INRODUCTION
Inequality can have wide-ranging effects on communities, families and children. Income inequality (measured through the Gini index) was found to have an association with higher levels of peer violence in 35 countries (Elgar et al. 2009) and to influence the use of alcohol and drunkenness among 11- and 13-year olds (Elgar et al. 2005). On a macro level, countries with greater income inequality among children have lower levels of child well-being and higher levels of child poverty (Toczydlowska et al. 2016). More worrying still is that growing inequality reinforces the impact of socio-economic status (SES) on children’s outcomes, limiting social mobility.

Concern about growing inequality features prominently on the current international development agenda. Goal 10 of the Sustainable Development Goals (SDGs) calls specifically to reduce inequality within and among countries, while the concept of ‘leaving no one behind’ reflects the spirit of greater fairness in society. But with a myriad of measures and definitions of inequality used in literature, the focus on children is often diluted.

This brief contributes to this debate by presenting child-relevant distributional measures that reflect inequality of outcomes as well as opportunity for children in society, over time.

DATA AND METHODOLOGY
Three indicators are selected to examine the child-centred income inequality and the impact of family background on child outcomes:

The first indicator, the Palma ratio – a standard indicator of income inequality – was adapted to reflect a focus on children. It measures the income share of the richest 10 per cent and the bottom 40 per cent of the population in an income distribution. To make it child-specific, the shares are based on the equivalized disposable household income of children.

The second indicator measures the bottom-end relative income gap among children. The measure represents a gap between household income of a child at the median and that of a child at the 10th percentile – reported as a percentage of the median. It represents an overview of how well the world’s developed nations are living up to the ideal of ‘no child being left behind’. The data for these two indicators comes from various waves of European Union Statistics on Income and Living Conditions (EU-SILC) for European Union countries and Iceland, Norway and Switzerland, and various household surveys for the remaining countries.

The third indicator represents the impact of family background or SES on students’ achievement in maths, reading and science literacy. It is measured through the composite index of economic, cultural and social status (ESCS) developed by the Programme for International Student Assessment (PISA). It includes a number of PISA-constructed indices such as family wealth or parents’ educational and occupational status. The ESCS index is built on a continuous scale which is standardized across the OECD countries to have a

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1 See Appendix 1 for data sources for non EU-SILC countries
2 For more information see OECD, 2015
mean of zero and a standard deviation of one (OECD, 2014). The results presented in this brief across 39 countries are based on the average score-point difference across students’ achievement in all three subjects, associated with a one-unit increase in the ESCS index. A higher value indicates a higher level of impact of socio-economic background on students’ performance.

RESULTS

Children in the rich countries live in a world of growing inequality. The trend on both income inequality indicators (relative income gap and Palma ratio), shows a widening economic divide between children across the whole income distribution. Since 2008, the most disadvantaged children in the bottom 10 per cent of income distribution have fallen further behind the median, in 23 countries. The starker increase in relative income gap between the poorest and the ‘average’ child (at the median) was registered in Estonia, Slovenia and Spain, as well as in Hungary and Portugal. Moreover, the share of income held by the richest 10 per cent increased in two thirds of rich world. (see Figure 1).

The increase of more than 0.2 percentage points took place in 23 countries with available data. In Denmark the increase is equal to 0.1 percentage points, which is not seen as statistically significant.

Figure 1 - Change in relative income gap and Palma ratio among children between 2008 and 2014

Note: The changes illustrate percentage point difference between 2008 and 2014 in relative income gap and Palma ratio among children between 2008 and 2014. Missing countries: Chile, Croatia, Korea and Turkey.
Source: EU-SILC various waves, and various household surveys.
The poorest children fall further behind if the richest accumulate more income

The countries where the richest top 10 per cent accumulate more income than bottom 40 per cent are also those that allow the poorest children to fall further behind the ‘average’ child (see Figure 2). We find that the countries with high relative income gap such as Bulgaria, Israel and Mexico are also the ones with a high Palma ratio i.e. share of income distributed unequally within society. In Bulgaria, the poorest children at the 10th percentile have around 30 per cent of the income of the ‘average’ child, while the richest group holds a bigger share than that of nearly half of all children combined. In Chile and Mexico, the share of income accumulated at the ‘top’ is more than twice the size of the share of the poorest 40 per cent of children. In Nordic countries, income distribution is more equitable with income differences being much smaller among children.

Figure 2 - Palma ratio and relative income gap among children in 2014

Note: The Palma ratio is the ratio of the income share of the top 10 per cent and the bottom 40 per cent of the population in an income distribution. A value of 1.0 indicates that the income of the top 10 per cent is the same as that of the bottom 40 per cent. Values above 1.0 show that the share of the top 10 per cent is bigger, and values below 1.0 indicate that it is smaller. Values below 1.0 therefore suggest lower levels of inequality.

Source: EU-SILC 2014 and various household surveys.
The school system can mitigate the impact of socio-economic background, but can equally exacerbate it.

Unequal accumulation and distribution of income can translate into a greater degree of inequality of opportunities. This can happen either through the education system or through differentiated ability of parents to invest in their children’s skills, knowledge, health and social support network. The family’s socio-economic background is a significant predictor of 15-year-old students’ achievement across three subjects (reading, mathematics, and science) in all 39 industrialized countries studied (Richardson et al. 2017). On average across OECD countries, the difference in academic performance explained by students’ socio-economic background is around 38 score points, which is equivalent to about one-year’s schooling.

Progress over time has been mixed (see Figure 3). In nine education systems, the average change in the effect of socio-economic background measured using the PISA ESCS index weakened by more than two score points between 2006 and 2015. The educational system of the United States of America has made significant improvements in mitigating the impact of SES across the three subjects between 2009 and 2015. Conversely, in twelve education systems, the effect of SES on school achievement across core subjects increased between 2006 and 2016. The highest increases in average differences in performance between students with different socio-economic statuses (above 5 score points) were observed in Finland, France, the Republic of Korea and Sweden – the countries with traditionally strong academic performance, as reported through PISA.

**Figure 3 - The score-point difference in reading, mathematics and science associated with a one-unit increase in the ESCS index**

![Graph showing the score-point difference in reading, mathematics and science associated with a one-unit increase in the ESCS index across three subjects for various countries between 2006-2015 and 2009-2015.](image)

**Note:** All values are statistically significant. US 2006 data are not available, as there are no data on reading. Data for Mexico are excluded due to low rates of enrolment. At the time of the PISA 2015 survey more than one in four Mexican students between the ages of 15-17 were out of school (26.7 per cent); children from the lowest income quintile make up almost half (45 per cent) of non-attendees in this age group, see UNICEF (2016). ‘Niños y niñas fuera de la Escuela en México’. Socio-economic advantage led to a 19.8 score-point difference in Mexico in 2015. Data on the ESCS index are missing for Austria in the 2012 round. Missing countries: Cyprus and Mexico.

CONCLUSION
The results show a consistent picture: Income inequality among children is growing in rich countries. The more the income share is accumulated at the top, the more likely the poorest children are to fall behind, compared to ‘average’ child. The education systems of OECD member countries show mixed results in mitigating the impact of family socio-economic background on students’ achievement. Tackling socio-economic inequalities may require a long-term political vision and coherent policy effort across distribution policies or education sector modalities. But it is high time that rich countries make it their policy priority. The SDG agenda on reducing inequality provides countries with an aspiration but at the same time makes them accountable for achieving a common vision of a more equal society.

BIBLIOGRAPHY

APPENDIX 1
Data Sources for non-EU-SILC countries:
Canada: Canadian Income Survey (CIS).
Chile: La Encuesta de Caracterización Socioeconómica Nacional (CASEN).
Israel: Household Expenditure Survey (from Luxembourg Income Study).
Mexico: El Módulo de Condiciones Socioeconómicas de la Encuesta Nacional de Ingresos y Gastos de los Hogares (MCS-ENIGH).
Turkey: Income and Living Conditions Survey.
USA: Current Population Survey 2013, Annual Social and Economic Supplement (from Luxembourg Income Study). Reported 2014 data for Australia, Chile and Republic of Korea refer to 2015; for USA and New Zealand refer to 2013; and for Israel and Japan refers to 2012. Reported 2008 data for Canada, Israel and USA refer to 2007. Income estimates for Chile are based on equivalized total household income and are not directly comparable.

Growing Inequality and Unequal Opportunities in Rich Countries