.127	0.138	0.283	2.43	3.80
1986	13,170	0.128	0.124	0.133	0.280	2.43	3.86
1987	15,088	0.145	0.140	0.151	0.297	2.58	4.19
1989	18,577	0.116	0.113	0.121	0.269	2.38	3.58
1991	21,309	0.111	0.107	0.112	0.262	2.39	3.57
1993	22,592	0.156	0.144	0.151	0.301	2.64	4.42
1995	24,695	0.158	0.146	0.153	0.302	2.66	4.44
Total income							
1987	15,618	0.153	0.148	0.162	0.305	2.63	4.33
1989	19,288	0.124	0.122	0.132	0.278	2.42	3.75
1991	21,956	0.118	0.113	0.119	0.269	2.43	3.69
1993	23,428	0.168	0.156	0.166	0.313	2.72	4.68
1995	25,430	0.167	0.155	0.166	0.312	2.72	4.60

Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Measures calculated for the distribution of equivalent disposable incomes between persons; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members.

DECOMPOSITION OF THE MEAN LOGARITHMIC DEVIATION IN ITALY, 1977-1995

Year	Household size			Sex of the household head			Age class of the household head			Household type			Total												
	Within-groups at fixed weights		Between-groups at fixed weights	Demographic effect		Within-groups at fixed weights	Between-groups at fixed weights		Demographic effect	Within-groups at fixed weights		Between-groups at fixed weights		Demographic effect											
	value	share		value	share		value	share		value	share			value	share	value	share								
Income net of interest on financial assets																									
1977	0.153	98.5	0.005	3.3	-0.003	-1.7	0.160	102.7	0.001	0.6	-0.005	-3.3	0.151	97.4	0.005	2.9	-0.001	-0.3	0.144	92.5	0.015	9.7	-0.003	-2.2	0.156
1978	0.141	95.1	0.007	5.0	-0.000	-0.0	0.152	102.5	0.003	2.3	-0.007	-4.8	0.146	98.5	0.003	2.3	-0.001	-0.7	0.138	92.6	0.014	9.5	-0.003	-2.1	0.149
1979	0.161	96.8	0.003	2.1	0.002	1.1	0.167	100.6	0.004	2.1	-0.004	-2.7	0.160	96.3	0.007	4.1	-0.001	-0.4	0.154	93.1	0.011	6.8	0.000	0.2	0.166
1980	0.129	96.3	0.003	2.3	0.002	1.4	0.140	104.9	0.001	0.6	-0.007	-5.5	0.129	96.5	0.005	3.6	-0.000	-0.2	0.124	93.0	0.010	7.3	-0.000	-0.3	0.134
1981	0.121	96.1	0.004	3.6	0.000	0.4	0.128	101.5	0.002	1.2	-0.003	-2.8	0.123	98.0	0.003	2.4	-0.001	-0.4	0.118	93.5	0.010	7.7	-0.001	-1.1	0.126
1982	0.113	97.9	0.004	3.4	-0.002	-1.3	0.118	102.3	0.001	1.2	-0.004	-3.4	0.114	98.6	0.003	2.4	-0.001	-1.1	0.109	94.3	0.009	7.7	-0.002	-2.0	0.116
1983	0.117	96.7	0.004	3.5	-0.000	-0.2	0.122	100.4	0.003	2.5	-0.004	-2.9	0.118	96.9	0.004	3.4	-0.000	-0.3	0.113	93.3	0.009	7.4	-0.001	-0.7	0.121
1984	0.127	97.9	0.003	2.3	-0.000	-0.2	0.129	99.2	0.004	3.0	-0.003	-2.2	0.125	96.7	0.004	3.0	0.000	0.3	0.121	93.3	0.010	7.9	-0.002	-1.2	0.130
1986	0.125	97.2	0.003	2.1	0.001	0.7	0.127	99.3	0.002	1.9	-0.002	-1.2	0.125	97.5	0.003	2.5	-0.000	-0.1	0.121	94.6	0.007	5.3	0.000	0.1	0.128
1987	0.139	96.4	0.004	2.8	0.001	0.8	0.142	98.3	0.004	2.5	-0.001	-0.8	0.141	97.8	0.003	1.8	0.001	0.4	0.134	93.0	0.009	6.4	0.001	0.5	0.145
1989	0.113	97.3	0.003	2.7	-0.000	-0.1	0.115	98.9	0.002	1.4	-0.000	-0.3	0.113	97.3	0.003	2.6	0.000	0.1	0.107	92.6	0.009	7.6	-0.000	-0.2	0.116
1991	0.109	97.7	0.002	2.1	0.000	0.1	0.113	101.0	0.001	0.7	-0.002	-1.7	0.110	98.2	0.002	2.1	-0.000	-0.3	0.105	94.1	0.007	6.3	-0.000	-0.4	0.111
1993	0.151	97.0	0.004	2.6	0.001	0.4	0.154	98.6	0.002	1.4	-0.000	-0.0	0.153	98.0	0.003	1.8	0.000	0.2	0.146	93.8	0.009	5.9	0.000	0.3	0.156
1995	0.155	98.3	0.003	1.7	-	-	0.157	99.4	0.001	0.6	-	-	0.155	98.3	0.003	1.7	-	-	0.152	96.5	0.006	3.5	-	-	0.158
Total income																									
1987	0.147	96.5	0.004	2.7	0.001	0.8	0.150	98.1	0.004	2.5	-0.001	-0.6	0.149	97.8	0.003	1.9	0.001	0.3	0.142	93.2	0.010	6.3	0.001	0.5	0.153
1989	0.121	97.3	0.003	2.7	-0.000	-0.1	0.123	98.9	0.002	1.3	-0.000	-0.2	0.121	97.6	0.003	2.4	-0.000	-0.0	0.115	92.9	0.009	7.2	-0.000	-0.2	0.124
1991	0.116	97.9	0.002	2.0	0.000	0.2	0.119	100.9	0.001	0.7	-0.002	-1.6	0.116	98.1	0.003	2.1	-0.000	-0.3	0.112	94.6	0.007	5.8	-0.000	-0.4	0.118
1993	0.163	97.2	0.004	2.5	0.001	0.3	0.166	98.6	0.002	1.4	-0.000	-0.0	0.165	97.9	0.003	1.9	0.000	0.2	0.158	94.2	0.009	5.6	0.000	0.3	0.168
1995	0.164	98.3	0.003	1.7	-	-	0.166	99.4	0.001	0.6	-	-	0.164	98.1	0.003	1.9	-	-	0.161	96.7	0.006	3.3	-	-	0.167

Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Measures calculated for the distribution of equivalent disposable incomes between persons; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members. "Value" refers to the absolute contribution of the component to the total index; "share" refers to the percentage impact of the same contribution on the total index.

Table 3

**DECOMPOSITION OF THE MEAN LOGARITHMIC DEVIATION IN ITALY
BY AREA OF RESIDENCE, 1977-1995**

Year	Within-groups at fixed weights		Between-groups at fixed weights		Demographic effect		Total
	value	share	value	share	value	share	
Income net of interest on financial assets							
1977	0.143	92.0	0.013	8.2	-0.000	-0.2	0.156
1978	0.133	89.5	0.016	10.7	-0.000	-0.2	0.149
1979	0.146	87.8	0.021	12.6	-0.001	-0.4	0.166
1980	0.114	85.0	0.020	15.3	-0.000	-0.3	0.134
1981	0.116	91.8	0.011	8.4	-0.000	-0.2	0.126
1982	0.106	92.0	0.009	8.1	-0.000	-0.1	0.116
1983	0.114	93.8	0.008	6.3	-0.000	-0.1	0.121
1984	0.120	92.5	0.010	7.6	-0.000	-0.1	0.130
1986	0.118	92.4	0.010	7.6	-0.000	-0.0	0.128
1987	0.129	89.2	0.016	10.8	0.000	0.0	0.145
1989	0.103	88.6	0.013	11.4	0.000	0.1	0.116
1991	0.099	89.2	0.012	10.9	-0.000	-0.1	0.111
1993	0.139	89.1	0.017	11.0	-0.000	-0.1	0.156
1995	0.138	87.7	0.019	12.3	0.000	0.0	0.158
Total income							
1987	0.135	88.3	0.018	11.7	0.000	0.0	0.153
1989	0.109	87.9	0.015	12.0	0.000	0.1	0.124
1991	0.105	88.3	0.014	11.8	-0.000	-0.1	0.118
1993	0.149	88.5	0.019	11.6	-0.000	-0.1	0.168
1995	0.145	87.1	0.022	12.9	0.000	0.0	0.167

Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Measures calculated for the distribution of equivalent disposable incomes between persons; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members. "Value" refers to the absolute contribution of the component to the total index; "share" refers to the percentage impact of the same contribution on the total index.

Table 4

SOURCES OF DATA IN THE LUXEMBOURG INCOME STUDY

Country	Year	Survey	Sample size
Belgium	1996	Panel Survey of the Centre for Social Policy	4,632
Denmark	1992	Income Tax Survey	12,895
Finland	1995	Income Distribution Survey	9,262
France	1994	Family Budget Survey	11,294
Germany	1994	German Social Economic Panel Study (GSOEP) (a)	6,045
Ireland	1987	ESRI Survey of Income Distribution, Poverty and Usage of State Services	3,294
Italy	1995	Survey of Households' Income and Wealth	8,135
Luxembourg	1994	The Luxembourg Social Economic Panel Study (Liewen zu Letzebuerg)	1,813
Netherlands	1994	Socio-Economic Panel (SEP)	5,187
Spain	1990	Expenditure and Income Survey	21,153
Sweden	1995	Income Distribution Survey (Inkomstfördelningsundersökningen)	16,260
United Kingdom	1995	The Family Expenditure Survey (b)	6,797

Sources and notes: the LIS (24 February 2001). (a) 208 observations were ignored because some components of income were missing. (b) Crown Copyright 1995. Source: Office for National Statistics.

Table 5

INEQUALITY OF EQUIVALENT DISPOSABLE INCOMES IN SELECTED EU COUNTRIES

Country	Year	Mean logarithmic deviation	Theil index	Half the squared coefficient of variation	Gini index	Quintile ratio	Decile ratio
Belgium	1996	0.103	0.097	0.099	0.247	2.14	3.31
Denmark	1992	0.080	0.073	0.072	0.216	2.03	2.86
Finland	1995	0.068	0.066	0.068	0.206	1.90	2.69
France	1994	0.112	0.111	0.121	0.265	2.23	3.54
Germany	1994	0.114	0.107	0.110	0.259	2.19	3.85
Ireland	1987	0.148	0.142	0.152	0.300	2.74	4.23
Italy	1995	0.176	0.159	0.166	0.316	2.77	4.85
Luxembourg	1994	0.077	0.077	0.082	0.222	1.97	2.92
Netherlands	1994	0.120	0.101	0.098	0.248	2.16	3.19
Spain	1990	0.133	0.127	0.136	0.284	2.46	3.97
Sweden	1995	0.077	0.069	0.067	0.203	1.76	2.61
United Kingdom	1995	0.165	0.157	0.169	0.315	2.84	4.57

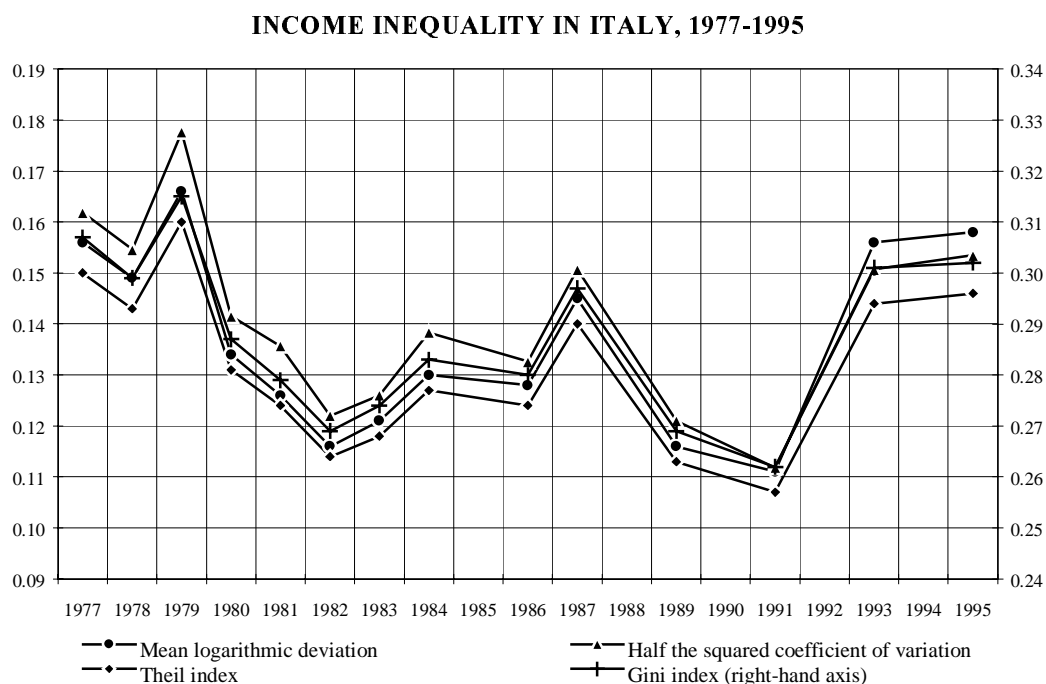
Sources and notes: authors' calculations on data from the LIS (24 February 2001). Measures calculated for the distribution of equivalent disposable incomes between persons; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members.

DECOMPOSITION OF THE MEAN LOGARITHMIC DEVIATION IN SELECTED EU COUNTRIES

Country	Household size			Sex of the household head			Age class of the household head			Household type			Total													
	Within-groups at fixed weights		Demographic effect	Within-groups at fixed weights		Demographic effect	Within-groups at fixed weights		Demographic effect	Within-groups at fixed weights		Demographic effect														
	value	share	value	share	value	share	value	share	value	share	value	share														
Belgium	0.091	88.4	0.003	3.3	0.009	8.3	0.098	95.5	0.004	4.3	0.000	0.2	0.099	96.0	0.007	6.8	-0.003	-2.8	0.088	85.3	0.008	7.5	0.007	7.2	0.103	
Denmark	0.059	74.4	0.005	6.2	0.016	19.5	0.069	86.9	0.008	9.8	0.003	3.4	0.063	79.0	0.013	16.3	0.004	4.7	0.056	69.8	0.013	16.1	0.011	14.0	0.080	
Finland	0.058	85.2	0.003	4.5	0.007	10.4	0.062	91.6	0.005	6.8	0.001	1.6	0.062	91.5	0.006	9.1	-0.000	-0.6	0.054	80.1	0.006	9.6	0.007	10.4	0.068	
France	0.106	94.1	0.002	2.0	0.004	3.9	0.108	95.9	0.004	3.5	0.001	0.6	0.112	99.6	0.003	2.4	-0.002	-2.0	0.102	90.5	0.006	5.4	0.005	4.1	0.112	
Germany	0.108	94.7	0.002	1.7	0.004	3.6	0.109	95.4	0.004	3.2	0.002	1.4	0.110	96.6	0.003	3.0	0.000	0.4	0.102	89.7	0.005	4.8	0.006	5.5	0.114	
Ireland	0.151	102.2	0.005	3.3	-0.008	-5.5	0.149	100.6	0.000	0.0	-0.001	-0.6	0.142	96.1	0.004	3.0	0.001	0.9	-	-	-	-	-	-	0.148	
Italy	0.172	98.2	0.003	1.8	-	-	0.174	98.9	0.002	1.1	-	-	0.172	98.0	0.004	2.0	-	-	-	0.170	96.9	0.005	3.1	-	-	0.176
Luxembourg	0.075	97.6	0.001	1.0	0.001	1.4	0.076	98.7	0.001	0.7	0.000	0.6	0.075	97.5	0.002	3.0	-0.000	-0.5	0.072	93.3	0.003	4.2	0.002	2.5	0.077	
Netherlands	0.111	92.7	0.003	2.2	0.006	5.1	0.116	96.5	0.004	3.5	0.000	0.0	0.120	99.4	0.003	2.7	-0.003	-2.1	0.104	86.9	0.006	5.4	0.009	7.7	0.120	
Spain	0.133	99.8	0.002	1.8	-0.002	-1.6	0.134	100.6	0.001	0.4	-0.001	-1.0	0.131	98.6	0.002	1.6	-0.000	-0.2	0.129	96.9	0.006	4.7	-0.002	-1.6	0.133	
Sweden	0.049	63.8	0.004	5.3	0.024	30.8	0.070	90.4	0.005	5.9	0.003	3.7	0.057	74.0	0.007	9.6	0.013	16.4	-	-	-	-	-	-	0.077	
United Kingdom	0.158	96.1	0.004	2.3	0.003	1.6	0.152	92.6	0.010	5.9	0.003	1.5	0.150	91.0	0.010	6.0	0.005	3.0	0.140	85.1	0.016	9.7	0.009	5.2	0.165	

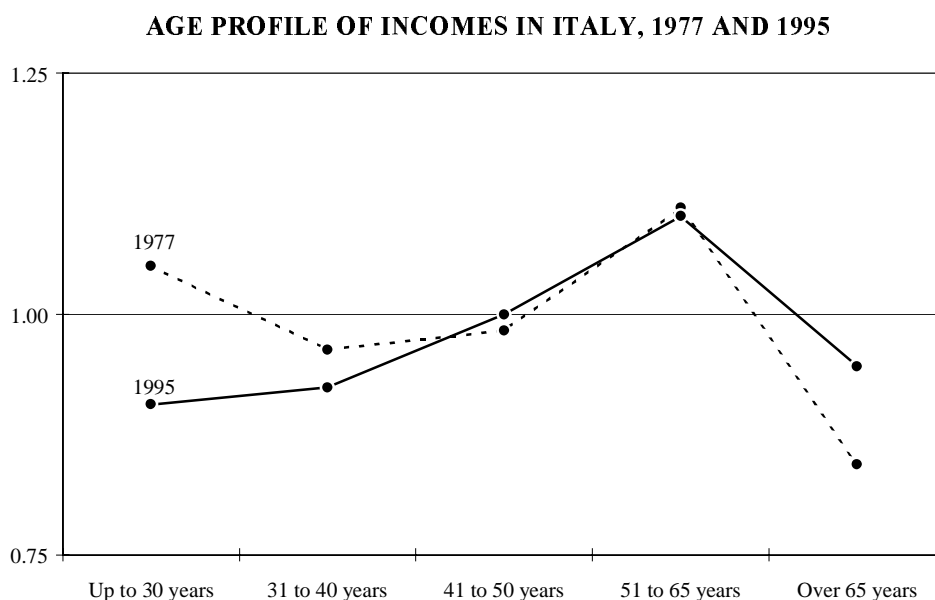
Sources and notes: authors' calculations on data from the LIS (24 February 2001). Measures calculated for the distribution of equivalent disposable incomes between persons; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members. "Value" refers to the absolute contribution of the component to the total index; "share" refers to the percentage impact of the same contribution on the total index.

Figure 1



Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Measures calculated for the distribution of equivalent disposable incomes between persons, where incomes are net of interest on financial assets; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members.

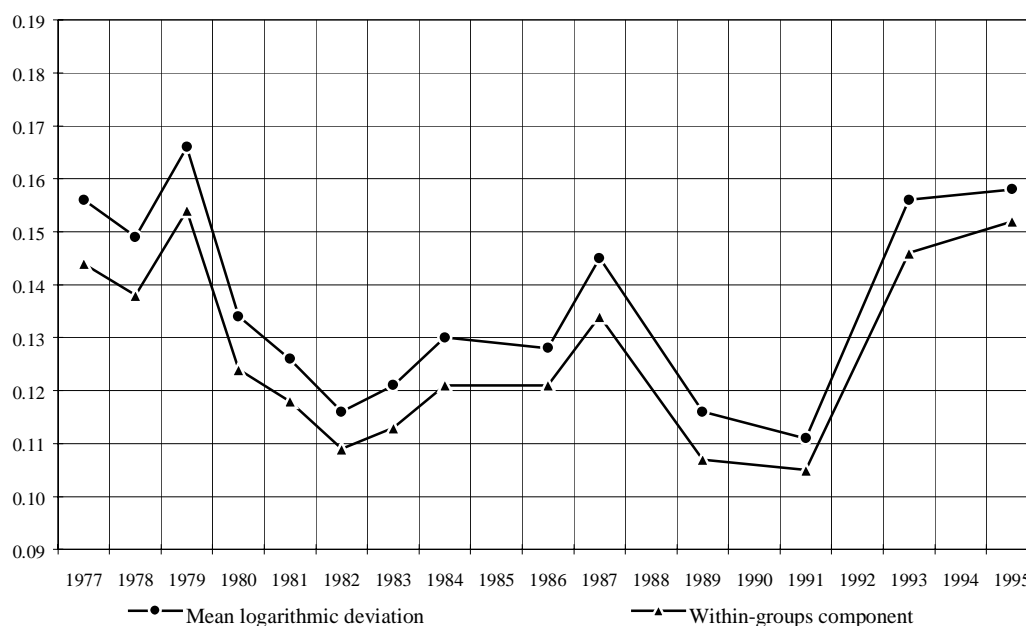
Figure 2



Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Ratio to the overall mean of the mean equivalent disposable incomes (net of interest on financial assets) of households with heads in the age group indicated; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members; households counted as many times as there are members.

Figure 3

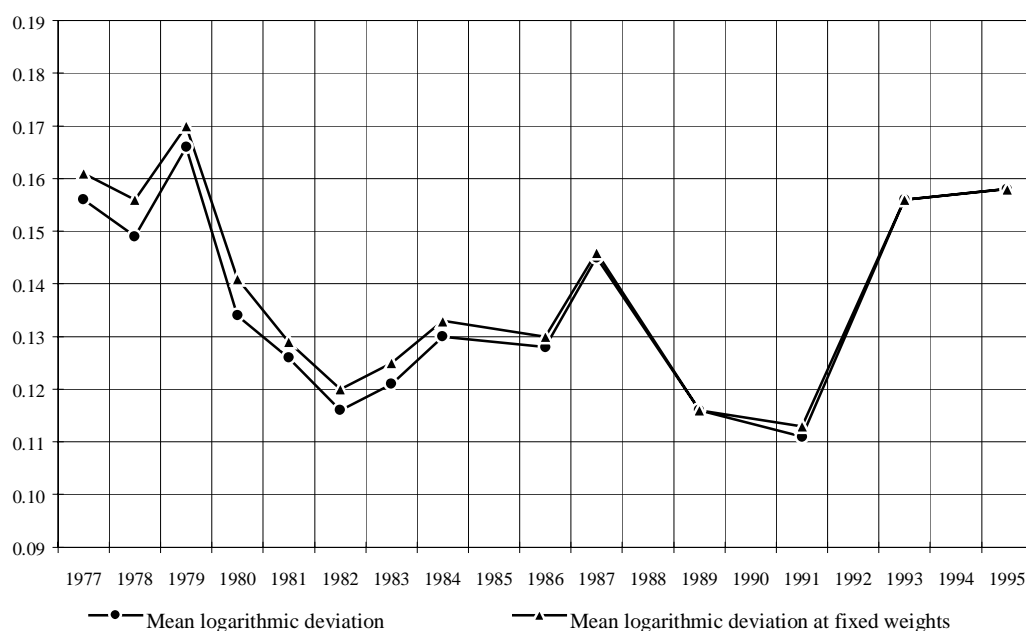
**TOTAL AND WITHIN-GROUP INEQUALITY BY HOUSEHOLD TYPE
IN ITALY, 1977-1995**



Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Measures calculated for the distribution of equivalent disposable incomes between persons, where incomes are net of interest on financial assets; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members.

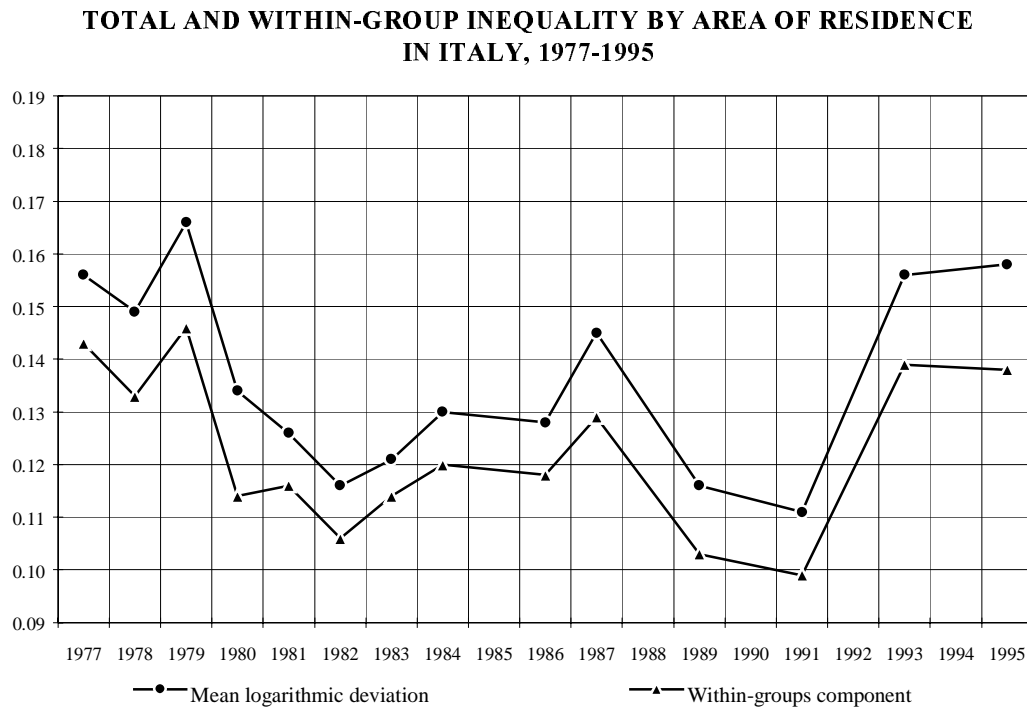
Figure 4

**TOTAL AND FIXED-WEIGHT INEQUALITY BY SEX OF THE HOUSEHOLD HEAD
IN ITALY, 1977-1995**



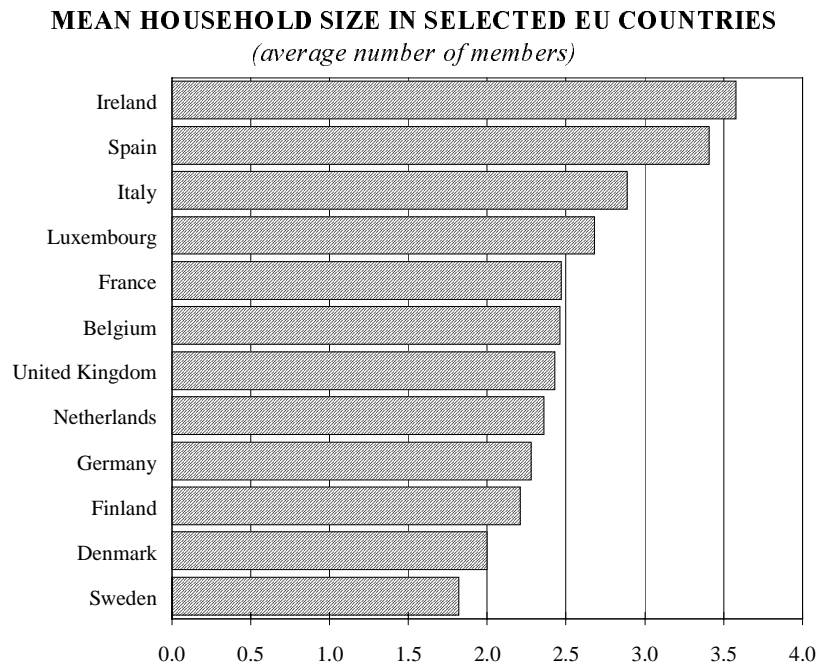
Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Measures calculated for the distribution of equivalent disposable incomes between persons, where incomes are net of interest on financial assets; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members.

Figure 5



Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Measures calculated for the distribution of equivalent disposable incomes between persons, where incomes are net of interest on financial assets; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members.

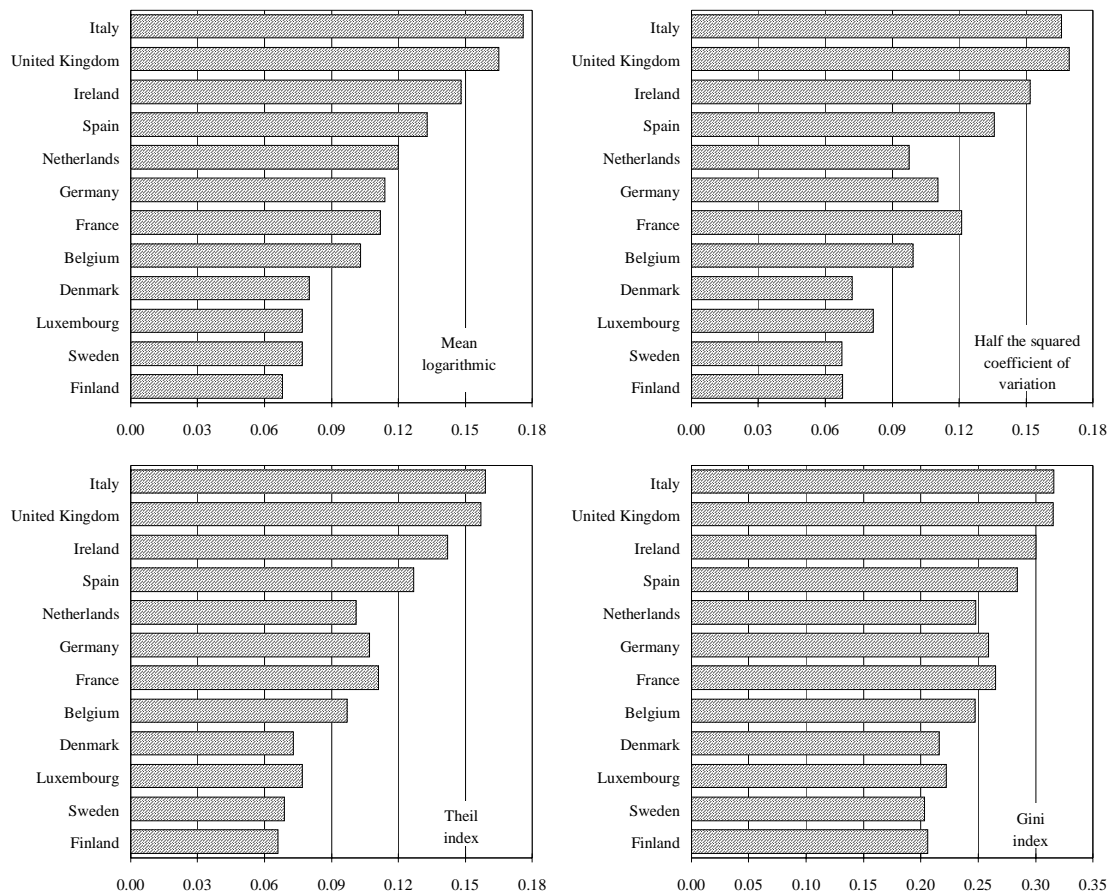
Figure 6



Sources and notes: authors' calculations on data from the LIS (24 February 2001).

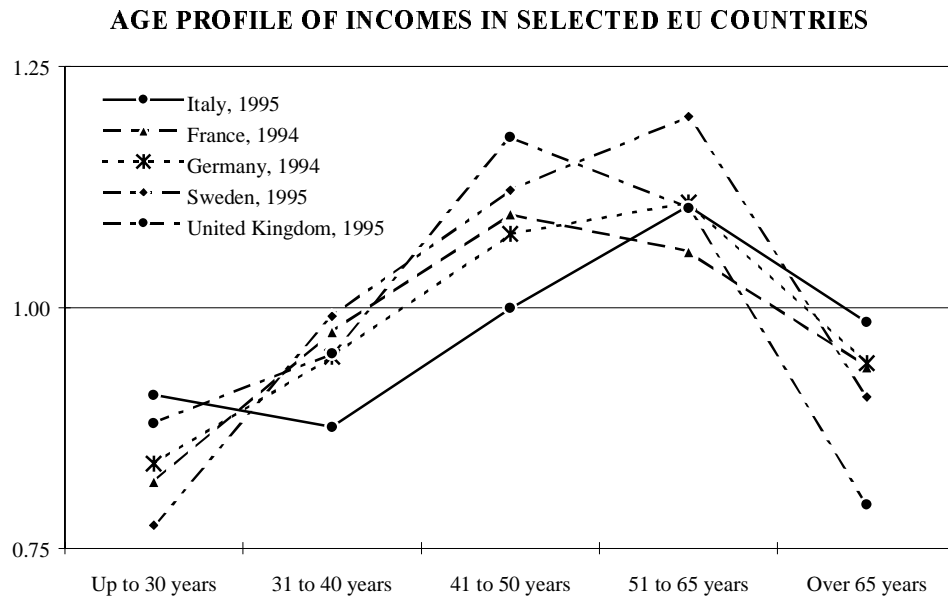
Figure 7

INCOME INEQUALITY IN SELECTED EU COUNTRIES



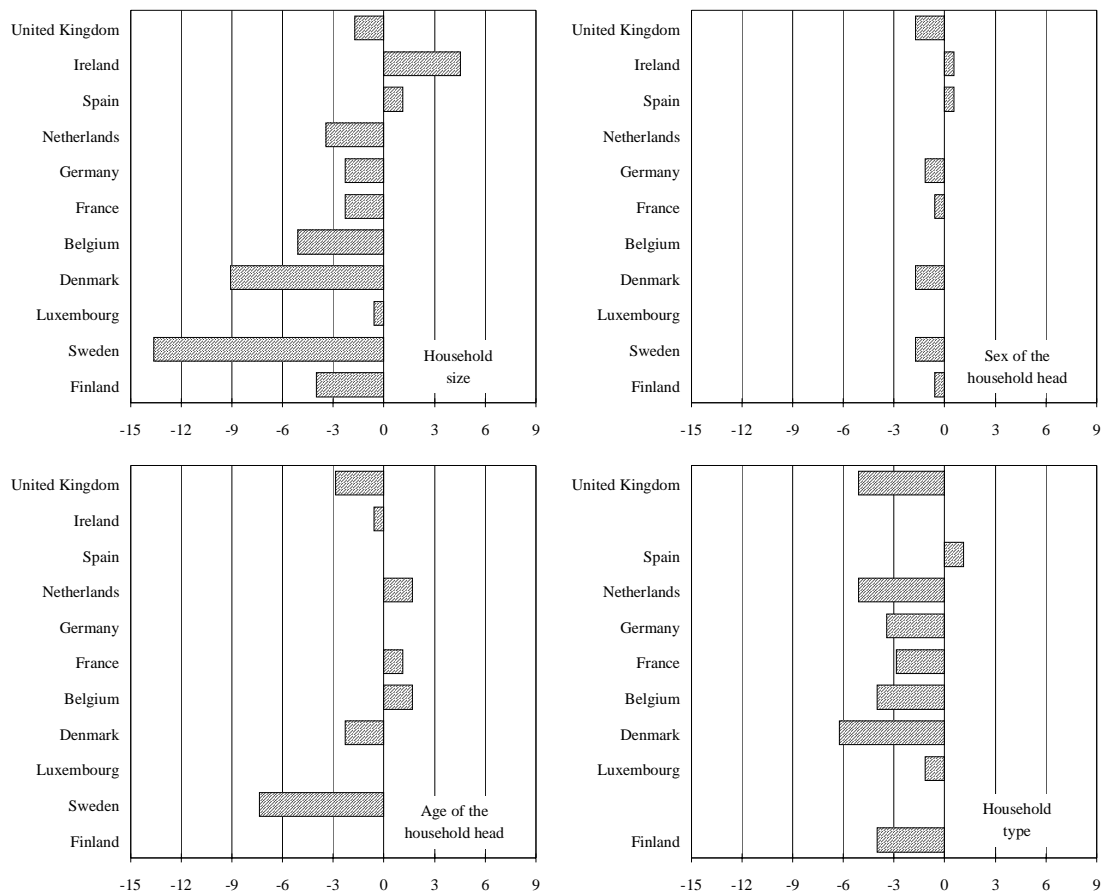
Sources and notes: authors' calculations on data from the LIS (24 February 2001). Measures calculated for the distribution of equivalent disposable incomes between persons; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members. Countries listed in descending order, from top to the bottom, according to the value of the mean logarithmic deviation.

Figure 8



Sources and notes: authors' calculations on data from the LIS (24 February 2001). Ratio to the overall mean of the mean equivalent disposable incomes of households with heads in the age group indicated; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members; households counted as many times as there are members.

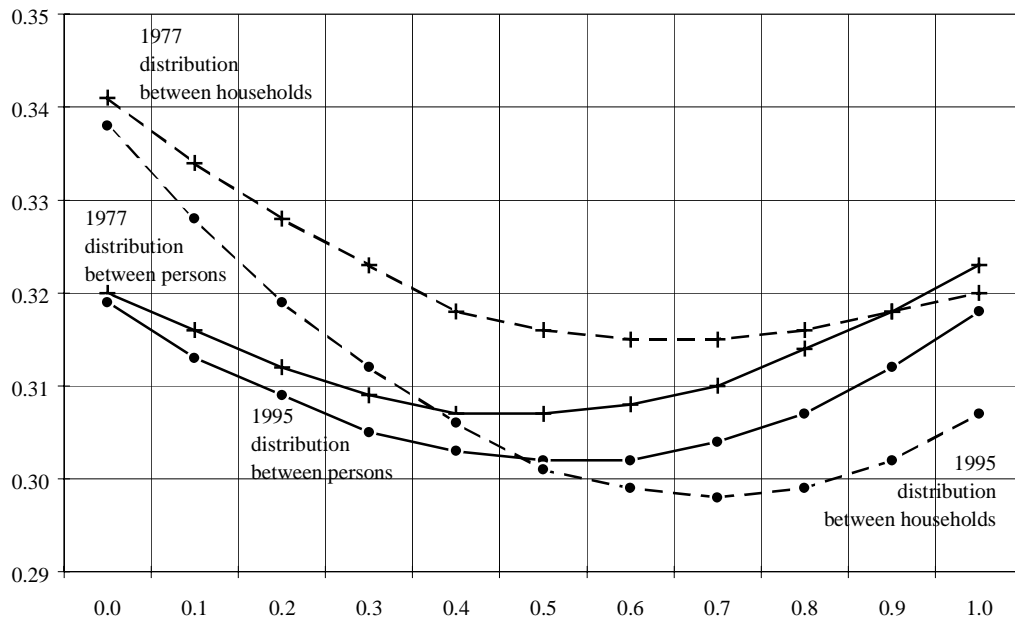
Figure 9

DEMOGRAPHIC EFFECTS ON INEQUALITY IN SELECTED EU COUNTRIES

Sources and notes: authors' calculations on data from the LIS (24 February 2001). Percentage variations in the mean logarithmic deviation obtained by imposing the demographic structure of Italy, expressed as a percentage of the mean logarithmic deviation of Italy. Measures calculated for the distribution of equivalent disposable incomes between persons; bottom- and top-coded incomes; equivalence coefficients equal to $N^{0.5}$, where N is the number of household members. Countries listed in descending order, from top to the bottom, according to the value of the mean logarithmic deviation.

Figure B1

**SENSITIVITY OF THE GINI INDEX TO VARIATIONS IN THE PARAMETER θ
OF THE EQUIVALENCE SCALE IN ITALY, 1977 AND 1995**



Sources and notes: authors' calculations on data from the SHIW-HA (Version 1.1, October 2000). Indices calculated for the distribution of equivalent disposable incomes, counting each household once (distribution among households), or as many times as it has members (distribution among persons); bottom- and top-coded incomes; equivalence coefficients equal to N^θ , where N is the number of household members.