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Factor Components of Inequality: Cross-Country Differences and Time Changes

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Factor Components of Inequality: Cross-Country Differences and Time Changes ♣

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Abstract: Recent work on inequality has examined either changes in the distribution of income or in that of earnings, without examining how the latter affects the former. In this paper we perform a factor decomposition of income inequality in order to asses the importance of earnings and income from other sources in recent changes in inequality. We examine data for 8 industrial countries over the last three decades of the 20th century. Our findings indicate that although changes in the distribution of earnings are an important aspect of recent increases in inequality, they are not the only one. In some countries the contribution of self-employment income to inequality has been on the rise. In others, increases in inequality in capital income –probably caused by tax changes- account for a substantial fraction of changes in the distribution of income.

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1. Introduction

The extent to which different sources of income influence overall income inequality across households has interested economists for several decades; see Fei et al. (1978), Fields (1979), Pyatt et al. (1980), Lerman and Yitzhaki (1985) or Shorrocks (1983). In recent years the literature on inequality has largely focused on the evolution of earnings inequality, and in particular on the increase in wage dispersion that has taken place in a number of industrial countries; see, for example, Gottschalk and Smeeding (1997), Acemoglu (2003), or Lemieux (2007). It becomes then important to assess to what extent inequality in earnings has contributed to changes in overall household income inequality. In this paper we perform a factor decomposition of income inequality in order to assess the importance of earnings and income from other sources, in recent changes in inequality in 8 industrial countries in the last three decades of the 20^{th} century.

A large theoretical literature has examined possible ways of decomposing inequality indices by factor components, and illustrated the methodologies proposed with some empirical evidence; see for example Pyatt et al. (1980), Fei et al. (1978), Lerman and Yitzhaki (1985), Fournier(2001). It is less common to find papers that focus solely on empirical evidence on factor decompositions. Two notable exceptions are Jenkins (1995) and Jantti (1997). Jenkins (1995) shows that in the U.K. the contribution of wages to total income inequality decreased during the 1970s and 1980s. Jäntti (1997) is to our knowledge the only cross-country study of factor decompositions of inequality. He considers five countries -Canada, the Netherlands, Sweden, United Kingdom and United States- and, using data from the Luxembourg Income Study, concludes that the increase in household income inequality that took place in Sweden, the UK and the US during the 1980s can be mainly explained by an increase in labour earnings inequality.

In this paper we extend the work of Jäntti by expanding both the number of countries and the period over which we consider changes in inequality, using the more recent wages of data from the Luxembourg Income Study (LIS). The increase in available data is significant: our sample includes 8 countries, and we have -at best- 8 observations per country, going from 1969/1970 to 2000. This implies an important increase in the length of the period of study as compared to Jäntti -who had two observations, one for the early and one for the late 1980s- and allows us to assess to what extent the increases in inequality observed in the 1980s have continued or been reversed. A second difference with the work of Jäntti is that, although he performs decompositions both by factors and by household characteristics, such as age' they are performed separately. In this paper we perform a cross country comparison of inequality trends using a double decomposition, by factors and by age, where the decomposition by age groups is nested within the factor income decomposition.

We use as our inequality index the squared coefficient of variation, which allows us to perform this nested decomposition. As in the existing literature, we find that overall income inequality and earnings inequality increased during the 1980s and 1990s in almost all countries in our sample. An increase in self-employment income inequality is also observed in all countries except Sweden. In contrast, trends in capital income inequality vary widely across countries. Inequality in this source of income has fallen in the Anglo-Saxon countries, while it has dramatically increased in Norway and Sweden, accounting for most of the increase in overall income inequality observed in these two countries towards the end of the period.

There are two broad questions that we address. The first consists in quantifying the contribution of earnings inequality to overall household inequality, assessing differences across countries and changes over time. The second is to see to what extent household age matters for inequality. There are three reasons why we want to consider this aspect. First, theories of the life-cycle imply that old agents live off their savings. Hence, if most of the inequality in capital incomes is observed across age groups, this would indicate that it is simply capturing differences across the life-cycle. Second, the recent literature on wage inequality has found that –at least in the US and the UK- part of the increase in wage inequality was due to an increase in the return to experience. Our analysis can then help us understand to what extent earnings inequality is due to the fact that older individuals have higher wages. Third, existing work –for example, Jäntti- has found that inequality across age groups had little explanatory power, but argued that this could be due to the short time period considered. Here we examine whether this result still holds over the substantially longer period that we analyse.

Concerning the importance of earnings inequality relative to other sources, our results indicate that its contribution varies widely across countries, accounting for as little as 22% in Italy in 1998 and for about 80% in Canada throughout the period. We unable to identify a clear trend in the contribution of this factor: it has fallen over the period in Sweden and Norway, while it has been quite stable in Canada, France and the US. Moreover, as is the case in previous work and in single-country studies, the contribution of within-group inequality to earnings inequality is small.

The contribution of self-employment varies substantially across countries. Self-employment has always been large in Italy and hence this source of income has always played a large role, roughly of the same magnitude as that of earnings. In contrast, it only accounts for a small fraction of inequality in the two North-American economies. In the UK, the period under study witnessed a large increase in the importance of this income source, rising from 7% in 1979 to 30% in 1999. We also find that the distribution of capital income can have a very large effect on overall income inequality. In fact, our results indicate that the increase in capital income inequality was the single

most important factor accounting for the increase in household inequality in Norway and Sweden during the 1990s. In Sweden, the increase in capital income inequality is largely concentrated in a particular age group, those between 55 and 64, for whom the contribution of capital income rose dramatically. Yet, overall, our decompositions by age group indicate that for this source of income the variations within age groups are much larger than those across groups, indicating that life-cycle asset accumulation is not an important aspect of inequality in income from property.

Decompositions of an inequality index into a within-group and between-group component have been widely used in empirical analyses of inequality; see, for instance, Mookherjee and Shorrocks (1982), Karoly (1992), Parker (1999), Brandolini and D'Alessio (2001). However, there are only a few studies that perform both decompositions across groups and factors. As well as Jenkins (1995) and Jäntti (1997) discussed above, this approach has been taken by Fluckiger and Silber (1994), Achdut (1996) and Drescher (1999), who focus, respectively, on Switzerland, Israel and Denmark, all countries that are not included in our sample. However, all these papers consider either the factor decomposition or the decomposition by age (or other characteristics). Our paper is, to our knowledge, the first to joint decompose inequality using a nested approach.[1]

The paper is organized as follows. Section 2 presents the natural decomposition rule of the half the squared coefficient of variation into factor components and population groups. The trends of inequality during the last three decades of the 20th century are presented in section 3. Sections 4 and 5 present the results of the decomposition of the overall inequality index, examining first decompositions by factor and subsequently by age-groups. Lastly, section 6 concludes.

2. Inequality index decompositions

2.1. Decomposing inequality

We start by explaining the decomposition method used to asses the importance of various income sources. We consider a population of n individuals indexed by i, with mean income μ and variance σ^2, and denote the income of individual i by y_i. The incomes are received from various sources or factors, denoted by f, so that $\sum_f y_{if} = y_i$. The population can be partitioned in J mutually exclusive age groups, index by j=1, …J. The inequality index we will use is half the squared coefficient of variation, denoted SCV and defined as

$$I \equiv \frac{1}{2n}\sum_i \left[\left(\frac{y_i}{\mu}\right)^2 - 1\right] = \frac{\sigma^2}{2\mu^2}. \qquad (1)$$

[1] See Mussard (2004) and Giammatteo (2007) for theoretical analysis of nested decompositions.

As is well known, different inequality indices have different merits and drawbacks.[2] The Gini coefficient, the most widely used index, is not easily decomposable. Indeed, several authors like Rao, 1969; Fei et al., 1978, Pyatt et al., 1980; Shorrocks, 1983; Lerman and Yithzakhi, 1985 and also Podder, 1993; have tried to decompose the Gini coefficient in factor sources but no consensus has really appeared on the relevant decomposition rule to adopt. We have chosen to employ the SCV for two reasons. First, decompositions can be nested, allowing us to examine the changes in factor contributions by population subgroups. Second, a number of studies use it, allowing us to compare our results with existing single-country work.[3] The SCV is more sensitive to extreme values than the Gini coefficient, an argument that is often used to prefer the use of the latter index. For our analysis, this is an advantage rather than a drawback. When we do decompositions either by factor or by age group, we find that there are many observations with value zero; hence we want to use an index that can capture this well.

A number of definitions will be useful for the subsequent decompositions

$\chi_f \equiv \mu_f / \mu$	factor *f*'s share
ρ_f	correlation between factor *f* and total income
$p_j \equiv n_j / n$	population share of group *j*
$\lambda_j \equiv \mu_j / \mu$	group *j*'s mean income relative to population mean
$\lambda_{jf} \equiv \mu_{jf} / \mu_j$	groups *j*'s mean factor-f income relative to population mean

We also define the inequality index for a particular factor and a particular group as

$$I_f = \frac{\sigma_f^{\,2}}{2\mu_f^{\,2}}, \tag{2}$$

$$I_j = \frac{\sigma_j^{\,2}}{2\mu_j^{\,2}}. \tag{3}$$

2.2. Factor decomposition

In order to analyse the impact of various income sources we follow Shorrocks (1982) and Jenkins (1995). A decomposable inequality index can be expressed as

$$I = \sum_f S_f \tag{4}$$

[2] See Bourguignon (1979) for a discussion of its properties.

[3] See, for example, Jenkins (1995) and Jäntti (1997).

where S_f is the absolute contribution of factor *f* to overall inequality. Let $s_f \equiv S_f / I$ be the relative factor contribution, such that $\sum_f s_f = 1$. Shorrocks makes the case for using a decomposition based on the point estimate of a regression of income of source *f* on total income, that is

$$s_f = Cov(y_{if}, y_i) / \sigma^2 . \tag{5}$$

It is then possible to express the absolute contributions in terms of the squared coefficient of variation for aggregate and factor incomes,

$$S_f = s_f I = \rho_f \chi_f \sqrt{I \cdot I_f} . \tag{6}$$

2.3. Group decomposition

There are two ways in which we can assess how the contribution of different sources of income varies across groups. First, we can simply compute inequality indices by age-groups and obtain the contribution of different sources for each group. We can perform the factor decomposition described above for each age group, with the factor shares being defined by

$$S_{jf} = \rho_{jf} \chi_{jf} \sqrt{I_j \cdot I_{jf}} \tag{7}$$

and $I_j = \sum_f S_{jf}$. The term S_{jf} then tells us how much of the overall inequality within group *j* is due to inequality in incomes from factor *f*.

Alternatively we can use a group decomposition of the inequality index. It is possible to express our inequality index *I* as

$$I = \sum_j p_j \left(\lambda_j\right)^2 I_j + \frac{1}{2} \sum_j p_j \left[\left(\lambda_j\right)^2 - 1\right] = wg + bg \tag{8}$$

where the first term captures inequality within age groups, *wg*, and the second term represents inequality between groups, *bg*. For factor f we can express the inequality index as

$$I_f = \sum_j p_{jf} \left(\lambda_{jf}\right)^2 I_{jf} + \frac{1}{2} \sum_j p_{jf} \left[\left(\lambda_{jf}\right)^2 - 1\right] = wg_f + bg_f , \tag{9}$$

and using this expression we can write overall inequality as

$$I = \sum_f S_f = \sum_f \left(\alpha_f wg_f + \alpha_f bg_f\right), \tag{10}$$

with $\alpha_f \equiv S_f / I_f$. The term wg_f represents within-group inequality in factor *f*, while $\alpha_f wg_f$ captures the contribution of within-group inequality in factor f to overall inequality. Similarly bg_f represents between-group inequality in factor *f*, and $\alpha_f bg_f$ is the contribution of between-group inequality in factor f to overall inequality. This decomposition allows us to first determine the

contribution of inequality in factor *f* to overall inequality, and then assess how much of it is due to within- and how much to between-group inequality.

3. Trends in inequality: Evidence from the Luxembourg Income Study

3.1. The data

The source of our data is the Luxembourg Income Study (LIS). The Luxembourg Income Study is a project started in 1983 by researchers in several European and American countries in order to collect income, demographic, labour market and expenditure information at the micro-economic level in a way that is consistent across countries. Surveys are conducted every few years, and the number of member countries has expanded over time, with the project now covering 30 countries. As is well known, the data on income inequality are problematic and international comparisons difficult (see Atkinson and Brandolini, 2001). Although some cross-country differences in methodology remain, the LIS data are the best existing data on inequality in terms of cross-country consistency.

Although the latest wave of LIS included 30 countries, our data set includes only the 8 countries for which we have at least 3 observations over the period 1969 to 2000. Details on the data and their sources are provided in the Appendix, and in table A.1. The number of observations varies across countries, depending on the number and frequency of surveys, with countries having between 3 and 8 observations spread over the period. Our sample includes Anglo-Saxon countries (US, UK, and Canada), the three large continental European economies (France, Germany and Italy), and two Scandinavian countries (Sweden and Norway).

We use gross income measures.[4] Our definition of total income consists in the sum of earnings, capital income, self-employment income, and a residual category termed "other". This last category includes transfers from various sources, and comprises pensions, state transfers such as unemployment benefit or child benefit, and private transfers such as alimony payments. We would have liked to separate pensions from the remaining sources of income, but for many countries they are not reported separately. Hence, in order to make our results comparable across countries, even when the information was available we grouped pensions with other incomes. In all cases but France and Italy, we use gross earnings. For those two countries, earnings are only reported net of employee contributions and we have no option but using those in our computations.

[4] The alternative would have been to consider disposable income, which, arguably, is a better measure of welfare. The reason for not doing so is that when using measures of disposable income tax changes have rapid and large effects on inequality (see, for example, Jäntti, 1997). Understanding these changes would have forced us to discuss changes in taxation and progressivity in the 8 countries under consideration, a task beyond the scope of this paper.

3.2. Inequality trends

Figure 1 presents the evolution of inequality, measured by the squared coefficient of variation, in the 8 countries we consider. We observe some of the trends that have been widely discussed in the literature, such as the increase in household income inequality in the US and the UK from the early 1980s onwards. Although these two countries have high levels of inequality, they are not dramatically different from those observed in the remaining economies in our sample. At first glance, this seems to be at odds with the large evidence that inequality is highest in the Anglo-Saxon economies, lowest in Scandinavian countries, with the large European economies being somewhere in between. The difference in the results is the fact that we are measuring gross income inequality. As Brandolini and Smeeding (2007) show some European countries, notably Germany and Sweden, have levels of market income inequality comparable to that in the US, and it is differences in the tax-transfer system that create the gap in disposable income inequality.

The increase in income inequality is also apparent for Canada, Italy, and the Scandinavian countries. Although in Canada and Norway there is evidence of an increase in inequality starting in the mid-80s, in both Italy and Sweden it took place somewhat latter. The German and French data indicate a reduction in equality, although data for Germany are available only until 1994 and those for France are based on net earnings.

Since the most work on cross-country comparisons of inequality uses the Gini coefficient, figure **Error! Reference source not found.** reports the Gini coefficients obtained with the LIS data. Our definition of income is, as before, gross household income. The ranking of countries in terms of the Gini coefficient is similar to that obtained with the SCV, although not identical. For example, in the 1990s, inequality is higher in the US than in the UK if measured by the Gini coefficient, but lower when the squared coefficient of variation is used.

4. Decomposition by income sources

4.1. Absolute factor contributions

Tables 1 to 3 report the factor decomposition for the US, the UK, France, Italy, Sweden and Norway for selected years. [5] The inequality index, the SCV, is calculated both for total gross income (first column) and for its four components: earnings, self-employment income, capital income and other. We then calculate the absolute contribution of each of these factors to overall inequality, that

[5] The decomposition for Canada, and for some other countries below, is not reported. We have chosen to focus on those countries that had the most interesting results. Similarly, we do not report the decomposition for all years. We have, however, performed all country-year decompositions, and they are available upon request.

is, S_f as given by equation (6), so that the horizontal sum of factor contributions sums up to overall income inequality for each year.

The observations for the UK and the US are reported for four dates, 1969, 1979, 1991 and 1999/2000. This allows us to asses the sources of changes in inequality in the 1970s, 1980s, and 1990s. Both countries experienced a reduction in inequality in the first decade and an increase in the two latter ones. The patterns are similar in many aspects. During the 1970s earnings inequality rose moderately, although the sharp reduction in capital income inequality more than offset the changes in the distribution of earnings. Over the next two decades, inequality increased by 0.21 points in the US and by 0.35 points in the UK. The 1980s and 1990s witnessed a large increase in earnings inequality – which doubled in the UK and increased by 65% in the US – and in inequality in self-employment income, which were accompanied by small changes in capital income inequality. There are two differences between these economies. The first concerns the timing: the largest increase in inequality in the US took place in the 1990s, while in the UK it occurred during the 1980S. Second, self-employment income plays a much more important role in the UK. The contribution of self-employment to the increase in inequality between 1979 and 1999 was of 0.160, roughly the same magnitude as contribution of earnings inequality, which was 0.175 over the period.

Table 2 presents inequality decompositions in Italy and France. The data for these two countries starts somewhat later, hence we report measures of inequality for 1989 and 2000, thus focussing on changes during the 1990s. In Italy, inequality rose from 0.26 to 0.347. Although both (net) earnings and capital income inequality increased over the period, the main contribution comes from self-employment income, which accounts for over a third of the increase in inequality. In France inequality fell by 13% during the 1990s, as a result of a more compressed distribution of (net) earnings and capital incomes. In both countries, earnings inequality is high even if it is quite similar to that in the US and not that in the UK which is the country with the highest dispersion in 1999. This may not seem surprising given the large body of evidence indicating that there is greater wage and earnings dispersion in the Anglo-Saxon countries; see Gottschalk and Smeeding (1997).

Decompositions for Sweden and Norway are reported in table 3. As discussed above, these two economies experienced increases in income inequality similar to those observed in the UK and the US, with the SCV increasing by 0.20 points in Norway and by 0.33 in Sweden. These changes were the result of a more dispersed distribution of earnings and a very large increase in capital income inequality. The SCV of capital income rose over fivefold in Sweden and thirteen-fold in Norway, implying that by 2000 the absolute contribution of capital income inequality to overall inequality was of similar magnitude as that of the distribution of earnings. As it has been

documented, [6] the increase in the contribution of capital income inequality was largely due to fiscal reforms that took place in the early 1990s in these two countries. These reforms increased, on the part of households, the incentives to realize capital gains on financial assets and, on the part of firms, the incentives to pay dividends. Note, however, that the LIS data does not include capital gains; hence our measure of inequality captures only the impact of the tax reforms through increased dividend payments. Although much of the discussion on the evolution of inequality in Scandinavian countries has focussed on tax reforms and capital income, it is important to note that the period also witnessed a large increase in earnings inequality. In Sweden, the SCV of earnings rose by 0.22 points between 1987 and 2000, while in the US it increased by 0.235 points during the 1990s. Once again, the question arises as to what was the source of the increase in earnings dispersion, especially given the preponderance of part-time employment in Scandinavian countries.

4.2. Relative factor contributions

A convenient way of examining the sources of changes in inequality is to consider the evolution of relative factor contributions. These are captured by the term s_f, as given by equation (5), which measures the share of inequality that is captured by factor *f*.

Figures 3 to 5 depict the relative factor contributions for the US, Canada and the UK, respectively. We can see that in the US earnings are by far the most important source of inequality, and that their relative contribution has increased over time. Canada is depicted in figure 4 and presents a similar pattern to that observed in the US: a high relative contribution of earnings and moderate contributions of capital and self-employment incomes. In the UK, there is greater variability in factor contributions over time. The contribution of earnings increased over the first decade, fell in the 1980s and increased again in the 1990s. The contribution of self-employment also presents substantial variation over the sample period, and was particularly high in the 1990s. Jenkins (1995) argues that the "increasing incidence of self-employment in the 1980s may also have led to a greater accumulation of assets and hence investment income". Although the data for 1979, 1986 and 1991 seem to support this hypothesis, it is not consistent with those for latter years. Both 1994 and 1999 exhibit an even higher relative contribution of self-employment inequality, accompanied by a reduction in the contribution of capital income inequality. An alternative hypothesis is that the pattern in capital income inequality is due to the high interest rates of the 1980s and early 1990s.

Figures 6 to 8 present the factor decomposition for the three large continental European countries, Germany, Italy and France. The data for these countries are less satisfactory since for

[6] See Aaberge et al. (2000) and Fjærli and Aaberge (2000).

Germany and France there are fewer observations, and for Italy and France wages are reported net of contributions. The three countries exhibit an increase of the contribution of capital income to inequality. For example, in Italy its contribution rose from 11% to almost 21%, and in France from 6% to almost 13%. Because wage income is reported net in these two countries, it is not surprising that the contribution of earnings to inequality is lower than for other economies. In the case of Italy, it is particularly small, accounting for between 22 and 45 percent of overall inequality. It is hence likely that this is partly due to a small contribution of gross earnings inequality. The reason for this is the importance of self-employment in the Italian economy, that results in a contribution of self-employment to income inequality between 39 and 50%, values that are much larger than those observed in all other economies (except for Norway in 1979).

The next two figures –figures 9 and 10- depict relative factor contributions for Sweden and Norway. The figures illustrate the sharp increase in the contribution of capital income discussed above. In Sweden, capital income accounted for 3 percent of overall inequality in 1975 and for 42 percent by 2000. In Norway its contribution rose from 3.3% in 1975 to 48% in 2000, implying that in the later year capital income's contribution to overall inequality was greater than that of earnings dispersion, which accounted for 41% of overall inequality. Both countries also experienced a reduction in the contribution of self-employment income, but differ in the fact that this source of income accounts for a much larger share of inequality in Norway than in Sweden, ranging between 47% and 13% in the former and between 9.3% and 1.8 in the later.

Figure 11 depicts the relative factor contributions for all eight countries, and illustrates the differences across countries. The upper panel is for in the year 1994 or 1995 (the latest year for which we have data for all countries), while the bottom panel reports relative factor contributions in 1999/2000. In the top panel, countries have been ranked according to the contribution of earnings to inequality, which is highest in Canada (82%) and lowest in Italy (36%). The contribution of self-employment income ranges from 3% to 39% (Sweden and Italy, respectively) and that of capital income from 4% to 30% (UK and Norway, respectively). A striking feature of the data is that there do not seem to be patterns common to the countries within each of the three groups – Anglo-Saxon, Continental, Scandinavian – . The contribution of earnings is high in the Anglo-Saxon economies, but also in Sweden and Germany. The two Scandinavian countries exhibit very different decompositions, with capital and self-employment income playing a much more important role in Norway than in Sweden. For the three continental economies we find a trade-off between the contribution of earnings – which is largest in Germany, then in France and smallest in Italy- and that of self-employment income – which is greatest in Italy and lowest in Germany. When we do the decomposition for 1999/2000 most of the cross-country patterns just described are also present,

with Canada and the US having the largest earnings contribution, and Italy the lowest. The most noticeable change is the increase in the contribution of capital incomes for the two Scandinavian countries.

5. Decomposition by age group

5.1. The Anglo-Saxon Economies

5.1.1. Trends in inequality by age

In order to further understand the dynamics of inequality, we decompose the population in each country–year in subgroups by age of the household head. We consider 7 subgroups: <25, 25-34, 35-44, 45-54, 55-64, 65-74, >74. Figures 12 to 17 depict the evolution of total gross income inequality, measured by the SCV, for each age subgroup in each of the eight countries (to make the figures easier to read, we do not depict the two end groups, <25 and >74).

In general, although not always, inequality is lower for young (25-34) and prime age households (35-54) and higher for older households (55-74). This pattern is clearly present for the US and Canada, as can be seen in figures 12 and 13. In both countries, the decline in inequality in the 1970s was driven by lower inequality for older households, while all age groups experienced an increase in inequality in the last two decades of the century. As a result, differences in within-group inequality were smaller in 2000 than at the start of our sample period. For example, in the US in 1969 inequality in the 65-74 group was 3.7 times that in the 25-34 group, while this ratio had fallen to 1.4 by 2000. Note also that in Canada inequality fell substantially for older households (those between 65 and 74 years) in the year 2000, making this group the least unequal one together with the young (25-34).

The UK (figure 14) presents a similar picture up to 1986, with inequality being higher for older households. However, latter observations exhibit strong movements in inequality in different groups. Leaving aside the observation for the 55-64 age group in 1991,[7] the negative age-inequality correlation disappears after 1986. In 1994, those in the 25-34 age group exhibit the highest degree of inequality, while in 1999 inequality is highest for the 35-44 group. Recall from figure 5 that these are years in which the contribution of self-employment to overall inequality is particularly high. A possible explanation is that the development of IT technologies increased entrepreneurship among the young in the UK, and this had simultaneously the effect of raising the contribution of self-employment income to overall inequality and inequality among young households.

5.1.2. Factor contributions

[7] The large increase in inequality for this grouping 1991 is driven by very high and unequal self-employment income.

In order to understand the sources of changes in inequality in the last two decades of the 20th century, we decompose inequality for each age group by income source. Tables 8 and 9 report the absolute contributions of the four factors examined in section 4 for the US and the UK in the years 1979 and 2000 (1999 in the case of the UK). Looking at the first column, we observe the increase in income inequality for all age groups reported in figure 12, with inequality increasing by between 40% (for the over 75) and 125% (for those 25 to 34). The same pattern is observed for almost all age groups: the increase in overall inequality was the result of a large increase in earnings inequality and more moderate increases in inequality in self-employment income and capital income. The exceptions are the groups 35-44 and 55-64 for whom the contribution of capital income fell over the period.

In the UK there is much greater variation across age groups. Inequality was between 1.5 times and almost 4 times higher in 1999 for households that were less than 54, rose more moderately for those between 55 and 74, and fell for those above 75. The contribution of earnings inequality is rose for all groups except those above 65, for whom it fell. Both the contributions of capital income and self-employment inequality increased for all groups. The increase in the contribution of self-employment is particularly large, and is important even for older households. The increase in the contribution of capital income is largest for young and prime-age households, for whom this source of income had a very minor contribution in 1979, indicating the increased ability of younger households to accumulate assets.

5.2. The continental economies

5.2.1 Trends in inequality by age

The evolution of inequality in the three large continental economies is depicted in figures 15, 16 and 17. Germany exhibits an age-group pattern that is both very different from that observed in the Anglo-Saxon economies and varies substantially over time. There is no clear pattern of inequality across age groups, nor similar trends. For example, inequality was highest amongst young households in 1984, and amongst old household in 1989. Between 1989 and 1994, inequality rose for those in the 45-54 and 55-64 groups, and fell for all other age groups. Only in the second half of the 1990s is there a common upwards trend for all categories.

Italy exhibits greater inequality for older households throughout most of the period. The increase in inequality in the 1990s was greater for older households than for younger ones, with some reversal of trends by 2000. France also exhibits higher inequality for older households. The striking feature in the French data is the flatness of the inequality curves for the two youngest groups. Changes in inequality occur only for those above 45 years, with different groups showing

different trends. For example, in periods in which inequality increases for the 55-64 group it decreases for the 65-74 category, and vice versa.

5.2.2. Factor contributions

Factor decomposition across age groups does not allow us to discern a particular pattern of inequality in Germany (table 10). Some groups (those in the 25-34 and 35-44 categories) experience a reduction in inequality from all factors, while others (those aged 45-54) witnessed increases inequality from all sources. In Italy (table 11) inequality increased for young and old households and fell for prime-age ones. This was largely driven by a reduction in inequality in self-employment for prime-age households and an increase in both inequalities from self-employment and from capital income for young and old ones. France exhibits a reduction in earnings inequality and an increase in inequality in incomes from capital for those over 35 years of age (table 12). The overall effect is a reduction in income inequality within all these groups.[8] In contrast, the two younger age groups exhibit only small changes in inequality, whether overall or for factor components.

5.3. The Scandinavian Countries

5.3.1 Trends in inequality by age

Figures 18 and 19 depict inequality by age group in Sweden and Norway. Both countries exhibit a much smaller difference in the degree of inequality across groups than the Anglo-Saxon economies. In Sweden, differences across age groups have been falling over time. For example, inequality in the 65-74 group was twice that in the 25-34 group in 1975, and only 1.05 in 2000. In the earlier decades, different groups had different experiences, but in the second half of the 1990s inequality increased for all age groups. One observation stands out: the high inequality level of the 55-64 group in 2000. Recall that this is the year in which capital income inequality rises sharply. As we will see below capital income inequality was particularly high for this age-group in 2000. A similar pattern is observed in Norway, with smaller differences across groups than in the Anglo-Saxon economies, and an increase in inequality at the end of the sample period for those between 35 and 64.

5.3.2. Factor contributions

When we decompose inequality by factor in each group (tables 13 and 14) both Sweden and Norway exhibit the same pattern of changes in the distribution of earnings: the contribution of

[8] The large increase in overall inequality observed for the 55-64 group in 1994 (see figure 17) is the result of large increases in both earnings and self-employment inequality for this group (not reported).

earnings inequality increased for household added less than 64 and fell for those older than 65. In Sweden, the increase in capital income inequality is largely concentrated in a particular age group, those between 55 and 64, for whom the contribution of capital income rose from 0.013 in 1975 to 0.861 in 2000. In Norway, the increase in capital income inequality is more dispersed, with households between 35 and 64 experiencing a substantial increase.

5.4. Within-group and Between-group Inequality

Our final table, table 15, presents a decomposition of within-group and between-group inequality for the US and Norway, as defined in equations (9) and (10). There are two reasons why we have chosen this particular comparison. First, we have observations for both 1979 and 2000 for the two counties. Second, these two countries experienced similar increases in overall income inequality between these two years. In Norway, the SCV rose from 0.314 to 0.513; in the US it increased from 0.306 to 0.521.

Recall that the term wg_f represents within-group inequality in factor *f*, while $\alpha_f wg_f$ captures the contribution of within-group inequality in factor f to overall inequality. Similarly bg_f represents between-group inequality in factor *f*, and $\alpha_f bg_f$ is the contribution of between-group inequality in factor f to overall inequality. The first two lines of table 15 indicate that the main source of the increase in inequality was higher within-group inequality, with inequality between age groups experiencing only small changes. There are, however, different patterns depending on which factor we consider. Although earnings inequality is greater within than between groups, the latter is nevertheless of large magnitude, being between 2 and 6 times smaller than within-group earnings inequality. In contrast, for capital income and, especially, for self-employment, inequality between groups is tiny compared to that within groups. In Norway in 2000, within-group inequality in self-employment incomes was 71 times higher than between group inequality. In the US it 177 times higher.

6. Conclusions

This paper aims at examining the contribution of various factors and population sub-groups to inequality in 8 industrial countries during the last three decades of the 20th century. Our results explain increasing inequality by a decomposition by the inequality index which is based on the coefficient of variation in income sources and population sub-groups defined by the age of household's head.

As in the literature, we observe that the overall income inequality and earnings inequality have risen in the different countries of our sample during the 80s and 90s. We have also showed

that at the beginning of the 70s, wage inequality played an important role in the overall inequality in all countries except in Norway. However, the contribution of this income source in overall inequality has followed different changes across the countries: it has diminished in Sweden and Norway while it is quite stable in Canada, France and the US. An important feature is that capital income explains a lot of total income inequality in Norway and Sweden at the very last of the 90s. Finally, we decompose the inequality index of each income sources into population subgroups which are defined by the age of the household's head.

Appendix I: Data source and descriptive statistics

Factor incomes

Data on incomes are obtained from the Luxemburg Income Study (www.lisproject.org, results obtained between 1/05/2007 and 18/12/2007). In LIS there are two files per country/year, a household file and a personal file. Only the former contains information on capital income, hence we have focused on household income. The data come from different surveys (see below), which have been harmonized by LIS. Table A.1. gives the list of countries and years on which we focus.

Earnings: In the LIS household file there is an aggregate variable for wage income (V1/V1NET = gross/net wages and salaries). However, for Italy and France this variable is only available net of employee social insurance and taxes.

Self employment income: We add farm self-employment self-employment income (V4) and non-farm self-employment income (V5 = Profit/loss from unincorporated enterprises; the income is recorded gross of social insurance contributions, but net of expenses).

Capital income : There is an aggregate variable for capital income (V8= cash property income). It includes cash interest, rent, dividends, annuities, private individual pensions, royalties, etc. It excludes capital gains, lottery winnings, inheritances, insurance settlements, and all other forms of one-off lump sum payments.

Total gross income: This variable (GI) includes wages and salaries, cash property income, self employment income but also pensions and transfers, both social and private. Total income is gross of tax income. It can be gross or net of employee social depending on if wages are net or gross of it.

Other income: We construct this variable as GI-(V1+V4+V5+V8). It consists of pensions, social and private transfers, and non-cash property income.

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Table 1 – Factor decomposition of income inequality: US and UK

		Year	Overall	Earnings	Self-emp Income	Capital Income	Other Incomes
US	**Inequality Index**	**1969**	0.370	0.450	11.983	16.002	1.830
		1979	0.306	0.468	10.786	8.580	1.608
		1991	0.328	0.536	11.407	7.082	1.343
		2000	0.521	0.771	17.346	6.687	1.452
		2004	0.558	0.870	17.546	8.064	1.220
	Absolute contribution	**1969**		0.255	0.077	0.044	-0.006
		1979		0.236	0.035	0.036	-0.002
		1991		0.251	0.031	0.045	0.001
		2000		0.429	0.054	0.041	-0.002
		2004		0.483	0.043	0.035	-0.002
	Factor Shares	**1969**		0.788	0.086	0.047	0.080
		1979		0.760	0.066	0.056	0.117
		1991		0.730	0.060	0.068	0.143
		2000		0.761	0.056	0.058	0.124
		2004		0.759	0.050	0.048	0.143
UK	**Inequality Index**	**1969**	0.284	0.386	9.117	30.722	1.096
		1979	0.232	0.488	11.514	8.891	0.577
		1991	0.482	0.798	18.35	17.257	0.7
		1999	0.586	1.056	22.259	9.705	0.684
		2004	0.616	1.212	20.51	11.233	0.735
	Absolute contribution	**1969**		0.192	0.033	0.067	-0.007
		1979		0.218	0.016	0.009	-0.01
		1991		0.296	0.099	0.101	-0.013
		1999		0.393	0.176	0.032	-0.015
		2004		0.466	0.144	0.021	-0.015
	Factor Shares	**1969**		0.76	0.074	0.041	0.126
		1979		0.728	0.048	0.028	0.196
		1991		0.652	0.079	0.07	0.199
		1999		0.644	0.091	0.041	0.224
		2004		0.655	0.088	0.035	0.223

Table 2 - Factor decomposition of income inequality: Italy and France

		Year	Overall	Earnings	Self-emp Income	Capital Income	Other Incomes
Italy	**Inequality Index**	**1989**	0.260	0.697	2.896	8.349	0.805
		2000	0.347	0.851	3.741	9.922	0.755
	Absolute contribution	**1989**		0.102	0.111	0.052	-0.004
		2000		0.115	0.144	0.071	0.017
France	**Inequality Index**	**1989**	0.315	0.728	14.037	25.395	0.834
		2000	0.275	0.682	15.804	11.420	0.755
	Absolute contribution	**1989**		0.194	0.065	0.038	0.018
		2000		0.174	0.050	0.035	0.016

Table 3 - Factor decomposition of income inequality: Sweden and Norway

		Year	Overall	Earnings	Self-emp Income	Capital Income	Other Incomes
Sweden	**Inequality Index**	**1987**	0.257	0.586	26.877	20.647	0.619
		2000	0.551	0.806	24.760	112.882	0.562
	Absolute contribution	**1987**		0.191	0.012	0.041	0.013
		2000		0.303	0.010	0.233	0.005
	Factor Shares	**1987**		0.636	0.026	0.041	0.297
		2000		0.643	0.022	0.043	0.292

		Year	Overall	Earnings	Self-emp Income	Capital Income	Other Incomes
Norway	**Inequality Index**	**1986**	0.222	0.461	6.034	3.781	0.772
		2000	0.513	0.541	15.360	50.700	0.625
	Absolute contribution	**1986**		0.163	0.048	0.010	0.002
		2000		0.211	0.066	0.247	-0.011
	Factor Shares	**1986**		0.675	0.094	0.037	0.193
		2000		0.654	0.067	0.066	0.212

Table 4 – Inequality within and between groups: US

	Year	Overall	Earnings	Self-emp Income	Capital Income	Other Incomes
Inequality Index	**1969**	0.370	0.450	11.983	16.002	1.830
	1979	0.306	0.468	10.786	8.580	1.608
	2000	0.521	0.771	17.346	6.687	1.452
	2004	0.558	0.870	17.546	8.064	1.220
Absolute contribution	**1969**		0.255	0.077	0.044	-0.006
	1979		0.236	0.035	0.036	-0.002
	2000		0.429	0.054	0.041	-0.002
	2004		0.483	0.043	0.035	-0.002
Within Group Inequality	**1969**	0.329	0.364	11.872	15.784	1.435
	1979	0.267	0.366	10.659	8.329	1.229
	2000	0.487	0.669	17.249	6.531	1.060
	2004	0.523	0.771	17.446	7.920	0.925
Between Group Inequality	**1969**	0.040	0.086	0.111	0.218	0.395
	1979	0.039	0.102	0.127	0.251	0.380
	2000	0.034	0.102	0.097	0.156	0.392
	2004	0.035	0.099	0.100	0.144	0.296
Contribution of Within Group Inequality to overall Inequality	**1969**		0.206	0.076	0.044	-0.005
	1979		0.185	0.035	0.035	-0.001
	2000		0.372	0.053	0.040	-0.002
	2004		0.428	0.042	0.034	-0.001
Contribution of Between Group Inequality to overall Inequality	**1969**		0.049	0.001	0.001	-0.001
	1979		0.051	0.000	0.001	0.000
	2000		0.057	0.000	0.001	-0.001
	2004		0.055	0.000	0.001	0.000

Table 5 - Inequality with and between groups: UK

	Year	Overall	Earnings	Self-emp Income	Capital Income	Other Incomes
Inequality Index	**1969**	0.284	0.386	9.117	30.722	1.096
	1979	0.232	0.488	11.514	8.891	0.577
	1999	0.586	1.056	22.259	9.705	0.684
	2004	0.616	1.212	20.510	11.233	0.735
Absolute contribution	**1969**		0.192	0.033	0.067	-0.007
	1979		0.218	0.016	0.009	-0.010
	1999		0.393	0.176	0.032	-0.015
	2004		0.466	0.144	0.021	-0.015
Within Group Inequality	**1969**	0.247	0.287	8.995	30.636	0.822
	1979	0.177	0.340	11.300	8.737	0.480
	1999	0.535	0.875	22.049	9.557	0.534
	2004	0.571	1.037	20.345	11.023	0.564
Between Group Inequality	**1969**	0.037	0.098	0.122	0.086	0.274
	1979	0.055	0.148	0.215	0.154	0.096
	1999	0.052	0.181	0.210	0.148	0.150
	2004	0.044	0.171	0.165	0.210	0.174
Contribution of Within Group Inequality to overall Inequality	**1969**		0.143	0.033	0.066	-0.006
	1979		0.152	0.015	0.008	-0.008
	1999		0.325	0.174	0.032	-0.011
	2004		0.401	0.144	0.021	-0.012
Contribution of Between Group Inequality to overall Inequality	**1969**		0.049	0.000	0.000	-0.002
	1979		0.066	0.000	0.000	-0.002
	1999		0.067	0.002	0.000	-0.003
	2004		0.066	0.001	0.000	-0.004

Table 6 – Inequality with and between groups: Norway

	Year	Overall	Earnings	Self-emp Income	Capital Income	Other Incomes
Inequality Index	**1979**	0.314	0.490	14.637	7.620	0.885
	2000	0.513	0.541	15.360	50.700	0.625
Absolute contribution	**1979**		0.174	0.147	0.011	-0.017
	2000		0.211	0.066	0.247	-0.011
Within Group Inequality	**1979**	0.262	0.342	14.495	7.525	0.606
	2000	0.457	0.384	15.147	50.519	0.403
Between Group Inequality	**1979**	0.052	0.149	0.142	0.095	0.279
	2000	0.056	0.157	0.213	0.181	0.223
Contribution of Within Group Inequality to overall Inequality	**1979**		0.121	0.146	0.010	-0.012
	2000		0.150	0.066	0.246	-0.007
Contribution of Between Group Inequality to overall Inequality	**1979**		0.053	0.001	0.000	-0.005
	2000		0.061	0.001	0.001	-0.004

Table 7 - Inequality with and between groups: Sweden

	Year	Overall	Earnings	Self-emp Income	Capital Income	Other Incomes
Inequality Index	**1975**	0.249	0.518	16.184	4.817	0.650
	2000	0.551	0.806	24.760	112.882	0.562
Absolute contribution	**1975**		0.221	0.023	0.008	-0.002
	2000		0.303	0.010	0.233	0.005
Within Group Inequality	**1975**	0.182	0.345	15.968	4.665	0.482
	2000	0.500	0.621	24.524	112.590	0.411
Between Group Inequality	**1975**	0.067	0.173	0.216	0.152	0.168
	2000	0.051	0.185	0.236	0.292	0.151
Contribution of Within Group Inequality to overall Inequality	**1975**		0.147	0.023	0.007	-0.002
	2000		0.233	0.010	0.233	0.004
Contribution of Between Group Inequality to overall Inequality	**1975**		0.074	0.000	0.000	-0.001
	2000		0.069	0.000	0.001	0.001

Table 8 - Absolute factor contributions by age: US

	Year	All	Earnings	Self-employment Income	Capital Income	Other Income
<25	1979	0.265	0.228	0.023	0.011	0.003
	2000	0.468	0.384	0.062	0.013	0.009
	2004	0.211	0.204	0.004	0.004	-0.001
25-34	1979	0.185	0.162	0.021	0.006	-0.004
	2000	0.413	0.366	0.031	0.018	-0.002
	2004	0.176	0.121	0.050	0.008	-0.003
35-44	1979	0.216	0.163	0.023	0.030	0.000
	2000	0.426	0.361	0.047	0.022	-0.003
	2004	0.217	0.134	0.042	0.042	-0.001
45-54	1979	0.218	0.169	0.024	0.021	0.004
	2000	0.430	0.357	0.042	0.031	0.000
	2004	0.361	0.237	0.085	0.040	-0.001
55-64	1979	0.351	0.219	0.049	0.077	0.006
	2000	0.547	0.418	0.063	0.057	0.008
	2004	0.353	0.250	0.073	0.029	0.001
65-74	1979	0.415	0.190	0.051	0.103	0.070
	2000	0.597	0.285	0.083	0.146	0.083
	2004	0.643	0.323	0.140	0.156	0.025
>74	1979	0.442	0.146	0.038	0.142	0.116
	2000	0.619	0.231	0.051	0.195	0.142
	2004	0.883	0.256	0.121	0.450	0.056

Table 9 – Absolute factor contributions by age: UK

	Year	All	Earnings	Self-employment Income	Capital Income	Other Income
	1979	0.141	0.139	0.004	0.000	-0.002
	1999	0.345	0.325	0.019	0.010	-0.008
<25	2004	0.688	0.219	0.480	0.001	-0.013
	1979	0.110	0.104	0.007	0.001	-0.002
25-34	1999	0.289	0.247	0.054	0.008	-0.021
	2004	0.453	0.424	0.039	0.007	-0.016
	1979	0.140	0.123	0.016	0.004	-0.002
35-44	1999	0.666	0.408	0.240	0.032	-0.015
	2004	0.415	0.325	0.092	0.011	-0.013
	1979	0.141	0.128	0.008	0.005	0.000
45-54	1999	0.495	0.301	0.178	0.022	-0.007
	2004	0.557	0.321	0.230	0.015	-0.009
	1979	0.228	0.204	0.007	0.018	-0.001
55-64	1999	0.413	0.271	0.092	0.036	0.014
	2004	0.821	0.675	0.092	0.046	0.007
	1979	0.365	0.200	0.019	0.072	0.073
65-74	1999	0.397	0.072	0.071	0.107	0.147
	2004	0.371	0.137	0.043	0.067	0.124
	1979	0.356	0.204	0.001	0.065	0.085
>74	1999	0.345	0.075	0.018	0.118	0.134
	2004	0.291	0.046	0.014	0.079	0.152

Table 10 – Absolute factor contributions by age: Germany

	Year	All	Earnings	Self-employment Income	Capital Income	Other Income
<25	1984	0.224	0.238	0.000	0.001	-0.015
	1994	0.319	0.297	0.028	0.000	-0.007
25-34	1984	0.799	0.738	0.054	0.013	-0.005
	1994	0.191	0.169	0.029	0.003	-0.010
35-44	1984	0.291	0.232	0.052	0.013	-0.006
	1994	0.160	0.108	0.048	0.010	-0.006
45-54	1984	0.188	0.139	0.043	0.009	-0.002
	1994	0.306	0.168	0.072	0.071	-0.005
55-64	1984	0.290	0.174	0.118	0.014	-0.017
	1994	0.269	0.253	0.019	0.014	-0.017
65-74	1984	0.281	0.086	0.041	0.066	0.088
	1994	0.226	0.101	0.017	0.027	0.082
>74	1984	1.060	0.071	0.114	-0.754	0.121
	1994	0.214	0.024	0.010	0.040	0.141

Table 11 – Absolute factor contributions by age: Italy

	Year	All	Earnings	Self-employment Income	Capital Income	Other Income
<25	1987	0.337	0.285	0.049	0.014	-0.012
	2000	0.321	0.107	0.163	0.040	0.011
25-34	1987	0.156	0.070	0.073	0.010	0.003
	2000	0.405	0.104	0.216	0.076	0.009
35-44	1987	0.200	0.064	0.107	0.024	0.005
	2000	0.182	0.084	0.074	0.020	0.005
45-54	1987	0.262	0.108	0.119	0.033	0.001
	2000	0.227	0.096	0.079	0.038	0.014
55-64	1987	0.302	0.129	0.149	0.028	-0.004
	2000	0.359	0.088	0.197	0.053	0.022
65-74	1987	0.313	0.103	0.118	0.045	0.048
	2000	0.544	0.096	0.177	0.209	0.062
>74	1987	0.248	0.087	0.037	0.037	0.087
	2000	0.385	0.047	0.053	0.144	0.140

Table 12 – Absolute factor contributions by age: France

	Year	All	Earnings	Self-employment Income	Capital Income	Other Income
<25	1984	0.138	0.142	0.003	0.000	-0.004
	2000	0.210	0.192	0.010	0.002	0.006
25-34	1984	0.147	0.126	0.026	0.001	0.003
	2000	0.177	0.149	0.023	0.008	-0.003
35-44	1984	0.188	0.163	0.033	0.005	0.003
	2000	0.177	0.128	0.044	0.008	-0.004
45-54	1984	0.226	0.213	0.020	0.007	0.008
	2000	0.228	0.152	0.065	0.015	-0.003
55-64	1984	0.379	0.236	0.055	0.030	0.082
	2000	0.341	0.196	0.058	0.069	0.018
65-74	1984	0.509	0.050	0.033	0.088	0.345
	2000	0.317	0.051	0.009	0.124	0.133
>74	1984	0.449	0.045	0.027	0.134	0.248
	2000	0.338	0.025	0.002	0.065	0.246

Table 13 – Absolute factor contributions by age: Sweden

	Year	All	Earnings	Self-employment Income	Capital Income	Other Income
<25	1975	0.212	0.190	0.003	0.001	0.018
	2000	0.305	0.287	0.003	0.005	0.010
25-34	1975	0.126	0.096	0.024	0.002	0.003
	2000	0.222	0.210	0.002	0.003	0.007
35-44	1975	0.118	0.111	0.006	0.003	-0.002
	2000	0.304	0.276	0.004	0.025	-0.002
45-54	1975	0.164	0.141	0.015	0.009	-0.001
	2000	0.279	0.250	0.012	0.023	-0.006
55-64	1975	0.221	0.190	0.023	0.013	-0.005
	2000	1.095	0.214	0.006	0.861	0.015
65-74	1975	0.257	0.129	0.020	0.017	0.091
	2000	0.234	0.059	0.010	0.060	0.106
>74	1975	0.190	0.029	0.016	0.022	0.124
	2000	0.250	0.018	0.003	0.110	0.121

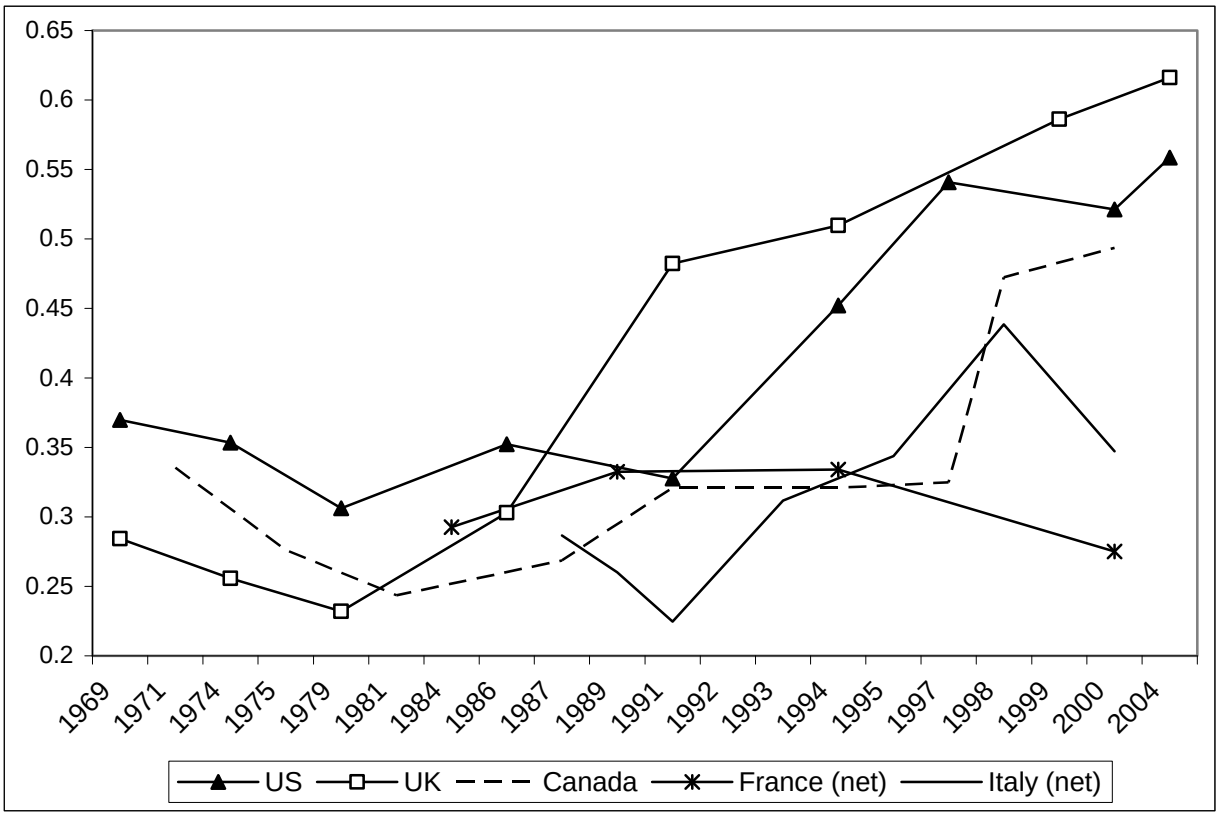
Table 14 – Absolute factor contributions by age: Norway

	Year	All	Earnings	Self-employment Income	Capital Income	Other Income
<25	1979	0.259	0.140	0.116	0.000	0.003
	2000	0.280	0.261	0.005	0.003	0.011
25-34	1979	0.178	0.074	0.118	-0.007	-0.006
	2000	0.188	0.153	0.027	0.012	-0.003
35-44	1979	0.121	0.076	0.044	0.005	-0.003
	2000	0.459	0.149	0.062	0.252	-0.004
45-54	1979	0.330	0.120	0.199	0.015	-0.005
	2000	0.499	0.124	0.067	0.315	-0.006
55-64	1979	0.223	0.131	0.091	0.013	-0.012
	2000	0.465	0.160	0.049	0.267	-0.011
65-74	1979	0.360	0.173	0.128	0.032	0.027
	2000	0.234	0.087	0.051	0.039	0.056
>74	1979	1.119	0.034	0.822	0.116	0.148
	2000	0.281	0.044	0.017	0.095	0.126

Table 15 – Decomposition of factor incomes inequality into within and between groups inequality

		within-group wg_f		between-group bg_f		$\alpha_f wg_f$		$\alpha_f bg_f$	
		US	*Norway*	*US*	*Norway*	*US*	*Norway*	*US*	*Norway*
1979	All	0.267	0.262	0.039	0.052				
2000	Income	0.487	0.457	0.034	0.056				
1979	Earnings	0.366	0.342	0.102	0.149	0.185	0.121	0.051	0.051
2000		0.669	0.384	0.102	0.157	0.372	0.150	0.057	0.057
1979	Self-em.	10.659	14.495	0.127	0.142	0.035	0.146	0.000	0.000
2000	Income	17.249	15.147	0.097	0.213	0.053	0.066	0.000	0.000
1979	Capital	8.329	7.525	0.251	0.095	0.035	0.010	0.001	0.001
2000	Income	6.531	50.519	0.156	0.181	0.040	0.246	0.001	0.001
1979	Other	1.229	0.606	0.380	0.279	-0.001	-0.012	0.000	0.000
2000	Income	1.060	0.403	0.392	0.223	-0.002	-0.007	-0.001	-0.001

Figure 1 – Income inequality: the Squared Coefficient of Variation



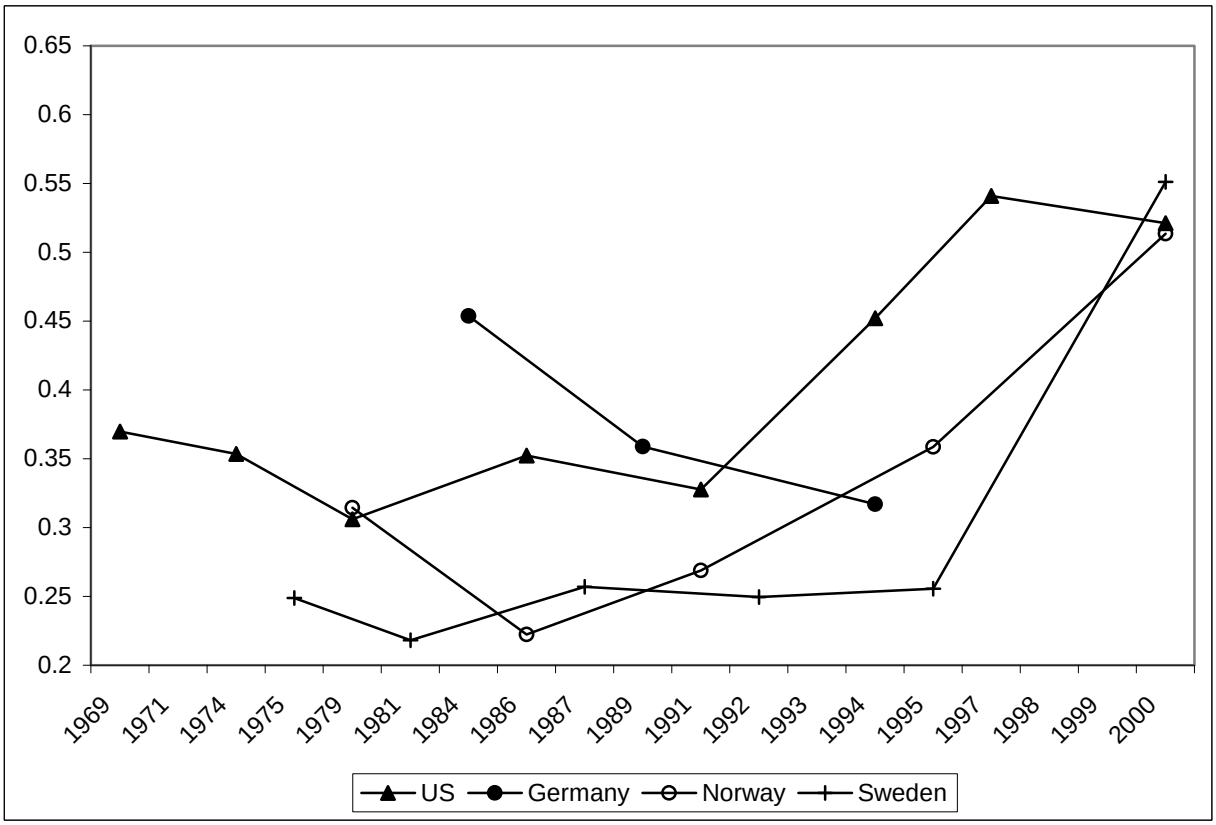
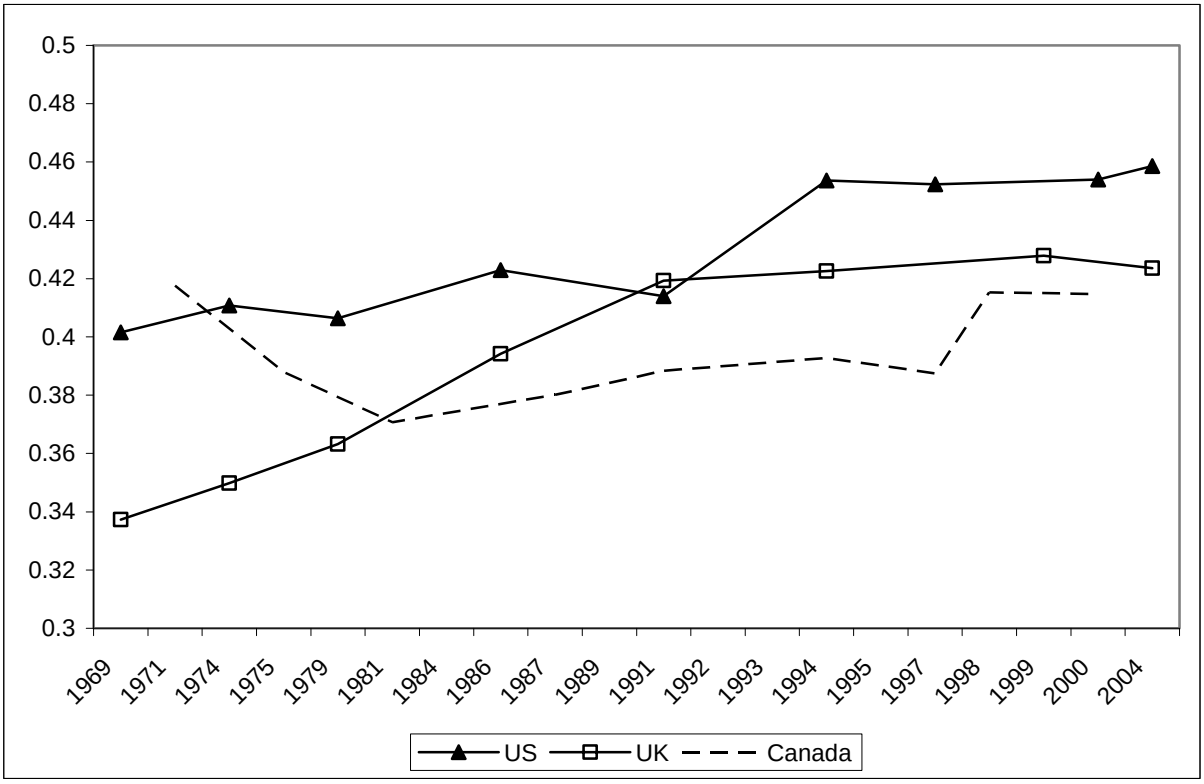


Figure 2 – Income inequality: Gini coefficients



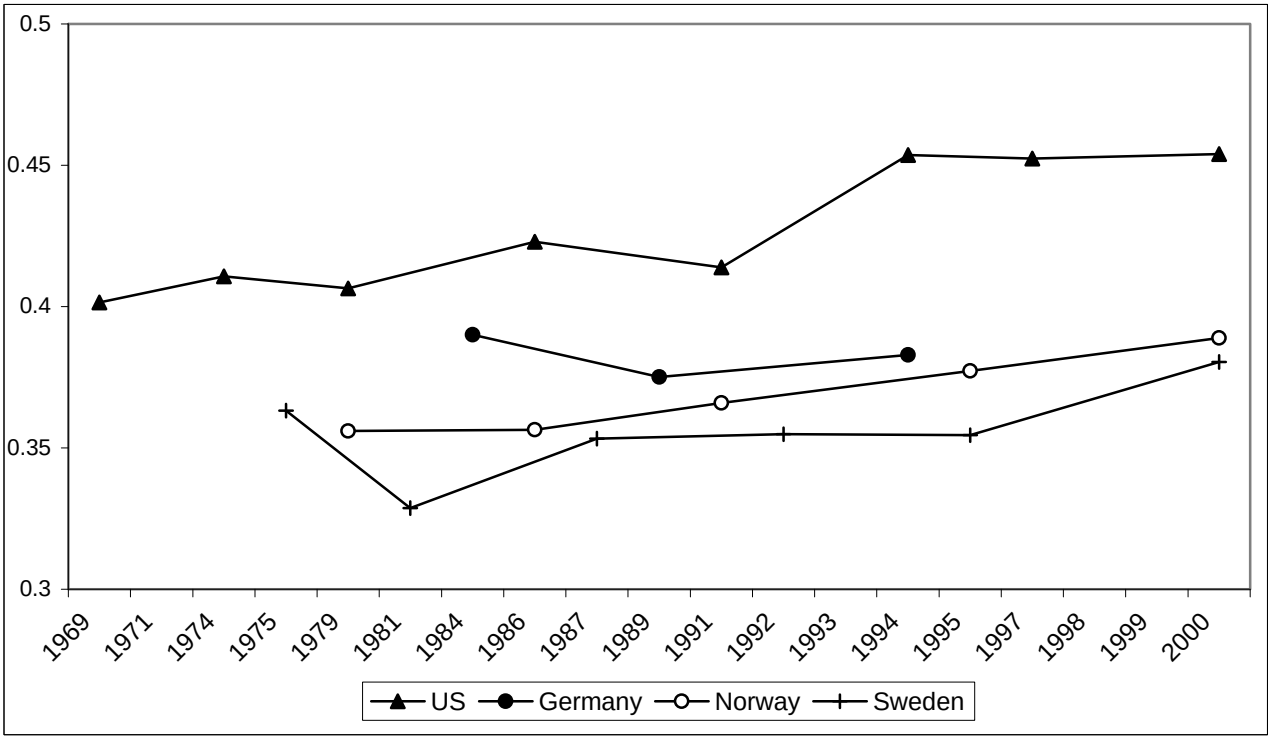


Figure 3 –Relative factor contributions: US

Figure 4 –Relative factor contributions: Canada

Figure 5 –Relative factor contributions: UK

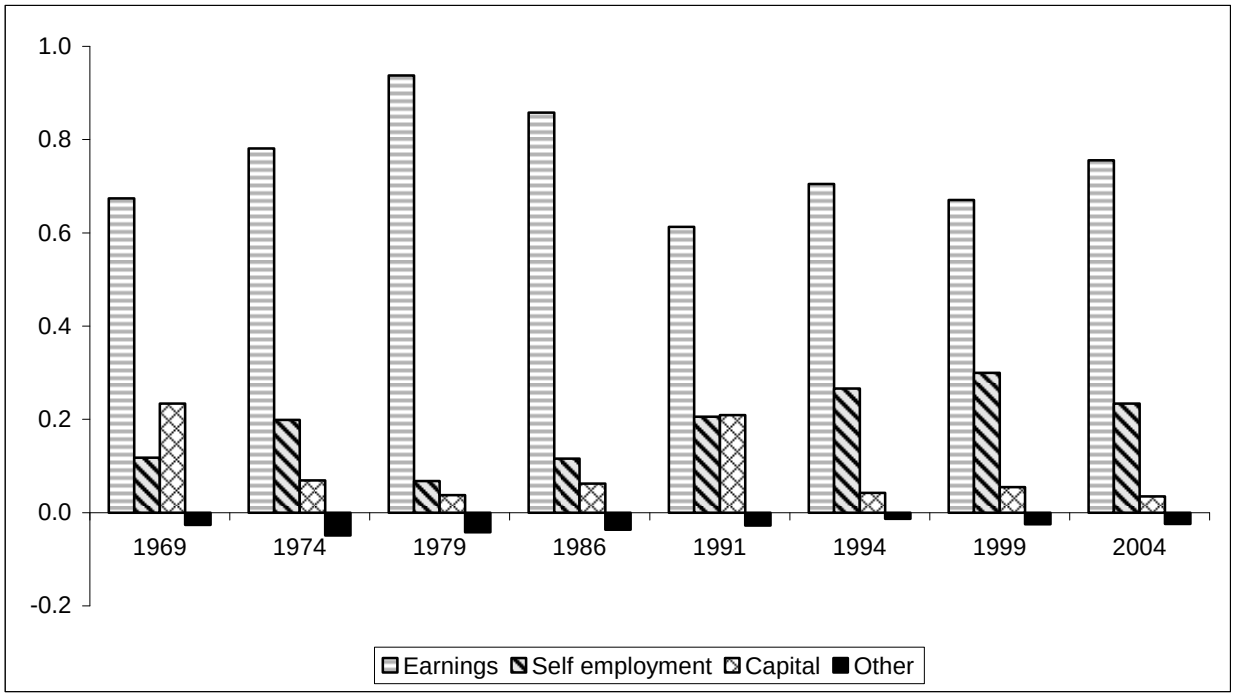


Figure 6 – Relative factor contributions: Germany

Figure 7 – Relative factor contributions: Italy (net wages)

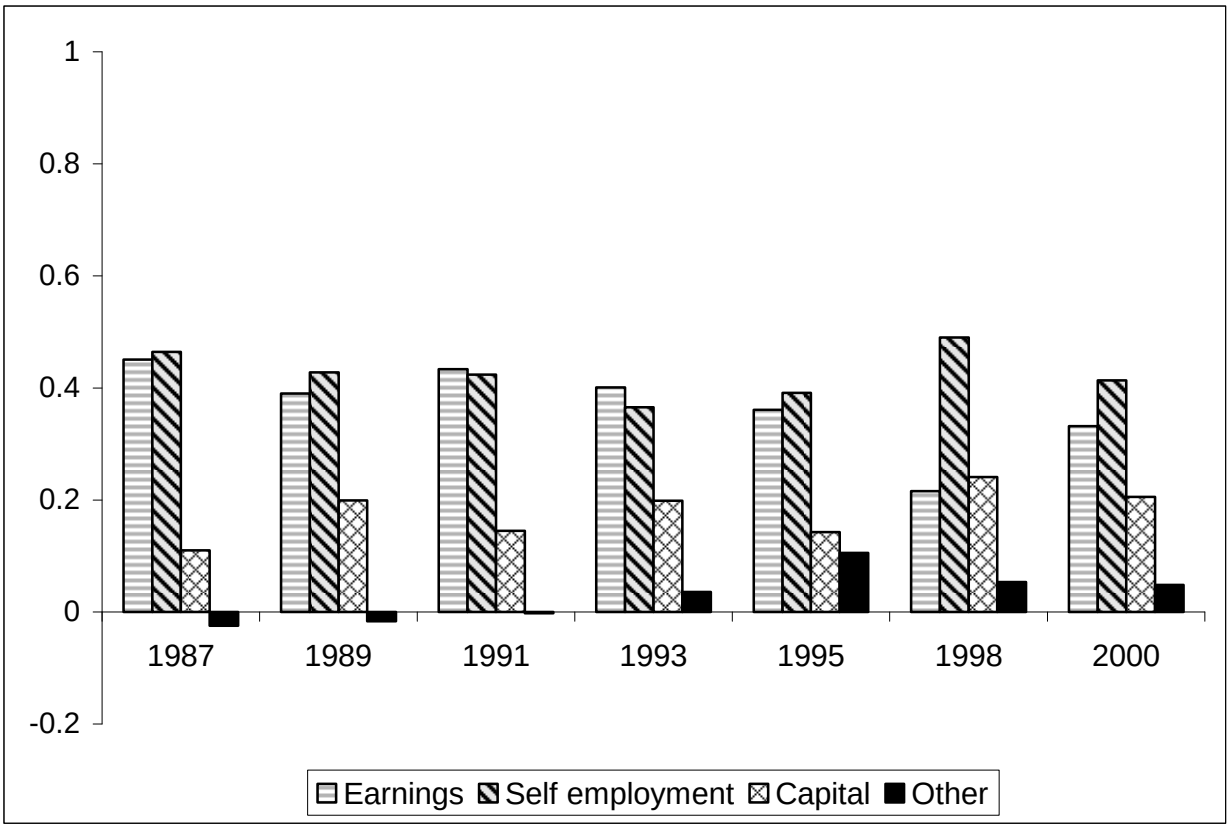


Figure 8 – Relative factor contributions: France (net wages)

Figure 9 –Relative factor contributions: Sweden

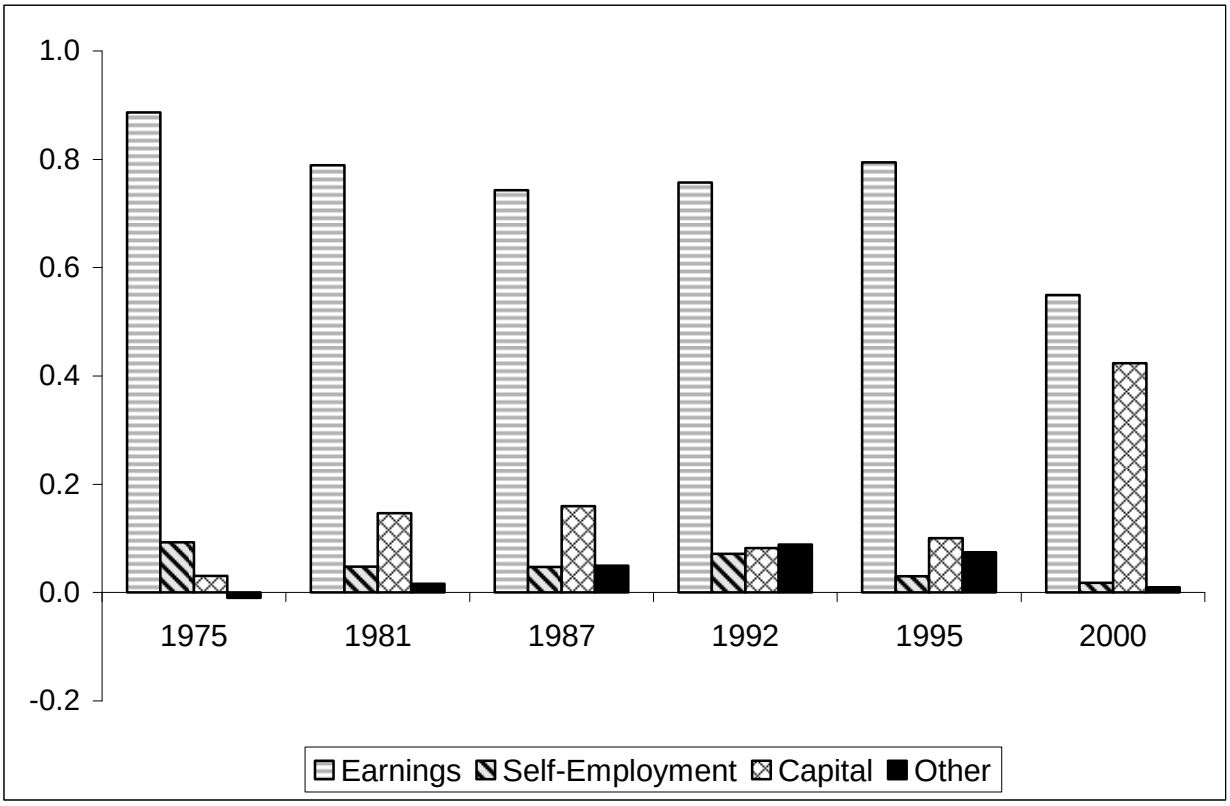
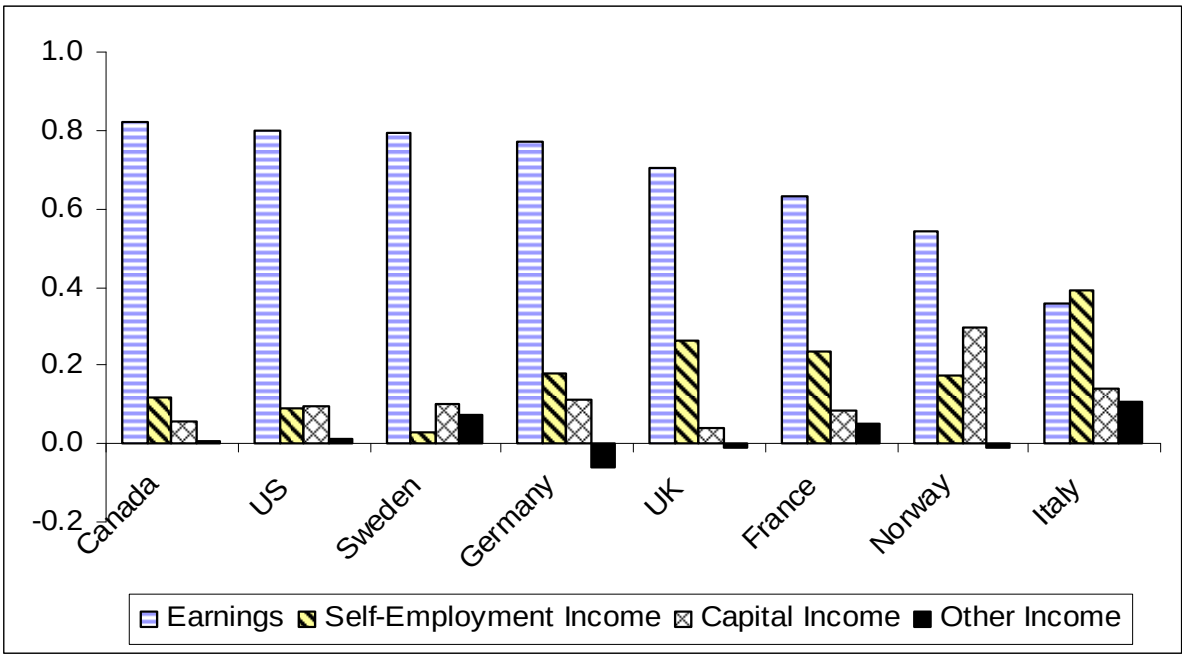


Figure 10 – Relative factor contributions: Norway

Figure 11– Relative factor contributions: All countries

11 a : 1994/1995



11 b : 1999/2000

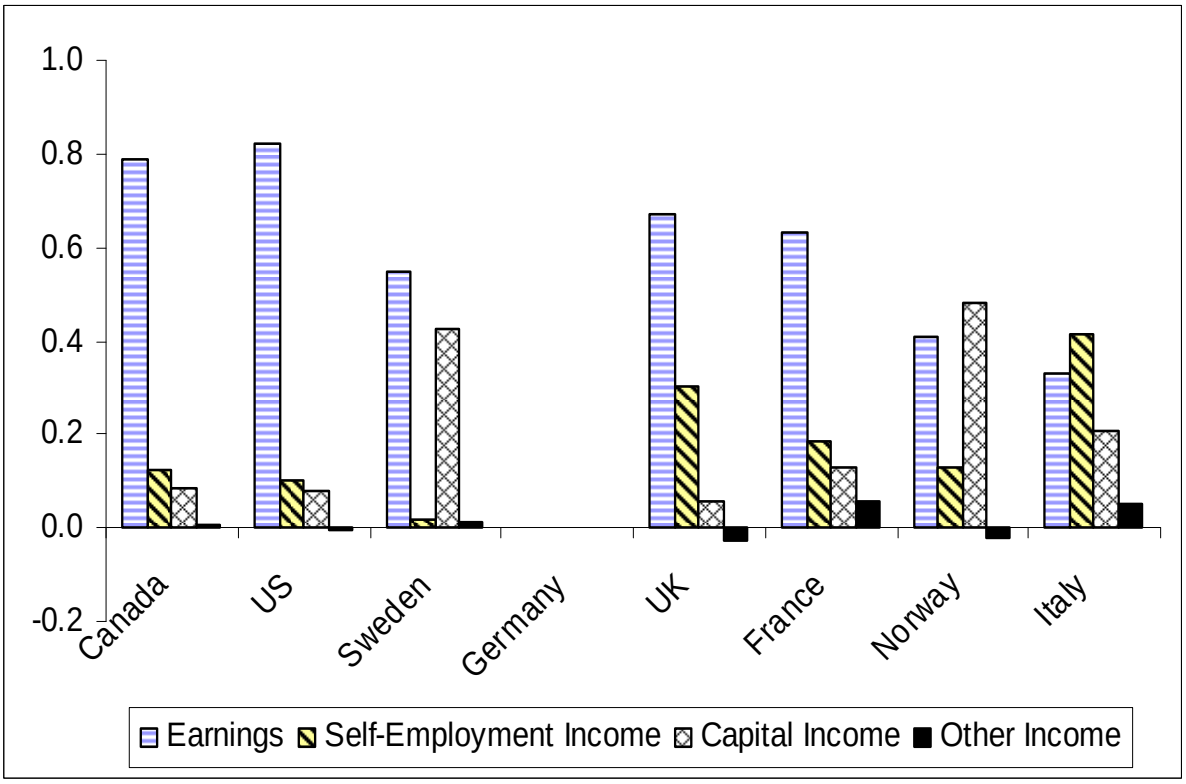


Figure 12 – Income Inequality by Age Group : US

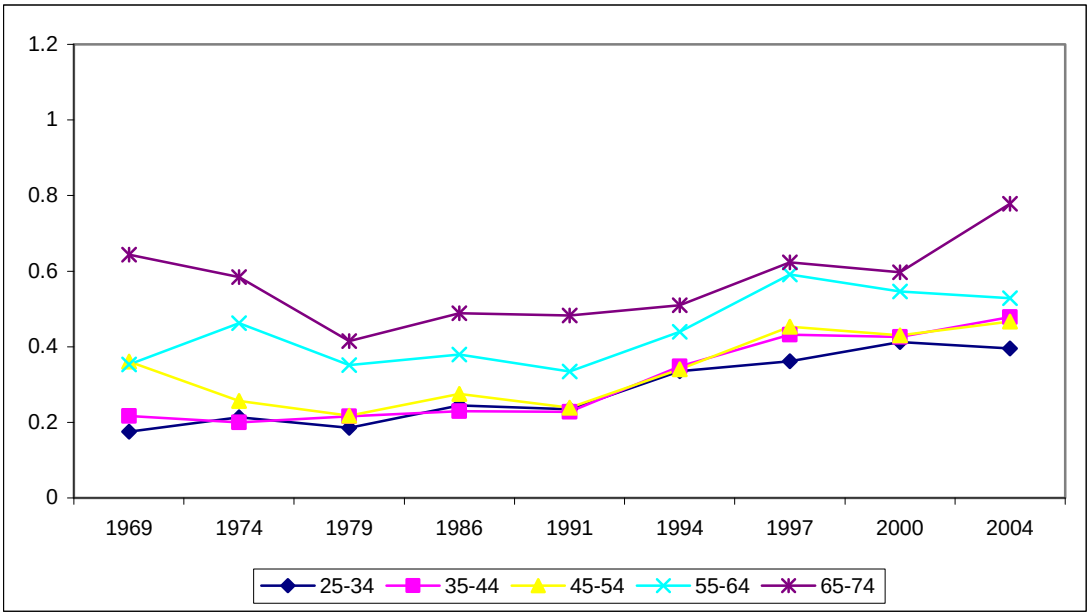


Figure 13 – Income Inequality by Age Group : Canada

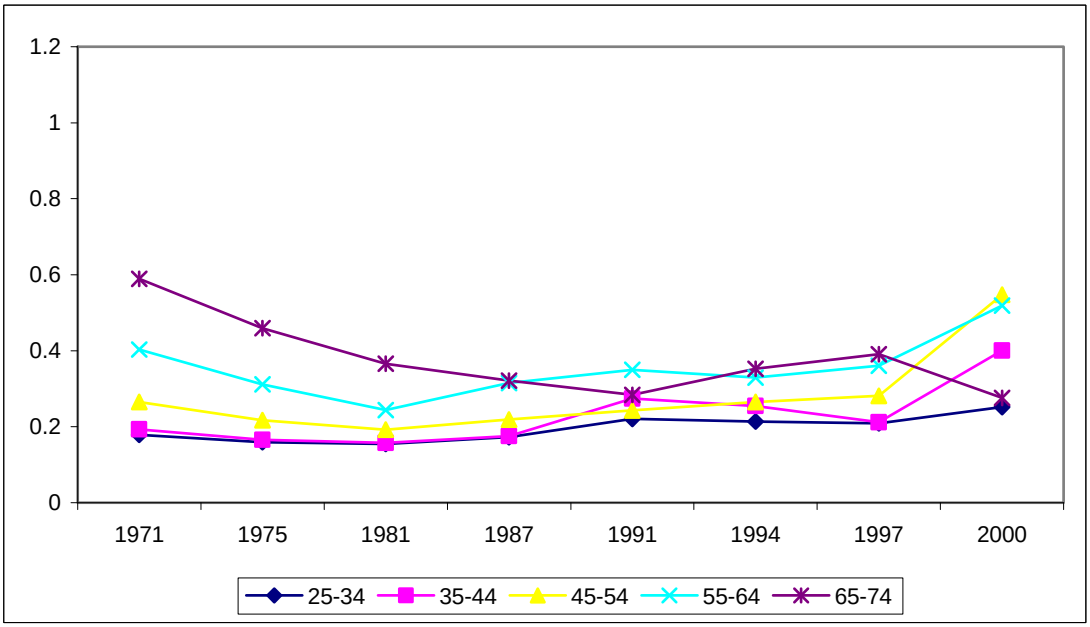


Figure 14 – Income Inequality by Age Group : UK

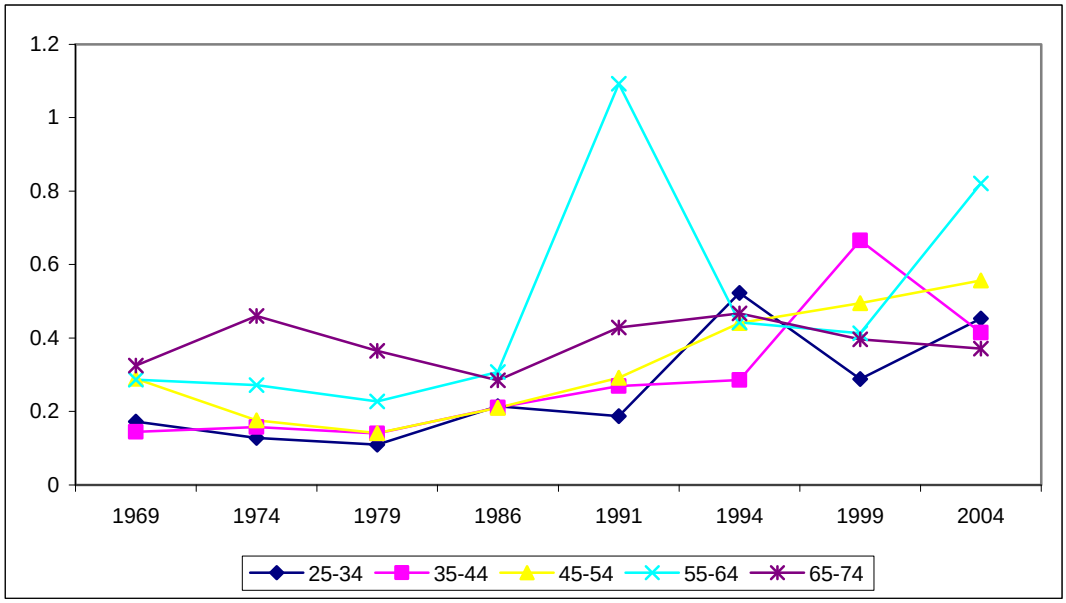


Figure 15 – Income Inequality by Age Group : Germany

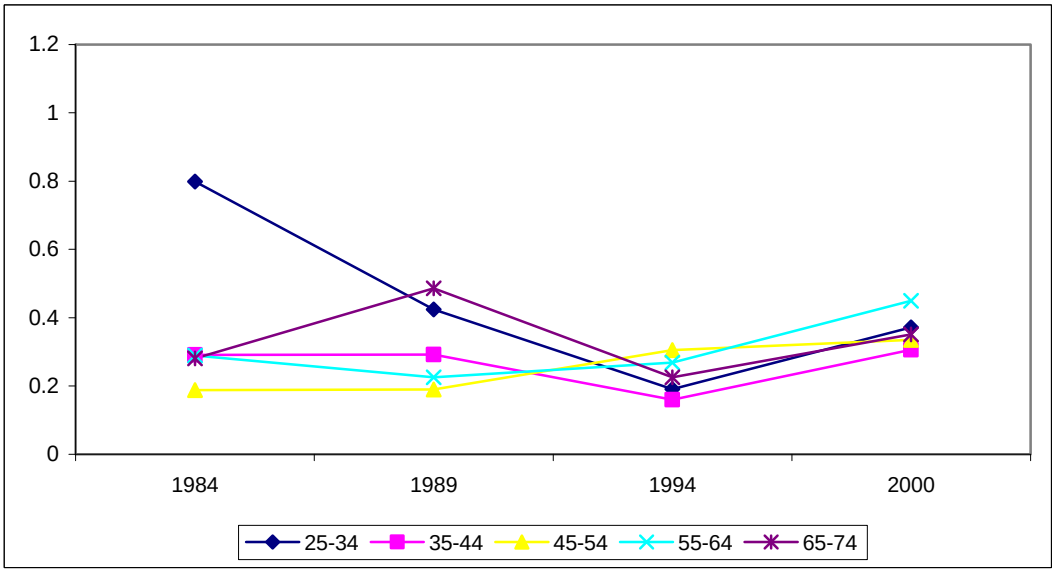


Figure 16 – Income Inequality by Age Group : Italy (net wages)

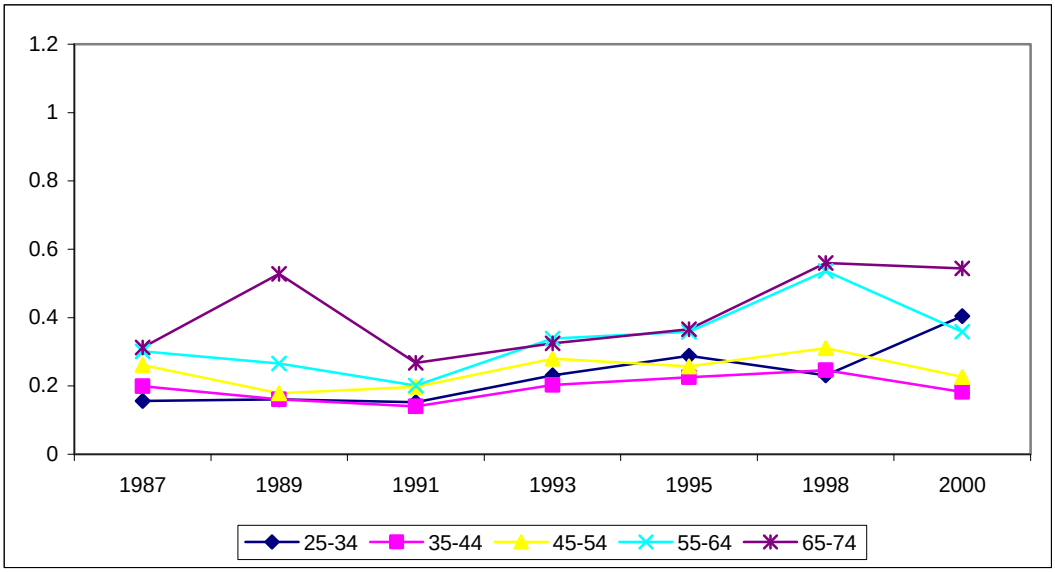


Figure 17 – Income Inequality by Age Group : France (net wages)

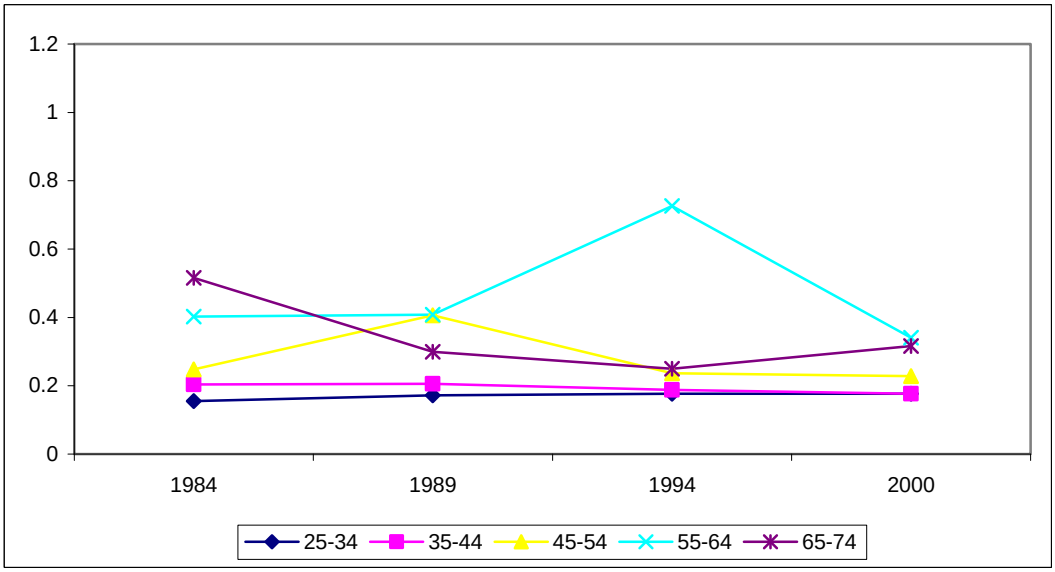


Figure 18 – Income Inequality by Age Group : Sweden

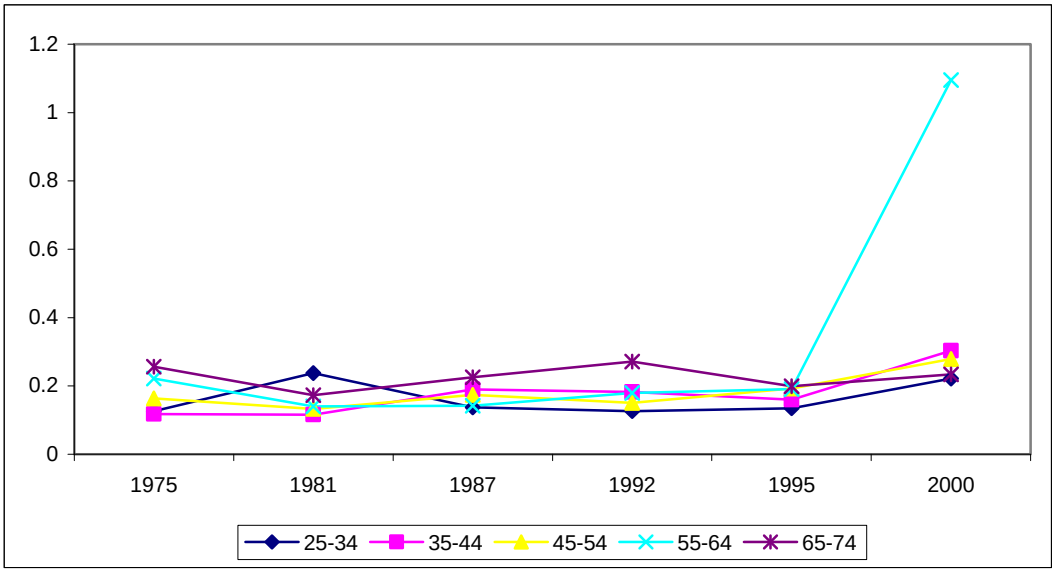


Figure 19 – Income Inequality by Age Group : Norway

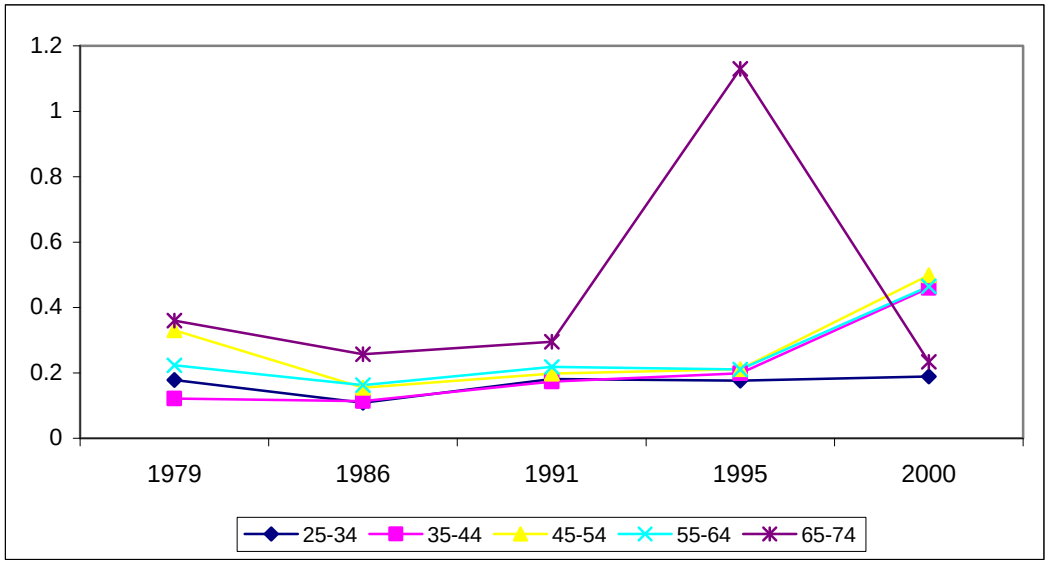


Table A.1 – Luxemburg income study surveys

Country	Year	Survey
Canada	1971, 1975, 1981, 1987, 1991, 1994, 1997	Survey of consumer finances
	2000	Survey of Labour and Income
France (Gross Income)	1979, 1984	Survey of Individual Income Tax Returns *("Revenus fiscaux")*
France (Net Income)	1984, 1989, 1994, 2000	Household Budget Survey *("Enquete budget famille")*
Italy	1987,1989, 1991, 1993, 1995, 1998, 2000	Survey on Household Income and Wealth *("L'Indagine Campionaria sui Bilanci delle Famiglie Italiane")*
Norway	1979, 1986, 1991, 1995, 2000	Income Distribution Survey *("Inntekts- og Formuesundersokelsen husholdninger")*
Germany[9]	1984, 1989, 1994	German Socio-Economic Panel (GSOEP) *(„ Das Sozio-oekonomischePanel(SOEP)* or *Leben in Deutschland")*
Sweden	1975, 1981, 1987, 1992, 1995, 2000, 2005	Income Distribution Survey *(« Inkomstfördelningsundersökningen »)*
UK	1969, 1974, 1979, 1986, 1991	Family Expenditure Survey
	1994, 1999, 2004	Family Resources Survey
US	1969, 1974, 1979, 1986, 1991, 1994, 1997, 2000, 2004	Current Population Survey

[9] Datasets earlier than 1994 refer to the former West-Germany, whereas the ones of 1994 2000 refer to unified Germany.