Child Poverty and Changes in Child Poverty in Rich Countries Since 1990

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ABSTRACT

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This paper documents levels and changes in child poverty rates in 12 OECD countries using data from the Luxembourg Income Study project, and focusing upon an analysis of the reasons for changes over the 1990s. The objective is to uncover the relative role of income transfers from the state in determining the magnitude and direction of change in child poverty rates, holding other demographic and labour market factors constant. As such the paper offers a cross-country overview of child poverty, changes in child poverty, and the impact of public policy in North America and Europe.

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1. Introduction

The *Convention on the Rights of the Child* is a comprehensive legal text covering most every aspect of the rights and well being of children. It was negotiated and signed by 192 heads of states and came into force on September 2nd 1990, in less time after adoption by the UN General Assembly than any other human rights convention. It has arguably played a role in promoting children as a priority in the making of public policy, not just in the developing world but also in the rich countries. One important concern underscored in several of the *Convention'*s articles is that of child poverty, and during the 1990s a number of countries in both North America and Europe in fact set explicit targets for the reduction of child poverty, including the United Kingdom, Ireland, Norway and Canada. And even in countries less explicit about their goals reducing child poverty has been an important public policy concern. This, for example, is as true in the United States, where child poverty rates have historically been among the highest relative to other rich countries, as it is in Sweden, where they have been among the lowest. These concerns are echoed in the less developed countries through the Millennium Development Goals and the declaration of *A World Fit for Children*, a central element of which is cutting by half the proportion of people living in poverty by 2015 and its elimination among children within a generation (UNICEF 2002). Child poverty, in other words, has a strong resonance in public policy discourse, and reflects a growing concern over the welfare of all children regardless of their place in the income distribution or the world. While it is a complicated task to evaluate

progress in attaining both explicit commitments and broad concerns, it is nonetheless relevant, 15 years after the signing of the *Convention*, to ask how things have changed. Have child poverty rates fallen? If not, why? And what role has government policy played?

These questions motivate the research summarized in this paper. In particular our concern is with understanding the nature of and reasons for changes in child poverty rates over the course of the 1990s. Our analysis speaks to three specific objectives: (1) to document changes in child poverty rates since the early 1990s; (2) to understand the major reasons for these changes; and (3) to offer an estimate of the impact of state support through income transfers on these changes. But the scope of our analysis is narrowly defined and should not be taken as a complete assessment of these concerns.

First, we focus on a group of twelve OECD countries, a relatively rich group but one whose members nonetheless faced a wide range of starting points and challenges. This said the research does not deal with the experiences of children and child poverty in the less rich countries. Changes in poverty in the developing countries are summarized in Besley and Burgess (2003) and UNICEF (2004). It is clear the challenges in these countries are very different than those in the OECD, and at a global level many observers will certainly feel should take priority. As a preface to his analysis of poverty in Europe Atkinson (1998) is at pains to stress this point. Limiting our analysis to the OECD is not meant to suggest otherwise. Rather it recognizes that child rights are universal and not dependent upon where a child lives, though the particular challenges and concerns of public policy to promote their well-being certainly will, and accordingly this requires different information and methods to understand. Indeed, as Atkinson also notes, countries tending to show more concern and priority for domestic poverty are also the countries showing most concern for poverty elsewhere.

The second particular focus concerns the definition of poverty. The paper begins in the next section with a discussion of this important issue. Our analysis deals with income poverty, using a poverty line fixed at around the time the *Convention of the Rights of the Child* came into force. This is a partial perspective since, as Sen (1999) among others makes clear, poverty is much more than just low income, and even if it were not in the rich countries it is a relative concept requiring a threshold that varies through time as the standards of what a community considers necessary for normal participation change. We adopt an income based approach because we are interested in international comparability. Other indicators of material deprivation surely vary from country to country and are beyond the information sources available to us. We adopt a fixed poverty line to focus on the least challenging standard by which to judge progress. Informed by the UK experience in defining poverty, Corak (2005) stresses that a fixed poverty line is central in setting credible poverty reduction goals as it provides a starting point for gauging progress and a backstop to ensure that children will be given priority should recession rather than growth be on the horizon. At the same time this indicator cannot offer a complete picture and needs to be used in conjunction with a poverty line that changes through time. Our research is asking: given the income standards prevailing when the *Convention on the Rights of the Child* came into force has the child poverty rate decreased or increased during the subsequent decade, why, and what role have income transfers played?

In addition to outlining these matters the next section presents the child poverty rates and changes in them that motivate the subsequent analysis. In five of the twelve countries we study—Hungary, Mexico, Italy, Germany, and Finland—child poverty rates have actually increased during the 1990s and in a further four—Netherlands, Belgium, Sweden and Canada—there have been no significant changes. In only three—Norway, the United States and the United

Kingdom—did child poverty rates fall noticeably. In other words, in the majority of this broadly representative set of OECD countries there has been at best little progress in reducing child poverty, indeed in some cases poverty rates have increased substantially. It should be stressed that this has occurred even when measured by the standards of the late 1980s and early 1990s.

However, it is difficult on this basis alone to assess the role played by public policy. Where child poverty rates rose they could very well have risen much more if it were not for increases in income support from the state; where they fell they could have fallen more if it were not for cut backs. In other words, to be able to assess the role of public policy we need to determine what the child poverty rate would have been had all other influences remained constant. The development of this counterfactual poverty rate is the main objective of the analytical part of the paper. Our methodology is outlined in sections 3 and 4. We divide the possible influences on the child poverty rate into three broad sets—the family, the labour market, and income transfers from the state—and in section 5 present a series of estimates of the change in child poverty due to each of these forces.

We offer a set of country specific results, but also attempt to draw general lessons. These are summarized and discussed in the concluding section of the paper. First, family and demographic forces play only a limited role in determining changes in child poverty rates. These forces change only gradually and are limited in their ability to cushion children from detrimental shocks originating in the labour market or in the government sector, which are the sources of the major forces determining the direction of change in child poverty. Second, in countries facing severe economic crises it does not appear that the amount of social transfers available were increased in a way to cushion children from these changes and put a backstop on their risk of low income. Indeed, just the opposite appears to have occurred in countries experiencing the largest

increases in child poverty. Third, there is no single road to lower child poverty rates. Changes in income transfers need to be thought through in conjunction with the nature of labour markets. Reforms intended to increase the labour supply and labour market engagement of adults may or may not end up lowering child poverty rates. At the same time increases in the level of support have also been shown to be a central ingredient in lowering the child poverty rate both when it is very high and when it is already quite low.

 2. Definition and measurement of child poverty

Three issues need to be addressed in establishing a poverty indicator.[1] These are in part technical, but not entirely and also inherently involve value judgments. The first concerns the definition, measurement and sharing of the resources related to material well being. Different conceptual frameworks offer a certain but still partial guide in making these analytical choices. Our analysis uses annual income measured at the household level with representative national surveys, and assumed to be shared equally among the individuals within the household. Annual income is a central aspect of the material well being of individuals living in market economies, but it is not complete. It can certainly be questioned on both theoretical and practical grounds. A perspective on welfare from the capabilities approach advocated by Sen (1999) would, for example, suggest that in the least annual income needs to be augmented by other indicators, health and education being prime. A rights perspective, as evidenced for example in Article 27 of the *Convention on the Rights of the Child*, would also suggest the need for other indicators.[2]

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[1] The source of the following discussion is Corak (2005), where these issues are discussed in more detail.

[2] Article 27 states that governments "recognize the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development." It states that parents or others responsible for the child "have the primary responsibility to secure … the conditions of living necessary for the child's development," but also that governments shall take appropriate measures to assist them "to implement this right and shall in case of

Another reason to question annual income has to do with the fact that it can be subject to considerable variation from year to year. The amount of income available to the household in any given year may not well approximate the total resources available to the household. The household's permanent income could be higher or lower and it may hold assets that allow consumption to be smoothed through periods of temporary income falls. The fact that there is a good deal of movement into and out poverty from year to year, as documented for example in Bradbury, Jenkins and Micklewright (2001), and that annual income measures are sometimes found not to line up with other indicators of material deprivation, as in Bradshaw *et al* (2000), are testament to these limitations.

All this said, annual income is at the core of available fungible resources and offers a basis for international comparisons that may not be possible with other indicators. In addition, its use puts the focus of our attention on just one aspect of public policy, income transfers. We also follow a wide literature on international comparisons of income and poverty by using the individual as the unit of analysis. This is necessary if we are to address the plight of children, but it requires assumptions as to the economies from living in a household with more than one person and as to how resources are shared within the household. Our use of the square root of household size as the equivalence scale to account for these economies follows the approach of the Luxembourg Income Study (LIS) project, the data bank of nationally representative household surveys that forms the information source for our analysis, and the report of the Expert Group on Household Income Statistics (2001). Different equivalence scales may imply different poverty rates and child poverty rates, though we doubt that our focus on changes would

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need provide material assistance and support programmes, particularly with regard to nutrition, clothing and housing." See UNICEF (2002).

be much affected by our particular choice. Assuming that household resources are equally shared among its members is also an international convention, but not one that should be made lightly. In assuming that children obtain an equal share of available annual resources we are charting a middle road between the deprivation they may be subject to if parents consume a disproportionate share, and the extra protection they might receive if parents make extra sacrifices to ensure children do not go without. There is a growing and important literature on the sharing rules adopted by households, but it is not yet clear what generalities can be made.[3] Taking this into account in the context of international comparisons is beyond the scope of our analysis.

The second issue that needs to be addressed in order to establish a poverty indicator involves establishing a minimum threshold of resources distinguishing the poor from the non-poor. There is no simple answer in the technical literature as to where the poverty line should be drawn. The threshold must in some sense represent the level of resources below which it would be insufficient to participate normally in society. In the rich countries this is at times defined in terms of the cost of a specific basket of goods deemed in some sense to be necessities, and at other times as a certain fraction of the typical income levels, often 50 or 60% of median income. The standard in the LIS is to use 50% of median individual equivalent income, and we adopt a version of this approach. Using individual level data from the LIS we determine the median individual equivalent income for all persons in each country in 1990 or the year closest to 1990 that is available, and use 50% of this as the poverty threshold. However, we do not update this threshold through time. As such our comparison of poverty rates over the 1990s is in reference to the income levels at the beginning of the decade. In a growing economy with rising incomes a

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[3] See for example, Browning (1992), Browning, Bourguignon, Chiappori, and Lechene (1994), Lundberg, Pollack, and Wales (1997), and Phipps and Burton (1995).

fixed threshold of this sort will imply that poverty rates will unambiguously decline if the poor experience any income growth at all, while the rate based upon contemporaneous median incomes could very well be unchanged or higher. The opposite could occur in an economy that is in decline. As stressed our use of a fixed threshold is not intended to offer a full portrait of poverty in the countries we study or a complete evaluation of public policy. But it does help to fix ideas on a backstop reflecting the conditions prevailing at around the time the *Convention on the Rights of the Child* came into force. It is also necessary because it makes the decomposition analysis we employ possible, allowing us to focus on creating counterfactual income distributions without having to model the evolution of median incomes.

Finally the third issue that needs to be addressed is the need to define a summary indicator or count of the poor. We use the so-called "head count ratio", the number of children who are poor divided by the total number of children. As pointed out by numerous observers this measure has its limitations. It gives equal weight to all individuals below the threshold and explicitly assumes that poverty is a discrete event associated with being above or below a given line. Someone one Euro below the threshold is given the same consideration as someone at the very bottom of the income distribution. In part, the appropriateness of this assumption will depend upon the theoretical perspective used. For example, a strict interpretation of a rights perspective might suggest that the headcount ratio is, in fact, the appropriate statistical indicator. A "right' is an either-or concept: it is either being respected or it is being violated. In this sense an indicator based upon a view that poverty is a discrete condition reflecting less than a minimum acceptable income might be viewed as appropriate (Atkinson 1998). But other interpretations, and indeed other interpretations based upon a rights perspective, might quite reasonably suggest that individuals below the poverty threshold should not be weighted equally.

The situation of those very much below the poverty line might in some sense matter more than those just below. The headcount ratio could after all be lowered by taking enough money from the very poorest and transferring it those hovering just below the poverty line in order to move them just above. This sort of policy, which would lower the headcount ratio, might not have a good deal of intuitive appeal to many observers. Or just as importantly a finding that poverty rates have gone up might imply only slight falls in the relative income of those just above the poverty line and mask important improvements in the circumstances of those very much below. While conscious of these limitations we rely on the headcount ratio in part because of its intuitive appeal within a rights framework, and the continued relevance it has in public policy as a tool for communicating to a broader public.

Our choice of countries is determined by a decision to focus on the OECD and by the availability of a consistent set of individual level data through the LIS at the beginning and end of the 1990s. The choice of years for our analysis reflects on the one hand the most recently available data, and on the other a desire to fix the starting point of the analysis on 1990—the year the *Convention on the Rights of the Child* came into force—or the closest year of available data to 1990. These criteria imply that certain countries are not part of our analysis. Denmark, however, is one of the countries that meets these criteria. Even though we undertook the calculations we do not report results for this country because of data quality concerns expressed by the LIS. In addition, we focus solely on West Germany rather than the entire country because of the desire to obtain information before unification and the *Convention on the Rights of the Child* came into force. A more detailed analysis of Germany is provided in Corak, Fertig, and Tamm (2005). Finally, it should be noted that the LIS data for the United Kingdom and Canada are not consistent through time, the nature of the underlying surveys changing over the 1990s.

We continue to report the LIS results for these countries, but supplement them with information for alternative data sources that are consistent over the period. All other OECD countries we do not study either did not provide data to the LIS project, or the data were not consistently based on the same survey over the span of the decade of interest. In this particular regard, and in general, our approach to analysis follows the recommendations in the report of the Expert Group on Household Income Statistics (2001). The one exception is Luxembourg. We do not report information for this country because our decomposition analysis did not seem to lead to informative results, but these are available upon request.

Figures 1 and 2 illustrate the resulting rates of child poverty prevailing in the countries under study and how they have changed since the late 1980s or early 1990s. The rates differ markedly, by a factor of ten or more. This was the case both at the beginning of the 1990s and at the end, though there were significant changes in the situations of particular countries. Figure 1 ranks the twelve countries according to the child poverty rate at the beginning of the period. At one extreme the United Kingdom, the United States, and Mexico had child poverty rates close to or exceeding 20%, while at the other Finland, Sweden, Belgium and West Germany all had rates in the neighbourhood of or lower than four percent. There is no simple story concerning how the risk of low income among children changed over this decade, some countries experiencing significant declines, others significant increases, while in others there were no major changes.

This is illustrated more explicitly in Figure 2, which offers the percentage point change in child poverty rates. The child poverty rate fell by more than one percentage point in four countries, essentially remained unchanged in three others, and increased in five. The United Kingdom and the United States stand out as having experienced the largest declines, though starting from among the highest levels. In the United Kingdom the child poverty rate fell over

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ten percentage points, and in the United States by over seven percentage points. Norway also experienced an important decline of 3.2 percentage points, making it the one country with a low child poverty rate that was significantly reduced. At the other extreme in Hungary the child poverty rate rose over 13 percentage points, signaling a significant decline in the living standards of children. Over this period Hungary went from having a child poverty rate of about seven percent to over 20%. Mexico also saw a significant rise. This country and Italy are the only two with high rates at the beginning of the period that went even higher, while West Germany and Finland were the only two countries with relatively low child poverty rates that experienced noticeable increases. In West Germany this amounted to 3.7 percentage points, or an almost doubling. The magnitude of this change is influenced by our choice of 1989 as the first year of analysis. Corak, Fertig and Tamm (2005) note that in previous years the child poverty rate hovered between six and eight percent after falling significantly to 4.1% in 1989. Afterward it rose sharply and continued to drift upward during the 1990s. If we had used a different year as a starting point the magnitude of the change would not be so great, but its direction would be the same.[4]

Table 1 supplements this information with alternative measures of poverty to underscore the relevance of the fact that we use a fixed poverty line. Columns (3) and (4) are the statistics depicted in Figure 1, while column (5) is the child poverty rate at the end period using 50% of the median income in the prevailing year. Column (6) offers the change in the child poverty rates depicted in Figure 2 and these are to be contrasted with the information in column (7), the change in the child poverty rate when it is defined in terms of prevailing median incomes. The magnitudes of the levels and changes certainly differ markedly, and are generally—but not

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[4] For the country as a whole the increase was 1.2 percentage points using 1991 as the base year.

always—more muted on the basis of a moving threshold. In Hungary the 1999 child poverty rate based upon 50% of the 1999 median income is only 8.8%, making the increase in child poverty rates, at 1.9%, much less than when the fixed poverty line is used. This reflects the fact that median incomes declined significantly for the entire economy. Children lost ground relative to their standing in 1991, but so did everyone. In Mexico and Italy similar though less dramatic changes took place, and in countries experiencing declines with a fixed threshold the decline was not as great with a moving threshold. West Germany, the Netherlands, Belgium and Sweden are the exceptions. The opposite pattern occurs in these countries, with the rate under the moving threshold indicating a greater increase. The situation of children improved in an absolute sense, but not in a relative sense.

In spite of these differences in magnitudes the direction of change is the same in all cases regardless of which poverty line is used. The single exception is Sweden where the fixed poverty line indicates a small fall, while the moving poverty line indicates a rise. But this is not a strong ambiguity as the change in the rate using the fixed threshold is not statistically different from zero to begin with. On this basis we conclude that in the set of countries under study there is no inconsistency in the direction of change between the two measures: when the situation has improved according to the fixed threshold, it has also improved according to the moving threshold; and when it has deteriorated according to one it has also done so according to the other.

This is not to suggest that one measure can be a substitute for the other. Indeed as the discussions on the definition of child poverty in the UK suggest these indicators have to used in conjunction with each other, and both should be moving downward for genuine progress to be made (Department for Work and Pensions 2003). The comparison in Table 1 is intended to

illustrate that in a growing economy making progress with respect to the poverty rate based upon a fixed threshold is the least demanding element of charting progress. It also makes clear that this may not be the case in an economy facing major structural changes. In both cases the poverty rate using a threshold fixed at the time the *Convention of the Rights on the Child* came into force is a useful benchmark from which to begin a discussion of whether things have become better or worse for children. As such, explaining the patterns and magnitudes illustrated in Figure 2 is the major objective of our analysis, and the range of both starting points and outcomes likely suggests that each country offers a very different context and set of explanations.

3. The determinants of child poverty

In all countries the material well being of children is determined by three broad sets of factors, what we refer to as demographics, labour markets, and government policy: the family, the market, and the state. Tables 2, 3, and 4 illustrate the particular measures of these factors that are the basis of our analysis, respectively for those countries experiencing declines, those with no significant changes, and those experiencing increases in child poverty.

By demographic or family factors we have in mind four influences: the average age of parents, the education of parents, the number of children per household, and family structure as indicated by the probability of living with a single parent. As a first approximation these are independent of government income transfer policies, though this could also vary from country to country. Older parents are more likely to be better situated to care for their children, if for no other reason than that more labour market experience implies higher earnings. We capture these life cycle effects by measuring the average age of parents over time. In a similar vein more educated parents are likely to have better labour market skills, lower chances of unemployment,

and higher earnings when employed. We capture this by measuring the percentage of children living with fathers and mothers having a university degree. Children living in households with fewer siblings are likely to have a higher material living standard, while those living with a single parent are likely to have a lower standard. With fewer siblings the household's resources need not be spread as thinly and we capture this by measuring the number of children in the home. This could change in response to the fertility decisions of parents or to the home-leaving age of children. Finally, with both parents present children are more likely to be in a household in which at least one adult is working or to be in a household with an overall higher wealth. We capture this by measuring the proportion of children in single parent households.

The impact of the labour market on changes in child poverty rates is measured by two variables: the percentage of parents working and the annual earnings they obtain. These are influenced by broader forces determining employment growth and the distribution of income, and will vary a good deal across the twelve countries. Business cycle and structural influences on the demand for labour associated with technical change and globalization certainly play a role in all places. But some countries, for example Hungary, also experienced important changes associated with the transition to market economies, while others, like Mexico, experienced important macro-economic shocks associated with external debt and currency fluctuations. Many of these factors are also independent of government transfers, but there could certainly be important interactions between the structure of social policy and labour supply, particularly among the lower paid.

These labour market variables are measured for fathers and mothers separately since patterns of labour market participation vary considerably across gender and since in some countries child well being may depend differently upon the labour market success of mothers

than of fathers. The greater the employment rate among fathers and mothers the less likely

children will live in poverty, but this will also depend upon the amount of money they actually

earn. Tables 2, 3 and 4 illustrate changes in both the average earnings of fathers and mothers, and

changes at lower points in the income distribution (the 10th percentile and the 25th percentiles).

Changes in annual earnings reflect changes in wage rates, hours worked per week, and number

of weeks worked per year, but our analysis does not distinguish between these influences.

Finally, the impact of the state is measured by changes in the amount of transfer income

received by households in receipt of some transfers. As such we do not distinguish between the

impact of the incidence of transfer payments—the likelihood of participating in social

programs—and the amount of support. All other things equal the greater the average amount of

income support, the lower the chances of child poverty. However, the average amount of cash

transfers may not fully reflect the extent of social support from the state if households are in

receipt of non-cash benefits, either in the form of targeted benefits or through the provision of

other public goods. For example, Garfinkel, Rainwater and Smeeding (2004) attempt a valuation

of these benefits in a number of countries using the LIS data in order to illustrate their impact on

the income distribution. The analysis suggests that non-cash benefits may be particularly

important in the United States, and the child poverty rate would be considerably lower.

The information in Tables 2, 3 and 4 begins to hint at which factors may be particularly

important in understanding the developments in Figure 2. It is immediately clear that there is no

unique path to lower child poverty rates. In two of the four countries listed in Table 2 the average

amount of government transfers rose, and in two others it fell. The UK and the US were

countries with high child poverty rates at the onset of the 1990s experiencing significant falls by

the end of the decade. In the UK this was associated both with significant increases in the

earnings of mothers and of government support. In the US mothers' earnings were even higher, particularly at the lower end of the income distribution, but the average amount of transfer payments fell. This was also associated with higher rates of employment among mothers. Among these countries the UK also stands out in recording significant increases in the percentage of children living with a single parent, a factor that would tend to raise the risk of child poverty.

The Netherlands stands out somewhat among the three countries experiencing no significant change in child poverty rates. The information in Table 3 suggests that there may still have been important changes in the underlying influences that if isolated could help in understanding why little progress was made. The employment rate of mothers and their earnings increased substantially, but at the same time government support fell dramatically. These are countervailing tendencies on the overall child poverty rate. In Belgium there was a substantial fall in the chances that children will be living in a household with a working father and also a significant rise in the proportion living with single parents.

Just as there is no single path to lower child poverty rates, nor is there a single way to higher rates. But the situation of countries in which child poverty rose does illustrate that adverse labour market developments are one important common factor. What varies are the responses. As illustrated in Table 4 employment rates of fathers fell for all five countries, the extreme case being Hungary. With the possible exception of Finland annual earnings also fell significantly for those in the lower part of the income distribution. In Italy, Mexico, and Hungary this was much more wide spread with average earnings actually lower at the end of the decade than at the beginning. Though the fathers of West German children experienced adverse labour market outcomes this was partially countered by higher employment rates of mothers and much higher government transfers. In Finland government transfers also increased, but the opposite

was the case in the three remaining countries and most notably in Mexico. This country also stands out in having a relatively high number of children per household, but also experiencing a significant decline. In all the other eleven countries this statistic is essentially unchanged over the decade, but in Mexico it falls from 3.5 to 3.1.

4. Analytical methods

Our analysis is intended to ascribe and decompose the relative influences of these factors on the overall change in child poverty rates. In particular, in order to assess the impact of government transfers we need to estimate what the child poverty rate would have been had no other factors changed. Therefore we begin with the development of a counterfactual income distribution that is based upon all influences other than government transfers being constant. This hypothetical income distribution allows us to derive the child poverty rate that would have prevailed at the end of the period had labour markets and demographics remained unchanged. The difference between this poverty rate and the actual child poverty rate is an estimate of the impact of income transfers, and represents a starting point for understanding the role of the tax-transfer system. We create the counterfactual income distribution for each country combining two methods, what we refer to as "re-weighting" and "rank-preserving exchange".

The re-weighting procedure is described by DiNardo, Fortin, and Lemieux (1996) and has been used most recently in Daly and Valletta (2000), and Chiquiar and Hanson (2002) to examine issues similar to ours. The latter authors also illustrate the use of rank-preserving exchange. The DiNardo, Fortin, and Lemieux (DFL) method is similar in spirit to the Oaxaca-Blinder decomposition often used in some fields of labour economics (Oaxaca, 1973). However, unlike the Oaxaca-Blinder decomposition, which only focuses on changes in averages, the DFL

procedure allows the entire conditional distribution to be analyzed. In this method estimated conditional weights are combined with sampling survey weights to produce a counterfactual distribution.

The Oaxaca-Blinder decomposition relies upon the fact that least squares regressions must by construction pass through the sample averages. If y_{90} and y_{00} represent individual equivalised child income in 1990 and 2000, if X is a vector of demographic, labour market, and government policy influences determining these incomes, and if ε represents all other unknown influences, then the least squares models relating these variables for the two periods under study can be depicted as $y_{90} = X\beta_{90} + \varepsilon$ and $y_{00} = X\beta_{00} + \varepsilon$. This individual level analysis implies that the difference in average child income between 1990 and 2000 is $\bar{y}_{00} - \bar{y}_{90} = \bar{X}_{00}\hat{\beta}_{00} - \bar{X}_{90}\hat{\beta}_{90}$, where the over-bars indicate averages and the circumflexes estimated values. The average income in 2000 had circumstances remained the same as in 1990 is $\bar{y}_{00}^{*} = \bar{X}_{90}\hat{\beta}_{00}$. This counterfactual income can be used in the previous equation to break down the difference in average incomes over the period into the sum of two differences, one reflecting an explained component and the other an unexplained component. This is depicted in equation (1).

$$\bar{y}_{00} - \bar{y}_{90} = \left(\bar{y}_{00} - \bar{y}_{00}^{*}\right) + \left(\bar{y}_{00}^{*} - \bar{y}_{90}\right) \tag{1}$$

$$= \left(\bar{X}_{00} - \bar{X}_{90}\right)\hat{\beta}_{00} + \left(\hat{\beta}_{00} - \hat{\beta}_{90}\right)\bar{X}_{90}$$

The explained difference is the first component and reflects differences in the average characteristics of children over the period; the unexplained component reflects difference in the impact these characteristics have in determining the incomes of children. The first term on the right-hand side the equation is a counterfactual responding to the question: "what would the change in the average equivalent income have been if in the year 2000 children had faced the average circumstances of 1990?" We could calculate an equation of this sort using only

information on demographics and labour markets, and then another also including government transfers to determine the impact of transfer payments on the change in the average income of children over the period.

Though this approach is simple and transparent the fact that it is pinned to the average implies that it cannot be used to examine issues associated with changes at different points in the income distribution, and in particular the change in the poverty rate. The DFL method generalizes the Oaxaca-Blinder decomposition to construct counterfactual densities, and thereby permits an analysis of the entire income distribution or any parts of it. Rather than working with averages this involves the density of incomes by using smoothed histograms or so-called kernel density estimation:

$$\hat{f}(y) = \frac{1}{n}\sum_{i=1}^{n}\frac{\theta_i}{h}K(\frac{y-Y_i}{h}) \tag{2}$$

Equation (2) is an estimate of a kernel density based on a random sample $(Y_1 \ldots Y_n)$ with sampling weights $(\theta_1 \ldots \theta_n)$ using a smoothing function, or width of the histogram, referred to as the bandwidth h, and a weighting function, K, called the kernel.[5] The summation is a weighted count of the fraction of observations within $h/2$ of y, and it is divided by h to obtain a density.

The simplest illustration of the DFL procedure, one that also produces the same results as the Oaxaca-Blinder decomposition, is the case of a discrete characteristic that can be summarized as a binary 0-1 variable. One example would be whether a child lives with a single parent or not. Let S be a binary variable indicating the type of household a child lives in, with $S=1$ meaning the child lives with a single parent and $S=0$ indicating otherwise. The density of 2000 equivalent

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[5]The choice of h and K may be sensitive to the distribution and has been subject to many discussions in the literature. In our analysis the "optimal bandwidth" according to Silverman (1986) and the Gaussian kernel function are used.

incomes can be decomposed into the weighted sum of the densities of children living in a single-parent household and children living in other household types. That is:

$$f_{00}(y) = \left[\Pr_{00}(S=1)f_{00}(y|S=1)\right] + \left[1 - \Pr_{00}(S=1)f_{00}(y|S=0)\right] \qquad (2)$$

As an example, if the proportion of children in single parent households is 20%, then in this equation $\Pr_{00}(S=1)$ is equal to 0.2 and $1 - \Pr_{00}(S=1)$ is equal to 0.8. Suppose this proportion had increased from 15% in 1990. Then the simplest way to impose the earlier distribution on the current family income distribution is to re-weight each observation according to the percentage change in the share of each group over time, that is to replace $\Pr_{00}(S=1)$ in equation (2) with $\Pr_{90}(S=1)$. In other words, to calculate what the distribution of incomes would have been in 2000 had the risk of living in a single parent family not changed, every single-parent child in 2000 should be down-weighted by 0.75 (0.15/0.20) since the possibility of being part of this group was lower, and every child in other household structures should be up-weighted by 1.0625 (0.85/0.80) because the chance of being in this group was higher. The counterfactual density of incomes is:

$$f_{00}^{*}(y) = \lambda(S=1)\left[\Pr_{00}(S=1)f_{00}(y|S=1)\right] + \lambda(S=0)\left[(1 - \Pr_{00}(S=1))f_{00}(y|S=0)\right] \quad (3)$$

In this equation $\lambda(S=1) = \Pr_{90}(S=1) / \Pr_{00}(S=1)$ and $\lambda(S=0) = [1 - \Pr_{90}(S=1)] / [1 - \Pr_{00}(S=1)]$. At the individual level we can imagine a person specific adjustment, $\lambda_i = S_i\lambda(S=1) + (1 - S_i)\lambda(S=0)$, so that the counterfactual density can be expressed as $\hat{f}^{*}(y) = \sum_{i=1}^{n} \frac{\theta_i \lambda_i}{h} K\left(\frac{y - Y_i}{h}\right)$. The fraction of children living in low income can then be calculated by imposing the low income threshold on these hypothetical densities, and the impact of the changing risk on low income can be determined by comparing the resulting statistic with the actual low income rate.

If there are other characteristics of relevance to incomes then these will also need to be held constant. If they are discrete then similar calculations can be performed for each distinct level of these characteristics, in effect conditioning the calculations on their levels. If they are multi-nomial, continuous, or if they become large in number, then the λ cannot be easily computed as sample proportions among all individuals, but they can be estimated using a probit or logit model by pooling the data from the two years under study. This re-weighting method is the approach used to hold constant most of the influences on child incomes in our analysis, in particular all of the demographic factors and some of the labour market factors. However, when we are concerned about changes in variables like the earnings of mothers and fathers and the amount of government transfers these methods will not suffice. The re-weighting technique put forward by DFL relies upon the assumption that the distribution of the outcome variable does not depend upon the distribution of the characteristics. This in fact may not even be the case for some of the demographic variables, but it is clearly not the case for characteristics like the earnings of fathers and mothers or income transfers from the state, as these directly determine equivalent family income. In recognition of this, a separate approach—rank preserving exchange—is used to hold the levels and distribution of earnings and government transfers constant.

Basically, this involves subtracting each child's equivalized earnings (be it from the mother or the father) from his or her total equivalent income and adding back the amounts to which his or her rank in the 2000 earnings distribution would have implied in 1990. More specifically, the procedure first ranks children from lowest to highest according to the amount of equivalized earnings in each year. The samples in each year are then divided into 100 equally sized groups taking household sampling weights into account. The median incomes within each

of these percentiles in 1990 is calculated. Then for each child we subtract equivalized earnings

component from the equivalized family income in 2000 and replace it with the 1990 information

for the same percentile rank in the equivalized earnings distribution. The resulting distribution of

family income can therefore be regarded as a counterfactual, which holds constant (or preserves)

the distribution of earnings at 1990 levels. The analysis of income transfers is done in the same

manner. This approach is adopted for children from an analysis of adults in Daly and Valleta

(2000).

Our analysis uses these two approaches in combination, and can be described as follows.

Consider the distribution of equivalent family income Y conditional on a set of attributes, X,

which can be expressed as:

$$f_t(Y) = f(Y \mid t_Y = 00, t_X = 00)$$
$$= \int f(Y \mid X, t_Y = 00) dF(X \mid t_X = 00) \qquad (4)$$

where X is a vector of household or parental characteristic. A hypothetical density—the density

of equivalent income in 2000 with household/parental characteristics held to 1990 level—can be

derived from (4)

$$f_t(Y) = f(Y \mid t_Y = 00, t_X = 90)$$
$$= \int f(Y \mid X, t_Y = 00) dF(X \mid t_X = 90)$$
$$= \int F(Y \mid X, t_Y = 00) \lambda_X(X) dF(X \mid t_X = 00), \qquad (5)$$

where $\lambda_X(X) = \dfrac{dF(X \mid t_X = 90)}{dF(X \mid t_X = 00)}$.

Equation (5) shows that the counterfactual density can be easily constructed, and it is identical to

the original 2000 density times a re-weighting function $\lambda_X(X)$. Applying Bayes' rule, this re-

weighting function can be written as

$$\lambda_X(X) = \frac{\Pr(t_X = 90 \mid X)}{\Pr(t_X = 00 \mid X)} \cdot \frac{\Pr(t_X = 00)}{\Pr(t_X = 90)}. \qquad (6)$$

It is equal to the relative probability of observing child with the characteristics X in the 1990

sample versus the 2000 sample times the unconditional probabilities of being in either sample.

The conditional probabilities are obtained through a probit model, while the unconditional

probabilities are simply the population ratio between two periods. In this context, the

household/parental characteristics, X, includes six factors: (1) a continuous age variable, A,

representing the average age of parents; (2) a discrete variable, U, indicating four possibilities

with respect to receiving university education among parents;[6] (3) a discrete variable, K,

indicating the number of children in a household; (4) a binary variable, S, equal to 1 if the child

is living in a single-parent household, and 0 otherwise; (5) a binary variable, Em_{fa}, equal to 1 if

the father worked, and 0 otherwise; and (6) a binary variable, Em_{mo}, equal to 1 if the mother

worked, and 0 otherwise. We refer to the first four of these collectively as "demographic"

factors.

  In order to account for the impact of each factor on the child poverty rate, we use an

additive approach, taking the situation in 2000 as our starting point, and changing one factor at a

time (see Table 5). We begin by estimating what the child poverty rate would have been if the

age structure of parents had remained as it was in 1990. Applying equations (5) and (6), the

counterfactual family income holding parental age constant at 1990 levels can be obtained

through an estimated re-weighting factor λ_A. The resulting change in poverty is the estimated

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[6]The four combinations of university education refer to: (1) only the father holds a university degree; (2) only the mother holds a university degree; (2) both parents holds university degrees; and (4) neither parent holds a university degree. It has been suggested to use by Susan Mayer that in the US having a high school diploma would be the more relevant level of education for the low income population of interest to us, but differences in the institutional structure of education systems across countries precludes focusing at this level.

impact of the changing age structure of parents. We then estimate the child poverty rate with both age and university attainment set to their level in the earlier period. The estimated re-weighting function λ_{AU} holds both age and university attainment of parents to their 1990 levels. The resulting difference in the child poverty rate between this estimate and that from holding just age constant indicates the impact of changes in parental education. The impact of changes in number of children per family and changes in the proportion living with single parents is calculated in the same way. The estimated re-weighting functions for these two factors are λ_{AUK} and λ_{AUKS} respectively.

To estimate impact of changes in labour markets we consider two components: (1) employment probabilities; and (2) annual earnings. As noted, factors such as technological innovation, economic integration, or exogenous shocks might result in substantial changes in market opportunities over time. The first component therefore preserves the macro-economic conditions of earlier years; the second preserves the earnings structure. The use of annual earnings takes into account changes in both wage rates and hours worked per year. Models are estimated separately for fathers and mothers.

The re-weighting functions $\lambda_{AUKSEmfa}$ and $\lambda_{AUKSEmfaEmmo}$ are estimated in a similar fashion. For children with positive equivalized earnings, their earnings are further adjusted through a rank-preserving approach. As a result, $Y_{00} | Efa_{90}$ refers to the counterfactual distribution of family income in 2000 with fathers' earnings structure held at 1990 values. The net change in child poverty rates between sequences 6 and 7 in Table 5 is therefore the effect of changing earnings distribution for fathers. The impact of changing mothers' earnings distribution is estimated in the similar way (see sequences 7 and 8). Finally, the last decomposition estimates the effect of changing level of government transfers. Again, the procedure of rank-preserving

exchange is applied to children who received transfers. The counterfactual in sequence 9 represents the distribution of equivalized family income that holds all three categories—demographic, labour, and government factors—to 1990 level. The difference between child poverty rates calculated under sequence 9 and the actual 1990 child poverty rate is referred to as the residual term.

5. Results

a. The United Kingdom as an illustration

The results of the decomposition analysis are presented in Tables 6, 7, and 8 respectively for countries experiencing falls, no significant changes, and increases in child poverty rates. Panel 1 of the tables repeats information from Figures 1 and 2 on the level and change in the child poverty rate, while panel 2 offers the hypothetical child poverty rates for the end period of each country holding demographic, labour market and government influences at their beginning period levels. It should be noted that the impacts moving down the rows are cumulative so that the difference between any two rows is the impact of the factor in question taking into account the impacts of all previously listed factors. Increases in the child poverty rate between any two rows of this panel implies that the factor in question was a force lowering the child poverty rate in 2000, in other words child poverty would have been higher than it was in that year if the circumstances of the early 1990s had continued to prevail. A fall between any two rows indicates the opposite, the factor was a force increasing the child poverty rate.

Since the United Kingdom experienced the largest fall in child poverty rates we use it as an example to illustrate in detail how the analytical method works and how the information in

Tables 6, 7 and 8 is derived and should be interpreted. Certain limitations in the underlying data also require extra attention in understanding the situation in this country.

For example, because children were on average living with older parents in 1999 than 1991 the child poverty rate in the United Kingdom was 0.4 percentage points lower than it otherwise would have been (8.1% - 7.7%). But because the number of children per household rose slightly and because the proportion living in with single parents rose significantly the child poverty rate was 0.7 percentage points higher than it otherwise would have been (7.4%-8.1%). All together demographic factors changed in a way that was slightly detrimental, implying a 0.3 percentage point increase in the rate: it would have been 7.4% had demographics stayed the same rather than 7.7%. These incremental impacts are listed in the third panel of the tables.[7]

The information in Table 6 suggests that the major factor determining the significant fall in child poverty rates in the UK were changes in the amount of government support. When all other factors are accounted for the child poverty rate would not have been much different than the actual rate (8.3% versus 7.7%), suggesting that demographics and labour markets offered only a mild push toward lowering the child poverty rate. Demographics led to a 0.3 percentage point rise in child poverty rates, driven mostly by changes in the probability of living with a single parent; labour markets led to a 0.9 percentage point fall, led by changes in the earnings of mothers. But if the level of government support had remained at 1991 levels the child poverty rate would have been 19.8%, or 11.5 percentage points higher than it otherwise would have been.

There are two reasons to be cautious about accepting this particular set of results. The first, and most obvious, is that the information is dated, with the most recently available LIS data available to us at the time we started our analysis being that for 1999. The policy environment

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[7] The UK data does not offer information on education levels of parents and therefore this variable is not used in the modeling exercise.

has changed considerably in the UK since that time and an accurate assessment requires more up to date information. The second reason is that the LIS information for this country is actually based on two different surveys, and therefore there is a possibility that changes over this period could reflect changes in survey design.

For these reasons we redo the UK analysis using an alternative data source that is both more up to date and consistent through time. The results are depicted in the second column of Table 6. The British Household Panel Survey (BHPS) is the source of information. The first available year of this survey is 1992, but the most recent year is 2001. The disadvantage of this data source is that it refers solely to Britain and not to the entire United Kingdom.[8] However, the 2001 child poverty rate from the BHPS is virtually the same as the 1999 rate from the LIS survey (7.8% versus 7.7%), but at the same time shows a shaper fall (from 21% in 1992 versus 18.5% in 1991 from the LIS survey). The total difference in the child poverty rate to be explained is -13.2 percentage points rather than -10.8. In spite of these differences, however, the decomposition analysis yields broadly the same results. Indeed, the analysis using the BHPS seems globally to have a better fit, the residual term being only 0.7 percentage points.

From the BHPS changes in demographic and labour market forces imply a larger decrease in child poverty. Had all these factors remained unchanged between 1992 and 2001 the child poverty rate would have been 12.1% rather than 7.8%. All of the demographic and labour market factors we focus upon were pulling the child poverty rate down with the exception of the probability of living with a single parent. Because of changes in the risk of living with a single

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[8] The BHPS is a longitudinal survey that actually began in 1991. We use it only in a cross-sectional way with appropriate sampling weights. Because of some questions concerning the validity of these weights for the 1991 information, we use 1992 data as the first year. The survey has been extended to be representative of the United Kingdom, but this was not the case in 1992. To be consistent through time we therefore restrict the analysis to Britain. Our analysis is based on the Cross-National Equivalent File version of this data provided by Cornell University.

parent the child poverty rate was higher by 0.34 percentage points. This is consistent with the LIS based analysis. All this said the major factor determining the fall in child poverty rates in Britain over this period were changes in government transfers. Changes in the average amount of government transfers received would have implied a 9.7 percentage point fall in child poverty (21.7% - 12.05%) if everything else had been unchanged. This is slightly less than that indicated by the LIS based analysis, but the order of magnitude is the same and we conclude that the LIS findings for the United Kingdom are likely robust in spite of changes to the underlying surveys and the limited time horizon. That said, while our BHPS based analysis does extend the analysis to 2001, it would be valuable to have even more recent data. This is something for future analyses.

Figures 3a through 3e illustrate how these estimates are derived using as an example the BHPS data. The smoothed histograms of individual equvalized child incomes are presented in Figure 3a for 1992 and 2001, as is the fixed poverty line of 5,157 £. The poverty rates of 21% and 7.8% represent the proportion of children with incomes less than this amount, the area under each curve to the left of the poverty lines divided by the total area under the respective curve. The differences between the curves represent actual developments to be explained by our model. Figure 3b represents the first step in the process, the actual 2001 income distribution contrasted with a counterfactual in which re-weighting is used to hold all the demographic factors at their 1992 levels. The dashed line in this figure is what the income distribution would have been like in 2001 had there been no changes in demographics since 1992. The differences between the two histograms suggests that demographics had their largest impact on children in the middle of the income distribution and did not change the situation below the poverty line very much. Any statistic of interest can be derived from this hypothetical income distribution but our focus of

course is on the child poverty rate, which would have been 8.6% had demographics been unchanged, rather than 7.8%.

This dashed line is redrawn as the solid line in Figure 3c. This distribution is recast in turn using re-weighting and rank preserving exchange to develop an income distribution for 2001 had both demographics and labour market conditions remained unchanged. There is a significant difference between the distributions indicating that if actual labour market developments had not taken place the 2001 income distribution would have proportionately fewer children with higher incomes and considerably more with less than 10,000 £ of income. As a consequence the child poverty rate would have been 12.1% rather than 8.6%.

Finally the exercise is repeated to impose the 1992 level of government support onto the 2001 income distribution that already holds demographics and labour markets to their 1992 levels. This is illustrated in Figure 3d. The solid line in this graph is the same as the dashed line in Figure 3c, the 2001 child income distribution holding demographics and labour markets at 1992 levels. The contrast between these two histograms illustrates the influence of changes in the amount of government transfers. If the 1992 situation had prevailed in 2001 the incomes of children with up to 20,000 £ of income would have been lower, but the most noticeable impact is on those with less than 10,000 £. In particular there would have been may more children below the poverty line, and the child poverty rate would have been 21.7% rather than 12.1%.

Finally this dashed line is redrawn as the dotted line in Figure 3e, which also repeats the original income distributions from Figure 1. The contrast between the dotted and dashed lines in this figure illustrates how well the modeling exercise is able to capture actual developments. If in 2001 all demographic, labour market, and government factors are held at their 1992 values the resulting hypothetical income distribution looks very much like the actual 1992 income

distribution. The model tends to slightly overstate the proportion of children with very low incomes and those just above the poverty lines. The difference between these two lines is the residual term.

It is in this way that all of the information in Tables 6, 7 and 8 is derived. In all cases, the analysis is based on a particular order for the decomposition: first demographic factors, then labour market factors, then government transfers. The particular impacts illustrated in the tables relies upon the assumption that this is appropriate and that these factors are independent of each other. In effect we are assuming that changes in government transfers do not influence demographic and labour market factors, or that labour market factors do not influence demographic choices. This will not always be the case, but we focus on this ordering because it builds a conservative bias into our calculations with respect to the role of transfer payments. For example, if there is an interaction between policy changes and labour markets then it is all attributed to labour markets. As such our calculations should not be taken as a definitive decomposition of the various factors working to influence the incomes of children, but rather as a starting point for a fuller discussion that also brings, when appropriate, other institutional knowledge to bear.

b. Countries experiencing declines in child poverty rates

In addition to the United Kingdom, the contrasting experiences of children in the United States and Norway are also worthy of attention among the countries experiencing significant declines in child poverty rates. As noted in both countries the child poverty rate fell significantly, though from very different starting points and for very different reasons. Figure 4 abstracts information from Table 6 and depicts the patterns of change in the these two countries,

highlighting the fact that labour market changes were the dominant influence leading to lower child poverty rates in the United States, while government transfers were the crucial factor in Norway. These countries highlight two very different paths to lower child poverty rates. As such their experiences suggest that there are no simple recipes for policy makers, but rather that it is important to understand the labour market context in which policy must operate. In a similar vein the very different starting points may also suggest different policy responses.

In the US this involves important structural changes to social policy taking place during a period of extremely robust economic growth. This quite explicitly raises the important caveat about our method as it is very unlikely that the impact of each factor is distinct and independent of the others. Many social benefits in the US are closely linked with recipients' work status. The Earned Income Tax Credit and Temporary Assistance for Needy Families (TANF) are important cases in point. Welfare reform and the introduction of the TANF program in 1997 requires recipients to work as soon as job ready or no later than two years after coming on assistance. There are also a host of other programs intended to increase the job readiness of potential beneficiaries. In other words, changes in social policy involved not only changes in benefit levels but also changes in the incentive to be engaged in the labour market. Average benefit levels may have fallen but average incomes also rose as the employment rate increased. If this is the case, then part of the impact of government transfers on the poverty rate is therefore inter-mingled with labour market factors and cannot be distinguished clearly in our decomposition model. The conclusion that changes in levels of government transfers in the United States would have actually increased child poverty rates assumes that there were no interactions between social policy and labour markets over this period, an assumption that may not be appropriate.

Indeed, one observer of US social policy has described legislative changes enacted since the mid-1990s as constituting "a revolution in public-assistance within the United States" (Blank 2002, pp. 1105-66). Federal monies to support working low income families increased six fold over a ten year period reaching $66.7 billion, while welfare support to non working families declined by over half to $13 billion. These changes significantly shifted the boundary between family and market, and in combination with strong economic growth and low unemployment led mothers to be more engaged in paid work. The strong economy also produced growing wages for both men and women. As a result fully four percentage points of the 7.3 percentage point fall in child poverty was associated with labour market changes. But some part of this reflects social policy changes that increased the incentive to work. The most important contributions were increases in the average earnings of mothers. Demographic factors also served to reduce the low income rate among children, but these had little to do with changes in the proportion of single parent families or the number of children per family, reflecting rather that parents, particularly mothers, were more likely to have a university degree. All this said, families still collecting some government transfers experienced significant declines in the amount of support, in the LIS data on average from $2,969 to less than $2,779 per child. And this on its own would have caused an increase in child poverty rates.[9]

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[9] All of this, however, begs the question of the extent to which these monetary changes have improved the lives of children. This is an area where additional indicators beyond the monetary are essential, with Jencks, Mayer and Swingle (2004) offering one example. Some parents in the US spend very long hours at work, and the most notable increases in labour force participation rates have been among single mothers with children under 18 years of age. The balance has clearly shifted between time parents spend at home and time spent at work. As Blank (2002) points out there is some evidence suggesting that if financial support tied to labour market engagement is generous enough it can increase earnings, reduce low income and, if also tied to quality child care, improve the well being and capabilities of younger children. But she also suggests that the possibility of this virtuous circle must be weighed against evidence suggesting negative effects for older children associated with falls in parental supervision, possible declines in breast feeding of newborns, changes in eating habits and nutritional well being leading to increased obesity among young children, and higher rates of out-of-home placement. Other very fundamental legislative changes will also affect these families, including significant decentralization of powers and most importantly the introduction of a five year limit on the receipt of income assistance. It is not yet clear how the latter will affect

In the United States social policy both pulled and pushed low income parents into the labour market. This happened during a period of very robust economic growth in an economy with a substantial service sector generating jobs for both high and low skilled workers. This context makes it very difficult using our analytical methods to discern the independent impact of government policy, and the extent to which the US experience can serve as a guide for other countries is still very much open to question particularly as it is not clear how things would play out in a climate of less robust economic growth or during a business cycle downturn.

Social policy played a very different role in Norway, and operated in a very different configuration of labour market forces. In Norway children saw improvements in their situation relative to 1991, their low income rate falling from 5.2% in that year to just 2.0% in 2000. Income transfers were important in minimizing the impact of an at best neutral labour market, and unambiguously reduced the risk of low income among children in Norway.

Labour markets during the early 1990s were particularly hostile in all of the Nordic countries. In Norway our data suggest that families adjusted on all possible fronts in ways beneficial to children—parents on average were older, better educated, and proportionately fewer children lived with a single parent—but this had only a small impact on the child poverty rate. Table 6 and Figure 4 suggest that on this basis alone the low income rate would have fallen slightly by 0.6 percentage points, about a third of this reflecting the fact that the percentage of children living with a lone parent went from about 24% to 17%. Over the span of the entire decade labour market changes were also neutral in their impact on the risk of low income among children, also implying a fall of about 0.6 percentage points.

children, nor how a policy putting such a stringent condition on the receipt of financial support from the state meshes within a rights-based perspective.

But the average amount received from transfer payments rose 34% per child in households relying on this support. Social benefits as a fraction of GDP fell in Norway over this period, from 24.7% to 23.0%, but benefits directed to families actually increased as a fraction of GDP.[10] Above and beyond anything else this was the reason for the fall in child poverty in Norway, accounting for a 4.3 percentage point decline. These patterns are in sharp contrast with those in the United States.

The situation in Canada and the role of government transfers is more ambiguous than in the other three countries listed in Table 6. The LIS information suggests a fall in child poverty of 1.3 percentage points. This is made up of a 1.2 percentage point fall due to demographics (mostly the aging of parents), a 3.4 percentage point fall due to labour market developments (mostly improvements in the annual earnings of fathers), and a 2.7 percentage point increase due to changes in the amount of government transfers. These results, however, merit a second look because as in the example of the UK the LIS data actually rely upon two different surveys. The results may therefore reflect changes in the survey designs and questions rather than actual developments.

The last column in Table 6 offers an alternative set of Canadian results. We make use of the Canadian Census which is based on information from 1990 and 2000. The child poverty rates from this source, however, are very different than those from the data available in the LIS. In 2000 the LIS sources suggests a child poverty rate of 14.0%, the Census a rate of 19.5%. This significantly higher child poverty rate is entirely due to the fact that the Census does not contain information on taxes so that the median income derived from it is post government transfers, but pre taxes. The resulting median is much higher and implies that the derived poverty threshold is

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[10] The source for this information is the OECD Social Expenditure data base as reported in UNICEF (2005), Figure 11.

also much higher. When we recalculate the child poverty rate using the same threshold as used with the LIS data, however, we obtain pretty much the same rate (15.9% in 1990 and 15.0% in 2000). Consequently the focus of our attention is not on differences in the levels of child poverty but on differences in the magnitude and direction of change.

In this regard both data sources are indicating the same pattern, a slight fall in child poverty rates bordering on the margin of statistical significance. However, the reasons for the fall are slightly different. In particular labour markets and government policy play out differently. As mentioned the LIS information suggests that holding demographics constant labour market changes would have lowered the child poverty rate by 3.4 percentage points (18.6%- 15.2%), but the Census information implies that labour markets were essentially neutral. The LIS information suggests that changes to government transfers led to higher child poverty rates, but the Census information implies lower rates. These differences may be due to the fact that the LIS information is based on two different surveys, but they could also be explained by the fact that 1991 saw the onset of a deep business cycle recession in Canada. For this reason unemployment insurance payments may have been unusually high, and certainly higher than in 1999 near the business cycle peak. The Census information is consistent over time. Just as importantly it is also based upon two years at similar points in the business cycle, 1990 and 2000 both being business cycle peaks.

As a result we are reluctant to draw firm conclusions about the Canadian experience, though the Census information is likely to be more reliable. The most accurate summary of the experience in Canada might be to suggest that there is no strong change in child poverty rates since the early 1990s and no strong impact of government transfers either in a positive or negative way. In this sense it might be better placed as one of the countries in Table 7.

c. Countries experiencing no significant change in child poverty rates

Table 7 depicts the results for countries experiencing little change in child poverty, magnitudes generally within the range of statistical uncertainty. In some of these cases our analysis is not able to fully model the outcome, the residual term being particularly large relative to the amount of change to be explained. In all three of the countries listed—Sweden, Belgium, and the Netherlands—child poverty rates were higher because of changes in the average amount of government transfers since the early 1990s. But with the exception of the Netherlands the impact is not large.

Like the United States, the Netherlands made very significant changes to social policy intended to encourage labour market participation, but unlike the US child poverty rose. The information in Table 7 suggests that this is almost entirely due to government transfer payments. The fact that parents were on average older and more educated, coupled with declines in the proportion of children in single parent families, augured for lower child poverty rates. Our calculations suggest that on the basis of these family/demographic changes the low income rate using a fixed 1991 poverty line was 1.4 percentage points (9.8% - 8.4%) lower than it otherwise would have been.

But changes in labour markets were broadly neutral with respect to their impact on child poverty, while government policy changes were sharply regressive and would have resulted in a 2.2 percentage point increase in child poverty all other things constant. It is the case that substantial increases in the employment rate of mothers were a strong force for lower child poverty rates, but this was partially countered by decreases in fathers' employment levels. As highlighted in Table 3 the average amount of social transfers per child in families collecting

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some benefits fell by almost 27% between 1991 and 1999. To some significant degree this reflects major social policy changes in the Netherlands that saw social expenditures as a proportion of GDP fall from about 28% at the beginning of the decade to below 22%, the largest percentage point fall in the OECD.[11] While these changes implied significant declines in the share of family related benefits, this may have been an unintended consequence as they were in the first instance directed to those of working age. Changes to unemployment insurance and to disability benefits were at the forefront, but policy changes also increased the incentive for women to work part time. These changes were associated with significant increases in employment and an increase in the median income of about seven percent for the population as a whole. But the positive labour market impacts on children through the experience of their parents did not outweigh the declines in income support from the state. In other words the induced incentive effects of the restructuring of social policy did not—in the context of the Dutch labour market—generate enough labour market income to compensate for the decline in social support. As a result the risk of low income among children rose.

d. Countries experiencing increases in child poverty rates

Finally Table 8 offers results for countries experiencing increases in child poverty rates. This is a very heterogeneous group, including countries like Mexico and Hungary that experienced very important economic crises and fundamental restructuring during the period under study. It should be noted that our analysis does not do a very good job of explaining the changes in Italy and West Germany, with a rather large residual term suggesting that important factors have not be taken into account or that the underlying structure of the true model

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[11] The source for this information is the OECD Social Expenditure data base as reported in UNICEF (2005), Figure 11.

determining child incomes has changed. Corak, Fertig and Tamm (2005) offer a more detailed overview of child poverty in Germany, suggesting that an important factor in the upward trend in both the West and the country as a whole has to do with the situation of children in households headed by non-citizens. This is particularly the case for more recent arrivals to the country. The fact that we do not control for immigrant status could be one reason for the large unexplained component in the German results. Developments in Italy require further and more detailed study.

This said the amount of government transfers were a force reducing child poverty rates only in West Germany and Finland. In the remaining three countries child poverty rates would have been lower had transfer payments remained unchanged. In Mexico the number of children per household fell and this lowered child poverty by as much as four percentage points. This is a result that stands out in comparison with all the other countries under analysis. It could be due to significant declines in fertility, or to significant declines in the age at which children leave the parental household. If children leave while still younger than the age of 18 but do not have a fixed address of their own they may be missed in the household based surveys of the type we are relying upon. An increase in the number of homeless children could in part explain the large impact negative impact this factor has on child poverty. This is a possibility that requires further analysis. At the same time the major reason for the rise in child poverty in Mexico are changes in the annual earnings of fathers. If the earnings distribution of fathers had not changed over this period the child poverty rate would have been 6.5 percentage points lower. This was also the major reason for the sharp rise of child poverty in Hungary. Over ten percentage points of the 13.5 percentage point increase in child poverty in that country is a reflection of the drop in the annual earnings of fathers. In addition declines in government support led to a further 5.2

percentage point increase so that these two factors far out weighed any other mitigating influences.

e. Summary

Figure 5 summarizes the major findings from these tables by recasting Figure 2 with information on the impact of changes in the amount of government transfer payments. The solid bars in this graph are the same as in Figure 2 and represent the actual change in the child poverty rate, while the white bars are the change in the child poverty rate that would have taken place if demographic and labour market factors had remained unchanged and only the average amount of government transfers changed. This is taken from the second to last row in Tables 6, 7 and 8. The difference between the two bars is the impact of all other factors on the change in child poverty rates (including the residual term). The results suggest that for three of the five countries experiencing significant increases in child poverty rates—Hungary, Mexico, and Italy—changes in the average amount of government transfers since the early 1990s contributed to higher child poverty rates and exacerbated broader demographic and labour market forces that were also pushing up child poverty rates. In the remaining two countries—West Germany and Finland— the opposite was taking place. If all other things had remained the same the changes in government transfer payments would have implied a lower child poverty rate. In these cases transfers were trying to cushion the impact of other more detrimental forces, but the scale of the effort was not large enough to entirely undo them.

The Netherlands stands out among the countries with no significant change in child poverty rates. In this country the changes in government transfers on their own would have implied a significant increase (almost 2.2 percentage points) in child poverty rates. In the two

remaining countries—Belgium and Sweden—the government sector was neutral: there does not appear to have been a significant government effort in reducing child poverty, but also no significant changes that would have implied higher rates. This finding also holds for Canada but the ambiguity in this country may also have to do with inconsistencies in the underlying information source. As suggested, other information sources suggest a mild role for government transfers in reducing child poverty.

The story is mixed in the countries experiencing significant declines in child poverty. In the United States child poverty rates would have been higher if all other things had stayed the same and only the amount of government transfers had changed. But as mentioned the United States is an important case in which the impact of policy changes is difficult to discern because they are likely wrapped up with strong behavioural changes associated with significant labour market growth. In Norway and in the United Kingdom the results suggest that changes in transfer payments are the major factor influencing the decline in child poverty rates. If these changes had not taken place the child poverty rate would have actually increased slightly in both of these countries.

6. Conclusion

Our analysis of child poverty in twelve OECD countries is intended to uncover the major factors determining the changes observed since the early 1990s. We focus our attention on developments since the *Convention on the Rights of the Child* came into force for the symbolic reason that the circumstances at that time offer a starting point for assessing subsequent developments. The analysis documents changes in child poverty rates using a income based poverty line held at 50% of national median income prevailing at that time; decomposes in a descriptive way the major

reasons for these changes using a number of factors categorized as influences from families, labour markets, and the state; and finally offers an estimate of the impact of state support through income transfers. Our analytical approach recognizes that observed changes in child poverty rates are the result of a number of influences and to understand the role played by income transfers it is necessary to derive counterfactual estimates of what the child poverty rate would have been had nothing else changed.

In the majority of the countries we analyze there has been little progress in reducing child poverty rates. We find that child poverty unambiguously fell in only three of the twelve countries under study, the United Kingdom, the United States, and Norway. In the remaining countries child poverty rates were essentially unchanged since 1990 or rose significantly. In addition to offering a detailed analysis of the reasons for changes in each country, we draw at the most general level three lessons from this experience. First, family and demographic forces play only a limited role in determining changes in child poverty rates. These forces change only gradually and are limited in their ability to cushion children from detrimental shocks originating in the labour market or in the government sector. It is changes in labour markets and government support that are the major causes of changes in child poverty. In almost all of the cases we study family and demographic factors have improved, the possible exception being a rise in the probability of living with a single parent. Yet these factors never play a determining role in child poverty dynamics. One important exception are changes in the number of children per household in Mexico, which fell significantly and was a force for lower child poverty rates. Though not definitive our analysis suggests a need to study this more carefully as, rather than reflecting a positive change, it could reflect an increase in the number of homeless children, the significant

economic changes in that country causing the young to leave home earlier than they otherwise would have.

Second, in countries facing severe economic crises it does not appear that the amount of income transfers from the state increased in a way to cushion children from these changes and put a backstop on their risk of low income. Indeed, just the opposite appears to have occurred in countries experiencing the largest increases in child poverty, Hungary, Mexico and Italy. Children in West Germany and Finland also witnessed increases in the risk of poverty, and though the average amount of income transfers increased the extent of change in government effort was not enough to hold this risk steady in the face of adverse labour markets.

Third, there is no single road to lower child poverty rates. The conduct of social policy needs to be thought through in conjunction with the nature of labour markets. Reforms to income transfers intended to increase labour supply and labour market engagement may or may not end up lowering child poverty rate. In the United States important structural changes to income support policies are closely wrapped up with significant economic growth in a labour market with a large service sector, and are associated with a significant fall in child poverty in a country that had a very high rate at the beginning of the period. In the Netherlands, on the other hand, they contributed to a rise in child poverty. At the same time increases in the level of support have also been shown to be a central ingredient in lowering the child poverty rate both not only when it is very high, but also when it is already quite low. In the United Kingdom and in Norway income transfers became much more generous and are the major reason for declines in child poverty rates in both of these countries, the former beginning the period with a high rate and the latter with a low one.

Our research should not be taken as a full assessment of the extent to which governments have met their commitments to children. There are certain limitations in the analytical approach. We employ a descriptive tool that does not fully recognize the behavioural interactions between the various influences on incomes. But just as importantly poverty is a relative concept and cannot be fully understood with the fixed poverty line we use. Further, income poverty needs to be supplemented with other direct measures of deprivation and capabilities, and attention needs to be paid to a much broader set of countries than those in the OECD. Nonetheless our analysis might be considered useful as a starting point for discussions of the extent to which children in some relatively rich countries have experienced changes in the risk of living in low income given the standards prevailing during the late 1980s and early 1990s.

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Table 1
Child poverty rates for various definitions of the poverty threshold

	Year		Child poverty rate			Change in child poverty rate	
	T-10	T	Year T-10 using T-10 threshold	Year T using T-10 threshold	Year T using T threshold	T_{T-10}–T-10	T–T-10
	(1)	(2)	(3)	(4)	(5)	(6)=(4)-(3)	(7)=(5)-(3)
Hungary	1991	1999	6.9	20.4	8.8	13.5	1.9
Mexico	1989	1998	24.7	33.1	27.7	8.4	3.0
Italy	1991	2000	14.0	18.1	16.6	4.1	2.6
West Germany	1989	2000	4.1	7.8	8.8	3.7	4.7
Finland	1991	2000	2.3	3.1	2.8	0.8	0.5
Netherlands	1991	1999	8.1	8.4	9.7	0.3	1.6
Belgium	1988	1997	3.8	4.0	7.7	0.2	3.9
Sweden	1992	2000	3.0	2.8	4.2	-0.2	1.2
Canada	1991	2000	15.3	14.0	14.9	-1.3	-0.4
Norway	1991	2000	5.2	2.0	3.4	-3.2	-1.8
United States	1991	2000	24.3	17.0	21.9	-7.3	-2.4
United Kingdom	1991	1999	18.5	7.7	15.4	-10.8	-3.1

Source: Calculations by authors using data from the Luxembourg Income Study.

Table 2
Demographic, labour market, and government influences on child poverty in countries experiencing declines in child poverty rates

	United Kingdom		United States		Norway		Canada	
	1991	1999	1991	2000	1991	2000	1991	2000
1. Family and Demographic Factors								
Average age of parents	36.7	37.9	37.2	38.4	36.8	37.8	37.2	38.8
Percentage of fathers with a university degree	n.a.	n.a.	24.4	28.8	27.3	34.4	16.8	18.8
Percentage of mothers with a university degree	n.a.	n.a.	16.4	23.2	19.5	33.9	11.9	17.0
Average number of children per household	2.2	2.3	2.4	2.4	2.1	2.2	2.3	2.2
Percentage of children living with a single parent	17.8	23.8	23.4	23.2	23.7	17.3	15.4	17.0
2. Labour Market Factors								
Percentage of fathers working	57.4	55.3	67.0	70.6	76.2	77.5	73.3	73.5
Percentage of mothers working	48.4	52.2	61.7	66.8	73.4	83.2	66.0	69.0
Change in annual earnings								
Fathers on average	7.0%		27.4%		21.0%		15.2%	
At the bottom 10%	-8.2%		11.2%		5.8%		22.0%	
At the bottom 25%	1.6%		5.6%		10.5%		13.3%	
Mothers on average	28.2%		28.0%		84.4%		21.4%	
At the bottom 10%	29.2%		59.9%		95.7%		26.9%	
At the bottom 25%	34.2%		36.1%		51.9%		27.0%	
3. Government Factors								
percentage change in average amount received by those receiving government transfers	39.1%		-6.4%		33.6%		-12.2%	

Table 3
Demographic, labour market, and government influences on child poverty in countries experiencing no significant changes in child poverty rates

	Sweden		Belgium		Netherlands	
	1992	2000	1988	1997	1991	1999
1. Family and Demographic Factors						
Average age of parents	37.6	39.0	35.0	38.1	37.6	38.9
Percentage of fathers with a university degree	26.5	30.9	11.9	13.1	21.4	29.3
Percentage of mothers with a university degree	22.9	32.3	5.3	6.8	12.4	23.2
Average number of children per household	2.2	2.2	2.1	2.2	2.3	2.2
Percentage of children living with a single parent	17.9	20.9	5.3	10.7	9.5	8.6
2. Labour Market Factors						
Percentage of fathers working	77.5	73.3	86.3	67.7	80.0	77.9
Percentage of mothers working	83.6	82.7	50.4	52.0	37.0	62.1
Change in annual earnings						
Fathers on average	29.3%		5.3%		0.6%	
At the bottom 10%	61.2%		7.2%		-1.0%	
At the bottom 25%	19.5%		8.0%		1.5%	
Mothers on average	29.1%		11.1%		23.4%	
At the bottom 10%	42.2%		7.2%		91.0%	
At the bottom 25%	35.8%		8.2%		59.0%	
3. Government Factors						
Percentage change in average amount received by those receiving government transfers	-2.9%		19.1%		-26.8%	

Table 4
Demographic, labour market, and government influences on child poverty in countries experiencing increases in child poverty rates

	Finland		West Germany		Italy		Mexico		Hungary	
	1991	2000	1989	2000	1989	1998	1989	1998	1991	1999
1. Family and Demographic Factors										
Average age of parents	37.7	38.9	37.9	39.0	40.1	40.4	40.2	39.7	37.5	37.5
Percentage of fathers with a university degree	11.7	18.9	13.4	17.2	9.5	10.7	5.1	5.6	13.2	13.1
Percentage of mothers with a university degree	8.7	16.8	6.0	11.8	7.2	9.9	1.6	3.1	13.1	16.8
Average number of children per household	2.2	2.3	2.0	2.1	1.9	1.9	3.5	3.1	2.1	2.0
Percentage of children living with a single parent	11.5	15.0	10.4	12.4	6.1	5.7	11.9	13.7	13.9	9.6
2. Labour Market Factors										
Percentage of fathers working	80.3	75.3	79.5	74.7	65.9	63.0	59.0	55.7	78.5	54.9
Percentage of mothers working	82.8	75.3	48.0	57.5	31.7	37.8	13.4	19.4	62.0	50.9
Change in annual earnings										
Fathers on average	12.5%		5.8%		-1.3%		-3.4%		-24.0%	
At the bottom 10%	13.1%		-22.7%		-17.5%		-22.4%		-76.5%	
At the bottom 25%	9.4%		1.4%		-4.1%		-20.0%		-29.6%	
Mothers on average	8.9%		4.8%		-7.1%		-9.4%		-22.6%	
At the bottom 10%	-0.5%		-2.7%		-34.8%		-40.9%		-62.3%	
At the bottom 25%	-1.6%		-13.9%		-21.0%		-44.6%		-42.3%	
3. Government Factors										
Percentage change in average amount received by those receiving government transfers	19.4%		86.4%		-9.2%		-65.5%		-41.1%	

Table 5
Decomposition Factors

Sequence	Counterfactual distribution holding constant factors to T-10 levels in following order	Method applied in decomposition	
		Rank-preserving	Re-weighting
1	Ages of parents *(A)*	Y_{00}	$\theta_{00} \cdot \lambda_A$
2	+ University attainment of parents *(U)*	Y_{00}	$\theta_{00} \cdot \lambda_{A,U}$
3	+ Number of children *(K)*	Y_{00}	$\theta_{00} \cdot \lambda_{A,U,K}$
4	+ % single-parent *(S)*	Y_{00}	$\theta_{00} \cdot \lambda_{A,U,K,S}$
5	+ Percentage of children living with a working father *(Em$_{fa}$)*	Y_{00}	$\theta_{00} \cdot \lambda_{A,U,K,S,Emfa}$
6	+ Percentage of children living with a working mother *(Em$_{mo}$)*	Y_{00}	$\theta_{00} \cdot \lambda_{A,U,K,S,Emfa,Emmo}$
7	+ Equvialized earnings distribution of fathers *(Efa)*	$Y_{00} \mid Efa_{90}$	$\theta_{00} \cdot \lambda_{A,U,K,S,Emfa,Emmo}$
8	+ Equvialized earnings distribution of mothers *(Emo)*	$Y_{00} \mid Efa_{90,} Emo_{90}$	$\theta_{00} \cdot \lambda_{A,U,K,S,Emfa,Emmo}$
9	+ Equivalized Government transfers *(G)*	$Y_{00} \mid Em_{fa90}, Em_{mo90,} G_{90}$	$\theta_{00} \cdot \lambda_{A,U,K,S,Emfa,Emmo}$

Table 6
Demographic, labour market and government impacts on child poverty rates in countries experiencing declines

	United Kingdom		US	Norway	Canada	
	LIS (1991,1999)	BHPS (1992, 2001)	(1991,2000)	(1991, 2000)	LIS (1991, 2000)	Census (1990,2000)
1. Child Poverty Rate						
T based on T-10 poverty line	7.7	7.8	17.0	2.0	14.0	19.5
T-10	18.5	21.0	24.3	5.2	15.3	20.4
Change	-10.8	-13.2	-7.3	-3.2	-1.3	-0.9
2. Child poverty rate in T holding influences at T-10 levels						
Demographic factors						
Average age of parents	8.1	8.82	17.66	2.09	15.0	21.2
Education of parents	-	-	18.65	2.38	15.4	21.9
Number of children	8.0	8.89	18.58	2.39	15.7	21.9
Proportion with single parents	7.4	8.55	18.35	2.61	15.2	20.3
Labour market factors						
Proportion with fathers working	7.8	10.42	19.17	2.42	15.7	19.8
Proportion with mothers working	8.1	10.99	19.88	2.73	16.2	20.6
Annual earnings of father	7.5	11.31	20.31	2.78	18.0	19.5
Annual earnings of mother	8.3	12.05	22.49	3.19	18.6	20.1
Government Factor						
Amount of social transfers	19.8	21.70	21.83	7.50	15.9	20.9
3. Contribution to change in child poverty rate						
Demographic factors	0.3	-0.75	-1.35	-0.61	-1.2	0.2
Average age of parents	-0.4	-1.02	-0.66	-0.09	-1.0	-0.7
Education of parents	-		-0.99	-0.29	-0.4	-0.7
Number of children	0.1	-0.07	0.07	-0.01	-0.3	0.0
Proportion with single parents	0.6	0.34	0.23	-0.22	0.5	1.6
Labour market factors	-0.9	-3.50	-4.14	-0.58	-3.4	0.2
Proportion with fathers working	-0.4	-1.87	-0.82	0.19	-0.5	0.5
Proportion with mothers working	-0.3	-0.57	-0.71	-0.31	-0.5	-0.8
Annual earnings of father	0.6	-0.32	-0.43	-0.05	-1.8	1.1
Annual earnings of mother	-0.8	-0.74	-2.18	-0.41	-0.6	-0.6
Government Factor						
Amount of social transfers	-11.5	-9.65	0.66	-4.31	2.7	-0.8
Residual	-1.3	0.70	-2.47	2.30	-0.6	-0.5

Table 7
Demographic, labour market and government impacts on child poverty rates:
countries experiencing no significant change in child poverty rates

	Sweden (1992, 2000)	Belgium (1988, 1997)	Netherlands (1991, 1999)
1. Child Poverty Rate			
T based on T-10 poverty line	2.8	4.0	8.4
T-10	3.0	3.8	8.1
Change	-0.2	0.2	0.3
2. Child poverty rate in T holding influences at T-10 levels			
Demographic factors			
Average age of parents	3.11	5.25	8.79
Education of parents	3.09	5.21	9.69
Number of children	3.12	5.21	9.73
Proportion with single parents	2.91	5.00	9.80
Labour market factors			
Proportion with fathers working	2.73	2.93	8.78
Proportion with mothers working	2.68	3.20	10.39
Annual earnings of father	3.37	3.32	9.47
Annual earnings of mother	3.92	3.48	9.64
Government Factor			
Amount of social transfers	3.73	3.35	7.47
3. Contribution to change in child poverty rate			
Demographic factors	-0.11	-1.00	-1.4
Average age of parents	-0.31	-1.25	-0.39
Education of parents	0.02	0.04	-0.90
Number of children	-0.03	0.00	-0.04
Proportion with single parents	0.21	0.21	-0.07
Labour market factors	-1.01	1.52	0.16
Proportion with fathers working	0.18	2.07	1.02
Proportion with mothers working	0.05	-0.27	-1.61
Annual earnings of father	-0.69	-0.12	0.92
Annual earnings of mother	-0.55	-0.16	-0.17
Government Factor			
Amount of social transfers	0.19	0.13	2.17
Residual	0.73	-0.45	-0.63

Table 8
Demographic, labour market and government impacts on child poverty rates:
countries experiencing increases in child poverty rates

	Finland (1991, 2000)	W. Germany (1989, 2000)	Italy (1991, 2000)	Mexico (1989, 1998)	Hungary (1991, 1999)
1. Child Poverty Rate					
T based on T-10 poverty line	3.1	7.8	18.1	33.1	20.4
T-10	2.3	4.1	14.0	24.7	6.9
Change	0.8	3.7	4.1	8.4	13.5
2. Child poverty rate in T holding influences at T-10 levels					
Demographic factors					
Average age of parents	3.26	8.42	18.13	33.05	20.38
Education of parents	3.50	8.65	18.50	33.35	20.82
Number of children	3.65	8.61	19.06	37.48	21.05
Proportion with single parents	3.34	8.01	19.09	37.47	21.90
Labour market factors					
Proportion with fathers working	3.02	7.70	18.82	37.18	21.06
Proportion with mothers working	2.60	8.43	19.87	37.97	20.21
Annual earnings of father	3.14	7.28	17.68	31.46	9.88
Annual earnings of mother	3.09	7.44	17.88	31.02	8.21
Government Factor					
Amount of social transfers	3.86	8.83	17.15	28.42	3.00
3. Contribution to change in child poverty rate					
Demographic factors	-0.24	-0.21	-0.99	-4.37	-1.5
Average age of parents	-0.16	-0.62	-0.03	0.05	0.02
Education of parents	-0.24	-0.23	-0.37	-0.30	-0.44
Number of children	-0.15	0.04	-0.56	-4.13	-0.23
Proportion with single parents	0.31	0.6	-0.03	0.01	-0.85
Labour market factors	0.25	0.57	1.21	6.45	13.66
Proportion with fathers working	0.32	0.31	0.27	0.29	0.84
Proportion with mothers working	0.42	-0.73	-1.05	-0.79	0.82
Annual earnings of father	-0.54	1.15	2.19	6.51	10.33
Annual earnings of mother	0.05	-0.16	-0.2	0.44	1.67
Government Factor					
Amount of social transfers	-0.77	-1.39	0.73	2.6	5.21
Residual	1.56	4.73	3.15	3.72	-3.90

Figure 1
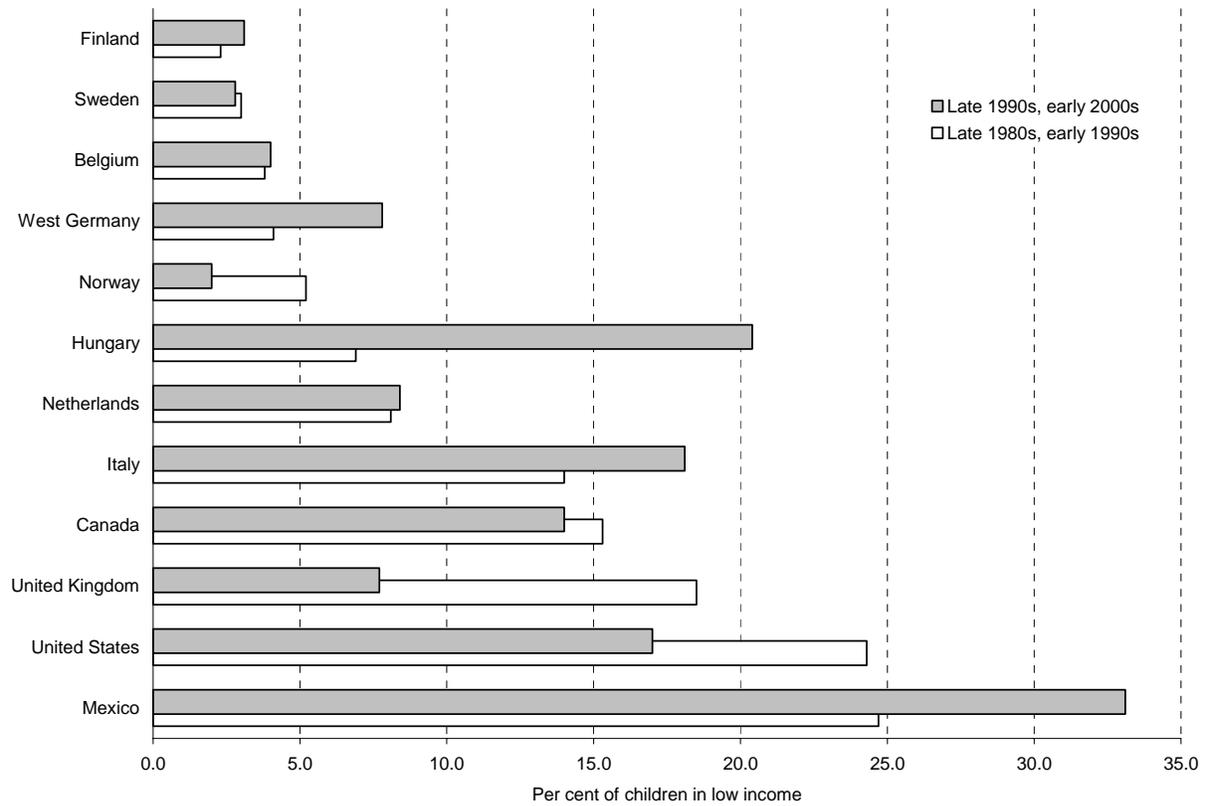Child poverty rates in twelve OECD countries, early 1990s and late 1990s

■ Late 1990s, early 2000s
□ Late 1980s, early 1990s

Per cent of children in low income

Figure 2
Changes in child poverty rates in twelve OECD countries

Percentage point change in child low income rate
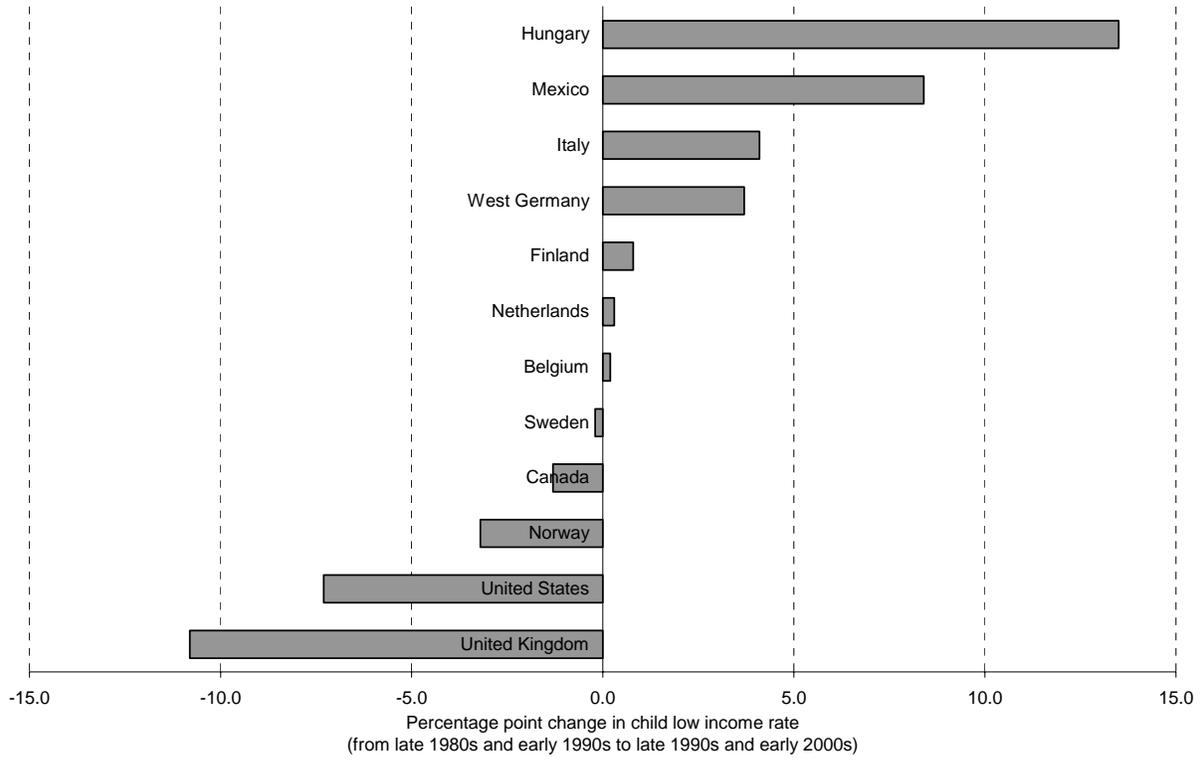(from late 1980s and early 1990s to late 1990s and early 2000s)

Figure 3a
Density of Equivalent Individual Income, Children Population using
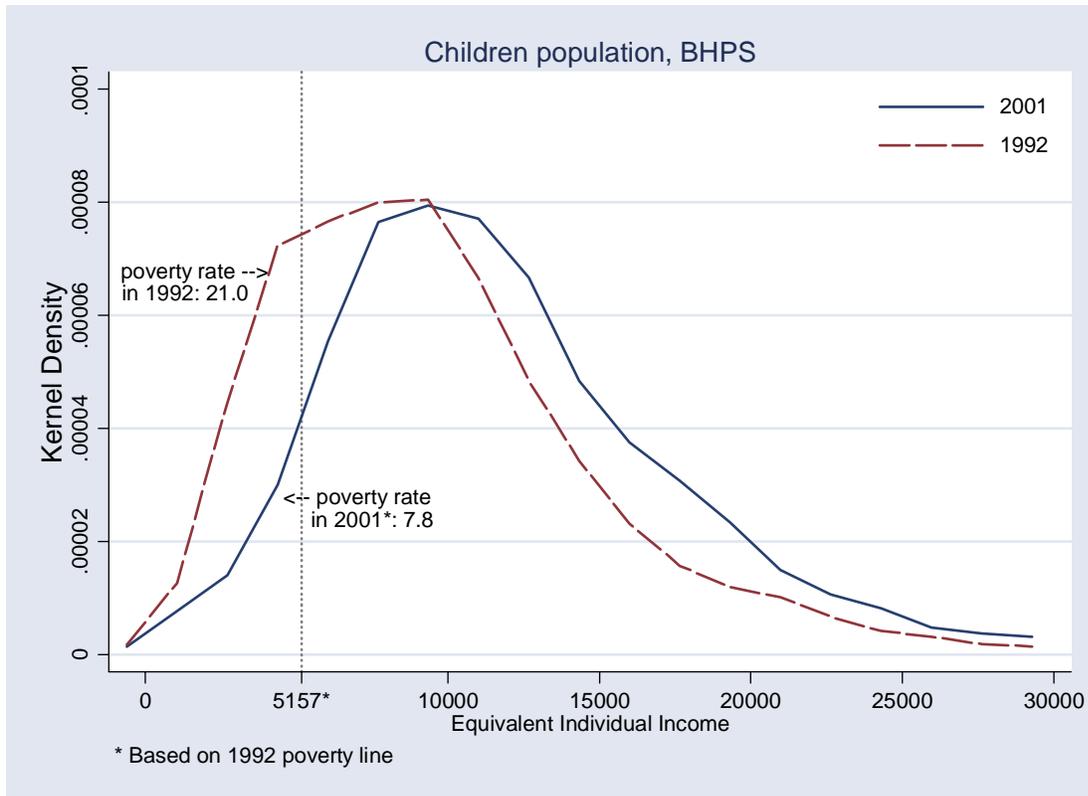the British Household Panel Survey

Children population, BHPS

poverty rate -->
in 1992: 21.0

<-- poverty rate
in 2001*: 7.8

Kernel Density

Equivalent Individual Income

* Based on 1992 poverty line

Figure 3b
Impact of the Change in Demographic Factors in the British Household Panel Survey

Children population, BHPS
Adjusted for Demographic Factors

* 1992 Poverty line
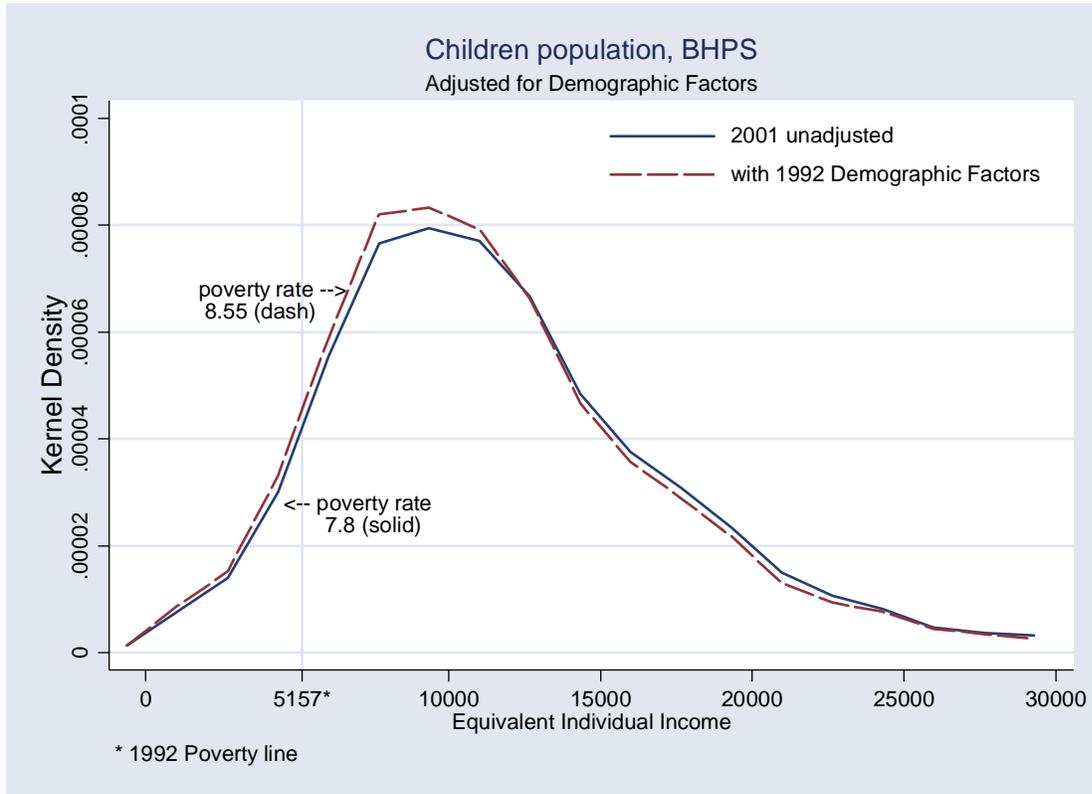
Figure 3c
Impact of the Change in Labour Market Factors in the British Household Panel Survey

Children population, BHPS
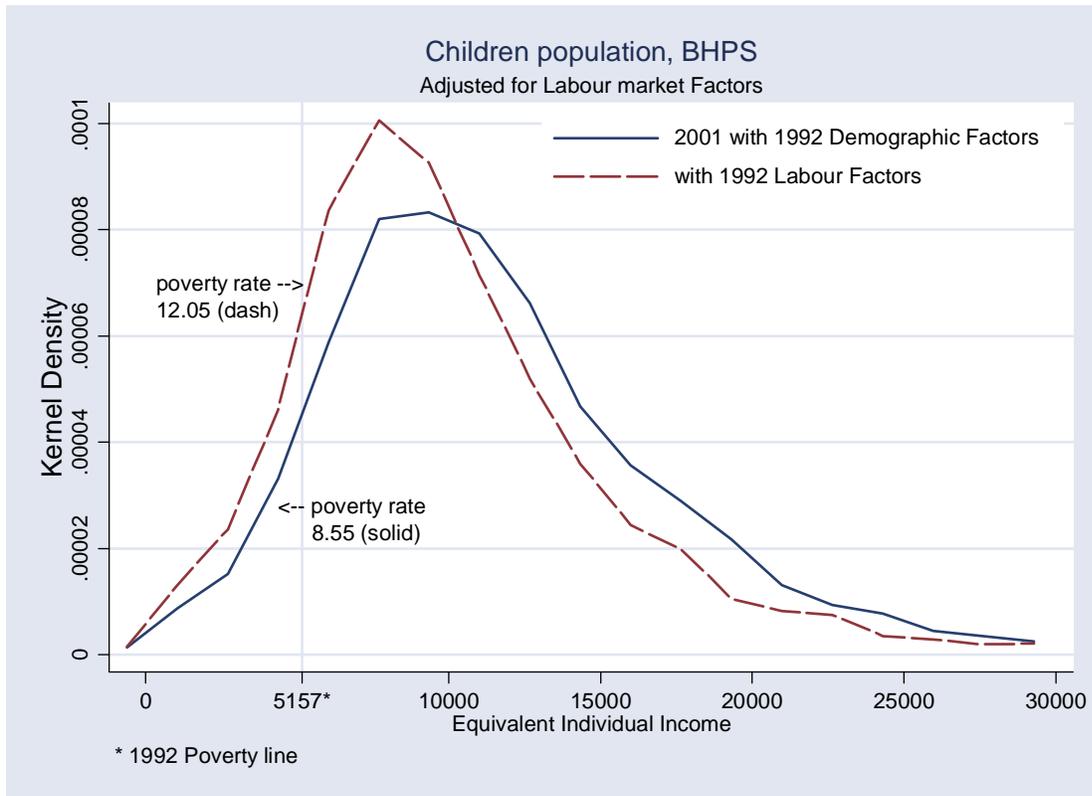Adjusted for Labour market Factors

2001 with 1992 Demographic Factors
with 1992 Labour Factors

poverty rate -->
12.05 (dash)

<-- poverty rate
8.55 (solid)

Kernel Density

Equivalent Individual Income

* 1992 Poverty line

Figure 3d
Impact of the Change in level of Government Transfers in the British Household Panel Survey

Children population, BHPS
Adjusted for Gov't Transfers

2001 with 1992 Demographic/Labour Factors
with 1992 Gov't Transfers

poverty rate -->
21.7 (dash)

<-- poverty rate
12.05 (solid)

Kernel Density

Equivalent Individual Income

* 1992 Poverty line
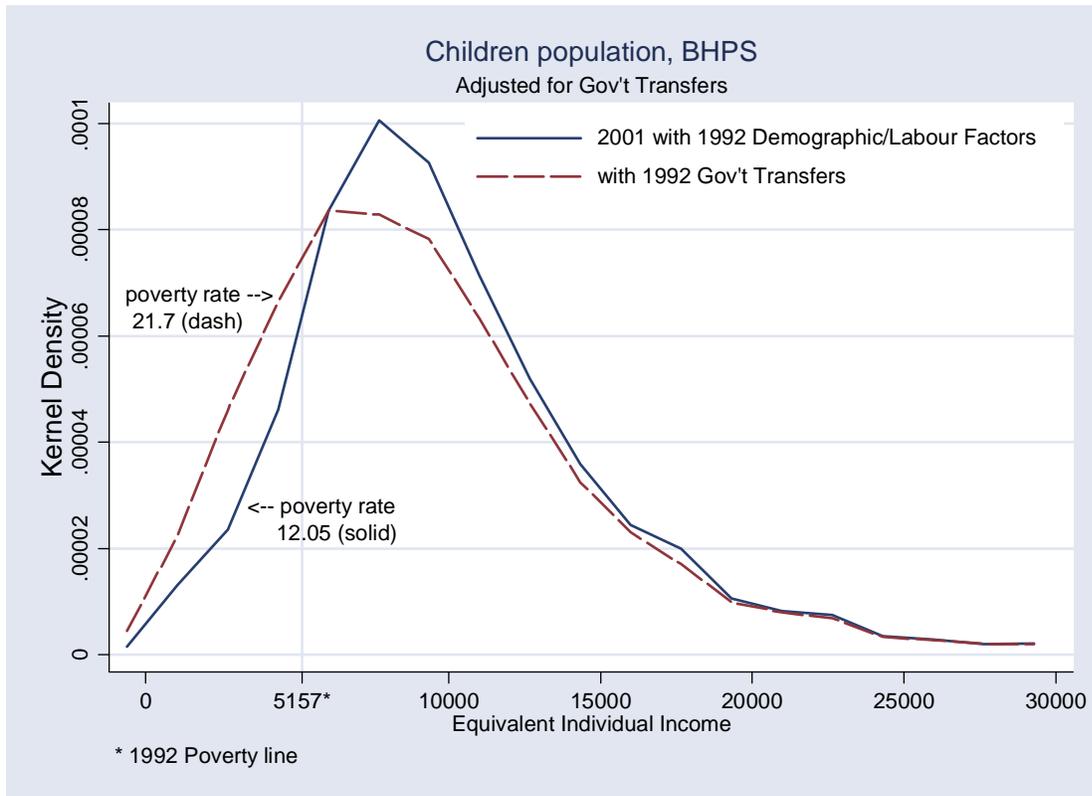
Figure 3e
Effects of Decompositions using the British Household Panel Survey

Children population, BHPS

Kernel Density

Original 2001 Density
Original 1992 Density
2001 with all factors at 1992 level

Simulated 1992
poverty rate --->
21.7 (dot)

Original 2001
<-- poverty rate*
7.8 (solid)

Original 1992
<------- poverty rate
21.0 (dash)

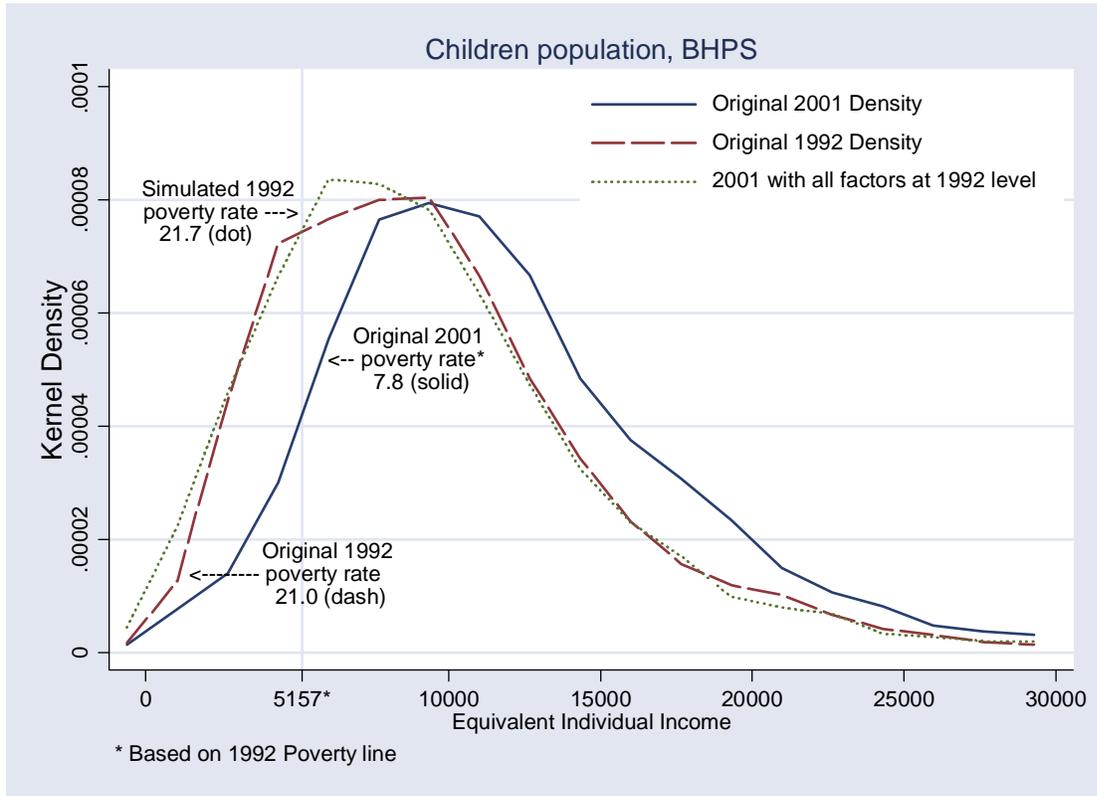Equivalent Individual Income

* Based on 1992 Poverty line
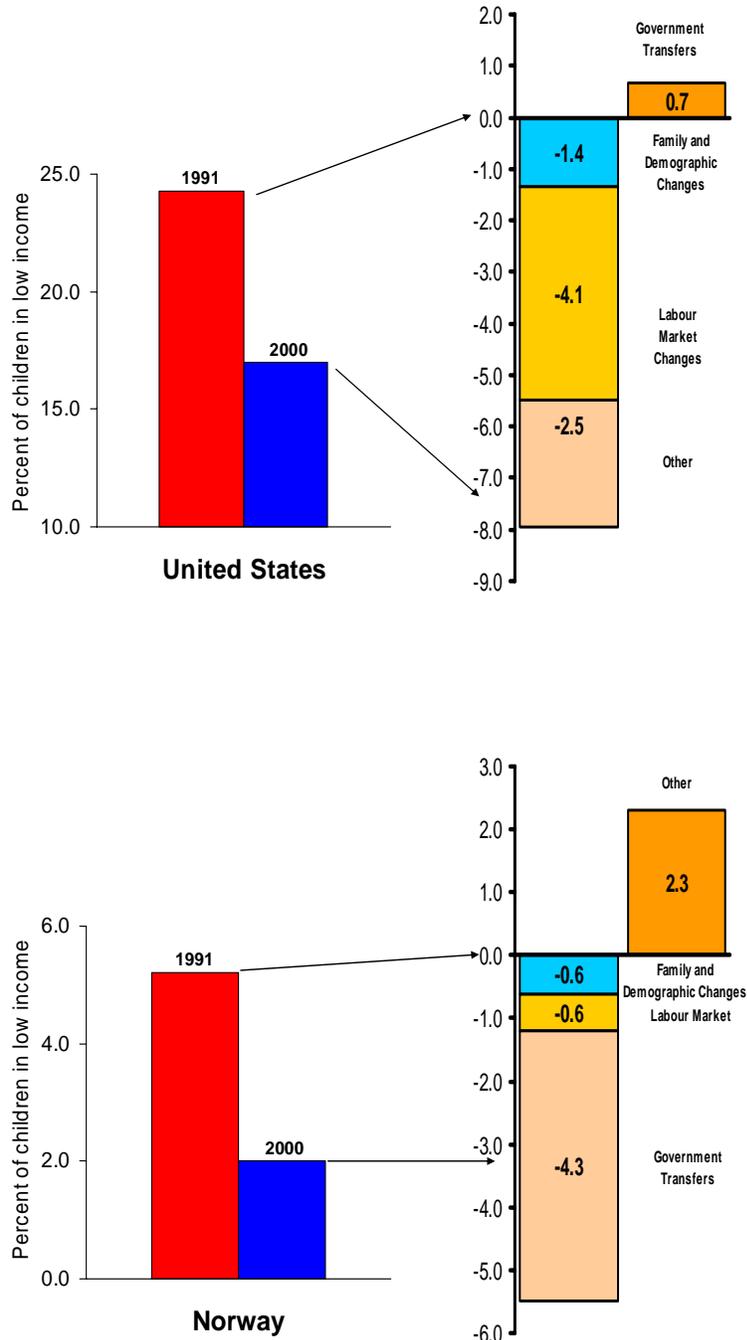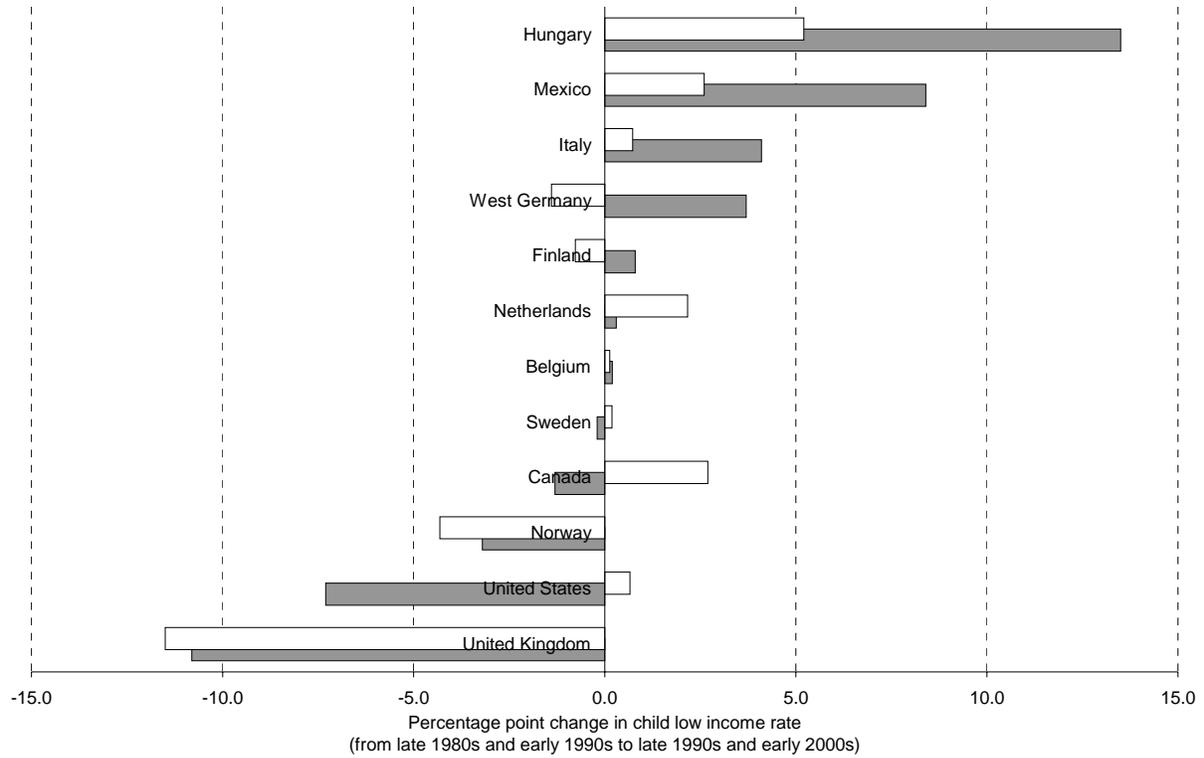
Figure 4
Reasons for changes in child poverty rates in the United States and Norway

Figure 5
Changes in child poverty rates and the impact of changes in government transfers

Percentage point change in child low income rate
(from late 1980s and early 1990s to late 1990s and early 2000s)

Note: shaded bars indicate the actual percentage point change in child poverty and are replicated from Figure 2 while the white bars indicate the impact of changes in government transfers holding demographic and labour market influences constant.