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Child Poverty and Material Deprivation in the European Union during the Great Recession

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Office of Research Working Paper

WP-2014-No. 06 | July 2014

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For readers wishing to cite this document we suggest the following form:

Chzhen, Y. (2014). Child poverty and material deprivation in the European Union during the Great Recession, *Innocenti Working Paper* No.2014-06, UNICEF Office of Research, Florence.

ISSN: 1014-7837

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Country Abbreviations

Austria	AT
Belgium	BE
Bulgaria	BG
Cyprus	CY
Czech Republic	CZ
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Germany	DE
Greece	EL
Hungary	HU
Iceland	IS
Ireland	IE
Italy	IT
Latvia	LV
Lithuania	LT
Luxemburg	LU
Malta	MT
Netherlands	NL
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CHILD POVERTY AND MATERIAL DEPRIVATION IN THE EUROPEAN UNION DURING THE GREAT RECESSION

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Abstract. The 2008 financial crisis triggered the first contraction of the world economy in the post-war era. This paper investigates the effect of the economic crisis on child poverty and material deprivation across the EU-28 plus Iceland, Norway and Switzerland. First, it examines if children were affected by the crisis to a greater extent than the population as a whole. Second, it analyses inequities among households with children and the degree to which those in workless households, migrant households, lone parent families and large families were at a greater risk of poverty and deprivation. Finally, it studies the extent to which social safety nets may have softened the negative impact of the economic crisis.

The paper observes a negative relationship between the absolute change in economic output and the change in material circumstances of children: absolute increases in both child poverty and deprivation between 2008 and 2012 were larger in countries experiencing greater falls in GDP per capita. The relationship was stronger for child poverty, indicating that household income is more responsive to macroeconomic shocks. The effect of adverse economic circumstances was not distributed equally among households with children: in countries most affected by the crisis, notably Greece and Iceland, child poverty and deprivation rates rose substantially faster among children in workless households, lone parent families and migrant families than among the population of children as a whole. Controlling for the socio-demographic structure of the child population, both the child poverty rates and the severe deprivation rates were significantly lower in countries with more generous safety nets. However, once total social spending and working-age unemployment were accounted for, the effects of the minimum income protection indicator were no longer statistically significant. Social spending was associated with lower risks of child poverty at the start of the crisis only, when many European countries implemented fiscal stimulus packages, while unemployment had large effects on both poverty and deprivation throughout the entire period 2008-2012. This suggests that social safety nets and social spending did not shield children from the effects of labour market turbulence during the Great Recession.

Keywords: Great Recession, child poverty, deprivation, social transfers

JEL classification: I32, I38, J13

Acknowledgements: Many thanks to Jonathan Bradshaw, Aurelie Chun, Saara Hämäläinen, Luisa Natali, Kenneth Nelson, and Chris de Neubourg for their helpful comments and suggestions. I would also like to thank all members of the Innocenti Report Card 12 Advisory Board and the participants at the Foundation for International Studies on Social Security Conference 2014.

TABLE OF CONTENTS

1. INTRODUCTION

Following the global financial crisis, the world plunged into recession in 2009 for the first time in the post-war period (Keeley & Love 2010). The economy contracted by 3.6% in the 27 member states of the European Union (OECD Statistics). Poland was the only country to record positive, albeit modest, economic growth in 2009. This major economic downturn became known as the 'Great Recession'.[1] Although many of the countries of the EU returned to modest growth by 2011, this paper uses Great Recession as a catch-all term to refer to the period between 2008 and 2012, the last year for which internationally comparable data on household income are available for the EU. Thus, it has to be noted that for the countries that either have slid into recession relatively late or where the crisis has not peaked yet, this analysis may not pick up the worst effects of the crisis on children's material circumstances.

This paper examines changes in the living conditions of children during the Great Recession across the EU-28 plus Iceland, Norway and Switzerland. It focuses on the effect of the economic crisis on child poverty and material deprivation and the extent to which social spending and minimum income protection schemes may have softened its impact. First, it examines if children were affected by the crisis to a greater extent than the population as a whole. Second, it analyses inequities among children and the degree to which those in more vulnerable socio-demographic groups suffered greater changes in material well-being over the course of the Great Recession. Finally, it examines the cross-country variation in the ability of the social safety nets to soften the adverse impact of the economic crisis on children's material well-being.

It is widely acknowledged that poverty harms children not only at the time it is experienced (Brooks-Gunn & Duncan 1997), but it also often has longer term consequences (Gregg & Machin 2001; Corak 2006; Esping-Andersen & Myles 2009). Therefore, investment in children is seen as an effective way of achieving equality of opportunities for all (Esping-Andersen 2008). The necessity to address disadvantage early is one of the reasons why child poverty has been high on the political agenda of the EU, leading to the adoption of the European Commission Recommendation "Investing in Children: Breaking the Cycle of Disadvantage" (2013). The Recommendation is part of the broader EU Social Investment Strategy, which emphasises investment in human capital from a very early age.[2]

Furthermore, child poverty and deprivation can be seen as a breach of children's rights enshrined in the United Nations Convention on the Rights of the Child (CRC) (1989). In particular, article 27 of the CRC asserts that: "States Parties recognize the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development". The article also calls on the governments to assist parents (and others responsible for the child) to implement this right. Thus, the existence of child poverty, i.e. living below the adequate standard of living, can be interpreted as contravening the CRC (UNICEF 2005).

[1] Apparently first used in speeches in the Spring 2009 by the then Managing Director of the IMF Strauss-Kahn (2009), the term has been generally accepted into the research literature (e.g. Jenkins, Brandolini, Micklewright, & Nolan 2013).
[2] Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0083:FIN:EN:PDF.

2. LITERATURE REVIEW AND HYPOTHESES

It is notable that in most industrialized countries, at least a decade before the start of the Great Recession, time and again children were found to be at a greater risk of poverty than the population as a whole. In an influential study of income distributions across the OECD in the 1990s, Forster and Mira D'Ercole (2005) documented higher rates of relative income poverty among children in most countries. The first detailed analysis of child poverty across the EU, based on cross-country comparative data from the EU Statistics on Income and Living Conditions (EU-SILC) 2005, also highlighted that in most member states poverty rates were higher among children (Social Protection Committee 2008). This finding has been a consistent feature of every new wave of the EU-SILC to date. In the majority of EU countries, children were found to be at a higher risk of relative income poverty (Atkinson & Marlier 2010; Bradshaw et al. 2012) and material deprivation (Tarki 2011) than the overall population. This study therefore investigates whether children's material circumstances deteriorated during the Great Recession to a greater extent compared with the population as a whole. It is expected that children suffered more in the countries that were hit by the crisis more severely.

Because of the two- to three-year lag with which cross-nationally comparable household income data become available, evidence of the impact of the Great Recession on children across the EU has only just started to appear. However, research on previous downturns in industrialized countries suggests that economic crises tend to affect children excessively. For instance, child poverty measured in relative terms but anchored in the first year of each downturn increased during each of the previous three recessions in the UK (the 1970s, the early 1980s and the early 1990s), even as pensioner poverty was falling (Muriel & Sibieta 2009). In Sweden, economic hardship rose significantly among households with children during the 1990s recession, with the greatest increases in absolute poverty of all age groups recorded for those under 20 (Mood & Jonsson 2014).

Emerging evidence on the impact of the Great Recession indicates that children have indeed been adversely affected. According to the latest available data from the EU-SILC for 2011/2012, children were at a higher risk of poverty or social exclusion[3] than the overall population in all but five countries of the EU-28 (Social Protection Committee 2014). Across the OECD area, recent statistics highlight that children and young people were the groups hit hardest by the crisis (OECD 2014). In a study of the social impact of the crisis in Greece, Matsaganis (2013) documented a two-fold increase (from 21.8% to 42.6%) in the relative child poverty rate between 2009 and 2012, using the poverty line anchored in 2009.[4] In the United States, where the global financial crisis had originated, national child poverty rates rose from 18% in 2007 to 22.5% in 2011, with the number of high poverty states (with child poverty of 20% or higher) reaching 27: the original 14 plus additional 13 states tipping over the benchmark by 2011 (Isaacs & Healy 2012).

[3] The 'at risk of poverty' or social exclusion (AROPE) indicator is defined as the share of the population in at least one of the following three conditions: 1) at risk of poverty, meaning below the poverty threshold of 60% of the national median; 2) in a situation of severe material deprivation; 3) living in a household with a very low work intensity. The AROPE rate is one of the headline indicators to monitor the "EU 2020 Strategy" poverty target.

[4] Poverty estimates for 2012 were produced (or "nowcast") using the micro-simulation model EUROMOD using EU-SILC data from an earlier period.

Moreover, substantial differences in the risks of poverty persisted among households with children long before the start of the Great Recession. It has been well established that children in workless households, lone parent families, large families (those with three or more children) and households with lower educated adults were particularly vulnerable to poverty (Atkinson & Marlier 2010; Fusco, Guio, & Marlier 2010; Social Protection Committee 2008; Tarki 2011; de Neubourg et al. 2012). Among children in lone parent families, those in single-unit households, female headed households, large families and those where the parent did not work full-time were more likely to be poor or deprived (Chzhen & Bradshaw 2012). In countries with sufficiently large migrant populations to obtain reliable estimates from household surveys, children in households headed by foreign-born adults were also consistently more likely to be poor (Tarki 2011). Therefore, this study analyses inequities in the impact of the crisis on children, expecting to find higher absolute increases in child poverty and deprivation among children in the types of households that had already been more vulnerable before the crisis.

There is ample cross-country comparative research evidence, spanning the period at least two decades before the start of the Great Recession, that greater levels of social spending are associated with lower poverty rates across industrialized countries. Using data for 15 affluent countries from the Luxembourg Income Study (LIS), Kenworthy (1999) reported a strong negative association between different measures of social policy extensiveness for the period 1960-91 and poverty rates in 1991, controlling for the GDP per capita in 1960. In a more recent and statistically sophisticated analysis of the LIS, Bäckman and Ferrarini (2010) found a significant association between family policy transfers and lower child poverty risks across 21 countries, controlling for country differences in the socio-demographic structure. Pooling data for 22 OECD countries for five equally spaced time points between 1985 and 2005, Caminada et al (2012) found social expenditure as a share of the GDP to be significantly associated with lower poverty rates, controlling for the share of the population over 65, unemployment rate and the GDP per capita.

At the same time, evidence for the relationship between social spending and material deprivation, rather than income poverty, is more ambiguous. Nelson (2012) reports a significant negative association between an individual's risk of material deprivation and levels of social assistance in 26 European countries in a multilevel model using data from the EU-SILC 2008, even after controlling for GDP per capita. In a macro-level analysis, Kenworthy et al (2011) find a significant relationship between deprivation and government social expenditure as a percentage of GDP, but they find no linear association between GDP per capita and material deprivation for a sample of 15 rich countries as of 2005. The authors find this result puzzling and suggest that it may be driven by the inclusion of the United States, which has high levels of both GDP per capita and material deprivation. In contrast, Chzhen and Bradshaw (2012) observe lower deprivation risks for children in lone parent families in countries with more generous social transfers, using multilevel models, although the effect washes out when the level of country wealth is controlled for.[5]

This paper investigates the effects of minimum income safety nets on children's poverty and deprivation risks during the crisis, controlling for relevant household level and macroeconomic

[5] Across the EU, material deprivation tends to be lower in richer countries (i.e. with higher GDP per capita), especially since the enlargement (see Gilbert 2009).

characteristics. It focuses on the non-contributory social transfers, rather than contributory unemployment insurance, because long-term unemployment surged in many countries, with ever more households falling on the social safety nets of last resort. Moreover, children in households where no adults work, especially in lone parent families, had already been at a higher risk of poverty before the Great Recession. Adequate minimum income protection can smooth incomes at times of temporary job loss as well as ensure a decent standard of living to those without access to work or other income replacement schemes.

In light of the documented negative pre-crisis relationship between social transfers and poverty risks, social policies in place at the time of the crisis should, in theory, have cushioned the impact of the Great Recession on households by supporting incomes when employment was scarce. However, minimum income provisions have been eroding in many European countries for around two decades, with ever greater emphasis on work-related requirements and less generous cash transfers (Van Mechelen & Marchal 2012; Nelson 2013; Marchal, Marx, & Van Mechelen 2014). Moreover, the crisis itself put pressure on governments to engage in fiscal consolidation, with social protection systems falling under threat when they were most needed (Immervoll & Llena-Nozal 2011). Thus, it is of interest if the generosity of the social safety nets in place during the crisis was associated with lower levels of child poverty and deprivation, once relevant macro-economic indicators are controlled for.

3. DATA, VARIABLES AND METHODS

This paper uses micro-data from the EU-SILC 2008-2012 for 31 European countries (EU-28 plus Norway, Iceland and Switzerland). The EU-SILC is the main source of information on living standards in the EU, collecting nationally representative and cross-country comparable statistics on income and social inclusion.[6] Since income poverty and material deprivation estimates produced by Eurostat are derived from the EU-SILC, this paper uses published indicators for descriptive statistics wherever possible, while all multivariate analyses rely on the micro-data from the user database.[7] The 2008 wave is used as the pre-crisis baseline in this study because the EU economy only slipped into recession in 2009. However, the income reference year in the EU-SILC is the calendar year before the interview (for all EU-SILC countries except the UK and Ireland). Thus, child poverty rates estimated using the 2008 wave of the survey refer to 2007 incomes, while the material deprivation indicator refers to 2008. Therefore, when it comes to the last year for which the survey data are available, i.e. 2012, the material deprivation indicator is more up to date.

This paper uses both income poverty and material deprivation to analyse temporal changes and cross-country variation in children's material well-being over the course of the Great Recession. There is a vast literature discussing conceptual and empirical differences between income poverty and material deprivation generally (Boarini & Mira D'Ercole 2006; Fusco et al. 2010; Gilbert 2009; Nolan & Whelan 2010) and in relation to children (de Neubourg et al. 2012). It is widely acknowledged that they are conceptually related but distinct measures that do not necessarily

[6] The EU-SILC is based on a common legal framework, where all participating countries use the same list of target variables and their definitions, and data collection guidelines (ex-ante output harmonisation). For more information, see http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/eu_silc.

[7] Using publicly available statistics wherever possible increases the transparency and replicability of the analysis. However, there may be discrepancies for some countries between the estimates published by Eurostat and those derived from the EU-SILC user database because although Eurostat revises their statistics continuously, updates to the user database are released less frequently (approximately twice a year).

identify the same populations. In this paper the two indicators are used side by side. It is expected that the effect of the crisis is more visible for monetary poverty than for material deprivation because the former is more sensitive to variations in the income stream (Whelan, Layte, & Maître 2004).

Using the conventional EU measure of child poverty, children are counted as income poor ("at risk of poverty") in 2008 if they live in households with equivalent[8] disposable income (after taxes and transfers but before housing costs) below 60% of the national median. Low income, adjusted for household size and composition, is thus measured with reference to the 'average' person in the society. However, the relative poverty indicator is less useful during the crisis, when the living standards of the whole population may be changing. For example, if everyone's income falls by the same amount, no one will appear to have become any poorer in relative terms.

Thus, in order to measure the change in living standards since the crisis, the baseline poverty line is held constant. It is adjusted for price inflation but not for changes in median incomes, so that "individuals may compare their material circumstances not only with those of *the average person* in the society in which they live, but also with their own in a previous period" (Matsaganis 2013, p. 10). Moreover, during economic crises, the anchored poverty rate is more sensitive to the deteriorating living conditions of the poor (Social Protection Committee 2013).

Changes in the anchored child poverty rate during the Great Recession have not been analysed extensively in the comparative literature to date. The EU Social Protection Committee (2014) reports a significant increase in the rate of relative child poverty or social exclusion (AROPE) between 2008 and 2012 in two-thirds of the member states. The AROPE indicator is based on the moving poverty line, so it is less pertinent during the time of economic turbulence. Furthermore, it combines poverty, severe material deprivation and low work intensity; as such, it is subject to critique on conceptual and empirical grounds (Nolan & Whelan 2011). Where changes in the anchored poverty rate across the EU or the OECD are reported, it is usually only done for the overall population (Caritas Europa 2014; OECD 2014; Social Protection Committee 2014).

In the absence of a dedicated child deprivation indicator, the child deprivation rate in the EU is calculated as the share of children living in households that report inability to afford at least three out of nine items:[9] 1) to face unexpected expenses; 2) to afford a one week annual holiday away from home; 3) to pay for arrears; 4) to have a meal with meat, chicken or fish every second day; 5) to keep the home adequately warm; 6) to have a washing machine; 7) to have a colour TV; 8) to have a telephone; 9) to have a personal car. The severe material deprivation indicator uses the threshold of four items out of nine. Here, the cut-off of four items is used for consistency with the AROPE measure.[10]

The 2009 round of the EU-SILC included a dedicated child-specific deprivation module, which would have been preferable for the analysis of children's circumstances (see de Neubourg et al.

[8] Income is equivalised using the 'modified OECD' scale.
[9] See Guio (2009) for a discussion of methodological issues involved in constructing the EU material deprivation indicator.
[10] Across 30 countries studied here, there is a very high correlation ($r=0.91$, $p<0.001$) between the percentage point change in the standard child deprivation rate and the change in the severe child deprivation rate. The only exceptions are Slovakia and Hungary, where severe deprivation increased to a greater extent than would have been (linearly) predicted based on their standard deprivation rates, and Ireland and Poland, where the reverse pattern was observed.

2012; Guio, Gordon & Marlier 2012). However, as the child deprivation module is currently only available for one wave, it cannot be used to analyse the changes during the Great Recession.

To examine if children were affected by the crisis more than the overall population, the percentage point difference is calculated between the child (overall) poverty rate estimated from the 2012 wave of the EU-SILC (but anchored in 2007/2008) and the baseline child (overall) poverty rate estimated from the 2008 wave of the survey. The absolute difference in the poverty change between children and the overall population is then used as an indicator of how much poorer children have become over the course of the Great Recession compared to the population as a whole. The corresponding indicator of changes in material deprivation is constructed the same way.

To analyse the inequities in the effects of the crisis on children, changes in child poverty (material deprivation) are estimated separately for children with the household characteristics previously associated with greater risks of poverty (i.e. lone parent families, large families, migrant households, low work intensity households). The absolute difference in the poverty (material deprivation) change between children in each of these sub-groups and the rest of the child population is then calculated. This helps investigate the extent to which the most economically vulnerable children may have been affected disproportionately.

In order to study the degree to which social safety nets may have softened the negative impact of the economic crisis on children's material well-being, a proxy for the generosity of social safety nets needs to be chosen. One approach is to use social spending as a share of the GDP, but this indicator may be affected by many factors besides policy (see Nelson 2012). However, it is a useful indicator of the size of the welfare state. Another potential measure is the change in the national child poverty rate before and after social transfers. Used as an indicator of social transfers' effectiveness in poverty reduction (e.g. Social Protection Committee 2014), it has intuitive appeal, but is based on the unrealistic assumption that the counterfactual pre-transfer income distribution is independent of the welfare state (see Bergh 2005). For instance, the indicator assumes that the labour supply and household formation of individuals would not have been different in the absence of social transfers.

Instead, this study uses the 'model family' approach to operationalise the generosity of social safety nets. The governing tax and benefit rules are used to calculate the net income available to stylised households (e.g. single adult; lone parent with two pre-school children) who have no market income. While tax and benefit micro-simulations (e.g. EUROMOD) can derive the net income for any type of household, the model family approach simplifies this by focusing on a small number of representative type cases.

This paper uses data from the *Social Assistance and Minimum Income Protection Interim Dataset* (SaMip 2.6). Compiled by Nelson (2007, 2010b) in an ongoing project, it currently covers 35 industrialized countries for every year between 1990 and 2013, which makes it particularly suited to the current study.[11] It has been specifically designed to assess the impact of institutions on household income in a comparative and longitudinal perspective. Indicators of social assistance

[11] However, data for Italy are missing from 2010 onwards.

generosity from SaMiP have been extensively analysed in the literature (Nelson 2010a, 2012, 2013; Pfeifer 2012).

In order to account for the fact that minimum income protection schemes tend to be more generous in richer countries, this study uses the value of the MIP package available to "typical" families (averaged over the amounts for the lone parent family type case and the couple family type case), as a share of the GDP per capita.

Country level data from the SaMip database and individual-level data from the EU-SILC are combined in one dataset. In order to correctly account for its hierarchical structure, i.e. children nested within countries, and to be able to estimate the effects of country level variables on the individual level outcomes, this paper uses the multilevel modelling approach (see Snijders & Bosker 2012). Thus, the association between a micro-level measure of material well-being (i.e. income poverty or material deprivation) and a macro-level indicator of social safety nets' generosity is estimated here controlling for various relevant household characteristics and macroeconomic indicators.

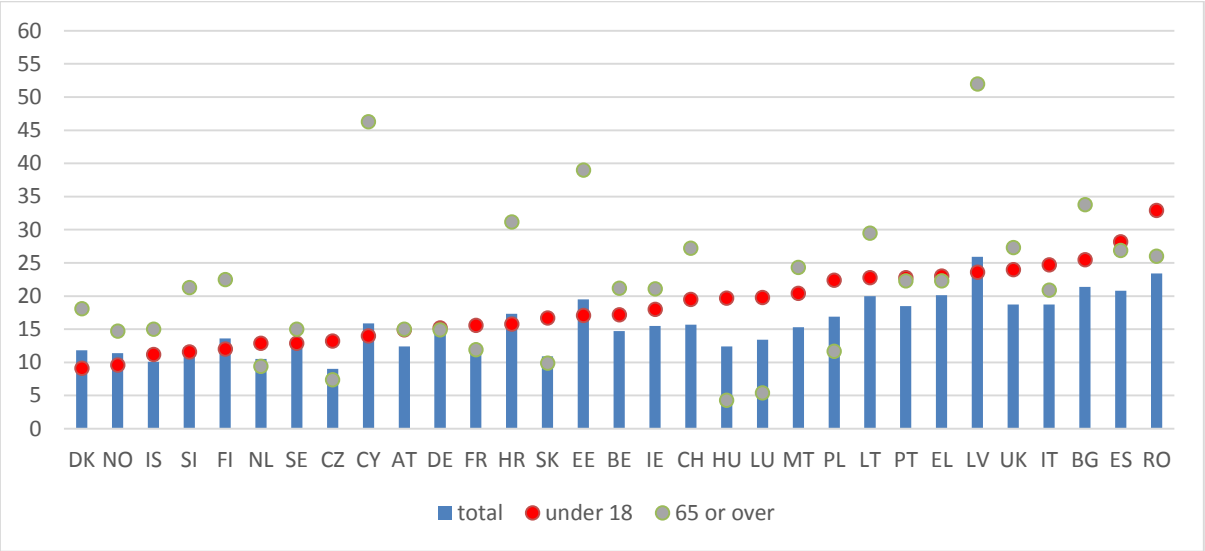
4. RESULTS

Changes in child poverty between 2008 and 2012

There was a lot of variation in child poverty levels before the start of the Great Recession. In 2008, the share of children living in households with equivalent income below 60% of the national median ranged from around one in ten (9-13%) in the Nordic countries, the Netherlands and Slovenia to between a quarter and one-third (25-33%) in Bulgaria, Spain and Romania. In 11 out of 31 countries in this analysis, at least one in five children were at risk of poverty in 2008.

Moreover, children were often more likely to be poor than the population as a whole (Figure 1a). In 20 out of 31 countries, child poverty rates exceeded the total poverty rates by 2ppt or more. In contrast, total poverty rates exceeded the child poverty rates by at least 2ppt in four countries only, i.e. Cyprus, Denmark, Estonia, and Latvia. However, in the two Baltic countries and Cyprus, population poverty appeared to have been driven by inordinately high pensioner poverty rates.

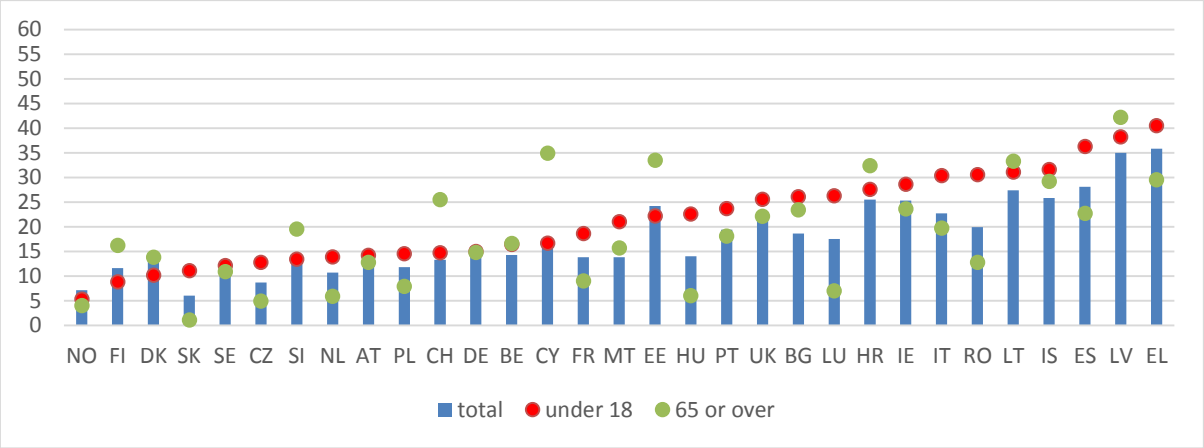
Figure 1a At-risk-of-poverty rate of children (0-17), the elderly (65 or over) and of the total population in 2008 (%)



Sorted by the child poverty rate.
Source: Eurostat (last update 16.06.2014). Estimates for Croatia are based on the Household Budget Survey, reported by Eurostat.

Keeping the national poverty thresholds at their 2008 levels in real terms allows for a consistent comparison of child poverty rates since 2008. Figure 1b shows the variation in the 2012 poverty rates anchored in 2008. The Czech Republic, the Netherlands, Slovakia, Slovenia and the Nordic countries (with the notable exception of Iceland) remained at the lower end of the ranking, with child poverty rates below 15%. The highest child poverty rates were observed in Spain (36%), Latvia (38%) and Greece (41%), with at least one in three children at risk of poverty. In most countries children remained more likely to be poor than the overall population. Only in Denmark, Finland and Estonia were child poverty rates appreciably lower than the total poverty rates (by around 2ppt). Meanwhile, in Hungary, Luxembourg, Romania and Spain, child poverty rates were at least 8ppt higher than for the population as a whole. Child poverty also tends to exceed pensioner poverty: in seven countries child poverty rates were at least 10ppt higher, while in only three were they at least 10ppt lower than poverty rates for those aged 65 and over.

Figure 1b At-risk-of-poverty rate, anchored in 2008, of children (0-17), the elderly (65 or over) and of the total population in 2012 (%)



Sorted by the anchored child poverty rate. Break in the series for Austria and the UK.
Source: Eurostat (last update 16.06.2014); EU-SILC 2012 for Croatia.[12]

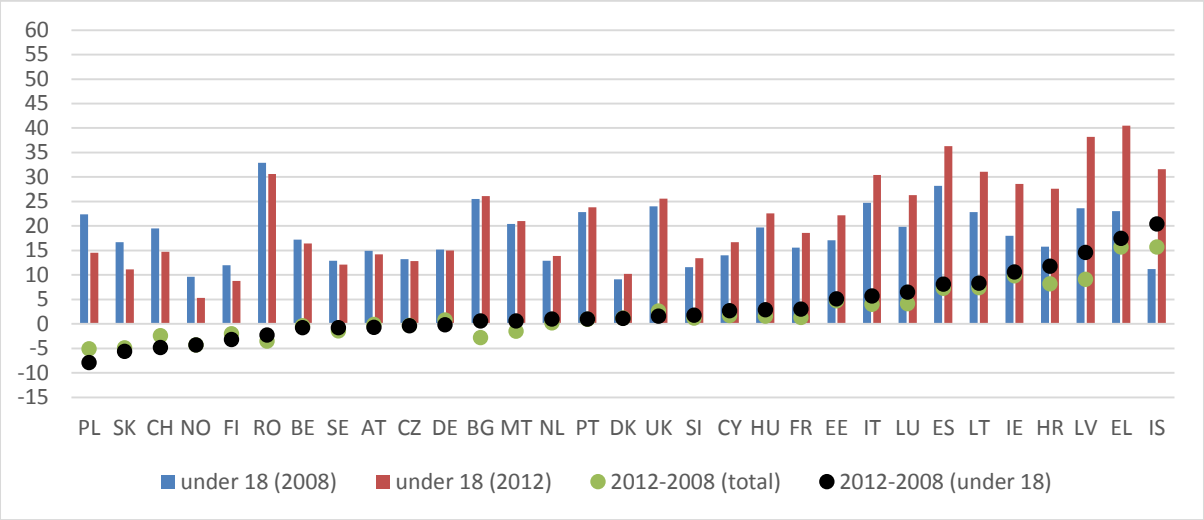
In about a third of the countries studied here, child poverty rates have increased since 2008. Figure 1c shows the absolute change in child poverty and in total poverty between 2008 and 2012. The biggest absolute increase in child poverty was observed in Latvia (15ppt), Greece (18ppt) and Iceland (20ppt). In 18 countries, child poverty has increased by at least 1ppt, which can be interpreted as statistically significant.[13] However, while focusing on changes in child poverty since the start of the economic crisis, it is important not to lose sight of the absolute levels. After a substantial increase in poverty, Iceland had some of the highest 'anchored' child poverty rates in 2012, but so did Romania after a 2ppt decrease in poverty since the pre-crisis levels. In both countries, nearly one-third of children were poor in 2012 based on the 2008 threshold. Similarly, after a negligible increase in child poverty in Bulgaria, over one-quarter of children were poor in 2012. Meanwhile, in five countries child poverty rates dropped by at least 3ppt to reach the comparatively low levels of 5-15%: Finland, Norway, Poland, Slovakia and Switzerland. This suggests an improvement in children's living standards in these countries since the pre-crisis levels.[14]

Furthermore, Figure 1c shows that the change in the poverty rate between 2008 and 2012 was larger in absolute terms for children than for the population as a whole in many countries, although rarely by a large margin. This is not surprising, since child poverty rates are subsumed in the total population rates. Among the countries where poverty either rose faster or fell slower among children, only in six of them did the difference exceed 2ppt (Malta, Luxembourg, Bulgaria, Croatia, Iceland, and Latvia). The biggest differential was observed in Latvia, where the poverty increase among children exceeded that for the whole population by nearly 6ppt, suggesting that

[12] The results for Croatia need to be interpreted with extreme caution because the 2008 poverty rate (and the poverty threshold) is based on the Household Budget Survey, while the 2012 estimate is based on the EU-SILC. The two surveys have different fieldwork and income reference periods, sample designs and income definitions.
[13] To measure changes in the share of children at risk of poverty or social exclusion between 2008 and 2012, Eurostat uses 1ppt as the statistical significance threshold (Social Protection Committee 2014, fig. 19).
[14] However, it could be argued that Poland and Switzerland have not experienced the economic crisis: economic output grew year on year in Poland between 2007 and 2012, while in Switzerland the economy contracted (by a relatively moderate 2%) in 2009 only.

children were affected by the crisis disproportionately. At the other end of the ranking, in Poland and Switzerland poverty fell faster among children (by about 2ppt).

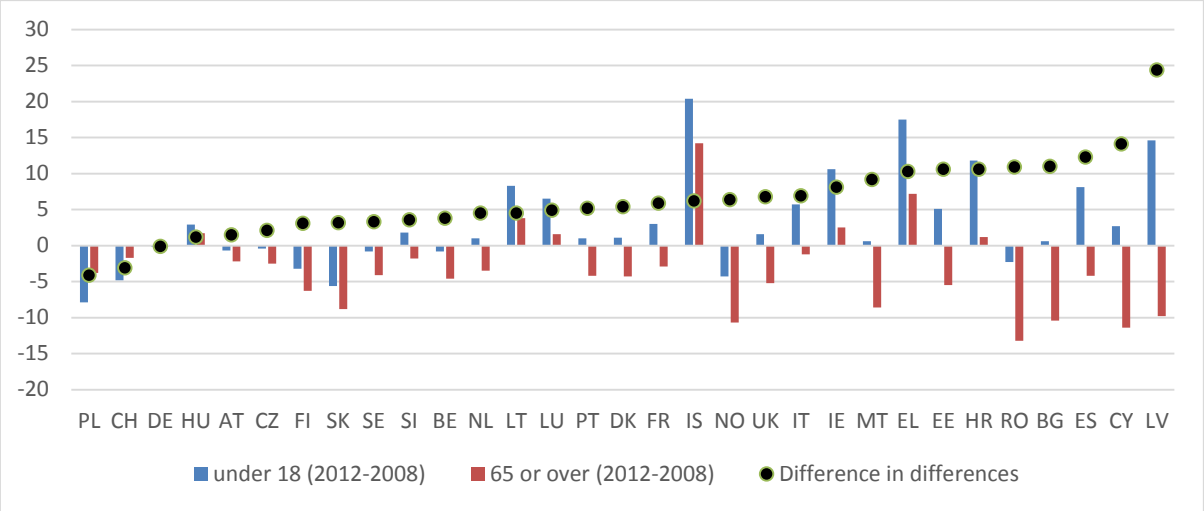
Figure 1c Absolute difference in the at-risk-of-poverty rate, anchored in 2008, between 2008 and 2012 (%)



Sorted by the difference in the anchored child poverty rate between 2008 and 2012. Break in the series for Austria and the UK in 2012.
Source: Eurostat (last update 16.06.2014); HBS 2008 and EU-SILC 2012 for Croatia.

Finally, Figure 1d shows that in most of the countries studied here, poverty increased faster or fell slower for children under 18 than for the elderly population (65 or over). The only exceptions are Poland and Switzerland, where child poverty fell faster, and Germany, where poverty rates have not changed between 2008 and 2012 for either sub-group. The biggest differential was recorded in Latvia, where child poverty increased by 15ppt while it fell by 10ppt for the elderly, suggesting once again that children were singularly affected by the crisis. However, the elderly (42%) were still more likely to be poor than children (38%). Cyprus had the next biggest gap, with child poverty increasing by 3ppt even as elderly poverty decreased by 11ppt. Nevertheless, the elderly poverty rate (35%) was twice as high as the child poverty rate (17%) in 2012.

Figure 1d Absolute difference in the 2008-2012 change in the at-risk-of-poverty rate (anchored in 2008) between children and the elderly (%)

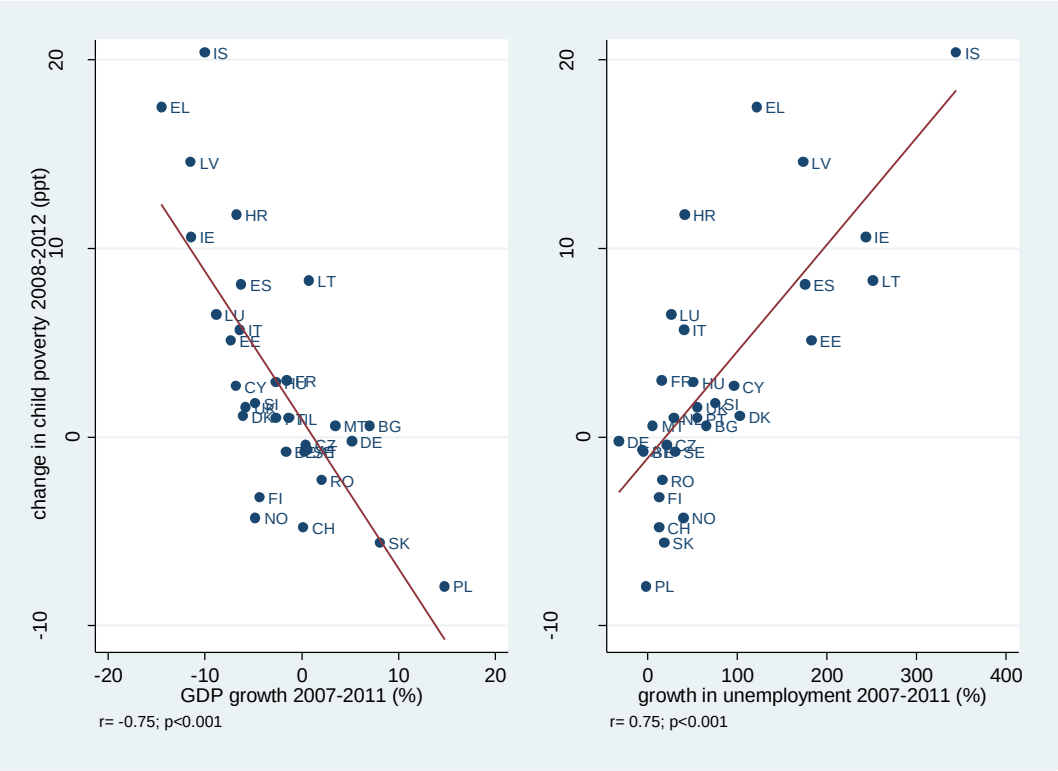


Sorted by the difference in the anchored poverty rate increase between children and the elderly. Break in the series for Austria and the UK in 2012.
Source: Eurostat (last update 16.06.2014). HBS 2008 and EU-SILC 2012 for Croatia.

Unsurprisingly, changes in child poverty went hand in hand with changes in economic conditions. Across 31 countries, there was a significant negative relationship between economic growth and the change in the share of poor children. Absolute increases in child poverty over 2008-2012 were larger in countries experiencing greater falls in the real GDP per capita during the same income reference period.[15] Child poverty changes were also significantly related to the growth in the working-age (25-64) unemployment rate[16] (Figure 2). This is not surprising given the evidence that the crisis affected households mainly through the labour market (see EBRD 2011). Since unemployment rate growth is negatively related to economic growth ($r=-0.54$, $p<0.01$), it is important to net out their corresponding influence on the change in child poverty to avoid detecting spurious relationships. Table 1 reports both the raw and partial correlations between the absolute change in child poverty and the relative changes in the GDP per capita (constant prices) and in the unemployment rate during the same period. Both economic growth and unemployment remain significantly related to child poverty, with partial effects of comparable size.

[15] Since income was measured during the calendar or tax year before the interview (or the 'floating' 12-month period before the interview in Ireland), the child poverty change between 2008 and 2012 refers to the period 2007-2011 (except for the UK where it is 2008-2012 because the income reference period is the current year).
[16] Child poverty changes were more strongly related to growth in unemployment (i.e. (unempl(t)-unempl(t-1))/unempl(t-1)) than to absolute changes in the unemployment rate.

Figure 2 Absolute differences in the at-risk-of-poverty rate, anchored in 2008, between 2008 and 2012 and GDP growth over the same period



Source: child poverty rates from Eurostat (last update 16.06.2014); GDP per capita (constant prices) from the World Economic Outlook database (April 2014); Working age (25-64) unemployment rate from OECD.Stat (extracted on 24.04.2014). GDP growth (constant prices) for 2008-2012 for the UK.

Table 1 Raw and partial correlations with the change in child poverty (2008-2012)

	Raw correlation	Partial correlation
GDP growth 2007-2011	-0.75***	-0.61***
Unemployment rate growth 2007-2011	0.75***	0.62***

Note: ***p<0.001; **p<0.01. N=31.

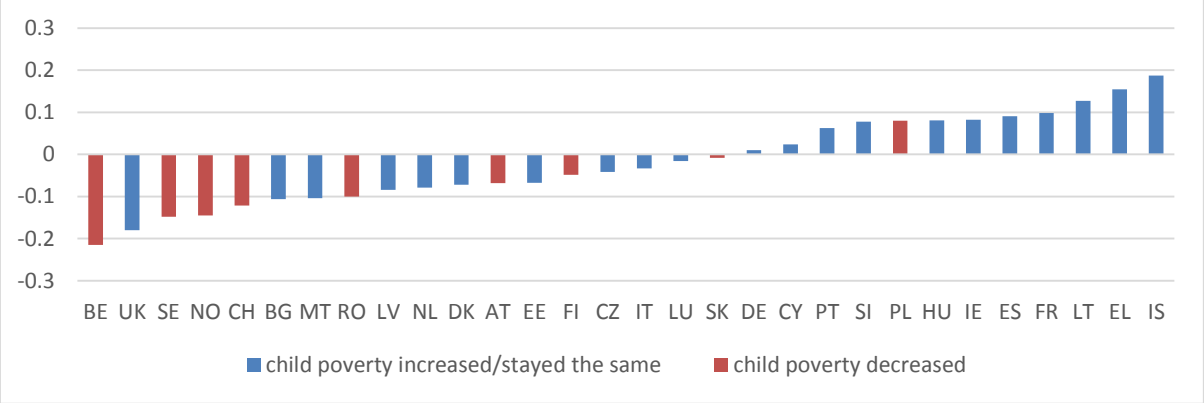
Inequities in child poverty change between 2008 and 2012

Eurostat defines very low work intensity households as those where working age (18-59) adults work less than one-fifth (0.20) of the potential time over the course of the income reference period. The work intensity measure is calculated as the "ratio of the total number of months that all working-age household members have worked during the income reference year and the total

number of months the same household members theoretically could have worked in the same period".[17] Thus, low work intensity is not the same as joblessness.[18]

Figure 3 ranks the countries according to the absolute difference in child poverty change over the period 2008-2012 between children in low work intensity households and those where adults work at least 20% of the potential time. At the right hand side of the ranking are countries where poverty rates either rose faster or declined more slowly among children in low work intensity households. In Iceland[19] and Greece, the increase in anchored poverty was at least 15ppt greater among children in low work intensity households than among the rest. In contrast, in Belgium, Sweden and the UK, child poverty fell among children in low work intensity households by at least 15ppt faster than among the rest, albeit from a very high base of 70% or more (see Table A1 in the Annex). The UK was exceptional in that poverty increased among children in higher work intensity households while it fell considerably among those in workless households, suggesting an increase in the prevalence of the working poor. Overall, however, countries that experienced the greatest increases in child poverty tended to be the ones where the household work intensity differential (i.e. poverty increased faster or fell slower among children in workless households) was largest (see Figure A1 in the Annex). This indicates that children in the most economically vulnerable households were hit disproportionately by the crisis.

Figure 3 Absolute difference in anchored poverty change (2008-2012) between children in workless households and other children

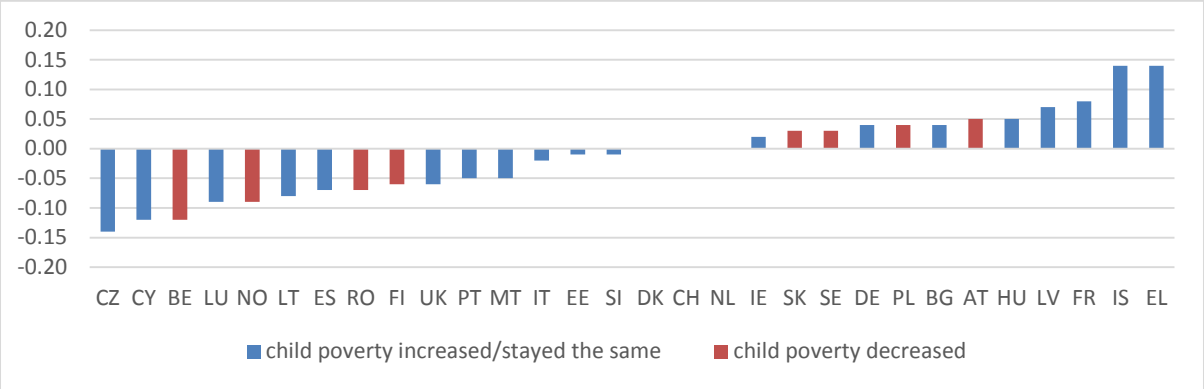


Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland. Break in the series for Austria and the UK in 2012.
Base: children under 18.

Lone parent families are identified using the methodology proposed in Chzhen and Bradshaw (2012, pp. 489–490): "a child under 18 years old having only one parent living in the same household, where this parent is not in a legal or a de facto consensual union with a co-resident partner". This definition captures not only the nuclear lone parent households but also the lone parent families living in multi-unit households. Once again, Iceland and Greece stand out as the countries with the largest differential, with poverty rates increasing much faster for children in lone parent families than for those in couple families between 2008 and 2012.

[17] http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Persons_living_in_households_with_low_work_intensity.
[18] Eurostat's indicators of the share of children living in jobless households are based on the Labour Force Survey, while the low work intensity measures are derived from the EU-SILC.
[19] The result for Iceland needs to be interpreted with caution due to low numbers of cases in the low work intensity sub-sample in 2008.

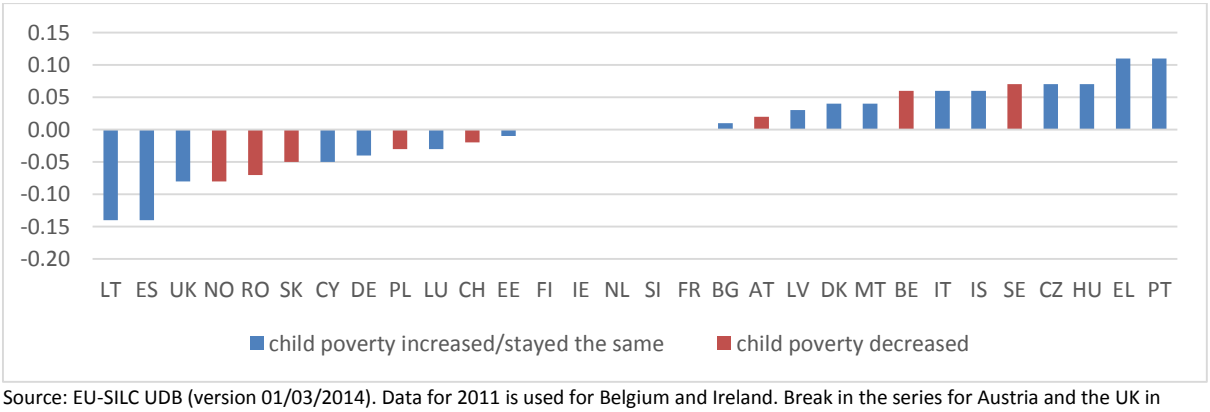
Figure 4 Absolute difference in anchored poverty change (2008-2012) between children in lone parent households and other children



Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland. Break in the series for Austria and the UK in 2012.
Base: children under 18.

Large families are defined as those with three or more children in the household. In countries like Lithuania and Spain, differences in poverty rates between children in larger and smaller families have decreased between 2008 and 2012, although child poverty was increasing, while in countries like Portugal and Greece, these differences increased. Equivalently, the child poverty rate fell faster or rose slower among children in large families in countries like Lithuania and Spain, while the reverse pattern was observed in countries like Portugal and Greece. However, the equal differential of 11ppt in the latter two countries masks important differences. In Portugal the poverty rate went up by 12ppt and 1ppt for children in large families and small families, respectively, while in Greece, the child poverty rate went up by 29ppt and 18ppt, respectively (table A2 in the Annex). Meanwhile, the focus on changes may hide important differences in the levels: the highest poverty rate for children in large families was observed in Bulgaria (62%), where there was virtually no change between 2008 and 2012 for any of the two sub-groups.

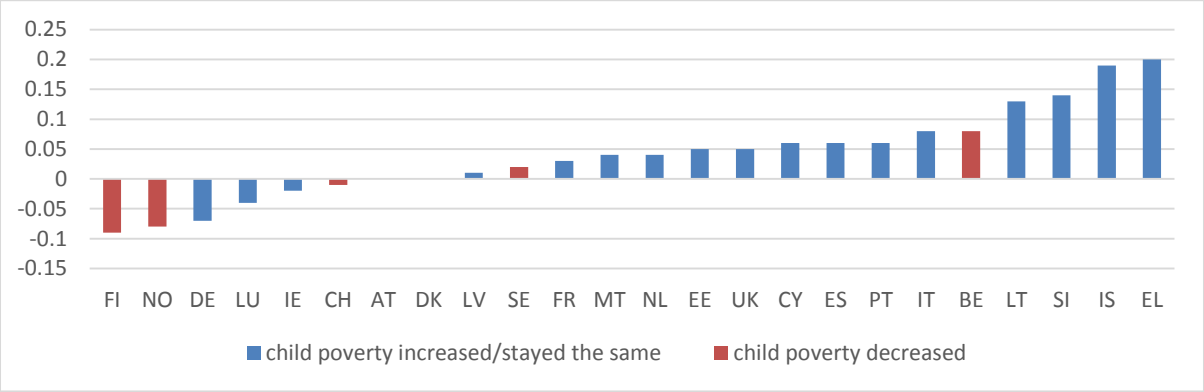
Figure 5 Absolute difference in anchored poverty change (2008-2012) between children in large families and other children



Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland. Break in the series for Austria and the UK in 2012.
Base: children under 18.

Figure 6 plots the differential in the poverty change between children in migrant and native households. Migrant households are defined as those with at least one adult born outside the EU.[20] Countries with insufficient case numbers of children in migrant households are excluded from the analysis.[21] In countries like Iceland and Greece, where the overall child poverty rates increased substantially during the Great Recession, poverty rates rose much faster for children in migrant households between 2008 and 2012. In Iceland, poverty rates for children in migrant households went up by 38ppt from 8% to 46%, compared with the increase of 19ppt (from 11% to 30%) for the rest. In Greece, poverty rates went up by 35ppt (from 42% to 77%) for children in migrant households, with the corresponding increase of 15ppt (from 20% to 35%) for the rest. By 2012 there were two countries where more than half of all children in migrant households were poor: Greece (77%) and Spain (62%).

Figure 6 Absolute difference in anchored poverty change (2008-2012) between children in migrant households and other children



Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland. Break in the series for Austria and the UK in 2012.
Note: countries are excluded if the share of children living in migrant households is under 5% of the sample or if the weighted case numbers are under 100 in either 2008 or 2012.
Base: children under 18.

Overall, children in the types of households that have consistently been identified as the most vulnerable to poverty before the Great Recession were often affected by the crisis to a greater extent than other children. This pattern was particularly strong in the countries suffering the greatest increases in child poverty over this period, Greece and Iceland. However, in Iceland, all increases were from a much smaller base.

Child poverty during the Great Recession: effects of household characteristics, macro-economic conditions and social safety nets

Out of 31 countries in the descriptive analysis, 27 are included in the multilevel logistic regression models. It is important to have the same countries in the model for every wave in order to be able to compare changes in the estimates across the waves of the survey. Croatia is excluded because there is no data for it in the EU-SILC user database until 2011, while there is no data for Ireland and

[20] If migrants are defined as those born outside of the country of the interview (rather than outside the EU), the resulting poverty rates for children in migrant households would be somewhat lower.
[21] Countries are excluded if the share of children living in migrant households is under 5% of the sample or if the weighted case numbers are under 100 in either 2008 or 2012.

Belgium in 2012. Italy had to be excluded because there is no data in the SaMip dataset for it from 2011 onwards.

Table 2 reports the results of the random intercept multilevel logistic regression models[22] of child poverty estimated separately for each wave between 2008 and 2012. As before, the anchored poverty definition is used here: the dependent variable is whether the child under 18 lives in a household with equivalent disposable income below 60% of national median estimated in 2008 and then uprated for inflation. The reported estimates are the effects of the predictor variables on the log odds of being poor. To calculate the corresponding effects on the odds, leading to a more intuitive interpretation, the estimated coefficients need to be exponentiated (anti-logged).

The effects of the individual level controls are all of expected signs and magnitudes. They are also relatively stable over the years. Children living in households where at least one adult works in the public sector[23] are significantly less likely to be poor, all else being equal. *Ceteris paribus*, children are more likely to be poor if they live in lone parent households, large families, migrant households, non-owner occupied households, and households where the highest level of education among adults is lower secondary or below. Adolescents (12-17) are consistently found to be at the greatest risk of poverty,[24] everything else being equal. Unsurprisingly, living in a low work intensity household has the largest effects on the individual risk of poverty. All else being equal, the odds of being poor for children in workless households are between 6 and 8 times greater than the odds for those who live in higher work intensity households.[25]

Country level characteristics also affect individual risks of child poverty. Having controlled for the cross-country differences in the socio-demographic structure, unemployment and MIP generosity, total spending on social protection benefits as a share of the GDP had significant effects in 2008 (i.e. before the crisis) and in 2009 (when most European countries were implementing fiscal stimulus packages). During the later stage of the Great Recession, when many countries introduced austerity policies, the net effect of expenditure on social protection benefits could no longer be detected.

The effect of the unemployment rate is consistently highly significant and substantively large. Thus, a difference of 10ppt in the unemployment rate in 2011 (e.g. between Poland (8%) and Spain (19%)) is associated with 2.5 times greater odds of a child being poor,[26] all else being equal. Figure A2 shows the predicted probability of a child being poor increasing from under 10% to 30% across the full range of the unemployment rate among 27 countries (from 2% to 20%).

The effects of the MIP indicator are negative but not statistically significant, once unemployment and social spending are controlled for.[27] This could have resulted from insufficient power of the model to detect several significant macro-level effects with only 27 countries in the analysis. Without controlling for other country-level predictors, the MIP indicator would have significant

[22] See Snijders & Bosker (Snijders & Bosker 2012, pp. 297–301) for an introduction to random intercept multilevel logistic regression models.
[23] Public administration and defence; compulsory social security; education; health and social work.
[24] In 2010, for instance, the odds of being poor are 21% higher for those aged 12-17 than for children in households where the youngest child is under 12. Exp(0.19)=1.21.
[25] Exp(1.83)=6. Exp(2.08)=8.
[26] Exp(10*0.09)=2.46.
[27] There were no significant interaction effects between the MIP indicator and the unemployment rate (results available on request), suggesting that the effect of the MIP generosity does not depend on the level of unemployment.

negative effects on the risks of child poverty in 2008-2012 (Table A5). Since there is a lot of variation in the MIP indicator across the 27 countries in the analysis (Table A6), these effects are not trivial. For instance, the coefficient of -0.03 in 2012 (Model 1 in Table A5) means that the difference of 10ppt in the MIP indicator (say, between Belgium (50%) and the Czech Republic (40%) in 2011) is associated with 35% greater odds of a child being poor in 2012, all else being equal.[28] Using the coefficients from the model, Figure A3 in the Annex shows a steady decrease in the predicted probability of a child being poor across the range of values of the MIP indicator. Thus, children in countries with more generous minimum income protection schemes are less likely to be poor during the crisis, but the generosity of social assistance could be picking up the effect of the overall size of the welfare state. When social spending is entered in the model, the MIP effect becomes smaller and less precisely estimated, remaining significant only in 2009 and 2012 (model 2 Table A5).

Overall, although social safety nets offer some protection during the Great Recession, it is not sufficient to shield children from the effects of the labour market. This may be because the minimum income protection schemes are not sufficiently generous at the time when households struggle with the loss of income from employment.

Table 2 Multilevel logistic regression of child poverty (2008-2012)

	2008	**2009**	**2010**	**2011**	**2012**
Low work intensity household	1.98***	2.08***	2.03***	1.96***	1.83***
Lone parent household	0.43***	0.43***	0.41***	0.32***	0.31***
Large family	0.86***	0.88***	0.86***	0.75***	0.72***
Migrant household	0.60***	0.57***	0.57***	0.68***	0.65***
Owner-occupier household	-0.52***	-0.50***	-0.54***	-0.64***	-0.67***
At least one adult works in the public sector	-0.72***	-0.81***	-0.71***	-0.72***	-0.73***
Age of youngest child (ref: under one)					
1-5	-0.02	-0.06	0.03	-0.03	-0.09**
6-11	-0.04	-0.03	0.04	-0.002	-0.11**
12-17	0.07*	0.07	0.19***	0.13***	0.09*
Highest level of education in the household (ref: lower secondary or below)					
Upper secondary/further	-0.86***	-0.79***	-0.75***	-0.80***	-0.79***
Higher	-1.81***	-1.78***	-1.71***	-1.85***	-1.77***
MIP as % GDP per capita	-0.01	-0.01	-0.01	-0.01	-0.01
Total social spending, % GDP	-0.06***	-0.03*	-0.03	-0.04	-0.03
Unemployment rate (%)	0.08*	0.12***	0.10***	0.09***	0.09**
Intercept	0.27	-0.40	-0.54	0.05	0.03
Standard deviation (intercept)	0.36	0.34	0.36	0.43	0.51
ICC	0.04	0.03	0.04	0.05	0.07
BIC	76,613	72,311	73,318	71,454	72,649
N (children)	106,751	104,849	104,364	100,470	102,683
N (countries)	27	27	27	27	27

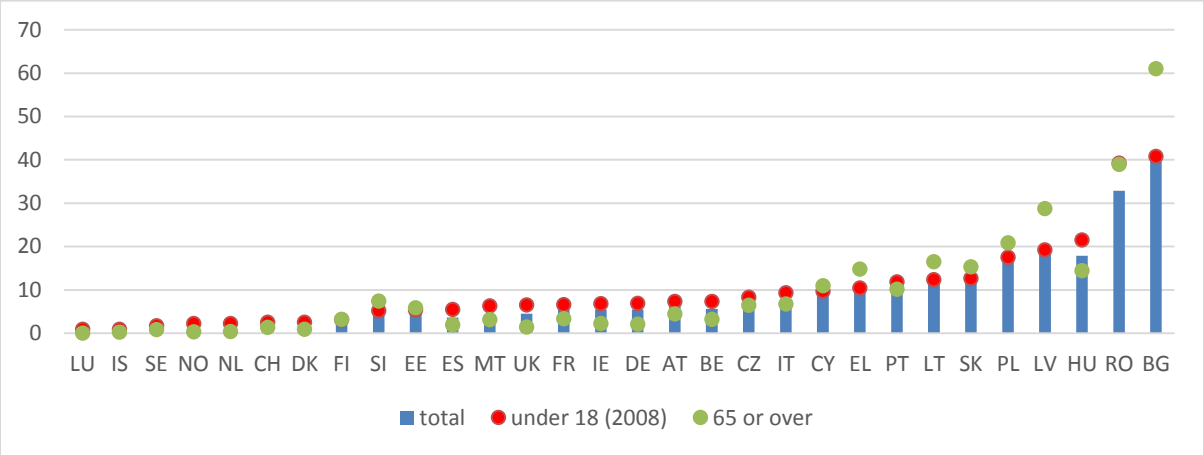
Sources: micro data from the EU-SILC UDB version 01.03.2014; MIP indicator from SaMip 2.6; working age (25-64) unemployment rate from OECD.Stat (extracted on 23.04.2014); total expenditure on social protection benefits from Eurostat (10.04.2014). Country level variables at their (t-1) levels. Stepwise inclusion of country-level predictors in Models 1 and 2 reported in Table A5 in the Annex. ***p<0.001, **p<0.01, *p<0.05. Estimated with 15 integration points.

28 Exp(10*0.03)=1.35.

Changes in severe child deprivation between 2008 and 2012

There was more variation in severe child deprivation than in child poverty across the countries studied here just before the crisis. In 2008, the share of children in severely deprived households ranged from under five in a hundred (1-3%) in the Nordic countries, Luxembourg, Netherlands and Switzerland to two out of five in Romania (39%) and Bulgaria (41%). Child deprivation rates exceeded total deprivation rates by 2ppt or more in five countries: Hungary, Malta, Portugal, Romania and United Kingdom (Figure 7a). In one-third of the countries children were more likely to be severely deprived than pensioners, with the absolute difference of at least 2ppt. These were mostly the countries with middling child deprivation rates, ranging from 6% in Spain to 9% in Italy, but also Hungary, with some of the highest child deprivation rates (22%).

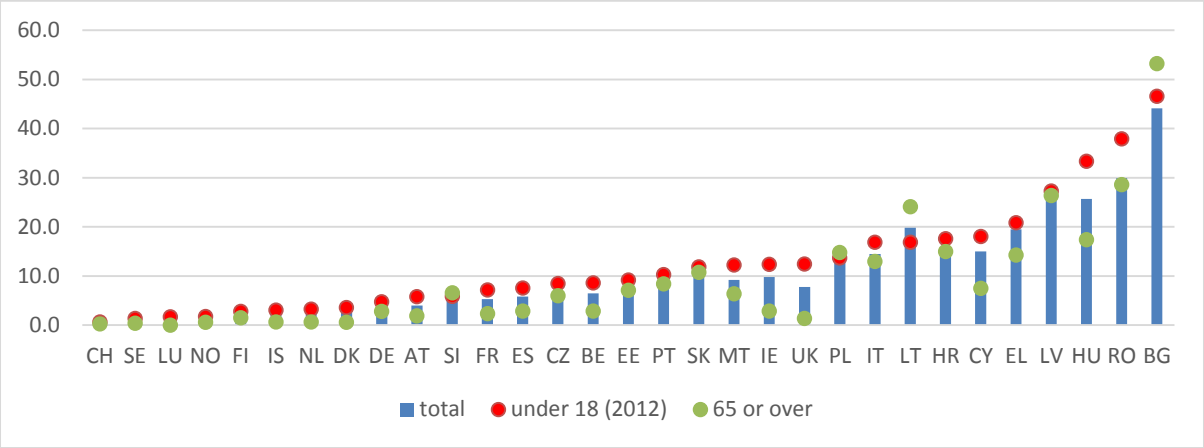
Figure 7a Severe deprivation rate for children (0-17), the elderly (65 or over) and of the total population in 2008 (%)



Sorted by the severe child deprivation rate. No data for Croatia.
Source: Eurostat (last update 04.06.2014).

Figure 7b shows the variation in the 2012 deprivation rates. Seven countries now had at least one in three children severely deprived. In five countries, at least one in five children were severely deprived: Greece (21%), Latvia (27%), Hungary (33%), Romania (38%), and Bulgaria (47%). In one-third of the countries the share of deprived children exceeded that for the overall population by at least 2ppt, with the biggest differential (9ppt) observed in Hungary and Romania. In the majority of the countries, the child deprivation rate exceeded that for pensioners by 2ppt or more, with the biggest differential (16ppt) recorded in Hungary. Overall, across the EU, there is evidence for children being hit disproportionately by the worsening economic circumstances.

Figure 7b Severe deprivation rate for children (0-17), the elderly (65 or over) and of the total population in 2012 (%)

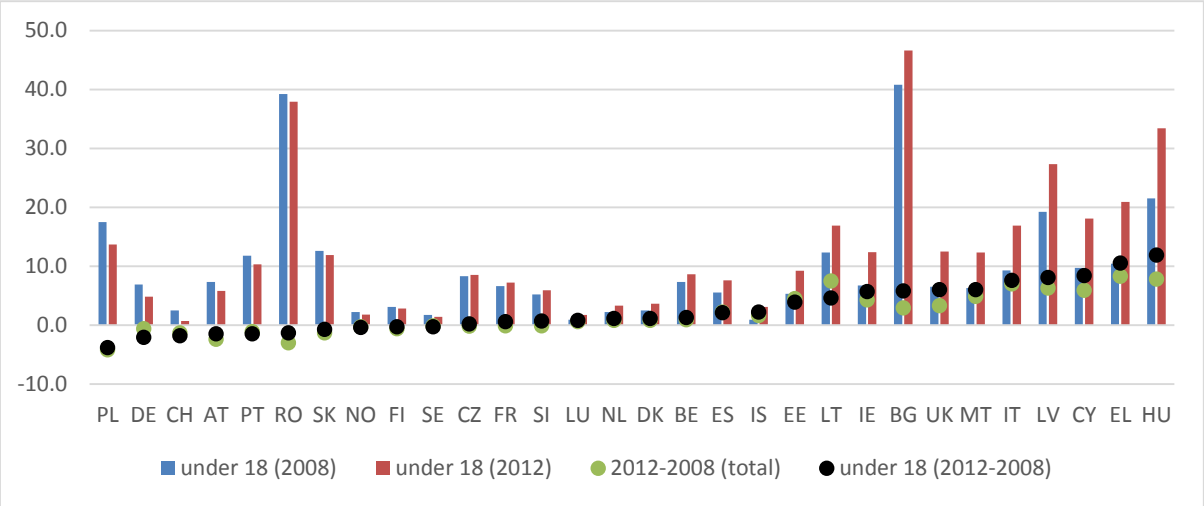


Sorted by the severe child deprivation rate. Break in the series for the UK.
Source: Eurostat (last update 04.06.2014).

Figure 7c puts together the previous information, showing the absolute change in child deprivation rates between 2008 and 2012. The biggest absolute increase in severe child deprivation was observed in Hungary (12ppt) and Greece (11ppt). In half the countries, child deprivation has increased by at least 1ppt. Meanwhile, in six countries these rates dropped by at least the same amount: Austria (2ppt), Germany (2ppt), Poland (4ppt), Portugal (2ppt), Romania (1ppt) and Switzerland (2ppt). While this suggests an improvement in children's living standards compared with the pre-crisis levels, it is important not to lose track of absolute deprivation levels: one in ten children were still severely deprived in Poland and Portugal, with one in five in Romania.

Figure 7c also shows that the change in the deprivation rate between 2008 and 2012 was larger in absolute terms for children than for the population as a whole in several countries. Severe child deprivation either rose faster or fell slower among children by 2ppt or more in five countries: Bulgaria, Cyprus, Greece, Hungary and United Kingdom. At the other end of the extreme, the increase in child deprivation fell at least 2ppt short of that for the whole population in Lithuania, but nearly one in five children (17%) remained severely deprived in 2012.

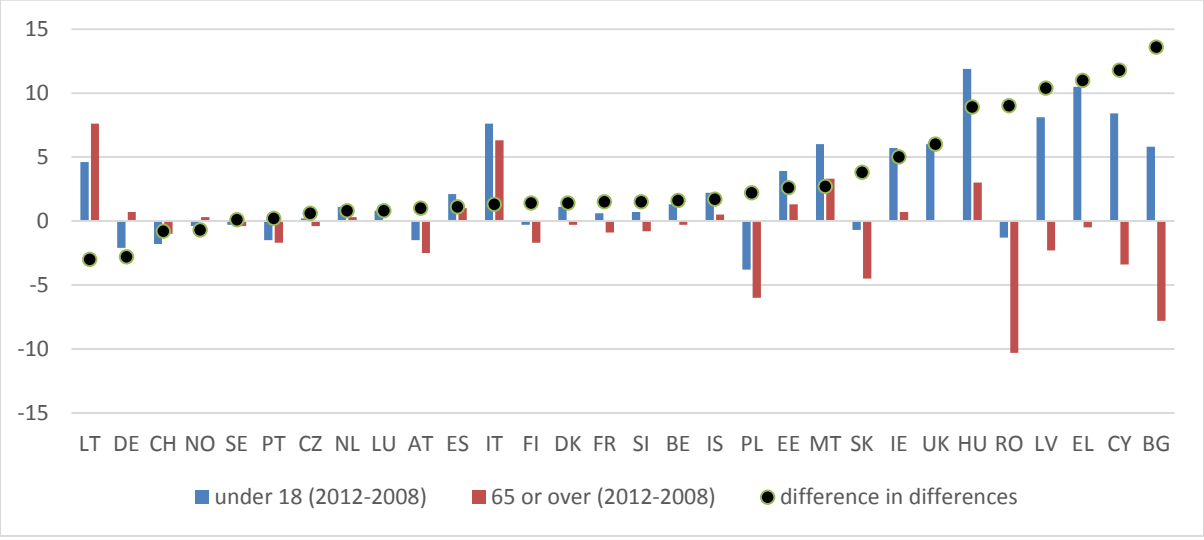
Figure 7c Absolute differences in the severe material deprivation rate (0-17) between 2008 and 2012 (%)



Sorted by the absolute difference in the severe child deprivation rate between 2008 and 2012. Break in the series for the UK in 2012. No data for Croatia in 2008.
Source: Eurostat (last update 04.06.2014).

Finally, Figure 1d shows that in most of the countries studied here, deprivation increased faster or fell slower for children under 18 than for the elderly population. The biggest differential was observed in Bulgaria, where child deprivation increased by 6ppt while it fell by 8ppt for the elderly. However, more than half (53%) of the elderly in Bulgaria were severely deprived in 2012, compared with 47% of under-18s.

Figure 7d Difference in the 2008-2012 change in the severe material deprivation rate between children and the elderly (%)



Sorted by the difference in the severe material deprivation rate increase between children and the elderly. Break in the series for the UK in 2012. No data for Croatia in 2008.
Source: Eurostat (last update 04.06.2014).

Overall, absolute changes in child deprivation went hand in hand with changes in child poverty. Across 30 countries (i.e. excluding Croatia), there was a high positive correlation ($r=0.59$, $p<0.001$) between the two indicators over the 2008-2012 period (Figure A4 in the Annex). However, there were some notable exceptions to the linear pattern. In Iceland, child deprivation rose by an amount (7ppt) that was much less than would have been expected given its surge in anchored poverty, while the child deprivation increase in Hungary was much higher (9ppt) than what would have been predicted given its moderate increase in child poverty. This suggests that in Iceland the crisis affected household incomes to a greater degree than material living standards generally.

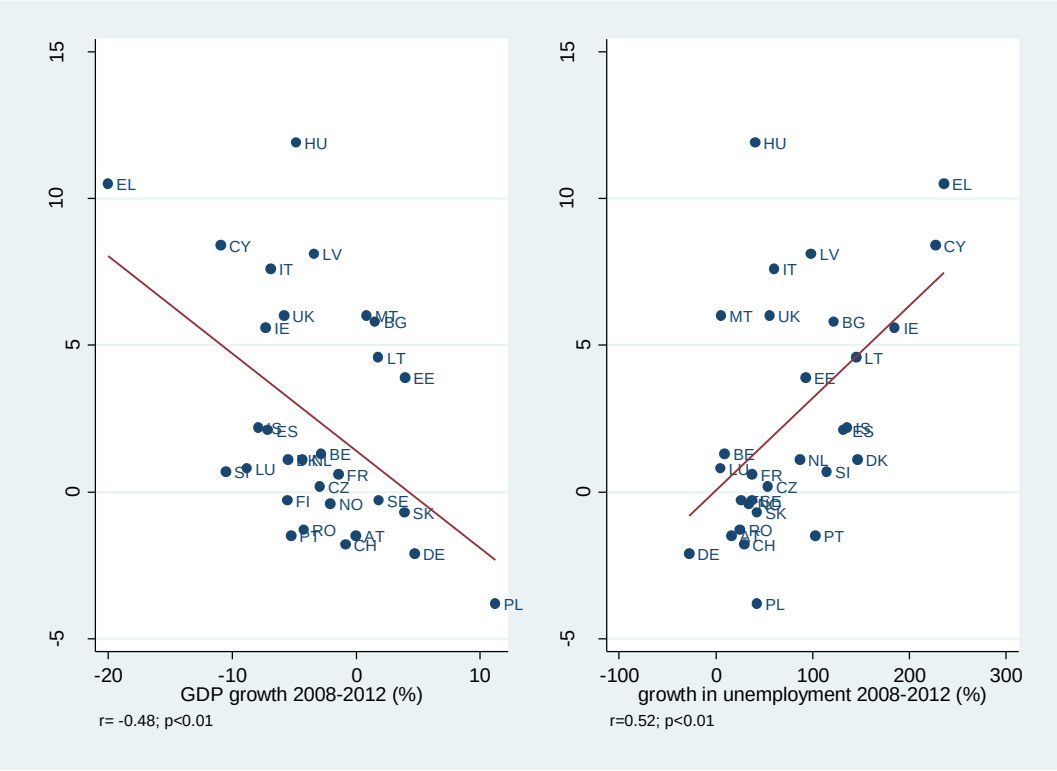
In Hungary, the crisis appeared to have hit households' and, by extension, children's material well-being directly. It has to be noted that while Iceland and Hungary started from similar pre-crisis fiscal positions and suffered comparable drops in economic output in 2009, they adopted very different adjustment policies in response to the crisis. Unlike Hungary, Iceland prioritised spending on social protection, protecting the most vulnerable groups in society (Martorano 2014).

In a similar pattern to the findings for child poverty, changes in child deprivation between 2008 and 2012 were influenced by the concurrent variation in the economic climate. Absolute increases in child deprivation over 2008-2012 were larger in countries experiencing greater falls in the real GDP per capita (or slower growth) during the same period. Child deprivation changes were also significantly related to growth in the unemployment rate (Figure 8).

Table 3 reports both raw and partial correlations between the absolute change in child deprivation and the relative changes in the GDP per capita (constant prices) and in the unemployment rate during the same period. Having accounted for their correlation with each other, neither GDP growth nor unemployment growth has a significant correlation with the change in child deprivation and they appear to cancel each other out.

Indeed, the two graphs in Figure 8 are almost mirror images of each other: although the countries are spread out around the regression lines (i.e. the linear relationships are not very strong), severe child deprivation increased in largely the same countries that experienced lower (or more negative) economic growth as the ones where the unemployment rate increased the most.

Figure 8 Absolute differences in the severe deprivation rate, anchored in 2008, between 2008 and 2012 and GDP growth over the same period



Source: child deprivation rates from Eurostat (last update 04.06.2014); GDP per capita (constant prices) from the World Economic Outlook database (April 2014); working age (25-64) unemployment rate from OECD.Stat (extracted on 24.04.2014). No data for Croatia in 2008.

Table 3 Raw and partial correlations with the change in child deprivation (2008-2012)

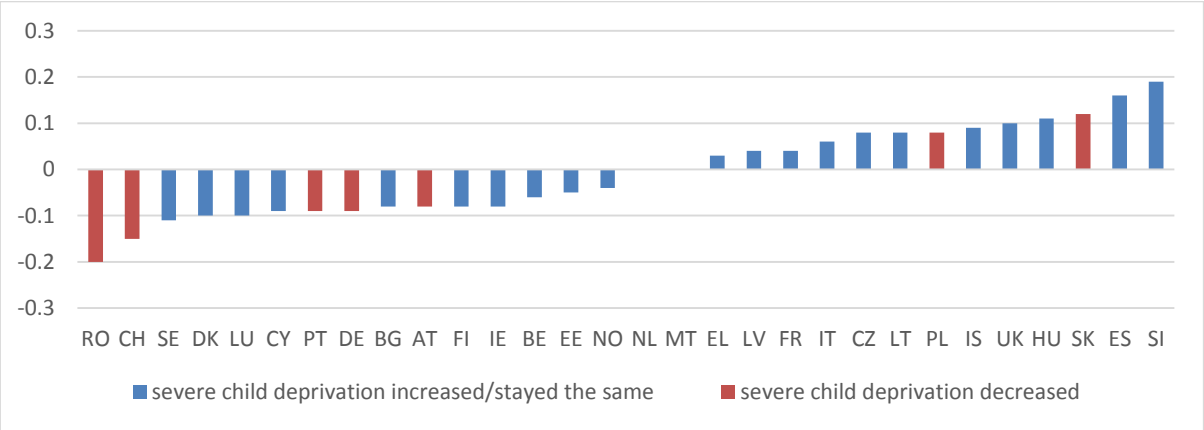
	Raw correlation	Partial correlation
GDP growth 2008-2012	-0.48**	-0.27
Unemployment rate growth 2008-2012	0.52**	0.34

Note: ***p<0.001; **p<0.01; *p<0.05. N=30 (no data for Croatia in 2008).

Inequities in severe child deprivation change between 2008 and 2012

Figure 9 ranks the countries according to the difference in the severe deprivation change between children in low work intensity households and the rest. Material deprivation rose faster or declined slower in the countries on the right hand side of the scale. The largest positive differential was observed in Slovenia where the severe deprivation rate went up by 19ppt (from 30% in 2008 to 49% in 2012) for children in low work intensity households, while remaining at 4% in both years for children in higher work intensity households (table A3). However, it was in Bulgaria where the highest share of children in low work intensity households (86%) were severely deprived in 2012.

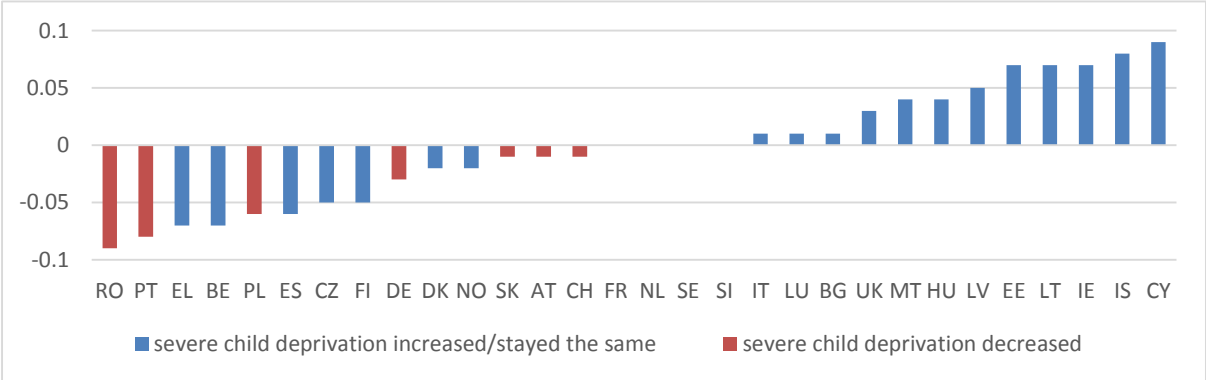
Figure 9 Absolute difference in severe material deprivation change (2008-2012) between children in low work intensity households and other children



Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland. Break in the series for the UK in 2012. No data for Croatia in 2008.
Base: children under 18.

Figure 10 plots the differential in the child poverty change between those in lone parent families and the rest. The biggest differences were observed in Iceland (8ppt) and Cyprus (9ppt), where severe deprivation rates rose substantially faster among children in lone parent families. However, similar differences in changes may mask a more complex picture. In Iceland, the severe deprivation rate for children in couple families remained at 1% in both 2008 and 2012, while it increased from 2% to 10% for those in lone parent families. Deprivation levels for both sub-groups were much higher in Cyprus in both years, going up from 7% to 15% for children in couple families and from 29% to 46% for those in lone parent families (Table A3).

Figure 10 Absolute difference in severe material deprivation change (2008-2012) between children in lone parent households and other children

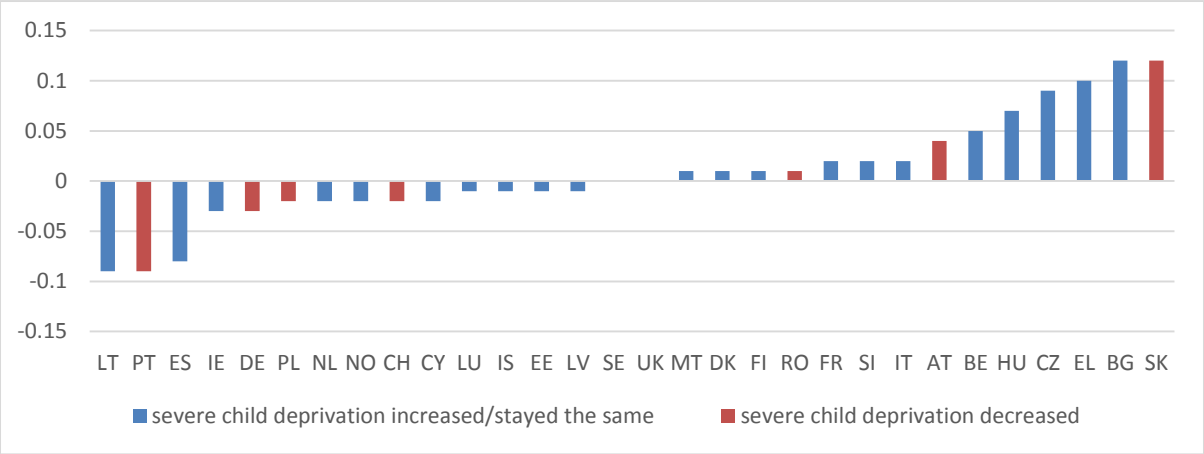


Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland. Break in the series for the UK in 2012. No data for Croatia in 2008.
Base: children under 18.

Figure 11 plots the differential in the child deprivation change between those in large families and the rest. The largest positive differences are observed in Greece (10ppt), Bulgaria (12ppt) and Slovakia (12ppt), where material deprivation rose substantially faster among children in large families. In Greece, severe deprivation rose from 10% to 20% and from 15% to 35% for children in

smaller families and those in large families, respectively. In Bulgaria, severe deprivation levels were always large for both sub-groups, increasing from 35% to 39% for those in smaller families and from 69% to 85% for those in larger families. Meanwhile, in Slovakia, where the overall severe child deprivation rate fell by 1ppt, the deprivation rate decreased by 3ppt (from 10% to 7%) for children in smaller families, while increasing from 21% to 30% for those in larger families.

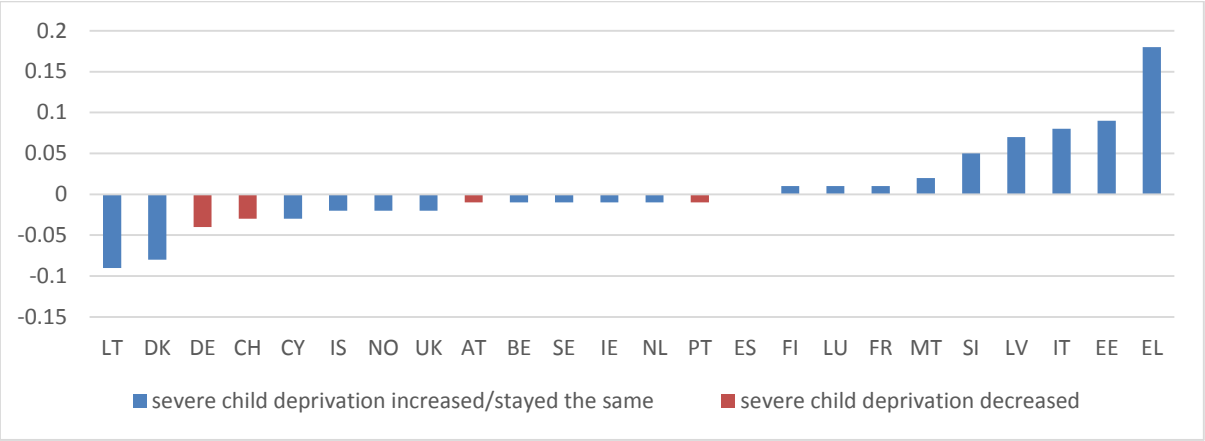
Figure 11 Absolute difference in severe material deprivation change (2008-2012) between children in large families and other children



Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland. Break in the series for the UK in 2012. No data for Croatia in 2008.
Base: children under 18.

Figure 12 plots the differential in the child deprivation change between those in migrant households and the rest. By far the biggest difference is observed in Greece, where material deprivation rose substantially faster, in absolute terms, among children in migrant households. The severe deprivation rate went up from 8% to 16% for those in non-migrant households, while increasing from 26% to 52% for children in households where at least one adult was born outside the EU (Table A4). Interestingly, these changes were the same in relative terms, as the deprivation rate doubled for both sub-groups.

Figure 12 Absolute difference in severe material deprivation change (2008-2012) between children in migrant households and other children



Source: EU-SILC UDB (version 01/08/2013). Data for 2011 is used for Belgium and Ireland. Break in the series for the UK in 2012. No data for Croatia in 2008.
Note: countries are excluded if the share of children living in migrant households is under 5% of the sample or if the weighted case numbers are under 100 in either 2008 or 2012.
Base: children under 18.

Overall, there is evidence that children in the most economically vulnerable households suffered disproportionately in many of the countries where severe deprivation rates increased the most (e.g. Cyprus, Greece, Hungary and Latvia).

Severe child deprivation during the Great Recession: effects of household characteristics, macro-economic conditions and social safety nets

Table 5 reports the results of the random intercept multilevel logistic regression models of severe child deprivation estimated separately for each wave between 2008 and 2012. The reported estimates show the effects of household level and country-level variables on the log odds of living in a household reporting an enforced lack of four or more out of nine items.

The estimated effects of the individual level controls are all of expected signs and magnitudes. Everything else being equal, children were significantly more likely to be severely deprived if they lived in: a low work intensity household, lone parent family, large family, migrant household, non-owner-occupied accommodation, a household where no one works in the public sector, or a household with lower educated adults. This is consistent with the findings for child poverty.

Similarly to the results from the child poverty model, the negative effect of the MIP indicator was statistically significant only when other country-level characteristics were not accounted for (Table A7).[29] Once again, this suggests that social safety nets did not offer sufficient protection during the crisis. In contrast, the effects of social spending and unemployment were large and significant over the whole period 2008-2012. Among children who had similar household characteristics and lived in countries with similar levels of social spending and generosity of social safety nets (relative to

[29] There were no significant interaction effects between the MIP indicator and unemployment (results available on request).

the GDP per capita), those who lived in countries with the unemployment rate 10ppt higher were three times[30] more likely to experience severe household deprivation in 2012.

Compared with the child poverty model, expenditure on social protection had larger and more precisely estimated effects on child deprivation over the period 2008-2012. While the poverty measure uses country-specific poverty lines (i.e. 60% of the median, uprated for inflation), the deprivation indicator uses the same threshold (i.e. enforced lack of four or more items out of nine) for every country. It is a consistent finding that the deprivation risks across the EU are higher in the newer accession states (Chzhen & Bradshaw 2012; Nelson 2012), which tend to have lower GDP per capita and lower levels of social spending. Since the GDP per capita is included in the MIP indicator, these results suggest that social spending explains a significant amount of variation in severe child deprivation rates, but it is not necessarily a causal relationship.

Table 5 Multilevel logistic regression of severe child deprivation (2008-2012)

	2008	**2009**	**2010**	**2011**	**2012**
Low work intensity household	1.16***	1.15***	1.09***	1.19***	1.20***
Lone parent household	0.95***	0.92***	0.79***	0.75***	0.70***
Large family	0.69***	0.64***	0.56***	0.54***	0.54***
Migrant household	0.66***	0.67***	0.56***	0.67***	0.53***
Owner-occupier household	-0.81***	-0.93***	-0.99***	-0.92***	-0.93***
At least one adult works in the public sector	-0.36***	-0.46***	-0.46***	-0.34***	-0.29***
Age of youngest child (ref: under one)					
1-5	0.09*	-0.04	0.20***	0.12**	0.07
6-11	0.04	-0.10*	0.12*	0.05	0.07
12-17	0.20***	0.03	0.22***	0.18**	0.16**
Highest level of education in the household (ref: lower secondary or below)					
Upper secondary/further	-0.86***	-0.88***	-0.83***	-0.85***	-0.75***
Higher	-2.02***	-2.01***	-1.95***	-2.08***	-1.91***
MIP as % GDP per capita	-0.01	-0.03	-0.02	-0.02	-0.02
Total social spending, % GDP	-0.12***	-0.13**	-0.16***	-0.14**	-0.13**
Unemployment rate (%)	0.28***	0.20*	0.12*	0.10*	0.11*
Intercept	-0.27	1.33	1.99	1.50	1.33
Standard deviation (intercept)	0.73	0.88	0.98	0.99	0.95
ICC	0.14	0.19	0.23	0.23	0.22
BIC	45,372	43,859	45,182	43,816	47,352
N (children)	106,751	104,849	104,364	100,470	102,683
N (countries)	27	27	27	27	27

Sources: micro data from the EU-SILC UDB version 01.03.2014; MIP indicator from SaMip 2.6; working age (25-64) unemployment rate from OECD.Stat (extracted on 23.04.2014); total expenditure on social protection benefits from Eurostat (10.04.2014). Country level variables at their (t-1) levels. Stepwise inclusion of country-level predictors in Models 1 and 2 reported in Table A7 in the Annex. ***p<0.001, **p<0.01, *p<0.05. Estimated with 15 integration points.

[30] Exp(10*0.11)=3.

5. CONCLUSION

The 2008 financial crisis triggered the first contraction of the world economy in the post-war era. This paper investigates the effect of the economic crisis on child poverty and severe material deprivation across the enlarged EU,[31] Iceland, Norway and Switzerland. Evidence from previous recessions in industrialized countries suggests that children tend to suffer disproportionately. However, given the two- to three-year lag with which household income data become available, it is only recently that statistics on the circumstances of children have started to emerge. Although this study focuses on the material well-being of children, more data are needed to investigate the impact on other aspects of child well-being, such as health and safety, education, and behaviours and risks, as well as subjective well-being. Some of these effects may not manifest until long after the Great Recession.

This paper defines income poverty as anchored at a point in time to allow for comparison in living standards since before the crisis. Changes in the anchored child poverty rate during the Great Recession have not been analysed extensively to date. The study finds that absolute increases in both child poverty and deprivation between 2008 and 2011 tended to be larger in countries experiencing slower growth and greater increases in unemployment in this period. The relationship was stronger for child poverty, indicating that household income is more responsive to macroeconomic shocks. Increases in child poverty in excess of 10ppt were observed in Iceland, Greece and Latvia. Absolute increases in severe child deprivation of more than 10ppt were recorded in Greece and Hungary.

There is evidence that children suffered disproportionately during the Great Recession. Child poverty and severe deprivation rose faster for children than the population as a whole in many countries, notably the ones most affected by the crisis. Moreover, in most of the EU countries child poverty and deprivation increased faster or fell slower for children than for the elderly population (65 or over), although in some of these countries the absolute levels of poverty and deprivation remained higher among the elderly. This may be due to the fact that old-age pensions tend to be stable, albeit ungenerous, sources of income, while children tend to live in households where working age adults are vulnerable to the vagaries of the labour market.

Meanwhile, the effects of adverse economic circumstances were not distributed equally among children: those in the types of households that have consistently been identified as the most vulnerable to poverty before the Great Recession were often affected by the crisis to a greater extent than other children. Child poverty and deprivation rates often rose faster or decreased more slowly among children in workless households, lone parent families and migrant families than among the rest of the child population. This pattern was particularly strong in the countries suffering the greatest increases in child poverty or severe child deprivation over this period, suggesting that the most economically vulnerable children were hit excessively by the crisis.

Using a multi-level framework that accounts for both household level and country level characteristics, the analysis finds evidence for minimum income protection schemes cushioning the blow of the crisis: children were significantly less likely to be poor in countries with more generous

[31] EU-27 with respect to severe material deprivation because there is no comparable deprivation data for Croatia in 2008.

safety nets in 2008-2012. However, once total social spending and working-age unemployment were accounted for, the effect of the minimum income protection indicator was no longer statistically significant. Consistent with previous research on the pre-crisis relationship between poverty and social spending (see Caminada et al 2012), expenditure on social protection as a share of the GDP had a sizeable negative effect on the risk of a child being poor in 2008 (and a smaller one in 2009), but the effect was no longer significant in 2010-2012, when many countries implemented austerity reforms. In contrast, unemployment had large effects on the risks of child poverty both before and during the crisis. These results suggest that the generosity of minimum income protection schemes and the level of social spending, while having non-negligible effects on the risks of child poverty, were insufficient to offer adequate protection at the time of labour market turbulence.

Similar findings emerge for child deprivation. The effects of social safety nets were only significant while total social spending and unemployment were not accounted for. Throughout the period 2008-2012, both social spending and the unemployment rate had large significant effects on the risks of severe child deprivation. Expenditure on social protection had larger and more precisely estimated effects on child deprivation than child poverty. This is not surprising, as it has been well documented that deprivation rates (based on the EU-wide deprivation threshold of four out of nine items) are higher in newer accession states, which tend to spend a smaller share of the GDP on social protection benefits.

REFERENCES

Atkinson, B., & Marlier, E. (2010). *Income and Living Conditions in Europe,* Luxembourg, Eurostat.

Bäckman, O., & Ferrarini, T. (2010). Combating Child Poverty? A multilevel assessment of family policy institutions and child poverty in 21 old and new welfare states. *Journal of Social Policy*, *39*(2), 275-296.

Bergh, A. (2005). On the Counterfactual Problem of Welfare State Research: How can we measure redistribution? *European Sociological Review*, *21*(4), 345–357.

Boarini, R. & d' Ercole, M. M. (2006). *Measures of Material Deprivation in OECD Countries,* OECD Publishing. Retrieved from http://ideas.repec.org/p/oec/elsaab/37-en.html

Bradshaw, J., Chzhen, Y., De Neubourg, C., Main, G., Martorano, B. & Menchini, L. (2012). Relative Income Poverty among Children in Rich Countries, *Innocenti Working Paper* No. 2012-01, UNICEF Innocenti Research Centre.

Brooks-Gunn, J. & Duncan, G. J. (1997). The Effects of Poverty on Children, *The Future of Children*, 55-71.

Caminada, K., Goudswaard, K. & Koster, F. (2012). Social Income Transfers and Poverty: A cross-country analysis for OECD countries, *International Journal of Social Welfare*, *21*(2), 115–126.

Caritas Europa. (2014). *The European Crisis and its Human Cost,* Brussels, Caritas Europa. Retrieved from http://www.caritas.eu/sites/default/files/caritascrisisreport_2014_en.pdf

Chzhen, Y. & Bradshaw, J. (2012). Lone Parents, Poverty and Policy in the European Union, *Journal of European Social Policy*, *22*(5), 487–506.

Corak, M. (2006). Do Poor Children Become Poor Adults? Lessons from a Cross-Country comparison of generational earnings mobility, *Research on Economic Inequality*, *13*, 143–188. doi:10.1016/S1049-2585(06)13006-9.

De Neubourg, C., Bradshaw, J., Chzhen, Y., Main, G., Martorano, B. & Menchini, L. (2012). Child Deprivation, Multidimensional Poverty and Monetary Poverty in Europe, *Innocenti Working Paper* No. IWP-2012-02, Florence, UNICEF Innocenti Research Centre.

EBRD (European Bank for Reconstruction and Development) (2011). *Life in Transition: After the crisis,* London, European Bank for Reconstruction and Development.

Esping-Andersen, G. (2008). Childhood Investments and Skill Formation, *International Tax and Public Finance*, *15*(1), 19–44.

Esping-Andersen, G. & Myles, J. (2009). Economic Inequality and the Welfare State, *The Oxford Handbook of Economic Inequality*, 639–664.

European Commission (2013). *Commission Recommendation of 20.2.2013. Investing in children: breaking the cycle of disadvantage,* Brussels, European Commission.

Forster, M. & D'Ercole, M. (2005). *Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s,* OECD.

Fusco, A., Guio, A.-C. & Marlier, E. (2010). Characterising the Income Poor and the Materially Deprived in European Countries, in *Income and living conditions in Europe* (pp. 133–150), Luxembourg, Publications Office of the European Union. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.190.2292&rep=rep1&type=pdf#page=135

Gilbert, N. (2009). European Measures of Poverty and "Social Eexclusion": Material deprivation, consumption, and life satisfaction, *Journal of Policy Analysis and Management*, *28*(4), 738–744.

Gregg, P. & Machin, S. (2001). Childhood Experiences, Educational Attainment and Adult Labour Market Performance, in: Vleminckx, K and Smeeding, T, (eds.) *Child Well Being, Child Poverty and Child Policy in Modern Nations: What do we Know?* Bristol,The Policy Press: 129–150.

Guio, A.-C. (2009). What Can be Learned from Deprivation Indicators in Europe, *Eurostat Methodologies and Working Papers*.

Guio, A.-C., Gordon, D. & Marlier, E. (2012). *Measuring Material Deprivation in the EU: Indicators for the whole population and child-specific indicators,* Eurostat Methodologies and Working Papers, Luxembourg, Office for Official Publications of the European Communities.

Immervoll, H. & Llena-Nozal, A. (2011). Social Policies for a Recovery, *IZA Policy Paper*, *32*. Retrieved from ftp://ftp.iza.org/RePEc/Discussionpaper/pp32.pdf

Isaacs, J. B. & Healy, O. (2012). The Recession's Ongoing Impact on Children, 2012. *Indicators of children's economic well-being,* Washington, DC, The Urban Institute. Retrieved from http://www.urban.org/UploadedPDF/412713-The-Recessions-Ongoing-Impact-on-Children-2012.pdf?RSSFeed=UI_Employment.xml

Jenkins, S. P., Brandolini, A., Micklewright, J. & Nolan, B. (2013). *The Great Recession and the Distribution of Household Income,* Oxford, Oxford University Press.

Keeley, B. & Love, P. (2010). *From Crisis to Recession: The causes, course and consequences of the Great Recession,* Paris, OECD.

Kenworthy, L. (1999). Do Social-welfare Policies Reduce Poverty? A cross-national assessment, *Social Forces*, *77*(3), 1119–1139.

Kenworthy, L., Epstein, J. & Duerr, D. (2011). Generous Social Policy Reduces Material Deprivation, in Lane Kenworthy, *Progress for the poor,* Oxford, Oxford University Press.

Marchal, S., Marx, I. & Van Mechelen, N. (2014). The Great Wake-Up Call? Social citizenship and minimum income provisions in Europe in times of crisis, *Journal of Social Policy*, *43*(02), 247–267.

Martorano, B. (2014). Is it possible to "adjust with a human face"? The different fiscal consolidation strategies followed by Hungary and Iceland, *Innocenti Working Paper* No.-2014-03, Florence, UNICEF Office of Research.

Matsaganis, M. (2013). *The Greek Crisis: Social impact and policy responses,* Berlin, Friedrich Ebert Stiftung. Retrieved from http://library.fes.de/pdf-files/id/10314.pdf

Mood, C. & Jonsson, J. O. (2014). Poverty and Welfare among Children and their Families 1968-2010. *No. Research Report 2014/2*, Institute for Futures Studies.

Muriel, A. & Sibieta, L. (2009). *Living Standards During Previous Recessions,* London, Institute for Fiscal Studies.

Nelson, K. (2007). *Introducing SaMip: The Social Assistance and Minimum Income Protection Interim Dataset, No. S-WoPEc No. 11/2007*, Swedish Institute for Social Research.

Nelson, K. (2010a). Social Assistance and Minimum Income Benefits in Old and New EU Democracies, *International Journal of Social Welfare*, *19*(4), 367–378.

Nelson, K. (2010b, October). The Social Assistance and Minimum Income Protection (SaMip) Interim Data-Set. Version 2.5 Beta.

Nelson, K. (2012). Counteracting Material Deprivation: The role of social assistance in Europe, *Journal of European Social Policy*, *22*(2), 148–163.

Nelson, K. (2013). Social Assistance and EU Poverty Thresholds 1990–2008. Are European welfare systems providing just and fair protection against low income? *European Sociological Review*, *29*(2), 386–401.

Nolan, B. & Whelan, C. T. (2010). Using Non-monetary Deprivation Indicators to Analyze Poverty and Social Exclusion: Lessons from Europe? *Journal of Policy Analysis and Management*, *29*(2), 305–325.

Nolan, B. & Whelan, C. T. (2011). The EU 2020 Poverty Target. *UCD Geary Institute, Discussion Paper Series, WP2011/11*. Retrieved from http://aiasbase.nl/uploaded_files/publications/DP19-Nolan,Whelan.pdf

OECD. (2014). *Society at a Glance 2014: The crisis and its aftermath,* Paris: OECD.

Pfeifer, M. (2012). Comparing Unemployment Protection and Social Assistance in 14 European Countries: Four worlds of protection for people of working age, *International Journal of Social Welfare*, *21*(1), 13–25.

Snijders, T. & Bosker, R. (2012). *Multilevel Analysis: An introduction to basic and advanced multilevel modeling* (2nd ed.), Los Angeles; London, SAGE.

Social Protection Committee (2008). *Child Poverty and Well-Being in the EU: current status and way forward,* European Commission, Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit E. 2.

Social Protection Committee (2013). *Social Policy Reforms for Growth and Cohesion: Review of recent Structural Reforms,* Luxembourg: European Commission.

Social Protection Committee (2014). *Social Europe: Many ways, one objective. Annual Report of the Social Protection Committee on the social situation in the European Union (2013)*.

Strauss-Kahn, D. (2009, 15 May). *Crisis Management and Policy Coordination: Do we need a new global framework?* Oesterreichische Nationalbank, Vienna. Retrieved from http://www.imf.org/external/np/speeches/2009/051509.htm

Tarki (2011). *Child Well-being in the European Union: Better monitoring instruments for better policies,* Budapest, Tarki Social Research Institute.

UNICEF (2005). Child Poverty in Rich Countries, *Innocenti Report Card* No. 6, Florence, UNICEF Innocenti Research Centre.

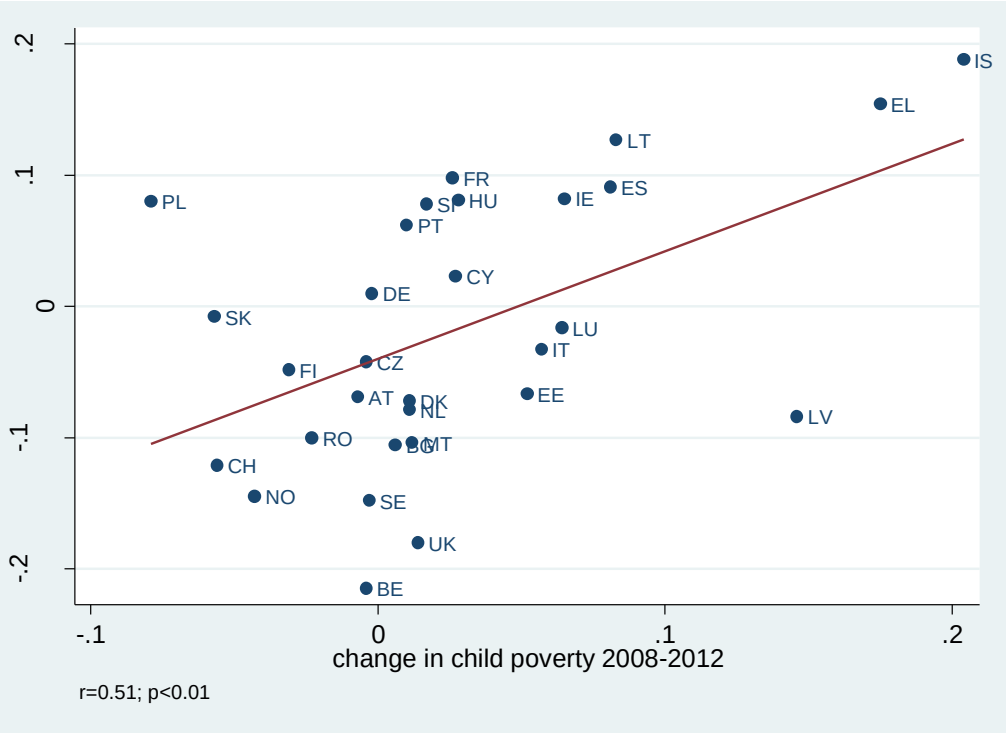
United Nations (1989). Convention on the Rights of the Child. http://www.ohchr.org/EN/ProfessionalInterest/Pages/CRC.aspx

Van Mechelen, N. & Marchal, S. (2012). Struggle for Life: Social assistance benefits, 1992-2009, in Ive Marx and Kenneth Nelson, *Minimum Income Protection in Flux*, Basingstoke, Palgrave: 28–53.

Whelan, C. T., Layte, R. & Maître, B. (2004). Understanding the Mismatch between Income Poverty and Deprivation: A dynamic comparative analysis, *European Sociological Review*, *20*(4), 287–302.

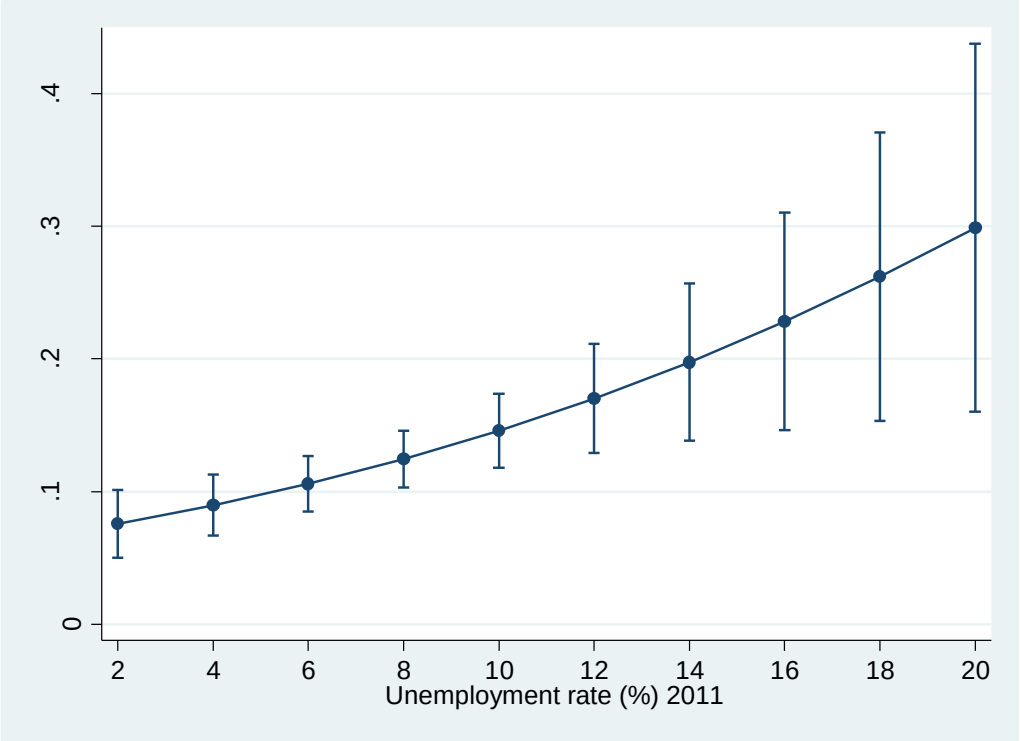
ANNEX

Figure A1 Absolute difference in anchored poverty change (2008-2012) between children in workless households and other children by total change in child poverty



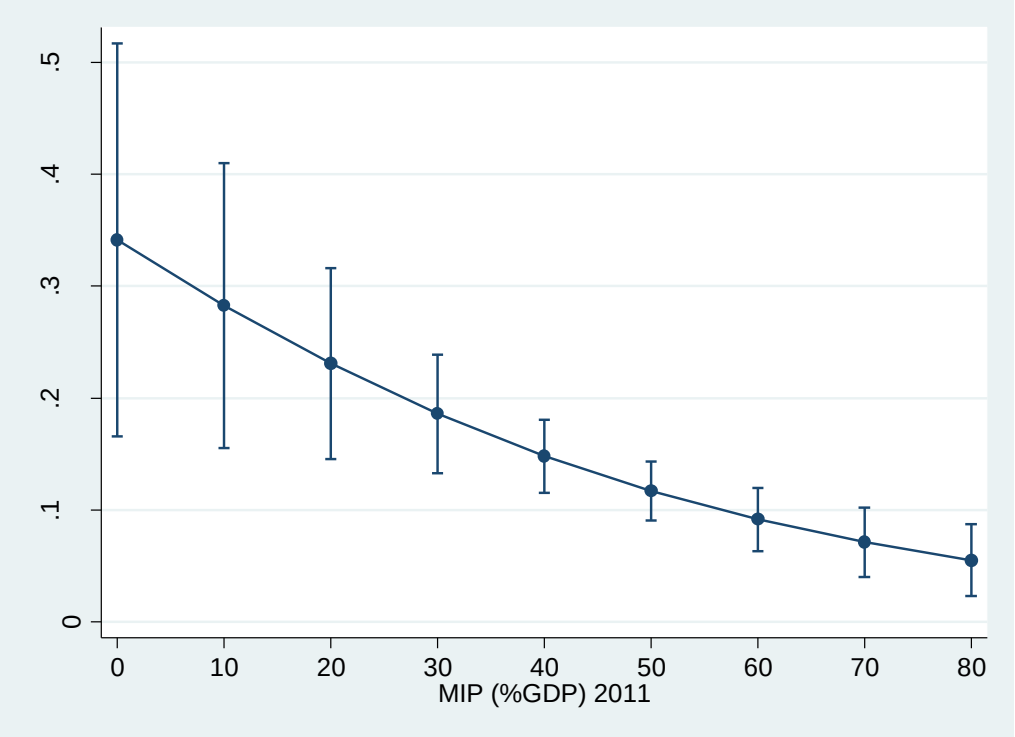
Source: EU-SILC UDB (version 01.03.2014). Data for 2011 is used for Belgium and Ireland. No data for Croatia.
Base: children under 18.

Figure A2 Effect of the unemployment rate on child poverty in 2012



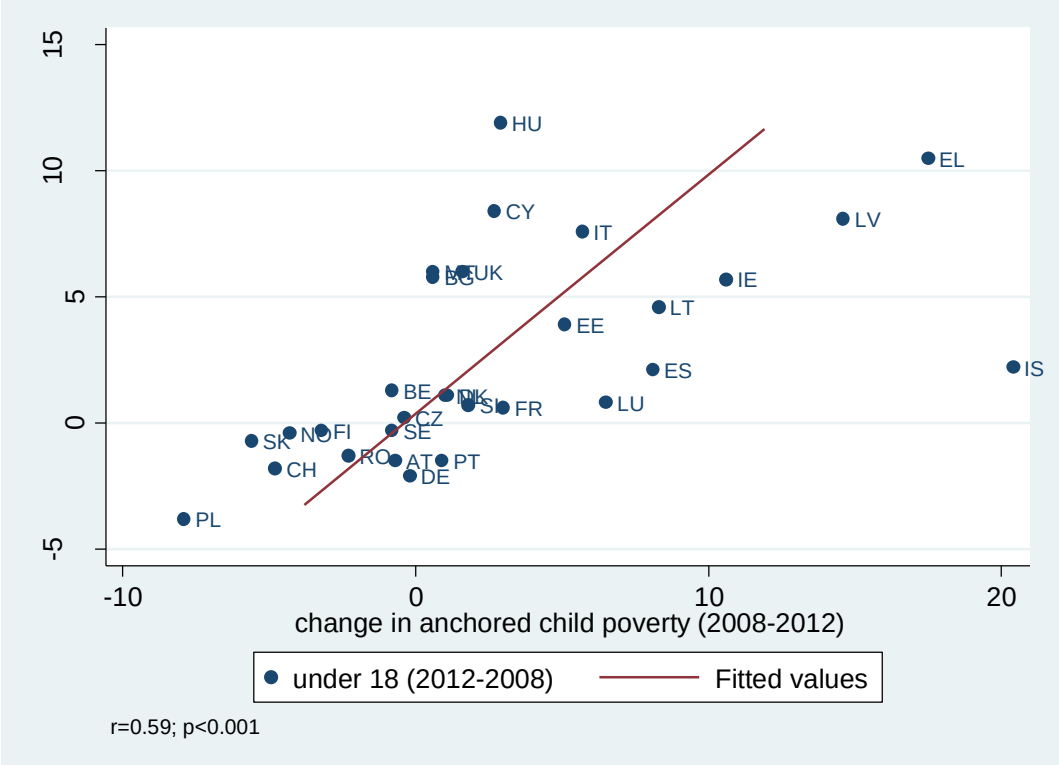
Estimated at the means of all predictors; coefficients from the full model in Table 2.

Figure A3 Effect of the MIP indicator on child poverty in 2012



Estimated at the means of all predictors; coefficients from Model 1 Table A5.

Figure A4 Absolute change in severe child deprivation by change in child poverty (2008-2012)



Source: Eurostat (last update 16.06.2014). No data for Croatia.

Table A1 Anchored child poverty change by household work intensity and lone parent status

	2008		2012		2008		2012	
	WI≥0.2	**WI<0.2**	**WI≥0.2**	**WI<0.2**	**Couple**	**Lone parent**	**Couple**	**Lone parent**
AT	0.12	0.66	0.11	0.59	0.13	0.25	0.12	0.29
BE	0.11	0.79	0.09	0.55	0.12	0.42	0.13	0.31
BG	0.19	0.93	0.15	0.80	0.22	0.42	0.22	0.46
CH	0.18	0.75	0.13	0.58	0.19	0.29	0.13	0.23
CY	0.13	0.55	0.14	0.59	0.11	0.33	0.16	0.26
CZ	0.08	0.75	0.09	0.71	0.08	0.39	0.10	0.27
DE	0.10	0.70	0.11	0.73	0.11	0.38	0.10	0.41
DK	0.08	0.38	0.09	0.32	0.07	0.17	0.08	0.18
EE	0.15	0.83	0.18	0.80	0.12	0.36	0.18	0.41
EL	0.22	0.60	0.36	0.91	0.22	0.34	0.39	0.65
ES	0.26	0.76	0.29	0.88	0.26	0.46	0.35	0.48
FI	0.09	0.63	0.06	0.55	0.10	0.25	0.08	0.17
FR	0.12	0.65	0.14	0.77	0.13	0.30	0.14	0.39
HU	0.13	0.71	0.12	0.78	0.18	0.29	0.20	0.36
IE	0.11	0.55	0.11	0.63	0.13	0.34	0.19	0.42
IS	0.11	0.33	0.29	0.71	0.08	0.26	0.25	0.57
IT	0.21	0.78	0.27	0.81	0.23	0.40	0.29	0.44
LT	0.21	0.69	0.26	0.86	0.17	0.47	0.26	0.48
LU	0.18	0.69	0.24	0.73	0.17	0.50	0.23	0.47
LV	0.21	0.84	0.33	0.88	0.19	0.36	0.32	0.56
MT	0.13	0.78	0.15	0.70	0.16	0.37	0.18	0.34
NL	0.10	0.62	0.11	0.55	0.10	0.32	0.11	0.33
NO	0.08	0.43	0.04	0.25	0.07	0.24	0.04	0.12
PL	0.20	0.72	0.12	0.72	0.22	0.28	0.13	0.23
PT	0.20	0.74	0.19	0.80	0.20	0.39	0.21	0.35
RO	0.30	0.82	0.28	0.71	0.31	0.42	0.3	0.34
SE	0.10	0.72	0.08	0.54	0.10	0.29	0.09	0.31
SI	0.09	0.78	0.11	0.87	0.10	0.26	0.12	0.27
SK	0.14	0.82	0.06	0.74	0.16	0.23	0.1	0.20
UK	0.16	0.72	0.19	0.57	0.19	0.43	0.21	0.39

Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland.
Base: children under 18.

Table A2 Anchored child poverty change by number of children and migrant status

	2008		2012		2008		2012	
	1-2 children	3 or more children	1-2 children	3 or more children	Non-migrant	Migrant	Non-migrant	Migrant
AT	0.13	0.21	0.11	0.21	0.11	0.28	0.10	0.27
BE	0.15	0.20	0.13	0.24	0.14	0.37	0.11	0.42
BG	0.19	0.61	0.19	0.62				
CH	0.16	0.31	0.11	0.24	0.15	0.35	0.10	0.29
CY	0.1	0.21	0.15	0.21	0.14	0.16	0.15	0.23
CZ	0.12	0.23	0.10	0.28				
DE	0.14	0.19	0.15	0.16	0.14	0.27	0.14	0.20
DK	0.07	0.15	0.07	0.19	0.08	0.25	0.09	0.26
EE	0.15	0.26	0.20	0.30	0.17	0.19	0.21	0.28
EL	0.22	0.31	0.40	0.60	0.20	0.42	0.35	0.77
ES	0.22	0.58	0.33	0.55	0.23	0.49	0.30	0.62
FI	0.1	0.16	0.07	0.13	0.10	0.41	0.07	0.29
FR	0.12	0.25	0.15	0.28	0.12	0.35	0.15	0.41
HU	0.16	0.33	0.16	0.40				
IE	0.15	0.23	0.22	0.30	0.18	0.18	0.25	0.23
IS	0.09	0.16	0.27	0.4	0.11	0.08	0.30	0.46
IT	0.22	0.38	0.27	0.49	0.24	0.32	0.28	0.44
LT	0.17	0.54	0.27	0.50	0.24	0.06	0.31	0.26
LU	0.16	0.35	0.21	0.37	0.16	0.4	0.21	0.41
LV	0.2	0.40	0.34	0.57	0.24	0.22	0.38	0.37
MT	0.16	0.30	0.16	0.34	0.19	0.18	0.20	0.23
NL	0.09	0.21	0.10	0.22	0.12	0.24	0.11	0.27
NO	0.07	0.15	0.05	0.05	0.08	0.27	0.04	0.15
PL	0.18	0.35	0.11	0.25				
PT	0.2	0.39	0.21	0.51	0.23	0.21	0.23	0.27
RO	0.24	0.59	0.25	0.53				
SE	0.11	0.17	0.09	0.22	0.10	0.29	0.09	0.30
SI	0.1	0.17	0.12	0.19	0.11	0.17	0.10	0.30
SK	0.11	0.34	0.07	0.25				
UK	0.18	0.39	0.22	0.35	0.23	0.29	0.23	0.34

Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland.
Base: children under 18.

Table A3 Severe child material deprivation change by household work intensity and lone parent status

	2008		2012		2008		2012	
	WI≥0.2	WI<0.2	WI≥0.2	WI<0.2	Couple	Lone parent	Couple	Lone parent
AT	0.05	0.39	0.04	0.3	0.06	0.17	0.04	0.14
BE	0.05	0.36	0.05	0.3	0.04	0.23	0.06	0.18
BG	0.36	0.91	0.39	0.86	0.37	0.6	0.42	0.66
CH	0.02	0.24	0.00	0.07	0.02	0.06	0.0	0.03
CY	0.08	0.45	0.17	0.45	0.07	0.29	0.15	0.46
CZ	0.06	0.35	0.06	0.43	0.06	0.23	0.07	0.19
DE	0.04	0.35	0.03	0.25	0.04	0.21	0.03	0.17
DK	0.02	0.24	0.03	0.15	0.01	0.08	0.03	0.08
EE	0.04	0.37	0.07	0.35	0.03	0.12	0.06	0.22
EL	0.09	0.41	0.18	0.53	0.09	0.34	0.20	0.38
ES	0.05	0.16	0.04	0.31	0.04	0.20	0.06	0.16
FI	0.02	0.20	0.02	0.12	0.01	0.14	0.02	0.10
FR	0.04	0.34	0.05	0.39	0.04	0.21	0.04	0.21
HU	0.17	0.57	0.25	0.76	0.19	0.36	0.30	0.51
IE	0.03	0.29	0.05	0.23	0.03	0.18	0.05	0.27
IS	0.01	0.03	0.03	0.14	0.01	0.02	0.01	0.10
IT	0.08	0.33	0.15	0.46	0.08	0.16	0.16	0.25
LT	0.11	0.42	0.13	0.52	0.10	0.22	0.13	0.32
LU	0.01	0.12	0.02	0.03	0.01	0.03	0.01	0.04
LV	0.18	0.53	0.23	0.62	0.14	0.34	0.21	0.46
MT	0.02	0.35	0.08	0.41	0.03	0.21	0.07	0.29
NL	0.01	0.20	0.02	0.21	0.01	0.10	0.02	0.11
NO	0.01	0.26	0.01	0.22	0.01	0.09	0.01	0.07
PL	0.16	0.49	0.12	0.53	0.15	0.39	0.11	0.29
PT	0.10	0.45	0.08	0.34	0.09	0.32	0.08	0.23
RO	0.37	0.77	0.37	0.57	0.35	0.63	0.36	0.55
SE	0.01	0.18	0.01	0.07	0.01	0.05	0.01	0.05
SI	0.04	0.30	0.04	0.49	0.04	0.13	0.05	0.14
SK	0.10	0.63	0.07	0.72	0.11	0.28	0.10	0.26
UK	0.03	0.27	0.07	0.41	0.03	0.2	0.08	0.28

Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland.
Base: children under 18.

Table A4 Severe child material deprivation change by number of children and migrant status

	2008		2012		2008		2012	
	1-2 children	3 or more children	1-2 children	3 or more children	Non-migrant	Migrant	Non-migrant	Migrant
AT	0.07	0.08	0.04	0.09	0.04	0.17	0.03	0.15
BE	0.07	0.08	0.06	0.12	0.05	0.22	0.05	0.21
BG	0.35	0.69	0.39	0.85				
CH	0.02	0.03	0.01	0.0	0.02	0.06	0.0	0.01
CY	0.09	0.12	0.18	0.19	0.09	0.11	0.18	0.17
CZ	0.07	0.13	0.06	0.21				
DE	0.06	0.09	0.05	0.05	0.07	0.09	0.05	0.03
DK	0.02	0.04	0.03	0.06	0.02	0.11	0.04	0.05
EE	0.04	0.11	0.08	0.14	0.06	0.03	0.08	0.14
EL	0.1	0.15	0.20	0.35	0.08	0.26	0.16	0.52
ES	0.03	0.16	0.07	0.12	0.03	0.18	0.05	0.20
FI	0.04	0.02	0.03	0.02	0.03	0.07	0.02	0.07
FR	0.06	0.08	0.06	0.10	0.05	0.15	0.06	0.17
HU	0.16	0.38	0.25	0.54				
IE	0.06	0.08	0.10	0.09	0.07	0.05	0.10	0.07
IS	0	0.02	0.03	0.04	0.01	0.03	0.03	0.03
IT	0.08	0.18	0.15	0.27	0.09	0.16	0.15	0.30
LT	0.11	0.23	0.16	0.19	0.11	0.23	0.17	0.20
LU	0.01	0.02	0.02	0.02	0.01	0.02	0.01	0.03
LV	0.16	0.3	0.25	0.38	0.19	0.19	0.26	0.33
MT	0.05	0.07	0.10	0.13	0.05	0.04	0.10	0.11
NL	0.02	0.04	0.03	0.03	0.01	0.12	0.01	0.11
NO	0.02	0.04	0.02	0.02	0.02	0.09	0.01	0.06
PL	0.14	0.28	0.11	0.23				
PT	0.09	0.31	0.09	0.22	0.11	0.2	0.09	0.17
RO	0.31	0.64	0.31	0.65				
SE	0.02	0.02	0.01	0.01	0.01	0.05	0.01	0.04
SI	0.05	0.08	0.05	0.10	0.05	0.08	0.05	0.13
SK	0.1	0.21	0.07	0.30				
UK	0.05	0.11	0.11	0.17	0.06	0.10	0.12	0.14

Source: EU-SILC UDB (version 01/03/2014). Data for 2011 is used for Belgium and Ireland.
Base: children under 18.

Table A5 Multilevel logistic regression of child poverty (2008-2012): country level predictors only, alternative models

		MIP as % GDP per capita	Total social spending, % GDP	Standard deviation (intercept)	ICC	BIC
2008	Model 1	-0.02**		0.47	0.06	76,604
	Model 2	-0.01	-0.05**	0.40	0.05	76,607
2009	Model 1	-0.02***		0.42	0.05	72,301
	Model 2	-0.02*	-0.03	0.41	0.05	72,310
2010	Model 1	-0.02*		0.53	0.08	73317
	Model 2	-0.01	-0.05*	0.48	0.07	73,323
2011	Model 1	-0.02*		0.63	0.11	71451
	Model 2	-0.01	-0.06**	0.55	0.08	71,455
2012	Model 1	-0.03**		0.64	0.11	72,638
	Model 2	-0.02**	-0.04	0.61	0.10	72,647

Sources: EU-SILC UDB version 01.03.2014; SaMip 2.6; OECD; Eurostat. Country level variables at their (t-1) levels.
***p<0.001, **p<0.01, *p<0.05. Estimated with 15 integration points.

Table A6 Country level indicators – summary statistics

	2007		**2008**		**2009**		**2010**		**2011**	
	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
MIP as % GDP per capita	40.1	13.9	41.0	14.4	45.3	15.0	45.5	14.9	45.4	15.1
Total social spending, %GDP	20.8	5.4	21.5	5.1	24.3	5.1	24.0	5.0	23.6	5.4
Unemployment rate (%)	5.1	2.1	5.0	2.0	7.1	3.5	8.2	4.3	8.1	4.3

Source: SaMip 2.6; OECD World Economic Outlook Database version April 2014; Eurostat.
27 countries (excluding Belgium, Ireland, and Italy)

Table A7 Multilevel logistic regression of severe child deprivation (2008-2012): country level predictors only, alternative models

		MIP as % GDP per capita	Total social spending, % GDP	Standard deviation (intercept)	ICC	BIC
2008	Model 1	-0.05***		1.04	0.25	45,369
	Model 2	-0.03	-0.11**	0.91	0.25	45,369
2009	Model 1	-0.07***		1.10	0.27	43,848
	Model 2	-0.04**	-0.13**	0.95	0.22	43,852
2010	Model 1	-0.05*		1.33	0.35	45,175
	Model 2	-0.02	-0.18***	1.05	0.25	45,174
2011	Model 1	-0.04*		1.32	0.35	43,808
	Model 2	-0.02	-0.17***	1.06	0.26	43,808
2012	Model 1	-0.05**		1.25	0.32	47,343
	Model 2	-0.03*	-0.14***	1.03	0.24	47,344

Sources: EU-SILC UDB version 01.03.2014; SaMip 2.6; OECD; Eurostat. Country level variables at their (t-1) levels.
***p<0.001, **p<0.01, *p<0.05. Estimated with 15 integration points.