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Welfare States, Social Structure and the Dynamics of Poverty Rates: A Comparative Study of 16 Countries, 1980-2000

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Welfare States, Social Structure and the Dynamics of Poverty Rates
A comparative study of 16 countries, 1980-2000*

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Abstract
The purpose of this paper is twofold. The primary purpose is to try and explain both the temporal and the spatial variation of poverty rates in terms of unemployment insurance indicators and structural/sociodemographic factors. Secondly, the paper aims to test the 'convergence hypothesis' of the poverty rate, i.e. whether or not poverty rates in modern welfare states have converged in recent decades.

The analyses tentatively suggest that structural change in terms of the unemployment rate, the proportion of single-earner households, the female labour-force participation rate, and the proportion of families with children primarily explains the temporal variation in poverty rates. The unemployment insurance factors primarily explain the spatial variation, i.e. variation between countries. In part, however, the temporal variation is explained by the cuts in net replacements in unemployment insurance. This factor alone explains a larger share of the overall variance than all the structural factors put together.

Where the convergence hypothesis is concerned, a random-effects model is proposed as a statistical tool for testing convergence (and dispersion). The results of this analysis suggest that for the 16 countries and the time frame under review the convergence hypothesis must be rejected, an outcome that is in line with some other analyses presented recently.

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Introduction

Over the years, a number of studies in comparative social policy have shown that welfare state arrangements have a profound impact on financial poverty in western countries. These studies show that modern welfare states – although to a varying degree – have managed to mitigate poverty in those phases of the life cycle that have traditionally been associated with economic hardship, such as childhood, child rearing and old age (e.g. Ferrarini, 2003; Kangas and Palme, 2000). In many countries, however, the consequences of more occasional losses of market income in connection with such events as sickness and job loss have also been alleviated by welfare state activity (Kangas, 1991; Carroll, 1999). These and other studies further show that the extent to which different welfare states have succeeded in combating poverty is to a large extent determined by the design of social policy schemes (see also Korpi and Palme, 1998). Thus, it is not just the generosity of different schemes that matters in this respect but also the way in which the welfare state is organised.

Although poverty and/or social exclusion can clearly be reduced by welfare state activity, this has by no means made it a less topical issue on the social policy agenda (Atkinson et al, 2002). The trend in most western countries, at least since the beginning of the 1980s, has been growing financial poverty and income inequality (e.g. Ritakallio, 2002; Smeeding, 2002). Without doubt, comparative welfare state research has been highly successful in determining the impact of welfare state arrangements on the variation of poverty risks across countries. However, it has been less successful in identifying what drives the temporal variation of aggregate poverty rates. This is not of course due to a lack of skill among researchers but rather to a lack of adequate data. Hitherto, sufficiently long time series for a sufficiently large number of countries have not been available. But with the fourth and fifth wave of the Luxembourg Income Study (see Atkinson et al, 1995) we may now start filling this gap in comparative welfare state research. Some efforts in that direction have already been made (see Gustafsson and Johansson, 1999; Fritzell and Ritakallio, 2004).

The purpose of this paper is thus to try and explain the variation in the relative poverty rate across countries as well as across time, in terms of both institutional and structural factors. As far as institutional factors are concerned, the analysis seeks to evaluate the effect of unemployment insurance on poverty rates. There are several reasons for focusing in particular on unemployment insurance. Firstly, there are practical reasons for choosing one programme at a time. Secondly, of those schemes that deal with the poverty risk-inducing phases and events mentioned above, unemployment insurance is perhaps the most controversial due to its

relatively direct interference with market processes (Carroll, 1999). The effectiveness of such a system seems important to evaluate. Thirdly, as opposed to family schemes, pension schemes and sickness cash benefit schemes, the relationship between poverty rates and unemployment insurance schemes has yet to be studied systematically. Finally, many of the structural factors that have been put forward as explanations for the cross-country variation of poverty rates, such as unemployment and female labour force participation (e.g. Kangas and Ritakallio, 2000; Fritzell and Ritakallio, 2004; Brady, 2004), relate to the labour market in one way or another.

However, before the driving forces that shape the temporal pattern are described, the temporal pattern itself must be identified. Thus the first part of the analysis aims at testing how we should properly describe the development of poverty rates.

The outline of the paper is as follows:

The next section presents the institutional framework from which the paper departs. Both specific social insurance schemes focusing on unemployment insurance and welfare state typologies are discussed. This is followed by a section discussing structural factors and their potential impact on poverty levels in modern welfare states. As one of the purposes of the paper relates to the temporal dimension of poverty rates, the next section is devoted to a discussion of the development of institutional and structural factors and of poverty rates across time. Thereafter, the data and the operationalisations of variables are presented, followed by a methodological discussion. The results section begins by reporting the outcome of a random-effects model describing the temporal pattern of poverty rates. In this part of the analysis, special attention is paid to the question of whether poverty rates have converged, diverged or remained stable across time. The second part of the results section is devoted to the effects of the explanatory variables. The paper closes with a discussion of the results.

Institutional framework

There is a vast literature stressing the importance of the institutional structures of welfare states for social policy outcomes. It is argued that in order to understand the divergent effectiveness of poverty reduction, for instance, we need to go beyond the study of social expenditure which used to dominate the field (e.g. Wilensky, 1975; Pampel and Williamson, 1985). Studies focusing on expenditure suffer from an ‘institutional deficit’ (Ferrarini, 2003:4) since spending levels are likely to be affected by a number of factors beyond the

scope of social policy legislation.[1] Although it is unlikely that welfare state institutions would remain totally unaffected by changes in, say, employment or family formation patterns, there is a built-in inertia in these systems that militates against rapid response (Pierson 2001). Partly due to this, the institutional approach has proved useful both in the study of causes for welfare state formation and transformation, and for social policy outcomes (e.g. Carroll 1999; Ferrarini 2003; Korpi 2003; Korpi and Palme 2003).

We can easily identify three institutional dimensions of welfare state arrangements that may be of crucial importance for determining the effectiveness of poverty alleviation in income maintenance programmes: eligibility, replacement rate, and period of payment. Eligibility as reflected by the coverage rate refers to how large a proportion of the population or workforce is covered by a particular type of insurance. It is determined by the basic qualification requirements associated with all types of insurance. The stricter these requirements are the lower the degree of coverage. Eligibility could also be affected by population changes. If immigration grows, the number of those ineligible for social insurance will increase, at least if the qualification requirements involve a certain amount of domestic labour market experience, which is usually the case for income related benefits. Replacement rate naturally refers to the level of cash benefits, i.e. the proportion of normal income that is actually paid by the insurance provider. Duration of payment period refers to both the beginning and end. At the beginning of payment periods, many schemes include non-payable qualifying days as a means of introducing self-insurance. At the other end of payment periods we are interested in their maximum duration. If the period is too short, a system that is generous in terms of the other two dimensions might still lack efficiency as regards poverty alleviation (Palme et al, 2003:62-73). This would be of particular importance in unemployment insurance, since the risk for poverty and social exclusion grows considerably with an increasing duration of unemployment spells (e.g. Abrahamson et al, 1986; Atkinson et al, 2002; Kieselbach, 2003).

Although the focus with regard to welfare state institutions is on unemployment insurance, it is important to recognise the significance of other benefit schemes for poverty alleviation. As mentioned earlier, the design of family policy schemes, sickness cash benefit schemes and pension schemes are important for poverty alleviation. Furthermore, means-tested benefits such as social assistance and housing allowances have some poverty alleviating effects

[1] Moene and Wallerstein's (2003) analysis of the effect of spending on economic inequality suffers from the same deficit, although it must be admitted that the more sophisticated analysis provided by these authors offers much useful information about the effectiveness of different social policy programs.

(Berendt, 2000). However, it has been shown that the way benefit schemes are organised in terms of means testing and non-targeted provisions is important for explaining differences in poverty alleviation. More specifically, the magnitude of non-targeted provisions is more important in this respect than that of means-tested benefits (Nelson, 2004). Also, in order to avoid omitted variable bias, the effects of these systems must be kept constant in one way or another in the analyses. One major problem of comparative welfare state research is that the 'samples' are usually quite small. Since this obviously limits the number of co-variates in multivariate analyses, indicators of all these systems cannot be included simultaneously in a regression model. An alternative is to use some kind of global indicator for these systems. One approach would be to construct an index based on these schemes, but that would be inapplicable in cases where the individual items of such an index measure different dimensions. Another approach, which is the one adopted here, is to include indicators based on a welfare state typology.

Several such typologies have flourished in the market for comparative welfare state research since Esping-Andersen's *Three Worlds of Welfare Capitalism* (1990), where welfare state regimes were divided into three clusters labelled Conservative, Liberal, and Social Democrat according to the ideological currents underpinning each. Esping-Andersen's typology has been highly influential, but has also been criticised. This has resulted in new, alternative classifications whereby categories have been split up or new ones added (e.g. Castles and Mitchell, 1991; Leibfried, 1992), depending on the focus of the criticism.

Korpi and Palme's (1998) typology of welfare states, too, partly derives from a critique of Esping-Andersen. Since his primary purpose was descriptive and he consequently allowed indicators on outcomes, institutional arrangements and political causes to define the three regime types, the analytical value of his model is limited. Korpi and Palme's model, on the other hand, is developed solely on the basis of institutional arrangements and is specifically designed to be used analytically, both as a dependent variable in the study of welfare state formation and as an independent (intervening) variable in the study of social policy outcomes. For the purpose of the present paper, the analytical gains of such a purely institutional approach would seem to outweigh the more 'holistic' gains to be had from the multidimensional approaches advocated by Esping-Andersen and his followers. Korpi and Palme arrive at five ideal-typical welfare state regimes, based on the institutional structure of primarily old-age pension schemes and to some extent of sickness cash benefit programmes. These are: the targeted, the voluntary state-subsidised, the state corporatist, the basic security

and the encompassing welfare state model. The categorisation of the 16 countries included in the present study is shown in Table 1. None of these countries fall into the voluntary state-subsidised category, and only one, Australia, falls into the targeted category. The targeted and the basic security models are therefore merged into one category in the following analyses.

The *targeted model* is characterised by income or means tested benefits which are fairly similar in size for those who qualify. Eligibility in the *basic security model* is either citizenship-based or based on contributions. Benefits are flat-rate or earnings-related with a low income ceiling. Both systems tend to encourage high income earners to seek private solutions for income insurance.

In the *state corporatist model*, eligibility is based on compulsory membership for specified occupational categories. Benefits in these systems are earnings-related and usually quite generous, but exclude persons outside the labour market.

Benefits in *encompassing welfare states* are also usually quite generous and citizenship-based, providing flat-rate benefits for all groups and earnings-related benefits to the economically active. Since all citizens are included in the same earnings-related system the demand for private insurance tends to be limited.

The reason why Korpi and Palme focus primarily on old-age pensions and to some extent on sickness cash benefit schemes is that these programmes provide protection from risks that people in all socio-economic categories are subject to. It is argued that because these two programmes have such a major economic impact for most citizens, their relevance for interest and coalition formation should be considerable. It would be legitimate to ask how a typology based primarily on old-age pensions can have any bearing on poverty risks among people of active age, which is the population stratum that the present paper focuses on (see below). Obviously, the institutional dimensions of pension schemes cannot possibly lift people below retirement age out of poverty. However, the logic of Korpi and Palme tells us that in encompassing welfare states, for instance, where practically all economically active groups are potentially eligible for earnings-related benefits, interest in preserving a generous welfare system is spread across socio-economic groups to an extent that cannot be found in countries in the basic cluster, for example. Thus, it is reasonable to assume that this widespread interest is not restricted to the pension scheme but applies to other schemes as well. This perception is supported by the fact that replacement rates in most social security programmes are higher in the encompassing and in the state corporatist countries, while countries with targeted and basic models lag behind. In the post-war period this is true for sickness cash benefits (Kangas

1991) and parental leave (Ferrarini 2003), and to a lesser extent for old-age pensions (Palme 1990) and unemployment insurance (Carroll 1999). However, for coverage rates the picture is more mixed, and averaged at the beginning of the 1980s for all clusters somewhere between 70 and 80 per cent for old-age pensions and unemployment insurance (Palme 1990; Carroll 1999), and between 50 and 60 per cent for sickness cash benefits (Kangas 1991).[2] As regards the maximum duration of payment period, this tendency prevails in the case of parental leave (Ferrarini 2003). In the case of sickness cash benefits, on the other hand, the tendency is that the insurance schemes in the encompassing, the corporatist and the targeted welfare states are the most generous, while the basic security countries lag behind (Kangas 1991). As regards unemployment insurance, no particular pattern prevails in this dimension (Carroll 1999).

Although the inclusion of the welfare regime type indicators might produce interesting results in their own right, in this study they are only used as control variables and as such their effects are discussed only briefly.

Structural factors

In their analyses of 11 welfare states, Fritzell and Ritakallio (2004) find that the increasing poverty rates noted in Western Europe since the beginning of the 1980s are more accurately explained in terms of structural shifts than in terms of welfare state retrenchment. On the other hand, the explanation of the variation between countries may to a great extent be sought in politics. Although imputation of the sociodemographic structure of Sweden in 2000 to ten other western countries shows that part of the cross-country variation disappears, the gap in poverty rates between welfare state regimes largely remains. This technique was also used by Kangas and Ritakallio (2000), when comparing Scandinavian and French poverty rates. They report that the difference between Scandinavia and France is almost eradicated in this particular case when the Scandinavian sociodemographic structure is imputed to France.[3] In both of these studies, sociodemography is defined by such factors as age, household composition, female labour force participation and the number of earners in households.

Although illuminating, this technique presents certain problems recognised by the authors. Firstly, it is sensitive to what is chosen as the counterfactual case. Had Fritzell and Ritakallio

[2] All replacement rates are net of an average production worker's income (see below). Coverage rates are in percentage of populations 15-64 years of age (old-age pension and sickness cash benefits) and of employees (unemployment insurance).

[3] However, when the French socio-demographic structure was imputed to Scandinavian countries, poverty rates remained unchanged.

chosen some other observation than Sweden 2000 the results might have been different. When only a handful of countries are studied, this problem might prove less serious. Secondly, the sociodemographic structure is not independent of welfare state structure. This is particularly obvious in the case of female labour force participation. The high female labour force participation rates in Scandinavia are to a large extent a result of the welfare state arrangements in these countries (Ferrarini, 2003).

This latter problem is not circumvented by using a regression approach. Thus, rather than competing, the counter-factual approach and the regression approach can complement one another since they have the potential for producing slightly different results. For example, Brady (2004) shows with a random-intercept regression approach that social security transfers and public health spending provide better explanations for poverty in 18 countries than do demographic variables.[4] In the present study, welfare state factors and (socio-)demographic factors are analysed side by side as well. However, by including time as a co-variate in the multivariate models, we can determine both whether 'structural' factors have an influence on the temporal variation and whether they affect the spatial variation of the poverty rate. The factors used in the analyses are unemployment, female labour force participation, the proportion of families with children, and the proportion of single-earner households in each country. Since the study focuses on unemployment insurance, only poverty among populations of active age is analysed. Thus the proportion of elderly in the population would obviously be a redundant variable.

Of these factors, unemployment is of particular importance, since the study focuses on institutional aspects of unemployment insurance. In his second study of poverty in York in the early 20th century, Rowntree (1942) identified unemployment as the principal poverty generator alongside old age and low wages. However, present-day welfare state expansion has made the relationship less self-evident. At the aggregate level in cross-country studies, the relationship between the two factors has been found to be either weak or non-existent (e.g. Cantillon et al, 2002; Haataja 1999). Brady (2004) found that neither unemployment nor the rate of non-participation in the labour market has had any impact on poverty in 18 countries. Across time, results vary considerably between countries. For example, Stenberg (1998) finds a positive correlation for Sweden while Burgess et al (2001) find a negative correlation for the UK. One obvious reason for these differing results is that while Stenberg analyses the

[4] The structural factors in Brady's study are percentage of population not in employment and percentage of children in single mother families.

correlation between changes in the time series, Burgess et al report the correlation between trends for a period when the UK introduced dramatic cuts in a number of areas, including unemployment insurance (see Atkinson, 1989). Nevertheless, when unemployment afflicts a household, it usually incurs some economic cost. Thus the effect of unemployment on the poverty rate, if any, should be positive, i.e. the higher the unemployment rate the higher the poverty rate.

Institutional change, structural change, and poverty

The financial poverty curve in most advanced welfare states has been pointing upwards since the 1980s (Fritzell and Ritakallio, 2004). There are of course a multitude of reasons for this development, and different authors emphasise different set of explanations. Generally speaking, however, the two set of factors under review in this study – structural and social policy factors – dominate. Structural factors can in turn be split up into exogenous and endogenous factors (Brady, 2004). Exogenous factors include globalisation and the international business cycle. Endogenous factors are typically those sociodemographic and labour market variables discussed in the previous section. The present study focuses mainly on endogenous factors.

In recent decades, employment and family formation patterns have changed in most western countries. The increase in female labour force participation and the lower average size of families are perhaps the most significant shifts (Fritzell and Ritakallio, 2004). Although the importance of these factors for the growth in poverty rates has been recognised, studies that explicitly set out to explain variation across time are rare. Brady (2004) analyses both the temporal variation and the cross-country variation of poverty in random-intercept models. Although he reports the variance at both the country and the temporal level, the way he specifies his models prevents him from drawing any conclusions about which factors can explain the temporal variation. It is clear that most of the variation is found at the country level, and this fact may justify his focus on it. However, although most of the variation can be expected to be found at the country level, there is no reason to ignore the temporal dimension. As should be clear from the discussion in previous sections, cross-country differences in poverty rates can to a great extent be explained in social-policy and sociodemographic terms. Temporal variation, on the other hand, has been less carefully explored, and, as already mentioned, part of the purpose of this paper is to add something to those findings that already exist.

In order to reach conclusions about the temporal variation, poverty must be modelled as a function of time. A light version of this approach is presented by Fritzell and Ritakallio (2004), who investigate whether or not poverty rates have converged in 11 welfare states by inspecting changes in the standard deviation and coefficient of variance. They gather that there is a tendency in that direction, but cannot draw any firm conclusions. This is primarily because they lack a statistical test of convergence. Such a test is suggested below, in a random-effects framework.

However, using the 60 per cent of median income poverty threshold, Fritzell and Ritakallio (2004) do find that between 1980 and 2000 poverty rates increased in most countries in their panel. In Finland poverty rates declined, while the Norwegian and Canadian rates remained practically unchanged. The greatest increase was found in the UK. When comparing the 1990 and 2000 poverty rates, they were found to have gone up in Finland and Canada as well.

It should come as no surprise that more countries fall into the pattern of increasing poverty rates when the focus is specifically on the 1990s. This decade is often described as one of economic crisis and welfare state retrenchment in most western countries (see for instance Stephens et al, 1999; Korpi and Palme, 2003; Palme et al, 2003). According to Brady (2004), this suggests that the relationship between indicators of welfare state generosity and poverty during this period is open to question. In order to test his proposal, Brady includes interaction terms between a dummy representing the 1990s and two 'welfare state variables' in a regression model. The interaction effects fail to appear, which leads to the conclusion that the underlying causes of poverty do not change in the 1990s.

On the basis of these earlier studies, we should expect welfare state variables to explain more of the overall variance in the poverty rate than structural variables. However, since the structure of data is such that the number of countries far exceeds the number of time points, most of the variance may be expected to appear at the country level. This means that the parameter estimates obtained in regression analyses on this type of panel data primarily refer to the cross-country variation and tell us very little about the reasons for temporal variation. Since studies adopting a regression approach and explicitly seeking to explore the driving forces behind the temporal variation of poverty rates across countries have not been found in the literature, previous research provides little guidance as to what effects on the temporal variation we would expect from the explanatory variables in a regression analysis. We do know, however, from Fritzell and Ritakallio's (2004) more exploratory approach, that there is

a tendency for structural factors to provide better explanations than social policy factors for temporal variation, while the opposite tends to apply in the case of spatial variation.

Data and operationalisations

The analyses in this study combine data from a number of sources. The poverty rates are calculated on data from the Luxembourg Income Study, LIS (see Atkinson, Rainwater and Smeeding, 1995). A relative poverty threshold is used, where people with less than half the median disposable income in a country are defined as poor. This is partly for practical reasons, since it makes international comparisons easier. But it is also theoretically motivated, since the average standard of living in a particular country is the most relevant comparison point for most of its citizens. This practice can be criticised from several viewpoints and the choice might have implications for what results can be obtained (see for instance Ruggeri Laderchi et al, 2003; Danziger and Jäntti, 2000). Clearly, relative income poverty measures are merely proxies for a more profound theoretical poverty concept. However, there is a vast literature in this area, which this is not the place to consider (see Atkinson et al, 2002, p 78ff, for a discussion). The poverty line (half median income) was calculated for the population older than 21, while the poverty rate was calculated for those aged 21-59. In the construction of disposable income, the 'traditional' OECD equivalence scale was used to weight for family size. In this scale, the first adult is assigned the weight 1, other adults 0.7, and children 0.5. Like the choice of poverty measure, the choice of equivalence scale may have implications for the results (see for instance Danziger and Jäntti, 2000).Thus in sensitivity analyses an alternative equivalence scale is tested as well (see below). Also the effect of setting the poverty threshold at 60 per cent of median income is analysed in sensitivity analyses.

The data in LIS are 'lissified', which means that they are harmonised in order to maximise comparability across countries and across years. Despite lissification there are comparability problems in LIS data. Van den Bosch and Marx (1996) evaluated the comparability in the data available at that time, i.e. up to and including the third wave. Since then, however, some of the data sets that they judge incomparable have been revised and now appear more comparable. For instance, this is the case for Germany 1989. Moreover, Van den Bosch and Marx compare the trend in average household income in order to judge comparability, and it would seem that comparing relative poverty rates is not equally sensitive to the problems that these authors identify. Of those countries and years available in both LIS and SCIP (see below), only the LIS data set for Austria 1985 appears too unreliable to use in the analyses.

Since the focus is on unemployment insurance, only data for populations of active age (21-59) have been used.

The data on net replacements, coverage rates and maximum duration of period of payment in the unemployment insurance schemes of the countries included in the study emanate from the Social Citizenship Indicators Programme (SCIP) being assembled at the Swedish Institute for Social Research, Stockholm University (see for instance Korpi and Palme, 2003). The SCIP data archives include legislated social citizenship rights in eighteen OECD countries in 1930-1995, with data points for approximately every fifth year.[5] In the SCIP data, several indicators of net replacement in the unemployment insurance are available. The one chosen for the analyses below is an index indicating the net average replacement rate in per cent during the first 26 weeks of unemployment for an average production worker. The coverage rate is measured as the percentage of the labour force covered by the insurance. Maximum duration is measured in weeks. Duration in cases where the period of payment is unlimited has arbitrarily been set at 104 weeks (2 years). The period is assumed to end when the benefit becomes either means- or income-tested or when it becomes linked to additional contributions, work requirements or participation in active labour market programmes (see Sjöberg 2000a). The institutional typology of Korpi and Palme (1998) is also based on SCIP data.

Unemployment (percentage of the labour force) and gender-specific labour force participation (percentage of the population aged 20-69) are the standardised rates as published by the OECD (SourceOECD). In the analyses, only the female labour force participation rate is included in the regression models. This variable has been operationalised as female labour force participation as a percentage of male labour force participation.

The percentages of single earner households and families with children have been calculated from the LIS data sets. The figures for single earner households for Ireland 1987 and Norway 1986 and for families with children for France 1981 are not realistic. Thus, these observations are not included in the analyses.

The number of data points is restricted by the availability in LIS and in SCIP. Data from the first LIS wave (1980 and surrounding years) through the fifth wave (2000 and surrounding years) are used. The data points in SCIP correspond to the LIS waves. However, some

[5] The countries included in SCIP are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the UK and the USA.

countries provide data for more than a single year in one LIS wave. In these cases, the same SCIP data is used for all years in that wave (see Table 1). Likewise, for some of the countries in the fifth LIS wave, SCIP data are as yet unavailable. In these cases – Canada, Finland, and coverage for Ireland – 1995 SCIP figures have been used. The data from the OECD are unique for each year. In all, data for sixteen SCIP countries are available in LIS (excluding the historical data sets). For these countries, 75 data points may be used (see Table 1).

Methodological considerations

The first part of the analysis below aims to depict the temporal structure of poverty rates. This is done in two steps. The first step is to fit a random-intercept model with poverty rate as the dependent variable and time as the only co-variate to data. This model serves primarily as a point of comparison for the model in the next step. However, it provides some interesting 'bonus material'. Firstly, it gives information about the slope of the time trend (although this information is also provided by succeeding models). If the sign of the parameter associated with time is positive, the average poverty rate has increased in the sample of countries. If it is negative, poverty has decreased, and if it is zero or close to zero, poverty rates have remained stable. Secondly, in this type of model the intercept is allowed to vary across level 2 units, in this case countries. The procedure partitions the explained variance into two terms (Twisk, 2003): one for level 2 variance (country level) and one for level 1 variance. On the basis of this information it is possible to calculate the intra-class correlation coefficient (ICC). The value of this coefficient, which varies between 0 and 1, tells us how large a proportion of the variance is attributable to level 2, i.e. the proportion of the total variation attributable to the variation across countries.

The next step is to determine whether or not poverty rates have converged in the panel of countries. This is accomplished by also letting the variance of the parameter estimate associated with time vary across countries, in a model with a random slope, in addition to the random intercept. This model produces two additional terms: the variance in the random slope and the co-variance of the random intercept and random slope. The latter is crucial to the convergence hypothesis. If this co-variance is significantly negative, level 2 units with low values on the intercept have steeper slopes for the time variable (Twisk, 2003, p 85). In other words, a negative co-variance suggests that in countries with low average poverty rates the increase of poverty is faster than in countries with high average poverty rates (for further reading, see Bryk and Raudenbush, 1992; Twisk, 2003; Goldstein, 2003).

Contrary to what Brady (2004) claims, these models prove very unstable when additional covariates are included. Thus some other estimation technique must be employed for this part of the analysis.

As is evident from Table 1, the 75 observations from the 16 countries provide an unbalanced panel, where different countries contribute different numbers of observations, ranging from two (Switzerland and Denmark) to eight (Italy). As is also shown in Table 1, the time span between observations varies considerably.

Table 1. Countries and years included in the analyses. Countries grouped by institutional type.

	LIS Wave I SCIP year: 1980	LIS Wave II SCIP year: 1985	LIS Wave III SCIP year: 1990	LIS Wave IV SCIP year: 1995	LIS Wave V SCIP year: 2000
Encompassing:					
Finland		1987	1991	1995	2000[a]
Norway	1979		1991	1995	2000
Sweden	1981	1987	1992	1995	2000
State Corporatist:					
Austria		1987		1994, 1997	
Belgium		1985	1988, 1992	1997	2000
France	1979	1984	1989	1994	
Germany	1981	1983, 1984	1989	1994	2000
Italy		1986, 1987	1989, 1991	1993, 1995	1998, 2000
Basic/Targeted:					
Australia	1981	1985	1989	1994	
Canada	1981	1987	1991	1994, 1997, 1998	2000[a]
Denmark		1987	1992		
Ireland				1994, 1995, 1996	2000[b]
Netherlands		1983, 1987	1991	1994	1999
Switzerland	1982		1992		
U.K.	1979	1986	1991	1994, 1995	1999
U.S.	1979	1986	1991	1994, 1997	2000

[a] SCIP data for 1995 are used in the analyses.
[b] Coverage data from SCIP 1995 is used.

It is well known that in regression analyses of panel data the standard assumption that error terms are independent across observations is unlikely to be satisfied. In the present paper, this problem is solved by using the Huber and White robust estimator of standard errors. This approach is quite straightforward, but still capable of relaxing the assumption of correlated error terms. In essence, it assumes that each observation can contribute differently to the variance, and this contribution is weighted into the formula. This feature means that instead of letting each observation contribute differently to the variance we can let clusters of observations (in the present case countries) contribute differently to the variance, and assume only that observations within clusters contribute equally. Ignoring the finite sample

adjustment, this generalised case of the robust standard estimator of variance can be written as:[6]

$$\hat{V} = \hat{\mathbf{V}}\left(\sum_{k=1}^{M} \mathbf{u}_k^{(G)'}\mathbf{u}_k^{(G)}\right)\hat{\mathbf{V}},$$

where $\hat{\mathbf{V}} = \left(-\partial^2 \ln L / \partial\beta^2\right)^{-1}$, the conventional estimator of variance, and $\mathbf{u}_k^{(G)}$ is the contribution of the *k*th group to the scores $\partial \ln L / \partial\beta$, and *M* is the number of independent clusters G_1, G_2, ..., G_M that the data set is divided into (for further reading see Stata Users Guide Release 6, 1999 pp 256-259; White 1982; Schrader and Hettmansperger 1980; Huber 1973; for an application on comparative social policy research, see Bradley et al, 2003).

The robust estimator of variance has no influence on parameter estimates. Thus, since the panel of countries is unbalanced in the sense that they are observed a different number of times, a weighting procedure is used in order to give each country equal weight independently of how many observations they actually provide in the analyses.

The robust estimator of variance is used in all regression models, including random-effects models.

Results

We begin by considering Table 2, showing the results from the random-effects models.[7] The parameter estimates for time in both models suggest that on average poverty rates increase by approximately 0.1 percentage points per year for the period under review. For the twenty-year period as a whole, this implies an average increase of two percentage points.

As noted above, the most crucial information in this model, for the purposes of the present paper, is that which is provided by the ICC. As expected, the ICC indicates that the bulk of the variation, 88 per cent, is found at the country level. The remaining 12 per cent is thus attributable to the temporal dimension. Brady (2004) does not report the ICC. Although he uses an alternative poverty measure we can compare the ICC in Table 2 with that which may be calculated from the least elaborate of Brady's models (Brady, 2004, Model 1 in Table 3), rendering an ICC of 0.91, which is fairly similar to that obtained here.

[6] The finite sample adjustment for clustered data is [*M*/(*M*-1)][(*N*-1)/(*N*-*K*)].

[7] The random-effects models have been estimated with the statistical software MLwiN (Rasbash et al, 2004)

Table 2. Random-effects models with random intercept (1) and with random intercept and random slope (2) on the poverty rate (50% of median income) in 16 countries 1980-2000. P-values in brackets.

	1	2
Time	.12 (<.001)	.12 (.001)
Constant	6.94 (<.001)	6.91 (<.001)
RANDOM PART [*]		
Level 2 variance:		
var (intercept)	14.05 (.006)	12.48 (.017)
var (slope)	-	.008 (.253)
cov (intercept,slope)	-	.004 (.977)
Level 1 variance:		
var (time)	1.93 (<.001)	1.62 (<.001)
ICC	.88	-
LLR	109.84[†]	2.90
df	1	2
prob (df, LLR)	<.001	.235

[*] P-values in the random part are approximations.
[†] In relation to a single-level regression model.

Despite the fact that most variation is attributable to the country level, it is important to investigate the nature of the temporal dimension. In the second model of Table 2, where the random slope is allowed for, we embark on the first step in this analysis. As discussed in the previous section, the sign of the co-variance determines whether or not there is any 'interaction' between the random intercept and the random slope. The table shows that the co-variance term is close to zero and far from significant according to its p-value (z-test). However, it should be noted that the z-scores associated with the random-effects parameters are only approximations (Rasbash et al, 2004). But since the more appropriate LLR test, too, shows that the random-slope model does not provide a better fit than the random-intercept model, we must conclude that there is no indication of convergence (or dispersion) for the countries and time period under review. This result is in line with the finding of Fritzell and Ritakallio (2004). Although these authors have observed a slight tendency towards convergence, it is not salient enough to conclude that poverty rates actually have converged.

Having determined the amount of variation attributable to the temporal level, and the need to reject the convergence hypothesis, we can now turn to the causal structure of poverty in both its temporal and its spatial dimensions. This is done by estimating OLS regression models with robust standard errors, where the relative poverty rate is the dependent variable and where time is included as a co-variate throughout. This enables us to see to what degree the effect of time on poverty changes when other factors are included in the model. It should be noted that the degrees of freedom in models with robust standard errors on clustered data are settled by the formula *N-k-1*, where *N* is not equal to the number of observations but to the

number of clusters, in this case countries. The letter *k* denotes the number of parameters in the model. This obviously places restrictions on the number of co-variates that can be included in the regression models. As a result, Table 3 shows the results from models where the factors of prime interest are included one at a time, as clusters, and also as clusters together with indicators on welfare state models according to Korpi and Palme (1998). However, all variables cannot be included simultaneously; therefore 'structural' factors and 'institutional' social policy factors are analysed separately.

First we observe that the effect of time is practically unchanged as compared to the random-effects models, although its p-value has increased. With this approach the development over time of the poverty rate is modelled as a linear function. This is certainly a strong assumption. To check it, alternative functional forms for the time variable, such as quadratic and cubic forms, have been tested in models not reported here. We then find that although the cubic form slightly improves the fit, it produces an unrealistic shape in the trend over time. Given the fact that the linear function produces a more realistic shape, and that the cubic function erodes degrees of freedom, the former is chosen for the succeeding models.[8]

In models 2-7, the structural, sociodemographic variables are included. First separately (models 2-5), and then together, both without controlling for the welfare state model (Model 6) and with such controls (Model 7). In Model 2, unemployment is included. While it clearly has no effect on the overall variation of poverty rates, the inclusion of this variable reduces the effect of time from 0.12 to 0.07. This suggests that although unemployment has no effect on the overall variance of the poverty rate, dominated by cross-country variation, it might be important for what happens over time. On average the unemployment rate has increased during the period under review.

Model 3 shows that the proportion of single earner households has no effect on the poverty rate, either. However, as in Model 2, the inclusion of this factor has implications for the effect of time. Here, the time parameter increases, implying that had the proportion of single earner households remained stable over the period, instead of decreasing, the poverty rate would have increased faster.

[8] A dummy representation of time does not assume a particular shape, but this approach is not appropriate when the time points are unequally spaced (Twisk, 2003, p 96).

Table 3. Estimates of OLS regression with robust standard errors on the relative poverty rate in 16 countries. P-values in brackets.

	1	2	3	4	5	6	7
Time	.11 (.071)	.07 (.191)	.16 (.070)	.22 (.001)	.20 (.006)	.22 (.008)	.22 (.012)
Unempl. %		.23(.267)				.09 (.683)	.02 (.951)
Single earner %			.72 (.342)			-.06 (.433)	-.06 (.384)
Female lab. force part. %				-.14 (.022)		-.15 (.099)	-.07 (.625)
Families w. children %					.25 (.035)	.15 (.304)	.18 (.185)
Encompassing							0
State Corporatist							3.22 (.173)
Basic/targeted							5.53 (.044)
Constant	7.10 (<.001)	5.88 (.002)	3.28 (.457)	16.36 (<.001)	-10.21 (.168)	8.60 (.542)	-2.54 (.894)
R^2	.03	.06	.06	.16	.15	.23	.46
N (countries)	16	16	16	16	16	16	16
N (observations)	75	75	75	75	75	75	75

Table 3 continued…

	8	9	10	11	12
Time	.04 (.455)	.12 (.031)	.13 (.056)	.08 (.208)	.14 (.034)
Net replacements %	-.13 (<.001)			-.10 (.036)	-.07 (.060)
Coverage rate %		-.03 (.299)		-.02 (.665)	-.03 (.189)
Max. duration			-.06 (.047)	-.05 (.083)	-.06 (.017)
Encompassing					0
State Corporatist					.64 (.567)
Basic/targeted					4.11 (<.001)
Constant	15.49 (<.001)	9.02 (<.001)	11.10 (<.001)	17.70 (<.001)	14.41 (<.001)
R^2	.34	.05	.26	.48	.68
N (countries)	16	16	16	16	16
N (observations)	75	75	75	75	75

A similar pattern is found in Model 4, where the female labour force participation rate is entered into the model, although this variable seems to have effects on both the temporal and the spatial variation of poverty. The parameter estimate suggests that an increase of the female labour force by one percentage point reduces the poverty rate by 0.14 percentage points. The change in the time parameter implies that if female labour force participation had not increased as rapidly as it has in recent decades, poverty rates would have increased substantially more than they in fact did.

The same is true of the effect that the proportion of families with children has in Model 5. Had not this proportion declined, poverty rates would have been greater in year 2000 than they actually were. As with female labour force participation, this variable has an impact on the overall variation of poverty, implying that the greater the proportion of families with children the greater the poverty rate.

In Model 6, where all structural factors are entered simultaneously, only female labour force participation is significant at the 10 per cent level. The magnitude of its parameter estimate remains practically unchanged, while the other estimates are substantially reduced. Again, the change in the time parameter as compared to that in Model 1 indicates that had these factors, taken together, remained at their initial levels, poverty rates would have increased faster than was in fact the case. The time parameter is only slightly reduced when controls are introduced for welfare state model in Model 7. This is quite logical since this factor is time-invariant. However, the effect of female labour force participation is mediated by the welfare state model factor. This is because female labour force participation is greater in the encompassing countries than in the state corporatist countries in particular, but also greater than in the countries in the basic/targeted cluster. As previous studies show, countries in the state corporatist cluster tend to promote single (male) breadwinner households (Ferrarini, 2003), which seems to explain much of the difference between this and the encompassing cluster. Between the encompassing and the basic/targeted welfare state, part of the difference in poverty rates remains after adjustment for the structural factors. Although this does not show up in the table, it is worth mentioning that the difference between state corporatist and the basic/targeted parameters is insignificant.

Models 8-12 focus on the effect of the institutional dimensions of unemployment insurance. In the first of these, Model 8, net replacements are shown to have the expected negative effect on poverty rates. Taken ‘literally’, the parameter estimate indicates that a reduction of replacement rates by one percentage point increases poverty rates by 0.13 percentage points.

The parameter estimate of time is halved when the net replacement indicator is included, suggesting that had not replacement rates declined during the period, poverty rates would have shown a slower increase. Note, too, that the proportion of explained variance in this model by far exceeds that of Model 6 where all structural factors are included.

Unemployment insurance coverage, on the other hand, seems to be uncorrelated to financial poverty in this data set. Also, the effect of time remains unaffected when this variable is included. This should not be taken to mean that coverage rate is irrelevant. Obviously, there must be a lower limit for the coverage rate at which both the replacement rate and the period of payment become redundant as far as poverty alleviation is concerned. If the insurance scheme covers only a small fraction of the population, it is irrelevant whether the replacement rate is 30 or 130 percent. Statistically, this implies that there would be an interaction effect between replacements and coverage as well as between period of payment and coverage, but such analyses lie beyond the scope of the present paper. It should also be noted that the coverage rate in the means-tested Australian system has been set to zero. However, in alternative models not shown here, excluding Australia from the analysis does not affect results.

As with net replacements, Model 10 shows an expected negative effect of maximum duration on the overall variation of the poverty rate, while it seems to have no effect on temporal variation, judging by the unchanged time parameter. As measured by SCIP data, average maximum duration rises during the first half of the period under review, but declines during the latter half. Accordingly, it is quite logical that this factor does not affect the more linear poverty trend although it obviously has important implications for the variation of poverty in the other (spatial) dimension.

Model 11 shows that with the time variable, these factors explain 48 per cent of the overall variance of the poverty rate, while the structural factors explain only 25 percent. However, the impact on the time parameter of the unemployment insurance indicators is weaker than that of the structural factors. Thus it would appear that these structural factors are of greater importance for the temporal variation of the poverty rate, while the unemployment insurance is more important for explaining differences between countries.

In Model 12, finally, the control for welfare state model has been added. The only difference compared to Model 11 is that the effect of net replacements is slightly reduced. Naturally, this is due to the fact that net replacements vary across institutional types, as noted above. Comparing Model 7 with Model 12, we find that the effect of basic/targeted welfare states is

slightly lower in the latter than in the former. Thus, only a small fraction of the difference between encompassing and basic/targeted welfare states is attributable to differences in the unemployment benefit schemes.[9] The difference between the estimates associated with the state corporatist dummy in Model 7 and Model 12, on the other hand, is more profound. The difference between the state corporatist and the encompassing dummy is practically eradicated in Model 12. More sensitive analyses not reported here show that this result is obtained not by any single dimension but by the three unemployment insurance dimensions taken together. The unemployment insurance variables, of course, may well capture the structure of other social insurance schemes. Thus, the difference between state corporatist and encompassing welfare states is to a large degree dependent if not on unemployment insurance at least on the generosity of social insurance in general. Such a result is not out of the ordinary. More interesting in this respect is the fact that the relatively strong deviation of countries with the basic/targeted welfare state model prevails in Model 12. This clearly indicates that not only are replacements rates, etc, of importance for poverty alleviation, but also the institutional structure, presumably in terms of income protection vs. flat-rate benefits.

As noted above, the choice of poverty indicator is partly an arbitrary one and may be a further factor influencing the outcome. In order to tentatively test the sensitivity of the results in this respect, the regression models in Table 3 have been run both with an alternative poverty threshold at 60 per cent of median income and with an alternative equivalence scale where the first adult is given the weight 1, the second adult 0.5, and children 0.3 (results not shown). These analyses produce no substantive deviations from the results in Table 3. In fact, the only change worth mentioning is that the p-value of the state corporatist dummy in Model 7 falls below the 10 per cent level when the 60 per cent threshold is used. Moreover, in analyses not reported here the models in Table 3 were re-run with adjustment for the domestic growth rate and the aggregate growth rate[10] for the 16 countries respectively. These analyses did not change the results. This was also the case for models where the observations from LIS Wave V were excluded. Finally, indicators on the generosity of family policy schemes (see Ferrarini, 2003) were included in Models 8-12 to see whether or not the effects of the

[9] This is also confirmed when comparisons are made with a model incorporating only welfare state type dummies and time, where the effect of the state corporatist dummy is 3.81 and of the basic/targeted dummy 6.41. Both with p-values well below 0.05.

[10] Both factors measure the annual GDP growth rate for each country and for all countries respectively. Data are derived from Penn World Tables (Heston, Summers, and Aten, 2002)

unemployment insurance indicators were reduced. This was not the case; rather the results indicate that these two social policy schemes have independent effects on poverty rates.

Discussion

The primary purpose of this paper has been to depict the causal structure of the poverty rate variation in both its spatial and its temporal dimensions. The general pattern that emerges in these analyses is the tendency whereby the structural factors explain temporal variation better while the social policy factors more fully explain the spatial, cross-country variation. As a result of their impact primarily on cross-country variation, social policy factors also have better explanatory value for the overall variation of poverty. However, there are some exceptions to this general pattern. Female labour force participation, the proportion of families with children, and the net replacement rate in unemployment insurance, for instance, all have effects in both dimensions.

The social policy focus of this paper has primarily been on unemployment insurance institutions. This focus was partly due to the fact that the effectiveness of such schemes in terms of poverty alleviation had not yet been evaluated systematically. Clearly, the design of unemployment insurance schemes is important for understanding the variation of poverty rates across countries. Of the three institutional dimensions evaluated here, the net replacement rate stands out as the most important, since it has effects in both the temporal and the spatial dimension. Moreover, this factor alone explains a larger share of the overall variance than all the structural factors taken together. The maximum duration of payment period in unemployment insurance is also of explanatory value for the overall variation, although not to the same extent as net replacements. Furthermore, as opposed to net replacements, this factor has no impact on the time effect, at least not in the way time has been modelled in these analyses. Finally, as discussed above, the coverage rate does not show enough variation to explain either the temporal or the spatial variation of poverty.

The period under review in this study, especially the latter half of it, has been described as one of welfare state retrenchment (Korpi and Palme, 2003). The results of the study indicate that this retrenchment, in terms of cuts in unemployment cash benefits, has had negative implications for the poverty risks in contemporary welfare states. Both in the academic and the political debate, it is sometimes argued that generous unemployment schemes may be counterproductive in the sense that they tend to create perverse work incentives, trapping people in unemployment and poverty. The results of the analyses presented here indicate that

generous unemployment benefits do not trap people in poverty, on the contrary. The relationship between poverty traps and social policy schemes is probably more a question of the institutional arrangements involved concerning eligibility, in terms not of coverage rate but of means-tested and non means-tested provisions (see for instance Korpi, 1980). Since means-tested benefits –although with a few important exceptions – nearly always produce a marginal effect of 100 per cent in cases where a benefit recipient moves from non-work to work, such systems are more likely to produce poverty traps than universal benefits. In the present study, such an interpretation is supported by the fact that the effects of the unemployment insurance indicators are reduced when the welfare regime typology indicators are brought into the regression model. Whether or not generous unemployment benefits trap people in unemployment, this study cannot say. However, there are indications that generous unemployment schemes, in particular in terms of lengthy payment periods, may promote unemployment (e.g. Sjöberg, 2000b) and reduce work commitment (Esser, 2005). These findings present a dilemma for policy makers. If generous unemployment schemes both reduce poverty and promote unemployment, the generosity level at which unemployment insurances should be set involves a trade-off that is primarily political. However, in contemplating this, it should be borne in mind that the dilemma derives from the maximum duration of period of payment. Neither Sjöberg (2000b) nor Esser (2005) find any negative effects of generosity in terms of net replacements on unemployment rates and work commitment respectively.

Most studies using panel data for cross-country studies of things like poverty or income inequality utilise the panel primarily as a means of increasing the number of observations. The conclusions drawn from such studies focus exclusively on cross-country explanations. The results from the present study and that of Brady (2004) show that this is perfectly legitimate since a major part of the variation is found at the country level. In fact, only about 10 per cent of the variance is attributable to the temporal dimension. However, this is partly due to the structure of the panel, where there are more observation points across countries than across time. In the best of worlds we would have had access to annual data for the countries included, and with such a data set the variation at the two levels would probably have been more evenly distributed

As should be clear from the analyses presented here, the small part of the variation attributable to the temporal dimension must not be used as an argument for ignoring this dimension. Rather, it should be used as an explanation as to why the effects on poverty rates

we would expect from some factors fail to appear. Such explanations are not possible, however, without modelling the poverty rate as a function of time. For instance, if time had not been included in the models, the straightforward interpretation of the effect of unemployment would have been that it is not important for the poverty variation. Undoubtedly, this is correct as long as we only discuss the difference between countries. But since the inclusion of this factor has a profound impact on the effect of time, we must also conclude that it is indeed important for understanding the increase of poverty rates in these countries across the years 1980-2000.

Inversely, the inclusion of the time factor also tells us which factors affect the overall variation of poverty but not the temporal variation. In the present study, such an outcome is found for the indicator on maximum duration of unemployment benefits. This factor has a negative effect on the overall variation of poverty, implying the longer the maximum duration of the period, the lower the poverty rate. However, the development of this factor across time in the countries under review has not been such as to affect the development of poverty across time.

As far as the development of poverty rates across time is concerned, the results of the present study suggest that although they have increased on average between 1980 and 2000, they have neither converged nor are in the process of converging. Although globalisation theory and to some extent theories concerning the logic of industrialism (Kerr et al, 1960; Gray, 1998) suggest that we would expect to see such a pattern among modern welfare states it must be concluded that the convergence hypothesis does not pass the test. However, it should be noted that these theoretical currents are concerned with much longer time periods than the ones analysed in the present paper. Such hypotheses for the period 1980-2000 could probably be derived from these theories, but it would still be unfair to say that they have been falsified on the basis of the results presented here. Nevertheless, the results are in line with those obtained by Fritzell and Ritakallio (2004), although these authors had to rely on a less objective criterion than that employed here. The random effects approach proposed in the present study might need further evaluation, but it seems safe to assume that it could very well be used as a tool for testing convergence (and divergence) hypotheses in many other areas besides that of poverty alleviation. One such research area might concern whether or not different dimensions of social policy institutions are converging in modern welfare states (e.g. Montanari, 2001).

In sum, the overall conclusion that may be drawn from the analyses presented here is that policy does have an impact, not only on cross-country differences in the poverty rate but also on the development of the rate across time. The former result does no more than confirm the findings of a number of studies focusing on that level of variation. The latter result, too, may come as no surprise, since such hypotheses have previously been inferred or even taken for granted by other authors, but they have never been explicitly analysed.

References

Abrahamson, P., J. Anderson, J. Henriksen, J. E. Larsen, 1986. 'Unemployment and Poverty in the Contemporary Welfare State', *Acta Sociologica*, 29: 51–60.

Atkinson A. B., 1989. *Poverty and Social Security*. Hertfordshire: Harvester Wheatsheaf.

Atkinson, T., B. Cantillon, E. Marlier, B. Nolan, 2002. *Social indicators. The EU and Social Inclusion*. Oxford: Oxford University Press.

Atkinson, T., L. Rainwater, T.M. Smeeding, 1995. *Income Distribution in OECD Countries*. OECD Social Policy Studies No. 18. Paris: OECD.

Berendt, C., 2000. 'Do Means–Tested Benefits Alleviate Poverty? Evidence on Germany, Sweden and the United Kingdom from the Luxembourg Income Study.' *Journal of European Social Policy*, 10:23–42.

Bradley, D., E. Huber, S. Moller, F. Nielsen, J. D. Stephens, 2003. 'Distribution and Redistribution in Postindustrial Democracies', *World Politics*, 55:193–228.

Brady, D., 2004. *The Welfare State and Relative Poverty in Rich Western Democracies, 1967–1997*. LIS Working Paper Series, no. 390. Syracuse, NY: Syracuse University.

Bryk, A. S. and S. W. Raudenbush, 1992. *Hierarchical Linear Models*. London: Sage.

Burgess, S., K. Gardiner, C. Popper, 2001. *Why Rising Tides Don't Lift All Boats: An explanation of the relationship between poverty and unemployment in Britain*. CASEpaper 46. London: Centre for Analysis of Social Exclusion, London School of Economics.

Cantillon, B., I. Marx, K. Van den Bosch, 2002. *The Puzzle of Egalitarianism: About the relationship between employment, wage, inequality, social expenditures and poverty*. LIS Working Paper Series no. 337. Syracuse, NY: Syracuse University.

Carroll, E., 1999. *Emergence and Structuring of Social Insurance Institutions. Comparative studies on social policy and unemployment insurance.* Stockholm: Swedish Institute for Social Research Dissertation Series no. 38, Stockholm University.

Castles, F. G. and D. Mitchells, 1991. *Three Worlds of Welfare Capitalism or Four?* Canberra: Australian National University, graduate programme in social policy, discussion paper no. 21.

Danziger, S. and M. Jäntti, 2000. 'Income Poverty in Advanced Countries.' In A. B. Atkinson and F. Bourguignon (eds.), *Handbook on Income Distribution*. Amsterdam: Elsevier.

Esping-Andersen, G., 1990. *Three Worlds of Welfare Capitalism*. Cambridge: Polity Press.

Esser, I., 2005. *Work Values across Twenty European Welfare States. Individual and Insitutional Explanations*. Mimeo: Swedish Institute for Social Research, Stockholm: Stockholm University.

Ferrarini, T., 2003. *Parental Leave Institutions in Eighteen Post-War Welfare States.* Stockholm: Swedish Institute for Social Research Dissertation Series no. 58, Stockholm University.

Fritzell, J. and V-M. Ritakallio, 2004. *Societal Shifts and Changed Patterns of Poverty*. LIS Working Paper Series, no. 393. Syracuse, NY: Syracuse University.

Goldstein, H., 2003. *Multilevel Statistical Models*. 3rd edn. Kendall's Library of Statistics 3. London: Arnold.

Gray, J., 1998. *False Dawn: The delusions of global capitalism*. London: Granta Books.

Gustafsson, B. and M. Johansson, 1999. 'In Search of Smoking Guns: What Makes Income Inequality Vary over Time in Different Countries?' *American Sociological Review*, 64:585–605.

Haataja, A., 1999. *Unemployment, Employment and Social Exclusion*. LIS Working Paper Series no. 195. Syracuse, NY: Syracuse University.

Heston, A., R. Summers, B. Aten, 2002. *Penn World Table Version 6.1*. Center for International Comparisons at the University of Pennsylvania (CICUP), October 2002.

Huber, P.J., 1973. 'Robust Regressions: Asymptotics, Conjectures and Monte Carlo', The 1972 Wald Memorial Lectures, *The Annals of Statistics*, 1:799–821.

Kangas, O., 1991. *The Politics of Social Rights. Studies on the dimensions of sickness insurance in OECD countries.* Stockholm: Swedish Institute for Social Research Dissertation Series no. 19, Stockholm University.

Kangas, O. and J. Palme, 2000. 'Does Social Policy Matter? Poverty cycles in OECD countries', *International Journal of Health Services*, 30:335–352.

Kangas, O. and V-M. Ritakallio, 2000. 'Social Policy or Structure?', in B. Palier and D. Bouget, (eds). *Comparing Social Welfare Systems in Nordic Europe and France*. Paris: MIRE.

Kerr, C., J.T. Dunlop, F.H. Harbison, C.A. Myers, 1960. *Industrialism and Industrial Man. The problems of labour and management in economic growth*. Cambridge, Mass: Harvard University Press.

Kieselbach, T. 2003. 'Long-Term Unemployment among Young People: The Risk of Social Exclusion', *American Journal of Community Psychology*, 32: 69–76

Korpi, W. 1980. 'Approaches to the Study of Poverty in the United States: Critical notes from a European perspective.' In V.T. Covello (ed.), *Poverty and Public Policy. An evaluation of social science research*. Boston & Cambridge, Mass.: G.K. Hall & Co. and Schenkman Publishing Co.

Korpi, W., 2003. 'Welfare-State Regress in Western Europe: Politics, Institutions, Globalization, and Europeanization', *Annual Review of Sociology*. 29: 589–609.

Korpi, W. and J. Palme, 1998. 'The Paradox of Redistribution and Strategies of Equality: Welfare state institutions, inequalities, and poverty in the western countries', *American Sociological Review*, 63:661–687.

Korpi, W. and J. Palme, 2003. 'New Politics and Class Politics in the Context of Austerity and Globalizsation: Welfare state regress in 18 countries, 1975–95', *American Political Science Review*, 97:425–446.

Leibfried, S., 1992. 'Towards a European Welfare State?', in Z. Ferge and J.E. Kolberg (eds.). *Social Policy in Changing Europe*. Frankfurt: Campus Verlag.

Moene, K-O. and M. Wallerstein, 2003. 'Earnings Inequality and Welfare Spending. A disaggregated analysis', *World Politics*, 55:485–516.

Montanari, I. 2001. 'Modernization, Globalization and the Welfare State: a comparative analysis of old and new convergence of social insurance since 1930.' *British Journal of Sociology*, 52: 469–494.

Nelson, K., 2004. 'Mechanisms of Poverty Alleviation: anti-poverty effects of non-means tested and means tested benefits in five welfare states.' *Journal of European Social Policy*, 14:371–390.

Palme, J., 1990. *Pension Rights in Welfare Capitalism. The development of old-age pensions in 18 OECD countries 1930 to 1985*. Stockholm: Swedish Institute for Social Research Dissertation Series no. 14, Stockholm University.

Palme, J., Å. Bergmark, O. Bäckman, F. Estrada, J. Fritzell, O. Lundberg, O. Sjöberg, L. Sommestad, M. Szebehely, 2003. 'A Welfare Balance Sheet for the 1990s', *Scandinavian Journal of Public Health*, Supplement 60, August 2003.

Pampel, F. and J.B. Williamson, 1985. 'Age Structure, Politics, and Cross-National Patterns of Public Pension Expenditures', *American Sociological Review*, 50:782–799.

Pierson, Paul (ed.), 2001. *The New Politics of the Welfare State*. Oxford: Oxford University Press.

Rasbash, J., F. Steele, W. Browne, B. Prosser, 2004. *A User's Guide to MLwiN*. London: Centre for Multilevel Modelling, Institute of Education, University of London.

Ritakallio, V-M., 2002. 'Trends of Poverty and Income Inequality in Cross-National Comparison', *European Journal of Social Security*, 4: 151–177.

Rowntree, S., 1942. *Poverty and Progress*. London: Longman's Green and Co.

Ruggeri Laderchi, C., R. Saith, F. Stewart, 2003. *Does it Matter that We Don't Agree on the Definition of Poverty? A comparison of four approaches*. QEH Working Paper Series Number 107. Oxford: Queen Elizabeth House, University of Oxford.

Schrader, R.M. and T.P. Hettmansperger, 1980. 'Robust Analysis of Variance Based upon a Likelihood Ratio Criterion', *Biometrica*, 67:93–101.

Sjöberg, O., 2000a. *Duties in the Welfare State. Working and paying for social rights.* Stockholm: Swedish Institute for Social Research Dissertation Series no. 42, Stockholm University.

Sjöberg, O., 2000b. 'Unemployment and Unemployment Benefits in the OECD 1960–1990 – An Empirical Test of Neo-Classical Economic Theory', *Work, Employment, and Society*, 14:51–76.

Smeeding, T. M., 2002. *Globalization, Inequality and the Rich Countries of the G-20. Evidence from the Luxembourg Income Study (LIS)*. LIS Working Paper Series no. 320. Syracuse, NY: Syracuse University.

Stata Users Guide Release 6, 1999. College Station, TX: Stata Corporation.

Stenberg, S-Å., 1998. 'Unemployment and Economic Hardship. A combined macro- and micro-level analysis of the relationship between unemployment and means-tested social assistance in Sweden'. *European Sociological Review*, 14:1–13.

Stephens, J. D., E. Huber, L. Ray, 1999. 'The Welfare State in Hard Times.' In H. Kitschelt, P. Lang, G. Marks, J. D. Stephens (eds.), *Continuity and Change in Contemporary Capitalism*. Cambridge: Cambridge University Press.

Twisk, J. W. R., 2003. *Applied Longitudinal Data Analysis for Epidemiology. A practical guide*. Cambridge: Cambridge University Press.

Van den Bosch, K. and I. Marx, 1996. *Trends in Financial Poverty in OECD Countries*. LIS Working Paper Series no. 148. Syracuse, NY: Syracuse University.

White, H., 1982. 'Maximum Likelihood Estimation of Misspecified Models', *Econometrica*, 50:1–26.

Wilensky, H.L, 1975. *The New 'Corporatism', Centralization and the Welfare State*. London: Sage.