Luxembourg Income Study Working Paper Series

Working Paper No. 372

Mechanisms of Poverty Alleviation

Kenneth Nelson

April 2004

Luxembourg Income Study (LIS), asbl

MECHANISMS OF POVERTY ALLEVIATION

A New Method for Disaggregating Anti-Poverty Effects into Various Transfer Programs in Different Types of Welfare States

KENNETH NELSON

Swedish Institute for Social Research
Stockholm University

ABSTRACT

Substantial cross-national differences in poverty alleviation are well documented, but the extent to which different parts of the social transfer system account for this variation is still relatively unexamined. This study analyses the redistributive effects of specific social policy institutions in a comparative perspective. The main question is to what extent non-targeted provisions and means-tested benefits reduce relative economic poverty in different institutional settings. It is shown that the structure of non-targeted entitlements is more important than that of means-tested benefits in explaining differences in poverty alleviation across countries. The study also presents a new method for estimating the anti-poverty effects of separate parts of the social transfer system. This method decomposes the anti-poverty effects of a set of social transfers into independent and combined effects, which produces more valid results than prevalent methods used to assess the impact of a particular transfer on poverty. The countries included in this study are Canada, Germany, Sweden, the United Kingdom and the United States. The empirical analyses are based on the Social Citizenship Indicators Program (SCIP) and Luxembourg Income Study (LIS) for data points describing the situation in the mid-1990s.

The alleviation of poverty is a central policy issue in all modern welfare democracies, although the ambition to mitigate economic hardship varies among governments. Ringen (1987: 141), for example, writes that whereas the responsibility placed on governments to reduce overall inequality varies, all welfare states share the common objective of eradicating poverty. To pursue this objective, countries have developed extensive social transfer systems and spend considerable amounts on redistributive policies. Nevertheless, cross-national differences in relative economic poverty are substantial.

Poverty is generally lower in the Scandinavian and Continental European welfare states than in the English-speaking countries (see Mitchell, 1991; Förster, 1993; Atkinson et al. 1995; Smeeding, 1997; Danziger and Jäntti, 2000). The anti-poverty effects of tax/transfer systems also tend to vary in a systematic fashion across nations. In terms of the relative size of social expenditures, larger welfare states tend to reduce income inequalities more effectively and have lower levels of poverty than smaller ones (see Mitchell, 1991; Förster, 1993; Korpi and Palme, 1998). However, the extent to which the different parts of the social transfer system account for this variation in outcomes is not sufficiently documented. Most studies do not analyze the different stages of the distributive process, but rather the total impact of tax/transfer systems on relative poverty. Therefore, several important questions remain to be addressed or deserve greater attention. One such question concerns the linkages between specific welfare state institutions and patterns of social stratification.

The purpose of this study is to specify the role of separate transfers in the distributive process of the welfare state. I disaggregate the overall issue of the redistributive impact of total tax/transfer systems into questions concerning the separate contributions of two of its constituent parts. The main question is to what extent non-targeted and targeted benefits reduce poverty in different institutional settings. In this study targeted benefit programs are defined as involving a means- or an income-test. The two terms, targeting and means-testing, are used synonymously throughout the text. By analyzing the anti-poverty effects of these two tiers of the social transfer system, the study

relates to the broader debate on how social policies are best structured to reduce poverty. Based on theories emphasizing the importance of middle class support for redistributive policies (see Korpi and Palme, 1998), the hypothesis is that differences among countries in the anti-poverty effectiveness of the welfare state are largely explained by the structure of non-targeted entitlements.

Disaggregated analyses of the anti-poverty effects of the welfare state are challenging for several reasons. These analyses require not only high qualitative micro-level income data and in-depth institutional knowledge, but also elaborate methods to empirically analyze how social transfers interact in the distributive process and produce certain outcomes. Today, there is no method that satisfies this last prerequisite. There has been an ongoing discussion in recent decades on how to measure the contribution of different income components to income inequality (see Rao, 1969; Pyatt, 1976; Shorrocks, 1982, 1983; Lerman and Yitzhaki, 1985; Aaberge and Aslaksen, 1996). The strengths and weaknesses of different approaches of measuring the impact of specific social transfers on poverty have received far less attention.

In the poverty literature, it is possible to discern two different methods for estimating the anti-poverty effects of separate social transfers: the marginal method and the sequential method. The marginal method is the one most frequently used in comparative research. In this method, pre-transfer poverty is defined as that prevailing after a specific transfer has been deducted from disposable income (see Deleeck et al. 1992; Jeandidier and Albiser, 1999; Behrendt, 2000a; Sainsbury and Morissense, 2002; Hölsch and Kraus, 2002).[1] The impact of a certain social transfer on poverty is then equal to the absolute or proportionate reduction in pre-transfer poverty. The sequential method, on the other hand, analyses the reduction in poverty occurring at each stage of the distributive process. It shows how much the addition of a

[1] By marginal, I mean the total deduction of one of several possible social transfers from the income package. Thus, it does not refer to marginal changes in disposable income itself.

social transfer to disposable income reduces poverty (see Rainwater et al. 1986: 181-199; Haataja, 1999).

In this study, I show that none of the prevalent methods accurately specify the interplay between transfers in the distributive process. They both result in misspecifications of the redistributive outcomes of the separated parts of the social transfer system. The distributional interplay among various types of social transfers is due to the income packaging within households, that is, the ways in which households assemble economic resources from various sources, such as earnings, private retirement plans, relative contributions and social transfers (Rainwater et al. 1986). In this context, I refer to the concept of income packaging in a rather narrow sense. It simply means that the disposable income of households may consist of several different types of social transfers. Consequently, two or more transfers may in some instances be sufficiently large to move a household from poverty independently of each other, whereas in other cases it takes the combination of several social transfers to do the same job. Thus, in order to avoid problems of validity in assessments of the net anti-poverty effect of specific social transfers, it is necessary to take into account the income packaging within households. I propose one alternative method where the reduction in poverty caused by a set of social transfers is decomposed into its independent and its combined effects. An independent effect arises when a certain social transfer by itself is sufficiently large to move a household from poverty, whereas a combined effect is the result of the sum of different transfers.

The empirical sections in this study combine institutional information on relevant social insurance programs with micro-level data on income distributions. The institutional analyses are based on data from the *Social Citizenship Indicators Program (SCIP)* and national regulations, whereas the analyses of income distributions are based on household-level income data from the

Luxembourg Income Study (LIS).[2] The empirical analyses are confined to households headed by adults of working age.[3] The countries included in the analysis are Canada, Germany, Sweden, the United Kingdom and the United States. Although these welfare states have established schemes of income protection to reduce economic hardships, different strategies have been used to pursue this objective. The institutional diversity is particularly evident in the area of social insurance, which is captured in the typology of social insurance institutions created by Korpi and Palme (1998). Based on institutional aspects of relevance for the coverage and level of benefits, they discerned five ideal-typical models of social insurance. Three of these models are represented in this study: the state corporatist model (Germany), the encompassing model (Sweden) and the basic security model (Canada, the United Kingdom and the United States). Since the basic security model is characterized by greater institutional diversity than the state corporatist and encompassing models, three countries are chosen to represent this category. It should be noted that Korpi

---

[2] SCIP is an ongoing research project at the Swedish Institute for Social Research, Stockholm University. The database includes quantitative institutional information on the benefit generosity (both gross and net of taxes) and coverage of major social insurance programs – unemployment compensation, sickness cash benefits, compensation for work injuries and old age pensions - for 18 OECD countries at fifteen points over the period 1930-2000. For detailed documentation of this data see Korpi (1989). In the LIS database, micro-level incomes for a large number of countries has been collected and harmonized to allow comparative analyses. For an overview of this database see Smeeding (2002).

[3] This restriction is made for two reasons. First, the redistributive processes determining the economic situation of the elderly and the young are rather different compared with processes affecting working-age people. The level of economic wellbeing among the elderly is less dependent on work income and more determined by cumulative incomes from previous earnings in the form of public and private insurances (Palme, 1996: 25-26). Among young adults a large share of those with low incomes are students who finance their education from a mix of work income, student grants, student loans and allowances. Even though many students have low incomes, their economic situation is in most cases voluntary and could be regarded as an investment for future income. Poverty among students in this sense is not so much founded in market forces; therefore being a poor student can be seen as something else than being a poor worker. Second, in the income data, there is a lack of comparability in the household definition across countries. In the Swedish data all young adults from the age of 18 still living with their parents are treated as independent households, while this is not the case for the other countries included in this study. The restriction to households headed by adults of working age is therefore also a means of improving comparability of data across countries.

and Palme based their typology on the institutional structure of old age pensions and sickness cash benefits. Single social insurance programs may therefore deviate from country classifications. When necessary, such deviations are discussed in the text.

This study is organized into three sections. The first section discusses theoretical aspects related to the redistributive impact of various social policy measures. The second section focuses on the institutional structure of major non-targeted and targeted benefit programs. The third section presents a new method to decompose the reduction in poverty caused by a set of social transfers into program specific components and carries out redistributive analyses of non-targeted provisions and means-tested benefits.

MINIMUM INCOME PROTECTION VERSUS INCOME SECURITY

The anti-poverty effects of the welfare state have been debated in academic research over several decades. In this discussion on poverty, a distinction is often made between non-targeted programs, among which social insurance is important, and targeted benefits, where a prominent example is social assistance. Whereas social insurance provides income security against such social risks as unemployment and work injury, means-tested benefits guarantee a minimum amount of economic resources precisely when other sources of income are insufficient to provide protection against economic hardships. Contrary to social insurance, means-tested benefits involve a distinct vertical redistribution from the rich to the poor and are ultimately measures designed to fight poverty.

The academic debate on the pros and cons of different strategies to eradicate poverty is not easily summarized in a few paragraphs, since supporters and critics of certain types of policy measures often use different conceptualizations of poverty and rely on different empirical criteria as baselines for evaluation. A common argument among proponents of targeted benefits is that the primary beneficiaries of important social policies are the non-poor, and that too small a share of total social benefit expenditures actually reaches

those most in need (see Lerman and Townsend, 1974; Le Grand, 1982; Tullock, 1983; Lee, 1987; Barry, 1990; Besley, 1990). Advocates of means-tested benefits therefore typically place emphasis on various concepts of target efficiency, i.e. the degree to which social expenditures are received by those defined as needy (Beckerman, 1979a, 1979b). Not surprisingly, the general policy recommendation in the fight against poverty proposed by these authors is that the poor should be given a greater share of the total money spent on redistributive policies, something that should be accomplished by a more pronounced targeting of benefits to those below the poverty line. Underlying this argument is a notion of a zero-sum conflict between the level of minimum income protection and the level of income security, where the benefits distributed to the non-poor are assumed to lower the amount available for redistribution to the poor.

Obviously, such a conflict is most likely to appear if governments are committed only to obtain a fixed amount of economic resources to spend on redistributive policies, which also is a common presumption in analyses of alternative policy options. Besley (1990), for example, holds expenditure levels fixed in his comparison of means-tested and universal benefits in the alleviation of poverty. According to Besley, both means-tested and universal benefits create some form of costs to both the government and the claimant. While universal provisions entail a leakage of resources to the non-poor, means-tested benefits are costly to administer and they also tend to stigmatize the recipient and impose psychic costs on the claimant. By comparing the critical level of costs for the same total government expenditure at which means-testing is preferred to a universal benefit, Besley (1990: 125) concludes that there is a '…strong presumption in favor of means-testing' and that the results '…do proclaim the superiority of means-testing'.

Comparisons of alternative policy options on the basis of different concepts of target efficiency and expenditure neutrality do not give an accurate description of the redistributive mechanisms at work in the welfare state. Creedy (1996: 174), for example, argues '…it is inappropriate to hold gross

expenditure fixed in comparing transfer schemes, and also to evaluate schemes without any regard to the extent by which they actually reduce poverty'. The emphasis on means-tested benefits as an anti-poverty strategy has also been theoretically contested. Korpi (1980, 1983), for example, states that while means-tested benefits may transfer a greater share of a fixed amount of economic resources from the rich to the poor than do non-targeted provisions, other factors are likely to make non-targeted transfers more redistributive in the long run. One such factor is the formation of political coalitions in defense of the welfare state, which either can be facilitated or obstructed by the structure of social policies. Whether social policies respond to the demand for income security among middle- and higher-income groups is especially important in this respect. Due to the emphasis on middle class support for welfare state institutions, this perspective on social policy making is sometimes called the middle class inclusion thesis (Pedersen, 1999).

This thesis can be derived from a power resource perspective (Korpi, 1980, 1983, 1985a, 2001). In power resource theory, social policy institutions are the outcomes of positive-sum conflicts related to the distribution of economic resources in society. Once in place, these institutions are not only imbued with a redistributive potential, but they also exercise indirect consequences over time for the formation of identities, interests and values among citizens. The way in which social policy institutions are structured is therefore relevant for people's opinions, beliefs and preferences toward state intervention in market inequalities. From a power resource perspective the redistributive budget need not be fixed. Instead, the amounts available for redistribution are expected to reflect the level of political support for social policies. Accordingly, the budget constraints political actors are faced with in the formation of social policy will, at least in the long run, be more flexible and depend also on the strategies chosen in the development of social insurance (Korpi and Palme, 1998).

Although it is difficult to establish any clear relationships between macro-level variables, such as social policy institutions, and micro-level

indicators, such as citizens' attitudes and opinions toward welfare state institutions, there is some evidence that institutional designs have an impact on public opinions. Several national studies show that non-targeted provisions receive greater support among citizens than do means-tested benefits (Svallfors, 1989, 1996; Kangas and Palme, 1993; Kangas, 1995; Forma, 1996). Comparative attitudinal research also indicates that such feedback effects vary by the degree of welfare state intervention in market processes. Public support for redistributive policies is generally greater in countries with encompassing and state corporatist social insurance systems than in countries with basic security insurance (Svallfors, 1997; 1999: 54-62). Furthermore, in the area of pension policy, public support for universalism is higher in Finland than in Australia, which relies more heavily on selective programs (Forma and Kangas, 1999).

Due to the potential for including broad categories of citizens, the level of political support for redistributive policies is likely to hinge largely on the institutional design of social insurance. Thus, the granting of a high level of income security to people in middle- and higher-income groups may increase the possibilities of also providing a high level of income protection to those located in the lower parts of the income distribution. Following this line of reasoning, a pronounced targeting of social benefits works in the opposite direction, lowering the total amount of economic resources available for redistribution and reducing the possibilities of providing generous social protection to households in lower income segments. Both Palme (1990) and Pedersen (1999) put forth similar arguments, as they reject the idea of a conflict between the level of basic and earnings-related pension benefits. Instead of a trade-off, they find that earnings-related pensions seem to foster the development of basic benefits.

Another relevant factor in this context, which is often overlooked by proponents of targeted benefits, is that social insurance, like means-tested benefits, involves a vertical dimension as people with low incomes often face greater risks of becoming unemployed, ill or subject to work injuries. For

example, analyses based on Swedish data show that both short-term sickness absence (Bäckman, 1998) and recipiency of unemployment compensation (Korpi, 1995) are more prevalent in lower than in higher socio-economic groups. Both social insurance and means-tested benefits are therefore relevant for vertical redistribution and the alleviation of poverty (Palme, 1999: 47-48).

THE GENEROSITY OF SOCIAL ENTITLEMENTS

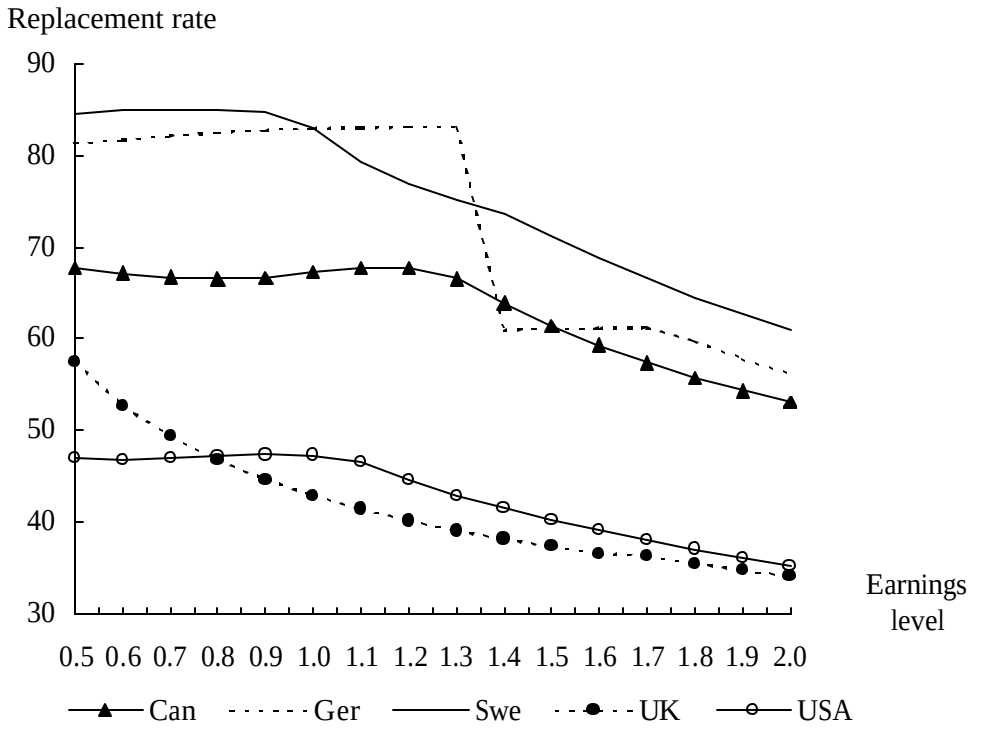
In the middle class inclusion thesis outlined above, general support for the welfare state is expected to be important for the quality of social benefits provided to individuals in the lower tail of the income distribution. The degree to which social insurance responds to the demand for income protection among middle- and higher-income groups is particularly relevant. Hence, if the welfare state includes the middle class, the political possibilities are greater for providing generous social protection to the less fortunate. *Figure 1* gives some support for this hypothesis. It shows an additive index of net benefit replacement rates in sickness, unemployment and work accident insurance at different levels of an average production worker's gross wage in Canada, Germany, Sweden, the United Kingdom and the United States in 1995.[4] Since the three programs differ in terms of their importance for the shape of the final income distribution, a weighted index is used.[5]

---

[4] The social insurance replacement rates are measured as the net benefit in percentages of the net wage at different levels of gross earnings. Since replacement rates for each program may vary across different types of households and over the duration of receipt of this benefit, two types of households and two periods of duration are used: a single person and a one-earner family with two children receiving social insurance benefits for 1 week and 26 weeks. Included in the replacement rates are also universal child benefits and refundable tax-credits for which the type case households would be entitled. Means- or income-tested benefits, such as social assistance and housing benefits, are not taken into account. As such, the figures reflect the quality of non-targeted provisions in a wider sense. The net social insurance replacement rates have been calculated on the basis of information of national social security and tax regulations in Commission of the European Communities (1996), US Social Security Administration (1995), OECD (1995), and International Bureau of Fiscal Documentation (1995).

[5] In the index, unemployment compensation is given a weight of .70, whereas sickness cash benefits and accident insurance are given weights of .27 and .03, respectively. These

Figure 1. *Weighted index of net benefit replacement rates in sickness, unemployment and work accident insurance at different levels of an average production worker's gross wage in Canada, Germany, Sweden, the United Kingdom, and the United States in 1995*



Note: The vertical axis shows the net benefit as a percentage of the net wage, whereas the horizontal axis depicts different levels of an average production worker's gross wage.

Source: Own calculations based on Commission of the European Communities (1996), U.S. Social Security Administration (1995), OECD (1995), International Bureau of Fiscal Documentation (1995). Data on average production workers' wages is from SCIP.

Social insurance maintains normal or accustomed standards of living to substantially varying extents across countries. Due to modest flat-rate benefits or weak earnings-relatedness, the basic security programs in the three English-speaking countries have levels of income security clearly below those of Sweden across the whole earnings spectra. The greater degree of earnings-

---

weights roughly correspond to each program's share of total benefit expenditures for the three schemes.

relatedness in the Canadian system is accompanied by more generous benefits than in the United Kingdom and the United States, but the graduation of benefits by earnings is generally not enough to provide the same level of compensation as in Germany and Sweden.[6] The significant drop in the social insurance replacement index in Germany at 1.4 times an average production worker's wage is due to the exclusion of high wage earners from sickness insurance. It should be noted, however, that there is a voluntary coverage in sickness insurance for salaried employees earning more than the maximum earnings level for benefit purposes.

Due to the absence of national sickness insurance legislation, the figures for the United States are not strictly comparable with those of the other countries.[7] One could argue that comparability across countries would be improved if sickness cash benefits were excluded as a component in the social insurance replacement index for this country. However, this would clearly over-estimate the generosity of social insurance in the United States, not the least because work accident insurance would be given much greater weight than in the other countries. In several countries, the structure of work-accident insurance often deviates from that of other insurances. In general, and specifically in the United States, workers' compensation covers a larger fraction of the labor force and provides more generous benefits than sickness insurance and unemployment compensation, although the benefit levels in a comparative perspective are low (Kangas, 2000).[8]

---

[6] Although not included in the figures presented here, the degree of earnings-relatedness in maternity insurances often resembles that of sickness insurance in most Western countries. The most distinctive difference between these two schemes is commonly found in terms of benefit duration (Ferrarini, 2003).

[7] In the index of net benefit replacement rates shown in Figure 1, sickness cash benefits in the United States are coded zero.

[8] These peculiarities of work accident insurance are often related to the way in which social insurance entitlements impede on the functioning of market principles, where worker's compensation serves broader political interests and is less politically contested than other insurance schemes (Väisänen, 1992; Carroll, 1999; Kangas, 2000).

The intersection of the Swedish and German lines at the level of an average production worker's wage is due to the structural differences between encompassing and corporatist programs, where core social insurance provisions in Germany are more intended to uphold market differentials than to address poverty risks (Leisering and Leibfried, 1999: 267). The income ceilings, defining the level above which lost earnings are not replaced by insurance benefits, are higher in Germany than in Sweden, whereas no minimum benefits exist at all in the German social insurance system. In Sweden, on the other hand, there is a minimum floor in unemployment insurance amounting to the flat-rate allowance received by those not qualifying for earnings-related compensation.[9]

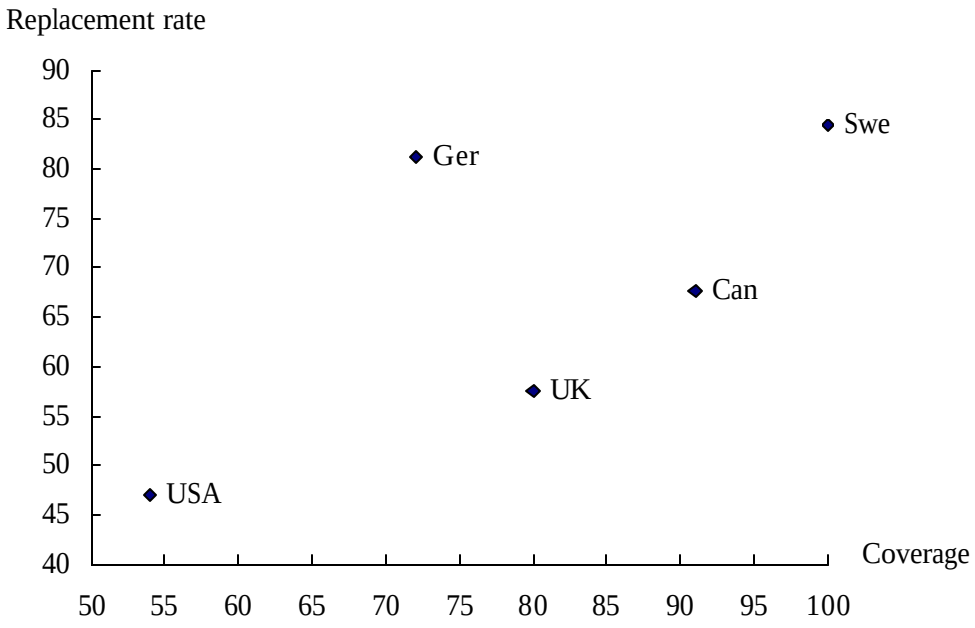
It should be mentioned that although net benefit replacement rates have extensively been used in comparative research to analyze benefit generosity (see Myles, 1989; Esping-Andersen, 1990; Palme, 1990; Kangas, 1991; Bradshaw et al. 1993; Whiteford and Bradshaw, 1994; Korpi and Palme, 1998), such comparisons may not always give an accurate description of the quality of a country's social security arrangements in the broader sense. One problem is that replacement ratios show how the system should work, not how it actually works. The estimates may also be sensitive to the wage series chosen in the calculation of statutory entitlements (Whiteford, 1995). Although this should be of minor importance in the analyses above, which take into account the replacement rates offered to workers at different levels of earnings, an alternative would be to rely on absolute benefit levels. However, a comparison of the level of statutory entitlements adjusted for PPPs and standardized by GDP per head (also at PPPs) does not alter the main pattern described in Figure 1. Most importantly, what happens is that relative to Germany and Sweden, social insurance benefits in Canada become more generous across the whole earnings distribution taken into account.

---

[9] The flat-rate unemployment allowance was replaced in 2001 by a basic unemployment benefit.

The coverage of benefits is another relevant feature for the redistributive impact of social policies and also here substantial cross-national differences exist. *Figure 2* depicts values of a weighted index of benefit coverage in sickness, unemployment and work accident insurance in the five countries in 1995.[10] It also depicts values of a weighted index of net benefit replacement rates in sickness, unemployment and work-accident insurance at the level of one-half an average production worker's gross wage.

Figure 2. *Weighted index of coverage and weighted index of net social insurance replacement rates in unemployment, sickness and work-accident insurance at the level of half an average production worker's wage in 1995*



Source: Coverage of social insurance is from SCIP. For the index of net social insurance replacement rates see sources for Figure 1.

[10] In each scheme, social insurance coverage is measured as the number of insured for daily allowances as a percentage of the labor force aged 15-64. The same program weights are used as in the social insurance replacement index above.

Universalism is reached only in the encompassing social insurance system in Sweden, where eligibility for benefit is based on citizenship.[11] It should be noted, however, that in countries where flat-rate benefits are complemented with an earnings-related component, eligibility for the latter type of compensation is usually established with reference to past work record. Canada is the only country that resembles Sweden, with coverage slightly above 90 percent of the labor force. The other two countries with basic security programs, the United Kingdom and the United States, have significantly lower levels of coverage. The extremely low coverage in the United States is partly due to the absence of national sickness insurance legislation. Excluding sickness cash benefits from the index would boost coverage in the United States to approximately the same level as in the United Kingdom. The low coverage in Germany is due to the corporative structure of social insurance, which has excluded economically non-active citizens and, in some cases, also high-income earners.

Although comparisons of benefit replacement rates should be interpreted with caution for reasons stated above, the results show that in cases where social insurance provides the middle class with a high level of income security, individuals in lower income groups also tend to benefit from more generous protection against losses in earnings. This result is not primarily due to improvements in flat-rate basic benefits, but to the degree of earnings-relatedness. Even for people earning one-half an average production worker's wage, earnings-related compensations generally tend to provide more generous protection against losses in earnings than do flat-rate basic benefits. Hence, individuals with very low wages also seem to benefit most from earnings-related compensation.

---

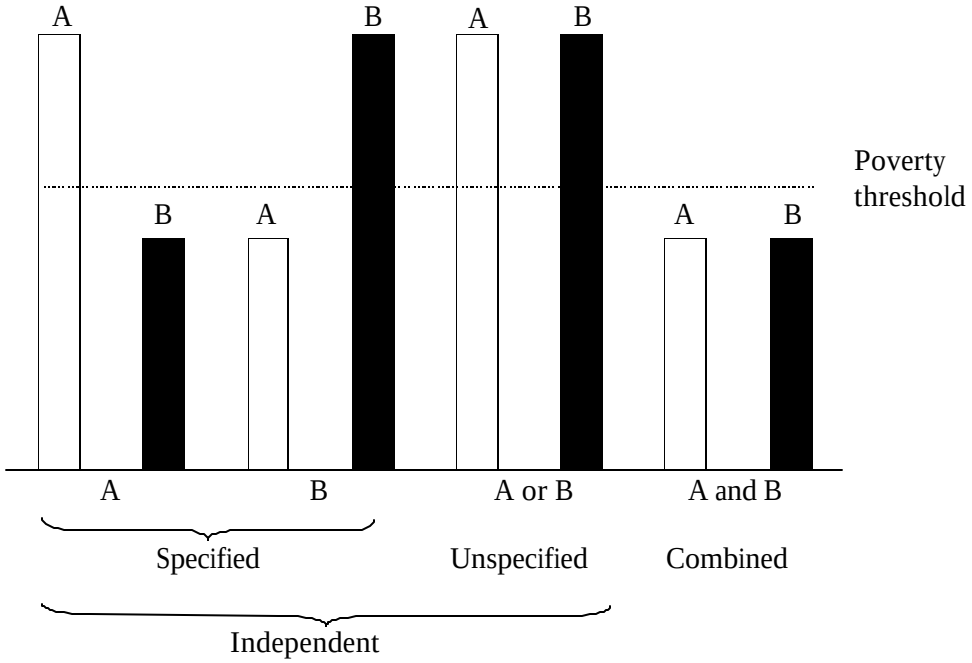
[11] Unemployment compensation was not provided on a truly universal basis in any national scheme in the mid-1990s (Carroll, 1999: 128). In Sweden, for example, unemployment insurance is characterized as a voluntary state-subsidized system of income protection (Palme and Wennemo, 1998).

One possible objection to the evidence presented above is that the welfare state consists of a complex set of social transfer programs. What is achieved in one country by first-resort social insurance payments may in other instances be accomplished by last-resort means-tested benefits (Castles, 1997). In most cases where eligibility for social insurance provisions cannot be established or when such benefits are inadequate to provide a certain standard of living, means-tested benefits are often the most important instrument whereby governments attempt to maintain the economic well being of its citizens. Therefore, countries with less generous social insurance schemes may have more generous means-tested benefit programs. However, observed patterns in the level of such benefits do not fully support this proposition (see Eardley et al. 1996a; Kemp, 1997; Bradshaw and Finch, 2002). According to the estimates provided by Eardley et al. (1996a), for example, means-tested social assistance tends to be most generous in Sweden followed by Germany, the United Kingdom, Canada, and the United States. Earlier I have also provided some evidence of a dependency between the degree of income security in social insurance and the generosity of means-tested minimum income protection. Here, the structure of social insurance either has facilitated or obstructed the political possibilities of extending means-tested provisions further up the income scale (Nelson, 2003).

ON THE MEASUREMENT OF REDISTRIBUTION

Below I present the method of disaggregating anti-poverty effects of a set of social transfers into its independent and combined effects. The presentation is restricted to a case with two different transfer types, named (A) and (B). For ease of presentation, *Figure 3* provides a graphic illustration of independent and combined effects.

Figure 3. *Graphic illustration of independent and combined anti-poverty effects in disaggregated analyses of two transfer types, A and B*



If one of the two transfer types is sufficiently large to move a household from poverty regardless of the level of the other, it is defined as an independent anti-poverty effect. In cases where the income package of a household consists of two different types of transfers, for example non-targeted entitlements and means-tested benefits, each transfer type may be large enough to move the household above the poverty threshold on its respective own. In such instances, it is not possible to ascribe the reduction in poverty to only one of the analyzed transfers. Therefore, the independent anti-poverty effect can be divided into two specified parts, denoted (A) and (B) in the figure, and one unspecified part, labeled as (A or B). The former equals that part of the independent effect due to a specific type of transfer that would not arise if this income component were removed from the income package. The latter amounts to that part of the independent reduction in poverty that alternatively can be ascribed to either one of the two transfer types, and the unspecified independent effect can thus be attributed both to non-targeted provisions and means-tested benefits. In contrast to the specified effects, the

removal of one of the two transfer types from the analysis would leave the unspecified effect unchanged. Finally, the combined anti-poverty effect is equal to the reduction in poverty due solely to the combination of the two transfer types, denoted (A and B). Consequently, in cases where the analysis comprises two separate types of social transfer programs, we end up with four different anti-poverty effects: two specified independent effects, one unspecified independent effect, and one combined effect. The independent and combined anti-poverty effects together represent the total poverty reducing impact of the two transfers.

In order to illustrate the advantage of decomposing the reduction in poverty into independent and combined effects, I apply the method to a fictitious income data set. I restrict the example to the most simple and frequently cited statistic in the poverty literature, the so-called head-count measure (Mitchell, 1991), although the method also can be applied to more intensity-driven measures, such as the poverty gap. The head-count measure estimates the number of families whose incomes are below a specified poverty threshold. Based on this statistic the anti-poverty effectiveness of social policies is measured as the absolute or relative reduction in the number of individuals in pre-transfer poverty.[12]

The fictitious income distribution is shown in *Table 1*, and comprises eight persons with an individual income package consisting of market income (MI), and two types of transfers (A) and (B). The disposable income of each person is equal to the sum of MI and transfers A and B. The yardstick whereby the extent of relative economic poverty is evaluated is 50 percent of the median disposable income, which in this example amounts to 22.5 monetary units. Figures in italics indicate whether the person is defined as poor or not. The last row displays the number of market income and disposable

---

[12] In the measurement of redistribution, some studies have instead used a system of sequential probability equations in order to estimate changes in the risk of being relatively poor (see Danziger and Jäntti, 1992; Båvner, 2001: 121-154), or have alternatively made use of partial pre- and post-transfer country orderings (see Mitchell, 1991: 52).

income poor. Together transfers A and B reduce pre-transfer poverty by 85.7 percent [(6/7)*100].

Table 1. *Fictitious income distribution*

Person	MI	A	B	Dpi	
1	90			90	
2	*20*		50	70	B
3	*10*	20	20	50	A or B
4	*20*	30		50	A
5	*0*	20	20	40	A and B
6	*10*	10	10	30	A and B
7	*10*	20		30	A
8	*10*			*10*	
Nr. poor	7			1	

The column to the right in Table 1 indicates whether we have a specified or an unspecified independent effect. Once again, the former effect is denoted (A) or (B), whereas the latter is denoted (A or B). It also shows whether we have a combined anti-poverty effect, denoted (A and B) in the table. Independently of each other, transfers A and B move three persons (3, 4 and 7) and two persons (2 and 3), respectively, out of poverty. Since both transfers move the third person out of poverty, we cannot ascribe this achievement specifically to either of the two transfers. The unspecified independent reduction of poverty resulting from the presence of the third person corresponds to a reduction in pre-transfer poverty by 14.3 percent. The computation of reduction coefficients is shown in the *Appendix*. The specified independent anti-poverty effect of transfer A is constituted by the effects for the fourth and seventh person, and amounts to a reduction in pre-transfer poverty by 28.6 percent. The corresponding reduction attributed to transfer B is 14.3 percent (yielded by the second person). Two persons (5 and 6) are secured from poverty only due to the combination of receiving both transfers, and the combined anti-poverty effect therefore amounts to 28.6 percent. The sum of the three independent anti-poverty effects and the combined reduction in

pre-transfer poverty is 85.7 percent, which corresponds to the total impact of the social transfer system on poverty in this example.

From the decomposition presented above it follows that the anti-poverty effect of transfer A is greater than that of transfer B. Transfer A reduces poverty by 42.9 percent (28.6+14.3) independently of the level of the other transfer, whereas the corresponding reduction attributed to transfer B is 28.6 percent (14.3+14.3). However, in about one-third of the cases where transfer A lifts a person out of poverty (14.3/42.9), this person would also have been secured from poverty by the other transfer.

To what extent do findings based on the marginal and sequential methods correspond with those of the decomposition by independent and combined effects? *Table 2* gives a preliminary answer to this question. Displayed are the results when the marginal and sequential methods are applied to the fictitious income distribution described above. At first glance the marginal method seems to generate almost the same finding as above; transfer A is more effective in reducing poverty than transfer B. Here it should be noted, however, that the difference between the two transfers is not as great as in the decomposition by independent and combined effects. Furthermore the sum of the two anti-poverty effects in the marginal method is not equal to the total reduction in poverty.

In the application of the sequential method, transfer A is assumed to enter the distributive process at an earlier stage than transfer B. The sequential method exists in two versions, which can be distinguished by the way in which redistribution is measured. In the first version, the initial stage of the distributive process is used to estimate the reduction in poverty at subsequent stages (see Haataja, 1999), while in the second version the reduction in poverty at each stage of the distributive process is estimated from the baseline of that achieved in the previous stage (see Rainwater et al. 1986: 181-199). According to the first version of the sequential method, it turns out that the two transfers are equally effective. When the second version is used, the anti-poverty effect of transfer B is greater than that of transfer A. Note that the

latter result is completely the opposite of what was found by the marginal method and by the decomposition by independent and combined effects.

Table 2. *Poverty reduction coefficients of the marginal and sequential methods (fictitious income distribution)*

Marginal Transfer A	[(5 – 1) / 5] * 100	= 80.0
Marginal Transfer B	[(4 – 1) / 4] * 100	= 75.0
I. Sequential Transfer A	[(7 – 4) / 7] * 100	= 42.9
I. Sequential Transfer B	[((7 – 1) / 7) – ((7 – 4) / 7)] * 100	= 42.9
II. Sequential Transfer A	[(7 – 4) / 7] * 100	= 42.9
II. Sequential Transfer B	[(4 – 1) / 4] * 100	= 75.0

In sum, the marginal and sequential methods may provide very different results, although they are applied to the same data. To some extent this reflects the way in which the two methods handle the distributional interplay between the analyzed transfers. In the marginal method, this interplay is built into each of the social transfers under investigation. More formally, the marginal method ascribes the combined anti-poverty effect to both transfers under investigation, whereas it fails to pick up the unspecified independent reduction of poverty. Consequently, the direction and degree of misspecification in the marginal method depends on the nature of the distributional interplay between the analyzed transfers.

The sequential method is sensitive to both the nature of the distributional interplay between the analyzed transfers and to the ordering of transfers in the distributive process. In the sequential method, the first-ordered transfer is given all credit for the unspecified independent reduction of poverty, whereas the combined anti-poverty effect only is ascribed to the second-ordered transfer. Another problem with the sequential method is that it requires social transfers to be perfectly ordered. At best such an ordering is possible only in the case of means-tested benefits that enter in the last stage

of the distributive process. However, if the focus is on means-tested benefits and if the second version of the sequential method is applied, the measurement procedure is identical with the marginal method described above and therefore shares the same limitations. Furthermore, depending on how certain social transfers are administered, the sequential method would also, at least in the ideal case, require monthly or weekly income data. Unfortunately, however, this type of data is seldom possible to acquire, particularly in comparative research.

ANTI-POVERTY EFFECTS OF SOCIAL TRANSFERS

The institutional description above showed that the structure of social insurance differs significantly among the five countries under investigation. The generosity of social insurance benefits provided to citizens in lower wage classes tend to be greatest in Sweden, followed by Germany, Canada, the United Kingdom and the United States. The coverage of social insurance entitlements has a slightly different pattern. Here, the Swedish welfare state with nearly complete coverage is followed by Canada, the United Kingdom, Germany and the United States. The cross-national variation in the generosity of means-tested minimum income protection is similar to that of social insurance, with Sweden followed by Germany and the English-speaking countries (Eardley et al. 1996a).

On the basis of the institutional differences sketched above, the anti-poverty effects of social transfer systems are expected to also show substantial cross-national variation. However, here it should be emphasized that it is difficult to theoretically and empirically relate institutional structures to distributive outcomes. The final redistribution achieved by the social transfer system is not only dependent on the structure of social policies, but also conditional upon a number of other factors, such as labor market behavior and

demographic factors.[13] These confounding factors may in turn also be affected by the structure of social transfers, something that usually is referred with respect to 'behavioral' effects of social policies. Furthermore, usually employee and employer social security contributions are assumed to be pure burdens on taxpayers, hence, lowering the level of disposable income. Some researchers have contested this idea and argued that these taxes instead should be treated as part of the income package as deferred earnings (Whiteford, 1995).

There are at least two problems with measuring income this way. First, the amount of benefit received in return for social insurance contributions is not perfectly in proportion to payments made into the schemes, particularly in the case of insurance benefits for working age people. Therefore, treating social security contributions as postponed earnings requires detailed knowledge of the exact proportion of social security contributions that should be treated as part of the net wage package of workers rather than as part of the tax burden, information that that is very difficult to get. Second, even if social security contributions are treated as deferred earnings, they differ from normal cash earnings since they are not readily accessible for people to use for consumption until the individual becomes, for example, ill or unemployed. Nevertheless, due to the problems involved in cross-country comparisons of income distributions, the results in this section should be interpreted with caution.

Based on the institutional structure of social transfers, a few hypotheses may be formulated. The greatest impact on pre-transfer poverty should be found in Sweden, where nearly complete coverage is combined with generosity. The anti-poverty effects in the other countries are more difficult to

---

[13] In previous analyses where some of these confounding factors have been controlled for, either by use of multivariate regression techniques (Danziger and Jäntti, 1992) or micro-simulations (Kangas and Ritakallio, 1998), the structure of tax/transfer systems is found still to have explanatory power in accounting for cross-country differences in relative poverty.

foresee. Due to the generosity of social entitlements, the German system is expected to reduce poverty more effectively than corresponding systems in the English-speaking countries. However, the low coverage and the absence of minimum social insurance benefits should make the German system less effective than its Swedish counterpart. Among the English-speaking countries, the greatest alleviation of poverty should be found in Canada, which provides more generous benefits and has higher levels of social insurance coverage than the United Kingdom and the United States. Finally, the absence of national sickness insurance legislation combined with a comparatively low quality of social benefits should make the United States least redistributive of the five countries.

Table 3 shows the level of poverty before and after social transfers and the proportional reduction in pre-transfer poverty in Canada, Germany, Sweden, the United Kingdom and the United States in the mid-1990s.[14] The level of poverty is measured by the head-count statistic, and to adjust for the needs of families of different size and composition the equivalence scale used throughout this study gives the first adult in a family a weight of 1. Every other adult is given a weight of 0.7 and every child a weight of 0.5. This is the 'classical' scale suggested by OECD, and it assumes modest economies of scale in the family. Since the results may be sensitive to the choice of equivalence scale (Buhmann et al. 1987; Förster, 1993), sensitivity tests with alternative scales that assume more and less substantial economies of scale are carried out. However, these tests do not alter the main findings presented below.[15]

---

[14] Taxable social insurance benefits are measured after direct income taxes and social security contributions by the use of a proportional tax estimation technique (Nelson and Ferrarini, 2002b). This tax estimation technique causes an under-estimation of the level of non-targeted provisions in countries where direct income taxes are levied at the individual level. In a previous study, however, Ferrarini and Nelson (2003) show that this underestimation is almost negligible.

[15] The square root scale, which assumes more substantial economies of scale within the family, generally increases the relative contribution of non-targeted provisions to the total reduction of poverty, whereas the contribution made by means-tested benefits is some-

Table 3. *Relative poverty rates before and after social transfers and proportional reductions in pre-transfer poverty in Canada (1994), Germany (1994), Sweden (1995), the United Kingdom (1995) and the United States (1994) among households headed by adults aged 25-59 (head-count measure)*

Country	Pre-transfer poverty	Post-transfer poverty	Relative poverty reduction
Canada	21.0	11.4	45.7
Germany	16.9	6.8	59.8
Sweden	28.3	3.3	88.3
United Kingdom	28.8	16.4	43.1
United States	22.9	18.6	18.8

Note: The formula for calculating relative poverty reductions is $[(P_{MI}-P_{DPI})/P_{MI}]*100$, where P_{MI} is the market income poverty level and P_{DPI} is the disposable income poverty level.

Source: Own calculations based on LIS.

The empirical evidence suggests that social transfer systems reduce poverty, yet there are marked differences in the magnitude of this impact across countries. The ranking of countries corresponds with the expectations. Sweden achieves the greatest alleviation of poverty, followed by Germany, with Canada, the United Kingdom, and the United States lagging clearly behind. The most surprising result is that the difference in poverty alleviation between Canada and the United Kingdom is not as great as one might expect, only 2.6 percentage points. However, it should be recognized that the United Kingdom has a higher pre-transfer poverty rate to start with and thus a greater share of poor persons to lift out of poverty than Canada.

To what extent do the different parts of the social transfer system account for this variation? One answer to this question is shown in *Table 4*,

---

what lowered. The results given by the application of the 'modified' OECD scale, which ascribes weights of 1 for heads of the households, 0.5 for each additional adult and 0.3 for each child, shows the opposite. The relative contribution of non-targeted entitlements to the total reduction in poverty is slightly lower than in the application of the 'classical' OECD scale, whereas the contribution of means-tested benefits is slightly higher.

which displays the independent and combined anti-poverty effects of non-targeted entitlements and means-tested benefits in the five countries.[16]

Table 4. *Independent and combined anti-poverty effects of non-targeted provisions and means-tested benefits at various poverty thresholds in Canada (1994), Germany (1994), Sweden (1995), the United Kingdom (1995) and the United States (1994) among households headed by adults aged 25-59 (head-count measure)*

	Poverty threshold	Independent effect			Combined effect	Total effect
		Specified non-targeted benefits	Specified means-tested benefits	Unspecified effect		
Can	40	20.7	22.3	7.4	11.9	62.3
	50	20.9	11.3	5.5	7.9	45.6
	60	18.8	6.1	3.3	6.3	34.5
Ger	40	48.4	10.2	3.5	11.6	73.7
	50	42.9	6.6	4.2	6.4	60.1
	60	33.6	3.7	0.4	7.1	44.8
Swe	40	60.5	11.2	14.8	4.5	91.0
	50	61.5	7.0	10.4	9.5	88.4
	60	59.8	3.6	5.6	12.3	81.3
UK	40	12.4	25.5	6.3	22.1	66.3
	50	11.5	16.0	2.8	12.7	43.0
	60	11.6	7.6	1.5	9.3	30.0
USA	40	12.6	8.9	3.2	5.6	30.3
	50	9.9	4.0	1.5	3.3	18.7
	60	7.5	2.4	0.5	1.7	12.1

Source: Own calculations based on LIS.

The high degree of poverty reduction in the Swedish welfare state emanates from a remarkable level of redistribution by non-targeted provisions. At the 50 percent poverty threshold, non-targeted entitlements in Sweden reduce poverty by 71.9 per cent (61.5+10.4) independently of the level of means-tested benefits. However, of this reduction about 10.4 percentage points are

[16] Due to rounding errors the total anti-poverty effects in table 4 differ on the first decimal from those depicted in Table 3.

also obtained through means-tested benefits, as indicated by the unspecified independent effect. The independent anti-poverty effect of non-targeted entitlements in Sweden is even higher than that of the total social transfer system in the other countries, irrespective of the poverty threshold chosen for comparison. For example, compare the independent anti-poverty effect of non-targeted provisions in Sweden referred to above (71.9 percent) with the total reduction in poverty at the 50 percent poverty threshold in the other countries. The high degree of redistribution in the German welfare state is also mainly due to the structure of non-targeted provisions. However, the modest performance of means-tested benefits in Germany diminishes the distance to the English speaking countries in the alleviation of poverty at lower thresholds.

From an institutional perspective the anti-poverty effects of means-tested benefits in Germany may seem remarkably low. To some extent this result may in part reflect the quality of German income data. Two problems with this data need to be addressed. First, market income includes parts of the wage continuation paid in the form of sickness and maternity insurances (Rainwater, 1993). Relative to the other countries, market income is therefore more equally distributed in Germany, which obviously not only affects the performance of means-tested benefits, but also the anti-poverty effects of non-targeted entitlements. Second, government transfers, in particular social assistance, are more under-reported in Germany than in, for example, Britain and Sweden. According to estimates made on an older data-set from the mid-1980s, means-tested social assistance (*Sozialhilfe*) and the income-tested housing allowance (*Wohngeld*) in Germany are under-reported by about 38 and 85 percent, respectively (Berntsen, 1989; Kassella and Hochmuth, 1989). The anti-poverty effects of means-tested benefits in the United States are also very low. At the 50 percent poverty threshold, the independent reduction of poverty attributed to means-tested benefits in the United States amounts only to 5.5 per cent (4.0+1.5), which can be compared to a reduction in Sweden by

17.4 per cent (7.0+10.4). However, the modest impact of means-tested benefits in the United States is in line with the institutional description above.

The redistributive effects of means-tested benefits take on a more mixed pattern across welfare states than that for non-targeted entitlements. Independently of the level of non-targeted provisions and at the lowest poverty threshold, means-tested benefits achieve a greater alleviation of poverty in Canada and the United Kingdom than in the other countries. This result, however, probably has less to do with the generosity of means-tested benefits than with the structure of non-targeted programs. For example, at the 40 percent poverty threshold, non-targeted transfers in the United Kingdom only reduce poverty by 18.7 percent (12.4+6.3), independently of the impact of means-tested benefits. Corresponding reductions in Germany and Sweden are 51.9 and 75.3 percent, respectively. The modest performance of non-targeted entitlements in the United Kingdom, and to some extent also in Canada, obviously creates a greater demand for means-tested benefits as a safeguard against poverty.

It is interesting to note that means-tested benefits in Sweden achieve a fairly high degree of redistribution, even though non-targeted transfers already have moved a large proportion of pre-transfer poor out of poverty before these benefits come into play. In fact, at the 50 and 60 percent poverty threshold and independently of the level of non-targeted entitlements, means-tested benefits achieve almost the same degree of poverty reduction in Sweden as in Canada and the United Kingdom. Compare, for example, the independent effect of means-tested benefits in Sweden at the 50 percent poverty threshold (7.0+10.4=17.4) with the United Kingdom (16.0+2.8=18.8).

The decomposition of poverty alleviation into independent and combined effects also shows that, compared with Germany and Sweden, a greater share of individuals receiving non-targeted provision in the three English-speaking countries must complement their income with means-tested benefits to escape poverty. This finding is indicated by the relative sizes of the combined effects, which are greater in Canada, the United Kingdom and the

United States than in Germany and Sweden. For example, at the lowest poverty threshold, the combined anti-poverty effect of the two transfer types in the United Kingdom amounts to a reduction in poverty by 22 percent, which approximately corresponds to one third of the transfer system's total effect (22.1/66.3). In Germany and Sweden, corresponding shares of the total effect are about 16 and 5 percent, respectively.

Another finding is that non-targeted benefits achieve almost the same degree of poverty alleviation at each of the three poverty thresholds. This is most evident in Canada, Germany and Sweden, where social insurance provides comparatively high levels of income security across the whole earnings spectrum. The anti-poverty effects of means-tested benefits, on the other hand, decrease sharply when we move to higher poverty thresholds. Precisely this characteristic of means-tested benefits renders welfare states with basic security insurance and a strong emphasis on selective policies less effective in reducing poverty among the moderately poor than among those living in harsh poverty. Here, it is interesting to compare the results of Canada with those of the United Kingdom. Both countries have implemented a basic security model of social insurance, but they nonetheless show marked differences in distributive outcomes. The most distinctive difference is that the relative importance of means-tested benefits is much greater in the United Kingdom than in Canada, which probably reflects the low level of social insurance generated by the flat-rate benefit structure in Britain. Due to the quality of social insurance, in particular the flat-rate benefit structure, the British social transfer system is less effective than its Canadian counterpart in reducing poverty at higher thresholds.

DISCUSSION

The criterion by which welfare states should be evaluated is a contested issue. Fighting poverty is not the only goal of social policies. Nevertheless, the alleviation of poverty may be seen as an important indicator of how effectively the welfare state performs on one of its core objectives. Both the philosopher

John Rawls (1971) and the political scientist Stein Ringen (1987), for example, argue that societies should be judged by how they treat the worst off. The analyses conducted in this study show that welfare states achieve very different policy success in this respect, which in turn seem to be linked to the strategies chosen in the formation of social insurance.

Although social insurance in general is not directly designed to alleviate poverty, the pooling of risks and resources across socio-economic heterogeneous population groups within such schemes creates certain conditions relevant for an effective alleviation of poverty. Despite that analyses of the generosity of social benefits involve several problems that in some situations may bias the results, the institutional analyses gave some support to the so-called middle class inclusion thesis. In essence, this thesis assumes that the introduction of social transfer programs responding to the demand for income security among middle- and higher-income groups helps to promote generous social benefits to citizens in lower income segments. Although the empirical analyses only include five countries, the results showed that the higher the degree of income security in social insurance is, the higher the level of social benefits provided to individuals in the lower tail of the income distribution tends to be, either in the form of social insurance payments or means-tested social assistance benefits.

These institutional differences were largely mirrored in the way social transfer systems reduce poverty. Mainly due to the degree of income security in social insurance, the Swedish welfare state achieves the greatest reduction in pre-transfer poverty, followed by Germany, Canada, the United Kingdom and the United States in that order. Furthermore, social insurance systems that provide a high degree of income security not only tend to reduce poverty more effectively than systems where benefits are only weakly income-related or paid as flat-rate amounts, social insurance yielding income security also restricts the extent of less generous means-tested minimum income protection policies. Hence, the reasons why means-tested benefits sometimes move greater proportions of pre-transfer poor individuals out of poverty in

countries with less generous social insurance schemes should be sought primarily in developments in the non-targeted parts of the social transfer system, not only in the structure of means-tested minimum income protection policies.

Issues related to the redistributive impact of the welfare state, in particular to poverty alleviation, have become increasingly important in recent decades. With the expansion of the welfare state in the early post-war decades there was a general belief among scholars as well as politicians that the Western countries had finally ended the problem of economic suffering. The distribution of economic resources in recent years shows that this belief was too optimistic. Although all Western countries by the end of the 1960s had developed extensive social transfer systems, there are still large proportions of households struggling to manage on very low incomes in nearly all welfare states. One estimate is that about one out of ten households live in relative poverty in the OECD countries (Atkinson et al. 1995). Several countries have also experienced an increase in relative poverty in recent decades (Smeeding, 1997; Ritakallio, 2001). However, as have been shown above, cross-national differences remain substantial regarding both the extent of poverty and the redistribution achieved by social transfers.

The general recommendation for future policy changes suggested by the results presented stands in opposition to those espoused by some current dominant interests among policymakers in the Western countries. I would argue that a greater targeting of economic resources to those defined as most needy is not the most effective strategy to alleviate poverty. Instead, the comparative analyses conducted here show that more may be gained from an extension of existing non-targeted entitlements, in particular in the area of social insurance. It should also be pointed out that the level of unemployment is important in this respect. In fact, the low extent of poverty in the Swedish welfare state in the post-war period up to the 1990s is often related to the successful struggle against unemployment, together with significant improvements in wage replacement policies. Here it should be noted that the

level of unemployment increased sharply in the early 1990s in Sweden. Nevertheless, poverty is in a comparative perspective low, something that largely seem to be explained by generous earnings-related and universal social insurance benefits.

Several questions about the redistributive effects of the welfare state still need to be addressed, such as the importance of confounding factors. Nevertheless, the results presented in this study show the fruitfulness of disaggregated redistributive analyses of social transfer systems. An explicit focus on the anti-poverty effects of separate social transfer programs improves the possibilities of identifying and justifying some of the redistributive mechanisms at work in the welfare state. In conducting such analyses I have argued that it is necessary to take into account the distributional interplay between social transfers. If we refrain from analyzing how separate social transfers and benefits interact in the distributive process and produce certain outcomes, we are likely to end up with misleading results and mistaken conclusions about the linkages between certain social policy structures and outcomes. Therefore, I have argued that it is possible to accurately assess and evaluate the degree to which specific welfare state institutions reduce poverty only if the distributional interplay between various social transfers is brought into the analysis of redistribution.

To achieve this objective, a new method in the measurement of redistribution has been presented. This method decomposes the anti-poverty effects of a set of social transfers into independent and combined effects. In cases where the anti-poverty effects of two separate transfers are analyzed, as described above, we end up with four different poverty-reducing effects. If we add a further transfer to the analysis, the number of anti-poverty effects drastically increases. This obviously complicates interpretations of the results. However, depending on the topic of research, it is possible in such instances to suppress some of the anti-poverty effects or combine them into more aggregate effects to reduce complexity. The decomposition of anti-poverty effects into independent and combined effects is still under development. It is

beyond the scope of the present study to extend the method to analyses of more than two different income components, or to apply it to other poverty indices than the head-count measure. These questions will be dealt with in more detail in forthcoming work. Still, the new method presented is a valuable contribution to the methodology of redistribution. In any case, it provides more valid estimates than prevalent methods used to measure the impact of separate transfers on poverty.

APPENDIX

Table A.1. *Independent and combined anti-poverty effects of transfers A and B (fictitious income distribution)*

Specified independent effect of transfer A	(2 / 7) * 100	= 28.6
Specified independent effect of transfer B	(1 / 7) * 100	= 14.3
Unspecified independent effect of transfers A and B	(1 / 7) * 100	= 14.3
Combined effect of transfers A and B	(2 / 7) * 100	= 28.6
Total impact of transfers A and B	28.6 + 14.3 + 14.3 + 28.6	= 85.8

REFERENCES

Aaberge, R. and I. Aslaksen. 1996. *Decomposition of the Gini Coefficient by Income Components: Various Types of Applications and Interpretations*. Discussion Papers, No. 182. Statistics Norway, Oslo.

Atkinson, A. B., L. Rainwater and T. Smeeding. 1995. *Income distribution in OECD Countries: Evidence from the Luxembourg Income Study*. Paris: OECD.

Bäckman, O. 1998. *Longitudinal Studies on Sickness Absence in Sweden*. Doctoral Dissertation Series, No. 34. Swedish Institute for Social Research, Stockholm University, Stockholm.

Barry, B. 1990. 'The Welfare State versus the Relief of Poverty'. Pp. 73-103 in *Needs and Welfare*, edited by A. Ware and R. E. Goodin. London: Sage.

Båvner, P. 2001. *Half full or half empty? Part-time Work and Well-being among Swedish Women*. Doctoral Dissertation Series, No. 49. Swedish Institute for Social Research, Stockholm University, Stockholm.

Beckerman, W. 1979a. 'The Impact of Income Maintenance Payments on Poverty in Britain, 1975'. *The Economic Journal* 89 (354): 261-279.

Beckerman, W. 1979b. *The Impact of Income Maintenance Programmes on Poverty in Four Developed Countries*. Geneva: International Labour Organisation.

Behrendt, C. 2000a. '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 (1): 23-42.

Berntsen, R. 1989. *Einkommensanalysen mit Daten des Sozio-ökonomischen Panels unter Verwendung von generierten Einkommensaten*. Arbeitspapier des Sonderforschungsbereich 3. Mikroanalytische Gru ndlagen der Gesellschafspolitik, J.-W.- Goethe-Universität Frankfurt und Universität Mannheim.

Besley, T. 1990. 'Means Testing Versus Universal Provisions in Poverty Alleviation Programmes'. *Economica* 57 (225): 119-129.

Bradshaw, J., J. Ditch, H. Holmes and P. Whiteford. 1993. *Support for Children: a Comparison of Arrangements in Fifteen Countries*. London: HMSO.

Buhman, B., A. J. M. Hagenaars, R. Hauser, P. Hedström, F. de Kam, M. O'Higgins, P. Saunders, G. Schmaus, T. M. Smeeding, and M. Wolfson. 1987.

'Equivalence Scales, Well-being, Inequality and Poverty: Sensivity Estimates across Ten Countries Using the Luxembourg Income Study Database'. *International Review of Income and Wealth* 34: 115-42.

Carroll, E. 1999. *Emergence and Structuring of Social Insurance Institutions. Comparative Studies on Social Policy and Unemployment Institutions.* Doctoral Dissertation Series, No. 38. Swedish Institute for Social Research, Stockholm University, Stockholm.

Commission of the European Communities. 1996. *MISSOC – Social Protection in the EU Member States and the European Economic Area.* Luxembourg : Office for Official Publications of the European Union

Creedy, J. 1996. 'Comparing tax and transfer systems: Poverty, inequality and target efficiency'. *Economica* 63 (250):163-174.

Danziger, S. and M. Jäntti. 1992. *Does the Welfare State Work? Evidence on Anti-poverty Effects from the Luxembourg Income Study*. Working Paper, No. 74. Luxembourg Income Study, Luxembourg.

Danziger, S. and M. Jäntti. 2000. 'Income poverty in advanced countries'. In *Handbook on Income Distribution,* edited by A. B. Atkinson and F. Bourguignon. Amsterdam: Elsevier.

Deleeck, H., K. Van den Bosch and L. De Lathouwer. 1992. *Poverty and the adequacy of social security in the EC. A comparative analysis.* Aldershot: Averbury.

Eardley, T., J. Bradshaw, J. Ditch, I. Gough and P. Whiteford. 1996a. *Social Assistance in OECD Countries: Synthesis Report*. London: HMSO.

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

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

Ferrarini, T. and K. Nelson. 2002b. *Estimating Post-tax Social Insurance Benefits: Validity Problems in Comparative Analyses of Net Income Components from Household Income Data.* Working Paper No. 6. Swedish Institute for Social Research, Stockholm University, Stockholm.

Ferrarini, T and K. Nelson. 2003. 'Taxation of Social Insurance and Redistribution: A Comparative Analysis of Ten Welfare States'. *Journal of European So-*

cial Policy 13 (1): 21-33.

Forma, P. 1996. *Interests, Institutions and the Welfare State. Studies on Public Opinion Towards the Welfare State*. Research report 102, National Research and Development Centre for Welfare and Health (STAKES), University of Turku, Turku.

Forma, P. and O. Kangas. 1999. 'Need, Citizenship or Merit?'. In *The End of the Welfare State? Responses to State Retrenchment*, edited by P. Taylor-Gooby and S. Svallfors. London: Routledge & Kegan Paul.

Förster, M. 1993. *Comparing Poverty in 13 OECD Countries: Traditional and Synthetic Approaches*. Working Paper No. 100. Luxembourg Income Study, Luxembourg.

Haataja, A. 1999. *Unemployment, employment and social exclusion*. Working Paper No. 195. Luxembourg Income Study, Luxembourg.

Hölsch, K. and M. Kraus. 2002. *European Schemes of Social Assistance: An Empirical Analysis of Set-Ups and Distributive Impacts*. Working Paper No. 312. Luxembourg Income Study, Luxembourg.

ILO (International Labour Organization). 1995. *Yearbook of Labour Statistics*. Geneva: ILO.

Jeandidier, B. and E. Albiser. 1999. *To what Extent Do Family Policy and Social Assistance Transfers Reduce the Frequency and Intensity of Child Poverty? A Comparison between France, the US and Luxembourg*. Working Paper No. 255. Luxembourg Income Study, Luxembourg.

Kangas, O. 1991. *The Politics of Social Rights. Studies on the Dimensions of Sickness Insurance in OECD Countries.* Doctoral Dissertation Series, No. 19. Swedish Institute for Social Research, Stockholm University, Stockholm.

Kangas, O. 1995. 'Attitudes to means-tested social benefits in Finland'. *Acta Sociologica* 38 (4): 299-310.

Kangas, O. 2000. *From Workmen's Compensation to Working Women's Insurance: Institutional Development of Work Accident Insurance in OECD Countries.* ZeS-Arbeitspapier No. 10/2000. Centre for Social Policy Research, University of Bremen.

Kangas, O. and J. Palme. 1993. 'Eroding Statism? Labour market benefits and the challenges to the Scandinavian Welfare States'. In *Scandinavian Welfare*

Trends, edited by E. J. Hansen, S. Ringen, H. Uusitalo, R. Erikson. Armonk: M. E. Sharpe.

Kangas, O. and V.-.M. Ritakallio. 2000. '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*, edited by D. Bouget and B. Palier. Paris: Mire -Drees.

Korpi, W. 1980a. 'Approaches to the Study of Poverty in the United States: Critical Notes from a European Perspective'. In *Poverty and Public Policy. An Evaluation of Social Science Research*, edited by V. T. Covello. Boston: G. K. Hall & Co.

Korpi, W. 1980b. Social Policy and Distributional Conflict in the Capitalist Democracies. A Preliminary Comparative Framework.' *West European Politics* 3 (3): 296-316.

Korpi, W. 1981. *Den demokratiska klasskampen*. Stockholm: Tiden.

Korpi, W. 1983. *The Democratic Class Struggle*. London: Routledge and Kegan Paul.

Korpi, W. 1985a. 'Power Resources Approach vs. Action and Conflict: On Causal and Intentional Explanation in the Study of Power'. *Sociological Theory* 3 (2): 31-45.

Korpi, W. 1989. 'Power, Politics, and State Autonomy in the Development of Social Citizenship: Social Rights during Sickness in Eighteen OECD Countries Since 1930'. *American Sociological Review* 54 (3): 309-28.

Korpi, W. 1995. *Arbetslöshet och arbetslöshetsförsäkring i Sverige. En studie bland arbetslöshetskassornas medlemmar*. Stockholm: Arbetsmarknadsdepartementet.

Korpi, W. 2001. 'Contentious Institutions: An Augmented Rational-Actor Analysis of the Origins and Path Dependency of Welfare State Institutions in the Western Countries'. *Rationality and Society* 13 (2): 235-83.

Korpi, W. and J. Palme. 1998. 'The Paradox of Redistribution and the Strategy of Equality: Welfare State Institutions, Inequality and Poverty in the Western Countries'. *American Sociological Review* 63 (5): 661-87.

Le Grand, J. 1982. *The Strategy of Equality - Redistribution and Social Services.* London: George Allen & Unwin.

Lee, D. R. 1987 'The trade-off between equality and efficiency: Short-run politics and long-run realities'. *Public Choice* 53: 149-165.

Leisering, L and S. Leibfried. 1999. *Time and Poverty in Western Welfare States: United Germany in Perspective.* Cambridge: University Press.

Lerman, R. I. and S. Yitzaki. 1985. 'Income inequality effects by income source: A new approach and applications to the United States'. *Review of Economics and Statistics* 67 (1):151-156.

Lerman, R. I. and A. A. Townsend. 1974. 'Conflicting objectives in income maintenance programs'. *The American Economic Review* 64 (2): 205-211.

Mitchell, D. 1991. *Income Transfers in Ten Welfare States*. Aldershot: Avebury.

Myles, J. 1989. *Old Age in the Welfare State: The Political Economy of Public Pensions* (revised edition). Lawrence: University Press of Canada.

Nelson, K. 2003. *Fighting Poverty. Comparative Studies on Social Insurance, Means-tested benefits and Income Redistribution*. Dissertation Series No. 60. Swedish Institute for Social Research. Stockholm University.

Palme, J. 1990. *Pension Rights in Welfare Capitalism. The development of Old-Age Pensions in 18 OECD Countries 1930 to 1985.* Doctoral Dissertation Series, No. 14. Swedish Institute for Social Research, Stockholm University, Stockholm.

Palme, J. 1996. 'Välfärdsstaten som en strategi för jämlikhet'. In *Generell välfärd. Hot och möjligheter?,* edited by J. Palme and I. Wennemo. Stockholm: Nordstedts.

Palme, J and I. Wennemo. 1998. *Swedish Social Security in the 1990s. Reform and Retrenchment.* Stockholm: The Printing Works of the Cabinet Office and Ministries.

Pedersen, A. W. 1999. *The Taming of Inequality in Retirement. A Comparative Study of Pension Policy Outcomes.* Report No. 317, Fafo, Oslo.

Rainwater, L., M. Rein, J. Schwarz. 1986. *Income Packaging in the Welfare state. A Comparative Study of Family Income*. New York: Oxford University Press.

Rao, V. M. 1969. 'Two Decompositions of the Concentration Ratio'. *Journal of the Royal Statistical Society* 132:418-425.

Rawls, J. 1971. *A theory of Justice.* Cambridge Mass: Harvard University Press.

Ringen, S. 1987. *The Possibility of Politics: A Study in the Political Economy of the Welfare State*. Oxford: Clarendon.

Ritakallio, V.-M. 2001. *Trends of Poverty and Income Inequality in Cross-National Comparison*. Working Paper No. 272. Luxembourg Income Study, Luxembourg.

Sainsbury, D. and A. Morissens. 2002. 'Poverty in Europe in the mid-1990s: The effectiveness of means-tested benefits'. *Journal of European Social Policy* 12 (4): 307-28.

Shorrocks, A. F. 1982. 'Inequality decomposition by factor components'. *Econometrica*, 50 (1): 193-211.

Shorrocks, A. F. 1983. 'The Impact of Income Components on the Distribution of Family Incomes'. *Quarterly Journal of Economics* 98 (2):311-26.

Smeeding, T. 1997. *Financial Poverty in Developed Countries: The Evidence from LIS*. Working Paper, No. 155. Luxembourg Income Study, Luxembourg.

Smeeding, T. 2002. *The LIS/LES Project: Overview and Recent Developments* Working Paper No. 294. Luxembourg Income Study, Luxembourg.

Svallfors, S. 1989. *Vem älskar välfärdsstaten?* Lund: Arkiv.

Svallfors, S. 1996. *Välfärdsstatens moraliska ekonomi: Välfärdsopinionen i 90-talets Sverige*. Umeå: Boréa.

Svallfors, S. 1997. 'Worlds of Welfare and Attitudes to Redistribution: A Comparison of Eight Western Nations'. *European Sociological Review* 13 (3): 283-304.

Svallfors, S. 1999. 'The Middle Class and Welfare State Retrenchment: Attitudes to Swedish Welfare Policies'. In *The end of the Welfare State?*, edited by S. Svallfors and P. Taylor-Gooby. London: Routledge.

Tullock, G. 1983. *Economics of income redistribution*. Amsterdam: Kluwer-Nijhoff.

U.S. Social Security Administration. 1995. *Social Security Programs Throughout the World – 1995*. Washington, DC.

Väisänen, I. 1992. 'Conflict and consensus in social policy developments in 18 OECD countries'. *European Journal of Political Research* 22 (3): 307-27.

Whiteford, P. 1995. 'The Use of Replacement Rates in International Comparisons of Benefit Systems'. *International Social Security Review*, 48(2), 3-31.

Whiteford, P. and J. Bradshaw. 1994. 'Benefits and Incentives for Lone Parents: A Comparative Analysis'. *International Social Security Review* 47 (3-4): 69-89.