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Measuring the Size and Impact of Public Cash Support for Children in Cross-National Perspective

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Abstract

The authors suggest a new comprehensive measure of support given through tax benefit systems to families with children. Using microsimulation techniques, this accounts for all provisions contingent on the presence of children, while usually only gross child/family benefits are considered. The authors use EUROMOD, the European Union tax-benefit microsimulation model, to quantify the support for children and analyze its impact on household incomes and child poverty for 19 countries. The authors find that the conventional approach underestimates on average the total amount of support for children by about one fifth. Furthermore, the differences between two measures vary considerably across countries and are, therefore, critical for cross-national comparisons.

Keywords

children, taxes and cash benefits, child poverty, European Union, microsimulation

Introduction

It is widely accepted that families with children should receive support from the public sector and this can be justified in a number of ways. First, support for children contributes to preserving horizontal equity by treating households not only according to their income but also to their different circumstances. Second, it aims to increase vertical equity by supporting families with higher expenditure and lower earnings as a consequence of the presence of children. Apart from equity concerns, public transfers for children can be considered as a form of smoothing of inter-temporal difference in consumption patterns, making people better off at a time of greater need and supporting the process of intergenerational mobility. There is strong evidence that employment, educational, health, and social outcomes for children growing up in poor families are more likely to be worse than those for better-off children (e.g., Ermisch, Francesconi, & Pevalin, 2001).

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In Europe, as well as elsewhere, there is a particular concern that national policies should reduce the risk of child poverty, promote equal opportunities for all children, and assist parents in pursuing working careers and so to facilitate, at the same time, the achievement of employment objectives (European Commission, 2008; Marlier, Atkinson, Cantillon, & Nolan, 2007). Policy intended for the direct support of children is clearly one major component of such a strategy.

Comparing the extent of such policies across countries, as well as assessing their effects, is not only a task of international bodies such as the European Commission (2008), United Nations Children's Fund (UNICEF, 2005), or the Organisation for Economic Co-operation and Development (OECD; Whiteford & Adema, 2007), it is also relevant to academic studies of policy effects on aspects such as fertility, the labor market behavior of parents, and migration between countries, as well as child poverty and welfare. It is therefore important that policies to support children can be measured in a way that allows valid comparisons to be made across countries. Measures to support families with children come in many guises and different modes of provision vary in their absolute size and relative importance across countries. A major division is between cash support and in-kind support such as free or subsidized child care. Within the cash component, there are benefit payments and tax concessions.[1] Such concessions may take the form of extra tax allowances, reliefs, or credits in the direct tax structure or may consist of reduced rates or exemptions from indirect taxes for particular child-related goods. In this article, we consider how best to capture the ''child-targeted'' element of household disposable income (i.e., income after taxes and transfers), the concept on which poverty and income inequality measures are often based. We therefore focus on the elements of child support contained within cash benefits and direct taxes.

Most studies that aim to capture the effects of state cash support for children focus on gross benefit payments that are labeled for children or families. Information on this is readily available in published statistics and in microdata sources such as the European Union Statistics on Income and Living Conditions (EU-SILC). The aim of this article is to demonstrate how a more complete measure of ''child-contingent'' support can be captured using microsimulation modeling, building on Corak, Lietz & Sutherland (2005). The next section explains why this provides a more comparable picture across countries than child/family benefits alone and discusses the issue of incidence assumptions within the household. The section on Data and Method introduces an empirical illustration for 19 countries, using the European Union microsimulation model, EUROMOD. Adopting a set of particular assumptions, results are presented showing the range of level of support across countries and how this support is distributed across the household income distribution in the next two sections. This includes an analysis of the effect of support for children in reducing the risk of child poverty, contrasting the effect using conventional measures of public cash support for children with that using the microsimulation-generated ''child-contingent'' measure. The section on Support Versus Needs provides an illustration of another application of this measure: to assess the relative extent to which cash support for children meets the needs of children across countries and this is followed by the Conclusion.

Support for Children: Measurement Challenges and Approaches

In measuring the scale of support for children and assessing its effectiveness, for example, in protecting children from poverty, there are two key decisions to be made. The first is to choose which forms of support are of interest and the second is to make assumptions about the incidence of payments and how they are shared within the household (Corak, Lietz, & Sutherland, 2005). It is common practice to identify benefit payments that are labeled as being for children or families. The problem with this is that such a definition misses some forms of payment such as supplements to unemployment benefits, housing benefits, or social assistance benefits. It also ignores tax concessions made to parents of dependent children. To this extent, it will underestimate the scale of support

for children. At the same time, ignoring interactions with other tax benefit instruments will overestimate the net value for families. First of all, some of the child-related benefits or, more generally, child-contingent benefits may be taxable. Second, if child-targeted payments were abolished, part of the income loss may be compensated by larger entitlements from other means tested benefits, therefore, limiting the additional gain from such payments. In cross-national perspective, such issues become particularly important for two reasons. First, the classification and naming of a particular payment as being for children may be somewhat arbitrary because many welfare payments have more than one function. Second and most importantly, the types of tax benefit instrument that are in use across countries vary considerably, even if they have a similar purpose. Capturing one part of the child support package and not others can lead to the use of misleading evidence about the relative scale of support for children in cross-national research.

For this reason, we measure net ''child-contingent'' payments by capturing all the elements of taxes and benefits that occur due to the presence of children in the household. In a nutshell, this is done by recalculating tax liabilities and benefit entitlements assuming no children are present, using a tax benefit microsimulation model, and comparing the resulting values with those when the children are present. More detail about how this is done is provided in the next section.

It is also important to consider a second issue: that of the incidence of payments within the household. First of all, having identified child-contingent payments, we need to decide how they are shared within the household. How this is done in practice is something we know very little about. In measuring income to assess the extent of poverty and inequality, the convention is to aggregate all household incomes, regardless of their source. Similarly, all taxes on income are deducted, regardless of the tax unit on which the liability falls. However, when comparing the relative size of support across countries, it is the amount per child that should be captured. This is because the number of children per household is one of the factors that vary across countries. One option is to assume that all child-contingent support is incident only on the children in the household and shared equally among them. Another is to assume each person in the household receives an equal share of the payment (hence lowering each child's share).

This raises a related issue about the role of non–child-contingent payments in the support of children. Under the household income sharing assumption, children benefit as much from €1 of pension received by their coresident grandparents or €1 of unemployment benefit received by their adult sibling as they do from €1 of child-contingent payments. In this case, it is relevant to consider all benefit payments together as is done by the European Commission (2008; Figure 13), although they exclude public pensions. To allow for this perspective, we also calculate the amount of all non–child-contingent benefits (including public pensions) but improve on the usual practice by deducting taxes paid on the benefits showing their net effect.

A further issue is how to compare levels of support across countries with different currencies and income levels. Again, there are a number of options, as discussed in Brandolini (2007) and addressed in the next section.

Data and Method

The estimates are derived using EUROMOD, a multicountry tax benefit microsimulation model. The version used here covers 19 EU countries—all the 15 pre-2004 member states and Estonia, Hungary, Poland, and Slovenia. There is great variation in tax benefit systems across these countries, which reflects the different typologies of European welfare states (Esping-Andersen, 1990; Ferrera, 1996). Among the ''old'' EU-15 member states, the Nordic countries (Denmark, Sweden, and Finland) and the continental countries (Austria, Belgium, the Netherlands, France, and Germany) are characterized by higher taxes and more generous benefits on average. However, there are the Southern countries (Portugal, Spain, Italy, and Greece) and the Anglo-Saxon countries (Ireland and

the United Kingdom), where the role of the state tends to be more limited. Not surprisingly, the level of income redistribution is higher and the inequality of disposable incomes is lower in the first group of countries, while the opposite is the case in the second group. The additional (new) four member states are not clearly distinguished and do not form a district group in this respect (Paulus et al., 2009).

The model calculates direct taxes, social insurance contributions (SIC), and cash benefits on the basis of the tax benefit rules in place in a particular year, for a representative microdata sample of households from each country. It can be used to show the first-round effect of changes in either policies or the characteristics of the population on the distribution of household incomes.[2] In the analysis reported here, baseline estimates are for the latest available policy year for each country, ranging from 2001 to 2005, as shown in Table 1. In most cases, the EUROMOD input data sets refer to a period a few years prior to this policy year and the original incomes (i.e., income before taxes and transfers) derived from them are updated to this date. The updating process involves simple indexing of each income component (which is not simulated) by appropriate growth factors, based on actual changes over the relevant period. In general, no adjustment is made for changes in population composition. The updating process, validation of each country component as well as detailed information on the tax benefit systems can be found in EUROMOD Country Reports.[3]

The components of the tax benefit systems, which are not simulated, are taken directly from the data, along with information on original incomes. Although income taxes and SIC can usually be simulated well, income surveys typically do not have enough information to simulate fully other direct taxes (e.g., wealth taxes, local taxes) or benefits that critically depend on contribution history (e.g., old age pensions, unemployment benefits), health condition (e.g., disability, sickness, and care benefits), discretion by officials (some, relatively small and often locally determined, social assistance schemes), or other unobserved characteristics (e.g., survivors' benefits). However, the main types of tax concessions and cash benefits that are contingent on the presence of children are those that tend to be simulated: family/parental benefits, means tested benefits, and income tax concessions. For further information about the model, see Sutherland (2007) and the EUROMOD web site (http://www.iser.essex.ac.uk/research/euromod/).

The basic idea for capturing the components of household income that are contingent on the presence of children is to remove children temporarily from the EUROMOD input data sets and recalculate household incomes as though only adults were present. The difference between household income in the baseline and after removing the children is a first approximation to the "child-contingent" measure. Note that as well as payments specifically intended for children this includes payments made on a per person basis (as in some social assistance schemes). We also need to take account of children's own original income and benefits that are not simulated. Our method for doing this, as well as for constructing a measure of non–child-contingent benefits, net of taxes, is explained in detail in Appendix.

In this analysis, EUROMOD does not take account of any non take-up of benefits or tax avoidance or evasion. It is assumed, therefore, that the legal rules are universally respected and that the costs of compliance are zero. This can result in the overestimation of taxes and benefits.[4] At the same time, our results can be interpreted as measuring the intended effects of the tax benefit systems.

In the analysis that follows, to illustrate the general approach, the following particular assumptions are made:

- All payments are equally apportioned between household members. See Corak, Lietz, & Sutherland (2005) and Figari, Paulus, & Sutherland (2007) for results based on the alternative sharing assumption that child-contingent payments are entirely incident on children. In practice, the choice makes rather little difference in terms of the relative size of child support by country.

Table 1. EUROMOD Input Data Sets and Simulated Tax Benefit Systems

Country		Data Set	Date of Collection	Income Reference Period	Tax Benefit System
BE	Belgium	Panel Survey on Belgian Households	2002	Annual 2001	2003
DK	Denmark	ECHP	1995	Annual 1994	2001
DE	Germany	German Socio-Economic Panel Study	2002	Annual 2001	2003
EE	Estonia	Household Budget Survey	2005	Monthly 2005	2005
EL	Greece	Household Budget Survey	2004/05	Monthly 2004	2005
ES	Spain	EU-SILC	2005	Annual 2004	2005
FR	France	Enquête sur les Budgets Familiaux (EBF)	2000/01	Annual 2000/01	2001
IE	Ireland	Living in Ireland Survey	1994	Monthly 1994	2001
IT	Italy	Survey on Household Income and Wealth	1996	Annual 1995	2001
LU	Luxembourg	Socio-Economic Panel (PSELL-2)	2001	Annual 2000	2003
HU	Hungary	EU-SILC	2005	Annual 2004	2005
NL	Netherlands	Sociaal-economisch panelonderzoek	2000	Annual 1999	2003
AT	Austria	Austrian version of ECHP	1998, 1999	Annual 1998	2003
PL	Poland	Household Budget Survey	2005	Monthly 2005	2005
PT	Portugal	ECHP	2001	Annual 2000	2003
SI	Slovenia	A sub-sample of Population Census merged with administrative records	2005 (2002)	Annual 2004	2005
FI	Finland	Income distribution survey	2001	Annual 2001	2003
SE	Sweden	Income distribution survey	2001	Annual 2001	2001
UK	United Kingdom	Family Expenditure Survey (FES)	2000/01	Monthly 2000/01	2003

Note: This refers to EUROMOD version D24. EUROMOD data sources are the European Community Household Panel (ECHP) User Data Base and the EU Statistics on Incomes and Living Conditions (EU-SILC) made available by Eurostat (under contract EU-SILC/2007/03); the Austrian version of the ECHP made available by the Interdisciplinary Centre for Comparative Research in the Social Sciences; the Panel Survey on Belgian Households (PSBH) made available by the University of Liège and the University of Antwerp; the public use version of the German Socio Economic Panel Study (GSOEP) made available by the German Institute for Economic Research (DIW), Berlin; the Estonian Household Budget Survey (HBS) made available by Statistics Estonia; the Greek Household Budget Survey (HBS) made available by the National Statistical Service of Greece; the Enquête sur les Budgets Familiaux (EBF) made available by INSEE; the Living in Ireland Survey made available by the Economic and Social Research Institute; the Survey of Household Income and Wealth (SHIW95) made available by the Bank of Italy; the Socio-Economic Panel for Luxembourg (PSELL-2) made available by CEPS/INSTEAD; the Sociaal-economisch panelonderzoek (SEP) made available by Statistics Netherlands through the mediation of the Netherlands Organisation for Scientific Research - Scientific Statistical Agency; the Polish Household Budget Survey (HBS) made available by the Economic Department of Warsaw University; a subsample of Population Census merged with Personal income tax database, Pension database, and Social transfers database, made available by the Statistical Office of Slovenia; the Income Distribution Survey made available by Statistics Finland; the Income Distribution Survey made available by Statistics Sweden; and the Family Expenditure Survey (FES), made available by the UK Office for National Statistics (ONS) through the Data Archive. Material from the FES is Crown Copyright and is used by permission. Neither the ONS nor the Data Archive bear any responsibility for the analysis or interpretation of the data reported here. An equivalent disclaimer applies for all other data sources and their respective providers cited in this acknowledgment.

- A child is defined as a person younger than 18. It is the payments and tax concessions for people in this age group that are counted in our analysis. Other age groups could, in principle, be examined. Tax liabilities and benefit entitlements are calculated using child definitions as appropriate to the specific national rules. Thus, the part of payments or concessions that is received by people aged 18 or over (even if considered children by the law) will not be counted as ''child-contingent''.
- The family benefits that are not simulated in EUROMOD are added to the ''child-contingent'' measure assuming that the whole amount received by parents is due to people aged up to 17.
- We also consider maternity and parental benefits as part of child-contingent support. One could, alternatively, consider these as being for the support of parents and leave them out.
- To compare across countries, the per child level of support is expressed as a proportion of total per capita disposable income for that country. Alternative ways of normalizing (such as the use of purchasing power parity adjustment) make rather little difference to the results—see Sutherland, Figari, & Paulus (2007).

Level of Support for Children

The level of child-contingent support varies considerably across country. Relative to national per capita disposable income, among the 19 countries considered, Hungarian children receive the highest level of child-contingent support, with the lowest level being one sixth of the Hungarian level, received by Greek children. Figure 1, where countries are ranked in order of the net payment, also shows the composition of this support.

The total effect of income taxes can be positive, where there are tax concessions for children, or negative where other child-contingent components are subject to tax. The negative effect outweighs the positive in the Nordic countries (Sweden, Denmark, and Finland) and the same applies to social contributions in Slovenia, Germany, and to a small extent in Poland. For benefits, we use the following categories: family benefits (including among other things, child benefits, support for child care, and disabled children), parental benefits, social assistance (including housing benefits), and other benefits, that is, old age and survivor benefits, health-related benefits, unemployment benefits, which sometimes include child-contingent additions. The largest component of child-contingent benefits is, unsurprisingly, family benefits in most countries. However, it is by no means the case that other benefits and taxes play no role nor that the relative importance is the same across countries. Parental benefits are also important in Sweden, Slovenia, and Estonia.[5] Social assistance is the third largest group of benefits on average, contributing to child-contingent income especially in France, Germany, Poland, Portugal, and the Nordic countries, whereas the other types of benefit account only for a marginal share, but as a group are of significant size in Poland, Slovenia, and Ireland.

In Spain, the total effect of taxes (child-contingent tax concessions less taxes on child-contingent benefits) exceeds the gross income from child-contingent benefits, which are very low. The main contribution on the tax side comes mostly in the form of income tax allowances, especially in Hungary, France, Slovenia, Luxembourg, and Belgium as well as the Southern European countries. The exception is in the Netherlands where most of the effect comes through lower SIC.

Overall, we can see that only counting gross family and parental benefits would make a significant difference to the identification of which countries provide the most support for children. The differences are highlighted in Figure 2. They are largest and show child-contingent payments exceeding gross family and parental benefits for the group of six countries with the lowest levels of support on either measure (Greece, Spain, Italy, Portugal, the Netherlands, and Poland) and a group with relatively high levels on the child-contingent measure (France, Slovenia, Luxembourg, and also Belgium). In most of these cases, the difference is mainly due to the value of tax

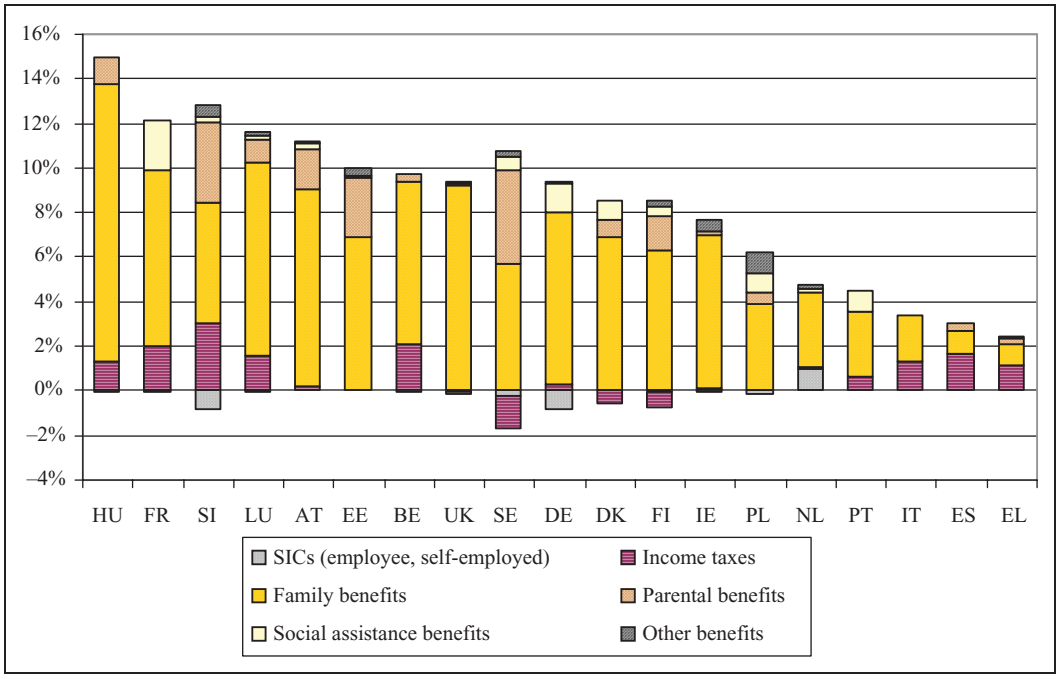

Figure 1. Child-contingent cash payments per child by benefit and tax categories (as a proportion of national per capita disposable income). Note: Countries are ranked by the size of the total net payment per child (as a proportion of national per capita disposable income). Estimates relate to policy years 2001, 2003, or 2005. See Table 1. Source: Own calculations with EUROMOD (Version D24).

concessions. In France and Portugal, social assistance benefits contribute equally with tax concessions, whereas in Poland, the difference is mainly due to other benefits (orphan pension, nursing allowance, and nursing benefit). In Sweden, the tax paid on benefits is sufficiently large to mean that gross family and parental benefits are larger than the net value of all child-contingent payments. In many countries, e.g., in the United Kingdom, benefits for children may be paid beyond the age of 18, if the child is in education. They are therefore captured for children aged 18 in the measure of gross family/parental benefits while only those for children aged up to 18 are captured in the child-contingent measure, by assumption. However, the differences arising from this are very small.

Overall, the proportion by which gross family/parental benefits differs from the net child-contingent payments ranges from underestimation of 35% in France to overestimation of 9% in Sweden. On average across countries, the conventional measure underestimates the total amount of cash support for children nearly by one fifth (18%).

Although our focus is on payments intended to support children, the assumption that underpins standard poverty measures that all income is shared within the household means that it is also relevant to consider the effect of non–child-contingent benefits. These are also calculated net of taxes paid on them, as explained above. Figure 2 also contrasts the average size of each child's share of net non–child-contingent benefits with the size of their child-contingent payments.

In a number of cases, notably the four Southern European countries and Poland, non–child-contingent benefits are of comparable size (Portugal and Italy) or even exceed child-contingent amounts (Poland, Greece, and Spain). In every other country shown, children on average receive more support from the benefits and tax concessions targeted on them than they do from all the other benefits and public pensions received by household members. It is worth noting (but not shown) that

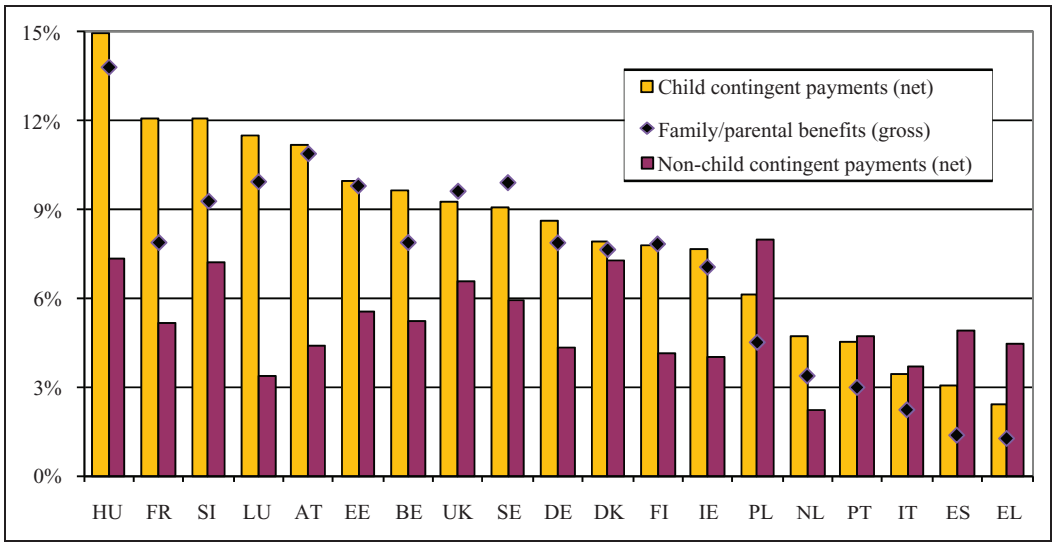

Figure 2. Total net child-contingent payments, net non–child-contingent payments and gross family/parental benefits per child as a percentage of per capita disposable income. Note: Countries sorted by the level of child-contingent payments. Estimates relate to policy years 2001, 2003, or 2005. See Table 1. Source: Own calculations with EUROMOD (Version D24).

pension incomes make up a large share of non–child-contingent incomes in some households containing children, particularly in the Southern European countries, Poland and Slovenia. This is a combined effect of the generosity of the pension systems and the presence within households of extended families. Overall, it seems that there is no particular relationship between the scale of benefits that are contingent on the presence of children and that of benefits that are not child contingent. They neither complement nor substitute for each other in any systematic way.

Distribution of Support for Children

So far we have considered national average payments for children. The way in which such payments are distributed across the distribution of household income in each country is highly relevant to their effectiveness, especially in terms of vertical equity. We consider the size of the payment made per child in each decile group of the equivalized household income distribution. Disposable incomes are adjusted for household size and composition using the modified OECD equivalence scale[6] and children are assigned to decile groups on the basis of this measure of their household's income. Figure 3 shows the average child-contingent payment for the children in each decile group. To be able to compare across countries, the payments are, as before, measured as a proportion of per capita disposable income in that country. Also shown is the share of all children in each decile group and it can be seen that children are not uniformly distributed by household income. In most cases, there are more children in lower deciles, except in the Nordic countries, Slovenia and Belgium, where children are concentrated in the middle deciles, and Estonia with a relatively flat distribution. However, as deciles are based on income after receipt of benefits and deduction of taxes and contributions, the distribution of children is also affected by the distribution of child support.

This chart shows the relative amounts received for each child, depending where their household is placed in the income distribution. It does not indicate the distribution of resources for children across the income distribution. The net effect of child-contingent incomes (i.e., benefits, less taxes paid on

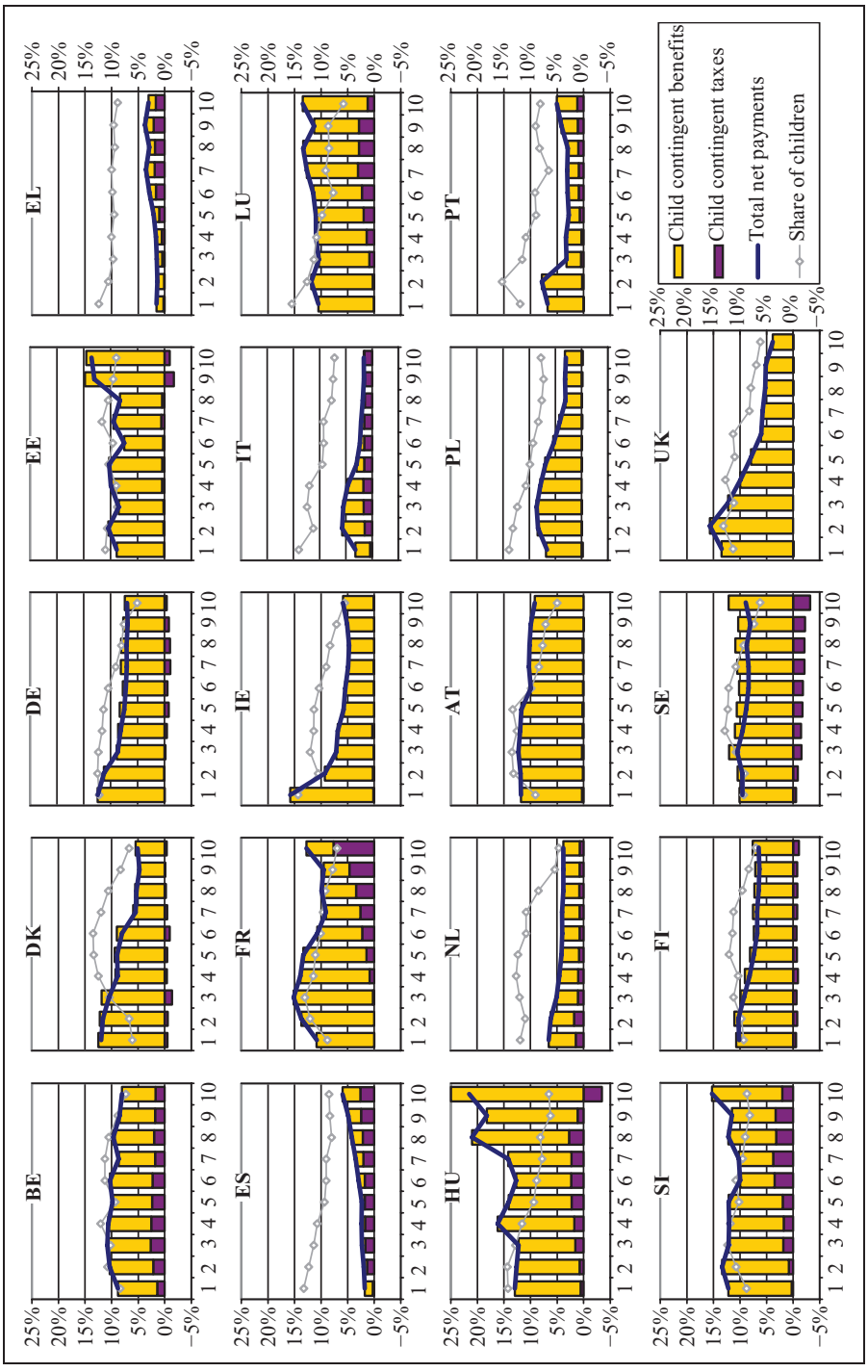

Figure 3. Child-contingent payments (as a percentage of national per capita disposable income) and the share of children by decile group. Notes: Bars show components of spending per child as a proportion of overall ave-rage per capita disposable income, by decile group. Deciles have been constructed on the basis of equivalized household disposable income of the entire population, using the OECD equivalence scale. Estimates relate to policy years 2001, 2003, or 2005. See Table 1. Source: Own calculations with EUROMOD (Version D24).

these benefits, plus tax concessions) is shown by a solid line and the dark bars distinguish between taxes deducted (negative) and tax concessions (positive). In most countries, both are present and the total effect of taxes is shown. In many countries, the basic shape of the curves indicates that children in lower income households receive greater net child-contingent support than children in higher income households. This is strongly the case in Ireland and the United Kingdom (except the bottom decile group) and there is a similar but less pronounced effect in Denmark, Germany, Italy, the Netherlands, Poland, Portugal, and Finland. In other cases, the net effect favors children in high-income household, particularly in Spain, Hungary, Estonia, and Greece. In a third group of countries, children receive rather similar amounts of support at each point in the income distribution, for example, in Belgium, Luxembourg, Austria, and Sweden. In France and Slovenia (and also to some extent in Hungary and Luxembourg), the line has a rather irregular shape. In these four countries, the positive effect of taxes (due to large tax concessions) and benefit payments play complementary roles with the former being more important at higher incomes, although with the exception of France, the positive effect of taxes loses its value in the top decile group and taxes play a negative role here in Hungary. Generally, the effect of the tax system, where there is one, is to complement that of benefits. However, in Finland and especially in Sweden, taxes reduce the value of benefits for the better off and the same applies especially for children in high-income households in Estonia, Hungary, and Germany. In addition, it is evident that including the net effects of taxes are not always the most beneficial to those on the very highest incomes. This is not what one might expect a priori and one cannot assume that by omitting the effect of tax concessions, one is simply underestimating the effect on the richest.

Overall, it is striking how much variety there is across countries in the targeting of resources by household income and in the use of the tax system to help target. Only accounting for gross family benefits would make little difference if any to the shape of the curve in some countries (Austria, Ireland, Poland, and the United Kingdom) but would have a significant effect in others (in particular in France, Greece, Italy, Luxemburg, Slovenia, Spain, and Sweden), making it important to capture as much as possible of total support in cross-national comparisons.

Given this variety in targeting net child-contingent payments by income, it is likely that there will be differences in the extent to which such payments protect children from poverty. It is also of interest to explore whether the picture is any different for net child-contingent payments than for gross family benefits, as conventionally used in such analysis (European Commission, 2008; Table 8). Poverty is defined as living in a household with total disposable income less than 60% of the median value, with incomes adjusted for household size and composition using the modified OECD equivalence scale. Table 2 shows the proportions of children measured as being in poverty if household income includes net child-contingent payments and if it excludes them. It also shows what happens if gross family benefits are excluded. As is well documented elsewhere (European Commission, 2008), support for children has a highly variable effect on the risk of child poverty in different countries. Here, the relevant issue is the extent of the difference between the effects of the two measures of child support. The child-contingent measure makes a modest difference to the lowering of child poverty risk in many of the countries. It is substantial in Belgium, France, the Netherlands, Hungary, and (relatively) in Spain. It is negligible in Denmark, Luxembourg, and Finland and negative in Sweden and the United Kingdom (for reasons outlined above). Again, the importance of taking account of all child-contingent elements of income lies not so much to the difference it makes in any one country but how it alters the picture cross-nationally.

One problem with considering the effect of state support on the risk of being poor is that this support, while contributing to income, may not be sufficient to raise it above the poverty line. Table 2 also shows the effect of the two measures of state support on the child poverty gap. This is the mean distance of the household income of poor children below the poverty threshold, expressed as a percentage of that threshold.[8] Because we hold the threshold fixed, this index picks up the extent to

Table 2. Child Poverty Rates and Gaps With and Without Net Child-Contingent Payments and Gross Family/Parental Benefits

	Child Poverty Rate %					Child Poverty Gap %				
	Baseline	Without Child-Contingent Payments	Difference (pp)	Without Gross Family/Parental Benefits	Difference (pp)	Baseline	Without Child-Contingent Payments	Difference (pp)	Without Gross Family/Parental Benefits	Difference (pp)
Belgium	8.5	24.3	15.8	20.2	11.8	2.3	6.2	3.9	5.1	2.9
Denmark	6.1	16.2	10.1	15.6	9.6	1.4	4.7	3.3	4.1	2.7
Germany	15.5	30.0	14.5	28.4	12.9	3.1	10.2	7.1	8.0	4.9
Estonia	19.2	30.0	10.7	28.6	9.4	4.9	11.9	6.9	11.8	6.9
Greece	22.0	23.5	1.5	23.1	1.1	7.6	8.5	0.9	8.4	0.8
Spain	23.4	26.3	2.9	24.2	0.8	7.5	8.7	1.2	8.2	0.7
France	8.9	34.0	25.1	28.4	19.5	1.1	9.9	8.8	6.1	5.0
Ireland	26.9	34.2	7.3	33.1	6.2	7.2	15.6	8.4	14.7	7.6
Italy	26.0	33.1	7.1	31.2	5.2	8.6	12.0	3.4	11.6	3.0
Luxembourg	14.9	32.7	17.8	31.9	17.0	1.6	8.7	7.1	8.2	6.6
Hungary	21.4	44.3	23.0	41.0	19.7	4.9	17.9	13.0	17.2	12.4
Netherlands	13.9	22.7	8.8	20.0	6.1	3.0	6.0	3.0	4.6	1.6
Austria	9.1	27.3	18.2	25.7	16.6	1.5	6.9	5.4	6.6	5.1
Poland	22.8	34.4	11.6	31.8	9.0	7.0	14.1	7.1	11.7	4.7
Portugal	27.9	31.0	3.1	30.0	2.1	5.9	11.8	5.9	8.9	3.0
Slovenia	15.2	30.3	15.2	28.2	13.1	2.5	10.1	7.5	10.3	7.7
Finland	11.3	24.2	12.9	24.3	13.0	1.8	6.9	5.1	6.9	5.1
Sweden	8.2	21.7	13.5	22.3	14.1	1.6	5.5	3.9	5.9	4.3
United Kingdom	19.1	37.7	18.6	38.2	19.1	2.9	14.3	11.4	15.2	12.2

Source: Own calculations with EUROMOD (Version D24).
Note: Estimates relate to policy years 2001, 2003, or 2005. See Table 1. Poverty lines are held constant at 60% of the baseline national equivalized household disposable income.

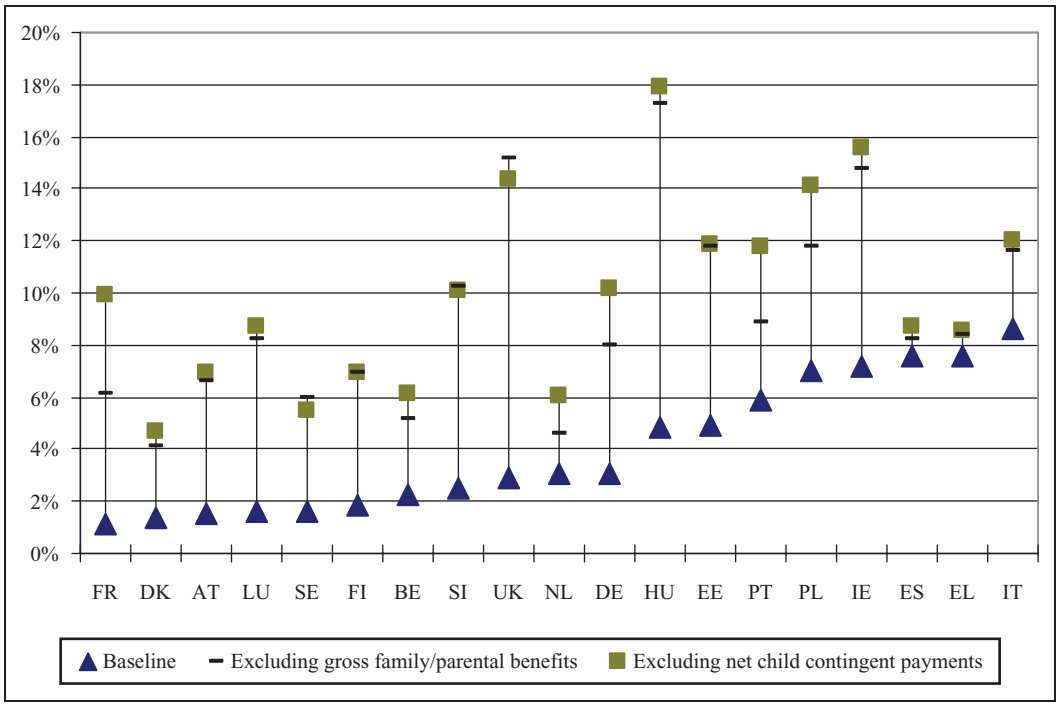

Figure 4. Child poverty gaps with and without net child-contingent payments and gross family/parental benefits. Note: Countries are ranked by the baseline poverty rate for the whole population, using national poverty lines defined as 60% of median equivalized disposable income. Estimates relate to policy years 2001, 2003, or 2005. See Table 1. Source: Own calculations with EUROMOD (Version D24).

which the two measures of state support that we consider improve the situation of poor children. This effect is also illustrated in Figure 4, which shows how without net child-contingent benefits and tax concessions, the child poverty gap would be much higher than it would be without gross family benefits in a subset of countries including France, the Netherlands, Germany, Portugal, and Poland. Again, the relative effectiveness of policies in reducing the child poverty gap looks quite different, depending on the measure used. For example, the size of the poverty-reducing effect in Portugal is similar to that in Italy using the conventional measure. Using the child-contingent measure, it is doubled.

Support Versus Needs

The net child-contingent measure captures the additional income received by a household because of the presence of children. We can use this to assess the extent to which countries cover the extra needs of children and hence contribute to horizontal equity. In general, assessing the degree of horizontal equity is difficult, because it requires a comparison of the effect of the system on households that are alike in all respects except one. In reality, households with children can differ from childless households in many ways, both directly and indirectly: for example, through labor market behavior. Our approach allows us to compare equivalized income for households with children with income for exactly the same household, assuming there were no children, but all other things remaining the same.

Comparing equivalized disposable incomes with and without children involves making two distinct calculations. First, we take no account of children in the calculation of household needs. This

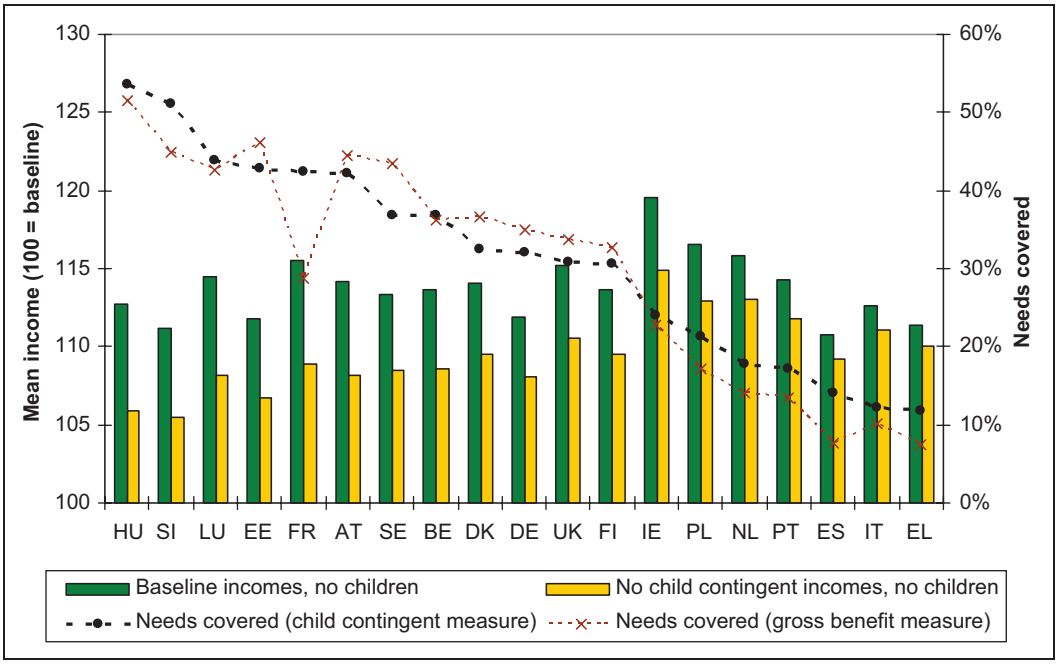

Figure 5. The proportion of average child needs covered by child-contingent payments. Note: Countries are ranked by the percentage of child needs covered by child-contingent payments. Estimates relate to policy years 2001, 2003, or 2005. See Table 1. Source: Own calculations with EUROMOD (Version D24).

causes household equivalized income to rise, as indicated by the dark bar in Figure 5, which shows equivalized income without children as a percentage of equivalized income with children (the baseline). Then, we remove the net benefit payments and tax concessions received because of the presence of children. This causes equivalized income to fall as indicated by the pale bars.

Countries are ranked by the proportion of the needs (i.e., the dark bars) covered by the child-contingent incomes (i.e., the difference between the dark and pale bars) and this is shown by the bold line (against the right-hand axis). The ranking is similar to that for the average child-contingent payment, shown in Figure 1, which is to be expected. The proportion of children's extra needs that are met by the tax benefit system is more than four times higher in the most generous country, Hungary (54%) as in the least, Greece (12%).

The results of this exercise are highly dependent on the equivalence scale used and should not be interpreted as absolute measures of need or the extent that it is met. This approach is of value because our focus is comparative and the extent to which having children makes households (financially) worse off varies with the tax and benefit system.

The same indicator obtained with gross family benefits (thin line) shows modest differences for most countries, except France. The results are basically the same with each measure for Luxembourg, Belgium, and Ireland. The percentage of needs covered is higher when measured for child-contingent support for countries that rank either at the top or at the bottom by this measure. It is the opposite for middle-ranking countries. This demonstrates again that taking a more comprehensive approach to measurement of cash public support for children matters particularly in cross-national perspective. The between-country variance of the proportion of needs covered is higher using the gross family benefit measure than it is using the child-contingent measure (as measured by the coefficient of variation—48.4% and 41.6%, respectively). The traditional approach therefore

overestimates the extent of variation in public cash support for children for the 19 countries considered.

Conclusions

Much of the analysis that compares the size and effects of cash transfers for children across countries does so on the basis of gross benefit payments that are labeled for children. We have demonstrated how a more comprehensive measure, captured using static microsimulation techniques, improves comparability across countries. Our ''net child-contingent measure'' includes additions for children in benefits labeled as having other functions, it deducts taxes where they are payable on these benefits, and it adds the value of tax concessions.

On average, over the 19 countries that we consider, the gross family benefits measure underestimates the total paid for the support of children by about one fifth. More importantly, the extent of the underestimation varies by country. It is largest for countries with relatively high levels of child-contingent support (e.g., France, Slovenia, and Luxembourg) and those with relatively low levels (e.g., the Southern countries), while in case of Sweden and the United Kingdom, the gross family benefits measure actually overestimates the scale of support. Moreover, the distributional effect of the components omitted from the traditional measure may also be significant. Most notably, tax concessions tend to favor children in better-off households, particularly in France, but the tax treatment of children overall does not necessarily favor children in the very highest income households. The taxation of benefits reduces their net value, particularly for the better off. Certain benefits containing child-contingent elements, such as social assistance and housing benefits in some countries are naturally targeted on low-income families. We also find that the protection offered against child poverty varies across countries with a different pattern when using the child-contingent measure than the traditional measure of child support. In addition, we demonstrate how the more comprehensive measure can be used to establish a ranking of countries in terms of the proportion of the additional needs of children that are met through state support. Not only does this differ from that based on the size of gross family benefits but the cross-country variance in degree of support, while still large, is smaller using the child-contingent support measure.

We believe that the use of microsimulation to estimate the size of net child-contingent incomes provides a measure that improves on standard practice. We have demonstrated how this applies in cross-national comparisons and it should be recognized that the method is also of value when assessing the effect of policy changes over time in a single country.[9] For comparisons of systems in which the modes of public cash support for children are as varied as those we have considered, and may indeed be hidden from those not familiar with the policy in the country concerned, it is critical that a method of capturing all the relevant components is adopted. Although this can be in principle done with any tax benefit microsimulation model, EUROMOD provides additionally the basis for comparable measurement across many countries. Furthermore, this method can potentially be also used to analyze population subgroups other than children.

Notes

1. ''Benefit'' is here used in its European sense of a cash transfer from the state. It is a term that includes contributory earnings replacement insurance payments, payments to compensate for contingencies such as disability, payments to support children and families, means tested social assistance, or welfare payments and ''in-work'' subsidies of low earnings.
2. In the EUROMOD input data sets, the household refers to people who share the dwelling, that is, they live at the same address and (at least to some extent) share resources.
3. See http://www.iser.essex.ac.uk/research/euromod/documentation/country-reports.

4. It can also result in the underestimation of poverty rates, although this depends on the relationship between the level of income provided by benefits and the poverty line (potential claimants may be poor whether or not they receive the benefits to which they are entitled). For a comparison of poverty rates estimated using simulated incomes from EUROMOD with those calculated directly from survey data by the OECD or available through the Luxembourg Income Study, see Corak, Lietz, & Sutherland (2005).
5. However, the data on parental benefits are not comparable across countries as in some cases (Germany, France, Ireland, Italy, the Netherlands, Portugal, and the United Kingdom) some or all payments are indistinguishable from earnings because employers administer the payments. Generally, where this is the case, parental benefits tend to be less generous or of shorter duration compared to countries where the payments are made directly by the government (see the Mutual Information System on Social Protection, MISSOC, http://ec.europa.eu/employment_social/spsi/missoc_en.htm). Furthermore, the problem of lack of comparability of parental benefit measures across countries also applies to traditional analysis using information on family and parental benefits taken directly from the data.
6. Attaching weight equal to 1 to the head of household, 0.5 to other adults (aged 14+), and 0.3 to children (aged below 14).
7. The poverty line remains the same, fixed at the level using (baseline) household disposable income, for all three measures.
8. Also known as the FGT(1) index (Foster, Greer, & Thorbecke, 1984).
9. For example, if child tax allowances were converted first to tax credits and later to cash benefits, and were subsequently taxed, fully capturing the changes would require a similarly comprehensive approach. For an example of such analysis for the United Kingdom see Adam & Brewer (2004).

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Appendix

Calculating Net Child-Contingent Payments and Net Non–Child-Contingent Benefits

Starting from the baseline scenario (see Figure A1), we first modify EUROMOD input data sets by removing children's original income (O_C) and recalculate household benefits (B_1), taxes and social insurance contributions (T_1), and net income (N_1), that is, Scenario 1. Only in the next step, we take out children from the input data sets and calculate benefits and taxes

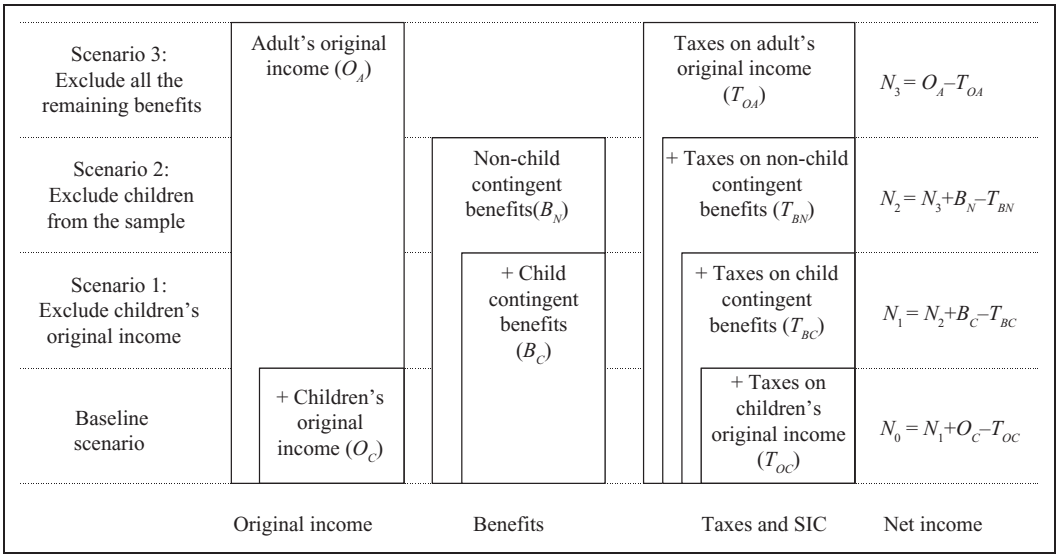

Figure A1. Calculation steps.

again: Scenario 2. Note that any remaining child-related benefits that are not simulated by EUROMOD, due to lack of necessary information in the input data sets, are identified and also excluded from household incomes in Scenario 2. The difference in total (gross) benefits between the baseline and Scenario 2 can be attributed to the presence of children:

$$B_C = B_0 - B_2. \quad (1)$$

Similarly, the difference in total taxes and social insurance contributions between Scenario 1 and Scenario 2 captures the total effect of taxes on child-contingent benefits and child-contingent tax concessions (and, hence, can be either positive or negative), which is referred to below as ''child-contingent taxes'':

$$T_{BC} = T_1 - T_2. \quad (2)$$

Finally, the difference between (1) and (2) is the net amount of payments made to support children, including the effect of complements and supplements to benefits such as housing or unemployment benefits, the value of tax concessions, and net of any taxes paid on these benefits.

Gross non–child-contingent benefits can be directly observed in the EUROMOD output data once children have been removed (i.e., in Scenario 2):

$$B_N = B_2. \quad (3)$$

Taxes levied on these benefits can be calculated in one further step, that is, Scenario 3. Taxes that are solely due to the adults' original incomes are estimated by calculating taxes once all benefits are omitted from the tax base (T_3). This amount is then deducted from all taxes paid by adults when children are excluded (T_2): the difference is the taxes paid on non–child-contingent benefits:

$$T_{BN} = T_2 - T_3. \quad (4)$$

As such, it is implicitly assumed that children's own (original) income is the "top slice" of the relevant tax base (and therefore facing the highest marginal tax rate under a progressive tax system), followed by (taxable) child-contingent benefits and (taxable) non–child-contingent benefits.

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