

Fritzell, Johan

**Working Paper**

## Still Different? Income Distribution in the Nordic Countries in a European Comparison

LIS Working Paper Series, No. 238

**Provided in Cooperation with:**

Luxembourg Income Study (LIS)

*Suggested Citation:* Fritzell, Johan (2000) : Still Different? Income Distribution in the Nordic Countries in a European Comparison, LIS Working Paper Series, No. 238, Luxembourg Income Study (LIS), Luxembourg

This Version is available at:

<https://hdl.handle.net/10419/160910>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

**Luxembourg Income Study  
Working Paper No. 238**

**Still Different? Income Distribution  
in the Nordic Countries  
in a European Comparison**

**Johan Fritzell**

**May 2000**

# **Still different? Income distribution in the Nordic countries in a European comparison**

*Johan Fritzell*

## **Introduction<sup>1</sup>**

A bottom-line of the interest in welfare state programs and cross-national variations in the pattern, size and structure of various social policies, is that we expect that the welfare state is an institution that greatly affects our lives and well-being. A further assumption is that this impact differs between individuals and social categories, and accordingly that the degree of inequality in the distribution of societal goods and resources has a scope to be affected. Hence, in so far as there is cross-national variation in these programs, "outcome" inequality may systematically vary across nations.

It has been said that one characteristic of the Nordic welfare states is that they pursue a different conception of equality, with a particular strong focus on equality of result (or outcome), as opposed to different equality of opportunity or different equity conceptions (for a discussion see e.g. Esping-Andersen 1996). This Chapter aims at looking at a central outcome in this respect, namely economic resources or to be more precise the distribution of annual income. Without making a thorough review it seems safe to say that earlier research on income distribution and poverty by and large have confirmed the view that the Nordic countries have a low degree of income inequality and also very low poverty rates (see e.g. Atkinson, Rainwater and Smeeding, 1995; Gottschalk and Smeeding, 1997 and forthcoming; Jäntti and Danziger forthcoming; Korpi and Palme 1998; OECD, 1998; Rainwater and Smeeding 1995). In fact

Finland, Sweden and Norway (mostly in that order) in the late 1980s came out as having the lowest inequality levels among OECD countries according to most inequality estimates presented by Atkinson, Rainwater and Smeeding (1995) in their thorough study for OECD.

The overarching question raised in this Chapter concerns whether or not we still find prove of a specific Nordic model when we from a variety of perspectives look at the distribution of income and compare the outcomes with that prevailing in three other European countries. Do we find any evidence on convergence, divergence or similar trends? Within this general issue four types of questions are raised and analyses on each of them will be conducted. The first issue raised concerns the level of inequality. Are the Nordic countries still in the mid1990s really that different from other European countries in terms of overall income inequality? Second, to what extent do we find commonality and variation with regard to recent changes in inequality? Do we find any evidence for a convergence with respect to the degree of inequality? Third, what is the role of cash benefits of welfare states in the income distribution process? This will be studied by comparing the size and distributional profile of income transfers and by comparing the extent of inequality when comparing before and after cash benefits is taken into account. Fourth, to what extent do we find cross-national similarity and variation with regard to the relative income position and poverty risks for more specific social categories when comparing their situation in the mid90s with that prevailing about a decade before? Is it still the case that specific vulnerable groups fare relatively better in the Nordic countries as indicated by earlier research?

---

<sup>1</sup> The author wishes to thank Anders Björklund and Hannu Uusitalo for valuable comments on earlier drafts of this chapter.

The data will exclusively be based on the Luxembourg Income Study (LIS), which have been the source of most of the ample evidence on comparative income poverty and inequality estimates among the Worlds richer nations during recent decades. The next section discusses some earlier and recent argumentation concerning why, and how, we should expect convergence to take place. The empirical section follows thereafter and consists of three parts. The first will present an overview of levels and trends in inequality among the countries to be included in the study. The middle section explores the role of welfare state redistribution - cash benefits - in producing the outcomes presented in the first section. The third part will go into more detail in the relative positions of some social categories, both with regard to changes in average incomes and relative poverty rates. All analyses are based on comparisons between the four Nordic countries, Denmark, Finland, Norway and Sweden, and data from Germany, the Netherlands, and the United Kingdom. Data will cover the period from around the mid 1980s to the mid 1990s. The chapter ends with a summary and a concluding discussion concerning whether or not the presented results are supportive of the Nordic uniqueness in this respect.<sup>2</sup>

### **Convergence, similarity or cross-national variation?**

The idea that a convergence of various social phenomenon would take place across nation-states was a basic feature of most post-World War II theories of societal changes. It is perhaps most commonly referred to in relation to what is often phrased the "logic of industrialism", a theoretical perspective of pluralistic modern societies, moving according to the law of the system (see, i.a. Kerr et al. 1960). This school of thoughts, with a clear functionalistic approach, emphasises cross-national similarity rather than variation, and the path supposedly followed by industrial societies give rise to a convergence (of attitudes, power structures,

---

<sup>2</sup> The issue of gender equality seen from an income distribution perspective will be thoroughly analysed in Chapter 4 of this volume and is therefore not discussed in this chapter.

levels of inequality etc.). The assumed underlying mechanism is such that technological and economic rationality engender convergence among all industrial societies, despite differences in historical and political context. It is important to note that proponents of this school did not necessarily claim that welfare state redistribution as such was unimportant rather: "...*taxes and benefits taken together have a highly egalitarian effect on income distribution*" (Wilensky 1975: 94). What was claimed was rather that welfare state development followed in the general pathway of industrialism and could be explained in terms of this logic. Accordingly any cross-national variation could largely be explained by cross-national variations in the terms of economic, industrial development.

Going back even further, and focus more specifically on the distribution of income, one can note that the idea of income distribution as a "natural law" has a much longer history. The first theories on the degree of inequality and the shape of an income distribution were solely based on mathematics and statistics. To give but one example Pareto, about 100 years ago, thought that he had found a law (a coefficient) that could summarise the shape of the distribution of income, and several other scholars followed in his footsteps with more sophisticated models but solely based on stochastic processes and probability theory (for a review see e.g. Pen 1971).

From a social science perspective the extremely influential work of Kuznets (1955, 1963) is more interesting. Once again the outcome, the degree of inequality, was according to Kuznets' hypothesis to follow a more or less universal law (the inverted-U curve). As societies move from agrarian to industrial production income inequality first increase, then stabilise, on a fairly low economic level, and from that on decrease. Although based on both historical data and economics, Kuznets's hypothesis once again stress cross-national similarity and convergence in

which the level of economic development is the basic factor for understanding both long run trends and differences between nations in the size distribution of income. As long as economic growth continues this hypothesis basically suggests that the long run trend should be towards a more compressed income distribution. It should be stressed that Kuznets primarily was investigating the societal change leading *to* industrialism not the societal changes we are witnessing today within the richer world. Further, Kuznets himself is not so deterministic in his writings, in which he writes about several counterbalancing forces. It is rather the many followers of Kuznets that has tended to regard the inverted-u curve as a law.

The idea of similarities and convergence has more recently taken a new shape and that, of course, forms one of the basic points of departure for this whole volume. However, now it is instead the widening of income differentials that is postulated to be inescapable. The main empirical evidence for such an opinion is the experience of the U.K. and the U.S. which made Atkinson so eloquently label the hypothesis "the Transatlantic Consensus" (Atkinson 2000). It is important to note that several of the suggested contenders of why income inequality has increased so dramatically in the United States, such as for example the technological change explanation and the deindustrialisation thesis, are to large extent global theories and tend to imply a more or less law-notion character of change that nation states cannot escape.<sup>3</sup> In our global economy multi-national firms more easily can move labour intensive production to countries with lower wage costs levels thereby, together with technological changes, creating a change in the relative demands for high skilled vs. low skilled workers which in turn will lead to higher wage inequality and/or alternatively increasing unemployment. Further, it is a commonly held view that the higher degree of internationalisation of our economies means that

---

<sup>3</sup> These explanations have though been forcefully critiqued, see e.g. the discussions and reviews in Levy and Murnane (1992), Gottschalk and Smeeding (1997).

the scope of action for national welfare states have diminished. Also the growing importance of multi-national organisations, such as the EU, are believed to foster convergence. And indeed these ideas have some face validity in the light of research on trends of rising income inequality. No doubt, income inequality has increased dramatically in these countries since around 1980. Further, few, if any, countries have experienced a substantial decline in inequality since then.

What, then, have empirical research more generally shown concerning similarities and convergence? It seems safe to say that these theories and hypotheses of convergence so far have been strongly refuted by comparative income distribution research. Instead findings can be seen as quite supportive of the fact that income inequality as such differs substantially also among the richer nations of the world. Moreover, the provision of the welfare state and its influence on the distribution of income and relative poverty rates shows a high degree of cross-national variation. In other words instead of supporting any ideas of convergence, profound cross-national variation have been noted both with regard to level of inequality and changes thereof. Consequently on the most general level it is rather, at least indirectly, the idea of "politics and institutions matter" which have gained support.<sup>4</sup> However, it should also be said that Gottschalk and Smeeding (forthcoming) claim that seen in a longer time perspective we tend to find a U-shaped pattern of inequality in many countries, that is they make a case for "similar trends", at least with regard to longer-run directions.

It is of course beyond the scope of the present chapter to fully falsify any of the major hypotheses discussed above. What can be scrutinised is to what extent the results from the

---

<sup>4</sup> Atkinson (2000) has recently put forward the concept of social norms as an important explanatory factor behind changes of income differentials. Since what is regarded as acceptable pay norms may vary both over



empirical analyses are in line with explicit or implicit suggestions in different theoretical discussions. Is it still the case that we can distinguish a specific Nordic model when looking at a central outcome such as the distribution of income, or have the Nordic countries finally converged into a more European like level and structure of inequality?

### **Data and methods**

The analyses in the empirical sections are solely based on the comparative database *the Luxembourg Income Study (LIS)*. This database consists of harmonised cross-national microdata on income for about 25 countries (with 3 to 4 waves for most of them), thereby providing the best comparative source for analyses of levels and trends of income distribution, income poverty etc (for a presentation of the data and the national data sources used see e.g. Atkinson, Rainwater and Smeeding 1995 or the homepage at <http://lissy.ceps.lu>).

In this study data for seven countries will be analysed, ideally from the mid80s to the mid90s. However, since LIS-data do not cover annual observations there is also a slight cross-national variation in years between observations. The four non-Nordic European countries that the Nordic countries (Denmark (1987/1992), Finland (1987/1995), Norway (1986/1995), and Sweden (1987/1995)) will be contrasted against are Germany (1984/1994), the Netherlands (1987/1994) and the United Kingdom (1986/1995).<sup>5</sup> The first empirical section will also, in case of availability of data, include inequality estimates from survey years in the middle of these observation points. The choice of countries is partly practical, data must obviously be available in LIS, but also coherent with most of the other chapters of this volume thereby including

---

time and between countries and also be influenced by politics this could still be seen as a hypothesis that are in line with the "politics matter" tradition.

<sup>5</sup> The years within parenthesis refer to the two data points that mostly will be studied. The starting year thereby coincide with the ending year in most of the analyses presented in the OECD study by Atkinson, Rainwater

countries usually characterised as belonging to different "welfare state regimes". Were we not to find any substantial cross-national difference, we surely would have a rather good case for the convergence thesis. One should be aware of the fact that we only have two or three observation points at our disposal in the empirical investigation. Ideally one would like to have *comparable* yearly data to more carefully study trends. It is therefore not possible to fully rule out the possibility that changes depending on for example the business cycle can have some impact on the results to be presented.

### *Income and equivalence scale*

Most of the analyses will be based on the disposable, i.e. post-tax and transfer, income of the income unit, which in this case is the household (though slight variation exists in defining households). However, when studying the role of cash benefits the comparison is instead between market, i.e. pre-tax and transfers, income and gross income, i.e. pre-tax and post-transfer. In order to be able to compare income between households of differing size and structure all incomes are adjusted with an equivalence scale. However, since there are no objective superior way of constructing an equivalence scale a simple one-parametric scale that relatively recently has become common in cross-national research is used.. If  $y$  denote disposable income and  $n$  the number of persons in the household the equivalent disposable income (EDI) is:

$$EDI = y/n^e$$

It has been shown that most equivalence scales in use with reasonably high accuracy can be estimated by the factor  $e$  (Buhmann et al. 1988). The lower one sets  $e$ , the higher economies of scale assumed. If  $e$  is set to zero one basically assumes that it is irrelevant how many persons

---

and Smeeding (1995) the most thorough descriptive study of recent date on cross-national variation in the degree and trends of income inequality.

are living in the household. If, on the other hand,  $e$  is set to 1 one assumes no economies of scale and thus all incomes are calculated per capita. If  $e$  is set to 0.5, which it is here, it means that the equivalence scale is the square root of the number of persons in the household. Thus, a four-person household in this case must have twice as high disposable income in order to have the same equivalent income as a single-person household. Despite the fact that the household is the income unit, the unit of analysis is the individual living in each household, that is to say we count persons rather than households (for a discussion on the theoretical motivations, see e.g., Cowell 1984).

It should also be mentioned that the Swedish household definition means that an individual is regarded as a separate household from the age of eighteen, regardless of whether or not the person lives with her parents. This obviously presents some comparability problem since their income will be grossly underestimated (and somewhat overestimated for parents). In order to avoid the major part of this problem, all results will, for all countries, refer to persons living in households headed by someone aged 20 or above, except for the general overview in the first section.<sup>6</sup>

## **Empirical results**

### *Levels and changes of income inequality*

Unlike the situation prevailing some twenty years ago we have today substantial evidence on the fact that there exists rather profound cross-national differences in the degree of inequality in income distributions also among the rich (post-) industrialised nations (see e.g. Atkinson, Rainwater and Smeeding, 1995; Fritzell, 1993; Gottschalk and Smeeding, 1997 and

---

<sup>6</sup> In a recent report from a Swedish government commission we have been able to show that the inequality trends, which are the focus in this first section, remain fairly unchanged when having a household definition

forthcoming). Do the LIS-data then support the uniqueness of the Nordic countries so often assumed in the welfare state literature? A first glance at that issue is presented in Figure 1. This figure shows how the overall level of inequality in the distribution of equivalent disposable income in our seven-country sample according to LIS-data how changed from the mid80s and onwards. For all countries, except Denmark and Germany, we have three observation points, the middle one referring to years around 1990.<sup>7</sup>

Figure 1 about here

The upper part of the figure gives the level of inequality according to the perhaps most widely used measure, that is the Gini coefficient, whereas the lower part presents the so-called 90/10-percentile ratio. The latter measure shows the relative distance, in terms of the ratio between the upper and lower end of the distribution of equivalent disposable income. For example, if this ratio equals three it means that someone located at the 90<sup>th</sup> percentile of the distribution lives in a household in which the equivalent income is three times higher than for someone located at the 10<sup>th</sup> percentile.

A first glance at the Figure reveals that the Nordic countries indeed have a comparatively low degree of inequality, regardless of which time period or which of the two inequality measures we are focusing. Further, the relatively low degree of income inequality is seen in all four countries and at least a simple ocular inspection of the estimates and changes thereof must be said to quite supportive to the view of Nordic distinctiveness in terms of overall inequality in

---

more in line with that prevailing in other countries, even though the level of inequality becomes somewhat lower (SOU 2000:3).

<sup>7</sup> The numbers reported in Figure 1 are basically the "semi-official" estimates reported on the homepage of LIS. However, the data of some countries, in particular the Netherlands, have recently undergone some revisions.

the distribution of income. As regard changes of inequality in these seven countries from the mid80s to the mid90s the data indicate that inequality either is rather stable or increase. The exception to this rule is Denmark for which both indices indicate a decrease of inequality between the only two observations that are available, but note that unfortunately the latest observation year we have for Denmark is already in 1992.<sup>8</sup> Without going into details on this matter it seems as if the data are supportive of a conclusion reached already when comparing inequality trends during the 80s. The degree of the increase differs and some countries are better characterised as having roughly constant inequality but it is rather uncommon to find countries in which inequality has decreased substantially.<sup>9</sup>

From the viewpoint of single countries, one can note that the increase is remarkably high in Germany and the United Kingdom. One obvious candidate for the development in Germany is the reunification but at least a static inspection of the data do not support that hypothesis since the increase of inequality roughly remain at the same level when citizens in Eastern Germany are excluded from the analysis. The increase in the United Kingdom is perhaps expected but still astonishing. Few countries within OECD experienced such a dramatic increase as United Kingdom up to mid80s. Still, the LIS-inequality estimates of 1986 did obviously not imply that the peak of inequality in the United Kingdom was reached. However, it can also be noted that after the first years of the 1990s it seems as if inequality is fairly stable also in the U.K as indicated by the fact that both inequality indices are fairly similar in 1991 and 1995 in Figure 1 (this conclusion is also supported by national series, see. e.g. Atkinson 2000; Jenkins 1999).

---

The estimates presented here are based on these corrected data. In the Dutch case I also follow the "LIS-recommendation" of only including households in which full income information is available.

<sup>8</sup> Although somewhat surprising this result was also presented by Aaberge et al. (1999). However, as also pointed out by Gustafsson et al. (1999) different national series give contradictory indications with regard to inequality trends in Denmark from the mid80s.

How, then, can we summarise the changes from a Nordic perspective? To what extent can we see any sign of a more alike situation, in terms of inequality, between the Nordic countries on one hand and Germany, Netherlands, and the U.K on the other? In Figure 2 this is presented graphically in the following way: If we, for both the mid80s and the mid90s observations points, treat the Nordic countries as one group and calculate the unweighted average Gini and Percentile ratio and then compare that with each of the three Non-Nordic countries in terms of relative distance we get a rough indication of convergence or divergence.<sup>10</sup> As seen in Figure 2 the outcome of such an exercise is for example that the Gini coefficient in the U.K., compared to the Nordic average, was 32,4 per cent higher in mid 1980s whereas it was 48,8 per cent higher in 1995. Even though we here clearly see that our inequality measures behave somewhat differently it seems evident that the distance between the Nordic countries on one hand and Germany and the U.K. on the other have increased substantially between the mid 1980s to the mid 1990s. The outcome in the comparison with the Netherlands is less clear. This reflects that our inequality indices report a slight different direction of the change taken place in the Netherlands. Still, according to both indices the Nordic countries in the mid90s all have a lower degree of inequality compared also to the Netherlands.

Figure 2 about here

In sum we find no evidence that the Nordic countries in terms of levels of inequality should have become more, so to speak, European. Given the macroeconomic background these

---

<sup>9</sup> In their review of national studies on income distribution trends in the study by Atkinson, Rainwater and Smeeding (1995, Ch. 5) they only found two out of sixteen countries in which there was a fall in inequality in the 1980s, namely Italy and Portugal.

results are quite startling. Between our measurement years unemployment skyrocketed in Finland, increased to earlier unthinkable rates in Sweden, and also increased substantially in Denmark and Norway. Despite this there are no sign whatsoever of any closing gap between the groups of countries studied here with regard to income inequality. Finally one should of course here be aware of the small-n problem. The choice of comparison might certainly be of utmost importance for the impression given. Still, given the total lack of support for the general idea of convergence is rather overwhelming, whereas the Nordic countries if anything seem to have become more alike. The lack of a clear relationship between unemployment and income inequality in the Nordic countries is confirmed in a recent study by Aaberge et al. (2000), in which they thoroughly analyse the impact of the marked increase in unemployment on income distribution during the economic recession of the early 1990s.

Scandinavian readers might be somewhat confused by the small changes reported in Figure 1. National studies tend to report larger increases of inequality than what is reported here (for Finland see Uusitalo 1999; for Norway see Ministry of Health and Social Affairs 1999; for Sweden see SOU 2000). One of the main reasons for this is that the LIS-data, for comparability reasons, do not include realised capital gains (or losses) in the measurement of disposable income. Realised capital gains have in many countries tended to become a more important component over the last decades. It is by no means self-evident how capital gains should be treated in the measurement of income distributions. Capital gains realised during a particular year may refer to an accumulation taken place over several years. Recent writings on this issue, basically following the Haig-Simons definition of income, seem to suggest that ideally both realised and unrealised capital gains should be included but only the part referring

---

<sup>10</sup> On several occasions we will refer to the two observation points as being in the mid1980s and the mid1990s. One should remember that some cases deviate strongly from that. In particular Denmark for which the measurement years are 1987 and 1992.

to the particular period for which the analysis is done (see Everaers, van der Laan and McDonald 2000). At any rate, most national reports in the Scandinavian countries do include realised capital gains which then increase both the level of income inequality but more importantly also tend to lead to widening income differentials over time. A second issue is that the ending year of the data presented in Figure 1 is 1995. In at least Finland and Sweden the above-mentioned sources indicate that income inequality has increased in the second half of the 1990s. That is, no or only minor change of inequality is reported during the worst recession years but instead it seems to be the case that it is during the up-swing of the economy inequality is increasing. In both countries capital income (incl. realised gains) has been a major driving force in explaining this recent increase in national trend data.

#### *Welfare state redistribution: the influence of cash benefits*

It is of course of great interest to focus specifically on the role of the welfare state in producing the cross-national variation reported above. For that purpose we will study to what extent, and by which magnitude, welfare state benefits influence cross-national variation of inequality. The analysis is conducted in the following procedure. We compare inequality in equivalent market income with equivalent gross income, that is the change as we move from the pre-transfer to post-transfer income distribution.<sup>11</sup> It should be stressed that the analysis has a static character, which do not detect any feedback effects of the redistributive programs. It is solely what has been called the first-order effects of the welfare state that is under scrutiny (Dodge 1975; Uusitalo 1989). Further, it should be noted that some of the transfers are taxed and ideally one would only take the net benefits into account.

---

<sup>11</sup> The difference between these two income concepts is accordingly that the latter includes various social insurance transfers and also universal and income- and means-tested cash benefits and assistance.



The analysis has a two-fold focus. First, do the cash benefits of the Nordic countries have a more distinct redistributive pattern that distinguishes them from the other European countries? The changes of inequality as we move from market income to gross income (i.e. including cash benefits) is basically dependent on two factors: the redistributive size of transfers and the degree to which transfers are directed towards those with low-income, what is often referred to as targeting. Second, what are the changes in the role of cash benefits when comparing the situation in the mid90 with that prevailing in the mid80s? The second question, of course, being related to the overall issue of whether or not we still find proofs of a distinct and unique Nordic model. What is to be expected as regard the changes in the 90s in the Nordic countries? One could easily have arguments both for and against an outcome of "less distinctiveness". On one hand, the reduction of inequality could decrease due to the fact that the economic recession led to various cuts in benefit schemes, on the other hand the fact that more people in the 90s could not rely solely on the market to uphold their living standard will presumably lead to a stronger impact of welfare state redistribution in the income distribution process. The extent to which these forces will counterbalance each other is also dependent upon changes in the "redistributive profiles" of various cash benefits, i.e. to what extent cash benefits are concentrated towards those with low market income.

This analysis is performed only for those between 20 and 64 years of age.<sup>12</sup> The reason being that the results otherwise would be strongly dependent on the relative number of pensioners since they more or less ultimately have very low market income. However, it should be remembered that one major cash benefit thereby is excluded from the analysis. Otherwise

---

<sup>12</sup> From hereon all analyses are conducted with households in which the household head is aged at least 20, in order to minimise the definition problem of Swedish households.

households are included in the analysis irrespective of whether or not they have any market income.

The measure of dispersion is the percentile ratio but this time focusing on the 80<sup>th</sup>/20<sup>th</sup> percentile ratios.<sup>13</sup> Figure 3 gives the percentile ratios for both the pre- and post-transfer income distributions, and thereby indirectly the reduction of this ratio when comparing before and after taking cash benefits into account. If we start by looking within the Nordic countries we note several interesting changes over time. First, the recession in the early 90s obviously has led to a quite substantial increase of market income inequality, no doubt to a large extent caused by increased unemployment and an even larger decline in labour force participation. Second, the reduction of inequality as we include cash benefits have in all four countries increased quite dramatically. This in turn means that the importance of cash benefits have increased and this force is obviously much more marked than any cuts in benefit levels etc. Third, this lead to an outcome of only minor increase in the percentile ratios of gross income so in that respect one could state that the Nordic welfare states acted according to intentions. There is a remarkable resemblance in this general picture among the four countries, although slight variation of course exists in single estimates.

Figure 3 about here

As for the three non-Nordic countries one could first note that the inclusion of cash benefits also leads to a clear reduction of inequality in all cases. It is indeed a general finding in all income distribution research (but note the feedback effect argument above). In fact, nowhere is

---

<sup>13</sup> The rationale for using this ratio is that a fraction in each country has zero market income and in fact this fraction is above 10 per cent in the U.K. which makes all ratios meaningless.

the reduction of inequality so large (according to this measure) as is the case for the United Kingdom. However, it should be said that this primarily reflects the huge percentile ratio of market income (note that the bar in the U.K. case actually should be drawn much taller).

In sum one could say that what is evident from this analysis is one of a similar trend, although from different starting points. In all countries market income inequality has increased when comparing the mid/late80s to the mid90s. The welfare state modification of this increase varies however strongly and produces a picture with a clear Nordic cluster. The general picture of very small changes of inequality in the Nordic countries basically resemble the earlier presented results even though the focus this time solely was on the potential working population and only focused upon the role of cash benefits.

We now turn to the issue of how these changes in inequality when including cash benefits come about. This is done by studying both the size of cash benefits and how it is distributed over the income distribution, but this time restricting to the latest available year of observation for each country. Table 1 reports how total transfer income, for the same age group as earlier, is distributed over income groups divided by quintiles. That is, we divide the distribution in five equal groups sorted by equivalent gross income. We then calculate how large fraction of total transfer is located into each income group. As is evident in all countries a larger sum of cash benefits are distributed to those in the lower end of the distribution, but some cross-national variation is evident. In general the picture given is that transfer in the Nordic countries to a *lesser* extent is concentrated towards the lower income groups. However, it seems as if the Netherlands have a distributional profile that is fairly similar to Denmark, Finland and Sweden,

whereas the distribution of cash benefits in Norway is not that different from Germany. So the country grouping is less clear in this analysis.

The reason why in particular Finland and Sweden still have such a strong reduction as we move from market to gross income is given in the last column of the table. Here the average transfer income is reported in relation to gross income. Once again Norway deviates from the other Nordic countries. Thus the average transfer income is higher both in the Netherlands and the United Kingdom compared to Norway. Similar analyses have earlier been presented for example by Atkinson, Rainwater and Smeeding (1995) and by Korpi and Palme (1998). In both cases they however included also old-age pensioners. A comparison with their results shows that the profiles generally tend to be less targeted towards to bottom of the income distribution when including the elderly and their income. However, as far as cross-national variations in profiles are considered most results here are similar to the ones presented by the above-mentioned sources.

Table 1 about here
--------------------

In sum we could then say that the relative size of cash benefits is one important factor as to why gross income inequality is relatively low in Denmark, Finland and Sweden. The low inequality in Norway seems neither to be dependent on extremely high targeting of transfers nor on the size factor. Instead, as seen already in Figure 3 the distribution of market income is much more compressed in Norway than anywhere else. It should be said that this plausibly does not only reflect low earnings inequality among the working population but also the high employment rate. A totally different picture is presented for the U.K. The reported redistributive budget size is not particularly low and the extent of targeting seems to be highest

among the countries studied. The outcome in the U.K. therefore seems rather to be the reverse than the case in Norway. The high degree of inequality in the U.K. is mainly caused by the unequal distribution of market income, which is by far the most unequal among these seven countries. In other words, this fairly crude analysis has highlighted that in order to understand the relatively high degree of income inequality in the U.K. we need to consider why market income inequality is so high and particularly why market income is so poor in the bottom end of the distribution. This conclusion is congruent with a recent analysis by Bradbury and Jäntti (1999) of why the poverty rates of children in the U.K. and some other English-speaking countries are so high. Their analysis shows that, for example, the major difference between the U.K. and the Nordic countries is not the amount of social transfers to low income families with children but rather the much lower market income in these families in the U.K.

Similarly, Kangas and Ritakallio (1999), in a comparison between France and the Nordic countries, report that differences in what they label social structure strongly affects poverty rates and poverty alleviation. Labour force participation rates within household were the most important part of that structure deviating France from the Nordic countries. In other words, also their study indirectly singles out differences in market income as a major factor. The above-mentioned results should not, however, be taken as a proof that welfare state actions are unimportant. In fact, several of the plausible mechanisms for results like these have to do with how welfare state programs influence the possibility to support oneself via the labour market, such as for example by providing child care programs.

#### *Income changes and relative poverty rates among vulnerable groups*

Even though the Nordic countries have a history of ranking low in overall inequality their deviance in earlier comparative income and poverty research have been most marked when

scrutinising the situation for specific social categories often regarded as particularly vulnerable. For example, it has been found that Sweden differed more when comparing relative poverty rates among the elderly and single mothers than was the case in e.g. overall poverty rates (Fritzell, 1992).<sup>14</sup> Not only among the elderly, but also among the latter group cash benefits have been seen as one major explanatory factor of this finding (Smeeding 1992; see also Sørensen 1994). However, it is not self-evident that these differences still are as profound as they were in the 1980s. It is to this issue we now turn. Old age has at least since the days of Rowntree's classical study been associated with a higher risk of poverty (Rowntree 1901). However, with more generous pension levels and maturity of various pension plans this association is nowadays less self-evident. A "new" vulnerable group often highlighted in various policy documents regarding poverty is instead single parents.

Beside the elderly and single parents the income situation for a third category will be looked upon here, namely the situation for the relatively young adults in each country and how their income levels and relative poverty rates have changed during recent times. Many studies have pointed to the fact that the young rather than the old have a high risk of relative poverty in modern societies, suggesting that Rowntree's curve of life cycle of poverty have to be redrawn quite drastically to cover the situation of today (cf. Kangas and Palme forthcoming). The focus on the young is also motivated by earlier results within this project (Fritzell 1999). The most striking change in relative income when comparing average incomes in the mid1980s to the mid1990s by different social categories (age, class and gender) referred to the relative deterioration of the younger segments of the populations. That outcome held for all three

---

<sup>14</sup> However, it should be noted that also other countries seem to provide de a reasonably good economic situation for single mothers, despite the fact that they usually are categorised into other welfare state models, as a recent comparison between Belgium and Sweden shows (Morissens 1999).

countries for which data were available (Finland, Norway and Sweden).<sup>15</sup> Also a recent OECD report that highlighted the younger segments of the populations as a new prime vulnerable group in the OECD countries (OECD 1998).

To what extent, then, is this a general feature of the countries included in this study? Table 2 reports relative poverty rates for those aged 20-29, those between 60 and 74, those aged 75 and above (age of head of household), and also the relative poverty rates for single parents. The adopted poverty line is a common one in comparative research, namely 50 per cent of the median equivalent disposable income. This threshold is arbitrary, as basically any income poverty line, and there is of course no qualitative difference between someone just below the threshold in comparison with someone just above. When looking at these numbers one should bear in mind that the exact location of the poverty threshold can be very important for distinguishing how large fraction falls into relative poverty. This is perhaps especially so among the elderly and single parents, the latter also being a relatively small population group which makes the estimate less precise. Still, the percentages give us a hint on cross-national differences of the size and composition of the bottom end of the income distribution.

Table 2 about here

As for the Nordic countries the overall picture given by Table 2 is no doubt that the risk of relative poverty over time has changed to the favour of the elderly versus the young in line with the maturity of pension plans and cohort replacement. In these countries we find a substantial decline in relative poverty rates among both the elderly age categories that are distinguished. In fact, for both age groups, it is more than halved in all countries but Norway

---

<sup>15</sup> The data used in that analysis was the so-called Scandinavian level of living surveys.

where the fractions have decreased by, roughly, a third. Conversely we find that relative poverty rates among the younger segments of the populations have increased in all seven countries, but the change in relative position versus the elderly is less obvious in the Non-Nordic countries since the rates actually in some cases have increased also among the elderly.

The relative poverty rates for the age group 60-74 is perhaps the best example of the fact that old age nowadays has less association with poverty. In fact in the mid90s in all seven countries studied here this age group has a lower prevalence of relative poverty than is found in the population at large (not seen in the table). One could make an argument that due to cohort replacements this, in the future, will hold also for the oldest old in many countries. In the mid90s only the Swedish rate among those aged 75 and above is lower than the overall average within each country. It is however, not so self-evident, due to gender differentials in mortality the vast majority of the oldest old tends to be single women that often tend to have low pensions.

The last column in Table 2 reports the fraction of single parents with equivalent income below the poverty threshold. Here we find startling differences between the Nordic countries and the three other European nations. In the U.K. close to four out of ten have incomes below 50 per cent of the median and the percentage is even slightly higher in Germany. In contrast it remains relatively low in the Nordic countries.

The relative poverty estimates reported above do obviously not tell us how the average income situation has evolved for these categories. We therefore turn to that issue. Figure 4 shows how the equivalent income for those aged 20-29, 60-74 and those above 74 have *changed* between our observation points in relation to the change of the overall mean (set to 1) within each



country. Hence, a number below 1 implies that the group has lost relatively speaking, and a number above 1 the opposite. Note that it is only relative changes that are seen in the figure. One cannot from that conclude anything about cross-national differences in levels, nor whether or not the young or the old have the lowest level within each country. The focus on change is motivated by the fact that it is less influenced by particular choice of equivalence scale.

Figure 4 about here

A very distinct pattern is revealed for the Nordic countries in this figure. In all of them the young have lost and the elderly won thereby confirming the picture given in Fritzell (1999). However, this pattern is not evident in any of the other three European countries. In fact, and somewhat surprisingly, we can note a slight decrease in relative income for the elderly groups in Germany, the Netherlands, and the United Kingdom. A result that, however, confirms with the changes in relative poverty rates presented above.

Accordingly once again we find a distinct Nordic pattern. How is then the economic deterioration of young adults in the Nordic countries to be explained? An obvious candidate here is the educational expansion taken place. However, in an earlier analysis solely conducted on three of the Nordic countries it was shown that the relative income loss of the young persisted even when students were excluded from the analysis (Fritzell 1999). Another possible mechanism behind this finding is indeed related to specific features of the Nordic model. One feature of the Nordic welfare state programs is that they are generous, with many earnings-related systems once you are within the labour market. Many of the young have found it increasingly difficult during this time period, due to generally lower employment opportunities, to become "insiders". This in turn is related to labour market regulations which basically

favours elderly workers versus younger. One hypothesis would therefore be that there is a so called "floor-problem" in the social insurance systems, also related to the labour market, of the Nordic countries that we perhaps do not find to the same degree in other welfare states. It remains to be seen whether or not the growing economic vulnerability of young adults is a mere period effect or a more permanent feature of modern societies. It remains also to be seen what impact this will have both for the well-being of individuals and on a societal level. In both respects this has to do with the long-term consequences. In other words, it will no doubt depend upon whether or not a substantial fraction of the younger generations also will have more long-term difficulties to become insiders as they grow older.

The last bar for each country in Figure 4 reports how the relative incomes have changed for single parents in the same manner as for the age groups. The most negative change is reported for single parents in Denmark, U.K., Norway and the Netherlands. The only country in which the relative income for single parents has not declined when comparing the mid80s to the mid90s is Finland. Despite the fact that the precarious economic position for single parents have for quite a long time now been high on the socio-political agenda (see e.g. discussion in Lewis 1997), we find no evidence that these European countries have been able to substantially improve the economic conditions for them.

Since the focus of attention in this analysis solely have been on change rather than level it should at last be mentioned that the relative income level for single parents in all four Nordic countries are markedly higher than is the case for the three non-Nordic countries, thereby conforming to the picture on relative poverty rates presented earlier. Above all in the United Kingdom a huge difference between the relative income level of single parents and the average

for all exists. In 1995 single parents' equivalent income is only slightly above half of the national mean when using this equivalence scale.<sup>16</sup>

### **Concluding discussion**

This chapter looks at the distribution of income in the Nordic countries in comparison with three other European countries, namely Germany, the Netherlands and the United Kingdom. The time period covered is roughly from the mid 1980s to the mid 1990s. The main question raised concerned whether or not we find support the existence of a Nordic model at the end of the 20<sup>th</sup> century? Within that framework some more specific questions were initially asked. First, is a low degree of overall income inequality still one characteristic of the Nordic countries? Second, do we find any evidence that the Nordic countries are becoming more alike the other European countries when comparing recent changes of inequality? Third, what is the role of the cash programs of the welfare state in producing the cross-national variation in inequality? Fourth, when looking at specific vulnerable groups, like the young, the old, and single parents, do we find a specific Nordic pattern?

The empirical evidence presented in this chapter makes it fairly easy to answer the first two questions. *Yes*, the Nordic countries do still have a low degree of inequality in the distribution of income and *No*, we find no support for a convergence. However, one should qualify these conclusions somewhat. First, national studies in three of Nordic countries - Finland, Norway, and Sweden - have concluded that income dispersion is widening in the latter years of the 1990s. It should also be pointed out that capital income, including realised gains, has been an important factor of this increase and this source of economic well-being is not fully captured by

---

<sup>16</sup> Also in this analysis household heads below 20 years of age are excluded. Since teenage motherhood is extremely unusual in all these countries except for the United Kingdom (see e.g. Wertheimer and McRae 1999)

the LIS-data. Still, it seems highly unlikely that including a few more years and a more inclusive measure of capital income would produce a radically different conclusion. More plausible is the argument that seen over a much longer time horizon we could have a case of similar trends in which most countries at present are witnessing a widening of income differentials.

Cash benefits, here analysed only for those potentially working, seem indeed to be important. Here though we find a more complicated pattern when looking cross-nationally. Sweden, Finland, Denmark, but also the Netherlands is roughly characterised by having large cash benefits, which, so to speak, decrease inequality to a relatively large extent by its size. On the other hand, Norway, Germany and the United Kingdom have a different distributional profile of their cash benefits. Cash benefits in these countries are more targeted towards those with low income. One could also note that the size of the redistributive pie in fact in the mid90s is higher in the U.K. than it is in Norway. The reason that these countries then come out so differently in terms of inequality is dependent on the distribution of market income which is by far the most unequal in the U.K. whereas it is, in the mid90s, the most equal in Norway.

The fourth question concerned the income position of specific socio-demographic groups. The results concerning single parents do indeed support the Nordic case. Both with regard to risks for poverty and changes thereof, we find a marked difference between the Nordic countries and the three other countries. Also with regard to the situation for young adults do we find that the Nordic countries stands out, but in a way less expected from the usual welfare state debate. Accordingly, it was found that in all four Nordic countries the relative income position

---

it seems likely that the relatively worst off situation for single parents in the U.K. is, if anything, underestimated in this analysis.

of young adults has deteriorated quite dramatically when comparing the 1990s to the 1980s. That outcome was seen both with regard to risks of relative poverty but even more visible when looking at the changes in average incomes for those below 30 years of age.

It was initially argued in this chapter that the Nordic welfare states, generally speaking, have tended to be strongly focused on equality of outcome and that such a perspective is no longer sustainable in a global economy. However, as hopefully has been shown in this chapter it is evident that also close to the end of the 20<sup>th</sup> century the Nordic countries can be characterised as having low income inequality, in accordance with this kind of equality focus.

## References

- Aaberge, R., Björklund, A., Jäntti, M., Palme, M., Pedersen, P. J., Smith, N. and Wennemo, T. (1999) "Income Inequality and Income Mobility in the Scandinavian Countries compared to the United States", mimeo, Statistics Norway et al.
- Aaberge, R., Björklund, A., Jäntti, M., Pedersen, P. J., Smith, N. and Wennemo, T. (2000) "Unemployment Shocks and Income Distribution: How did the Nordic Countries Fare during their Crises?", *Scandinavian Journal of Economics*, 102: 77-99.
- Atkinson, A. B. (2000) "Is Rising Income Inequality Inevitable? A Critique of the Transatlantic Consensus", 1999 WIDER Annual Lecture, UNU/WIDER, Helsinki.
- Atkinson, A. B., Rainwater, L. and Smeeding, T. M. (1995) *Income Distribution in OECD Countries*, *OECD Social Policy Studies No. 18*, Paris: OECD.
- Bradbury, B. and Jäntti, M. (1999) "Child Poverty across Industrialized Nations", *Innocenti Occasional Papers, Economic and Social Policy Series, no. 71*, Florence: UNICEF.
- Buhmann, B., Rainwater, L., Schmaus G. and Smeeding, T. (1988) "Equivalence Scales, Well-being, Inequality and Poverty: Sensitivity Estimates Across Ten Countries Using the Luxembourg Income Study Database", *Review of Income and Wealth*, 34: 115-42.
- Cowell, F. A. (1984) "The Structure of American Income Inequality", *Review of Income and Wealth*, 30: 351-75.
- Dodge, D. A. (1975) "Impact of Tax, Transfer, and Expenditure Policies of Government on the Distribution of Personal Income in Canada", *Review of Income and Wealth*, 21: 1-52.
- Esping-Andersen, G. (1996) "Positive-Sum Solutions in a World of Trade-Offs?", in G. Esping-Andersen (ed), *Welfare States in Transition*, London: Sage.
- Everaers, P., van der Laan, P. and McDonald, M.K. (2000) "Conceptual Overview", paper to the Canberra Group Meeting in Luxembourg, May 2000, Statistics Netherlands and Australian Bureau of Statistics.
- Fritzell J. (1992) "Ojämlighets- och fattigdomsutveckling under 1980-talet: Sverige i internationell belysning" in A. Björklund and J. Fritzell *Inkomstfördelningens utveckling*. Stockholm: Allmänna Förlaget.
- Fritzell, J. (1993) "Income Inequality Trends in the 1980s: A Five-Country Comparison", *Acta Sociologica*, 36: 47-62.
- Fritzell, J. (1999) "Changes in the Social Patterning of Living Conditions", in M. Kautto, M. Heikkilä, B. Hvinden, S. Marklund and N. Ploug (eds), *Nordic Social Policy*, London: Routledge.
- Gottschalk, P. and Smeeding, T. M. (1997) "Cross-National Comparisons of Levels and Trends in Inequality", *Journal of Economic Literature*, XXXV: 633-87.

- Gottschalk, P. and Smeeding, T. M. (forthcoming) "Empirical Evidence on Income Inequality in Industrialized Countries", in A. B. Atkinson and F. E. Bourguignon (eds), *Handbook of Income Distribution*, Elsevier: North Holland.
- Gustafsson, B., Aaberge, R., Cappelen, Å., Pedersen, P. J., Smith, N. And Uusitalo, H. (1999) "The distribution of income in the Nordic countries", in M. Kautto, M. Heikkilä, B. Hvinden, S. Marklund and N. Ploug (eds), *Nordic Social Policy*, London: Routledge.
- Jenkins, S. P. (1999) "Trends in the UK Income Distribution", *Working Paper 99-22*, Essex, Colchester: Institute for Social and Economic Research.
- Jäntti, M. and Danziger, S. (forthcoming) "Income poverty in advanced countries", in Atkinson, A. B. and Bourguignon, F. E. (eds), *Handbook on Income Distribution*, Elsevier: North Holland.
- Kangas, O. and Palme, J. (forthcoming). "Does social policy matter? Poverty cycles in OECD countries", *International Journal of Health Services*.
- Kangas, O. and Ritakallio, V-M. (1999) "Social policy or structure? Income transfers, socio-demographic factors and poverty in the Nordic countries and in France", in *Comparing Social Welfare Systems in Nordic Europe and France, Copenhagen Conference*, Paris: MIRE.
- Kerr, C., Dunlop, J. T., Harbison, F.H. and Myers, C. A. (1960) *Industrialism and Industrial Man*, Cambridge Mass.: Harvard University Press.
- Korpi W. and Palme, J. (1998) "The Paradox of Redistribution and Strategies of Equality: Welfare State Institutions, Inequality, and Poverty in the Western Countries", *American Sociological Review*, 63: 661-87.
- Kuznets, S. (1955) "Economic Growth and Income Inequality", *American Economic Review*, 45: 1-28.
- Kuznets, S. (1963) "Distribution of Income by Size", *Economic Development and Cultural Change*, 11: 1-80.
- Levy, F. and Murnane, R. J. (1992) "U.S. Earnings Levels and Earnings Inequality: A Review of Recent Trends and Proposed Explanations", *Journal of Economic Literature*, XXX: 1333-81.
- Lewis, J. (ed) (1997) *Lone Mothers in European Welfare Regimes*, London: Jessica Kingsley.
- Ministry of Health and Social Affairs, Norway (1999) *Utjamningsmeldinga, om fordeling av inntekt og levekår i Norge* St. meld. nr 50, Oslo.
- Morissens, A. (1999) "Solo Mothers and Poverty: Do Politics Matter? A Comparative Case Study of Sweden and Belgium", *LIS Working Paper Series No. 210*, Luxembourg.

OECD (1998) "Income Distribution and Poverty in Selected OECD Countries", *Economic department Working Papers No. 189*, Paris: OECD.

Pen, J. (1971) *Income Distribution*, London: Allen Lane.

Rainwater, L. and Smeeding, T. M. (1995) "Doing Poorly: The real income of American Children in a Comparative Perspective", *LIS Working Paper Series No. 127*, Luxembourg.

Rowntree, B. S. (1901) *Poverty: A Study of Town Life*, London: Macmillan.

Smeeding, T. M. (1992) "Why the U.S. Antipoverty System Doesn't Work Very Well", *Challenge* Jan-Feb, 30-35.

SOU 2000, *Välfärd vid vägskäl, utvecklingen under 1990-talet*, delbetänkande från Kommittén Välfärdsbokslut SOU 2000:3, Stockholm: Fritzes.

Sørensen, A. (1994) "Women's Economic risk and the Economic position of Single Mothers", *European Sociological Review* 10: 173-188.

Uusitalo, H. (1989) *Income Distribution in Finland*, Helsinki: Central Statistical Office of Finland.

Uusitalo, H. (1999) "Tuloerot kasvaneet jo kolmena peräkkäisenä vuonna", *Yteiskuntapolitiikka* 5-6, 465-479.

Wertheimer, A. and McRae, S. (1999) *Family and Household Change in Britain*, Oxford: Centre for Family and Household Research.

Wilensky, H. (1975) *The Welfare State and Equality*, Berkeley, CA.: University of California Press.



*Table 1. Distribution of transfers by income quintiles and average transfer income as a fraction of median equivalent gross income.<sup>a</sup> Households aged 20-64. Percentages*

<i>Country and year</i>	<i>Lowest</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Highest</i>	<i>Total</i>	<i>Average transfer income</i>
Denmark, 92	30,1	26,7	16,9	14,7	11,7	100	16,7
Finland, 95	29,8	24,3	19,9	15,2	10,7	100	18,3
Norway, 95	35,0	23,6	16,5	13,5	11,3	100	12,9
Sweden, 95	27,2	27,5	19,0	15,4	11,0	100	24,0
Germany, 94	38,9	23,4	15,9	13,1	8,7	100	9,7
Netherlands, 94	29,1	22,6	16,4	14,3	17,6	100	15,2
United Kingdom, 95	37,0	29,5	14,5	10,6	8,4	100	13,9

Notes:

a) Classification of income quintiles from equivalent gross income. The proportion of transfers refers as well to equivalent transfer income.

Source: Luxembourg Income Study.

*Table 2. Relative poverty rates<sup>a</sup> for those aged 20-29, 60-74, 75- and for single parents. Percentages*

<i>Country and Year</i>	<i>Aged 20-29</i>	<i>Aged 60-74</i>	<i>Aged 75-</i>	<i>Single parents</i>
Denmark, 87	12,0	16,8	41,5	6,6
Denmark, 92	16,5	5,6	16,3	11,6
Finland, 87	10,1	7,8	18,1	4,9
Finland, 95	14,0	3,6	7,6	6,6
Norway, 86	14,1	8,7	33,5	12,6
Norway, 95	18,1	5,2	21,9	11,9
Sweden, 87	12,1	4,8	12,4	5,8
Sweden, 95	15,7	2,3	3,9	6,8
Germany, 84	17,2	5,4	15,4	27,9
Germany, 94	20,6	6,1	8,7	41,7
Netherlands, 87	12,7	3,4	-	8,4
Netherlands, 94	15,3	6,5	5,9	24,4
United Kingdom, 86	16,3	6,4	8,0	18,6
United Kingdom, 95	22,8	8,1	18,7	39,1

Notes:

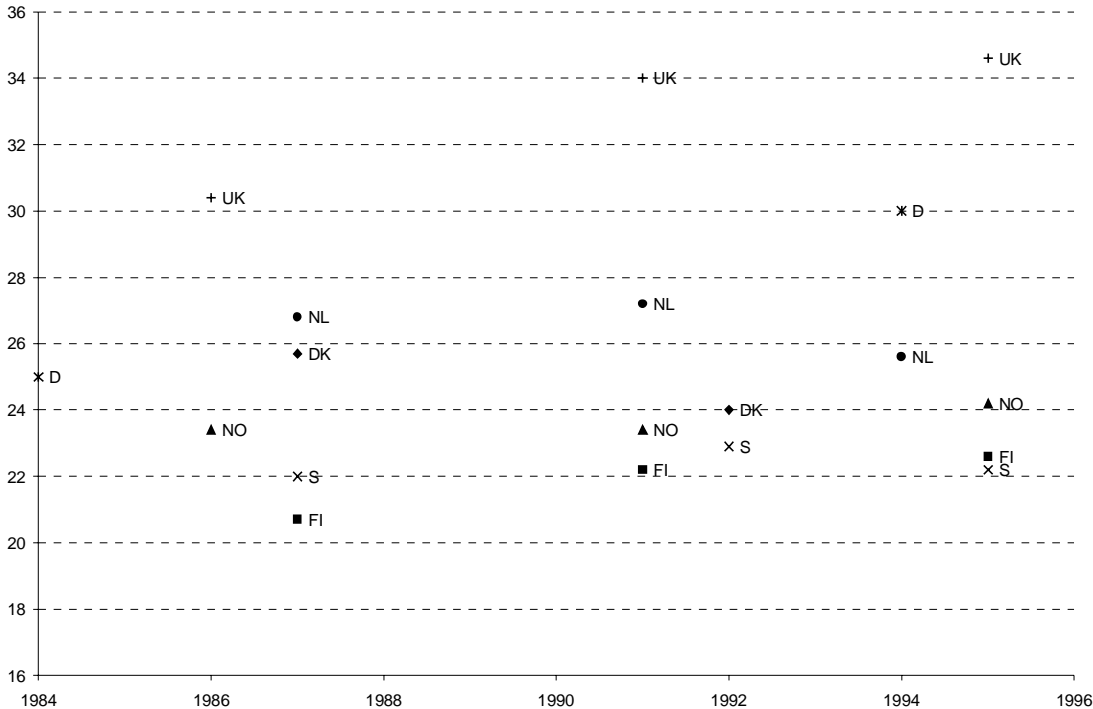
a) Poverty threshold 50 percent of median equivalent disposable income. All households with household head aged at least 20. Equivalence scale: square root of household size. Person weights adopted.

b) Age categories refer to age of household head.

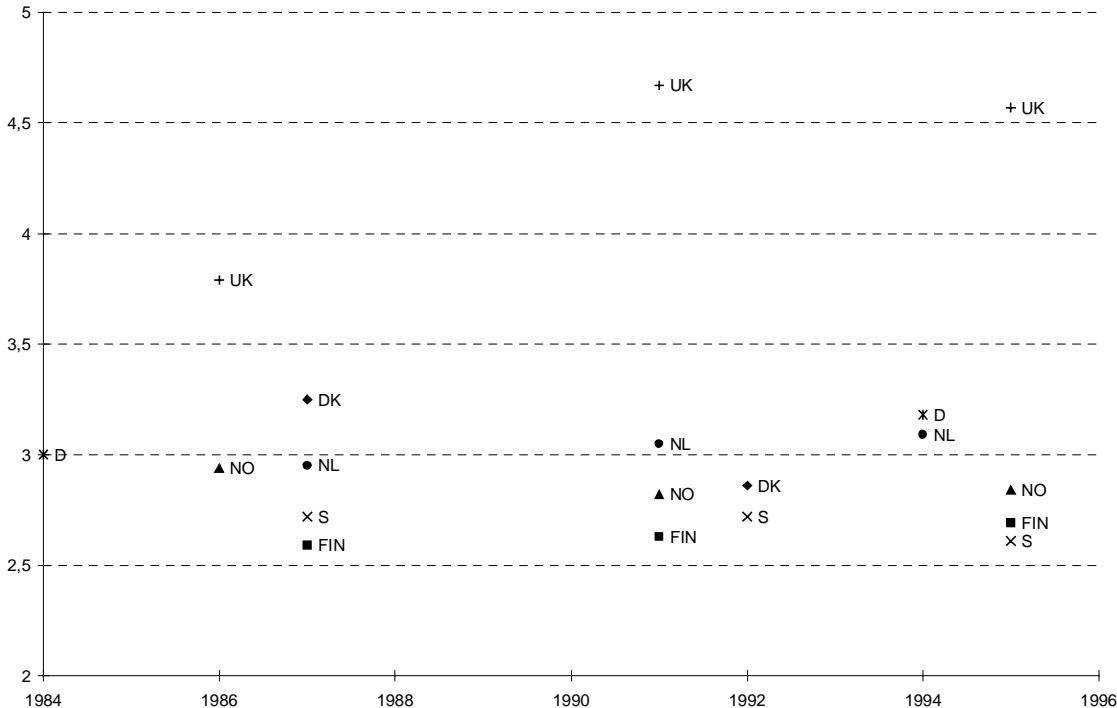
Source: Luxembourg Income Study.

**Figure 1.** Income inequality estimates - Gini coefficients and percentile ratios p90/p10 - in seven countries from 1984 to 1995. Income = Equivalent disposable income

(Gini coefficients\*100)

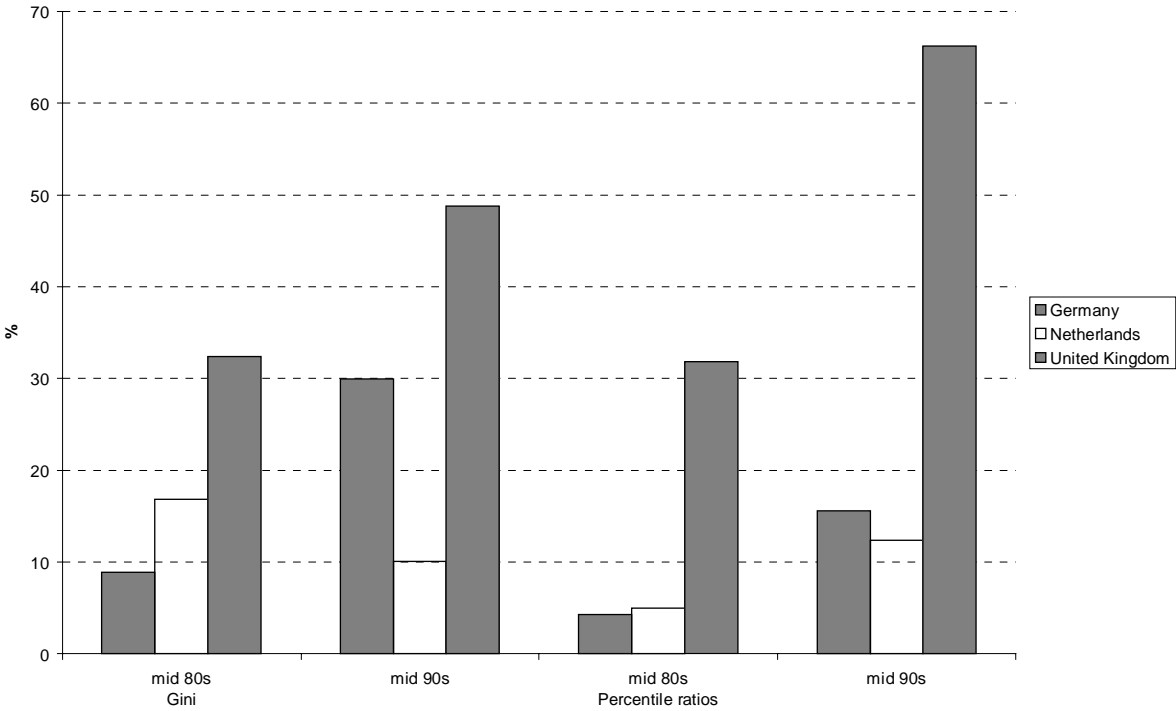


Percentile ratios (p90/p10)



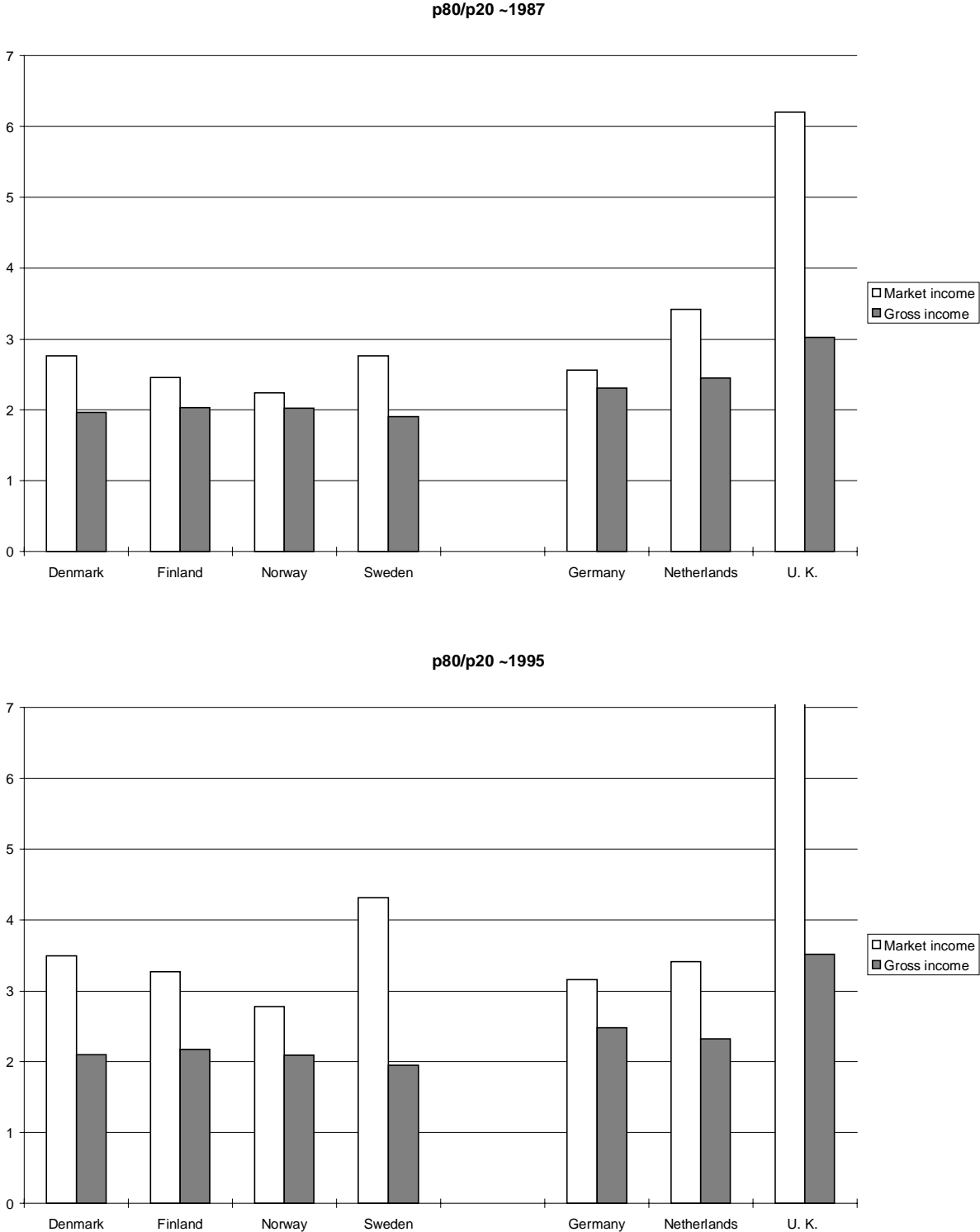
Source: Luxembourg Income Study

**Figure 2.** The relative difference (%) in inequality between the Nordic countries and Germany, the Netherlands and the United Kingdom, respectively. Around mid 1980s and mid 1990s. Inequality measures: Gini and Percentile ratios.



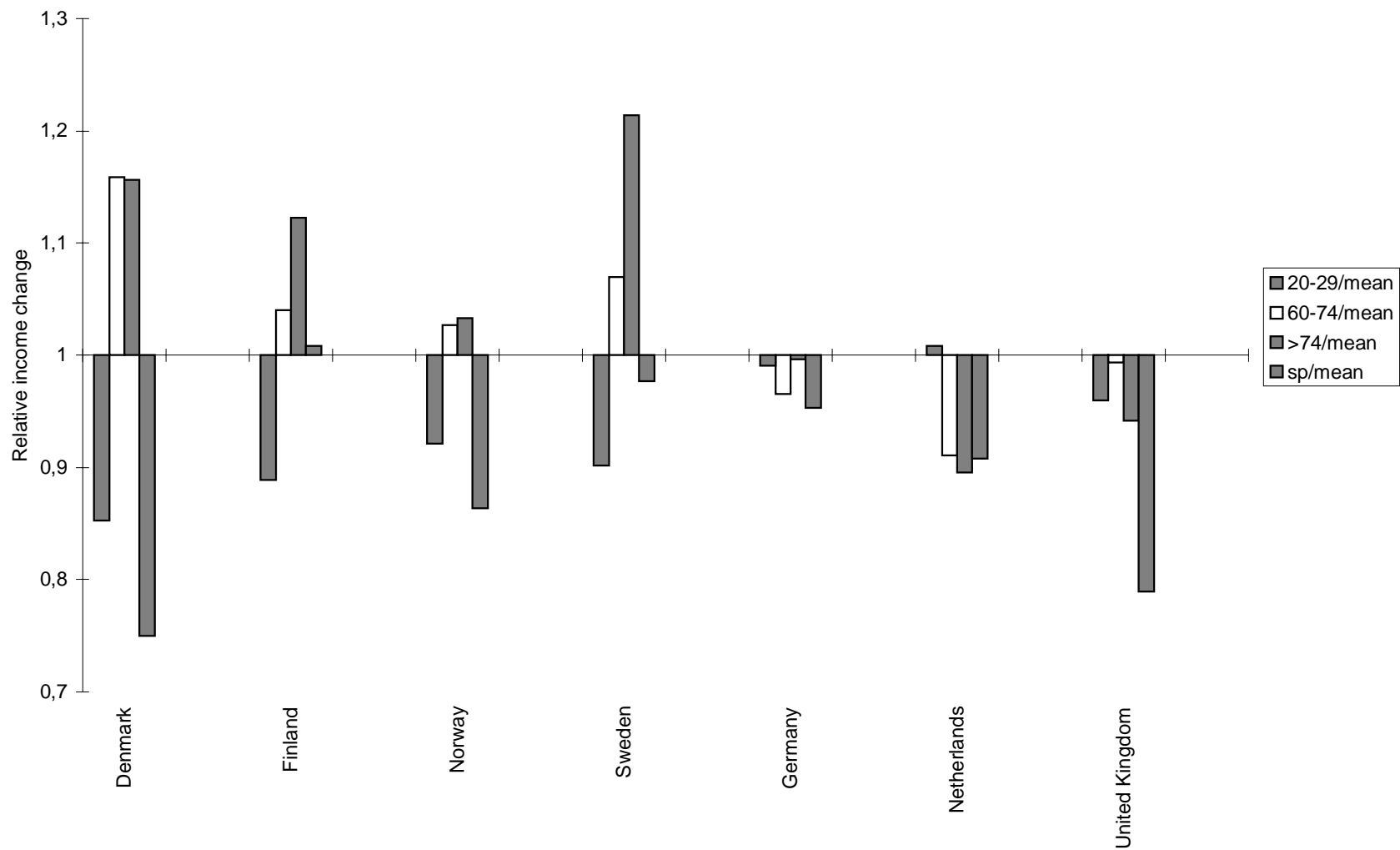
Source: Luxembourg Income Study

**Figure 3.** Income inequality (percentile ratios: p80/p20) in equivalent market and gross income. In mid/late 1980s and in mid 1990s, respectively. All aged 20 to 64 (age of household head).



Note: The percentile ratio for U.K. in 1995 is in reality 12,2  
 Source: Luxembourg Income Study.

**Figure 4.** Relative income change between the mid/late 1980s and the mid1990s for three age groups (20-29, 60-74,75+) and for single parents (sp) in relation to average change (set to 1,0) within each country.



Source: Luxembourg Income Study.