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Living arrangements, intra-household inequality and children's deprivation: Evidence from EU-SILC

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Editorial note

Eleni Karagiannaki is Assistant Professorial Assistant at CASE. Tania Burchardt is Dr Tania Burchardt is Associate Director of the Centre for Analysis of Social Exclusion (CASE), Deputy Director of STICERD, and an Associate Professor in the Department of Social Policy at the London School of Economics. This work was supported by the Economic and Social Research Council grant number ES/P000525/1. It is based on data from Eurostat, EU-SILC 2014. The responsibility for all conclusions drawn from the data lies entirely with the authors and not those of Eurostat, European Commission or any of the national statistical authorities whose data have been used. We are grateful for useful comments to Kitty Stewart, members of the Advisory and User Group of the project "Intra-household allocation of resources: implications for poverty, deprivation and inequality in the European Union" and to participants of the International Workshop "Money within the household: new frontiers in research, new directions for law and policy" Oxford 3-5 July 2019.

Abstract

Evidence from the 2014 EU-SILC indicates that a non-negligible proportion of children in Europe live in multi-family households. Leaving aside more complex household types, around 4% of children live with their grandparents and a further 7% with their adult siblings. In this paper we investigate the extent to which living in these two types of households protects children against material deprivation and we provide direct tests of the relationship between the distribution of bargaining power within households and children's deprivation outcomes.

Our findings indicate that most groups of children in multi-family households face significantly higher deprivation than children in nuclear households. The exception is lone-parent children who live in multi-family households with their grandparents, who in many countries face a lower deprivation risk than their counterparts in nuclear households. To a large extent the higher deprivation risk of most children in multi-family households reflects selection into co-residence of families facing financial difficulties. Household income and household work intensity explains to a large extent the higher deprivation risk of children in multi-family households. By contrast neither mother's nor parents' income share within the household are significant predictors of children's deprivation status, once other factors are controlled for, suggesting that the distribution of bargaining power within the household does not have any effect on children's deprivation outcomes.

Using a simulation exercise we further show that co-residence with grandparents protects a large share of children against deprivation while co-residence with adult siblings has more mixed effects across countries. Analysis of the within household differences in deprivation outcomes shows that differences in deprivation status between children and adults in multi-family households are common, with parents and grandparents apparently more likely to make sacrifices in their own living standards to protect both dependent and adult children in the household from deprivation.

Key words: material deprivation, children, living standards, poverty, intra-household inequality, bargaining power, Europe

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1. Introduction

Co-residence between generations of the same family is a key form of intergenerational solidarity and a strategy employed by families to capitalise on the economic and non-economic resources of the extended family. Evidence from the US and from other countries has consistently found that co-residence as a form of intergenerational support is employed as coping strategy in the face of hardship providing both functional and financial support. In Europe, intergenerational co-residence as a form of intergenerational solidarity is more prevalent in Southern and especially Eastern European countries and less so in Western and Northern Europe. Cross-country differences in the prevalence of intergenerational co-residence have been attributed to several factors including cultural values and beliefs (Giuliano, 2007) and the interplay between public and private forms of provision for care and financial support (Saraceno and Keck, 2010; Glaser et al, 2004). Over the course of the 20th century, improvements in the health and economic well-being of the elderly as well as rising incomes of the non-elderly has led to decreases in intergenerational co-residence in most western industrialised societies (Ruggles, 2007; Palloni 2001; Tomassini et al. 2004). The few last years, however, a trend towards an increased age at which young adults leave parental home – due to a combination of factors including delays in the age of marriage, increased labour market insecurity, youth unemployment, rising house prices and limited access to welfare benefits on their own right – produced a rise in another type of intergenerational co-residence: i.e., that between young adults and their parents many of whom may also still have dependent children. In Europe, this trend has been linked to the differential degree of defamiliarization of different welfare states and welfare regimes (Lohmann and Marx, 2008) and has been stronger in Southern European countries (Eurofound, 2014) traditionally characterised by high intergenerational dependence, though increases have also been recorded in Northern and

Western European countries (Stone, et al, 2014; Fry 2016; Gustafsson, 2021).¹

Although there is a large and growing literature on the drivers and the possible implications of intergenerational co-residence on the well-being of parents and their adult children, there are very few studies focusing on its implications for the well-being of dependent children. To our knowledge the only study that examines this issue in Europe is that by Verbist et al (2020), whose main objective was to analyse child poverty outcomes within three-generation households. Their main conclusion is that the formation of multi-generational households operates mainly as solidarity from older to younger generations. In this paper we use data from 2014 EU-SILC to extend the evidence base by considering the effects on children's living standards not only of co-residence with grandparents but also co-residence with young adult siblings. Given that the formation of multi-generational households may be a response to needs of different household members the implications of intergenerational co-residence for children's well-being may vary considerably between these two household types. Moreover, unlike Verbist et al (2020) who measure the degree and the direction of intergenerational solidarity in terms of income poverty, our assessment is based on child-specific material deprivation outcomes. The advantage of using child deprivation data is that it allows us to directly examine children's living standards and to capture differences in individual living standards within the household (Nolan et al., 2011; Cantillon and Nolan, 1998), and provides a unique opportunity to test directly whether the assumption of equal sharing of resources holds within households. We use a definition of 'nuclear family' that includes an adult, his/her spouse (if any), and

¹ The concept of defamilisation is often defined as 'the degree to which individual adults can uphold a socially acceptable standard of living independently of family relationships, either through paid work or through social security provisions' (Lister, 1997: 173 cited in Bamba, 2007). It has been mainly used to examine the extent to which welfare states, and welfare state regimes, facilitate female autonomy and economic independence from the family (Bamba, 2007).

dependant children (if any), and we define a 'multi-family household' as a household consisting of two or more nuclear families, which therefore might comprise, for example, a couple and a dependant child, plus an older sibling who has not yet left home, or a single mother and child, living with the child's grandparents. Specifically, we address the following questions: i) how do the rates of children's deprivation vary by children's family type and by whether they live in a nuclear or multi-family household? ii) does living in a multi-family household protect children against deprivation and how does this vary by multi-family household type? iii) what is the relationship between children's and parents', and between children's and other household members' deprivation status?; iv) what do these relationships imply about intra-household inequality in deprivation outcomes and about how different household members value their own and children's welfare? v) does the distribution of relative bargaining power between the parents and between the parents and other household members have any effect on children's deprivation risk?

The first, purely descriptive, question is important to identify in what kinds of households deprived children are concentrated, which can be useful to inform the targeting of social protection and other interventions. The second question takes account of the fact that in order to economise families and individuals in financial difficulties are more likely to form multi-family households and recognises that there may be winners and losers, in terms of living standards, from this strategy. For example, adult siblings may gain from co-residence compared to living independently, but unless they are net contributors to the household finances, children's living standards may suffer to some extent. This is crucial for understanding the implications of different kinds of living arrangements for children and for designing policies to support families appropriately. Questions three, four and five turn to the extent and correlates of inequalities within the household. These questions are important because they problematise the common assumption that income (or utility) is shared to the equal benefit

of all adults and children living in the household and that a child cannot be poor or materially deprived if total household resources are over a certain threshold and therefore living standards of individuals can be measured through household-level indicators. This issue is important because there is compelling evidence which suggests that there may be significant inequalities within a household (as reviewed for example by Bennett, 2013 and stressed by many studies e.g., Iacovou, 2017) and that these inequalities may affect not only adults' but also children's living standards.

2. Relevance to the literature

The paper relates to two strands of existing literature. The first considers the impact of intra-household sharing of resources on children's welfare. With few exceptions the issue of intra-household sharing of resources and their implications for living standard measurement is studied in couples (Borooah and McKee, 1993; Davies and Joshi, 1994; Findlay and Wright, 1996; Fritzell, 1999; Phipps and Burton, 1995; Pontieux and Meurs, 2015); and many studies focus on the allocation of resources between adults rather than considering how the living standards of children may be affected. The few studies that examine the implications for children's well-being have shown that children benefit when the bargaining position of women is improved, indicating a lesser degree of income pooling; Haddad and Hodinott (1994) and Duflo and Udry (2004) for Côte d'Ivoire; Bobonis (2009) and Attanasio and Lechene (2010) for Mexico; Thomas (1990) for Brazil. In contrast, Braido et al (2012) find no evidence from a natural experiment in Brazil that women being benefit recipients had an independent association with household food expenditure, suggesting a greater degree of income pooling. However, as the authors stress, the households in their sample are very poor and spend more of their income on basic goods and therefore cannot be generalised to the whole population. For the UK, Lundberg et al (1997) used the 1970 reform of the UK tax and benefit system, which redirected child benefit income from men to women, as a quasi-experiment to examine the impact on household

spending patterns. Using aggregate data, they found evidence that households shifted expenditures away from male clothing and towards female and children's clothing, in line with the conjecture that women attach more weight to their children's and their own welfare. Ward-Batts (2008) and Hotchkiss (2005) exploited the same reform, this time using microdata and focusing on families without children as a control group, to reject the income-pooling hypothesis implied by unitary household models, reaching similar conclusions to Lundberg et al (1997). Fischer (2015), using another reform to the UK tax-credit system in 2003 which made the carer of the children the default benefit recipient as a quasi-experiment, found that whilst the reform caused low-income households to reallocate spending towards children's goods, the effect also extended to goods that are collectively consumed by all household members, thus providing evidence supporting some aspects of the income-pooling hypothesis.

Exploring intrahousehold differences in material outcomes using data from Ireland, Cantillon (2013) found that the gap between partners is wider where the woman's independent income is a lower share of total household income, and especially if there are children in the household. Main and Bradshaw (2016), analysing the UK Poverty and Social Exclusion survey, showed that parents who are themselves in poverty are engaging in a range of behaviours suggesting that they sacrifice personal necessities in favour of spending on children. Cantillon et al., (2004) examining child and household deprivation jointly found that children and parents experience parallel deprivation whereas Middleton et al. (1997) have shown that parents and children may not experience the same level of deprivation.

The evidence is scarce for more complex households consisting of more than one nuclear family unit, but the studies that do exist, reject the equal sharing assumption (Duflo, 2000; Hayashi, 1995; Gosling et al, 2003). Verbist et al (2020) using self-reported data from EU-SILC on the degree of sharing in households found that the full sharing of incomes occurs less

in three-generation than in two-generation households and that the elderly household members share a substantial part of their income in the common household budget (with the average sharing centring at around 70%). Iacovou and Davia (2019) using the same data show that substantial numbers of young people who live with their parents do share a significant proportion of their incomes with their households; that the degree of sharing is driven primarily by needs of the wider household, and barely at all by the resources of the young adults and is largest in poorest households; and that in these households, the income shared by young adults is likely to make a considerable difference to the household's standard of living.

A second strand of literature, which relates to our study, considers the prevalence, determinants and the implications of intergenerational co-residence across different dimensions of well-being of younger and older generations (Rendall and Speare, 1995; Glaser et al. 2004; Grundy, 2000; Karagiannaki, 2011; Manacorda, and Moretti, 2006; Silverstein and Bengtson 1997; Iacovou and Davia, 2019). To date the majority of studies in this area do not examine specifically the link between multi-generational co-residence and the well-being of dependent children. One exception is the study by Glaser et al, (2018) who found a decrease in multigenerational co-residence in Austria, France, Greece and Portugal, between the 1970s and the early 2000s but an increase in the US and Romania and strong link between living in a multi-generational household and socio-economic disadvantage. Another exception is the study by Verbist et al (2020) who assess how the formation of multi-generational households is related to poverty risk of both the elderly and children across European countries. The results indicate that the formation of multigenerational households operates mainly as solidarity from older to younger generations and is particularly strong in countries with high prevalence of multi-generational households and with welfare states characterized by relatively generous pensions and relatively meagre child

benefits, as well as larger inequalities in working income. Through a series of simulations, Verbist et al investigate the implications of relaxing the standard assumption in distribution analysis that resources are fully shared within the household and find that under the partial resource-sharing assumption, child poverty in multi-generational households would be on average almost 10 percentage points higher than under the standard full sharing assumption (with considerable cross-country differences).

Our paper contributes to and extends these literatures by examining the effects of a wider range of living arrangements on children's living standards including living in extended households which beyond their nuclear family include co-resident grandparents versus co-resident adult siblings; by looking at the relationship between children's, and adult household members' deprivation outcomes; and by undertaking direct tests of the association between children's deprivation and the distribution of bargaining power within the household to unravel the existence of a potential link between intra-household inequality in sharing of household resources and children's deprivation.

3. Data

3.1. General information about the EU-SILC

Data for our analysis come from the European Union Statistics on Income and Living Conditions (EU-SILC). EU-SILC is an annual micro survey which has run continuously since 2007. It provides detailed micro data on a wide range of social indicators including income, poverty, social exclusion and living conditions for all the then 28 EU Member States (as well as Serbia, Switzerland, Norway and Iceland). The data collection methods in EU-SILC differ across countries. Broadly, countries can be classified into two groups according to the data collection type used: (i) the 'register countries' (Denmark, Finland, Norway, Sweden and Iceland as well as the Netherlands and Slovenia) that rely on administrative sources for collecting several variables (e.g., income) and collect other household and individual-level

variables (e.g., education, health) via interviews with a single 'representative person' in the household (i.e., the selected respondent in the EU-SILC terminology) and; (ii) the 'survey countries', where all information is collected through personal interviews with all adults in each household over sixteen years of age.

3.2. Family and household type classification

Identifying the different family units within each household plays a central role in the analysis of this paper. To construct our combined family and household type classification we define a family unit – as briefly mentioned above – as an adult, plus his/her partner (if any), plus any dependent children. A critical decision we had to make to identify family units within each household is how to define a dependent child. Principles may vary across countries, and are influenced by variations in education and benefit systems. For the purposes of consistency and comparability, we adopt a common definition for all countries and we classify as a dependant any child living with either of his/her parents, who is aged 19 years and under, or aged 20 to 25 and in full-time education. Based on these definitions, we classify family units into six categories: singles with no dependent children; lone-parent (singles with dependent children); couples with no dependent children; couples with dependent children; elderly singles (aged 65 or over); or elderly couples (at least one aged 65 or over). We further distinguish between family units living in one-family (nuclear) households (i.e., a household consisting exclusively of a single-family unit), and family units living with others in what we term a 'complex' or 'multi-family household'. Examples include a couple plus a grown-up son or daughter; a couple or a single person (with or without dependent children) plus an elderly parent.

According to the adopted definitions we categorise children in six broad household types: i) children in a two-parent family who live in a nuclear household; ii) children in a lone-parent family who live in a nuclear

household; iii) children in a two-parent family who live in a multi-family household with grown-up siblings iv) children in a two-parent family who live in a multi-family household with grandparents; v) children in a lone-parent family who live in a multi-family household with a grandparents; vi) children in a lone-parent family who live in a multi-family household with adult siblings.² Note, that under the definition adopted in this paper, parents are not necessarily natural parents of the child, so a “two-parent family” may for example include parent and stepparent, and “siblings” include co-resident step- or half-siblings. Also, note that the adopted definition does not restrict on grandparent’s age to define multi-generational households (i.e., grandparents can be younger than 65).³

Table A1 includes statistics describing the demographic profile and other relevant characteristics of the grandparents and the adult siblings who live in the two multi-family household types that are the focus of this paper. First, in most countries the majority of grandparents who live in multi-family households with their grandchildren are younger than 65 years old (with the exception of Greece and Italy and to a lesser extent the Nordic countries where the majority of grandparents who live in multi-family households are older than 65 years old). Differences in the distribution of self-reported economic status across countries are also very large and to some extent reflect country differences in the age distribution of the co-resident grandparents. This is important because economic status is

² Children may fall into four additional household types. i) children in a two-parent family who live in a multi-family household with both adult siblings and grandparents; ii) children in a two-parent family who live in a multi-family household with other adults; iii) children in a lone-parent family who live in a multi-family household with both adult siblings and grandparents; v) children in a lone-parent family who live in a multi-family household with others. Given the complexity of presenting results for all types the main body of the paper does not report results for these household types (though statistics about the proportion of children living in these households are presented in Appendix Table A6.

³ By contrast, in Verbist et al. (2020) a multigenerational household is defined as a household where at least one child, one old-age individual and one working-age individual is present.

associated with the likelihood that the grandparent will be a net contributor to household resources. The proportion of grandparents in work range between 10% (Greece) and 47% (Cyprus), while those reporting to be "retired" range between 22% (Cyprus and Malta) and 62% (Slovenia and Austria). Large differences also exist in the proportion of grandparents classifying themselves as "permanently ill or disabled" which is less than 1% in Cyprus but more than 13% in the UK. In many countries there are particularly many grandparents who classify themselves as "unemployed" (most pronounced being the case of Bulgaria, Cyprus, Spain, Belgium and Ireland). This fraction is much lower in Luxembourg, Czech Republic, Estonia, Malta and Romania (less than 3%). Finally, there is a very large variation in the proportion of grandparents who report "fulfilling domestic tasks" as being their main economic status. This proportion is particularly small in Slovakia, Czech Republic, Lithuania and Hungary (less than 2%), very large in Malta (over 40%) and the other Mediterranean countries, but also considerable in Luxembourg (around 33%). The grandparents in these households can be seen as providing a substitute for publicly provided childcare. Around 45% of grandparents who live in multifamily households report that they are limited in their daily activities due to ill-health (with a range from around 57% in Slovakia to around 18% in Malta). Differences with similarly-aged people not living in multi-family households are relatively small however so it is difficult to determine the extent to which these limitations drive the formation of multi-family households.

Several interesting observations can also be made about the characteristics of young adult siblings who live in multi-family households. First, as one would expect, in all countries most young adult siblings who live with their parents and dependent siblings are aged between 19-24 (78% overall with a range between 55% in Slovenia to 96% in Denmark) although a substantial proportion of adult siblings who live with parents and dependent siblings are aged over 25 especially in the Southern and several Eastern European countries. In the Nordic and Continental countries, the majority

of co-resident young adults are employed. A much lower proportion of co-resident young adults are employed in Southern Europe (except for Malta) and several Eastern European countries. In many of these countries the dominant economic status among co-resident adult siblings is unemployment. This is especially the case in Greece, Spain and Portugal, countries which are generally characterised by weaker social protection systems for younger people which can be linked to increased intergenerational dependency and a shift of the poverty risk from young adults to their family (Lohmann and Marx, 2008).

3.3. Measures of material deprivation in EU-SILC

EU-SILC provides household-level material deprivation data on an annual basis. These household-level material deprivation data formed the basis of the official material deprivation indicator adopted in EU in 2009. This indicator defines individuals as being deprived if they live in a household that cannot afford at least three of the following nine basic items: i) to pay their rent, mortgage or utility bills; ii) to keep their home adequately warm; iii) to face unexpected expenses; iv) to eat meat or proteins regularly; v) to go on holiday; vi) to have a television set; vii) to have a washing machine; viii) to have a car; ix) to have a telephone. The standard 9-item index is based on a threshold of 3 or more items while a threshold of four or more items is deemed 'Severe Material Deprivation' by the EU and was one of the principal indicators of the Europe 2020 social inclusion targets.

Though useful for measuring and monitoring material deprivation across the EU Member States, the official material deprivation indicator had one major shortcoming: the deprivation items that are included in the index are collected at household level (i.e., only one household member provides information) and the deprivation status is then assigned to all household members. Thus, it cannot be used to infer inequality in deprivation outcomes across household members (including children) or to make inferences about how differences in deprivation risks within households can

be explained by the distribution of bargaining power across household members. In March 2018, the EU adopted a new material deprivation indicator which was a step forward towards the direction of capturing individual deprivation. This indicator includes 7 of the 9 household-level deprivation items included in the original 9-items index plus 6 individual-level deprivation items.⁴

For children, a variant of this measure was developed indicating the share of children up to 16 years of age, who live in households where at least half of the adult household members (aged 16 and older) cannot afford at least 5 items of the 13 included in the index. But recognising that this new measure did not purely reflect children's well-being, in a parallel development a new child-specific deprivation measure was adopted – following recommendations by Guio et al. (2018) – which includes age-appropriate child-specific information available in the 2014 ad-hoc EU-SILC material deprivation module.⁵ The new official EU child deprivation index includes 12 child-specific deprivation items (see the list below) plus five deprivation items measured at the household level.⁶ This indicator is

⁴ The seven household-level deprivation items included in this index are: 1) avoid arrears (in mortgage, rent, utility bills and/or hire purchase instalments); 2) afford keeping their home adequately warm; 3) ability to face unexpected expenses; 4) afford a meal with meat, chicken or fish or vegetarian equivalent every second day; 5) afford one-week annual holiday away from home; 6) have access to a car/van for personal use; and 7) replace worn-out furniture. The six individual level deprivation items assess the inability of the individual to: 8) replace worn-out clothes with some new ones; 9) have two pairs of properly fitting shoes; 10) spend a small amount of money each week on him/herself; 11) have regular leisure activities; 12) get together with friends/family for a drink/meal at least once a month; and 13) have an internet connection

⁵ This builds on earlier work by Guio et al. (2012) which used the earlier (2009) EU-SILC material deprivation module.

⁶ Some recent works have used this new measure to analyse the determinants of child deprivation in Europe (e.g., Guio et al 2020). Earlier de Neubourg et al. (2012) estimated a child deprivation scale based on 14 specific child-related variables based on 2009 EU-SILC material deprivation module.

deemed as more appropriate to capture child well-being and it will be collected in future every three years via an ad-hoc module of the EU-SILC.

In this paper we use the same 2014 EU-SILC data as Guio et al (2018), which includes the ad hoc material deprivation module with child-specific deprivation questions, but for reasons explained below our index is not identical. The child deprivation questions in this module refer to children aged 1-15. However, the questions were asked not to children themselves but to the household respondent. According to the survey protocol, the household respondent had to indicate whether the children in their household (as a group) have each particular good or service from a list of the following 13 items: 1) some new (not second hand) clothes; 2) two pairs of properly fitting shoes including a pair of all-weather shoes) 3) fruits and vegetables once a day; 4) one meal with meat, chicken or fish (or vegetarian equivalent) at least once a day; 5) books at home suitable for their age; 6) outdoor leisure equipment; 7) indoor games; 8) regular leisure activity 9) celebrations on special occasions 10) invite friends round to play; 11) participate in school trips and school events that cost money; 12) suitable place to study or do homework; 13) go on holiday away from home at least one week per year. Items (1)-(10) and (13) apply to households with children aged 1-15 while items (11)-(12) apply only to households with school-age children. If the household respondent reported lack of a particular item, they had to indicate whether this was because the household cannot afford it or for other reasons.

The inclusion of child-specific deprivation items in EU-SILC is an important step forward in the measurement of child living standards. However, several features and limitations should be noted. Firstly, there is a decision to be made about whether to use the 'enforced lack' definition (lack because cannot afford) or the 'simple lack' definition. The enforced lack definition attempts to capture the impact of financial constraints rather than preferences, but responses may be influenced by subjective adaptation to

economic circumstances (McKay, 2004; Dominy and Kempson, 2006; Halleröd, 2006), and/or a person spending a high share of his or her income on 'unnecessary' types of goods and services can still report an enforced lack of items on the list. Despite these concerns, we persist with the enforced lack definition in order to maintain comparability with prior research on this topic and to circumvent potentially large differences in preferences for child-related items in different countries affecting the cross-country comparisons. Secondly, the EU-SILC questions are addressed to a respondent who answers on behalf of children in the household as a group, obscuring any differences there may be between different children within the household. And thirdly, qualitative research suggests that there are important differences in the perceptions and experiences of deprivation between parents and children (Ridge, 2009; Main, 2018). The EU-SILC child deprivation data reflects the perspective of adult respondents. However, despite these limitations, the ability to examine children's deprivation separately from either adult- or household-level deprivation is an important and valuable extension in the repertoire of material deprivation analysis and particularly useful for the analysis of children's living standards in complex households.

The child deprivation indicator we use in this paper is constructed based on the unweighted sum of all deprivation items that apply to all children aged 1-15. This leaves out items applicable only to school-age children i.e., items 11 and 12 from the list above, because we wish to avoid having different lists of items for different families.⁷ Also unlike the new EU child-specific deprivation index our index does not include household level deprivation items. Though, we recognise that these will have an impact on child deprivation (as it has also been stressed in the literature see e.g. Bárcena et al, 2017; Guio et al, 2020), our choice was driven by the fact that for

⁷ Note that item 12 "Suitable place to study or do homework" has not been included in the EU child-specific indicator either as it failed to pass some of the underlying tests.

addressing the questions relating to the relationship between children's deprivation and the distribution of bargaining power within the household as well as for the analysis of the distribution of deprivation outcomes within households it was more appropriate to focus on purely child-specific deprivation items.

The unweighted sum of all 11 deprivation items included in our index produces the deprivation scale for each child in the sample, with a range from 0 (corresponding to the situation of no deprivation) to 11 (indicating enforced lack of all deprivation items). As shown in appendix Table A2, across all countries, the items most commonly lacked are "ability to go on holiday" and "regular leisure activity" (lacked by 26% and 12% of children respectively). In contrast the items least commonly lacked are "two pairs of properly fitting shoes", "fruit and vegetables once a day" "books at home" and "indoor games", each lacked by about 4% of children in the countries included in analysis, and especially so in richer European countries. Overall, across all countries, 32% of the children lacked any of the eleven items, ranging from less than 7% in Sweden to over 70% in Romania and Bulgaria (Table A3). In general, the Nordic countries and Luxembourg have the lowest levels of child deprivation, with less than 15% of children lacking any of the items in the deprivation scale, followed by the Czech Republic, Slovenia, Estonia, Netherlands, Germany, France, Austria and Belgium where around 16-23% of children suffer from at least one deprivation. Much higher levels of deprivation are observed among children in Slovakia, Lithuania, Poland, Croatia, Italy, Spain and Malta, with approximately a third of children suffering from at least one deprivation and even higher rates in the United Kingdom, Latvia, Portugal, Serbia, Greece and Cyprus (approximately 40%) and even higher in Hungary and Ireland (more than 55%).⁸

⁸ The reliability of the 11-item child deprivation index for the pooled sample of all countries as indicated by the Cronbach statistic is almost 0.88 which is very high (see appendix Table A4). Though there is some variation across

As one would expect, the deprivation rates in all countries decrease substantially with higher deprivation thresholds, especially when the threshold increases from 1+ to 2+. Here, we choose a threshold of 3+ items to define whether a child is deprived or not (we refer to this indicator as MDC3). Although there is some degree of arbitrariness, the chosen threshold provides the best balance between minimising the bias (which is deemed higher if we set the threshold to 1+ or 2+) and maximising sample size in richer countries where a 4+ threshold produces very small sample size.

In addition to the child-specific deprivation data, in section 7 we make use of the adult individual-level deprivation data included in the 2014 module to construct an individual-level deprivation indicator for each adult household member. We use this indicator to assess the relationship between children's, parents' and other household members' deprivation outcomes. This indicator classifies adults as deprived if they lack because they cannot afford two or more of the following seven items: (i) replace worn out clothes by some new; (ii) two pairs of properly fitting shoes; (iii) get together with friends/family for drink/meal at least once per month; (iv) regularly participate in leisure activities; (v) spend a small amount of money each week on yourself; (vi) internet connection for personal use at home; (vii) regular use of public transport. The choice of a threshold of two or more items provides the closest equivalent to the threshold used in the standard 9-item EU material deprivation indicator in terms of the proportion

countries, for the majority of countries the Cronbach's alpha is over the 0.70 acceptable threshold (Nunally, 1978). The suitability of the different deprivation items comprising the index (as indicated by the proportion of children in households that either have the item, or do not have the item due to financial constraints) is also very high. In the pooled sample of all countries: 9 out of the 11 items were either possessed or wanted by more than 95% of the children (see Table A5). A slightly lower but still fairly high proportion of children (more than 85%) lived in a household that either possessed or wanted but could not afford the remaining two items (i.e. the "regular leisure activity" and "invite friends round to play" items).

of items required to define deprivation and the proportion of adults that are identified as deprived (for more details see Karagiannaki and Burchardt, 2020).

3.4. Sample selection

For the analysis of this paper, we use data for all European countries included in the cross-sectional 2014 EU-SILC user database (UDB) i.e. all the then 28 European Union member states plus Serbia and Switzerland.⁹ For all included countries, the analysis sample is restricted to children aged 1-15 years old with non-missing data on each of the items included in the deprivation index as well as with non-missing household income and parental income information. To avoid adding further complexities in the definition of children's family and household types and to be able to disentangle the impact of the relative bargaining power of different household members on children's deprivation risk, we drop children who live in households that include two or more families with children (1,260 out of 86,235 children) as well as children who live in households with zero or negative income (209 observations) and children who do not live with any of their parents (577 observations). The analysis of the relationship between children's, parents' and other household members' deprivation in section 7.1 further excludes children in several "register countries" (Denmark, Finland, Sweden, and the Netherlands) given that information on adult material deprivation in these countries is only available for one adult in the household (i.e., the selected respondent).

Though we implement most of our analysis at country-level we present many of the results for each country using the following country grouping typology:

⁹ The cross-sectional EU-SILC UDB also includes data for Norway and Iceland. Norway, is excluded from our analysis due to a high prevalence of missing values for several children deprivation items while Iceland is out of scope of this paper.

- Nordic: Sweden, Denmark, Finland
- Continental: Germany, France, Belgium, Luxembourg, Switzerland, Austria, and the Netherlands
- Anglo-Saxon: United Kingdom and Ireland
- Southern: Greece, Italy, Spain, Portugal, Cyprus, Malta
- Eastern: Slovenia, Slovakia, Poland, Croatia, Bulgaria, Romania, Serbia, Czech Republic and Hungary
- Baltic: Estonia, Lithuania and Latvia

4. Cross-country differences in children's living arrangements

This section investigates variation in the living arrangements and household composition of children across Europe. We first consider differences across countries in the proportion of children who live in a two-parent family or in a lone-parent family (i.e., leaving aside for the moment whether the household they live in includes other adults beyond their parents). Figure 1 shows the proportion of children aged 1-15 years old in each country who live in two-parent families or in lone-parent families, with countries grouped according to the country grouping described above.

As can be seen in Figure 1, a majority of children (around 86%) across Europe live in a two-parent family setting. This proportion ranges from around 76% in Latvia up to 94% in Greece and is generally higher in Southern European countries (except for Malta and Portugal) and several Eastern European countries (except for Bulgaria), rather lower in the Continental countries, and lowest in the Baltic counties and the United Kingdom.

Figure 2 considers the broader household in which children live and shows the proportion of children who live in multi-family households. The statistics are presented overall for all children and separately for children in two-

parent and lone-parent families. Starting with the graph which corresponds to all children, we observe that overall, across all countries included in our analysis, around 12% of children aged 1-15 live in households containing adults beyond their parent(s), i.e., what we term multi-family households. This proportion ranges from around 3% in Sweden, Germany, and the Netherlands, up to 42% in Serbia. Generally, the proportion of children in multi-family households is highest in Eastern Europe (except for Czech Republic and Slovenia), the Baltic countries and several South European countries (Malta, Cyprus and Portugal) plus Hungary and Austria. It is rather lower in other Southern European countries (Greece, Spain, Italy) and in the Continental countries and lowest in Nordic countries. In almost every country, a higher proportion of children in lone parent families than those in two-parent families live in households that include adults beyond their parents.¹⁰

Figure 3 considers in more detail the composition of multi-family households which include children. As shown in Figure 3a, across all countries, around 7% of children live with their grandparents and another 4% with their adult siblings.¹¹ Although there is again a very large cross-country variation, a general pattern that emerges is that co-residence with grandparents is most prevalent in Southern and Eastern European countries and less so in the Nordic and Continental countries. By contrast, co-residence with adult siblings, though again generally more common in Southern and Eastern Europe, displays a substantially smaller variability across countries. As a result of these patterns, in the Nordic countries and

¹⁰ Note however, that cross-country differences in the prevalence of multi-family households cannot be explained by differences in the prevalence of lone parent families: the probability of living in a multi-family household among children in two parent families differs across countries while the proportion of children in lone-parent families in all countries is too low to explain the differences.

¹¹ A further 1% of children live in households which include both adult siblings and grandparents and fewer than 1% with adults other than their adult siblings or grandparents –see appendix Table A6 for this fuller breakdown.

in the countries of the Continental group, the largest proportion of children in multi-family households live with their adult siblings while in most Eastern and Baltic countries with their grandparents. The Southern European countries stand somewhere between: having a higher proportion of children who live with their grandparents compared to countries in the Continental and the Nordic cluster and a similar proportion of children who live with adults siblings. Looking at the patterns for children in two-parent and lone-parent families separately (Figure 3b and 3c) we observe that while the co-residence patterns for children in two-parent families is similar to that for all children (reflecting the fact that the overall estimates are driven by the patterns for two-parent children given their larger population size), for children in lone parent families the most common form of co-residence in all but the Nordic countries is living with grandparents.

5. Comparing the living standards of children living in nuclear and multi-family households

Having examined how children's living arrangements differ across countries we now turn to investigate difference in the deprivation risk among children who live in different household types (section 5.1). It should be stressed, that this type of descriptive analysis does not aim to address the question of whether the formation of multi-family households is beneficial or detrimental for children's living standards. Such an assessment would require accounting both for the effect of the potential selection into co-residence of families facing financial difficulties as well as other compositional differences across groups with respect to observable background characteristics. Nevertheless, it provides important benchmark about the living standards of children living in different household types. In section 5.2, we examine the effect of different determinants in explaining differences in the deprivation risk of different groups of children and section 6 provides an assessment of the potential effects of different living arrangements on children's material deprivation status.

5.1. Descriptive analysis

Before examining differences across groups in their deprivation risk, we first consider differences in their average income (Table 4). The income measure that we use is equivalised household disposable income: that is the sum of gross income from all sources of all household members less income taxes and social security contributions adjusted by the Modified OECD equivalence scales to reflect differences in size and needs of households of different size and composition. As we can observe here, across most countries, children in two-parent nuclear households have the highest average equivalised household income. The group with the next highest income level in most Southern and Eastern European countries as well as in the two Anglo-Saxon countries is the group of two-parent children who live with their grandparents whereas in Continental countries it is the group of two-parent children who live with their adult siblings. In all countries lone-parent children have much lower average equivalised household income level than two-parent children. In countries where sample size allows comparisons, lone-parent children who live with their grandparents have slightly higher average income levels than either the group of lone-parent children who live with their adult siblings or in nuclear households. The latter finding is a first indication of the protective role that living with grandparents plays, although as mentioned above we need to account for compositional differences to reach conclusions on this – a task we undertake in subsequent sections of the paper.

Figure 4 considers differences in deprivation rates across different groups of children, by showing the proportion of children in each group that live in households that are unable to afford 3 or more child deprivation items. Overall, across all countries, 12% of all children lacked three or more items (Figure 4a). As one would expect there are substantial differences across countries. The lowest child deprivation rates (below 3%) are found in the Nordic countries and Switzerland. Continental and Anglo-Saxon European countries have, on average, the next lowest child deprivation rates

although within each country group rates display significant variation (ranging from as low as 4-6% in Luxembourg, Austria, Germany and France to 10% in Belgium and around 9% and 11% in the UK and Ireland respectively). Wide variation also exists across countries in the Southern group where the child deprivation rates range from 9% in Malta to around 12-14% in Italy, Spain and Cyprus and 16% in Greece and Portugal. The variation in Eastern European countries is even larger with a range from as low as 5% in Slovenia to as high as 56-59% in Bulgaria and Romania. In most countries children who live in multi-family households face a substantially higher deprivation risk than their counterparts who live in nuclear households, mirroring the differences in average incomes discussed in the section above. Generally, differences in the deprivation rates between the group of children who live in multi-family household and those who live in nuclear households are higher in countries with higher deprivation rates.

Overall and across most countries, children in lone-parent families - irrespective of whether they live in nuclear or in multi-family households - face a substantially higher deprivation risk than children in two-parent families (Figure 4b and 4c). Again, consistent with the income patterns discussed above, differences between the two groups are smaller for children who live in multi-family households than for those in nuclear households. This reflects on the one hand, the greater deprivation risk of two-parent children who live in multi-family households compared to their counterparts who live in nuclear households and on the other hand the fact that the deprivation risk of lone parent children who live in multi-family households is lower than or close to that of lone parent children who live in nuclear households.

Examining differences in the deprivation rates among children by type of multi-family household in which children live and considering first children in two-parent families, we observe that in all countries where differences

in deprivation rate are statistically significant, children who live in multi-family households face a much higher deprivation risk than their counterparts who live in nuclear two-parent households (Figure 5). For lone-parent children the patterns are more mixed. On the one hand, lone-parent children who live with their adult siblings face a higher deprivation risk than their counterparts who live in nuclear households. On the other hand, in the majority of countries with statistically significant differences lone-parent children who live in multi-family households with their grandparents have lower deprivation rates than their counterparts who live in nuclear households (with the exception of Portugal). Comparisons by multi-family household types shows that for both two-parent and lone-parent children those who live with their adult siblings face higher deprivation risks than those who live with their grandparents (with the exception of two-parent children in Austria, Portugal, Czech Republic, Slovakia and Estonia where the opposite pattern is observed).

Summing up, the results of the empirical analysis so far indicate that children living in multi-family households are at higher risk of material deprivation and of low living standards than children in nuclear households. Among the children who live in multi-family households those who live with their adult siblings are at a higher risk of deprivation and low living standards than children who live with grandparents. The only exception is children of lone-parents who live with their grandparents who, in many countries, are found to face a lower deprivation risk than their counterparts who live in nuclear lone-parent households. As mentioned above, some of what we observe in these descriptive analyses reflect the selection into co-residence of families facing financial difficulties as well as compositional differences across groups. In order to assess whether living in a multi-family household protects children against deprivation one would need to account for compositional differences and compare the living standards of children under their current living arrangements with the living standards

that they would have attained if they lived in a nuclear household. We address these questions in subsequent sections.

5.2. Multivariate analysis: The role of income, control over household resources and other socio-economic characteristics in explaining differences in children's deprivation risks

As mentioned above in this section, we investigate the extent to which differences in deprivation across different groups of children reflect compositional differences across groups. In addition to examining the contribution of household income, and more generally other factors that may be associated with higher deprivation risk, we examine the extent to which children's deprivation risk depends on the distribution of bargaining power within household. We are interested in examining both the extent to which children's deprivation risk depends on the distribution of bargaining power between their parents (measured by their mother's income as a share of total parental income), and in the case of children who live in multi-family households, the bargaining power of their parents relative to other household members.

Our general approach to address these issues is to estimate a series of regression models for the pooled data for all countries predicting children's deprivation risk that sequentially introduces controls for different sets of variables. The benchmark model (Model A) represents the basic specification and includes a set of country dummies and six dummies classifying children according to their family and household type. Then we augment the model by the logarithm of total equivalised household disposable income, homeownership status, two dummy variables indicating the number of disabled adults in the household, and a dummy indicating the household's low work intensity status (Model B), to examine the extent to which differences in the deprivation risk of the different groups of children can be explained by differences in these characteristics. The

subsequent models introduce additional variables to capture the impact of the relative bargaining power of different household members. Model C includes controls for mother's income as a share of total parental income which we use as a proxy of the bargaining power of mothers relative to fathers. This model aims to explore how the distribution of power between mothers and fathers affects children's deprivation risk. A positive and significant coefficient on mother's income share would suggest that mothers having more bargaining power is protective for children (and controlling for this would decrease the coefficient of children's deprivation risk of all groups of two-parent children and in turn would result in an increase in the coefficients capturing the deprivation risk differential between two-parent children and the other groups children). Finally, Model D includes two variables defined for each particular household type (and set to zero for not applicable household types) to indicate respectively grandparents' and adult siblings' income as a share of total household income, which we use as proxies of the bargaining power of the parents relative to grandparents and adult siblings respectively. Here we are explicitly examining the hypothesis that control over household resources has no effect on children's deprivation risk.

Table 5 shows the results from these models. In line with results of the descriptive analysis, the results from Model A show that with the exception of two-parent children who live with their grandparents, all other groups of children face a significantly higher deprivation risk than two-parent children who live in nuclear households. However, the estimated differences for some groups are much smaller compared to the raw differences documented in the descriptive analysis of section 5. Given that this model controls only for country fixed effects, this decrease reflects the fact that certain groups of children with higher deprivation risk are more prevalent in countries with higher average deprivation rates. The groups of children facing the largest deprivation risk are lone parent children who live with their adult siblings, lone parent children who live in nuclear households,

two-parent children who live with adult siblings and lone parent children who live with their grandparents (who face respectively 20, 11, 8 and 6.5 percentage points higher risk than children in two-parent nuclear households). At the other extreme, the groups facing the smallest deprivation risks are two-parent children who live in nuclear households only with their parents and those who live in in multifamily households with their grandparents (facing only 1.4 percentage points higher deprivation risk than children in two-parent nuclear households, and statistically insignificant). Controlling for household income, household work intensity and homeownership status (Model B) explains the higher deprivation risk of all groups of children in lone-parent families as well as of two parent children who live with their adult siblings to large extent, but not completely. The mother's income share variable in Model C is not statistically significant but it has the anticipated sign implied by existing evidence which suggest that children's living standards improves as mother's bargaining power improves. The adult siblings' and grandparents' income share variables are not statistically significant either, supporting the conjecture of children being considered as a "*public good*" in both types of households (Becker, 1981; Weiss and Willis, 1985) and suggest that the distribution of bargaining power within these households does not have any bearing on children's deprivation outcomes.

6. An assessment of the potential gains or losses of living in a multi-family household

As discussed above, this section assesses the extent to which living in multi-family households protects children against deprivation using a simulation exercise which compares the material living standards of children under their current living arrangements to the counterfactual living standards that they would have attained if they lived with their parent(s) alone. Our assessment is based on comparing the standards of living of children in terms of two indicators. The first is the *equivalised household*

disposable income which is the sum of the income of all household members adjusted by the household equivalence scale to reflect differences in needs of households of different size and composition. The second is the *equivalised **family** disposable income* which is the sum of the net incomes of the children's parents adjusted by the family-level equivalence scales.¹² Both the household-level and family-level equivalence scales were calculated based on the Modified OECD equivalence scales.

The difference between these two income measures can be thought as capturing the difference in material living standards that children attain under their current living arrangements (captured by the equivalised household income indicator) and the standard of living they could attain by parental income (captured by the equivalised family income measure). The latter can be thought as reflecting the living standards that children and their parents could attain if they did not live in a multi-family household, or if there were neither economies of scale nor sharing of income across members of different family units within households. Note that this assessment abstracts from any second-order effects on employment income resulting from changes in labour supply as well as any relevant changes in benefit income eligibility due to changes in the living arrangements.

As shown in Table 6, with the exception of the UK, the average equivalised household income of (both two-parent and especially lone-parent) children who live in multi-family households with their grandparents is higher than the equivalised family income measure, suggesting that co-residence with grandparents on average is associated with financial gains for children (and their parents). The financial gains are larger in Southern and Eastern European countries, a result that be linked to the fact that the social

¹² For constructing the family income measure, we need to derive the individual net income for each individual in the sample. For details about see Karagiannaki and Burchardt (2020).

protection for older people tends to be more developed than for the young and for families with children in those contexts. The effects for children of living in multi-family households with adult siblings varies across countries, but in the majority of countries where significant differences are identified, the average equivalised household income is lower than the equivalised family income measure, indicating that on average in these countries this living arrangement entails some financial losses for children (i.e. the contribution of young adults' income to the household budget is less than the increase in the living costs that their presence in the household entails). This effect is stronger in the Nordic countries as well as in several Southern countries (especially in Italy, Cyprus and to a lesser extent Spain and Greece) and Eastern European countries (especially in Serbia, Bulgaria, Romania and less so in Czech Republic). By contrast co-residence with adult siblings is estimated to involve financial gains for two-parent children in Malta, the UK and Ireland as well as for lone parent children in all countries where the sample size allows us to make inferences.

One thing that should be stressed here is that the assessment discussed above is based on evaluating average differences in the two income measures. The conclusions may differ if the differences between the two income measures are significantly different across the distribution. In the remainder of this section, we assess the extent to which there are gains/losses in terms of lower/higher deprivation risk among children living in different household types exploiting differences across the two income distributions. This assessment is based on a simple simulation exercise. This consists of two main stages. The first stage involves estimating the relationship between children's deprivation risk and total equivalised household income, controlling for various socio-economic characteristics. The second step uses the coefficients from stage one to predict the probabilities of a child being deprived based, firstly, on their equivalised *household* income, and, secondly, on their equivalised *family* income.

Table 7 shows the average predicted probabilities based on these two income measures for two-parent and for lone-parent children. By construction the two predictions (i.e., those based respectively on the equivalised household and the equivalised family income measures) are identical for children living in nuclear households, and thus the results are presented only for children who live in multi-family households. The predicted probabilities in columns (1) and (4) are calculated using total equivalised household income whereas those in columns (2) and (5) are calculated using the equivalised family income. The latter can be seen as capturing the deprivation risk that children would face if their living standards were determined exclusively by their parents' income. The difference between the two predicted probabilities can be seen therefore as reflecting the potential gains or losses children face in terms of reduced or increased deprivation risk by living in a multi-family household.

The regression coefficients used for the calculation of the predicted probabilities in this table are from pooled probit models predicting the probability of being deprived among children living in different household types as a function of the logarithm of equivalised household income and a set of standard demographic controls including the number of children living in the household aged 0-15, a dummy variable indicating whether the household has children aged 16-18, and a set of dummy variables indicating children's family/household type.¹³ The predicted probabilities in the row that corresponds to all countries are calculated using the coefficients from a regression on the pooled sample of all countries with country dummies, while the predicted probabilities for each country

¹³ This is captured by a set of dummy variables indicating two parent children living in nuclear household; lone parent children in nuclear household; two parent children living with adult siblings; two parent children living with grandparents; two-parent children living with grandparents and adults siblings; two-parent children living with others; lone-parent children living with adult siblings; lone-parent children living with grandparents; lone-parent children living with grandparents and adults siblings; and lone parent children living with others.

(reported in subsequent rows of the table) are based on country level models. In all models the standard errors are clustered by household level to account for multiple children per household.

According to the results presented in columns (1)-(3) of Table 7, living with grandparents has a protective effect against deprivation for both two-parent and lone parent children. This is evident in all countries and is generally very strong. On average, across all countries the deprivation risk of two-parent children based on the equivalised household income measure is 5.7 percentage points (or 25%) lower than the deprivation risk that would have prevailed under the counterfactual scenario where children and their parents were not living with their grandparents. The magnitude of the effect however varies substantially across countries, ranging from slightly more than 2 percentage points in Slovenia up to 12 percentage points in Greece. Generally, the largest effects are found in countries within the Southern European cluster (especially in Greece, Portugal and Cyprus), though some large effects are also found in many Eastern European countries. The protective effect of living with grandparents is even more marked for children in lone parent families. The smallest effects (of around 4 percentage points) are found in the UK and Ireland and the largest again in Greece (around 40 percentage points). Substantial effects are also found in other Southern European countries and in several Eastern European countries.

Living with adult siblings has smaller and often insignificant effects. Among the countries where significant effects are found, the effects vary substantially i.e. there are some countries where the estimated effects suggest that living with adult siblings protects a large share of children against deprivation (Portugal, Malta, France, Poland, Slovakia, the UK and Luxembourg especially for lone-parent children) and others (including Greece, Bulgaria, Cyprus, Denmark and Italy and to lesser extent Germany) where living with adult siblings is estimated to have a

detrimental effect on dependent children's deprivation (Table 6, columns (4)-(6)).

7. Intra-household differences in deprivation outcomes

As we discussed above, in the majority of countries children who live only in nuclear households face a much lower deprivation risk than their counterparts who live in multi-family households. Before we move on to examine what explains differences in children's deprivation risk, in this section we compare the deprivation status of children with the deprivation status of their parents, grandparents and adult siblings. As described in section 2.3 for measuring the parents', grandparents', and adult siblings' deprivation status we use the adult individual-level deprivation indicator. This index defines an adult as deprived if he/she suffers from two or more deprivations from a list of seven individual level deprivation items.

Figure 6a illustrates for the group of two-parent children, the proportion of them who live in households where 1) only the father is deprived 2) only the mother is deprived 3) neither the mother nor the father is deprived and 4) both the father and the mother are deprived, separately for non-deprived and deprived children. As one would expect, there is a high degree of overlap between parents' and children's deprivation status. On average across all countries included in this analysis, 84% of non-deprived children have parents who are also non-deprived, and 90% of deprived children have at least one parent who is also deprived. Despite the large degree of overlap between parents' and children's deprivation, however, there is a certain degree of mismatch between them: i.e., a non-negligible proportion of non-deprived children have deprived parents, and an equally non-trivial proportion of deprived children have non-deprived parents. What is also clear from Figure 6a is that for most non-deprived children with only one parent deprived, the deprived parent is usually the mother, supporting evidence from studies that mothers display a higher propensity to sacrifice their own well-being to protect their children's well-being (e.g., Main and

Bradshaw, 2016; Lundberg et al., 1997; Ward-Batts, 2008; Hotchkiss, 2005). Similarly, among deprived children who have one non-deprived parent it is usually the father who is non-deprived. A significant minority of non-deprived lone-parent children have a deprived parent, and very few deprived lone-parent children have a non-deprived parent (Figure 6b), which is consistent with the conclusion for two-parent families, that parents, especially mothers, attempt to shield their children from deprivation when resources are scarce. The degree of disagreement between children's and parent's deprivation status is greater among lone-parent than two-parent families, which most likely reflects the lower resources of lone-parent households. (Note however that the sample size in some countries is rather small to draw any conclusions).

Figures 6c illustrate the patterns for the two groups of non-deprived two-parent children who live in multi-family households with grandparents and adult siblings while Figure 6d the patterns for lone-parent children who live with in multi-family households with grandparents. In addition to the categories describing parental deprivation (as defined above), statistics are also provided for grandparents' and adult siblings' deprivation status.¹⁴ Starting with the results for two-parent children, we see that although the relationships between children's and parent's deprivation status are broadly similar to those for children who live in one-family households, for children in multi-family households the overlap with their parents' deprivation status is smaller (i.e., a higher proportion of parents of non-deprived children are deprived) – a result that most likely reflects the lower resources of these types of households increasing the likelihood of parents to sacrifice their own living standards for their children's living standards. In relation to the grandparents' and adult siblings' deprivation status we note that in most countries where sample size allows comparisons, the deprivation rates are higher among grandparents than adult siblings and the deprivation rates of

¹⁴ Grandparents/adult siblings are defined as deprived if at least one grandparent/adult sibling in the household is deprived.

adult siblings is lower than that of their parents (except from Germany and Poland). The former result may reflect the fact that grandparents are more likely than adult siblings to sacrifice their own well-being to protect their grandchildren against deprivation while the latter that parents are more likely to sacrifice their well-being for the sake of both their adult and dependent children's well-being.

Overall the analysis of this section, provides evidence in support of the conjecture that parents and especially mothers are more likely to sacrifice their own well-being for their children's well-being, as found in earlier studies e.g. by Cantillon et al., (2004). The analysis of the previous section suggests, however, that differences in the extent to mothers and fathers sacrifice their well-being to protect their children against deprivation are unlikely to be significant in most countries. Grandparents in some circumstances are also found to forgo their own well-being to protect their grandchildren's well-being.

8. Conclusions

Drawing on data from the 2014 EU-SILC, this paper details a wide array of children's living arrangements across a number of European countries, including living in multi-family households with grandparents and living with adult siblings; it illustrates how children's living standards vary by their living arrangements; and it provides evidence on how the distribution of bargaining power within households affect children's deprivation outcomes.

In line with previous studies, we find that co-residence with grandparents is most prevalent in Southern and Eastern European countries and less so in the Nordic and Continental countries whereas co-residence with adult siblings, though again generally more common in Southern and Eastern Europe, displays a substantially smaller variability across countries.

We found substantial differences in child deprivation risk across children living in different household types. Except for lone-parent children who live with their grandparents (who in many countries face a lower deprivation risk than their counterparts who live in nuclear households), other groups of children in multi-family households face a significantly higher risk of deprivation than those in nuclear households. However, exploring the determinants of children's deprivation risk, we found that to a large extent the higher deprivation risk of children who live in multi-family households reflects the selection into co-residence of families facing financial difficulties.

In fact, for children in most circumstances, living in a multi-family household has a protective effect. We assessed this protective effect using a simulation-based exercise which compares the living standards of children under their current living arrangements with the living standards that they would have attained if they lived only with their parents. The protective effect and indeed the direction of financial solidarity differs across different household types. Co-residence with grandparents was found to have an important role in protecting children (both those in two parent and lone-parent families) against deprivation. Co-residence with adult siblings was also found to protect children in lone-parent families against deprivation (in all countries where sample size allows statistical inferences). By contrast for children in two parent families, co-residence with adult siblings has more mixed effects across countries. In the majority of countries (13 out of 30) it has no effect, in 10 countries it has a protective effect and in 7 countries a detrimental effect on children deprivation risk.

Analysis of the relationship between children's deprivation and indicators of the distribution of bargaining power within the households shows that neither the distribution of resources between the parents, nor that between parents and other household members have any statistically significant association with children's deprivation. This suggests either that spending

on children is treated as household public good not only by their parents (Blundell et al, 2005) but by all household members or alternatively that all household members share the same preferences when it comes to spending on children. Though this result appears incompatible with evidence from direct survey questions about the degree of sharing within households from the 2010 intrahousehold module presented in Verbist et al. (2020) - which suggests that full sharing of income occurs less in multi-generational households - it is possible that both are correct. On the one hand, our finding about the absence of any association between control over household resources and children's deprivation outcomes does not preclude the possibility that other indicators of children's well-being are affected by the existence of incomplete sharing. On the other hand, the presence of incomplete sharing suggested by the direct questions does not preclude the possibility that incomplete sharing does not affect children's living standards, which would arise for example through child being a household public good and if all household members do not have different preferences when it comes to spending on children, as mentioned above.

From a policy perspective our findings underscore the important function that households perform in providing economic support and protecting family members at-risk of low living standards. However, they also highlight that in the process of performing this important function families are sometimes faced with important trade-offs. For example, co-residence of young adults with their parents is a coping strategy employed by families in response to the structural constraints (e.g., high youth unemployment, underemployment, housing supply shortages) faced by young adults as they transition to adulthood. While this may lead to a reduced poverty risk for the young adults themselves, the deprivation risk of parents and dependent siblings may rise. Indeed, our findings indicate that many dependent children face a higher deprivation risk when their adult siblings still live in the parental home than they would if they did not, especially in countries with very high youth unemployment and inadequate social

protection support for younger adults. These detrimental effects point to the importance of setting policy goals that allow young adults a smooth transition to adulthood and independence, including ensuring adequate social protection in the transition out of the child welfare system, addressing housing supply shortages and implementing policies to tackle youth unemployment. At the same, policies should allow parents to support their children into their transition to independence, with corresponding recognition by the benefits and housing systems that there is not a single discrete point of transition to adulthood.

In relation to co-residence with grandparents, although we find a protective effect of living with grandparents on child deprivation in many European countries – especially those with high rates of multi-generational co-residence – as is also stressed by Verbist et al (2020), “the conclusion cannot be that policy should stimulate the formation of such households”. Rather this finding again underscores the important function that the formation of multi-generational households plays as a short-term ‘coping strategy’, and the large and growing age imbalance that characterizes social protection spending in many European countries in favour of pensioners (Raitano et al, 2021). One of the core functions of social protection in general and social security in particular is to assist with smoothing living standards across the life cycle, but the erosion of entitlements for parents and children is undermining the effectiveness of the system in meeting this objective and forcing families into adopting living arrangements that may not be of their choosing, with potentially negative consequences for their wider well-being.

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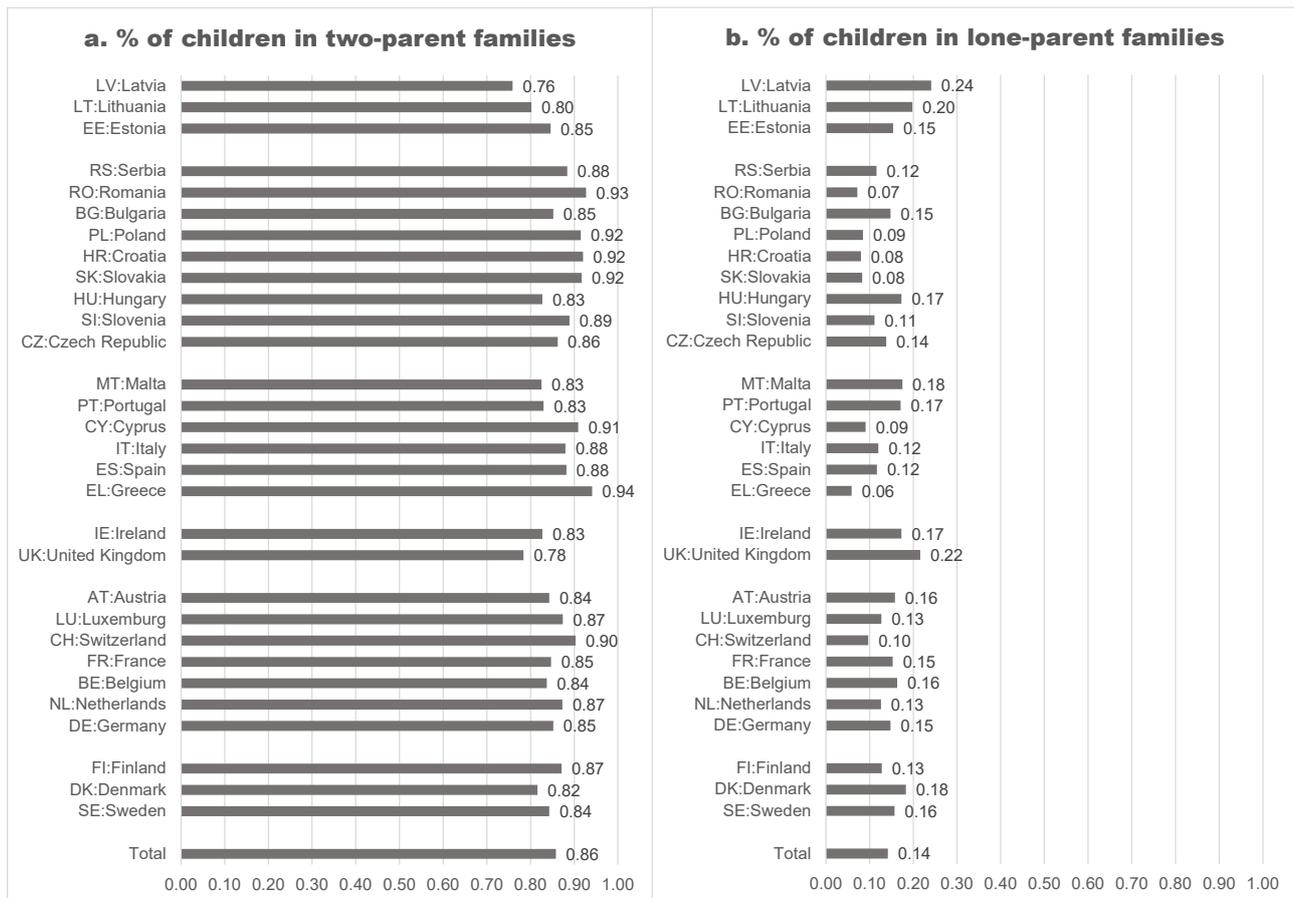
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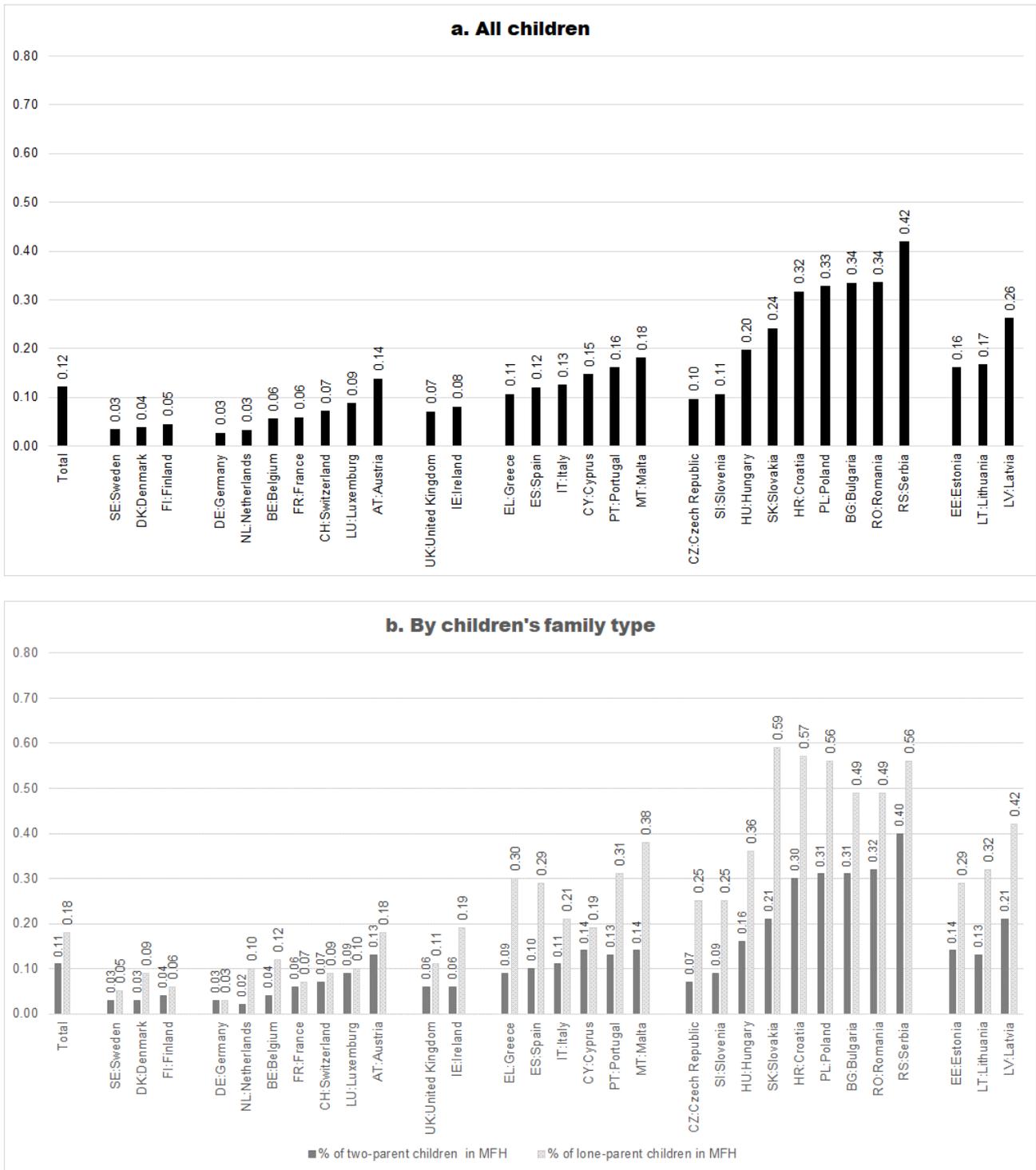
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Figure 1: Proportion of children who live in two-parent and lone parent families



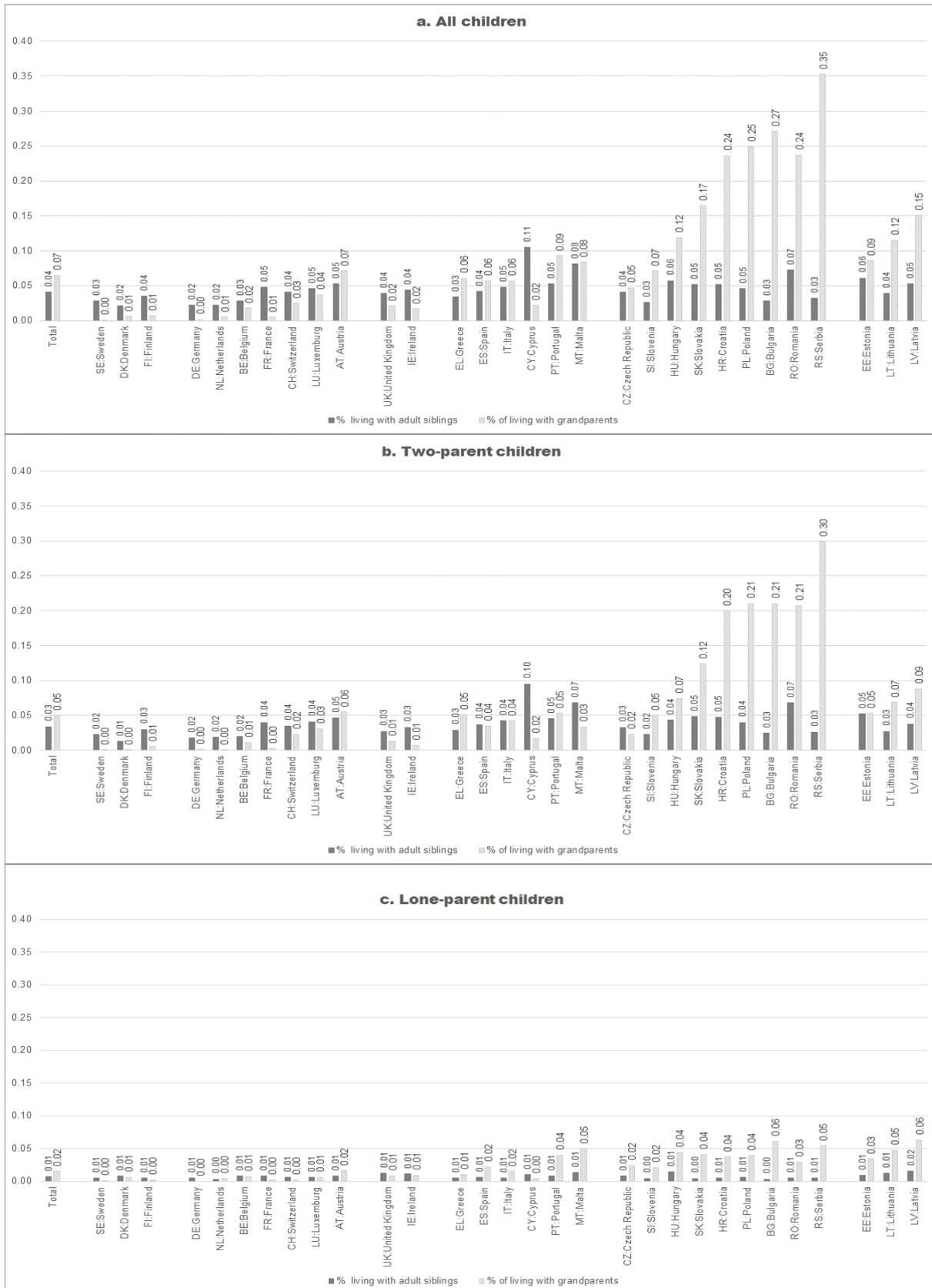
Note: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16.

Figure 2: Proportion of children who live in multi-family households (MFH) across Europe, overall and by children’s family type



Note: Authors’ calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16.

Figure 3: Proportion of children who live with adult siblings and with grandparents, for all children and by family type



Note: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16. Excludes children living with both adult siblings and grandparents and those living with others – estimates provided in appendix Table A6.

Table 4: Mean equivalised household among children living in different household types, levels and percent difference relative to two-parent children living in one-family households (OFH)

a. Levels

	Children in one family households		Children in multi-family households					
	Two-parent children	Lone-parent children	Two-parent children			Lone parent children		
			All	... living with adult siblings	...living with grandparents	All	...living with adult siblings	... living with grandparents
Total	16,021	11,605	14,739	14,414	13,542	12,00	10,603	13,974
Nordic								
SE: Sweden	28,771	20,607	26,457	27,468	n.a.		n.a.	n.a.
DK: Denmark	31,097	22,538	41,576	36,014	n.a.		n.a.	n.a.
FI: Finland	26,010	19,105	25,872	25,715	25,807	23,44	n.a.	n.a.
Continental								
DE: Germany	22,227	16,535	27,725	30,394	n.a.		n.a.	n.a.
NL: Netherlands	22,533	17,149	23,052	22,160	n.a.	16,56	n.a.	n.a.
BE: Belgium	24,542	16,132	18,033	19,330	n.a.	16,20	n.a.	n.a.
FR: France	23,385	16,011	17,893	18,341	n.a.	15,58	14,052	n.a.
CH: Switzerland	38,797	33,545	33,315	33,915	n.a.		n.a.	n.a.
LU: Luxembourg	34,769	25,214	29,939	30,310	28,467		n.a.	n.a.
AT: Austria	22,829	16,547	21,589	22,632	20,753	19,82	n.a.	19,376
Anglo-Saxon								
UK: United	22,400	16,161	23,409	22,295	23,789	17,32	17,255	17,616
IE: Ireland	23,416	14,501	17,124	16,718	n.a.	15,48	n.a.	17,940
Southern								
EL: Greece	9,317	7,538	6,158	5,361	6,668	5,623	n.a.	6,774
ES: Spain	14,787	11,098	11,158	9,711	11,745	10,74	n.a.	11,307
IT: Italy	16,601	12,200	14,236	13,847	14,682	13,32	10,946	13,288
CY: Cyprus	17,127	11,496	16,009	14,833	13,284	13,60	n.a.	n.a.
PT: Portugal	9,709	7,014	7,103	6,501	7,627	7,092	n.a.	7,760
MT: Malta	14,101	9,183	12,592	13,339	11,764	11,73	n.a.	11,605
Eastern								
CZ: Czech	8,742	5,856	8,427	8,706	8,241	6,762	n.a.	7,277
SI: Slovenia	13,182	10,095	12,270	11,473	12,819	10,27	n.a.	10,401
HU: Hungary	4,850	3,454	3,971	3,539	4,198	3,958	2,842	4,396
SK: Slovakia	6,723	6,380	6,456	6,016	6,764	7,332	n.a.	7,507
HR: Croatia	5,659	4,394	5,170	4,733	5,350	5,193	n.a.	5,021
PL: Poland	6,447	4,581	4,985	4,710	5,091	4,863	3,648	5,067
BG: Bulgaria	3,817	2,385	3,202	2,873	3,291	2,760	n.a.	2,878
RO: Romania	2,205	1,914	1,842	1,025	2,119	1,929	n.a.	2,020
RS: Serbia	2,949	2,296	2,461	1,832	2,536	2,372	n.a.	2,511
Baltic								
EE :Estonia	10,207	6,273	8,182	8,315	7,561	6,457	5,452	6,834
LT: Lithuania	6,191	3,550	6,203	5,766	6,458	4,473	n.a.	4,770
LV: Latvia	7,246	4,396	5,774	4,538	6,084	4,837	5,009	4,831

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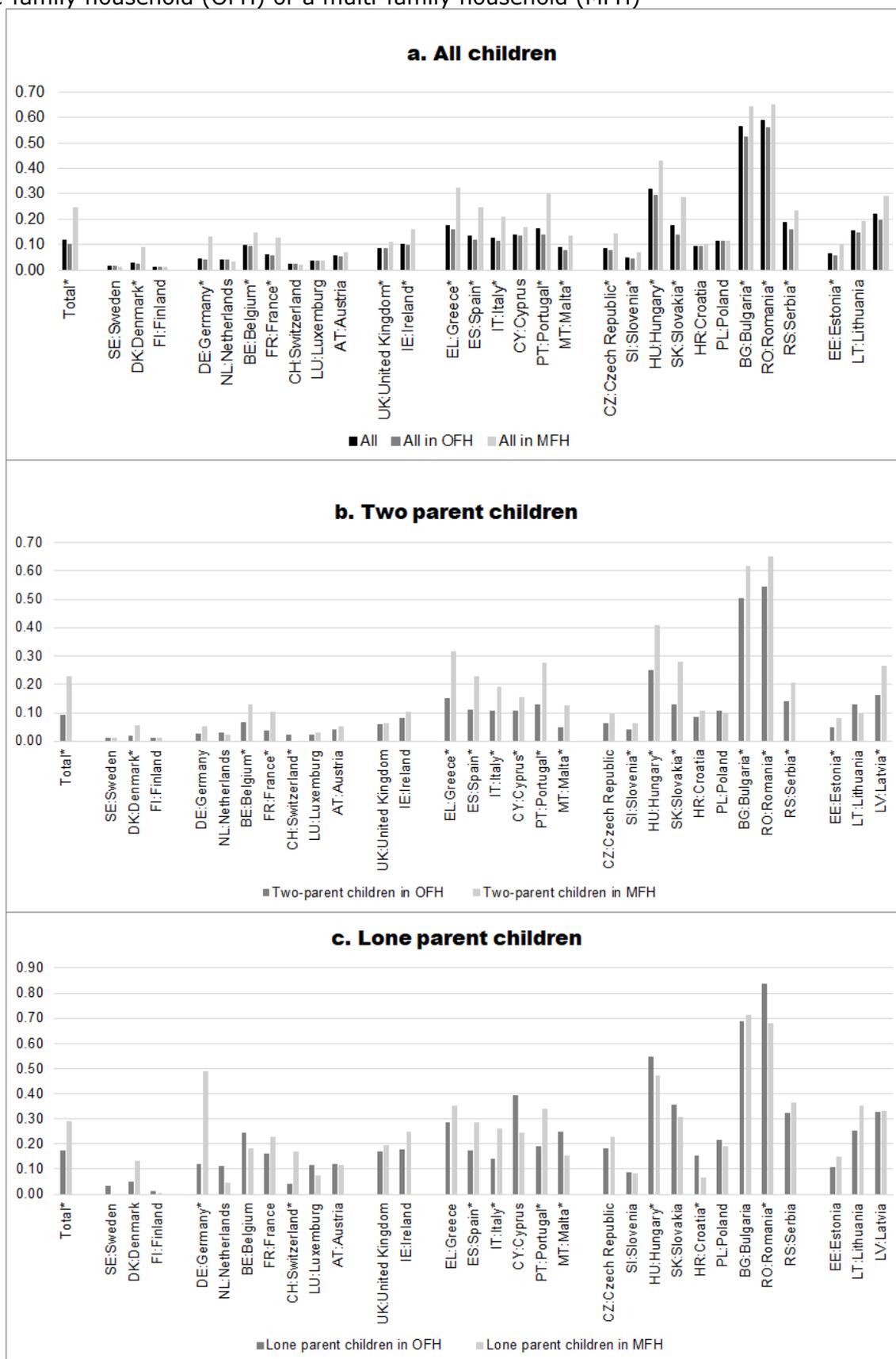
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b. % difference relative to two-parent children in OFH

	Children in one family households		Children in multi-family households					
	Two-parent children	Lone-parent children	Two-parent children			Lone parent children		
			All	... living with adult siblings	...living with grandparents	All	...living with adult siblings	... living with grandparents
Total	0.000	-0.276*	-0.080*	-0.100*	-0.155*	-0.251*	-0.338*	-0.128*
Nordic								
SE: Sweden	0.000	-0.284*	-0.080	-0.045	n.a.	n.a.	n.a.	n.a.
DK: Denmark	0.000	-0.275*	0.337*	0.158*	n.a.	n.a.	n.a.	n.a.
FI: Finland	0.000	-0.265*	-0.005	-0.011	-0.008	-0.098	n.a.	n.a.
Continental								
DE: Germany	0.000	-0.256*	0.247*	0.367*	n.a.	n.a.	n.a.	n.a.
NL: Netherlands	0.000	-0.239*	0.023	-0.017	n.a.	-0.265*	n.a.	n.a.
BE: Belgium	0.000	-0.343*	-0.265*	-0.212*	n.a.	-0.34*	n.a.	n.a.
FR: France	0.000	-0.315*	-0.235*	-0.216*	n.a.	-0.333*	-0.399*	n.a.
CH: Switzerland	0.000	-0.135*	-0.141*	-0.126*	n.a.	0.000	n.a.	n.a.
LU:	0.000	-0.275*	-0.139*	-0.128*	-0.181*	n.a.	n.a.	n.a.
AT: Austria	0.000	-0.275*	-0.054*	-0.009	-0.091*	-0.132*	n.a.	-0.151*
Anglo-Saxon								
UK: United	0.000	-0.279*	0.045	-0.005	0.062	-0.227*	-0.23*	-0.214*
IE: Ireland	0.000	-0.381*	-0.269*	-0.286*	n.a.	-0.339*	n.a.	-0.234*
Southern								
EL: Greece	0.000	-0.191*	-0.339*	-0.425*	-0.284*	-0.396*	n.a.	-0.273
ES: Spain	0.000	-0.249*	-0.245*	-0.343*	-0.206*	-0.273*	n.a.	-0.235*
IT: Italy	0.000	-0.265*	-0.142*	-0.166*	-0.116*	-0.197*	-0.341*	-0.200*
CY: Cyprus	0.000	-0.329*	-0.065*	-0.134*	-0.224*	-0.206*	n.a.	n.a.
PT: Portugal	0.000	-0.278*	-0.268*	-0.33*	-0.214*	-0.27*	n.a.	-0.201*
MT: Malta	0.000	-0.349*	-0.107*	-0.054	-0.166*	-0.168*	n.a.	-0.177*
Eastern								
CZ: Czech	0.000	-0.330*	-0.036	-0.004	-0.057	-0.226*	n.a.	-0.168*
SI: Slovenia	0.000	-0.234*	-0.069*	-0.13*	-0.028	-0.221*	n.a.	-0.211*
HU: Hungary	0.000	-0.288*	-0.181*	-0.27*	-0.134*	-0.184*	-0.414*	-0.093*
SK: Slovakia	0.000	-0.051	-0.040	-0.105	0.006	0.091	n.a.	0.117
HR: Croatia	0.000	-0.224*	-0.086*	-0.164*	-0.055	-0.082	n.a.	-0.113
PL: Poland	0.000	-0.289*	-0.227*	-0.269*	-0.21*	-0.246*	-0.434*	-0.214*
BG: Bulgaria	0.000	-0.375*	-0.161*	-0.247*	-0.138*	-0.277*	n.a.	-0.246*
RO: Romania	0.000	-0.132	-0.164*	-0.535*	-0.039	-0.125	n.a.	-0.084
RS: Serbia	0.000	-0.221*	-0.165*	-0.379*	-0.14*	-0.196*	n.a.	-0.149*
Baltic								
EE :Estonia	0.000	-0.385*	-0.198*	-0.185*	-0.259*	-0.367*	-0.466*	-0.33*
LT: Lithuania	0.000	-0.427*	0.002	-0.069	0.043	-0.277*	n.a.	-0.229*
LV: Latvia	0.000	-0.393*	-0.203*	-0.374*	-0.16*	-0.332*	-0.309*	-0.333*

Note: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16. n.a. indicates sample size too small for reliable estimate (i.e., less than 30). * indicates significant difference at less than 10% level.

Figure 4: Deprivation rates among children (1-15) in Europe, overall and by whether they live in one-family household (OFH) or a multi-family household (MFH)



Note: The average across all countries is unweighted. Within each country group countries are ranked by the proportion of children in MFH from low to high. The asterisk (*) behind country name indicates significant difference in deprivation rates between children 'in OFH and 'in MFH' (at 95% confidence level). *Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16.

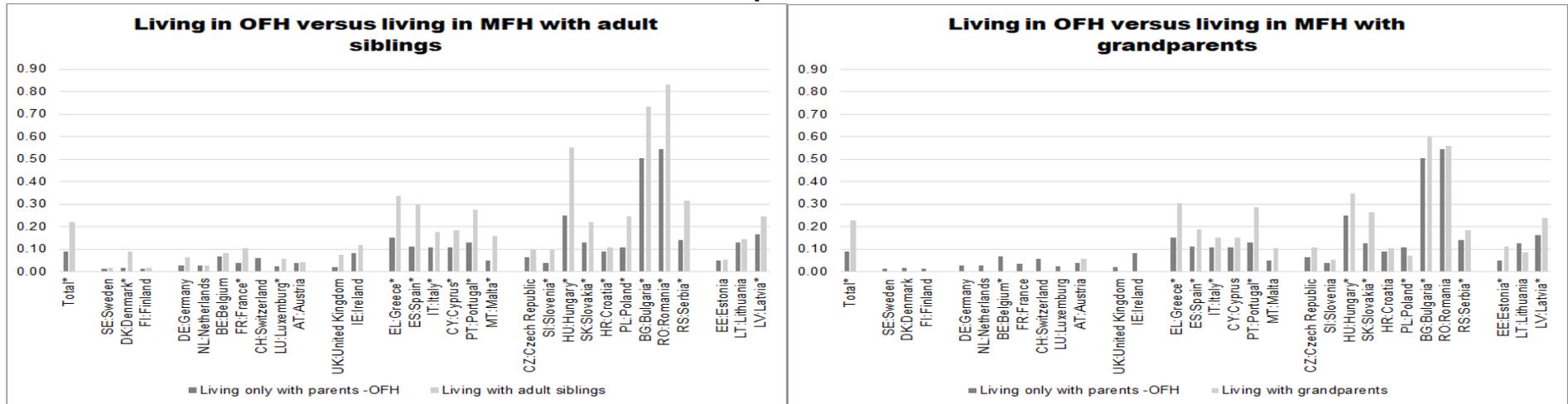
Table 5: Marginal effects for probit models predicting children's deprivation risk

	Model A	Model B	Model C	Model D
Household type (<i>ref. two-parent nuclear household</i>)				
Lone-parent nuclear household	0.095*** (14.19)	0.036*** (5.63)	0.045*** (4.75)	0.046*** (4.75)
Two-parent & adult siblings	0.078*** (8.32)	0.044*** (5.26)	0.037*** (3.31)	0.037*** (3.31)
Two-parent & grandparents	0.014 (1.64)	-0.008 (-1.08)	-0.014 (-1.07)	-0.013 (-1.01)
Lone-parent & adult siblings	0.196*** (10.43)	0.125*** (8.04)	0.122*** (6.07)	0.122*** (6.07)
Lone-parent & grandparents	0.065*** (6.50)	0.028*** (3.00)	0.027 (1.45)	0.028 (1.48)
Number of children 0-15				
2		0.018*** (4.04)	0.018*** (3.99)	0.018*** (3.99)
3		0.061*** (10.09)	0.060*** (10.00)	0.060*** (10.00)
Number of disabled adults in the household				
1		0.047*** (9.18)	0.047*** (9.19)	0.047*** (9.19)
2+		0.088*** (10.17)	0.088*** (10.13)	0.088*** (10.13)
Log equivalised household income		-0.084*** (-21.04)	-0.084*** (-20.95)	-0.084*** (-20.95)
House owned outright or with mortgage		-0.061*** (-12.44)	-0.061*** (-12.44)	-0.064*** (-6.42)
Low work intensity hh (<i>ref. not low work</i>)		0.054*** (8.47)	0.054*** (8.50)	0.054*** (8.50)
Mother's income share			-0.014 (-1.33)	-0.014 (-1.33)
Adult siblings' income share			0.036 (1.07)	0.036 (1.08)
Grandparents' income share			0.015 (0.63)	0.016 (0.68)
House owned by parents				0.003 (0.36)
Observations	83987	83987	83987	83987
Pseudo R-squared	0.167	0.321	0.321	0.321

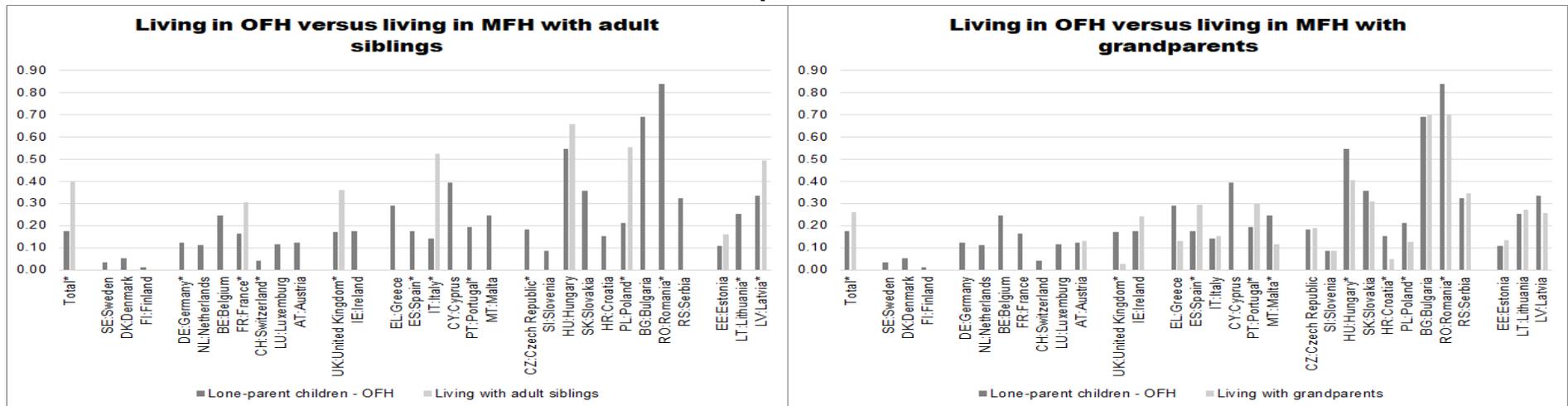
Note: Marginal effects from probit models. The sample includes all children aged 1-15. All models include a set of dummies indicating the number of children of different age groups in the household as well as a set of country dummies. Standards errors are clustered within households to account for intra-household correlations. The model also includes two dummy variables indicating two-parent and lone-parent children respectively living with others adults. The variables indicating grandparents', adult siblings, other household members' income share are mutually exclusive and indicate the share of total household income brought by grandparents', adult siblings, other household members respectively. They are defined for each household type and are set to zero for other household types. Z-statistics in parentheses. *, ** and *** indicate statistically significant effects at 10, 5 and 1 percent levels.

Figure 5: Deprivation rates among children in one-family household (OFH) and those in multi-family households (MFH) by whether the MFH includes grandparents or adult siblings

a. Two parent children



b. Lone-parent children



Note: The average across all countries is unweighted. Within each country group countries are ranked by the proportion of children in MFH from low to high. The asterisk (*) behind country name indicates significant difference in deprivation rate between children 'in OFH and those in 'in MFH' (at 95% confidence interval). Statistics not reported if sample base is less than 30 obs. Source: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16.

Table 6: Percentage difference between *family* and *household* equivalised income for children living in different multi-family household types (MFH)

	Two-parent children living in MFH –all	Two-parent children living in MFH with adult siblings	Two-parent children living in MFH with grandparents	Lone-parent children living in MFH – all	Lone-parent children living in MFH with adult siblings	Lone-parent children living in MFH with grandparents
Total	0.002*	0.026*	-0.075*	-0.23*	-0.069*	-0.334*
Nordic						
SE: Sweden	0.07*	0.08*	n.a.	0.00	n.a.	n.a.
DK: Denmark	0.15*	0.10*	n.a.	0.00	n.a.	n.a.*
FI: Finland	0.06*	0.08*	-0.03	-0.06	n.a.	n.a.*
Continental						
DE: Germany	0.07*	0.07*	n.a.	0.00	n.a.	n.a.*
NL: Netherlands	0.04*	0.03*	n.a.	-0.29*	n.a.	n.a.*
BE: Belgium	-0.01	-0.03	n.a.	-0.06	n.a.	n.a.*
FR: France	-0.01*	-0.01*	n.a.	-0.15*	-0.04	n.a.*
CH: Switzerland	0.01*	0.02*	n.a.	n.a.	n.a.	n.a.
LU: Luxembourg	-0.01	0.02*	-0.01	n.a.	n.a.	n.a.*
AT: Austria	-0.07*	-0.03	-0.09	-0.24*	n.a.	-0.27*
Anglo-Saxon						
UK: United Kingdom	-0.01	-0.06	0.08*	-0.29*	-0.12	-0.41*
IE: Ireland	-0.02	-0.05*	n.a.	-0.03	n.a.	-0.15
Southern						
EL: Greece	-0.11*	0.04*	-0.19*	-0.31*	n.a.	-0.41*
ES: Spain	-0.09*	0.03*	-0.19*	-0.45*	n.a.	-0.52*
IT: Italy	-0.04	0.11*	-0.15*	-0.3*	0.02	-0.45*
CY: Cyprus	0.1*	0.13*	-0.12*	-0.11	n.a.	n.a.
PT: Portugal	-0.13*	-0.02	-0.22*	-0.41*	n.a.	-0.43*
MT: Malta	-0.11*	-0.12*	-0.08	-0.37*	n.a.	-0.41*
Eastern						
CZ: Czech Republic	-0.05	0.02*	-0.15*	-0.36*	n.a.	-0.40*
SI: Slovenia	-0.06*	-0.01*	-0.09*	-0.28*	n.a.	-0.34*
HU: Hungary	-0.13*	-0.03	-0.19*	-0.31*	-0.04	-0.37*
SK: Slovakia	-0.13*	-0.01	-0.17*	-0.37*	n.a.	-0.42*
HR: Croatia	-0.08*	-0.02	-0.11*	-0.35*	n.a.	-0.38*
PL: Poland	-0.18*	-0.01	-0.22*	-0.46*	-0.12	-0.5*
BG: Bulgaria	-0.11*	0.07*	-0.13*	-0.44*	n.a.	-0.45*
RO: Romania	-0.12*	0.05*	-0.15*	-0.41*	n.a.	-0.46*
RS: Serbia	-0.17*	0.1*	-0.19*	-0.44*	n.a.	-0.47*
Baltic						
EE: Estonia	-0.02	0.07*	-0.14*	-0.24*	-0.18*	-0.24*
LT: Lithuania	-0.1*	0.03	-0.15*	-0.41*	n.a.	-0.43*
LV: Latvia	-0.08*	0.03*	-0.18*	-0.33*	-0.15	-0.41*

Note: The average across all countries is unweighted. n.a. indicates sample size too small for reliable estimate (i.e., less than 30). * indicates significance at less than 10% significance level. Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16.

Table 7: Differences in the probability of children in multi-family households being deprived predicted using equivalised household income and using equivalised family income, by family and multi-family household type

	Children in two-parent families in multi-family households which include adult siblings			Children in two-parent families in multi-family households which include grandparents		
	Average predicted probabilities based on equivalised household income (1)	Average predicted probabilities based on equivalised family income (2)	difference ((2)-(1)) (3)	Average predicted probabilities based on equivalised household income (4)	Average predicted probabilities based on equivalised family income (5)	difference ((5)-(4)) (6)
Total	0.217	0.222	-0.005*	0.226	0.283	-0.057*
Nordic						
SE: Sweden	0.015	0.016	-0.001	n.a.	n.a.	n.a.
DK: Denmark	0.081	0.069	0.012*	n.a.	n.a.	n.a.
FI: Finland	0.014	0.014	0.000	n.a.	n.a.	n.a.
Continental						
DE: Germany	0.059	0.055	0.004*	n.a.	n.a.	n.a.
NL: Netherlands	0.025	0.026	-0.001	n.a.	n.a.	n.a.
BE: Belgium	0.085	0.083	0.002	n.a.	n.a.	n.a.
FR: France	0.099	0.120	-0.021*	n.a.	n.a.	n.a.
CH: Switzerland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
LU: Luxembourg	0.063	0.072	-0.009*	n.a.2	n.a.2	n.a.2
AT: Austria	0.037	0.040	-0.003*	0.053	0.101	-0.048*
Anglo-Saxon						
UK: United Kingdom	0.077	0.087	-0.01*	n.a.2	n.a.2	n.a.2
IE: Ireland	0.118	0.123	-0.005*	n.a.	n.a.	n.a.
Southern						
EL: Greece	0.330	0.293	0.037*	0.301	0.422	-0.121*
ES: Spain	0.286	0.291	-0.005	0.184	0.240	-0.056*
IT: Italy	0.173	0.165	0.008*	0.150	0.189	-0.039*
CY: Cyprus	0.182	0.164	0.018*	0.155	0.239	-0.084*
PT: Portugal	0.270	0.302	-0.032*	0.282	0.386	-0.104*
MT: Malta	0.149	0.175	-0.026*	0.122	0.169	-0.047*
Eastern						
CZ: Czech Republic	0.096	0.103	-0.007	0.101	0.161	-0.06*
SI: Slovenia	0.093	0.097	-0.004	0.051	0.072	-0.021*
HU: Hungary	0.547	0.554	-0.007	0.347	0.444	-0.097*
SK: Slovakia	0.220	0.233	-0.013*	0.263	0.343	-0.08*
HR: Croatia	0.109	0.112	-0.003	0.101	0.133	-0.032*
PL: Poland	0.244	0.266	-0.022*	0.073	0.136	-0.063*
BG: Bulgaria	0.740	0.722	0.018*	0.599	0.654	-0.055*
RO: Romania	0.832	0.823	0.009	0.559	0.609	-0.050*
RS: Serbia	0.311	0.309	0.002	0.182	0.278	-0.096*
Baltic						
EE: Estonia	0.050	0.053	-0.003	0.114	0.159	-0.045*
LT: Lithuania	0.140	0.143	-0.003	0.090	0.151	-0.061*
LV: Latvia	0.239	0.254	-0.015*	0.236	0.319	-0.083*

...continues

Table 7 continued:

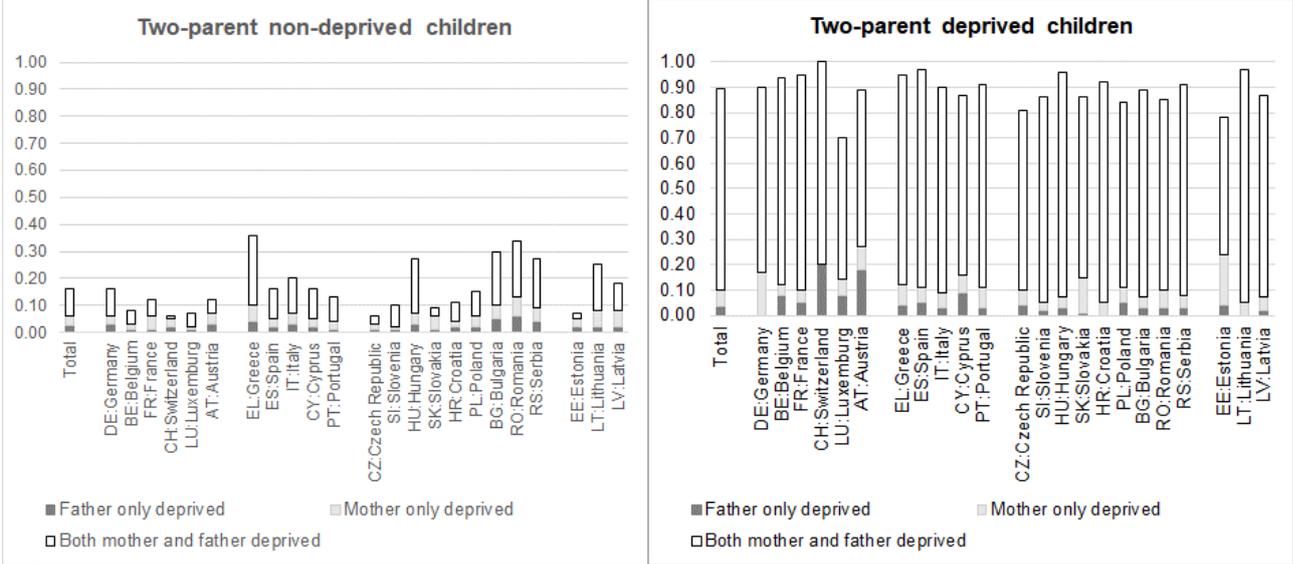
	Children in lone-parent families living in multi-family household which include adult siblings			Children in lone-parent families living in multi-family household which include grandparents		
	Average predicted probabilities based on equivalised household income (1)	Average predicted probabilities based on equivalised family income (2)	difference ((2)-(1)) (3)	Average predicted probabilities based on equivalised household income (4)	Average predicted probabilities based on equivalised family income (5)	difference ((5)-(4)) (6)
Total	0.392	0.427	-0.035*	0.260	0.443	-0.183*
Nordic						
SE: Sweden	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
DK: Denmark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FI: Finland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Continental						
DE: Germany	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
NL: Netherlands	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
BE: Belgium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FR: France	0.313	0.348	-0.035*	n.a.	n.a.	n.a.
CH: Switzerland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
LU: Luxembourg	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
AT: Austria	n.a.	n.a.	n.a.	0.143	0.191	-0.048*
Anglo-Saxon						
UK: United Kingdom	0.354	0.395	-0.041*	0.031	0.069	-0.038*
IE: Ireland	n.a.	n.a.	n.a.	0.252	0.292	-0.04*
Southern						
EL: Greece	n.a.	n.a.	n.a.	0.148	0.547	-0.399*
ES: Spain	n.a.	n.a.	n.a.	0.291	0.526	-0.235*
IT: Italy	0.518	0.537	-0.019	0.150	0.384	-0.234*
CY: Cyprus	n.a.	n.a.	n.a.			n.a.
PT: Portugal	n.a.	n.a.	n.a.	0.296	0.494	-0.198*
MT: Malta	n.a.	n.a.	n.a.	0.123	0.329	-0.206*
Eastern						
CZ: Czech Republic	n.a.	n.a.	n.a.	0.189	0.431	-0.242*
SI: Slovenia	n.a.	n.a.	n.a.	0.085	0.205	-0.12*
HU: Hungary	0.655	0.668	-0.013	0.407	0.600	-0.193*
SK: Slovakia	n.a.	n.a.	n.a.	0.305	0.527	-0.222*
HR: Croatia	n.a.	n.a.	n.a.	0.048	0.136	-0.088*
PL: Poland	0.552	0.588	-0.036*	0.133	0.317	-0.184*
BG: Bulgaria	n.a.	n.a.	n.a.	0.702	0.852	-0.15*
RO: Romania	n.a.	n.a.	n.a.	0.688	0.820	-0.132*
RS: Serbia	n.a.	n.a.	n.a.	0.341	0.566	-0.225*
Baltic						
EE :Estonia	0.154	0.212	-0.058*	0.128	0.207	-0.079*
LT: Lithuania	n.a.	n.a.	n.a.	0.263	0.476	-0.213*
LV: Latvia	0.498	0.552	-0.054*	0.250	0.396	-0.146*

Note: The predicted probabilities in this table are calculated based on regression coefficients from pooled probit models predicting the probability of being deprived for children in different family types as a function of number of children of different ages in the household, total equivalised household income and family type. The predicted probabilities in the row that corresponds to all countries are from a regression on the pooled sample of all countries with country dummies, while the predicted probabilities for each country are based on country-level models. Standards errors are clustered at household level to account for multiple children per household. n.a. indicates sample size too small for reliable estimate (i.e. less than 30). n.a.² that the deprivation outcome does not vary for the particular group (all non-deprived). *, ** and *** indicate statistically significant effects at 10, 5 and 1 percent levels.

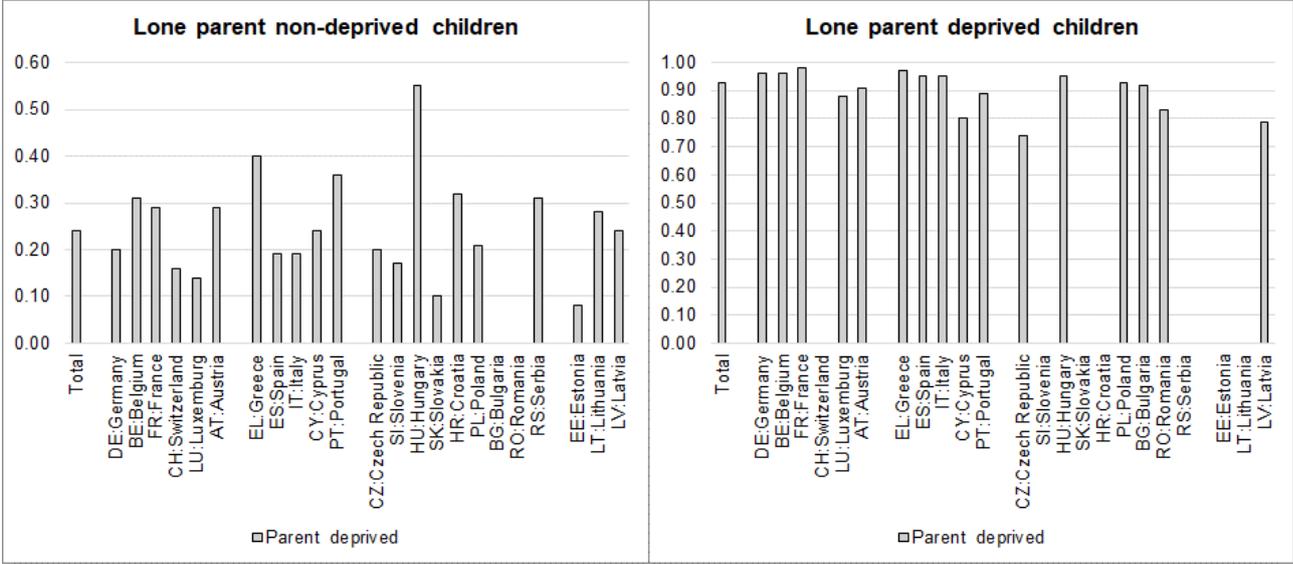
Source: * Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16.

Figure 6: The distribution of parents' and other household members' deprivation status for non-deprived children

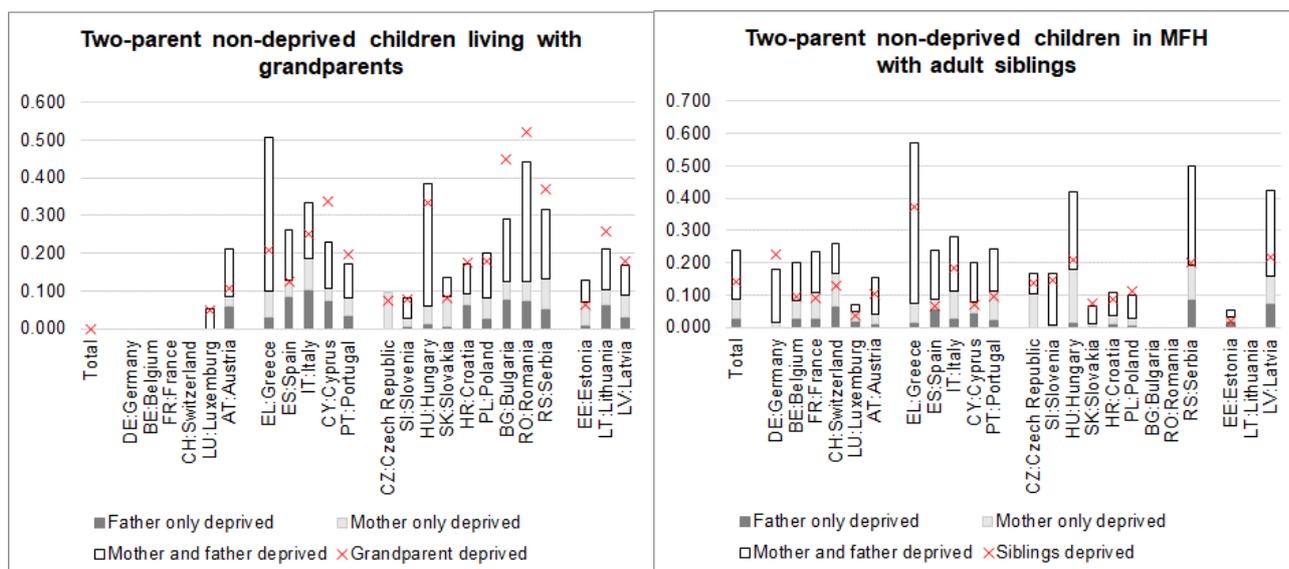
a. Children in two-parent nuclear (one-family) household (OFH)



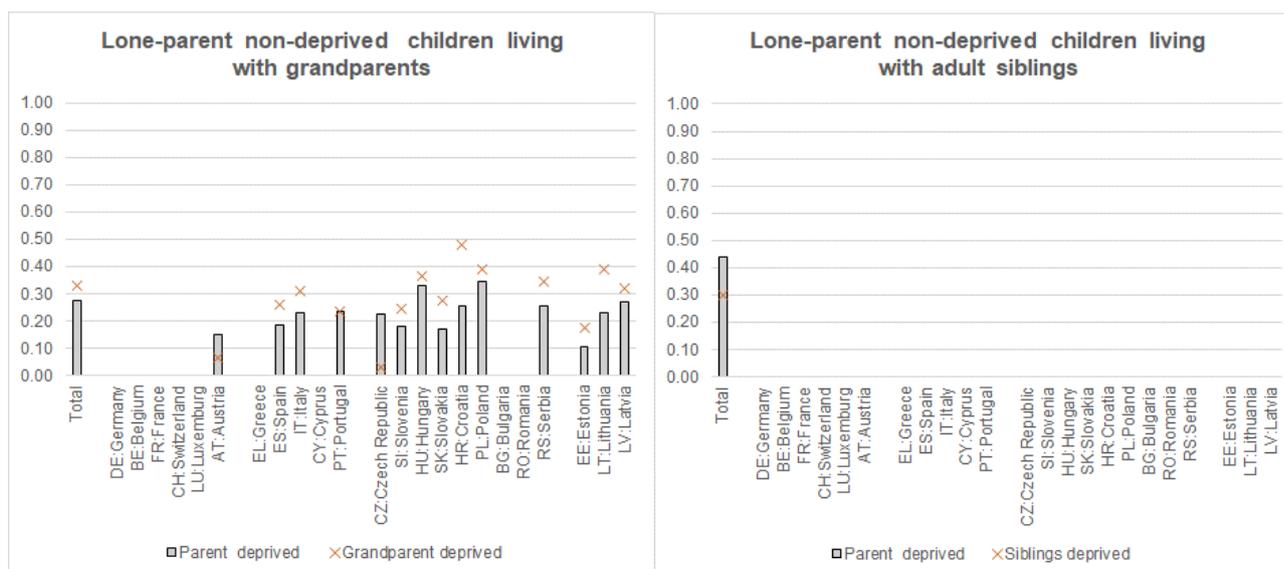
b. Children in lone-parent nuclear (one family) households (OFH)



c. Children in two-parent families in multi-family households



d. Children in lone-parent families in multi-family households



Note: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16. Empty bars indicate sample size too small for reliable estimates (less than 30 observations).

Appendix Tables and Figures

Table A1: Descriptive statistics for co-resident young adult siblings and grandparents

a. Descriptive statistics for: Grandparents living in multi-family households

	<65	65-74	75+	Working	Unemployed	retired	Permanent ill	Fulfilling domestic tasks	Other inactive	No limitations in daily activities due to health
Total	61.0	24.1	14.9	27.3	7.2	45.9	6.0	9.8	3.8	55.6
Nordic										
SE: Sweden	83.7	16.3	0.0	83.7	0.0	16.3	0.0	0.0	0.0	
DK: Denmark	37.2	15.3	47.5	33.2	0.0	56.2	0.0	0.0	10.7	36.2
FI: Finland	48.1	24.7	27.3	19.1	6.3	71.8	2.8	0.0	0.0	23.0
	49.0	29.4	21.6	35.3	2.0	52.9	5.9	0.0	0.0	66.7
Continental										
DE: Germany	41.1	8.5	50.4	0.0	0.0	58.9	0.0	0.0	41.1	0.0
NL:	78.0	22.1	0.0	44.1	9.7	12.6	10.6	13.5	9.4	61.9
BE: Belgium	53.6	32.0	14.3	15.7	13.6	44.7	9.7	15.5	0.8	55.5
FR: France	75.6	16.6	7.8	17.8	7.9	38.4	9.7	7.8	18.4	61.0
CH:	64.7	24.3	10.9	55.0	0.0	29.3	4.8	7.8	3.2	80.7
LU:	62.6	25.2	12.2	33.5	0.7	26.8	6.4	32.6	0.0	60.4
AT: Austria	53.2	23.8	23.1	18.6	7.6	64.0	1.0	3.9	4.9	47.5
	59.3	25.8	14.8	25.7	6.7	44.6	5.3	13.7	0.0	51.4
Anglo-Saxon										
UK: United	66.6	20.9	12.5	34.7	5.0	38.3	13.9	7.0	1.2	53.8
IE: Ireland	65.3	27.2	7.6	33.3	11.2	28.3	4.8	22.4	0.0	68.2
	64.6	23.3	12.2	29.6	9.0	33.9	8.5	18.0	0.5	59.3
Southern										
EL: Greece	32.8	37.5	29.7	10.8	6.7	58.3	1.9	21.3	0.9	46.8
ES: Spain	53.7	27.6	18.8	23.9	13.6	29.9	7.3	22.3	3.2	47.4
IT: Italy	44.6	28.3	27.2	17.3	7.9	37.7	3.7	29.7	3.8	46.2
CY: Cyprus	76.0	16.7	7.3	47.5	15.7	21.8	0.0	10.9	4.1	70.9
PT: Portugal	55.6	23.2	21.2	25.8	9.1	47.0	4.5	10.9	2.8	42.7
MT: Malta	71.3	22.9	5.8	26.6	2.8	23.6	1.3	43.6	2.1	82.9
	50.3	26.9	22.8	21.4	8.2	40.6	3.4	23.4	0.0	52.4
Eastern										
CZ: Czech	66.9	24.5	8.6	43.2	2.1	44.1	9.0	1.5	0.0	67.2
SI: Slovenia	65.3	23.4	11.3	23.8	10.0	61.2	0.5	3.8	0.7	56.2
HU: Hungary	74.9	15.9	9.2	34.1	9.9	41.1	10.4	1.8	2.7	59.4
SK: Slovakia	65.2	25.1	9.7	33.4	10.5	52.0	3.2	0.8	0.2	42.5
HR: Croatia	66.5	22.7	10.8	24.4	10.1	54.5	0.1	9.3	1.6	47.6
PL: Poland	62.9	22.7	14.4	29.2	4.5	46.8	9.5	2.8	7.1	61.8
BG: Bulgaria	64.1	27.3	8.7	29.5	14.2	45.5	7.3	3.4	0.2	72.0
RO: Romania	66.4	21.6	12.1	30.0	3.0	53.6	1.5	11.0	0.8	46.1
RS: Serbia	60.1	28.5	11.4	20.8	11.1	53.5	0.1	11.6	2.9	77.5
	60.8	26.4	12.8	25.0	7.7	53.6	4.4	6.2	0.0	60.7
Baltic										
EE: Estonia	60.2	21.7	18.1	42.1	3.0	44.4	8.0	2.6	0.0	47.1
LT: Lithuania	65.8	22.8	11.4	43.0	5.8	38.9	9.0	1.8	1.5	67.4
LV: Latvia	59.6	26.2	14.2	39.4	4.4	47.0	4.6	4.4	0.3	42.6
	54.1	27.2	18.7	36.1	3.7	51.5	6.0	2.5	0.0	46.9

b. Descriptive statistics for: Young adult siblings living in multi-family households

	19-24	25+	Working	Unemploy ed	Pupil, student, further training, unpaid work experience	Fulfilling domestic tasks	Other inactive/retired/per manently ill or disabled / compulsory military community or service
Total	78.2	21.8	51.0	28.7	9.3	3.6	7.5
Nordic							
SE: Sweden	93.2	6.8	65.8	29.9	2.6	0.0	1.7
DK: Denmark	96.2	3.8	37.6	15.6	27.8	0.0	19.0
FI: Finland	93.6	6.4	46.2	15.3	11.9	0.2	26.4
	<i>95.0</i>	<i>5.0</i>	<i>52.1</i>	<i>18.2</i>	<i>10.8</i>	<i>0.3</i>	<i>18.5</i>
Continental							
DE: Germany	87.0	13.0	43.1	17.5	31.1	0.0	8.3
NL: Netherlands	91.2	8.8	63.0	7.3	27.2	0.9	1.5
BE: Belgium	80.9	19.1	55.8	24.6	11.8	0.7	7.1
FR: France	82.5	17.5	51.2	29.9	5.0	1.2	12.7
CH: Switzerland	94.6	5.4	71.1	2.1	12.5	0.0	14.4
LU: Luxembourg	78.5	21.5	56.9	29.7	6.0	4.7	2.6
AT: Austria	76.7	23.3	59.8	18.0	10.6	2.2	9.3
	<i>82.3</i>	<i>17.7</i>	<i>55.2</i>	<i>21.7</i>	<i>11.7</i>	<i>1.3</i>	<i>10.1</i>
Anglo-Saxon							
UK: United Kingdom	89.4	10.6	74.6	16.0	0.7	1.7	7.0
IE: Ireland	79.8	20.2	49.4	43.4	0.0	0.2	7.0
	<i>84.3</i>	<i>15.7</i>	<i>61.1</i>	<i>29.6</i>	<i>0.5</i>	<i>1.4</i>	<i>7.4</i>
Southern							
EL: Greece	70.9	29.1	27.7	59.8	2.5	0.0	10.0
ES: Spain	71.7	28.4	35.6	49.3	5.7	2.0	7.3
IT: Italy	76.1	23.9	33.3	29.0	25.3	9.6	2.8
CY: Cyprus	76.8	23.2	41.6	28.9	9.3	0.0	20.3
PT: Portugal	71.2	28.8	43.5	50.7	4.2	0.0	1.6
MT: Malta	65.4	34.6	75.6	8.4	7.8	0.8	7.5
	<i>71.1</i>	<i>28.9</i>	<i>39.7</i>	<i>36.9</i>	<i>11.8</i>	<i>3.7</i>	<i>7.9</i>
Eastern							
CZ: Czech Republic	69.0	31.0	63.4	28.5	3.6	0.0	4.5
SI: Slovenia	55.1	44.9	46.1	42.7	9.9	0.0	1.3
HU: Hungary	76.4	23.6	54.6	34.4	4.1	0.0	6.8
SK: Slovakia	74.1	26.0	60.2	30.4	8.8	0.0	0.7
HR: Croatia	66.3	33.8	49.7	40.0	7.8	0.0	2.5
PL: Poland	62.5	37.5	56.2	32.8	3.3	0.0	7.7
BG: Bulgaria	77.7	22.3	38.6	36.8	9.2	0.0	15.3
RO: Romania	79.7	20.4	54.0	19.0	1.4	17.3	8.3
RS: Serbia	82.6	17.4	27.8	60.0	8.0	0.0	4.2
	<i>72.1</i>	<i>27.9</i>	<i>53.3</i>	<i>33.9</i>	<i>5.6</i>	<i>1.4</i>	<i>5.7</i>
Baltic							
EE: Estonia	75.9	24.2	55.9	15.0	3.9	9.5	15.8
LT: Lithuania	84.6	15.4	58.1	14.6	0.0	2.3	25.1
LV: Latvia	75.3	24.7	49.7	27.2	7.8	1.7	13.7
	<i>79.9</i>	<i>20.1</i>	<i>56.1</i>	<i>18.9</i>	<i>4.2</i>	<i>7.4</i>	<i>13.5</i>

Source: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16

Table A2: Proportion of children with enforced lack of each item overall and by country

	Some new clothes	Two pairs of properly fitting shoes	Fruits and vegs once a day	One meal with meat, ch. or fish at least once a day (or veg. equiv.)	Books at home suitable of their age	Outdoor leisure equipment	Indoor games	Regular leisure activity	Celebrations on special occasions	Invite friends round to play	Participate in school trips/ events that cost money	Suitable place to study or do homework *	Go on holiday away from home at least one week per year
All countries	0.070	0.040	0.040	0.050	0.040	0.070	0.040	0.120	0.070	0.080	0.080	0.070	0.260
Nordic													
SE: Sweden	0.010	0.000	0.000	0.000	0.010	0.010	0.000	0.020	0.010	0.010	0.010	0.020	0.050
FI: Finland	0.030	0.010	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.010	0.020	0.070
DK: Denmark	0.020	0.030	0.000	0.010	0.030	0.020	0.010	0.030	0.010	0.020	0.020	0.040	0.100
Continental													
DE: Germany	0.020	0.020	0.020	0.040	0.010	0.010	0.010	0.060	0.010	0.020	0.010	0.030	0.170
NL: Netherlands	0.020	0.040	0.010	0.020	0.000	0.020	0.000	0.060	0.020	0.010	0.020	0.040	0.160
FR: France	0.090	0.050	0.030	0.020	0.010	0.020	0.010	0.060	0.050	0.020	0.050	0.050	0.120
BE: Belgium	0.080	0.040	0.020	0.030	0.050	0.040	0.030	0.090	0.060	0.060	0.050	0.110	0.190
LU: Luxembourg	0.030	0.010	0.010	0.010	0.010	0.030	0.020	0.030	0.020	0.020	0.040	0.040	0.090
CH: Switzerland	0.020	0.000	0.010	0.010	0.010	0.010	0.010	0.050	0.010	0.010	0.010	0.030	0.050
AT: Austria	0.020	0.010	0.010	0.020	0.010	0.030	0.010	0.100	0.020	0.040	0.030	0.030	0.180
Anglo-Saxon													
UK: United Kingdom	0.040	0.020	0.040	0.030	0.010	0.050	0.010	0.060	0.020	0.070	0.050	0.040	0.350
IE: Ireland	0.120	0.070	0.030	0.030	0.010	0.030	0.020	0.080	0.030	0.030	0.040	0.040	0.550
Southern													
EL: Greece	0.020	0.000	0.050	0.090	0.070	0.090	0.040	0.160	0.180	0.130	0.240	0.230	0.400
IT: Italy	0.080	0.030	0.020	0.060	0.070	0.060	0.050	0.130	0.070	0.070	0.100	0.130	0.290
ES: Spain	0.070	0.030	0.020	0.030	0.020	0.060	0.030	0.130	0.110	0.120	0.110	0.060	0.340
PT: Portugal	0.140	0.040	0.030	0.010	0.060	0.050	0.040	0.230	0.070	0.130	0.100	0.060	0.360
CY: Cyprus	0.050	0.010	0.020	0.020	0.050	0.080	0.030	0.210	0.100	0.120	0.030	0.060	0.400
MT: Malta	0.060	0.060	0.020	0.070	0.020	0.040	0.020	0.060	0.050	0.040	0.030	0.040	0.330
Eastern													
CZ: Czech Republic	0.060	0.030	0.030	0.050	0.020	0.070	0.030	0.080	0.040	0.020	0.070	0.040	0.080
SI: Slovenia	0.060	0.010	0.010	0.010	0.010	0.020	0.010	0.110	0.030	0.030	0.030	0.040	0.070
HU: Hungary	0.260	0.070	0.210	0.200	0.140	0.160	0.130	0.200	0.140	0.290	0.160	0.070	0.500
SK: Slovakia	0.140	0.060	0.090	0.120	0.090	0.100	0.070	0.100	0.110	0.140	0.100	0.050	0.140
HR: Croatia	0.040	0.020	0.040	0.050	0.060	0.050	0.050	0.080	0.050	0.070	0.080	0.090	0.280
PL: Poland	0.030	0.010	0.030	0.030	0.030	0.040	0.020	0.180	0.090	0.080	0.110	0.040	0.250
BG: Bulgaria	0.340	0.480	0.380	0.400	0.410	0.500	0.370	0.510	0.310	0.400	0.440	0.380	0.530
RO: Romania	0.260	0.270	0.140	0.210	0.240	0.540	0.410	0.590	0.320	0.390	0.410	0.240	0.600
RS: Serbia	0.130	0.070	0.100	0.150	0.070	0.100	0.060	0.200	0.100	0.080	0.160	0.150	0.390
Baltics													
EE: Estonia	0.030	0.020	0.060	0.060	0.020	0.040	0.020	0.040	0.030	0.050	0.030	0.030	0.100
LT: Lithuania	0.130	0.000	0.080	0.060	0.020	0.070	0.030	0.190	0.050	0.100	0.090	0.040	0.190
LV: Latvia	0.230	0.110	0.090	0.080	0.100	0.160	0.080	0.160	0.100	0.110	0.090	0.040	0.260

Source: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16..The categories for the "suitable place to study or do homework" item in EU-SILC do not distinguish between lack and enforced lack so the statistic refer to simple lack of the item.

Table A3: Proportion of children aged 1-15 identified as deprived on 11-item index using different thresholds, by country

	Prob (MDC1=1)	Prob (MDC2=1)	Prob (MDC3=1)	Prob (MDC4=1)	Prob (MDC5=1)	Prob (MDC6=1)	Obs.
Total	0.318	0.171	0.119	0.085	0.061	0.046	84,164
Nordic							
SE: Sweden	0.064	0.027	0.015	0.011	0.003	0.001	2,370
FI: Finland	0.132	0.051	0.027	0.024	0.018	0.018	1,903
DK: Denmark	0.093	0.027	0.012	0.007	0.002	0.002	5,056
Continental							
DE: Germany	0.211	0.082	0.044	0.025	0.013	0.006	2,708
NL: Netherlands	0.213	0.098	0.06	0.035	0.023	0.017	4,514
FR: France	0.196	0.083	0.039	0.016	0.009	0.006	4,558
BE: Belgium	0.229	0.128	0.097	0.073	0.057	0.044	2,537
LU: Luxembourg	0.566	0.218	0.102	0.053	0.022	0.015	2,708
CH: Switzerland	0.123	0.052	0.035	0.023	0.017	0.009	1,752
AT: Austria	0.225	0.104	0.054	0.030	0.017	0.011	2,054
Anglo-Saxon							
UK: United Kingdom	0.094	0.044	0.022	0.011	0.01	0.007	2,392
IE: Ireland	0.391	0.145	0.084	0.044	0.021	0.013	4,208
Southern							
EL: Greece	0.460	0.250	0.175	0.118	0.087	0.063	2,637
IT: Italy	0.364	0.189	0.132	0.092	0.063	0.046	4,547
ES: Spain	0.335	0.174	0.124	0.090	0.064	0.051	6,215
PT: Portugal	0.477	0.237	0.137	0.097	0.059	0.039	1,843
CY: Cyprus	0.44	0.252	0.163	0.109	0.074	0.054	1,960
MT: Malta	0.364	0.142	0.087	0.062	0.04	0.027	1,597
Eastern							
CZ: Czech Republic	0.163	0.119	0.083	0.052	0.036	0.028	2,450
SI: Slovenia	0.176	0.077	0.047	0.028	0.017	0.01	3,583
HU: Hungary	0.562	0.389	0.319	0.268	0.209	0.171	3,230
SK: Slovakia	0.289	0.222	0.174	0.126	0.101	0.08	1,934
HR: Croatia	0.31	0.14	0.095	0.069	0.053	0.039	1,586
BG: Bulgaria	0.304	0.181	0.114	0.075	0.049	0.031	5,376
PL: Poland	0.702	0.628	0.563	0.507	0.456	0.407	1,299
RO: Romania	0.736	0.667	0.590	0.506	0.398	0.322	1,500
RS: Serbia	0.459	0.273	0.187	0.152	0.117	0.086	2,376
Baltic							
LT: Lithuania	0.18	0.103	0.063	0.035	0.025	0.019	2,259
EE: Estonia	0.302	0.203	0.153	0.101	0.071	0.045	1,152
LV: Latvia	0.414	0.285	0.219	0.157	0.117	0.088	1,860

Note: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16.

Table A4: Cronbach's Alpha of the deprivation index by country

	All	Cronbach's alpha if item is deleted										
		Some new clothes	Two pairs of properly fitting shoes	Fruits and vegs once a day	One meal with meat, ch. or fish at least once a day (or veg. equiv.)	Books at home suitable of their age	Outdoor leisure equipment	Indoor games	Regular leisure activity	Celebrations on special occasions	Invite friends round to play	Go on holiday away from home at least one week per year
Total	0.88	0.87	0.76	0.87	0.87	0.87	0.86	0.87	0.87	0.87	0.86	0.89
Nordic												
SE :Sweden	0.71	0.67	0.70	0.71	0.71	0.69	0.69	0.69	0.66	0.68	0.68	0.67
FI: Finland	0.55	0.47	0.52	0.52	0.54	0.53	0.52	0.54	0.52	0.54	0.55	0.56
DK: Denmark	0.80	0.78	0.78	0.80	0.79	0.78	0.77	0.78	0.77	0.77	0.78	0.83
Continental												
DE: Germany	0.73	0.72	0.72	0.71	0.69	0.72	0.72	0.72	0.69	0.71	0.70	0.74
NL: Netherlands	0.65	0.64	0.63	0.65	0.60	0.64	0.62	0.65	0.57	0.64	0.63	0.68
FR: France	0.79	0.77	0.77	0.77	0.77	0.78	0.78	0.78	0.77	0.76	0.77	0.78
BE: Belgium	0.89	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.87	0.87	0.87	0.89
LU: Luxembourg	0.80	0.79	0.79	0.79	0.78	0.79	0.77	0.77	0.78	0.78	0.79	0.80
CH: Switzerland	0.71	0.66	0.71	0.70	0.70	0.68	0.69	0.70	0.70	0.69	0.69	0.73
AT: Austria	0.68	0.67	0.68	0.68	0.67	0.66	0.64	0.66	0.58	0.66	0.61	0.66
Anglo-Saxon												
UK: United Kingdom	0.69	0.67	0.67	0.66	0.67	0.69	0.65	0.68	0.66	0.68	0.65	0.74
IE: Ireland	0.69	0.66	0.66	0.67	0.66	0.68	0.67	0.68	0.67	0.66	0.67	0.72
Southern												
EL: Greece	0.84	0.84	0.85	0.83	0.82	0.82	0.83	0.83	0.82	0.82	0.81	0.85
IT: Italy	0.87	0.86	0.87	0.87	0.86	0.85	0.85	0.85	0.85	0.86	0.85	0.89
ES: Spain	0.85	0.83	0.85	0.85	0.85	0.85	0.83	0.84	0.83	0.83	0.83	0.87
PT: Portugal	0.82	0.79	0.81	0.81	0.81	0.80	0.80	0.80	0.79	0.79	0.79	0.81
CY: Cyprus	0.81	0.79	0.81	0.81	0.80	0.78	0.78	0.79	0.79	0.79	0.79	0.82
MT: Malta	0.84	0.82	0.82	0.83	0.82	0.83	0.81	0.83	0.81	0.82	0.82	0.86
Eastern												
CZ: Czech Republic	0.90	0.89	0.89	0.90	0.90	0.89	0.89	0.89	0.89	0.89	0.89	0.89
SI: Slovenia	0.84	0.82	0.83	0.82	0.82	0.83	0.81	0.82	0.82	0.83	0.83	0.82
HU: Hungary	0.89	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.89
SK: Slovakia	0.81	0.79	0.80	0.80	0.79	0.80	0.79	0.79	0.80	0.79	0.78	0.80
HR: Croatia	0.91	0.90	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91
BG: Bulgaria	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PL: Poland	0.87	0.87	0.87	0.86	0.86	0.86	0.85	0.86	0.86	0.86	0.86	0.90
RO: Romania	0.95	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
RS: Serbia	0.83	0.83	0.83	0.82	0.82	0.82	0.82	0.83	0.81	0.80	0.80	0.83
Baltic												
EE: Estonia	0.80	0.79	0.80	0.78	0.78	0.79	0.78	0.79	0.80	0.80	0.77	0.78
LT: Lithuania	0.83	0.81	0.83	0.81	0.82	0.83	0.82	0.82	0.82	0.82	0.81	0.81
LV: Latvia	0.89	0.88	0.88	0.88	0.88	0.88	0.87	0.88	0.88	0.88	0.88	0.89

Note: Authors' calculations based on 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16.

Table A5: Proportion of children who have or want but cannot afford each item

	Some new clothes	Two pairs of properly fitting shoes	Fruits and vegs once a day	One meal with meat, chicken. or fish at least once a day (or veg. equiv.)	Books at home suitable of their age	Outdoor leisure equipment	Indoor games	Regular leisure activity	Celebrations on special occasions	Invite friends round to play	Participate in school trips/ events that cost money	Suitable place to study or do homework	Go on holiday away from home at least one week per year
All countries	0.980	0.990	0.970	0.980	0.970	0.970	0.980	0.840	0.970	0.890	0.950	n.a.	0.940
Nordic													
SE: Sweden	1.000	0.990	0.990	1.000	0.980	1.000	1.000	0.730	0.950	0.940	1.000	n.a.	0.930
FI: Finland	0.990	1.000	0.960	0.990	0.980	0.960	0.990	0.820	0.990	0.980	0.980	n.a.	0.940
DK: Denmark	0.990	0.970	0.970	1.000	0.940	0.990	0.980	0.910	0.990	0.990	0.960	n.a.	0.970
Continental													
DE: Germany	0.970	0.990	0.920	0.940	0.990	0.990	1.000	0.900	0.980	0.950	1.000	n.a.	0.960
NL: Netherlands	1.000	0.990	0.990	0.980	0.980	0.990	0.990	0.960	0.990	0.930	0.990	n.a.	0.990
FR: France	0.990	0.990	0.950	0.980	0.990	0.980	0.990	0.770	0.900	0.890	0.960	n.a.	0.970
BE: Belgium	0.960	0.990	0.990	1.000	0.970	0.970	1.000	0.880	0.980	0.930	0.990	n.a.	0.950
LU: Luxembourg	0.990	0.990	1.000	0.990	0.990	0.980	1.000	0.850	0.970	0.900	0.860	n.a.	0.950
CH: Switzerland	1.000	0.990	1.000	0.990	0.98	1.000	0.99	0.96	0.99	0.98	1	n.a.	0.99
AT: Austria	0.990	1.000	0.990	0.990	0.980	0.990	1.000	0.850	0.980	0.920	0.990	n.a.	0.940
Anglo-Saxon													
UK: United Kingdom	1.000	0.990	0.970	0.980	0.990	0.970	0.990	0.830	0.990	0.780	0.980	n.a.	0.970
IE: Ireland	0.960	0.990	0.990	0.990	1.000	0.980	1.000	0.990	0.990	0.960	0.960	n.a.	1.000
Southern													
EL: Greece	1.000	1.000	1.000	0.970	0.970	0.980	0.980	0.950	0.980	0.930	0.980	n.a.	0.940
IT: Italy	0.950	0.990	0.940	0.970	0.850	0.940	0.940	0.780	0.930	0.850	0.840	n.a.	0.840
ES: Spain	0.990	1.000	0.970	1.000	0.990	0.980	0.980	0.900	0.980	0.930	0.960	n.a.	0.970
PT: Portugal	0.990	1.000	1.000	1.000	0.990	0.990	0.990	0.820	0.980	0.880	0.950	n.a.	0.930
CY: Cyprus	0.990	1.000	0.990	0.990	0.950	0.950	0.990	0.790	0.970	0.850	0.980	n.a.	0.820
MT: Malta	0.980	0.990	0.900	0.940	0.970	0.880	0.980	0.810	0.960	0.670	0.980	n.a.	0.740
Eastern													
CZ: Czech Republic	0.990	0.960	0.970	0.910	0.970	0.960	0.990	0.780	0.940	0.800	0.970	n.a.	0.790
SI: Slovenia	0.990	0.990	1.000	0.990	0.990	0.990	1.000	0.800	1.000	0.950	0.990	n.a.	0.990
HU: Hungary	0.940	0.990	0.980	0.960	0.970	0.970	0.970	0.900	0.980	0.870	0.960	n.a.	0.920
SK: Slovakia	0.950	0.980	0.990	0.950	0.970	0.970	0.990	0.730	0.880	0.720	0.960	n.a.	0.820
HR: Croatia	0.990	1.000	1.000	0.990	0.980	0.980	0.980	0.710	0.980	0.900	0.900	n.a.	0.740
BG: Bulgaria	0.990	0.990	0.980	0.990	0.940	0.940	0.940	0.810	0.980	0.930	0.940	n.a.	0.960
PL: Poland	1.000	1.000	0.990	1.000	0.990	0.980	1.000	0.880	0.990	0.930	0.980	n.a.	0.930
RO: Romania	0.980	0.980	0.990	0.970	0.960	0.910	0.950	0.790	0.950	0.910	0.850	n.a.	0.920
RS: Serbia	0.980	0.990	0.990	0.990	0.97	0.97	0.99	0.78	0.98	0.94	0.88	n.a.	0.93
Baltic													
EE: Estonia	1.000	1.000	0.940	0.970	0.980	0.990	1.000	0.820	0.990	0.910	0.970	n.a.	0.890
LT: Lithuania	0.990	1.000	0.990	1.000	0.980	0.960	0.990	0.750	0.980	0.900	0.990	n.a.	0.930
LV: Latvia	0.970	0.990	0.990	1.000	0.970	0.980	0.990	0.920	0.990	0.910	1.000	n.a.	0.880

Note: Own calculations using the 2014 EU-SILC cross-sectional data UDB ver. 2014-2 1-8-16. The suitability of the "suitable place to study or do homework" item could not be tested because the categories for this item in EU-SILC do not distinguish between lack and enforced lack of the item.

Table A6: Proportion of children who live with i) others ii) with both grandparents and adult siblings, iii) with grandparents and iv) adult siblings, for all children and by children's family type

	% of all children living with				
	...others	... adult sibling and grandparents	... adult siblings	... grandparents	in any type of MFH
Total	0.01	0.00	0.04	0.07	0.121
Nordic					
SE: Sweden	0.00	0.00	0.03	0.00	0.034
DK: Denmark	0.01	0.00	0.02	0.01	0.038
FI: Finland	0.00	0.00	0.04	0.01	0.045
Continental					
DE: Germany	0.00	0.00	0.02	0.00	0.027
NL: Netherlands	0.01	0.00	0.02	0.01	0.033
BE: Belgium	0.01	0.00	0.03	0.02	0.056
FR: France	0.00	0.00	0.05	0.01	0.059
CH: Switzerland	0.01	0.00	0.04	0.03	0.072
LU: Luxembourg	0.00	0.00	0.05	0.04	0.088
AT: Austria	0.01	0.00	0.05	0.07	0.138
Anglo-Saxon					
UK: United	0.01	0.00	0.04	0.02	0.071
IE: Ireland	0.02	0.00	0.04	0.02	0.081
Southern					
EL: Greece	0.01	0.00	0.03	0.06	0.106
ES: Spain	0.02	0.00	0.04	0.06	0.12
IT: Italy	0.02	0.00	0.05	0.06	0.125
CY: Cyprus	0.02	0.00	0.11	0.02	0.147
PT: Portugal	0.01	0.01	0.05	0.09	0.161
MT: Malta	0.01	0.01	0.08	0.08	0.181
Eastern					
CZ: Czech	0.01	0.00	0.04	0.05	0.097
SI: Slovenia	0.01	0.00	0.03	0.07	0.106
HU: Hungary	0.02	0.00	0.06	0.12	0.197
SK: Slovakia	0.02	0.00	0.05	0.17	0.242
HR: Croatia	0.02	0.01	0.05	0.24	0.317
PL: Poland	0.02	0.01	0.05	0.25	0.328
BG: Bulgaria	0.03	0.01	0.03	0.27	0.335
RO: Romania	0.02	0.01	0.07	0.24	0.336
RS: Serbia	0.02	0.02	0.03	0.35	0.419
Baltic					
EE: Estonia	0.01	0.00	0.06	0.09	0.161
LT: Lithuania	0.01	0.00	0.04	0.12	0.167
LV: Latvia	0.04	0.01	0.05	0.15	0.262
	% of two parent children living with				
	...others	... adult sibling	... adult siblings	... grandparents	in any type of
Total	0.01	0.00	0.04	0.06	0.11
Nordic					
SE: Sweden	0.00	0.00	0.03	0.00	0.03
DK: Denmark	0.01	0.00	0.02	0.00	0.03
FI: Finland	0.00	0.00	0.04	0.01	0.04
Continental					
DE: Germany	0.00	0.00	0.02	0.00	0.03
NL: Netherlands	0.00	0.00	0.02	0.00	0.02
BE: Belgium	0.01	0.00	0.02	0.01	0.04
FR: France	0.00	0.00	0.05	0.00	0.06
CH: Switzerland	0.01	0.00	0.04	0.03	0.07
LU: Luxembourg	0.00	0.00	0.05	0.04	0.09
AT: Austria	0.01	0.00	0.05	0.07	0.13
Anglo-Saxon					
UK: United	0.01	0.00	0.04	0.02	0.06
IE: Ireland	0.01	0.00	0.04	0.01	0.06
Southern					
EL: Greece	0.01	0.00	0.03	0.06	0.09
ES: Spain	0.01	0.00	0.04	0.04	0.10

