Session Number: 8D
Session Title: *Poverty and the Well-Being of Children*
Session Chair: Stephan Klasen, University of Göttingen

Paper Prepared for the 29th General Conference of
The International Association for Research in Income and Wealth

Joensuu, Finland, August 20 – 26, 2006

Child poverty and changes in child poverty

Wen-Hao Chen and Miles Corak

For additional information please contact:

Author Name(s) : Miles Corak
Author E-Mail(s) : miles.corak@statcan.ca

This paper is posted on the following websites: http://www.iariw.org

Child poverty and changes in child poverty*

Wen-Hao Chen

Family and Labour Studies
Statistics Canada

Miles Corak

Family and Labour Studies
Statistics Canada
and IZA

April 2006

Abstract

This paper documents levels and changes in child poverty rates in 13 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.

JEL classification: I30, I32, I38.

Keywords: Poverty, children, welfare programs.

* This is a rewritten and updated version of a paper originally circulated as UNICEF Innocenti Working Paper no. 2005-02, IZA Discussion Paper No. 1574, and LIS Working Paper No. 405. The research was initiated while Miles Corak was visiting researcher at the UNICEF Innocenti Research Centre, Florence Italy. The authors acknowledge and thank the UNICEF Innocenti Research Centre, the Nuffield Foundation, Statistics Canada, and the Luxembourg Income Study for financial and in kind support, while at the same time noting that the results are entirely their own responsibility and do not reflect the views of any of these institutions. In particular, the authors are grateful to the staff of the Luxembourg Income Study project for their support and help in providing access to and understanding the data, in particular to Paul Alkemade, Thierry Kruten, Tim Smeeding, and Caroline de Tombeur. The British Household Panel Survey was made available in its Cross-National Equivalent File version with the assistance of Dean Lillard through the Cornell University data archive. This support is also acknowledged with thanks, as are the comments on the earlier draft by Celia Badillo, Irwin Garfinkel, and participants at the UNICEF Innocenti meeting of experts held in Florence in June 2004, the University of Essex, Université de Montréal, and the 2006 meetings of the Population Association of America. We also acknowledge the very helpful comments of an anonymous referee. Comments and feedback are welcomed at miles.corak@statcan.ca.

Child poverty and changes in child poverty

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. While it is a complicated task to evaluate progress in attaining both explicit commitments and broad concerns, it is nonetheless relevant, more than 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 13 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.

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. This is a partial perspective since, as Sen (1999) among others makes clear, poverty is much more than just low income. 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. Our analysis uses both a fixed and a moving poverty line. In a growing economy a fixed poverty line focuses on the least

challenging standard by which to judge progress. Informed by the UK experience in defining poverty, Corak (2005) stresses that a fixed 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. In this instance, our research is asking: given the income standards prevailing when the *Convention on the Rights of the Child* came into force has the child low income rate decreased or increased during the subsequent decade, why, and what role have income transfers played? At the same time this indicator cannot offer a complete picture if poverty is a concept related to being able to function normally in society. It needs to be used in conjunction with a poverty line that changes through time. Accordingly, we also highlight developments and examine the reasons for changes in low income rates defined according to a contemporaneous poverty line.

In addition to outlining these matters the next section presents the child poverty rates and changes in them that motivate the subsequent analysis. 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. Section 6 checks the sensitivity of our findings to a number of methodological issues.

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 some countries facing severe economic crises it does not appear that the amount of social transfers available were increased in a way cushioning children from these changes and putting a backstop on their risk of low income. 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

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

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 advanced 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] 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—

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

whom we define to be persons younger than 18 years of age—but it also 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 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

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

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. In the first instance we do not update this threshold through time, with the exception of taking inflation into account. 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 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 the 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. To complement this analysis we also use a moving threshold based upon 50% of the contemporaneous median income. Taken together these two definitions allow a more refined picture to be painted of change in child poverty rates in the manner suggested by the UK government (Department for Work and Pensions 2003), and outlined by Corak (2005) for international comparisons.

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 just 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 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 to 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 survey 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 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 at the time we undertook our research, 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 information in Table 1 illustrates 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. At one extreme Italy, Canada, the United Kingdom, the United States, and Mexico all had child poverty rates substantially above 10%, while at the other Finland, Sweden, Belgium, and West Germany all had rates lower than five 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.

According to a fixed poverty line, as presented in column (6) of the table, the child poverty rate fell by more than one percentage point in five countries, essentially remained unchanged in four others, and increased in four. 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 ten percentage points, and in the United States by over seven percentage points. Norway and Mexico also experienced important declines of about three percentage points. Norway is the only 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%. Italy is the only country with high rates at the beginning of the period that went even higher, while West Germany and Finland were the only two countries with 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 also supplements this information with an alternative measure of poverty—in columns 5 and 7—based upon 50% of the median income in the prevailing year. The magnitudes of the levels and changes differ markedly, and are generally—but not always—more muted on

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

the basis of this moving threshold. In Hungary the 1999 child poverty rate based upon 50% of the 1999 median income is 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 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. Sweden, Belgium, West Germany, Luxembourg, and the Netherlands 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 or held steady in an absolute sense, but not in a relative sense. Mexico might also be classed in this group.

In spite of these differences in magnitudes the direction of change is the same in almost all cases regardless of which poverty line is used. 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 suggests 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 economies, like that of Germany and Hungary, 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 Table 1 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. Appendix Tables 1, 2, and 3 illustrate the particular measures of these factors that are the basis of our analysis.

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 either a father or a mother 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 13 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 and Germany, 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. The tables in the appendix illustrate changes in both the average earnings of fathers and mothers, and changes at lower points in the income distribution (the 10^{th} percentile and the 25^{th} 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. All other things equal the higher the likelihood of eligibility for government transfers and 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.

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 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 by among others 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 decomposition (Oaxaca, 1973). However, unlike the Oaxaca 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. As such it can 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 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 these methods will not suffice. The re-weighting technique 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 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.

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. This approach is adapted for children from an analysis of adults in Daly and Valleta (2000).

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 in the order they are presented in the Appendix tables. 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. The resulting change in poverty is the estimated 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 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.

To estimate the 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, macroeconomic policy or exogenous shocks might result in

substantial changes in market opportunities over time. The first component therefore preserves the employment 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.

Finally, the last decomposition estimates the effect of changing level of government transfers. We subtract equivalised transfer income from each child's total equivalent income in the most recent year of available data, and then add back the amount that a child with the same equivalised no-transfer income would have received in the first year of available data. In order to do this we find for each child in the most recent data a child in the earlier data set with the same or closest lower non-transfer income as well as another child with the closest higher non-transfer income. Each child therefore has two counterparts in a data set for the early 1990s and his or her transfer income is replaced by the average transfer income the counterparts received. The calculation of the counterfactual level of government transfers in this way is not the only alternative possible. We also undertake an analysis based upon a rank preserving exchange. This derivation is conditional on having received some amount of transfers and therefore does not fully recognize explicit changes in policies that may affect eligibility for benefits. The contrast between these alternatives allows us to speak indirectly to the relative roles of program eligibility and program generosity in determining changes in child poverty rates.

The final counterfactual represents the distribution of equivalized family income that holds all three categories—demographic, labour, and government factors—to 1990 levels. The difference between the calculated child poverty rates and the actual 1990 child poverty rate is referred to as the residual term. Our analysis does this first for a poverty line fixed at 50% of the 1990 median income, and also for a moving poverty line based upon 50% of the

contemporaneous median income. The latter involves rescaling all incomes in the most recent year so that for each country the equivalized income distribution has the same median as during the first year. The decomposition analysis is then applied to the rescaled income distribution for children with the results reflecting changes in their relative position.

5. Results

The results of the decomposition analysis are presented in Tables 2a,b, 3a,b, and 4a,b respectively for countries with initial child poverty rates above ten percent, between five and ten percent, and less than five percent. Panel 1 of the tables repeats information from Table 1 on the level and change in the child poverty rate, while panel 2 offers the calculated impacts of each of the three sets of influences and their elements.

a. Countries with high initial child poverty rates

The patterns of change in these high child poverty countries is diverse. In Italy child poverty rates rose substantially according to both a fixed and moving poverty line, but in the United Kingdom and the United States they fell. In Mexico and Canada the picture is mixed with the poverty rates falling according to the standards prevailing in the late 1980s and early 1990s, but not changing according to a relative definition. This said, all of these high child poverty rate countries experienced declines according to a fixed poverty line with the exception of Italy.

The rise in child poverty in Italy occurred in spite of demographic changes that together would have implied a one percentage point lower rate. In particular this was due to changes in the number of children per household and the level of parental education. Labour market factors were a force increasing the child poverty rate, particularly fathers' earnings. But this is muted by

changes in mothers' employment rates. All this said, changes in government transfers over this period were a significant force implying higher child poverty rates. This is especially the case when the moving poverty line is used, suggesting that changes in the incidence of government transfers worked against the improvement of the relative position of low income children. While up to one-half of the change in child poverty according to a fixed poverty line is unexplained in our model, the fit is much better when a moving line is used with the residual of -0.6 percentage points amounting to about one-quarter of the total change.

The situation in Canada is more ambiguous. 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 according to a fixed poverty line due to demographics (mostly the aging of parents), a 4.6 percentage point fall due to labour market developments (occurring in a manner that is of equal magnitude and direction for both fathers and mothers), and a 2.9 percentage point increase due to changes in the amount of government transfers. These results may, however, reflect changes in the survey designs and questions rather than actual developments, and as a check we make use of the Canadian Census which is based on consistent information from 1990 and 2000.[5]

Both data sources indicate the same pattern, a slight change in child poverty rates bordering on the margin of statistical significance. However, the reasons for the changes are

[5] 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 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. Our analysis is based upon the Census returns of the 20% of Canadians receiving the so-called "Long Form" of the Census questionnaire, from which information on incomes is available. In order to ease the computational burden we actually use a random 10% sample of these data, leading our analysis to be based upon a two percent sample of the entire population. The low income rates calculated from this smaller sample are the same as those from the full 20% file.

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 over four percentage points but the Census information implies that labour markets were essentially neutral or a force for higher rates. The LIS information suggests that changes to government transfers led to higher child poverty rates, but the Census information implies they led to slightly 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. Unemployment insurance payments may have been unusually high, and certainly higher than in 2000 at the business cycle peak. The Census information is consistent over time, and 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. This is the likely reason the LIS based analysis attributes a more important role to labour market factors, and since there is a counter-cyclical component to transfer payments also suggests that changes in them led to higher low income rates.

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 contrast, the information in Tables 2a and 2b 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, suggesting that demographics and labour markets

offered at best only a mild push toward lowering the child poverty rate. This is true regardless of which poverty threshold is used but like Canada the underlying survey data provided to the LIS changed over this period. Labour markets play a more significant role in the alternative data source we use, the British Household Panel Survey.[6] The employment rates of mothers and fathers are both strong influences lowering the child poverty rate, but changes in the annual earnings of fathers has the opposite influence on the relative measure. But both sources of information clearly suggest an important role for government transfers. Indeed almost all of the fall in child poverty according to a fixed poverty line is due to government transfers, and their role is almost as significant according to a moving line.

While the child poverty rates also fell significantly in the United States, it is for very different reasons. Labour market changes are the dominant influence, while changes in government transfers would have implied, all other things constant, higher child poverty rates. 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 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

[6] 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 disadvantage of this data source is that it refers solely to Britain and not to the entire United Kingdom. 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.

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.[7] Average benefit levels may have fallen but average incomes also rose as the employment rate increased. In fact, the results in Table 2a clearly show a strong influence of the annual earnings of mothers lowering the child poverty rate. Combined with their changes in employment rates this implies a three percentage point fall in the child poverty rate.

If there is a strong interaction between the design of social policy and labour market status, then part of the impact of government transfers on the poverty rate is inter-mingled with labour market factors and cannot be distinguished clearly in our decompositions. All this said, these changes however had relatively little influence on the relative standing of children, with the 2.4 percentage point fall in the child poverty rate depicted in Table 2b resulting in large part from demographic factors or remaining unexplained.

Mexico offers the only example in our analysis in which demographic factors stand out as playing a major role, most particularly the number of children per family. The total fall in the child poverty rate using a fixed poverty line was 3.7 percentage points. Demographic factors implied a 4.3 percentage point fall, with fully 3.7 percentage points reflecting changes in the number of children per household. This 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 changes

[7] See Blank (2002) for a detailed overview of social policy changes in the United States and a review of their labour market impacts.

in government transfers were also an important influence in reducing child poverty according to a fixed line. Both demography and government transfers also implied lower rates according to a moving line, but this was countered by labour market changes and a significant residual. In particular, the annual earnings of fathers changes in a way that would have implied higher child poverty in a relative sense, a result shared in kind by all the other countries in this group.

b. Countries with moderate initial child poverty rates

Among the countries with initial child poverty rates between five and ten percent Luxembourg and the Netherlands experienced a similar pattern of change with the poverty rate according to a fixed line holding steady, but the rate according to a moving line rising. This is in sharp contrast to Norway where both rates fell significantly and Hungary with they rose significantly.

In Luxembourg the major reason for the deterioration in the relative standing of low income children has to do with paternal earnings and government transfers. Transfer payments from the state did nothing to improve the child poverty rate relative to the median 1991 equivalized income and worsened it relative to the contemporaneous median. This was also the case in the Netherlands. The difference in this country is that changes in employment rates of mothers countered the tendency of changes in annual earnings of fathers so that the labour market was not responsible for as significant a rise in the relative poverty rate.

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 did not fall. These policy changes 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.[8] 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. This is reflected in the findings in Tables 3a and 3b as the proportion of mothers working has a significant downward impact on both child poverty rates. Indeed, 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 mothers 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 among low income families to compensate for the decline in social support.

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, and an equally impressive decline relative to the prevailing median incomes. 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 the findings suggest that families adjusted on all possible fronts in ways beneficial to children—parents on average were older, better educated, and proportionately fewer

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

children lived with a single parent—but this had only a small impact on the child poverty rate. Over the span of the entire decade labour market changes were also neutral in their impact on the risk of low income among children.

Social benefits as a fraction of GDP fell slightly in Norway over this period, from 24.7% to 23.0%, but benefits directed to families actually increased as a fraction of GDP.[9] Above and beyond anything else this was the reason for the fall in child poverty in Norway, accounting for a large part of the decline in absolute and relative child poverty rates. These patterns are in sharp contrast with those in the United States and the Netherlands. They also contrast with the experience in Hungary. The major reason for the sharp rise of child poverty in this country has to do with the deterioration of the labour market, especially for fathers. The large impact on child poverty from the labour market is only partly countered by demographic changes, but strongly exacerbated—at least in the case of a fixed poverty line—by changes to government transfers.

c. Countries with low initial child poverty rates

Finally, Tables 4a and 4b offers results for countries with child poverty rates below five percent at the onset of the 1990s. Sweden and Finland do not experience significant changes in either measure of poverty but the poverty rate according to a moving line rises significantly in Belgium and it rises even more according to both lines in West Germany.

In Finland any increase in child poverty is associated with government transfers, and this is more notable in Sweden with respect to the relative standing of children. In Belgium the rise in the relative poverty rate is due to labour market and government factors, the most notable influence being the employment and earnings of fathers. While the very significant increases in

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

West Germany are also associated with changes in government transfers, it should be noted that our analysis does not do a very good job of explaining the changes this country. The rather large residual term relative to the total change suggests that important factors have not be taken into account or that the underlying structure of the true model 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.

6. Alternative specifications

The two most important aspects of the analytical model determining the results are: the order in which the decomposition is carried out; and the particular method of calculating counterfactual government benefits.

The estimated impacts rely upon the assumption that the particular order for the decomposition—first demographic factors, then labour market factors, then government transfers—is appropriate, and that these factors are independent of each other. 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. As stressed, 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. In addition, even if there is no behavioural interaction between these two factors our results could be misleading because of the focus on the headcount ratio. For example, beneficial labour market changes might improve the incomes of those below the poverty line and lower the poverty gap significantly but without necessarily lifting these children above the line and lowering the headcount ratio. Rather marginal improvements in government transfers could then lead to significant declines in the headcount ratio by offering just enough income to get above the poverty line. In this scenario our analysis would attribute the change in the poverty rate entirely to government transfers, when in fact other factors played an important role.

To explore the sensitivity of the results in Tables 2, 3 and 4 to this choice of ordering we redo the analysis with a reverse ordering: first government transfers, then labour markets, and finally demographics. Table 5 offers the estimated impacts of government transfers on both poverty rates, repeating in the first column the results from the previous tables and contrasting them in the second column with the reverse ordering. For the most part this alternative specification does not lead to significant changes. In every case the direction of change is the same, and in most cases the magnitudes are also similar. In particular, this is also the case for the United States and the Netherlands, two countries in which given the nature of the social policy reforms undertaken during this period it might have been reasonable to anticipate considerable interaction between the labour market and government factors.

The magnitude of the impact of government transfers, however, is significantly different in the United Kingdom and Hungary under the reverse ordering. In particular the results from the BHPS suggest for both poverty lines that the decline in the child poverty rate due to transfers, while still important, is less than half of that estimated by the original specification. The LIS

based results, however, are of roughly similar magnitude. In Hungary introducing government transfers into the decomposition before labour market factors significantly increases both estimated impacts, from less than five percentage points to almost 14 in the case of the fixed poverty line. The fact that the transition to a market economy in Hungary had very much to do with a major restructuring of the labour market suggests that the original specification is probably closer to the truth, but the reserve ordering in the very least suggests that under neither specification did changes in income transfers mitigate the influence of the market.

The second important aspect of the model concerns the calculation of the counterfactual amount of government transfer payments. This is done conditional on non-transfer income in the most recent year of data and set at a level that this would have implied for government benefits a decade or so earlier. In other words, the counterfactual amount of transfers are determined according to both the eligibility rules and benefit schedules of the earlier period. Therefore, the total amount of transfers paid is demand determined. This formulation captures the influence of any explicit policy changes, particularly those addressed to the income targeting of benefits through eligibility rule changes. This is in fact an important aspect of policy changes in some countries over the period under study (Bradshaw and Finch 2002). In order to check the robustness of this approach and to draw further insight into the workings of state support we offer an alternative specification by conditioning on having received transfers in the most recent year. That is, we estimate the change in the amount of transfer income received by households in receipt of some transfers. In order to do this we apply a rank preserving exchange to the distribution of transfer payments assigning to children the equivalised transfer income their rank in the most recent distribution would have implied in the earlier period. This abstracts from any changes in eligibility. If the incidence of receipt of government transfers does not change over

time then the difference in the estimated impact between this method and that used in our base case would reflect changes in the amount of benefits.

The estimated impact on the child poverty rate is presented in the last column of Table 5 using the original ordering, and should be compared with the information in the first column. In most cases the direction of change is the same under the two scenarios. Indeed, so are the magnitudes, with most of the estimates falling within one percentage point of each other. In only four countries does the direction of change differ with respect to the fixed line, and in only three with respect to the moving line. Finland is part of both of these groups but the magnitudes involved are in the neighbourhood of only one percentage point and therefore on the margin of statistical significance. Luxembourg is also part of both groups, but the alternative specification of government transfers leads to a very large residual and brings the validity of this specification into question.[10] The most notable differences resulting from this alternative specification of government transfers are, therefore, Mexico and to a lesser extent West Germany.

In particular, the base case estimate of the impact of transfers in Mexico is to reduce the poverty rate according to a fixed line by 2.9 percentage points, but under the alternative specification to increase it by 6.7 percentage points. These estimates offer very different assessments of the role of transfer payments from the state over this period. In particular the latter seem to be at odds with the fact that there were major changes in social policy designed, at least in part, to alleviate extreme poverty. In 1997 the Mexican government introduced PROGRESA, a program of targeted conditional cash transfers.[11] Under this program cash transfers are made to mothers in households of extreme poverty conditional on their children

[10] The full set of results for all of the models upon which Table 5 is based are not reported but are available from the authors upon request.

[11] The source for this discussion is Skoufias (2005).

regularly attending school and visiting health clinics. The program was rolled out in a series of phases but began accepting participants in August of 1997. The most significant expansion occurred in 1998 when 1.63 million families were part of the program. By 2000 this was as high as 2.6 million families, making up about 40% of all rural families and one-ninth of all families in the country. However, the actual payment of cash benefits—the aspect of the program which would have an impact on income poverty—started only in May 1998 as the first participants began meeting the conditions for payment. As such the impact of the program on income poverty can only be expected to be felt after 1998, and particularly after 2000.

The important aspect of the program from our perspective is that it led to a larger fraction of the poor population receiving cash transfers than previous policies. Further, those households participating in PROGRESA were not to be receiving benefits from any other government program. These facts help in interpreting the results in Table 5 and suggest that the estimates listed as our base case are likely more reliable. A targeting of benefits upon the poor implies that the population in receipt of some benefits was very different in 1989 than in 2002. In fact, in our data eight times as many children were in receipt of some cash transfers in 2002 than in 1989, but the amount of equavilized benefits conditional on some receipt was lower. The use of a method that preserves the rank in the benefit distribution of a principally poor group does not recognize that they may not have been in receipt of any benefits at all in the earlier period. By ignoring the impact of the eligibility rules the method assigns to them higher benefits than they might be currently receiving. For this reason the model suggests that child poverty rates would have been lower in the counterfactual distribution. Thus, the method of rank preserving exchange conditional on benefit receipt does not appear to accurately represent actual developments when eligibility conditions change markedly.

As a check that these impacts can be attributed to PROGRESA we also conduct the analysis using data only up to 1998, just before the program can be expected to have an impact. In this year the child poverty rate using a poverty line fixed at 50% the 1989 median was 33.1%, an increase of 8.4 percentage points. This reflects the fact that Mexico experienced important macro-economic shocks associated with external debt and currency fluctuations just prior to 1998. Hence, all of the 3.7 percentage point fall in child poverty between 1989 and 2002 recorded in Table 1 which is the subject of our analysis occurred in the period after 1998. Further, the impact of government transfers calculated for the 1989 to 1998 period conditional on non-transfer income is at -0.3 percentage points essentially neutral, and in sharp contrast to the figure in the first column of Table 5 which is about ten times as large in magnitude. Also for the alternative method the impact is much smaller—at 2.3 percentage points—than the estimate provided in Table 5. This suggests that the timing of the effects we uncover are coincident with the introduction of this major government program.

In sum, our base case estimates of the impact of government transfers do not seem to be sensitive to the particular ordering used in the composition analysis nor to the particular method of deriving the counterfactual. With respect to the latter, however, the results for Mexico are the major exception, but an appreciation of institutional developments over the period suggest that the base case estimates are preferred because they account for important increases in eligibility rules resulting from social policy reform.

7. Conclusion

Our analysis of child poverty in 13 OECD countries is intended to uncover the major factors determining 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 public policy reason that the circumstances at that time offer a starting point for assessing subsequent developments. The analysis documents changes in child poverty rates using an income based poverty line held at 50% of national median income prevailing at that time, and a line based on 50% of the contemporaneous median; 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 four of the 13 countries we study—Hungary, Italy, Germany, and Finland—child poverty rates have actually increased during the 1990s and in a further five—Luxembourg, Netherlands, Belgium, Sweden and Canada—there have not been significant changes. In only four—Norway, the United States, United Kingdom, and Mexico—did child poverty rates fall noticeably. This is according to a poverty line fixed in the early 1990s, the least demanding standard by which to judge progress in a growing economy. In only three countries did the relative standing of low income children improve, with the United Kingdom, the United States, and Norway recording declines in child poverty rates according to a moving poverty line.

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 many countries the increased labour market engagement of mothers is consistently a force for lower child poverty rates. At the same time decreases in the employment rates of fathers, particularly with respect to the relative standing of children as measured by a moving poverty line, are a force for higher child poverty rates. This said, in countries facing major structural changes—most notably Hungary—a sharp downturn in the labour market of fathers led to increases in child poverty rates that could not be compensated for by increased maternal labour supply. It also does not appear that the amount of income transfers from the state increased in a way to cushion children from these changes.

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 Mexico, the United Kingdom and in Norway changes in income transfers are a major reason for declines in child poverty rates, the two 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. Though our results appear to be robust to at least two important aspects of our analytical method, we employ a descriptive tool that does not fully recognize the behavioural interactions between the various influences on incomes. But just as importantly 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.

References

Atkinson, A.B. (1998). *Poverty in Europe*. Oxford: Blackwell publishers.

Besley, Timothy and Robin Burgess (2003). "Halving Global Poverty." *Journal of Economic Perspectives*. Vol. 17, pp. 3-22.

Blank, Rebecca (2002). "Evaluating Welfare Reform in the United States." *Journal of Economic Literature*. Vol. 40, pp. 1105-66.

Bradbury, Bruce, Stephen P. Jenkins and John Micklewright, editors (2001). *The Dynamics of Child Poverty in Industrialized Countries.* Cambridge: Cambridge University Press.

Bradshaw, Jonathan, David Gordon, Sue Middleton, Peter Townsend, Christina Pantazis, Ruth Levitas, Sarah Payne, and Glen Bramley (2000). "Explorations of the Relationship between Poverty and Social Exclusion in Britain." Paper presented to the 26th General Conference of the IARIW, Cracow, Poland.

Bradshaw, Jonathan and Naomi Finch (2002). *A Comparison of Child Benefit Packages in 22 Countries*. Department of Work and Pensions Research Report No. 174. London: CDS.

Browning, Martin (1992). "Children and Household Economic Behavior," *Journal of Economic Literature*. Vol. 30, pp. 1434-75.

_____, François Bourguignon, Pierre-André Chiappori, and Valérie Lechene (1994). "Incomes and Outcomes: A Structural Model of Intrahousehold Allocation." *Journal of Political Economy*. Vol. 102, pp. 1067-98.

Chiquiar, Daniel, and Gordon H. Hanson (2002). "International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States." Working Paper No. 9242. Cambridge: National Bureau of Economic Research.

Corak, Miles (2005). "Principles and practicalities in measuring child poverty." UNICEF Innocenti Working Paper No. 2005-01, and IZA Discussion Paper No. 1579. Forthcoming in *International Social Security Review*.

_____, Michael Fertig and Marus Tamm (2005). "A portrait of child poverty in Germany." UNICEF Innocenti Working Paper No. 2005-03, and IZA Discussion Paper No. 1528.

Daly, Mary C. and Robert G. Valletta (2000). "Inequality and Poverty in the United States: The Effects of Changing Family Behavior and Rising Wage Dispersions." Unpublished Working paper, Economic Research Department, Federal Reserve Bank of San Francisco.

Department for Work and Pensions (2003). *Measuring Child Poverty*. United Kingdom: Department for Work and Pensions, available at www.dwp.gov.uk/consultations/consult/2003/childpov/final.asp.

DiNardo, John, Nicole M. Fortin, and Thomas Lemieux (1996). "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach." *Econometrica*. Vol. 64, pp. 1001-1044.

Expert Group on Household Income Statistics, The Canberra Group (2001). *Final Report and Recommendations*. Ottawa: The Canberra Group.

Garfinkel, Irwin, Lee Rainwater and Timothy M. Smeeding (2004). "Welfare State Expenditures and the Redistribution of Well-Being: Children, Elders and Others in Comparative Perspective." Paper presented to the Workshop on The Welfare State in an Intertemporal Perspective, Siena, Certosa di Pontignano.

Lundberg, Shelly, Robert Pollack, and Terence Wales (1997), "Do Husbands and Wives Pool their Resources? Evidence from the UK Child Benefit." *Journal of Human Resources*. Vol. 32, pp. 463-80.

Oaxaca, R. (1973). "Male-Female Wage Differentials in Urban Labor Markets." *International Economic Review*. Vol. 14, pp. 693-709.

Phipps, Shelley and Peter Burton (1995). "Sharing Within Families: Implications for the Measurement of Poverty Among Individuals in Canada." *Canadian Journal of Economics*. Vol. 28, pp. 177-204.

Skoufias, Emmanuel (2005). "PROGRESA and Its Impacts on the Welfare of Rural Households in Mexico." International Food Policy Research Institute, Research Report 139.

Sen, Amartya (1999). *Development as Freedom*. New York: Random House.

UNICEF (2005). *Child poverty in rich countries, 2005*. Innocenti Report Card No.6. Florence: UNICEF Innocenti Research Centre.

UNICEF (2004). *The State of the World's Children, 2005*. New York: The United Nations Children's Fund.

UNICEF (2002). *A World Fit for Children*. New York: The United Nations Children's Fund.

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)
Finland	1991	2000	2.3	3.1	2.8	0.8	0.5
Sweden	1992	2000	3.0	2.8	4.2	-0.2	1.2
Belgium	1988	1997	3.8	4.0	7.7	0.2	3.9
West Germany	1989	2000	4.1	7.8	8.8	3.7	4.7
Luxembourg	1991	2000	5.0	5.1	9.1	0.1	4.0
Norway	1991	2000	5.2	2.0	3.4	-3.2	-1.8
Hungary	1991	1999	6.9	20.4	8.8	13.5	1.9
Netherlands	1991	1999	8.1	8.4	9.7	0.3	1.6
Italy	1991	2000	14.0	18.1	16.6	4.1	2.6
Canada	1991	2000	15.3	14.0	14.9	-1.3	-0.4
United Kingdom	1991	1999	18.5	7.8	15.3	-10.8	-3.2
United States	1991	2000	24.3	17.0	21.9	-7.3	-2.4
Mexico	1989	2002	24.7	21.0	24.8	-3.7	0.1

Note: Table entries are ranked by the magnitude of the child poverty rate in the beginning period as presented in column 3. Standard errors vary across countries and survey years, but generally the 95% interval is plus or minus one percentage point.

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

Table 2a
Demographic, labour market and government impacts on changes in child poverty rates in countries with initial rates higher than ten percent: fixed poverty line

	Italy	Canada		United Kingdom		United States	Mexico
	(1991, 2000)	LIS (1991, 2000)	Census (1990,2000)	LIS (1991,1999)	BHPS (1992, 2001)	(1991,2000)	(1989, 2002)
1. Child poverty rate based upon fixed poverty line							
T based on T-10 poverty line	18.1	14.0	19.5	7.8	7.8	17.0	21.0
T-10	14.0	15.3	20.3	18.5	21.0	24.3	24.7
Change	**4.1**	**-1.3**	**-0.8**	**-10.8**	**-13.2**	**-7.3**	**-3.7**
2. Contribution to change in child poverty rate							
Demographic factors	**-1.0**	**-1.2**	**-1.0**	**0.1**	**-0.8**	**-1.4**	**-4.3**
Average age of parents	0.0	-1.0	-1.8	-0.5	-1.0	-0.7	0.0
Education of parents	-0.4	-0.4	-0.7	-		-1.0	-0.5
Number of children	-0.6	-0.3	0.0	0.1	-0.1	0.1	-3.7
Proportion with single parents	0.0	0.5	1.5	0.5	0.3	0.2	-0.1
Labour market factors	**1.6**	**-4.6**	**0.3**	**-0.8**	**-3.5**	**-4.1**	**1.3**
Proportion with fathers working	0.3	-0.5	0.5	-0.3	-1.9	-0.8	0.3
Proportion with mothers working	-1.1	-0.5	-0.7	-0.4	-0.6	-0.7	-0.9
Annual earnings of father	2.2	-1.8	1.1	0.7	-0.3	-0.4	1.5
Annual earnings of mother	-0.2	-1.8	-0.6	-0.8	-0.7	-2.2	0.4
Government transfers	**1.4**	**2.9**	**-0.6**	**-11.3**	**-8.4**	**0.4**	**-2.9**
Residual	2.1	1.6	0.4	1.2	-0.5	-2.2	2.2

Table 2b
Demographic, labour market and government impacts on changes in child poverty rates in countries with initial rates higher than ten percent: moving poverty line

	Italy	Canada		United Kingdom		United States	Mexico
	(1991, 2000)	LIS (1991, 2000)	Census (1990,2000)	LIS (1991,1999)	BHPS (1992, 2001)	(1991,2000)	(1989, 2002)
1. Child poverty rate based upon moving poverty line							
T based on T poverty line	16.6	14.9	20.7	15.3	13.8	21.9	24.8
T-10	14.0	15.3	20.3	18.5	21.0	24.3	24.7
Change	**2.6**	**-0.4**	**0.4**	**-3.2**	**-7.2**	**-2.4**	**0.1**
2. Contribution to change in child poverty rate							
Demographic factors	**-1.0**	**-1.2**	**-0.9**	**0.7**	**-1.3**	**-1.7**	**-4.6**
Average age of parents	-0.1	-0.9	-1.8	-1.0	-1.9	-0.8	0.0
Education of parents	-0.3	-0.5	-0.7	0.0	0.0	-1.3	-0.5
Number of children	-0.6	-0.3	0.0	0.2	-0.1	0.1	-4.1
Proportion with single parents	0.0	0.5	1.6	1.5	0.7	0.3	0.0
Labour market factors	**0.8**	**-4.2**	**1.0**	**-0.2**	**-3.2**	**-0.3**	**3.6**
Proportion with fathers working	0.2	-0.5	0.5	-0.5	-2.9	-1.0	0.3
Proportion with mothers working	-0.9	-0.5	-0.8	-0.7	-1.0	-0.7	-1.0
Annual earnings of father	1.4	-1.6	1.7	1.7	1.1	2.0	3.7
Annual earnings of mother	0.1	-1.6	-0.4	-0.7	-0.4	-0.6	0.6
Government transfers	**3.4**	**2.6**	**-0.1**	**-5.5**	**-4.3**	**1.4**	**-2.7**
Residual	-0.6	2.4	0.4	1.8	1.6	-1.8	3.8

Table 3a
Demographic, labour market and government impacts on changes in child poverty rates in countries with initial rates between five and ten percent: fixed poverty line

	Luxembourg (1991, 2000)	Norway (1991, 2000)	Hungary (1991, 1999)	Netherlands (1991, 1999)
1. Child poverty rate based upon fixed line				
T based on T-10 poverty line	5.1	2.0	20.4	8.4
T-10	5.0	5.2	6.9	8.1
Change	**0.1**	**-3.2**	**13.5**	**0.3**
2. Contribution to change in child poverty rate				
Demographic factors	**-0.8**	**-0.6**	**-1.5**	**-1.4**
Average age of parents	0.0	-0.1	0.0	-0.4
Education of parents	-0.6	-0.3	-0.4	-0.9
Number of children	0.0	0.0	-0.2	0.0
Proportion with single parents	-0.2	-0.2	-0.9	-0.1
Labour market factors	**0.2**	**-0.6**	**13.7**	**0.2**
Proportion with fathers working	-0.9	0.2	0.8	1.0
Proportion with mothers working	-0.4	-0.3	0.8	-1.6
Annual earnings of father	1.7	-0.1	10.3	0.9
Annual earnings of mother	-0.2	-0.4	1.7	-0.1
Government transfers	**0.1**	**-3.8**	**4.8**	**0.9**
Residual	0.6	1.8	-3.5	0.6

Table 3b
Demographic, labour market and government impacts on changes in child poverty rates in countries with initial rates between five and ten percent: moving poverty line

	Luxembourg (1991, 2000)	Norway (1991, 2000)	Hungary (1991, 1999)	Netherlands (1991, 1999)
1. Child poverty rate based upon moving line				
T based on T poverty line	9.1	3.4	8.8	9.7
T-10	5.0	5.2	6.9	8.1
Change	**4.1**	**-1.8**	**1.9**	**1.6**
2. Contribution to change in child poverty rate				
Demographic factors	**-1.5**	**-1.2**	**-0.6**	**-1.7**
Average age of parents	-0.1	-0.2	0.0	-0.4
Education of parents	-1.0	-0.6	-0.2	-1.1
Number of children	0.0	-0.1	-0.1	-0.1
Proportion with single parents	-0.4	-0.3	-0.3	-0.1
Labour market factors	**3.2**	**-0.3**	**4.8**	**0.8**
Proportion with fathers working	-0.9	0.4	1.9	1.2
Proportion with mothers working	-0.2	-0.5	0.3	-1.9
Annual earnings of father	3.8	0.1	2.2	1.6
Annual earnings of mother	0.5	-0.3	0.4	-0.1
Government transfers	**2.6**	**-1.5**	**0.6**	**1.8**
Residual	-0.2	1.2	-2.9	0.7

Table 4a
Demographic, labour market and government impacts on changes in child poverty rates in countries with initial rates below five percent: fixed poverty line

	Finland	Sweden	Belgium	West Germany
	(1991, 2000)	(1992, 2000)	(1988, 1997)	(1989, 2000)
1. Child poverty rate based upon fixed line				
T based on T-10 poverty line	3.1	2.8	4.0	7.8
T-10	2.3	3.0	3.8	4.1
Change	**0.8**	**-0.2**	**0.2**	**3.7**
2. Contribution to change in child poverty rate				
Demographic factors	**-0.2**	**-0.1**	**-1.0**	**-0.2**
Average age of parents	-0.2	-0.3	-1.3	-0.6
Education of parents	-0.2	0.0	0.1	-0.2
Number of children	-0.1	0.0	0.0	0.0
Proportion with single parents	0.3	0.2	0.2	0.6
Labour market factors	**0.2**	**-1.0**	**1.5**	**0.6**
Proportion with fathers working	0.3	0.2	2.1	0.3
Proportion with mothers working	0.4	0.0	-0.3	-0.7
Annual earnings of father	-0.5	-0.7	-0.1	1.1
Annual earnings of mother	0.0	-0.5	-0.2	-0.1
Government transfers	**1.0**	**0.5**	**1.0**	**1.2**
Residual	-0.2	0.4	-1.3	2.1

Table 4a
Demographic, labour market and government impacts on changes in child poverty rates in countries with initial rates below five percent: moving poverty line

	Finland	Sweden	Belgium	West Germany
	(1991, 2000)	(1992, 2000)	(1988, 1997)	(1989, 2000)
1. Child poverty rate based upon moving line				
T based on T poverty line	2.8	4.2	7.7	8.8
T-10	2.3	3.0	3.8	4.1
Change	**0.5**	**1.2**	**3.9**	**4.7**
2. Contribution to change in child poverty rate				
Demographic factors	**-0.3**	**-0.2**	**-1.0**	**-0.3**
Average age of parents	-0.2	-0.6	-1.4	-0.7
Education of parents	-0.2	0.0	0.0	-0.2
Number of children	-0.2	0.0	0.2	0.0
Proportion with single parents	0.3	0.4	0.2	0.6
Labour market factors	**0.1**	**-0.8**	**4.2**	**0.8**
Proportion with fathers working	0.3	0.2	3.6	0.4
Proportion with mothers working	0.4	0.1	-0.5	-0.8
Annual earnings of father	-0.6	-0.5	1.0	1.2
Annual earnings of mother	0.0	-0.6	0.1	0.0
Government transfers	**0.5**	**2.4**	**2.4**	**1.0**
Residual	0.2	-0.2	-1.7	3.2

Table 5
Change in child poverty rate due to government transfers for different model specifications

	Counterfactual government transfers conditional on non-transfer income		Counterfactual government transfers conditional on receipt of some transfer income
	Base Case	Reverse Ordering	
	(percentage points)		
1. Fixed poverty line			
a. Countries with initial child poverty rates higher than 10%			
Italy	1.4	2.8	0.3
Canada (LIS)	2.9	1.2	2.1
Canada (Census)	-0.6	-0.5	-0.8
United Kingdom (LIS)	-11.3	-8.7	-11.5
United Kingdom (BHPS)	-8.4	-3.6	-9.7
United States	0.4	0.2	0.7
Mexico	-2.9	-2.2	6.7
b. Countries with initial child poverty rates between 5 and 10%			
Luxembourg	0.1	1.2	-6.7
Norway	-3.8	-0.5	-4.3
Hungary	4.8	13.9	5.2
Netherlands	0.9	1.3	2.1
c. Countries with initial child poverty rates below 5%			
Finland	1.0	0.7	-0.8
Sweden	0.5	0.9	0.2
Belgium	1.0	1.3	0.1
West Germany	1.2	0.8	-1.4
2. Moving poverty line			
a. Countries with initial child poverty rates higher than 10%			
Italy	3.4	3.1	0.0
Canada (LIS)	2.8	1.1	2.6
Canada (Census)	-0.1	0.1	-0.8
United Kingdom (LIS)	-5.5	-5.4	-5.4
United Kingdom (BHPS)	-4.3	-1.6	-3.8
United States	1.4	1.6	1.4
Mexico	-2.7	-1.6	8.0
b. Countries with initial child poverty rates between 5 and 10%			
Luxembourg	2.6	4.1	-5.0
Norway	-1.5	-1.0	-2.6
Hungary	0.6	3.5	1.4
Netherlands	1.8	2.0	3.9
c. Countries with initial child poverty rates below 5%			
Finland	0.5	0.0	-0.8
Sweden	2.4	1.8	1.7
Belgium	2.4	3.6	1.3
West Germany	1.0	0.6	-0.9

Note: Column 1, referred to as the Base Case, presents the impacts on child poverty rates attributed by the decomposition analysis to government transfers from Tables 2, 3 and 4. The factors are introduced into the decomposition analysis in the order presented in these tables: first demographic factors, then labour market factors, and finally government transfers. Column 2, Reverse Ordering, refers to results from a decomposition in which government transfers are introduced first, followed by labour market factors, and then finally demographic factors. In column 3 the ordering of the factors is the same as in column 1. The complete results from these models are available upon request.

Appendix Table 1
Demographic, labour market, and government influences on child poverty in countries experiencing declines in child poverty rates

	Italy		Canada		United Kingdom		United States		Mexico	
	1991	2000	1991	2000	1991	1991	1991	2000	1989	2002
1. Family and Demographic Factors										
Average age of parents	40.1	40.4	37.2	38.8	36.7	37.9	37.2	38.4	40.2	40.8
Percentage of fathers with a university degree	9.5	10.7	16.8	18.8	n.a.	n.a.	24.4	28.8	5.1	6.6
Percentage of mothers with a university degree	7.2	9.9	11.9	17.0	n.a.	n.a.	16.4	23.2	1.6	3.2
Average number of children per household	1.9	1.9	2.3	2.2	2.2	2.3	2.4	2.4	3.5	2.9
Percentage of children living with a single parent	6.1	5.7	15.4	17.0	17.8	23.8	23.4	23.2	11.9	15.7
2. Labour Market Factors										
Percentage of fathers working	65.9	63.0	73.3	73.5	57.4	55.3	67.0	70.6	58.9	55.4
Percentage of mothers working	31.7	37.8	66.0	69.0	48.4	52.2	61.7	66.8	13.4	22.2
Change in annual earnings										
Fathers on average	-1.3%		15.2%		7.0%		27.4%		11.9%	
At the bottom 10%	-17.5%		22.0%		-8.2%		11.2%		17.5%	
At the bottom 25%	-4.1%		13.3%		1.6%		5.6%		8.3%	
Mothers on average	-7.1%		21.4%		28.2%		28.0%		5.9%	
At the bottom 10%	-34.8%		26.9%		29.2%		59.9%		-30.0%	
At the bottom 25%	-21.0%		27.0%		34.2%		36.1%		-24.8%	
3. Government Factors										
percentage change in average amount received by those receiving government transfers	-9.2%		-12.2%		39.1%		-6.4%		-65.5%	

Appendix Table 2
Demographic, labour market, and government influences on child poverty in countries experiencing no significant changes in child poverty rates

	Luxembourg		Norway		Hungry		Netherlands	
	1991	2000	1991	2000	1999	1999	1991	1999
1. Family and Demographic Factors								
Average age of parents	38.8	38.9	36.8	37.8	37.5	37.5	37.6	38.9
Percentage of fathers with a university degree	6.9	16.3	27.3	34.4	13.2	13.1	21.4	29.3
Percentage of mothers with a university degree	3.7	7.3	19.5	33.9	13.1	16.8	12.4	23.2
Average number of children per household	2.0	2.1	2.1	2.2	2.1	2.0	2.3	2.2
Percentage of children living with a single parent	10.0	7.1	23.7	17.3	13.9	9.6	9.5	8.6
2. Labour Market Factors								
Percentage of fathers working	79.3	84.9	76.2	77.5	78.5	54.9	80.0	77.9
Percentage of mothers working	37.1	50.5	73.4	83.2	62.0	50.9	37.0	62.1
Change in annual earnings								
Fathers on average	14.8%		21.0%		-24.0%		0.6%	
At the bottom 10%	-0.8%		5.8%		-76.5%		-1.0%	
At the bottom 25%	-6.9%		10.5%		-29.6%		1.5%	
Mothers on average	5.8%		84.4%		-22.6%		23.4%	
At the bottom 10%	81.9%		95.7%		-62.3%		91.0%	
At the bottom 25%	22.2%		51.9%		-42.3%		59.0%	
3. Government Factors								
Percentage change in average amount received by those receiving government transfers	60.4%		33.6%		-41.1%		-26.8%	

Appendix Table 3
Demographic, labour market, and government influences on child poverty in countries experiencing increases in child poverty rates

	Finland		Sweden		Belgium		West Germany	
	1991	2000	1992	2000	1988	1997	1989	2000
1. Family and Demographic Factors								
Average age of parents	37.7	38.9	37.6	39.0	35.0	38.1	37.9	39.0
Percentage of fathers with a university degree	11.7	18.9	26.5	30.9	11.9	13.1	13.4	17.2
Percentage of mothers with a university degree	8.7	16.8	22.9	32.3	5.3	6.8	6.0	11.8
Average number of children per household	2.2	2.3	2.2	2.2	2.1	2.2	2.0	2.1
Percentage of children living with a single parent	11.5	15.0	17.9	20.9	5.3	10.7	10.4	12.4
2. Labour Market Factors								
Percentage of fathers working	80.3	75.3	77.5	73.3	86.3	67.7	79.5	74.7
Percentage of mothers working	82.8	75.3	83.6	82.7	50.4	52.0	48.0	57.5
Change in annual earnings								
Fathers on average	12.5%		29.3%		5.3%		5.8%	
At the bottom 10%	13.1%		61.2%		7.2%		-22.7%	
At the bottom 25%	9.4%		19.5%		8.0%		1.4%	
Mothers on average	8.9%		29.1%		11.1%		4.8%	
At the bottom 10%	-0.5%		42.2%		7.2%		-2.7%	
At the bottom 25%	-1.6%		35.8%		8.2%		-13.9%	
3. Government Factors								
Percentage change in average amount received by those receiving government transfers	19.4%		-2.9%		19.1%		86.4%	