

CO2.3. Material deprivation among households with children

Definitions and methodology

This indicator presents two measures related to material deprivation among households with children: (i) access to household goods and amenities, and (ii) access to educational items. Material deprivation is considered in absolute terms as well as in terms of inequalities across households.

Absolute material deprivation: The first part of this indicator presents data on the proportion of children that live in households that are not able to afford essential necessities:

- (i) Access to household goods and amenities: This measure looks at children in households that lack access to 4 essential household goods ((1) a washing machine, (2) a colour TV, (3) a telephone, and (4) a personal car) or that lack the financial ability to (5) keep the household adequately warm, (6) pay utility bills, (7) meet mortgage or rent payments, (8) eat meat, chicken or fish at least every second day, or (9) pay its necessary expenses generally. Thus, deprivation is measured across a total of nine key household items.
- (ii) Educational resources: This measure looks at the ownership of educational resources based on a child's access to seven basic items within the household as asked in the PISA survey. These seven items are: (1) a desk to study, (2) a quiet place to study, (3) a computer for school work, (4) educational software, (5) an internet connection, (6) a dictionary, and (7) school textbooks.

Inequality in material deprivation: The absolute deprivation measure allows for an overview of access to basic household and educational goods that may be expected by children in economically developed countries. However, cultural norms and schooling systems may mean that in certain countries some of these goods are not essential for children and a lack of such goods may not necessarily reflect deprivation (for example, the school curriculum for mathematics and languages might mean that calculators and dictionaries are not essential). This makes the results less comparable across countries. Therefore, this indicator also presents information on relative deprivation as a measure of inequality.

This relative measure looks at inequality at the bottom end of the distribution by comparing children's access to the number of goods below the median. Because the two measures used in this indicator are based on a composite variable calculated from 9 and 7 discrete items respectively (see above), a modified McLoone Index (see McLoone and Boddy, 1994) is used. The index is defined as such: for a distribution with C ordinal categories (in the case of educational resources, for example, ranging from having access to 0 to 7 items) *at or below the median*, the modified McLoone Index can be defined as

$$1 - \left\{ \frac{\sum(C_1 * N_{C1}, C_2 * N_{C2} \dots C_M * N_{CM})}{[M * \sum(N_{C1}, N_{C2} \dots N_{CM})]} \right\}$$

where N is the number of respondents in each category and M is the value of the median category. Thus, if all respondents belonged to the median category the index would give a score of zero, denoting no inequality below the median. Overall, this measure shows the proportion of items that are missing among children below the median that is needed for these children to equal the median value.

Other relevant indicators: Child poverty (CO2.2); Trends in the income position of different household types (CO2.1)

Key findings

Table CO2.3.A shows that on average, across the 23 OECD countries with available data, around 39% of children have access to all 9 household items that are deemed essential for material well-being, while no children are deprived of all 9 items and very few of more than 6. The level of deprivation is high in Greece and Hungary where 6% or more of children are deprived of over half (five or more) of the essential items. By contrast, material deprivation is low in Belgium, Luxembourg, the Netherlands, the Nordic countries and Switzerland, where less than 1% of children are deprived of 5 or more of the items.

Table CO2.3.A. Material deprivation based on access to household goods and amenities, 2013
 Proportion (%) of children that do not have access to household goods and amenities by number of items

	Number of household amenities and goods that a child does NOT have access to (%)									
	0	1	2	3	4	5	6	7	8	9
Austria	47.1	34.4	10.2	4.4	2.4	1.4	0.1	0.0	0.0	0.0
Belgium	54.2	28.2	10.3	4.8	1.8	0.6	0.2	0.0	0.0	0.0
Czech Republic	24.4	53.8	13.0	4.9	2.3	0.9	0.5	0.2	0.0	0.0
Denmark	64.6	25.3	6.5	2.4	0.6	0.5	0.1	0.0	0.0	0.0
Estonia	31.5	43.4	15.5	6.1	2.6	0.9	0.1	0.0	0.0	0.0
Finland	63.9	21.5	8.9	4.6	1.0	0.1	0.0	0.0	0.0	0.0
France	32.5	46.0	11.8	6.7	1.9	0.7	0.4	0.0	0.0	0.0
Greece	4.2	39.5	23.9	14.2	10.2	6.1	1.8	0.2	0.0	0.0
Hungary	8.0	35.1	19.8	14.7	10.4	7.7	3.4	0.8	0.0	0.0
Iceland	36.9	40.4	13.0	6.6	2.2	0.6	0.0	0.3	0.0	0.0
Ireland	19.7	46.8	13.5	10.6	6.8	2.4	0.2	0.0	0.0	0.0
Italy	17.2	50.0	15.9	9.7	4.6	2.2	0.4	0.0	0.0	0.0
Luxembourg	60.1	31.8	4.3	2.7	0.9	0.2	0.0	0.0	0.0	0.0
Netherlands	63.1	27.0	6.5	1.8	1.2	0.3	0.0	0.0	0.0	0.0
Norway	75.5	14.3	4.8	4.1	1.2	0.2	0.1	0.0	0.0	0.0
Poland	26.1	43.6	17.2	8.4	3.4	1.1	0.2	0.0	0.0	0.0
Portugal	15.3	48.0	20.6	8.6	5.4	1.4	0.6	0.1	0.0	0.0
Slovak Republic	18.8	46.6	19.3	8.6	2.7	2.2	1.2	0.5	0.1	0.0
Slovenia	26.0	45.8	18.9	5.6	2.5	1.1	0.1	0.0	0.0	0.0
Spain	26.7	48.4	12.8	8.4	2.7	0.7	0.2	0.1	0.0	0.0
Sweden	78.4	14.0	3.8	2.6	1.0	0.2	0.1	0.0	0.0	0.0
Switzerland	63.2	25.8	8.5	1.7	0.7	0.1	0.0	0.0	0.0	0.0
United Kingdom	34.8	34.7	15.9	8.3	4.5	1.5	0.2	0.0	0.0	0.0
OECD-23 average	38.8	36.7	12.8	6.5	3.2	1.4	0.4	0.1	0.0	0.0
Russian Federation	4.5	33.5	29.7	15.9	10.3	4.3	1.4	0.5	0.0	0.0
Bulgaria	5.4	23.9	19.1	17.7	13.3	10.3	5.0	3.1	2.2	0.0
Croatia	6.4	48.0	30.6	8.2	3.8	1.2	0.5	1.3	0.0	0.0
Cyprus	10.7	40.1	26.0	14.5	7.2	1.3	0.2	0.0	0.0	0.0
Latvia	12.7	36.1	20.8	13.4	9.8	4.3	2.1	0.5	0.2	0.0
Lithuania	9.6	42.9	26.4	12.1	4.7	4.3	0.1	0.0	0.0	0.0
Malta	26.0	39.9	18.5	9.8	3.8	1.2	0.5	0.2	0.0	0.0
Romania	8.8	29.1	22.9	14.2	11.9	6.3	4.4	1.8	0.6	0.0

Note: Material deprivation is based on children having access to (1) a washing machine, (2) a colour TV, (3) a telephone, and (4) a personal car, and on the household having the ability to (5) keep the household adequately warm, (6) pay utility bills, (7) meet mortgage or rent payments, (8) eat meat, chicken or fish at least every second day, and (9) pay its necessary expenses generally

Source: [for all countries, EU SILC](#)

Table CO2.3.B shows that across the OECD, on average, around 45% of children have access to all the basic educational resources. Deprivation in educational resources is highest in Chile, Turkey and Mexico where at least 10% of children do not have access to 4 or more of the essential educational items. By contrast, deprivation is very low in Denmark, Iceland and Poland. In these countries, less than 2% of children lack 4 or more items and more than 60% of children have access to all 7 essential educational resources.

Table CO2.3.B. Material deprivation based on access to educational resources, 2012
 Proportion of children that do not have access to educational resources by number of items

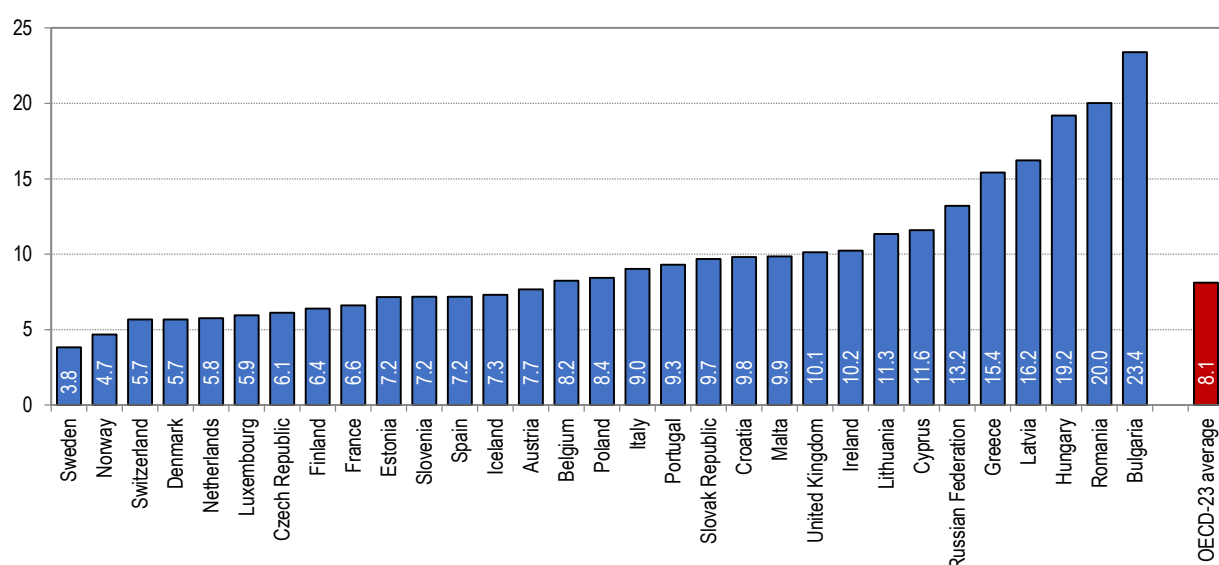
	Number of educational resources that a child does NOT have access to (%)							
	0	1	2	3	4	5	6	7
Australia	59.4	22.7	10.4	4.2	2.0	0.8	0.3	0.2
Austria	40.4	38.9	16.2	3.3	0.9	0.3	0.1	0.1
Belgium	49.4	33.9	11.3	3.5	1.3	0.4	0.2	0.1
Canada	49.1	28.2	13.9	5.2	2.2	0.9	0.3	0.1
Switzerland	37.9	40.6	16.0	4.2	0.9	0.2	0.1	0.0
Chile	21.4	33.8	19.9	12.4	7.5	3.6	1.1	0.3
Czech Republic	47.2	39.5	8.8	3.1	0.8	0.5	0.1	0.1
Germany	47.4	38.8	9.7	2.9	0.8	0.3	0.2	0.0
Denmark	64.0	23.7	8.2	2.7	0.6	0.7	0.1	0.0
Spain	40.3	40.6	13.5	3.9	1.2	0.4	0.1	0.1
Estonia	56.0	28.3	10.9	3.3	1.0	0.4	0.0	0.0
Finland	30.6	44.1	17.1	5.9	1.6	0.7	0.0	0.0
France	32.8	49.4	13.3	3.2	1.0	0.2	0.1	0.0
United Kingdom	57.6	24.4	10.2	4.5	2.2	0.8	0.2	0.2
Greece	35.2	36.9	16.4	7.2	2.7	1.2	0.3	0.1
Hungary	38.9	41.7	10.9	5.1	2.1	0.8	0.5	0.1
Ireland	47.3	31.5	12.9	5.1	2.0	0.7	0.3	0.1
Iceland	67.4	23.0	6.9	1.9	0.6	0.1	0.1	0.1
Israel	43.1	34.9	13.1	5.4	2.0	0.8	0.4	0.3
Italy	45.3	39.3	10.7	3.2	1.0	0.4	0.1	0.1
Japan	12.2	44.8	23.6	13.2	4.4	1.2	0.5	0.1
Korea	46.0	32.1	13.5	5.3	2.1	0.8	0.2	0.0
Luxembourg	44.5	39.4	11.3	2.6	1.1	0.5	0.3	0.3
Mexico	14.9	18.6	14.1	21.1	16.6	10.3	4.0	0.4
Netherlands	57.4	34.0	5.6	1.9	0.8	0.2	0.1	0.1
Norway	57.8	28.6	9.0	3.0	1.0	0.4	0.1	0.1
New Zealand	47.7	25.5	13.7	6.5	3.2	2.2	0.8	0.5
Poland	65.3	25.8	5.8	2.1	0.6	0.3	0.2	0.1
Portugal	42.3	40.0	11.4	4.1	1.3	0.8	0.2	0.1
Slovak Republic	46.2	31.7	10.5	4.7	2.8	2.1	1.1	0.9
Slovenia	57.3	31.7	8.4	1.9	0.4	0.1	0.0	0.1
Sweden	48.4	29.2	14.3	5.4	2.0	0.5	0.2	0.1
Turkey	23.3	25.9	15.7	16.7	9.5	5.5	2.7	0.8
United States	43.0	24.9	14.7	9.1	4.6	2.3	1.0	0.4
OECD average	44.6	33.1	12.4	5.5	2.5	1.2	0.5	0.2

Note: Material deprivation is based on children having access to the following educational resources: (1) a desk to study, (2) a quiet place to study, (3) a computer for school work, (4) educational software, (5) an internet connection, (6) a dictionary, and (7) school textbooks.

Source: [OECD PISA](#)

Chart CO2.3.A shows the bottom-end inequality in access to household amenities and goods among children in 23 OECD countries based on a modified McLoone Index. Average deficits across the OECD as a whole are small, with an average increase of only 8.1% of total items needed to achieve equality for the most deprived children on this measure (children below the median). The value ranges from only 4% in Sweden (low inequality) to more than five times that amount in Hungary (high inequality). Along with Sweden, the Czech Republic, Denmark, Finland, France, Luxembourg, the Netherlands, Norway and Switzerland all have levels of inequality in access to household goods and amenities that are considerably lower than the OECD average. Several countries, including Greece, Hungary, Ireland and the United Kingdom are considerably more unequal than the OECD average.

Chart CO2.3.A. Inequality in access to household goods and amenities, 2013
 Modified McLoone index of household goods and amenities



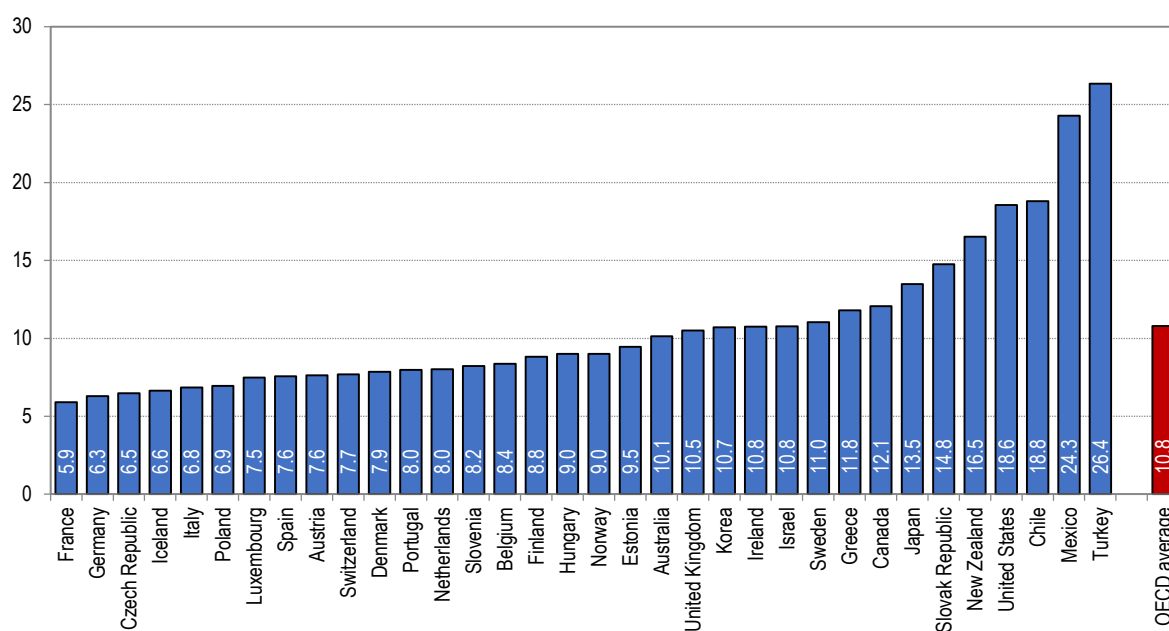
Note: See notes for Table CO2.3.A for household amenities and goods considered for this measure.
 Source: [for all countries, EU SILC](#)

Chart CO2.3.B shows the bottom-end inequality in the ownership of educational resources across the OECD is a little higher than inequality in access to household amenities and goods. On average 10.8% of educational items are missing for those in the bottom half of the distribution. France and Germany are among those with the lowest inequality. High-inequality countries contain a mix of lower income OECD countries (Chile, Mexico and Turkey) and higher income countries (Japan, New Zealand and the United States). Turkey has the highest level of inequality on this measure with over one in every four items required to achieve equality for the poorest children.

Comparability and data issues

The measures of deprivation used in this indicator are based around the outline set out in UNICEF's Innocenti Report Card 9 for essential items. It should be noted, however, that cultural norms and schooling systems may mean that in certain countries some of these items are not essential for children and a lack of such items may not necessarily reflect deprivation (for example, in some countries the school curriculum for languages might mean that dictionaries are not an essential item).

Chart CO2.3.B. Inequality in access to educational resources, 2012
 Modified McLoone index of educational resources



Note: See notes for Table CO2.3.B for educational resources considered for this measure.
 Source: [OECD PISA](http://www.oecd.org)

Here, we use an inequality measure to make data more comparable across countries. The choice of threshold which defines inequality can refer to “lower-end inequality” or poverty (the distance of some children below a nationally defined standard) or “upper-end inequality” or surplus (the distance of some children above a nationally defined high-standard). The interest here is in the numbers of children left behind, thus, we focus on lower-end inequality.

Both child (PISA) and household (EU-SILC) level surveys suffer from a lack of capture, particularly when referring to extreme cases. PISA, which is a school survey, will not capture children who are disabled, ill or truants. Families in temporary accommodation, who are homeless, and those experiencing severe forms of deprivation, neglect or mistreatment, are likely to be missing from EU-SILC. This is a particular concern when looking at bottom-end indicators as is done for the inequality measure.

Sources and further reading: EU SILC (2011) The European Survey on Income and Living Conditions (EU SILC) for 2010 and 2011, accessed at http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/eu_silc; OECD (2013) The Programme for International Student Assessment (PISA) International Database 2012, accessed at <http://pisa2012.acer.edu.au>; McLoone, P. and F. Boddy (1994) Deprivation and mortality in Scotland, 1981 and 1991. British Medical Journal, 309:1465-1470; UNICEF (2013), *Innocenti Research Centre: Report Card 11*; UNICEF (2011), *Innocenti Research Centre: Report Card 9*; OECD (2009) *Doing Better for Children*, OECD, Paris