

CO3.3: Educational deprivation

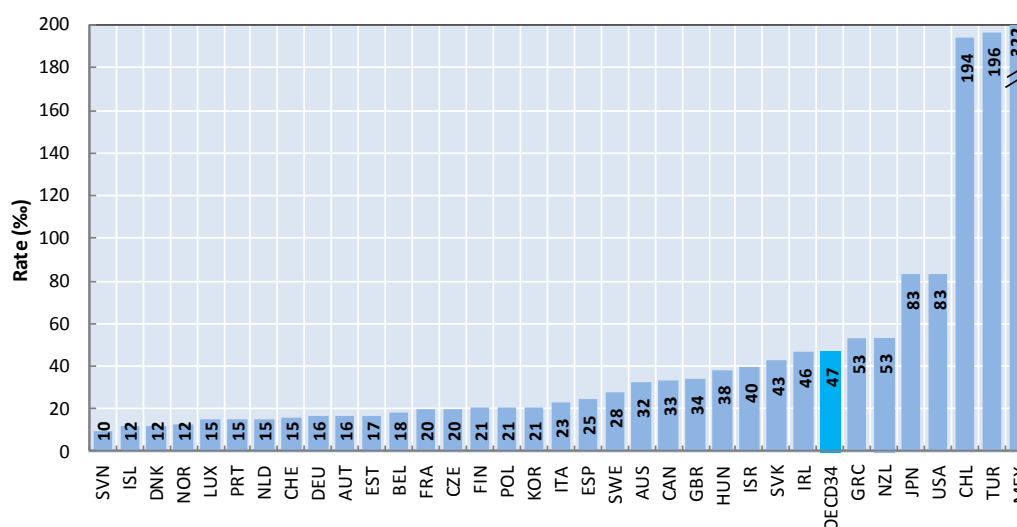
Definitions and methodology

The educational deprivation indicator measures resources for school available to 15-year-old children in their home. Data are taken from the PISA (Programme of International Student Assessment, OECD) surveys which asked children whether they could access: a desk to study, a quiet place to work, a computer for schoolwork, educational software, an internet connection, a dictionary and school textbooks. Educational deprivation is defined here as having less than four of the seven items listed above.

Key Findings

In OECD countries, most of 15-year-old children have all of the basic school resources. The In 2009, the proportion of educationally deprived children was 26 times higher in Mexico than in Iceland (see Chart CO3.3.A.). Educational deprivation is most prevalent in Chile, Mexico and Turkey where around one-fifth or more students are missing most items. By contrast, less than 1.5 percent of children in Denmark, Iceland, Norway and Slovenia are educationally deprived.

Chart CO3.3.A. Educational deprivation
 15-year-old children reporting less than four educational possessions per 1 000 15-year-olds in the school population, 2009

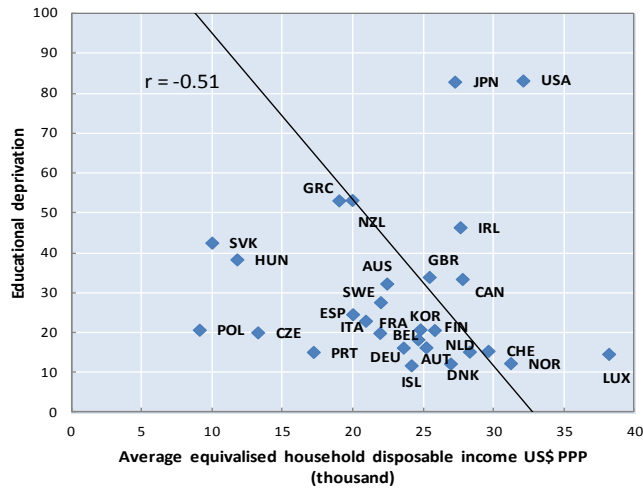


Source: OECD Programme for International Student Assessment database, 2009 (OECD, 2011).

The relationship between educational deprivation and family income is negative and moderately strong (correlation coefficient of -0.51 in 2009; see Chart CO3.3.B.). Similar results are observed for all the PISA waves. Some countries, such as Japan and the United States, have high levels of educational deprivation despite average family income being among the highest in the OECD. Others, such as the Czech Republic or Poland, have low educational deprivation and low family income. This result may be in part explained by educational policies that provide subsidies to poor families, by intra-household sharing of incomes, or by large variation in family incomes.

Other relevant indicators: CO2.1 *Income Poverty*, and OECD Family database (www.oecd.org/social/family/database) CO2.1 *Trends in the income position of different household types*

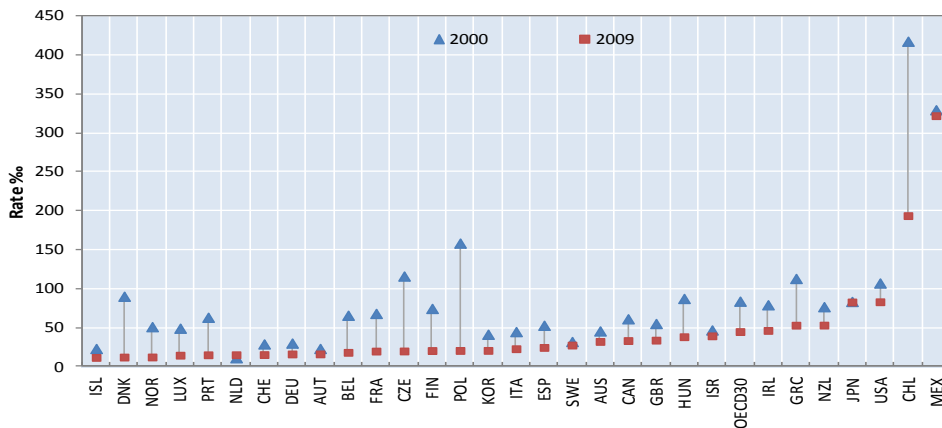
Chart CO3.3.B. There is no relationship between educational deprivation and family income of the 15-year-old population in OECD countries, 2009



Source: PISA, 2009; and Income distribution database, OECD.

Trends over time show that the proportion of educationally deprived children has decreased between 2000 and 2009 in all OECD countries except the Netherlands, where the rate was already very low (see Chart CO3.3.C.). The decline has been particularly marked in Denmark and Poland where deprivation has fallen 7 fold since 2000. By contrast, Japan, Mexico and the United States, are countries with consistently high educational deprivation rates.

Chart CO3.3.C. Decline of educational deprivation between 2000 and 2009
 15-year-old children reporting less than four educational possessions per 1 000 15-year-olds in the school population, 2000 and 2009



Note: Estonia, Slovak Republic, Slovenia and Turkey were not part of PISA 2000. Countries are ordered according to 2009 data.

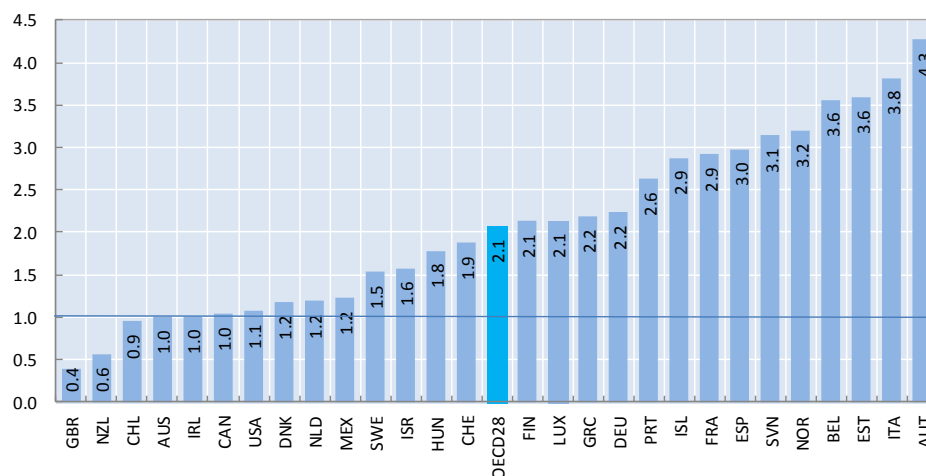
Source: PISA 2000 and 2009, OECD.

Using PISA data it is also possible to analyse educational deprivation by migrant status. Figure 4 shows the ratio of non-native to native deprived students. Non-native students were more likely to be deprived than native students in most OECD countries in 2009. Twenty-four of the thirty-one OECD countries, for which data are available, have ratios above the line of equal deprivation (ratio=1). Particularly high rates are seen in Austria, Belgium, Estonia, Italy, Norway and Slovenia, where migrant students were more than 3 times more deprived than native students. In Chile, New

Zealand and the United Kingdom deprivation is lower for non-native groups. Results here are unlikely to be related to the origins and size of the migration populations which are very different across the OECD.

The same pattern of non-native to native deprivation levels applies for all the waves of the PISA survey. On average migrant students have always been more deprived. Nevertheless, there is no clear pattern on the evolution of this ratio (see related spreadsheet).

Chart CO3.3.D. Migrant students are more educationally deprived than native students
 Ratio of non-native students/native students' educational deprivation, 2009



Note: Countries where the migrant population makes up less than 1% of the 15-year-old population have been excluded: Czech Republic, Korea and Poland.

Source: PISA 2009, OECD.

In 2000, rates of educational deprivation were larger for girls than for boys in many countries. Nineteen countries had a significantly higher deprivation rate for girls than for boys. During the last decade, this trend has shifted in the opposite direction. In 2009, only three countries had a greater rate of deprivation for girls, but the difference between girls and boys was always less than 5%. In contrast, out of the 25 countries where boys were much more deprived than girls, 24 had a difference larger than 5% between boys and girls.

Table CO.3.3.A. Boys are more and more deprived than girls in OECD countries
 Educational deprivation by sex, 2000-2009

| | 2000 | 2003 | 2006 | 2009 |
|-----------------|----------|----------|----------|----------|
| Australia | G | - | B | B |
| Austria | G | B | - | B |
| Belgium | B | B | B | - |
| Canada | G | B | B | B |
| Chile | - | | G | G |
| Czech Republic | G | - | - | - |
| Denmark | G | G | B | B |
| Estonia | | | G | - |
| Finland | G | - | B | B |
| France | B | B | B | B |
| Germany | B | B | B | B |
| Greece | G | G | B | B |
| Hungary | G | G | B | B |
| Iceland | G | - | - | - |
| Ireland | G | B | B | B |
| Israel | G | | G | G |
| Italy | G | B | B | B |
| Japan | B | B | B | B |
| Korea | G | G | B | B |
| Luxembourg | - | - | B | B |
| Mexico | G | G | B | G |
| Netherlands | G | G | B | B |
| New Zealand | B | G | B | B |
| Norway | G | - | B | B |
| Poland | G | G | G | - |
| Portugal | B | B | B | B |
| Slovak Republic | | - | B | B |
| Slovenia | | | B | - |
| Spain | G | G | B | B |
| Sweden | B | G | G | B |
| Switzerland | B | B | B | B |
| Turkey | | B | B | B |
| United Kingdom | G | B | B | B |
| United States | B | B | B | B |

Note: G=girls are more deprived than boys, B=boys are more deprived than girls, -=there is no significant difference between boys and girls. Bs and Gs are bold when the difference between boys and girls is larger than 5%.

Source: PISA 2000, 2003, 2006 and 2009, OECD.

Comparability and data issues

Educational deprivation is calculated using the answers given by students in the PISA study regarding their access to educational possessions in their home (see definition above).

Most of the 34 OECD countries participated in all waves of PISA. For 2000, Estonia, Slovak Republic, Slovenia and Turkey are missing. For 2003, Chile, Estonia, Israel and Slovenia are missing. All of the 34 OECD countries participated in PISA 2006 and 2009.

The PISA questionnaire on student background has changed slightly over time, and the question on the possession of a calculator – which was initially taken into account when this indicator was first used¹ – has been suppressed for the 2009 round. After testing, no other question was found to replace ownership of a calculator and the indicator was calculated using the seven remaining items. To decide whether the former deprivation threshold of less than four items was still **valid**, correlations for results for the 4 waves are reported for rates of children reporting less than 3, 4 and 5 of the seven items in Table CO3.3.B below.

Table CO3.3.B. Pearson correlation coefficient on possession of education items, by PISA survey years.

| | 2000 | | 2003 | | 2006 | | 2009 | |
|----------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 3, 4 items | 4, 5 items | 3, 4 items | 4, 5 items | 3, 4 items | 4, 5 items | 3, 4 items | 4, 5 items |
| r | 0.98 | 0.82 | 0.97 | 0.95 | 0.99 | 0.97 | 0.99 | 0.93 |

The results show a strong positive relationship between the variables in each of the waves. The threshold of less than four items, as it was when 8 items were selected, looks to most accurately represent deprivation at other thresholds, a finding which is reliable over the PISA waves.

The calculations have been made using the final student weight as recommended by the PISA data providers. The final student weight takes into account the school base weight, the school weight trimming factor, the school non response adjustment, the student base weight, the student non response adjustment and the student weight trimming factor. The grade non-response adjustment factor is also accounted for.

Graph CO3.3.D should be read whilst considering the following information: countries where migrant population makes up less than 5% of the sample are Chile, Denmark, Estonia, Finland, France, Hungary, Mexico, the Netherlands and Slovenia. Japan, Slovak Republic and Turkey have less than 1% migrants and have then been excluded of the comparison.

Sources and further reading: OECD (2011), *OECD Education database*, OECD, Paris, www.oecd.org/education/database; OECD (2009), *Doing Better for Children*, OECD, Paris (www.oecd.org/els/social/childwellbeing); OECD (2011), *Doing Better for Families*, OECD, Paris (www.oecd.org/social/family/doingbetter); and OECD (2009) *Growing Unequal?*, OECD, Paris www.oecd.org/els/social/inequality/GU

¹ The educational deprivation indicator was first reported in “An overview of child well-being in rich countries”, UNICEF, 2007.