Deep and Extreme Child Poverty in Rich and Poor Nations:

Lessons from Atkinson for the Fight against Child Poverty*

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1. Introduction

Child poverty has drawn increasing attention from social scientists and policy makers in the past decades. Nations should be judged on how they treat their children, especially those facing the uninsurable risk of being born to parents who are unable or unwilling to support them. A number of studies from developed countries illustrate the negative effects of children living in poverty, especially deep poverty (incomes less than half of the poverty line) on their future development. These include chronic health and psychological problems as well as poor educational attainment compared to their middle class and affluent peers in rich countries (Almond, Currie & Duque, 2017; Magnuson & Votruba-Drzal, 2008; Rainwater & Smeeding, 2003; Smeeding & Thévenot, 2016).

In some less-developed but still rapidly growing nations, extreme child poverty (incomes per person below $2, $4 and $6) is still a major issue. Although some doubt the goal will be reached, governments around the world have committed to a new set of sustainable development goals (SDGs) that include ending extreme poverty for everyone and everywhere by 2030 (Gertz & Kharas, 2018). Usually, to examine the extremely disadvantaged, the World Bank conducts studies using spotty microdata and methods that are not used to measure poverty in rich countries. In addition, the family size adjustments that were used assume no economies of scale in household consumption. We will overcome both of these obstacles in this paper.

Deep and extreme poverty issues have recently surfaced in very rich but unequal nations such as the United States. Nobel Laureate Angus Deaton (2018) points to high levels of extreme disadvantage in the United States, citing a stunning UN report on US poverty by Alston (2017), United Nations Special Rapporteur on extreme poverty and human rights. Alston found very poor child conditions such as ringworm and toothless children due to dental decay in his examination of poverty in various areas in the United States. Deaton goes on to compare poverty in rich and poor countries, using a method invented by Allen (2017); Deaton claims that "there are 5.3 million Americans who are absolutely poor by global standards. This is a small number compared with the one for India, for example, but it is more than in Sierra Leone (3.2 million) or Nepal (2.5 million), about the same as in Senegal (5.3 million) and only one-third less than in Angola (7.4 million)." Hence rich nations are becoming aware of extreme poverty in their midst (see also Edin and Shaefer, 2017).

The aim of our paper is to consistently measure deep and extreme child poverty in a more global context, using a set of rich and poor nations, and to think about what could be done to alleviate these conditions. We use both absolute ("extreme") and relative ("deep") poverty measures (Smeeding, 2016). We refer to children living in families with incomes below a fixed dollar line ($2, $4, or $6 per person per day) as being in extreme poverty. We refer to children living in families with incomes below half of the "half median" international poverty line (25% median) or half of the US semi-relative poverty line (20% median) as being in deep poverty (Jencks, 2016; Fox, 2017). The role of the labor market, private transfers and public benefits all need to be recognized as they differ across nations and nation types (high-middle-low income).

As major emerging nations experience income growth, they begin to look more like rich Western nations, especially in cities and urban areas and even in remote rural areas. In this paper, we examine child poverty in set of emerging nations: Brazil, China, India and the Republic of South Africa (RSA), and in another set of large and rich English-speaking nations: Australia, Canada, Ireland, the United Kingdom (UK) and the United States (US). Taken together, these countries include about a third of the world's population and more than 25% of all children. Only one dataset, the Luxembourg Income Study (LIS), allows us to consistently examine differences in child poverty using multiple poverty measures, multiple periods and a collection of income measures in a fully flexible and comparable way.

The paper is very much in line with Tony Atkinson's concerns for poor children as expressed in his recent research on global poverty with the World Bank, in his work with rich countries such as LIS and his prescriptions for ending poverty among children in all nations (Atkinson, 2015; World Bank, 2017). We say this knowing that Tony would be aghast at the depth of child poverty that we explore here, far below the 60% of national median poverty standards that he time and again defended and upheld (e.g. Atkinson, 2015).

We structured the paper as follows. Below we look at the major current child poverty issues in poor and rich nations. The data and methods are presented in the third section, which is followed by results on child poverty levels and trends in 9 countries of interest using both relative and absolute measures from 2002/2003 to the most current year. We also analyze the influence of the different components of household income resources on deep-child-poverty rates in order to examine the role of market and redistributive effects, which materialize through transfers and child benefits, on poverty reduction. We close the paper with a discussion of the

further implications for effective interventions that improve children's life chances in a local context.

2.   A Quick Review of Issues Surrounding Extreme and Deep Child Poverty

With increasing economic growth, most of the world's poor live in countries that are being reclassified as middle-income countries (MICs) from previous low-income country clusters. More than 70 percent of the global poor live in MICs (Kanbur, 2012). In addition, increasingly, those who are used to living in low-income countries tend to migrate to MICs (Kanbur & Sumner, 2012), making it more promising to tackle child poverty in a global context, as MICs have relatively fewer financial constraints for reducing poverty among their next generations compared with their low-income counterparts. Our nations are excellent examples of this emergence. Table 1 shows the progress of our four emerging nations using the World Bank's 2018 measures for poor or low-income nations (L), lower middle-income nations (LM), upper middle-income countries (UM) and rich countries (R). Brazil, which was LM in 2002, quickly reached UM in 2006 and may soon join the R nations; China went from LM in 2002 to UM by 2010; India has progressed from L to LM between 2002 and 2008 and South Africa jumped from LM to UM and has remained there early in the 2000s.

< Table 1 about here>

Notwithstanding increasing economic growth in these nations, reducing childhood poverty remains a challenge due to less formal and effective social safety net programs in developing countries, and a nontrivial proportion of private transfers flow between households are observed in middle-income countries (Cai & Evans, 2017), which to some extent act as crucial financial support to buffer severe deprivation. According to a report by UNICEF and World Bank Group (2016), over 30 percent of the world's poorest children live in India, struggling with \$1.90 or less per person daily[1], and more than 50 percent of the nation's children live in poverty in South Africa. In all of these nations, a high level of resource inequality makes tackling child poverty problems more difficult both due to the high disparity in the distribution of economic resources as well as ethnic and racial differences, especially in India and the RSA.

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[1] Even more striking, the share of the world's extremely poor children in Sub-Saharan Africa is approximately 50 percent today

South Africa remains the country with the highest income inequality in the world and the country with the highest fraction of low-income Blacks (World Bank, 2017).

Poverty rates among children in middle-income countries in the LIS Database have remained overwhelmingly higher than those in high-income countries, using either relative or absolute measures (Gornick and Jäntti, 2012). Still, others have called attention to the role of within-country policies that influence child poverty reduction in LM and UM countries. The positive effects of conditional cash transfer programs in reducing child poverty have been cited in Brazil (Shei, Costa, Reis, & Ko, 2014), South Africa (Engle et al., 2011), and Mexico (Fernald, Gertler, & Neufeld, 2008; Fernald et al., 2009). The targeted policy progress of the Child Support Grant in South Africa has cushioned financial stress among impoverished families and improving the well-being of poor children living in such families (SAHRC & UNICEF, 2016). Most recently, the emergence of the welfare state and anti-poverty policy in China has been documented as well (Gao, 2017).

In rich countries, deep child poverty continues to persist despite the great wealth of others in English-speaking nations. We find an armada of income support and redistribution policies aimed at helping poor children, but not all English-speaking nations provide these. Among the five countries we investigate, all but the US have a universal child allowance. In addition, the UK's war on child poverty is still very robust (Waldfogel, 2010), while Canada has recently introduced a very generous universal child benefit that will almost halve relative child poverty in that nation by the end of 2018 (Corak, 2017).

However, the trend in the US has been the reverse: it has increasingly transferred income support from the desperately poor with little or no earnings to the working poor (Moffitt & Pauley, 2018) and most recently, work requirements were added to almost all targeted income support policies for food, housing, and even medical care (Trump, 2018). This phenomenon has also been sparked by the emergence of a study on families with children living on less than $2 per person per day (Edin & Shaefer, 2017). While some question the $2 poverty measure and the length of time a family might be in such straits, there is an emerging belief that instability and lack of access to credit drive many families with children to this position at some point within a given year and that in fact deep poverty is rising (Jencks, 2016).

Moreover, the US's recent call for 'welfare reform' to "promote opportunity and mobility" by testing all programs and reducing access to the already small safety net will

produce even more deeply poor families with children (Trump, 2018). This is especially true among US-born children of immigrants, where the immigrant parents of US citizen children are being removed from the nation and separated from their children (Heinrich, 2018). Hence, the topic of the paper is of some important concern in all nations, rich and emerging.

3. Methods and Data

In this paper, we use measures of both deep and extreme poverty, comparing and contrasting levels and trends across the 4 emerging nations and the 5 rich ones. Below, we describe how we measure deep and extreme poverty and how we use the LIS data to examine each of these measures.

Setting the Poverty Lines

We faced multiple measurement issues in assessing child poverty across countries with widely varying incomes and distributions within and between these countries. The role of household income is not limited to their overall poverty effect but is also linked to fundamental issues of the measurement and adjustment of income and national price levels. The consensus in most comparative studies of poverty is that local currency of each country should be converted into international US dollars using purchasing power parities (PPP) to allow direct comparison of absolute poverty rats – "extreme poverty" in our paper. However, if living standard in different years or locations is not taken into account, measuring extreme poverty over time across countries would be problematic. In terms of the incorporation of the updated poverty research, recent article by Pinkovskiy and Sala-i-Martin (2018) and conventional practice suggest that the most recent PPPs are usually the best ones, as they increase in coverage, sophistication and quality with each round. We apply the 2011 PPP values between countries using the LIS year closest to 2011. Of equal importance, any absolute or anchored poverty line should be adjusted over time for inflation within countries using the harmonized national CPI during periods when research is conducted (Smeeding, 2016).

Additionally, regarding relative poverty measures, choosing a certain percentage of median equivalized disposable income as the threshold has been an issue for many decades. In the LIS, traditional poverty rates are calculated at 40, 50 and 60% of the median. The highest relative line at 60 % is the Ireland, European Union and UK poverty standard. The half-median

line is the usual measure for international bodies, such as UNICEF, OECD and LIS. The lower 40% of the median standard is closest to the poverty lines in other English-speaking nations, such as the United States.

Deep poverty is measured at half the international relative measure, so 25% of the median for the international line is most comparable. Recent research (Fox, 2017, Short, 2013; Wimer and Smeeding, 2017) suggests that the US's new Supplemental Poverty Measure, which changes annually with per expenses spent by lower-income households, translates almost exactly to 40% of the median national adjusted income in the USA's most recent data in LIS Database as well as Canada's and Australia's LIS data. We use half of that 40% line, or 20% of the LIS median adjusted national income, as our second measure of deep poverty. Thus, for each country we examined, the paper creates two relative poverty lines, 20 and 25% of median equivalized income based on the level and distribution of household income among the total population.

LIS Data

Our analyses of deep and extreme child poverty throughout the paper are drawn upon harmonized microdata from the Luxembourg Income Study Database (LIS), which has been a pioneer in collecting a series of internationally comparable household survey data. Most recently, the database has expanded its traditional scope of the partner countries from the rich OECD world and included a series of MICs to strengthen its commitment to global poverty and inequality studies (see Gornick & Jäntti, 2012; Gornick & Nell, 2017).

An additional merit of the LIS database[2] is the detailed disaggregation of social program provisions for each country participating in the database. In this way, we can identify the role of the market and redistributive effects from private transfers, living arrangements, social benefits and the tax system. (Gornick & Smeeding, 2018).

This paper approaches child poverty issues in the nine nations as follows. For the purpose of comparability, the analysis sample consists of country data starting in the year 2002 and continuing to the most recent year available. Only households with children less than 18 years old are included when calculating the proportion of children living in poverty. Poor children are defined as those living in households whose income is below the thresholds mentioned above within each country. The analysis derived from disposable income includes labor income,

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[2] Details on the background of LIS database can be found on http://www.lisdatacenter.org/

transfer income, and capital income with the taxes and social security contributions subtracted. All zero or missing values of income were excluded from our samples.

The most prudent choice of a poverty threshold depends on the country, its context, and the time period under consideration. When it comes to adjusting poetry lines for family size, the equivalence scale matters a lot, as it measures the cost of providing an equal standard of living for households that differ by characteristics, such as ages of household members or the size of a household. The way that we consider the scales is presented in Equation 1:

$$S_i = (N_{i-adult} + \gamma * N_{i-child})^\theta \tag{1}$$

Where S is the total household size, computed in equivalent adults for household i. $Ni\text{-}a$ indicates the total number of adults present in household i, and similarly, $Ni\text{-}c$ is the number of children below the age of 18 in household i. The parameter γ indexes the cost of a child's expenses relative to that of adults, while parameter θ represents the economies of scale regarding expenditures of household i. We test two different scales to determine our absolute measure. First, we assign both γ and θ values of 1, for which the number of adults is equivalent to the exact household size, leading to a per-capita-scale welfare measure. Alternatively, we set γ to a value of 1 and let θ equal 0.5, which refers to "LIS square root scale," in order to adjust poverty thresholds according to a given household's living standard and size. The extreme child poverty rates are expected to be higher under the first premise, especially for results from the MICs where large household sizes have no economies of scale using the per capita per day method.

Even though technically an international poverty line of $2 could represent a comparable way to track global poverty and evaluate progress on poverty reduction goals, this threshold is inadequate to meet the most basic needs for the developed world and for some emerging high economies. It was estimated by the US Department of Agriculture that the minimum needed in US to purchase food in 2011 was $5.04 per day (Hickel, 2015). It is more appropriate to use a country's poverty line to better facilitate the policy discussion and to better target social programs that benefit the poorest children. In a further step of cross-national comparison between MICs and Anglo-Saxon nations, we compared the percentage of children living with less than $2 a day from each of the four MICs to the proportion of children living below $4 and $6 per day in five developed countries.

Harmonized CPI data from LIS serves as the method that we use to arrive at a historical estimate of inflation. The procedure that led to the new household income for the specific years examined is specified in Equation 2, where CPI_t indicates Consumer Price Index (2011 = 100) for year t. The 2011ppp indicates 2011 purchasing power parity exchange rates (US = 1) used to adjust each national currency into 2011 international USD.

$$Income\ in\ international\ dollar\ for\ year\ t = \frac{Income\ in\ local\ currency_t}{\left(\frac{CPI_t}{100}\right)*2011ppp} \tag{2}$$

In order to reduce our estimate bias resulting from different living standards over time and adjust for changes in the original standards of \$1 or \$2 per person per day, the three fixed thresholds (e.g., \$2, \$4, and \$6) that we used were also adjusted backward to the specified years for each country using the national CPI. An example is presented in Equation 3, where "fixed line" is \$2 (or \$4, \$6) divided by the CPI for year t.

$$Real\ line\ for\ year\ t = \frac{Fixed\ line}{CPI_t/100} \tag{3}$$

Relative poverty is measured in the LIS by first adjusting disposable family income per equivalent adult for all households using the same square root scale. The poverty line is set once, and we then examine the adjusted family incomes at several points in the income process: market income, income after private family transfers and after tax and transfer income.

4. Results

Figure 1 shows that the relative/deep poverty rates among children across the 4 MICs we examined tend to remain flat across the whole period, although some fluctuations are observable in Brazil and South Africa, whereas deep child poverty rates tended to be higher in India and China in the latest year relative to earlier points in time. This increase in relative poverty rates over the period examined may be due to growing inequality—real economic growth at the bottom of the distribution is lower for lower income families in these nations compared to the median income families (Alvaredo, Chancel, Piketty, Saez & Zucman, 2017). Focusing on the most recent year (of available data) for each nation, China can be distinguished by having the lowest relative proportion (5.6 percent) of children living in households with incomes lower than 25 percent of the median regional disposable income; on China's heels are India (6.8 percent), Brazil (9.2 percent), and South Africa (11.6 percent).

< Figure 1 about here>

As noted in the previous section, the US SPM line, which is approximately 40 percent of the median regional income, used to be the benchmark of our relative measure for 5 developed nations. We then estimated relative trends based on 20 percent of the median regional income as deep relative child poverty threshold. As the results in Figure 2 show, Ireland, UK and Canada have relatively lower proportions (approximately 1 percent) of children living in households subsisting on less than 20 percent of median regional income, while Australia's relative line fluctuates, before it reaches 1.5 percent in 2010. However, the US is the only developed nation we studied that struggles with relatively severe deep child poverty rates--approximately 4 percent nationwide, between 2004 and 2016.

< Figure 2 about here>

The conception of change in extreme child poverty rates is very different when we deploy absolute measures. In addition to calculating the rates based on per-capita scale, we also estimate percentage of children living in absolute extreme poverty using LIS equivalence scale to reflect economies of household size. To equivalize this household disposable income and adjust for family size, household income is divided by the square root of the household size. Figure 3 reports estimates of the proportions of children in 4 MICs, living on incomes of less than $2 per day, based on two different equivalence scales (LIS square root and per-capita scale). Each set of colored lines represents $2 per day poverty rates among children for each nation, the solid line is based on LIS square root, while the dashed line displays the trend based on the per-capita scale.

< Figure 3 about here>

It is interesting to note that two sets of lines within each country are virtually parallel, while tending to converge for the most recent years, except in India. All the lines trend downward in all countries, regardless of the different definitions of equivalence scales; this reflects widespread economic growth across all 4 of these nations. As we expected, given that the per-capita scale fails to account for the concept of resource-sharing within households, the lines based on per capita measures for each nation are always higher than those lines representing extreme poverty rates that take economies of household size into account. Specifically, relative to the LIS square root, the per-capita scale measure reflects much higher

rates of extreme poverty among children across these 4 countries, ranging from 2 to 4 times the poverty rates estimated using the LIS square root.

Results based on a per-capita scale indicate that the absolute national rate of extreme poverty among children in Brazil has decreased from 23 percent in 2006 to 6 percent in 2013. It is also promising to note that China showed a sharp reduction (almost 42 percent) in the rate of extreme child poverty, from 47 percent in 2002 to just over 5 percent in 2013. Similarly, South Africa and India show reductions of 30 percent and slightly less than 40 percent, respectively, in their national rates of extreme child poverty within a seven-year period.

Turning to absolute measures of the $4-a-day line across 4 high-income countries in Figure 4, we observe a somewhat different conception of poverty reduction that we observed in the previous figures based on relative measures. Again, we display results based on both definitions of equivalence scales (either LIS square root or per-capita scale), as illustrated above for the MICs. Overall, starting from the earlier years of 2003/2004, all 5 nations appear to achieve a largely constant reduction in their absolute rates of extreme child poverty, while Australia and the US are notable for their unfavorably increasing proportion of children living on materially less than $4 per day in the most recent year we examined.

< Figure 4 about here>

The idea of the income package (Rainwater & Smeeding, 2003) guides our analyses of why families may or may not be in deep poverty and the way the policy affects poverty rates. The income package includes incomes from three sources: those that are earned by the family per se (market incomes); those that come from other family members, including implicitly the economies of scale from larger household units, and private transfers across households, including remittances; and finally the effects of the state on income support, measuring net benefits (taxes paid minus benefits received).

Based on analyses that are not shown here, trends in both deep and extreme poverty in our four MIC countries are driven by the growth of market incomes. Despite rising inequality in overall incomes in each country, the growth dividend at the bottom of the distribution has reduced extreme child poverty in all of the nations. A new global middle class is emerging as poverty falls (Gertz & Kharas, 2018).

For the rest of the analyses in this paper, we will be using data from the most recent year available for each country. Figures 5 and 6 present the results of an analysis of different deep child poverty rates[3], which are based on calculations using 20 percent of the median DHI for developed nations and 25 percent of the median DHI for MICs, to examine the marginal effects of each component of a given household's economic resources, incrementally and cumulatively, on changes in deep child poverty rates. We begin by estimating the market-income poverty rates, and then integrating private transfers into household income packages. We report two further sets of deep poverty rates based on (1) additional consideration of social insurance and universal programs as sources of income, and (2) the combination of means-tested benefits with net of tax and social security contributions. In the last column, we show an overall reduction from market-income deep poverty rates to disposable income poverty rates.

< Figure 5 about here>

Results in Figure 5 suggest that among Australian children living in households that survive on only market income plus occupational pensions, around 17 percent could be regarded as existing in conditions of deep poverty. Supplementing market income with private transfers, such as child support and other inter-household transfers, can yield only a slight reduction in the deep child poverty, lowering it to 16.5 percent. Similarly, it is possible to observe the very limited role that private transfers play in reducing extreme child in 4 other Anglophone nations. When social insurance and universal programs, however, supplement the addition of private transfers, this combination can serve as a promising mode of reducing deep child poverty: by about 16 percentage points in Australia, 10 percentage points in Ireland, 8 percentage points in the UK, and around 3 percentage points in Canada and the US. Yet, Canadian estimates for poverty reduction will soon be doubled as their new and generous child allowance benefit comes online in the 2016 LIS data (Corak, 2017). It is worth noting that means-tested transfers, along with net tax pay-outs (eg. in work benefits from the tax system), further reduce the deep poverty rate among children to less than 1 percent in both Ireland and the UK, and to 1.5 percent in Australia, while leaving slightly higher rates of 5.8 percent in Canada and 4 percent in the US.

< Figure 6 about here>

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[3] We also calculate the extreme child poverty rates over time based on each component of a given household's economic resources (As seen in Appendix, Figures 9 and 10).

When we turn to 4 MICs[4] in Figure 6, it is possible to observe a different account of poverty reduction story than the one we see in Anglophone nations. In South Africa, an overwhelming proportion (41 percent) of children would live below the 25 percent of the median DHI if only market income were available. When households possess both market income and private transfers, the deep child poverty rate is reduced to 36 percent, which suggests that private transfers play a more significant role in redeeming children from circumstances of deep poverty. Similarly, taking private transfers into account reduces deep child poverty rates in India by 4.4 percentage points. In Brazil and South Africa, the deep child poverty rates are reduced by another 3 to 6 percentage points when social insurance and universal benefits are added to a household income that was originally limited to market income and private transfers. More importantly, taking means-tested programs and tax payments into account yields a reduction of another 22 percentage points from the deep child poverty rate in South Africa, while analogous programs in Brazil and India would reduce deep poverty rates by another 2 to 3 percentage points.

< Figure 7 about here>

We take a further step, to illustrate how the weights of different income components account for the total reduction in deep child poverty rates for each nation and shed light on which interventions may merit further attention. In Figure 7, we calculate the extent to which private transfers, social insurance, universal benefits, and net means-tested transfers contribute to the overall reduction in deep child poverty rates within each respective country. With the exception of Australia, where the reduction of deep child poverty is disproportionally due to social insurance and universal programs, across all of the other countries we have examined, net means-tested benefits play a substantial role in reducing deep child poverty; the most significant illustration of this (76 percent) can be observed in South Africa, but reduction rates range from 65 percent to 29 percent in the other nations. In addition, social insurance and universal programs contribute disproportionally to the reduction of Brazil's deep child poverty rate, relative to the contributions of such programs in the 4 Anglophone nations, Australia excepted.

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[4] Data from China regarding distinction of universal benefits, assistance benefits and private transfers is unavailable.

5. Discussion and Conclusion

In recent years, many have questioned how to measure child poverty consistently across countries, especially among traditionally high-income nations and emerging upper-middle-income countries. As several larger economies have been reclassified as upper-middle-income nations, poverty reduction has become a main goal, which has led to a strong need to revisit issues regarding comparability in measurements of child poverty in countries with large differences in terms of their living standards and welfare regimes.

This paper contributes to the existing literature on poverty studies in two ways. First, instead of choosing one time point of a country for comparison, we estimated the trends of data of deep and extreme child poverty in two clusters of HICs and MICs to trace the poverty dynamics among this vulnerable population and to assess any progress that has been made over time under different social program provisions and welfare regimes. Second, we employ two equivalence scales to capture the absolute extreme poverty level and adjust the fixed poverty lines over time for inflation using the national CPI throughout the period examined to estimate the different level poverty rates across these countries, through which we aim to offer new insights into the efforts of poverty measures via a more consistent channel.

Our aim is to foster a better understanding of what extreme child deprivation problems look like in a global context and what could be done in terms of safety nets or poverty-oriented economic growth to lift the poorest children out of poverty. We also tried to explore what other factors may have key influences on extreme child poverty rates. In addition to the trends of deep and extreme poverty for each nation, we estimated the market income poverty levels; addressed the comparative roles of private transfers, social insurance, and universal benefits; and targeted cash as well as near-cash transfers and taxes on extreme poverty.

The prevalence of large-scale social programs in Brazil, South Africa, and India demonstrates a response by the Global South to material deprivation. We observed a substantial reduction in child poverty in all 4 MICs during the examined period, with India experiencing the most dramatic drop. These trends were driven both by overall economic growth, which reduces market income poverty, and by income supports that raise family incomes and add in investments in health and education to better prepare children and each nation for further growth. In the latest years examined, interventions in public benefit systems became more prevalent in

the MICs relative to their previous periods, with substantial reductions that resulted from CCT occurring in Brazil and South Africa.

Even though less-developed nations tend to lean more on private transfers because they have relatively fewer comprehensive social protection systems, Brazil appeared to have smaller proportions of inter-household transfer flows; instead, universal programs gradually became a vital means of reducing deep child deprivation, along with the gradually stronger social assistance. India, however, stands out with its large inter-household transfer payments as its major means of helping to lift impoverished children out of poverty. In addition, South African social assistance appeared robust in terms of benefiting the deep poor.

The antipoverty effects of a household's income package in disadvantaged households with children varied across the 9 countries of interest in terms of their levels of reliance on public transfers or private support in fighting against deep poverty. Compared to other high-income counterpart nations, the US constantly experienced higher child poverty rates, regardless of the relative or absolute terms. Social insurance and universal programs in the US tend to be meager compared to those in other high-income countries, and the overall portion that the US contributes to reducing its deep child poverty is far lower than the portion Brazil contributes. While the overall reduction of deep poverty in the US is mostly due to means-tested programs, private transfer flows are also non-ignorable. A recent proposal for an unconditional monthly child allowance in the United Sates would eliminate deep child poverty at a very reasonable cost, were it implemented (Shaefer et al, 2018).

It is also worth noting that, in the most recent year, Canada and Ireland increased their spending on social assistance programs, which substantially reduce deep or extreme poverty rates among children to tangibly lower levels, even when the effects are not yet shown.

The primary results show that nations with universal benefits do better in lifting children out of deep or extreme poverty than those with targeted programs alone in rich nations (Brady & Burroway, 2012). In contrast, private transfers and remittances from relatives abroad as well as conditional cash transfers benefit the poorest children in the middle-income countries. We conclude that some type of a universal child benefit—complementing basic public health care and education—is needed to eradicate long-term child poverty in all types of nations.

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Table 1. Historical classification by income among 4 middle-income countries

	2002	**2004**	**2006**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2015**
Brazil	LM	LM	**UM**							→
China	LM	LM	LM	LM	LM	**UM**				→
India	L	L	L	**LM**						→
RSA	LM	**UM**								→

Note: LM = Lower middle income; UM = Upper middle income; L = Low income;
RSA = the Republic of South Africa; Source: World Bank (2018)

Figure 1. Deep child poverty across middle-income countries
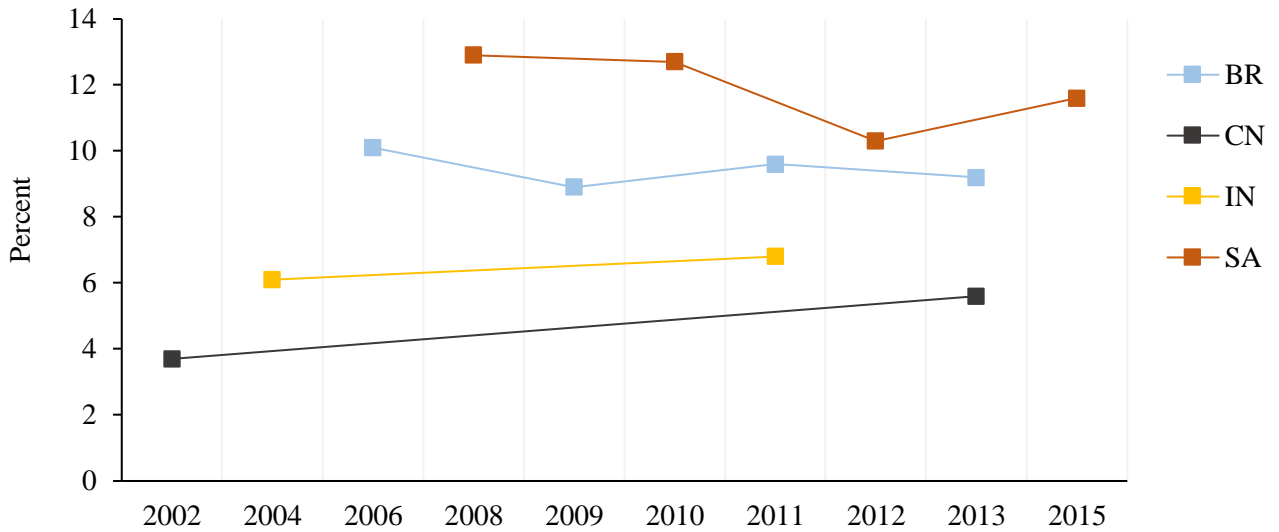
Note: Relative deep poverty is defined as income less than 25 percent of the national median equivalised disposable income. Source: Authors' calculation from LIS

Figure 2. Deep child poverty across high-income countries
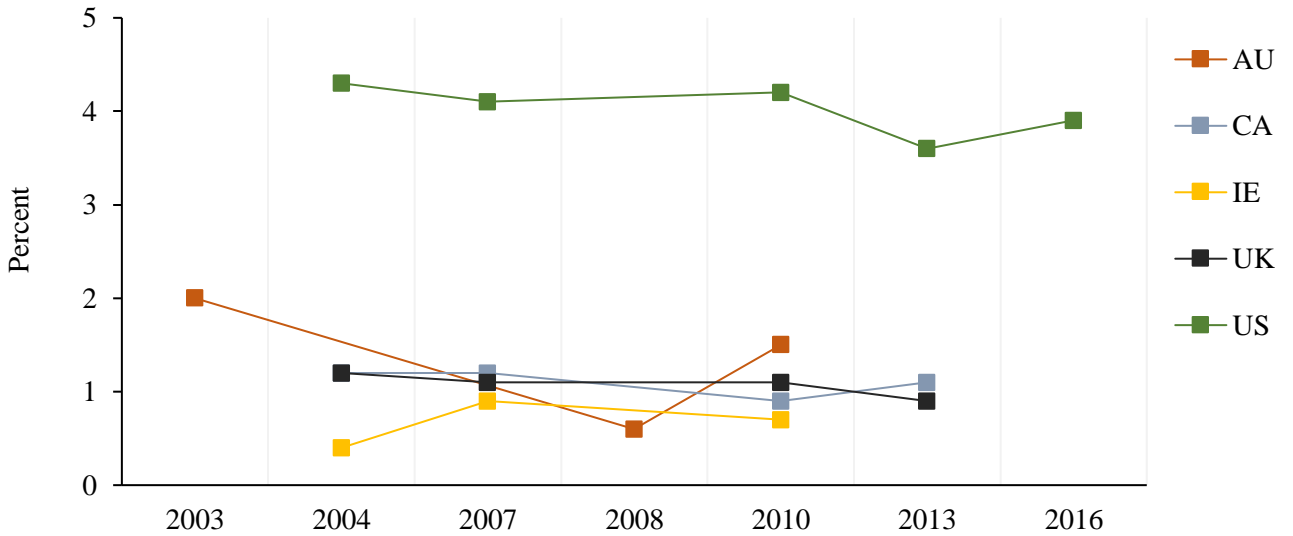
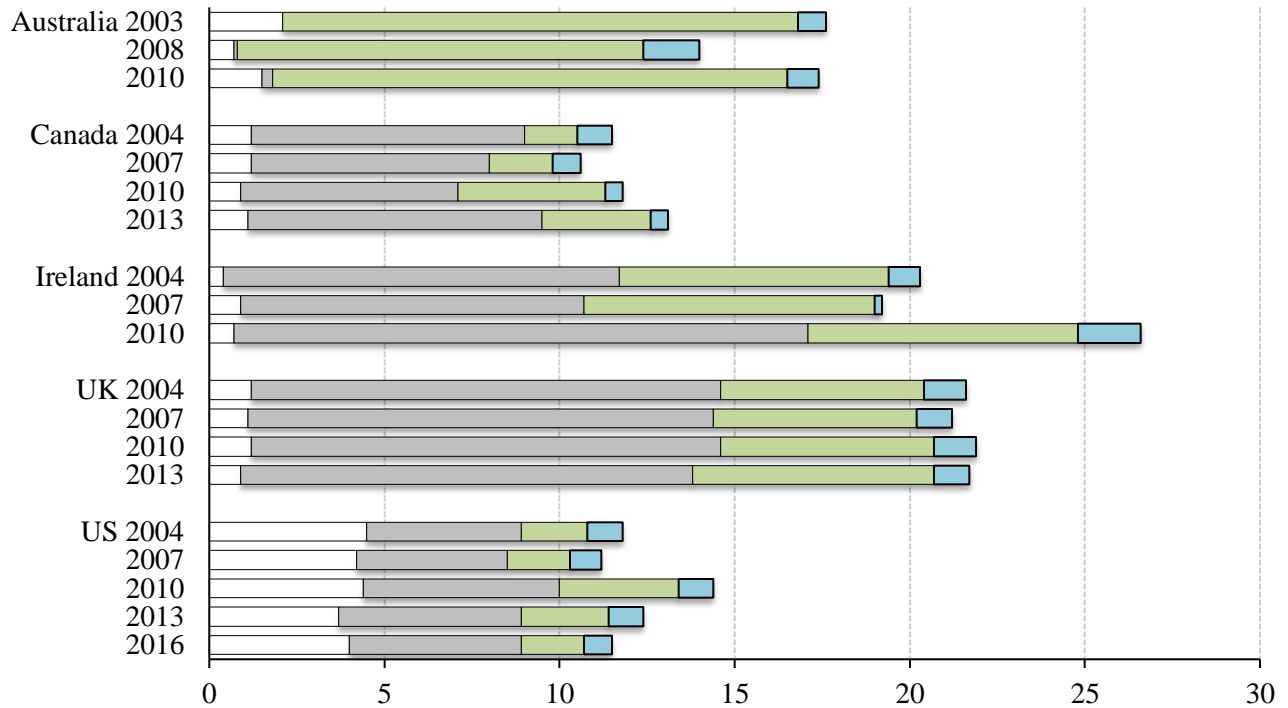Note: Relative deep poverty is defined as income less than 20 percent of the national median equivalised disposable income. Source: Authors' calculation from LIS

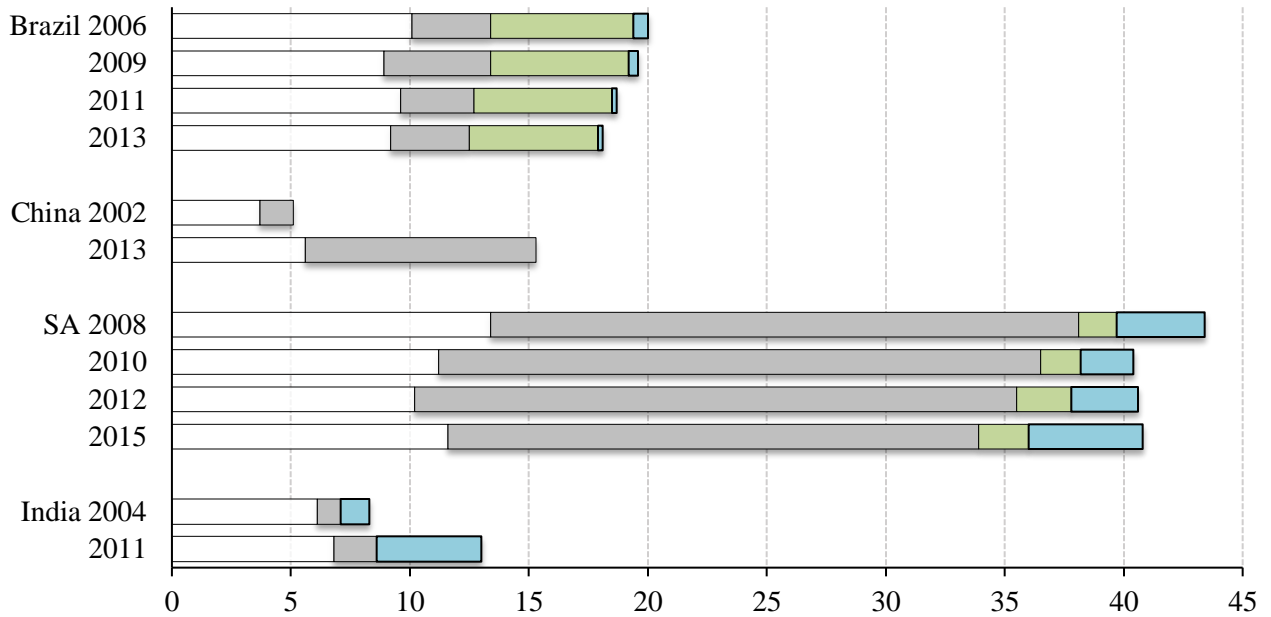Figure 3. Extreme child poverty across middle-income countries ($2 a day)
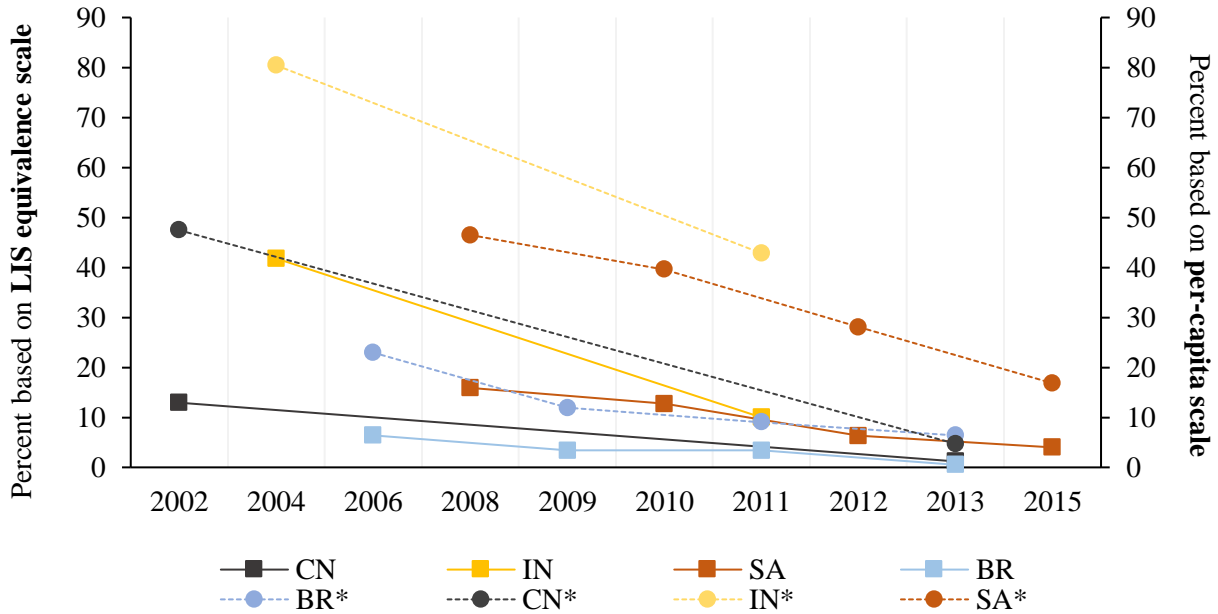
Note: Solid line is based on LIS square root; Dashed line displays the trend based on the per-capita scale.
Source: Authors' calculation from LIS

Figure 4. Extreme child poverty across high-income countries ($4 a day)
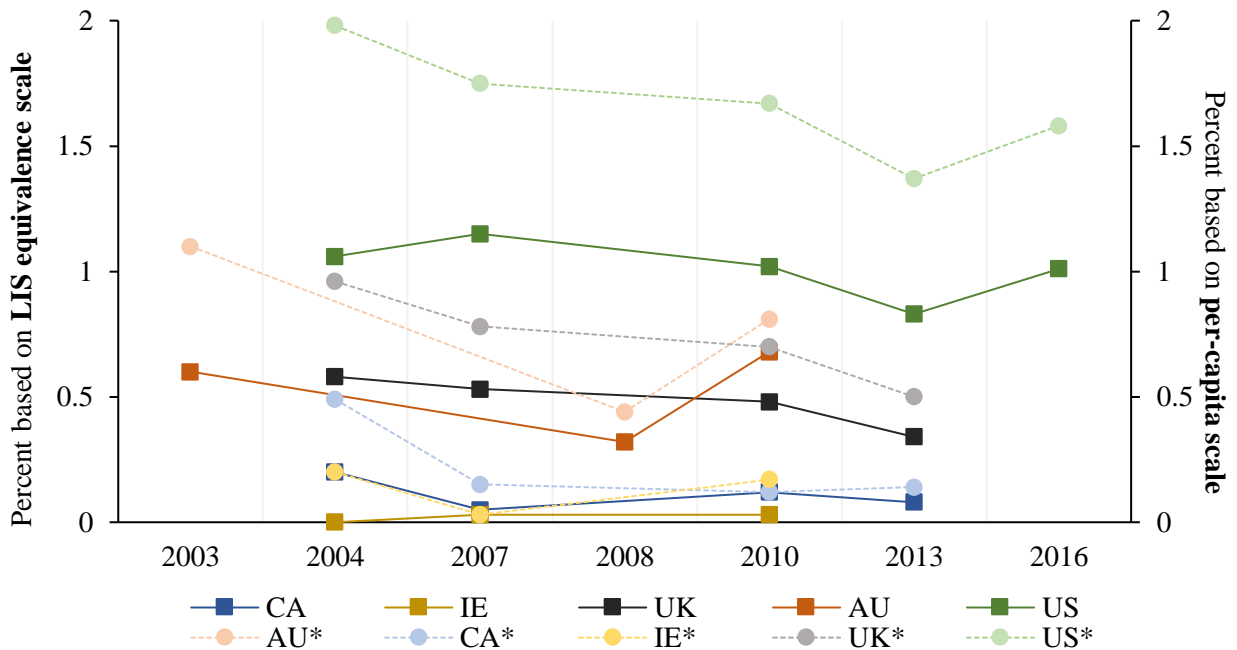
Note: Solid line is based on LIS square root; Dashed line displays the trend based on the per-capita scale.
Source: Authors' calculation from LIS

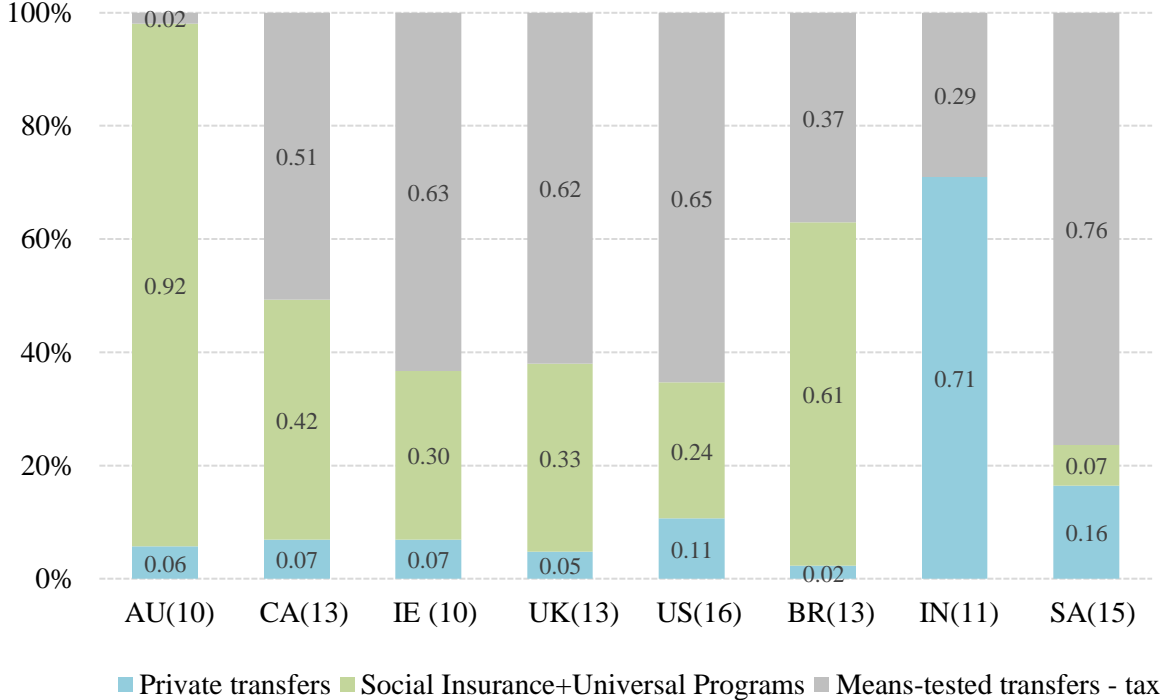Figure 5. Reductions in deep child poverty across high-income countries

Note: Deep poverty is defined as income less than 20 percent of the national median equivalised disposable income. The **light blue portion** represents reductions in child poverty from *private transfers*. The **green portion** represents additional reductions from *private transfers plus social insurance and universal programs*. Additional reductions from *private transfers, social insurance and universal programs*, *plus targeted transfers, minus direct taxes* (including refundable tax credits) are represented by the **gray portion**. Source: Authors' calculation from LIS

Figure 6. Reductions in deep child poverty across middle-income countries

Note: Deep poverty is defined as income less than 25 percent of the national median equivalised disposable income. The **light blue portion** represents reductions in child poverty from *private transfers*. The **green portion** represents additional reductions from *private transfers plus social insurance and universal programs*. Additional reductions from *private transfers, social insurance and universal programs*, *plus targeted transfers, minus direct taxes* (including refundable tax credits) are represented by the **gray portion**. Data from China regarding distinction of universal benefits, assistance benefits and private transfers is unavailable. Source: Authors' calculation from LIS

Figure 7. Percentage of deep child poverty reduction that each component accounts for (20% of DHI for HICs; 25% of DHI for MICs)

Legend: ■ Private transfers ■ Social Insurance+Universal Programs ■ Means-tested transfers - tax

Appendix:

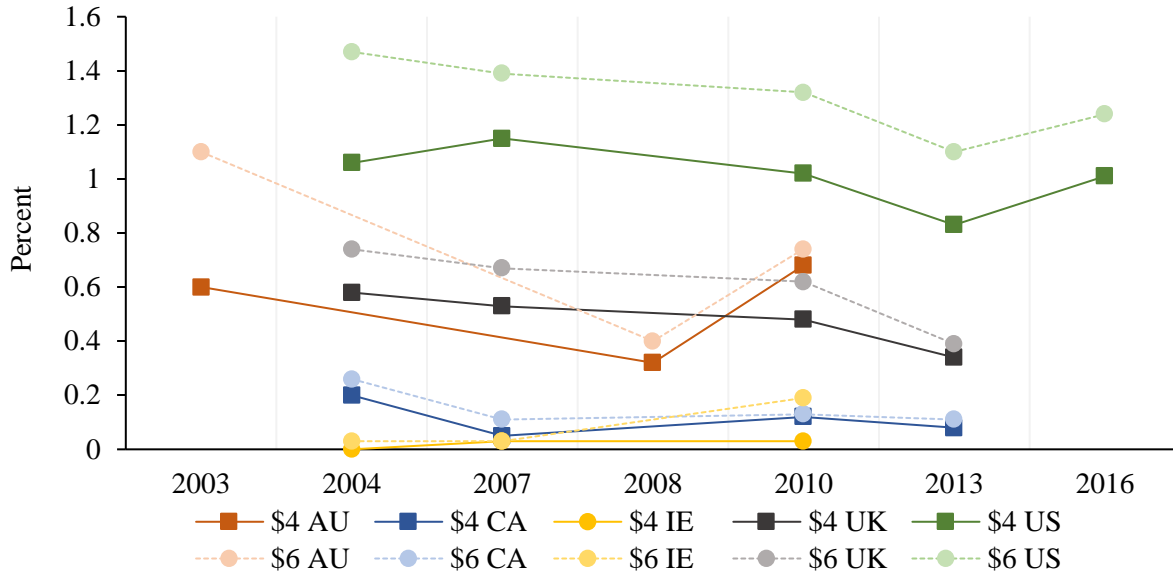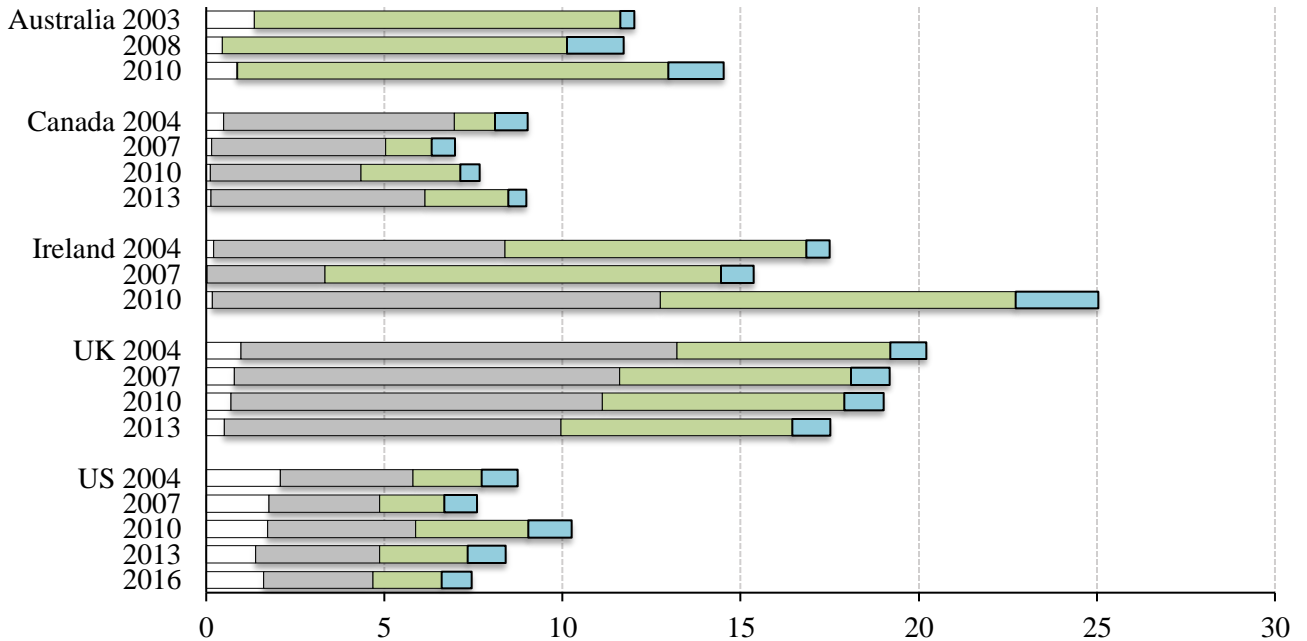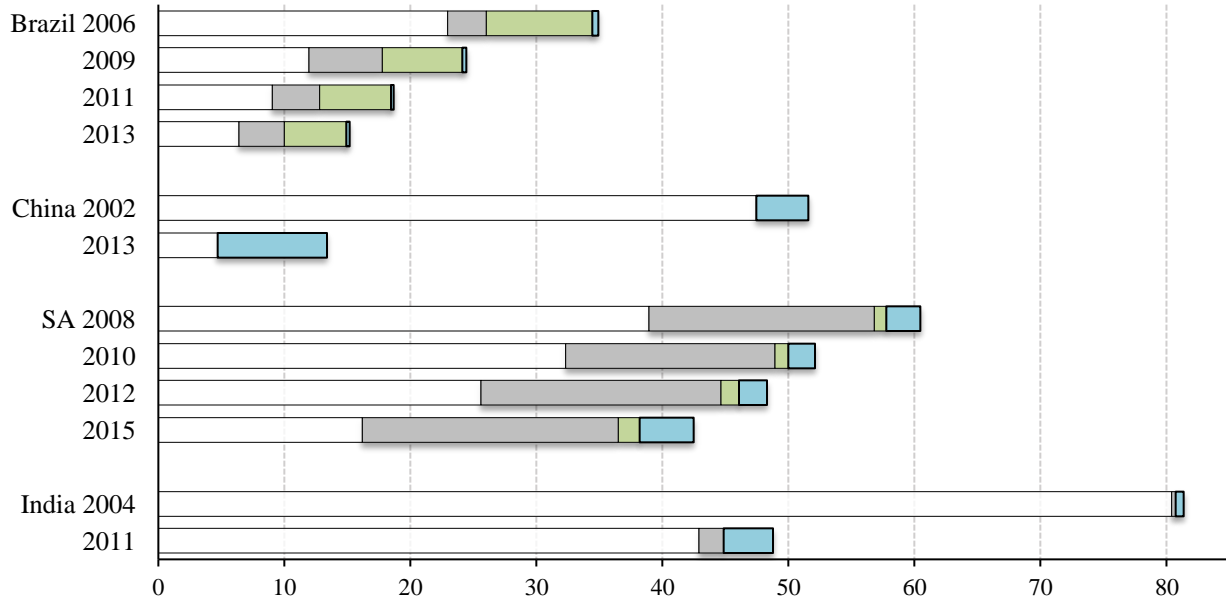Figure 8. Extreme child poverty across high-income countries (square root scale)

Figure 9. Reductions in extreme child poverty across high-income countries
($4 per day per person)

Note: The **light blue portion** represents reductions in child poverty from *private transfers*. The **green portion** represents additional reductions from *private transfers plus social insurance and universal programs*. Additional reductions from *private transfers, social insurance and universal programs*, plus *targeted transfers, minus direct taxes* (including refundable tax credits) are represented by the **gray portion**. Source: Authors' calculation from LIS

Figure 10. Reductions in extreme child poverty across middle-income countries
($2 per day per person)

Note: The **light blue portion** represents reductions in child poverty from *private transfers*. The **green portion** represents additional reductions from *private transfers plus social insurance and universal programs*. Additional reductions from *private transfers, social insurance and universal programs*, *plus targeted transfers, minus direct taxes* (including refundable tax credits) are represented by the **gray portion**. Data from China regarding distinction of universal benefits, assistance benefits and private transfers is unavailable. Source: Authors' calculation from LIS