

UNICEF
Innocenti Report Card 13
Children in the Developed World

Fairness for Children

A league table of inequality in child well-being in rich countries



hbsc
HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN
WORLD HEALTH ORGANIZATION COLLABORATIVE CROSS-NATIONAL STUDY

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SECTION 1
INTRODUCTION

"In all actions concerning children, whether undertaken by public or private social welfare institutions, courts of law, administrative authorities or legislative bodies, the best interests of the child shall be a primary consideration."

– United Nations Convention on the Rights of the Child, 1989 (article 3)

This *Report Card* presents an overview of inequalities in child well-being in 41 countries of the European Union (EU) and the Organisation for Economic Co-operation and Development (OECD). It focuses on 'bottom-end inequality' – the gap between children at the bottom and those in the middle – and addresses the question *'how far behind are children being allowed to fall?'* in income, education, health and life satisfaction.

Why inequality?

With the gap between rich and poor at its highest level for some three decades in most OECD countries, there is now a renewed focus on questions surrounding inequality.

While much political debate has centred on the growing income of the top 1 per cent, in many rich countries incomes below the median have grown less quickly than have those above the median.[1]

Across the OECD, the risks of poverty have been shifting from the elderly towards youth since the 1980s. These developments accentuate the need to monitor the well-being of the most disadvantaged children, but income inequality also has far-reaching consequences for society, harming educational attainment, key health outcomes and even economic growth.[2]

A concern with fairness and social justice requires us to consider whether some members of society are being left so far behind that it unfairly affects their lives both now and in the future.This *Report Card* asks the same underlying question as *Report Card 9*,[3] which focused on inequality in child well-being, but uses the most recent data available and includes more countries.

Inequality, fairness and children

Questions of fairness and social justice have a special resonance when inequalities among children, rather than adults, are the focus of attention.

Social inequalities among adults may be justifiable if they have arisen through fair competition and under conditions of equality of opportunity. But when it comes to children, the social and economic circumstances they face are beyond their control, and so differences in merit cannot reasonably be advanced as justification for inequalities among them.

In addition, few dispute that childhood experiences have a profound effect not only on children's current lives, but also on their future opportunities and prospects. Likewise, social and economic disadvantages in early life increase the risk of having lower earnings, lower standards of health and lower skills in adulthood. This in turn can perpetuate disadvantage across generations.[4] None of this is the fault of the child.

Comparing bottom-end inequality across rich countries

The league tables in this *Report Card* rank countries according to *how far children at the bottom are allowed to fall behind their peers* in income, education, health and life satisfaction. We also provide an overall league table of inequality in child well-being that summarizes performance across all four of these dimensions.

The measures of inequality in the league tables are put into context through the use of indicators that capture how many children in each country have low income, low educational achievement, poor health or low levels of life satisfaction. This offers a wider picture of how far children's rights are being upheld in rich countries.

The league tables presented in Section 2 compare countries on the basis of how far children are being allowed to fall behind. Sections 3, 4, 5 and 6 offer a more detailed exploration of trends in inequality affecting income, education, health and life satisfaction, respectively. Each of these sections also considers the impacts of inequality on child well-being. Section 7 returns to the general question of fairness and inequality, considering the extent to which child well-being in rich countries is shaped by deeply rooted social and economic inequalities over which children have no control. Section 8 presents conclusions and recommendations.

Box 1 Social justice and fairness

The findings of *Report Card 9* were presented as a "first attempt to measure nations by the standards of a *'just society'* as defined by the American political philosopher John Rawls".[i] Though subject to much debate since its publication, Rawls' ground-breaking analysis of justice as fairness provides a lens through which our exploration of bottom-end inequality over time can be viewed.

Rawls asked us to imagine an "original position" in which the overall shape of society is debated before its creation. He then asked us to imagine that a "veil of ignorance" would prevent individuals from knowing their position in the society being created. Through this thought experiment, he effectively reframed the question *'what does a fair society look like?'* to become *'what kind of society would reasonable citizens consent to living in?'*

Rawls argued that a key principle to emerge from such a bargaining process would be that people would agree that social and economic inequalities could exist in a fair society, but only so far as they (i) emerged from fair conditions of equality of opportunity and (ii) were to the greatest benefit of the least-advantaged members of society – which he termed the "difference principle".[ii] In other words, in Rawls' model inequalities in material living conditions are permissible if they benefit all (e.g. by creating higher standards of living for everyone) and arise from a position of equality of opportunity that allows all a fair chance of succeeding.

In this *Report Card* the themes that Rawls identified are explored, but with an exclusive focus on the position of children. Inequalities in children's lives are examined in detail, as is the extent to which inequality itself shapes outcomes for children. These issues are considered alongside a concern with how far inequalities in child well-being are connected to social and economic inequalities over which children have no control.

[i] UNICEF (2010). 'The Children Left Behind: A league table of inequality in child well-being in the world's rich countries', *Innocenti Report Card 9*, UNICEF Innocenti Research Centre, Florence (Box 3).

[ii] Rawls, J. (1971). *Theory of Justice*, Harvard University Press, Cambridge, MA.

SECTION 2
LEAGUE TABLES

League Table 1 Inequality in income

Rank	Country	Relative income gap	Child poverty rate (50% of the median)
1	Norway	37.00	4.5
2	Iceland	37.76	6.4
3	Finland	38.34	3.7
4	Denmark	39.54	4.8
5	Czech Republic	39.62	6.3
6	Switzerland	39.64	7
7	United Kingdom	39.94	9.3
8	Netherlands	40.64	5.7
9	Luxembourg	41.21	13
10	Ireland	41.49	6.9
11	Austria	41.87	9.6
12	Germany	43.11	7.2
13	France	43.95	9
14	Australia	44.75	9.3
15	Republic of Korea	45.74	8
16	Sweden	46.23	9.1
17	New Zealand	46.52	11
18	Cyprus	47.19	9.1
19	Slovenia	47.29	8.3
20	Malta	48.21	14.5
21	Hungary	48.34	15
22	Belgium	48.41	10.1
23	Poland	51.76	14.5
24	Canada	53.19	16.9
25	Slovakia	54.21	13.7
26	Croatia	54.59	14.8
27	Lithuania	54.81	17.8
28	Estonia	55.55	12.4
29	Turkey	57.07	22.8
30	United States	58.85	20
31	Chile	59.03	26.3
32	Latvia	59.66	16.3
33	Portugal	60.17	17.4
34	Japan	60.21	15.8
35	Italy	60.64	17.7
36	Spain	62.62	20.2
37	Israel	64.58	27.5
38	Greece	64.69	22.3
39	Mexico	65.00	24.6
40	Bulgaria	67.01	23.1
41	Romania	67.08	24.3

See data sources and notes on page 44.

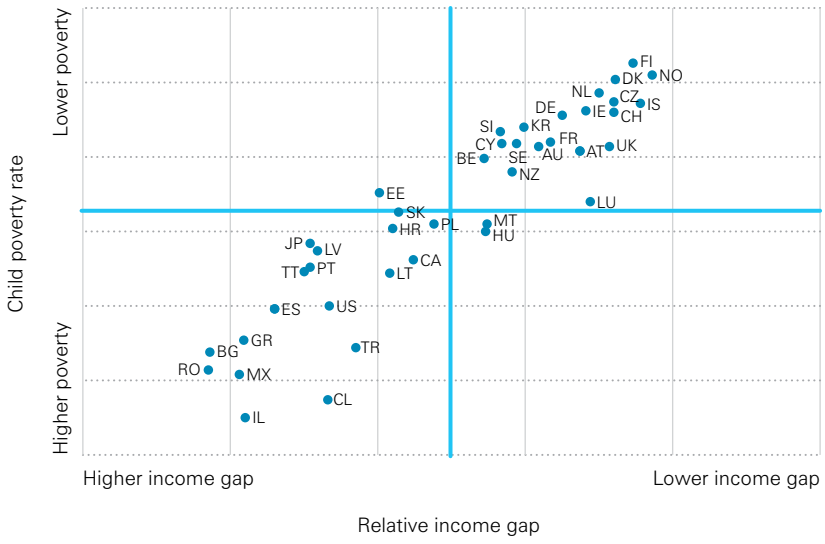
The four main league tables presented in this *Report Card* rank rich countries on the basis of *bottom-end inequality* in children's income, education, health and life satisfaction. Each league table provides a snapshot of *how far rich countries allow their most disadvantaged children to fall behind the 'average' child.* The league tables are supplemented by a fifth league table, which provides a summary of the overall record across these four areas. Each of the main league tables puts its measure of inequality into context, using an indicator that captures how many children fall in the very bottom of the distribution of income, educational achievement, health and life satisfaction.

League Table 1 ranks countries on the size of their *relative income gap.* This measure of bottom-end inequality captures how far the poorest children are being allowed to fall behind the 'average' child in each country.

To provide context for the inequality measure, *League Table 1* also displays the child poverty rate (measured as 50 per cent of the national median) for each country.

More detail about these measures is provided in the box *'Interpreting the data: League Table 1 – Income'.*

Figure 1 Relative income gap versus levels of poverty



Sources: see page 44 – League Table 1.

Interpreting the data: League Table 1 – Income

Calculations of bottom-end income inequality for children, also referred to as the *relative income gap*, are based on the disposable incomes of households with children aged 0 to 17 (after adding benefits, deducting taxes, and making an adjustment for the different sizes and compositions of households).

To measure inequality at the bottom end of the distribution, the household income of the child at the 50th percentile (the median) is compared with the household income of the child at the 10th percentile (i.e. poorer than 90 per cent of children); the gap between the two, reported as a percentage of the median, provides us with a measure of *how far behind the poorest children are being allowed to fall.*

For example, in Norway, the household income of the child at the 10th percentile is 37 per cent lower than that of the child in the middle of the income distribution – the median.

Child poverty is measured as the percentage of children in households with incomes below 50 per cent of national median income (after taking taxes and benefits into account and adjusting for family size and composition).

The league table uses survey data for 2013 (or the most recent year available).
See data sources on page 44.

Key findings:

- The Scandinavian countries, with the exception of (mid-ranking) Sweden, have the smallest relative income gaps. In these countries, the disposable household income of the child at the 10th percentile is around 38 per cent lower than that of the child at the middle of the income distribution.
- In 19 of 41 rich countries the relative income gap exceeds 50 per cent: the child at the 10th percentile has less than half the disposable household income of the child at the median.
- In Bulgaria and Romania, the relative income gap is 67 per cent, i.e. household income of children at the 10th percentile is 67 per cent lower than at the median.
- Income gaps in excess of 60 per cent are also found in the larger southern European countries (Greece, Italy, Portugal and Spain), as well as in Israel, Japan and Mexico.
- Relative income gaps and levels of poverty are closely related (*Figure 1*): higher levels of poverty tend to be found in countries with higher income gaps (bottom-left quadrant of *Figure 1*) and lower levels of poverty in countries with lower income gaps.

League Table 2 Inequality in education

Rank	Country	Achievement gap	Share of children below proficiency level 2 in all three subjects
1	Chile	1.92	24.6
2	Romania	1.77	24.0
3	Estonia	1.59	3.2
4	Latvia	1.19	8.3
5	Croatia	0.88	11.7
6	Poland	0.79	5.7
7	Lithuania	0.67	12.1
8	Denmark	0.66	9.3
9	Ireland	0.62	6.8
10	United States	0.54	12.2
11	Slovenia	0.46	9.9
12	Spain	0.36	10.4
13	Czech Republic	0.30	8.9
14	Canada	0.28	6.2
15	Republic of Korea	0.22	4.4
16	Finland	0.18	5.3
17	Hungary	0.15	13.1
18	Greece	0.08	15.7
19	Portugal	-0.10	12.6
20	Switzerland	-0.12	7.5
21	Austria	-0.17	10.7
22	Italy	-0.26	11.9
23	Norway	-0.28	11.0
24	Australia	-0.29	9.1
25	United Kingdom	-0.40	11.2
26	Iceland	-0.46	13.6
27	Japan	-0.48	5.5
28	Germany	-0.56	8.8
29	Sweden	-0.61	15.0
30	Netherlands	-0.70	8.6
31	New Zealand	-0.94	11.1
32	Bulgaria	-0.97	28.6
33	Luxembourg	-0.98	14.4
34	Slovakia	-1.03	18.8
35	France	-1.36	12.7
36	Belgium	-1.39	11.5
37	Israel	-1.96	18.5
	Mexico	2.19	31.0
	Turkey	1.76	15.6

See data sources and notes on page 44.

League Table 2 ranks countries according to their *achievement gap* in the OECD's Programme for International Student Assessment (PISA) tests. This measure captures how far low-achieving students are allowed to fall behind the 'average' child in reading, maths and science literacy at the age of 15.

League Table 2 also displays the proportion of students performing at below PISA's proficiency level 2 in all three subjects.

More detail about these measures is provided in the box *'Interpreting the data: League Table 2 – Education'*.

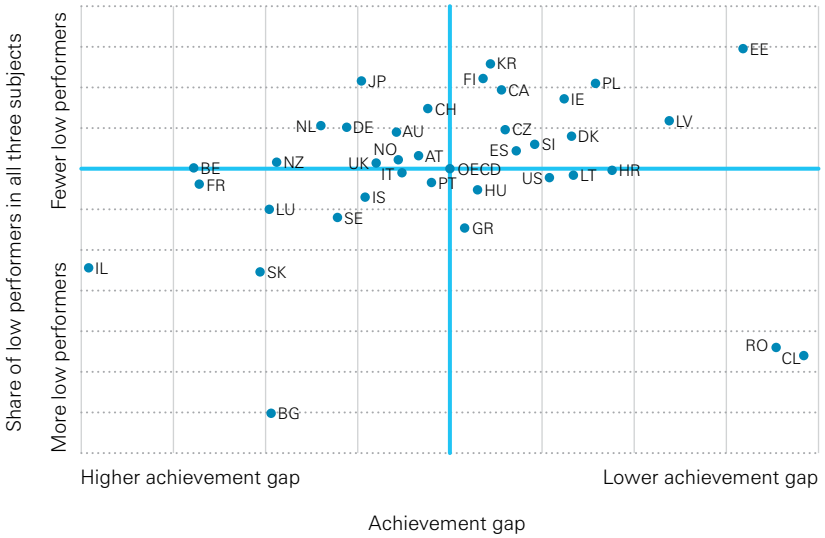
Key findings:

- The two countries with the lowest achievement gap, Chile and Romania, have a very high proportion of students falling below proficiency level 2 in all three subjects. This means that, although fewer children are left behind the 'average' child in these countries, a higher proportion of children lack basic skills and competencies.
- Two high-income countries, Belgium and France, are found at the bottom of the league table, with very large achievement gaps.
- Across rich countries, the proportion of 15-year-olds falling below proficiency level 2 in all three subjects is as low as 3–5 per cent in Estonia, Finland and Korea, and as high as 24–28 per cent in Bulgaria, Chile and Romania.
- *Figure 2* depicts the relationship between the achievement gap and the proportion of children below proficiency level 2 in all three subjects. Countries in the upper-right quadrant are the best performers, as they combine low achievement gaps with a low proportion of children falling below proficiency level 2 in all three subjects; countries in the bottom-left corner are the worst performers, displaying both high achievement gaps and a high absolute proportion of children below proficiency. It highlights the fact that minimizing the achievement gap does not require countries to 'trade off' equality against standards. In Estonia, Ireland, Latvia and Poland, low bottom-end inequality in educational achievement is combined with a low proportion of children scoring below

proficiency level 2 in all three subjects.

- On the other hand, a high achievement gap can exist alongside a comparatively large proportion of students achieving below proficiency level 2 in all three subjects. This is the case in Bulgaria, Israel, Luxembourg, Slovakia and Sweden (bottom-left quadrant).
- Estonia is the best-performing country in terms of combining good outcomes on both measures. Yet even here, the achievement gap in reading equates to 2.5 years of schooling lost for the child at the 10th percentile, compared with the 'average' child.

Figure 2 Achievement gap and educational disadvantage



Source: PISA 2012. See page 44 – League Table 2.
Note: Mexico and Turkey are excluded.

Interpreting the data: League Table 2 – Education

The OECD's PISA measures the competence of students aged 15 in maths, reading and science literacy. Data from the most recent survey, conducted in 2012, are used in *League Table 2.*

The educational achievement gap is measured as the PISA test-score point difference between students at the median and the 10th percentile.

In order to allow achievement gaps for the three subjects to be combined in a single measure, in *League Table 2* the score-point differences between the median and the 10th percentile in each subject are converted into z-scores, which are then averaged across subjects to provide an overall achievement gap for each country. Z-scores measure the standardized distance of any given value from the group average. Positive figures above 0.5 represent a score that is above the OECD average; negative figures below -0.5 indicate a score that is below average; and figures between -0.5 and 0.5 are considered close enough to be indistinguishable from the average.

For example, in Chile the average z-score across the three subjects is 1.92 standard deviations above the OECD average.

PISA also maps test scores against six levels of achievement that capture milestones related to key 'aspects' of each subject that are defined independently by experts in the field.

PISA defines low academic performance as a score that is below the threshold of proficiency level 2 in each subject.

League Table 2 provides information on the proportion of students in each country who fall below proficiency level 2 for all three subjects. Low performance at age 15 in all three subjects is a proxy for profound educational disadvantage.

In Section 4 we analyse the raw PISA test scores (rather than the z-scores) for reading. A difference of 41 points corresponds to the equivalent of approximately one year of formal schooling.

League Table 3 Inequality in health

Rank	Country	Relative health gap	One or more health complaints every day
1	Austria	23.64	17.7
2	Germany	24.76	19.6
3	Switzerland	24.95	16.3
4	Norway	25.15	14.9
5	Denmark	25.50	17.6
6	Finland	25.89	15.0
7	Portugal	26.39	17.7
8	Netherlands	26.74	19.9
9	Czech Republic	26.84	25.3
10	Spain	27.31	23.9
11	Greece	27.37	27.9
12	Croatia	27.59	25.7
13	Estonia	27.65	23.8
14	United States	27.98	28.2
15	Belgium	28.14	23.8
16	Slovenia	28.29	18.7
17	Latvia	28.61	23.3
18	Hungary	28.79	22.2
19	United Kingdom	28.87	21.4
20	Ireland	28.90	21.0
21	Slovakia	28.96	23.8
22	Sweden	29.08	19.1
23	France	29.18	30.7
24	Canada	29.27	22.6
25	Lithuania	29.31	23.0
26	Bulgaria	29.39	30.6
27	Australia	29.86	21.8
28	Italy	30.11	30.5
29	Luxembourg	30.27	24.1
30	Malta	30.56	30.7
31	Iceland	31.08	22.6
32	Romania	33.95	31.2
33	Poland	34.05	27.4
34	Turkey	34.54	53.3
35	Israel	38.88	29.7

See data sources and notes on page 44.

League Table 3 ranks countries in terms of the size of the relative gap in children's self-reported health symptoms. For each country, the relative gap compares a child with frequent reporting of health symptoms and an 'average' child at the median of the health scale, with the gap measured as the difference between the two calculated as a share of the median. This captures the extent to which children at the bottom are allowed to fall behind the 'average' child in health.

League Table 3 also displays the proportion of children who report one or more health symptoms every day. This indicates the proportion of children with poor self-reported health in each country.

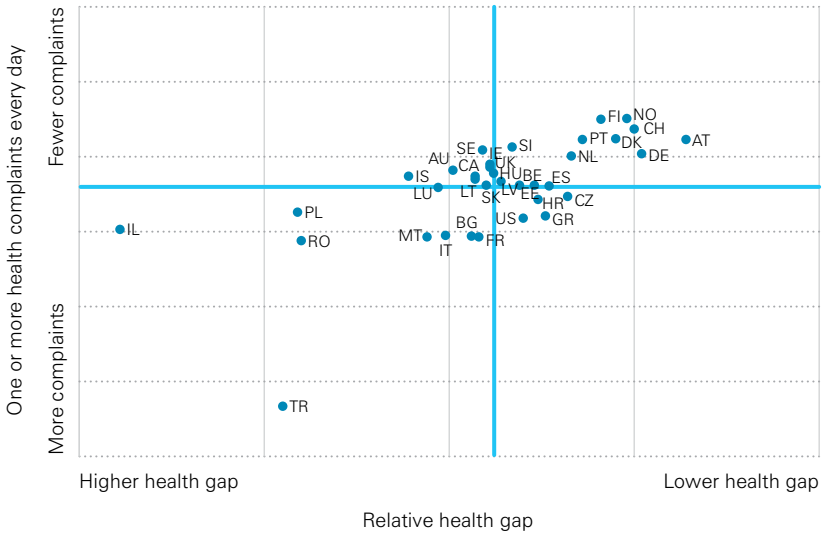
More detail about these measures is provided in the box *'Interpreting the data: League Table 3 – Health'.*

Key findings:

- The average relative gap in children's self-reported health symptoms is 29 per cent across the 35 countries examined.
- The smallest relative health gaps are found in Austria (23.6 per cent), Germany (24.8 per cent) and Switzerland (25 per cent). Denmark, Finland and Norway also have comparatively small gaps in self-reported health.
- The largest relative health gaps are found in Israel (38.9 per cent), Turkey (34.5 per cent) and Poland (34.1 per cent).
- More than half of children in Turkey and around a third of children in Bulgaria, France, Israel, Italy, Malta and Romania report one or more health symptoms a day.

» *Figure 3* positions countries in terms of their performance on bottom-end inequality and absolute frequency of health complaints. Countries in the top-right quadrant perform better than average on both counts, while countries in the bottom-left quadrant perform worse than average on both measures. Only Turkey shows both high bottom-end inequality and high frequency of reported health complaints (bottom-left quadrant).

Figure 3 Relative health gap and daily health complaints



Source: HBSC 2014. See page 44 – League Table 3.
Note: data for 2010 used for Israel, Turkey and the United States.

Interpreting the data: League Table 3 – Health

Data from the 2013/2014 wave of the Health Behaviour in School-aged Children (HBSC) study are reported in *League Table 3.*

This table ranks countries on the basis of bottom-end inequality in self-reported health symptoms. Students aged 11, 13 and 15 were asked how often in the previous six months they had experienced the following psychosomatic symptoms: headache; stomach ache; backache; feeling low; irritability or bad temper; feeling nervous; difficulties in getting to sleep; and feeling dizzy. The response options were "about every day", "more than once a week", "about every week", "about every month", "rarely or never". These responses are summed to produce a composite scale that captures the frequency of self-reported health complaints. It ranges from 0 to 32, where 0 corresponds to frequent occurrence of all eight symptoms and 32 refers to no health complaints at all.

Using this scale, for each country the relative health gap is computed by comparing a child with relatively frequent health complaints *(represented by the mean of values below the median)* to the frequency of complaints recorded by the 'average' child *(represented by the median itself)*, with the gap measured as the *difference between the two calculated as a share of the median.* This indicator shows how far children at the bottom are allowed to fall behind the 'average' child in each country.

For example, in Austria the health score for children at the bottom of the distribution is 23.6 per cent lower than that of the child at the middle.

The relative health gap is supplemented by the proportion of children in each country who report one or more health complaints every day – an indication of absolute severity in health symptoms.

The HBSC survey includes a wide range of health-related indicators. In Section 5 we not only explore self-reported health symptoms data in more detail, but also examine data on key health behaviours, such as diet and exercise.

League Table 4 Inequality in life satisfaction

Rank	Country	Relative life satisfaction gap	Life satisfaction at 4 or lower out of 10
1	Netherlands	24.03	4.4
2	Australia	24.34	4.5
3	Denmark	25.12	5.7
4	Greece	25.72	4.5
5	Romania	26.06	4.8
6	Latvia	26.09	6.4
7	Switzerland	26.32	5.4
8	Norway	26.35	4.5
9	Austria	26.90	5.2
10	Estonia	26.95	5.3
11	Finland	27.01	5.7
12	Slovenia	27.21	5.6
13	Ireland	27.38	6.9
14	Malta	27.61	5.7
15	Hungary	27.86	6.3
16	Bulgaria	27.90	5.0
17	Sweden	27.98	8.2
18	Portugal	28.03	6.0
19	Iceland	28.38	6.7
20	United Kingdom	28.42	7.4
21	United States	28.67	7.3
22	Italy	28.80	8.0
23	Croatia	29.13	5.0
24	Spain	29.23	5.6
25	Canada	29.37	8.6
26	Slovakia	29.41	7.0
27	Lithuania	29.44	5.4
28	France	29.56	8.5
29	Germany	29.58	8.4
30	Belgium	29.96	9.6
31	Israel	30.01	7.7
32	Luxembourg	30.04	8.2
33	Poland	31.11	10.0
34	Czech Republic	31.50	8.6
35	Turkey	35.95	15.3

See data sources and notes on page 44.

League Table 4 ranks countries on the size of the relative life satisfaction gap for children. This measure indicates how far those with the lowest levels of life satisfaction fall behind their peers.

League Table 4 also displays the proportion of children with very low overall levels of life satisfaction in each country – i.e. those reporting 4 or less on a scale from 0 to 10.

More detail about these measures is provided in the box *'Interpreting the data: League Table 4 – Life satisfaction'.*

Key findings:

- The 'average' child reports life satisfaction of 8 out of 10 in almost all countries, but children at the lower end of the life satisfaction distribution fall far behind their peers – typically between 2.5 and 3 points out of 10 lower than the median.
- Children at the bottom fall furthest behind in Turkey, where the relative life satisfaction gap is 36 per cent. Gaps in excess of 30 per cent are also found in Poland and the Czech Republic.
- The smallest relative life satisfaction gap (24 per cent) is found in the Netherlands, while Australia and Denmark also have comparatively low relative gaps of around 25 per cent. In other words, in Denmark the mean life satisfaction score of children in the bottom half of the distribution is 75 per cent of the score of a child at the median.
- There are important cross-national differences in the proportion of children who rate their life satisfaction at the very low level of 4 out of 10 or below. The size of this group ranges from 4.4 per cent in the Netherlands to 15.3 per cent in Turkey.

» *Figure 4* places countries in one of four quadrants where, as before, those in the top-right quadrant perform better than average both in bottom-end inequality and in the proportion of children reporting very low life satisfaction. For life satisfaction, the relationship between the two is quite strong, as most countries are either in the top-right or the bottom-left quadrants. Countries with lower bottom-end inequality also tend to have a lower share of children who rate their life satisfaction at 4 out of 10 or below, and vice versa – a larger proportion of those in countries with higher bottom-end inequality assign life satisfaction a low score.

Figure 4 Relative life satisfaction gap and low life satisfaction



Source: HBSC 2014. See page 44 – League Table 4.
Note: data for 2010 used for Israel, Turkey and the United States.

Interpreting the data: League Table 4 – Life satisfaction

Data from the 2013/2014 [see page 44] wave of the Health Behaviour in School-aged Children (HBSC) study are reported in *League Table 4*.

The life satisfaction scores are based on children's own ratings of their life satisfaction on a scale of 0 *("the worst possible life for you")* to 10 *("the best possible life for you")*.

For each country, the relative life satisfaction gap is the difference between mean life satisfaction of a child with relatively low life satisfaction *(represented by the mean of values below the median)* and the life satisfaction of the 'average' child *(represented by the median itself)*, with the gap measured as the *difference between the two calculated as a share of the median.* This indicates how far those with relatively low levels of life satisfaction have fallen behind their peers.

For example, in the Netherlands the life satisfaction score for children at the bottom is 24 per cent lower than that for children in the middle.

League Table 4 also reports the proportion of children in each country rating their life satisfaction at 4 out of 10 or below. This allows us to assess the prevalence of very low levels of life satisfaction in each country.

League Table 5 Average rank across all dimensions of inequality

Rank	Country	Income	Education	Health	Life satisfaction	Missing indicators
1	Denmark	4	8	5	3	0
2=	Finland	3	16	6	11	0
2=	Norway	1	23	4	8	0
2=	Switzerland	6	20	3	7	0
5	Austria	11	21	1	9	0
6	Netherlands	8	30	8	1	0
7	Ireland	10	9	20	13	0
8	Estonia	28	3	13	10	0
9	Slovenia	19	11	16	12	0
10	Latvia	32	4	17	6	0
11	Czech Republic	5	13	9	34	0
12	Croatia	26	5	12	23	0
13	Australia	14	24	27	2	0
14=	Germany	12	28	2	29	0
14=	Greece	38	18	11	4	0
14=	Hungary	21	17	18	15	0
14=	United Kingdom	7	25	19	20	0
18	United States	30	10	14	21	0
19	Portugal	33	19	7	18	0
20	Iceland	2	26	31	19	0
21	Romania	41	2	32	5	0
22	Spain	36	12	10	24	0
23	Sweden	16	29	22	17	0
24	Malta	20		30	14	1
25	Lithuania	27	7	25	27	0
26	Canada	24	14	24	25	0
27	Poland	23	6	33	33	0
28	France	13	35	23	28	0
29=	Belgium	22	36	15	30	0
29=	Luxembourg	9	33	29	32	0
31	Slovakia	25	34	21	26	0
32	Italy	35	22	28	22	0
33	Bulgaria	40	32	26	16	0
34	Turkey	29		34	35	1
35	Israel	37	37	35	31	0
-	Republic of Korea	15	15			2
-	Chile	31	1			2
-	New Zealand	17	31			2
-	Japan	34	27			2
-	Cyprus	18				3
-	Mexico	39				3

n.a top third middle third bottom third two or more indicators missing

See data sources and notes on page 44.

League Table 5 summarizes each country's overall record for bottom-end inequality in child well-being. It displays each country's rank in the income, education, health and life satisfaction league tables, and provides an overall rank based on that country's average position across each of the four previous league tables.

Countries lacking indicators for two or more domains of child well-being are excluded from the overall ranking, but are displayed at the end of the league table for reference.

Key findings:

- Denmark is at the top of the overall league table. It has comparatively low bottom-end inequality in each of the four domains of child well-being. Indeed it is the only country to rank in the top third in all four league tables. Denmark's lowest ranking is eighth in education.
- Finland, Norway and Switzerland share second place in the overall league table. They rank in the top third in each domain, except education.
- Israel and Turkey rank lowest in the overall league table. They have comparatively high bottom-end inequality in each of the four domains of child well-being for which they have valid data.
- Some of the richest countries in the world are placed in the bottom third of the overall league table, including three of the Group of Seven countries: Canada (26th), France (28th) and Italy (32nd). The country in the European Union with the highest income per person, Luxembourg, ranks 29th.
- *Report Card 9* examined bottom-end inequality before the economic crisis. A comparison of the overall league tables in the two *Report Cards* suggests that France, Iceland and Sweden have seen their comparative positions decline in recent years: France, previously towards the middle of the overall table, now ranks in the bottom third; while Iceland and Sweden, previously towards the top of the overall league table, now sit marginally above the bottom third. However, a direct comparison between the two *Report Cards* cannot be made as somewhat different measures are used.

SECTION 3
INCOME

Income gaps have widened in the majority of rich countries

How has income inequality evolved over the past few years? Different pathways can explain changes in the relative income gap over time. For example, if incomes at the bottom of the distribution grow faster than in the middle, the result is a doubly positive scenario of overall improvements coupled with declines in bottom-end inequality. Conversely, if the 10th percentile decreases faster than the median, inequality widens and the poorest children are left even further behind.

Countries are placed into five groups in *Figure 5* to clarify the reasons for changes in inequality between 2008 and 2013. These pathways are based on 'real' changes in incomes over time, i.e. adjusting for inflation, although this does not affect the relative gap itself.

Bottom-end income inequality has increased in over half of the rich countries analysed: 19 of 37 saw an increase in the relative child income gap of at least 1 percentage point between 2008 and 2013. Two-thirds of these countries saw a substantial increase in inequality, exceeding 2 percentage points.

Figure 5 shows that:

- Of the 10 countries where the relative income gap narrowed by at least 2 percentage points between 2008 and 2013, in only four – the Czech Republic, Finland, Korea and Switzerland – was that because of a 'positive' closing of the gap: the incomes of both the 10th percentile and the median grew, but those of the 10th percentile increased faster.
- In the second group of countries, the relative gap shrank because the median income declined, while the 10th percentile either decreased more slowly (Ireland, Lithuania and Luxembourg), remained unchanged (the United Kingdom and the United States) or even increased (Mexico).
- In Canada, France, Israel, Slovakia and Sweden, the relative income gap increased, as the median income grew or at least remained unchanged, while the 10th percentile income improved more slowly or even decreased, thus widening the gap between the bottom and the middle.
- The largest increases in inequality – of at least 5 percentage points – occurred in four southern European countries (Greece, Italy, Portugal and Spain) and three eastern European countries (Hungary, Slovakia and Slovenia). In all these countries, except Slovakia, children's median household incomes fell, but the 10th percentile income decreased even faster, leaving the poorest children increasingly lagging behind.

Social transfers matter

Labour markets play a significant role in shaping the income of households with children – particularly following an economic crisis, when rates of unemployment and underemployment rise. Children living in jobless households are overrepresented in the bottom income decile in all European countries. In Bulgaria, over 75 per cent of children in the poorest decile live in a jobless household, while that is the case for over 60 per cent in Belgium, Greece, Hungary, Ireland and Slovakia.

The comparison of pre- and post-transfer incomes for European countries shown in *Figure 6* underlines the fact that social transfers also play a role in reducing relative income gaps among children in rich countries. Indeed, in all these countries income inequality is higher *before* social transfers than *after*, but the degree to which social transfers reduce the relative income gap varies considerably across Europe.

In Ireland and the United Kingdom, social transfers nearly halve the relative income gap. Indeed, without significant social transfers, the income gaps in these two countries would be among the highest in Europe. In other countries, particularly Bulgaria, Greece, Italy and Portugal, the pre- and post-transfer income gaps are very similar. These are countries

with some of the highest levels of bottom-end inequality in the comparison.

Higher income gaps, higher levels of poverty and deprivation

An examination of inequality in children's income alongside monetary child poverty and material deprivation rates provides a fuller picture of changes in children's living standards. As noted in Section 2, the relative income gap and child poverty are closely associated: countries with higher bottom-end income inequality tend to have higher child poverty (and vice versa, lower bottom-end income inequality tends to equate to lower child poverty). However, relative income statistics do not necessarily convey what it means to live on a low income in a rich country. Analysis of material deprivation can help us better understand the situation of children at the bottom end of the income distribution.

Children are considered materially deprived when their household cannot afford three or more out of nine items considered necessary for an adequate life: 1) to face unexpected expenses; 2) to afford a one-week annual holiday away from home; 3) to avoid arrears in rent, mortgage and utility bills; 4) to have a meal with meat or proteins every second day; 5) to keep the home adequately heated; 6) to have a washing machine; 7) to have a colour TV; 8) to have a telephone;

Figure 5 Change in income inequality

Country	Relative income gap 2008	Relative income gap 2013	Change (2008–2013)
Countries in which the 10th percentile increased faster than the median			
Republic of Korea	51.1	45.7	-5.4
Switzerland	42.4	39.6	-2.8
Czech Republic	42.1	39.6	-2.5
Finland	40.5	38.3	-2.2
Countries in which the 10th percentile decreased more slowly than the median			
United Kingdom	48.1	39.9	-8.2
Ireland	46.7	41.5	-5.2
Luxembourg	45.5	41.2	-4.3
Mexico	68.4	65.0	-3.4
United States	61.1	58.9	-2.2
Lithuania	56.9	54.8	-2.1
Countries in which the relative gap remained stable (+/-2pp)			
Australia	46.5	44.7	-1.8
Iceland	39.2	37.8	-1.4
Latvia	60.9	59.7	-1.2
New Zealand	47.6	46.5	-1.1
Austria	42.7	41.9	-0.8
Norway	36.6	37.0	0.4
Belgium	47.9	48.4	0.5
Germany	42.6	43.1	0.5
Denmark	38.5	39.5	1.0
Poland	50.7	51.8	1.1
Netherlands	39.4	40.6	1.2
Bulgaria	65.7	67.0	1.3
Romania	65.6	67.1	1.5
Malta	46.5	48.2	1.7
Countries in which the 10th percentile increased more slowly than the median			
France	41.4	43.9	2.5
Canada	50.3	53.2	2.9
Israel	61.6	64.6	3.0
Sweden	41.4	46.2	4.8
Slovakia	46.2	54.2	8.0
Countries in which the 10th percentile decreased faster than the median			
Estonia	52.7	55.5	2.8
Cyprus	42.4	47.2	4.8
Portugal	54.8	60.2	5.4
Hungary	42.6	48.3	5.7
Slovenia	40.7	47.3	6.6
Spain	55.9	62.6	6.7
Italy	52.6	60.6	8.0
Greece	55.6	64.7	9.1

Source: EU-SILC 2008–2013.
Notes: Canada and the United States, 2007–2013; Israel, 2007–2012; Mexico, 2008–2012.
There was a break in time series in Canada, Spain and the United Kingdom.
No trend data available for Croatia, Turkey, Chile and Japan.

Figure 6 Income inequality and social transfers

Country	Relative income gap pre-transfers	Relative income gap post-transfers	Percentage of gap reduced by social transfers
United Kingdom	77.4	39.9	48.4
Ireland	76.3	41.5	45.6
Belgium	82.2	48.4	41.1
Iceland	63.6	37.8	40.6
Austria	68.9	41.9	39.2
Norway	60.5	37.0	38.8
Hungary	76.1	48.3	36.5
France	68.5	43.9	35.9
Denmark	61.4	39.5	35.6
Finland	58.2	38.3	34.1
Luxembourg	61.3	41.2	32.8
Sweden	67.7	46.2	31.7
Germany	62.9	43.1	31.5
Malta	68.1	48.2	29.2
Netherlands	56.3	40.6	27.8
Lithuania	75.2	54.8	27.1
Slovenia	63.0	47.3	25.0
Croatia	68.8	54.6	20.6
Switzerland	48.9	39.6	19.0
Estonia	67.9	55.5	18.2
Spain	75.2	62.6	16.7
Poland	61.7	51.8	16.2
Bulgaria	78.3	67.0	14.5
Czech Republic	46.3	39.6	14.4
Latvia	69.0	59.7	13.5
Cyprus	54.5	47.2	13.4
Slovakia	62.3	54.2	13.0
Romania	75.9	67.1	11.6
Italy	64.5	60.6	6.0
Portugal	62.5	60.2	3.6
Greece	66.3	64.7	2.4

Source: EU-SILC 2013.

9) to have a personal car. Although national income plays a role in shaping the levels of material deprivation, across Europe there is a strong association between relative income gaps and material deprivation in households with children: countries with higher bottom-end income inequality tend also to have higher material deprivation.[5]

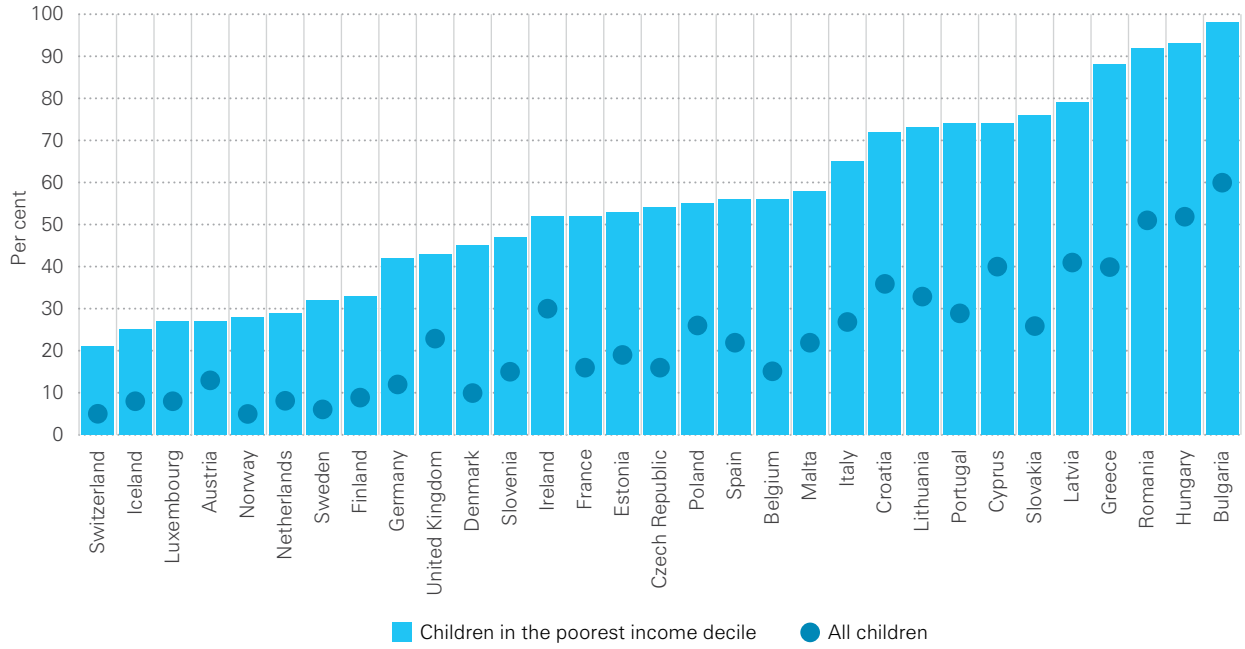
Figure 7 shows that in all European countries children in the bottom income decile are more likely to be materially deprived than the child population as a whole. In Bulgaria, Hungary and Romania, over 90 per cent of children in the bottom income decile live in materially deprived households.

Lower income inequality, higher child well-being

How is bottom-end income inequality related to overall child well-being? *Figure 8* plots a revised version of the multi-dimensional child well-being index presented in *Report Card 11* (2013) against relative income gaps.[6] Countries with higher income gaps tend to have lower levels of overall child well-being.

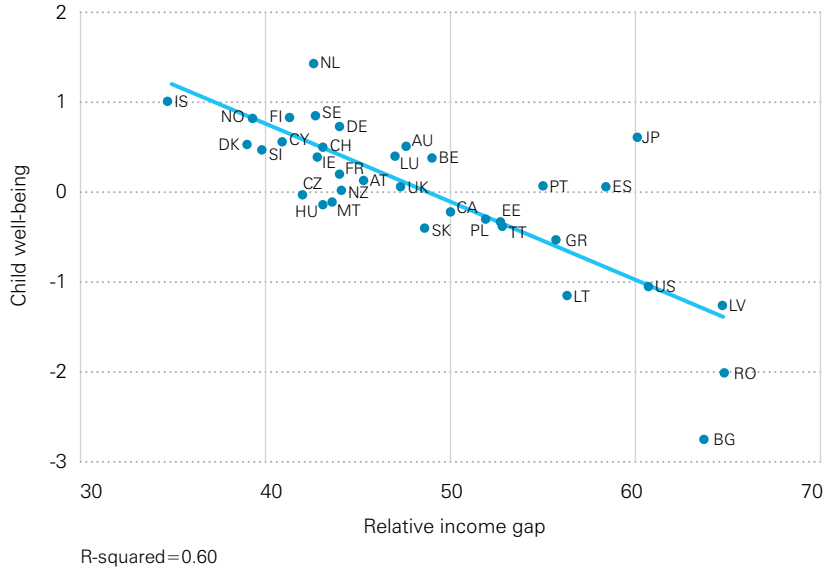
The evidence presented here shows that large relative income gaps are not inevitable, that policy makers have tools at their disposal that are effective in reducing income inequality, and that smaller income gaps are better for all children, insofar as they are associated with higher levels of overall child well-being. While policy makers face undoubted challenges in balancing budgets in the aftermath of the economic crisis, the arguments in favour of prioritizing policies that prevent the incomes of the poorest households with children from falling behind are compelling.

Figure 7 Percentage of children living in deprived households



Source: EU-SILC 2013.

Figure 8 Relative child income gap and overall child well-being (2009)



Source: Bradshaw, J. (2015). 'Child poverty and child well-being in international perspective', in E. Fernandez, A. Zeira, T. Vecchiato and C. Canali (eds), *Theoretical and Empirical Insights into Child and Family Poverty*, Springer International, Cham, Switzerland, pp.59–70; EU-SILC 2009.

SECTION 4
EDUCATION

Inequality in educational achievement narrowed in the majority of the countries

Whether or not inequality has declined in recent years is an important question. But understanding *how* the achievement gaps have altered indicates how far educational disadvantage and low achievement have been addressed. For example, a closing of the achievement gap can result from children at the lower end being 'lifted up', so that their achievement level is closer to the average standard. However, it may also be the result of falling average achievement, alongside constant (or even declining) achievement among the children at the bottom end of the distribution.

Figure 9 details changes in inequality in PISA test scores for reading between 2006 and 2012.[7] It shows that the majority of countries display a positive trend in terms of reducing the achievement gap in reading. Countries are placed into five groups, depending on how their inequality has changed. We are particularly interested in cases where both the median improved and the achievement gap narrowed, as this is a 'win-win' scenario of overall improvement coupled with a decline in inequality at the lower end.

The main pathways distinguished in *Figure 9* are:

- *Countries that narrowed inequality while improving median test scores.* The positive news is that 20 out of the 38 countries fell into this category, with the largest improvements in Chile, the Czech Republic, Germany and Mexico, although the median test scores in the Czech Republic and Mexico remain low compared with other countries. Belgium and Germany show large improvements, but with higher median test scores.
- *Countries that saw a decrease in inequality but with a fall in median test scores.* This type of trajectory is only seen in Canada, where a notable decline in lower-end inequality occurs in part because of a decline in overall achievement.
- *Countries that saw an increase in inequality alongside increased median test scores.* Only Bulgaria displays this trend; low achievers have been allowed to fall even further behind.
- *Countries where bottom-end inequality increased alongside a fall in median test scores.* This type of downward trajectory is the most worrying – and not very common in reading. Two high-income countries fall into this group: Finland and Sweden.

Many countries reduced absolute educational disadvantage

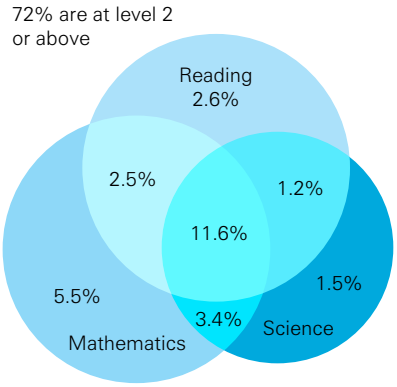
In *League Table 2*, measures of the relative achievement gap were supplemented by an indicator of absolute educational disadvantage, measured as all children who fall under the PISA threshold of proficiency level 2 in all three subjects. Across the OECD countries in 2012, 28 per cent of 15-year-olds fell below proficiency level 2 in at least one of the three subjects, and 11.6 per cent scored below level 2 in all three subjects (*Figure 10*). Children who underachieve in all three subjects are likely to have been in the lowest-achieving group for some time.

Figure 9 Change in inequality in reading achievement

Country	Achievement gap 2006	Achievement gap 2012	Change (2006–2012)
Countries in which the 10th percentile increased more than the median			
Czech Republic	153	117	-36.0
Chile	133	104	-28.5
Germany	158	131	-27.6
Mexico	130	106	-24.0
Belgium	167	144	-23.6
Poland	139	118	-20.6
Austria	151	131	-20.5
Italy	153	138	-15.2
Lithuania	131	118	-13.0
Turkey	120	109	-11.0
Norway	146	135	-10.7
Ireland	126	116	-10.5
United Kingdom	142	132	-10.4
Romania	125	115	-10.0
Estonia	116	106	-9.8
Portugal	140	131	-9.3
Japan	145	136	-8.7
Greece	148	140	-8.1
Switzerland	132	126	-6.1
Croatia	123	118	-5.0
Countries in which the 10th percentile decreased less than the median			
Canada	132	125	-7.5
Countries in which the achievement gap remained within +/- 5 score points			
Denmark	120	116	-4.9
New Zealand	147	143	-4.6
Republic of Korea	123	119	-3.8
Netherlands	136	133	-3.1
Latvia	122	120	-1.8
Slovenia	124	123	-1.4
Hungary	131	131	-0.3
Australia	130	130	0.0
Israel	165	167	2.0
Spain	125	127	2.1
Iceland	136	138	2.4
Luxembourg	143	145	2.4
France	153	157	4.2
Slovakia	146	151	4.7
Countries in which the 10th percentile increased less than the median			
Bulgaria	153	167	14.2
Countries in which the 10th percentile decreased more than the median			
Sweden	134	147	13.0
Finland	109	131	21.7

Source: PISA 2006 and 2012.
Note: no trend data available for the United States.

Figure 10 Percentage below proficiency level 2 in mathematics, reading and science



Source: PISA 2012.
Note: unweighted average for 34 OECD countries.

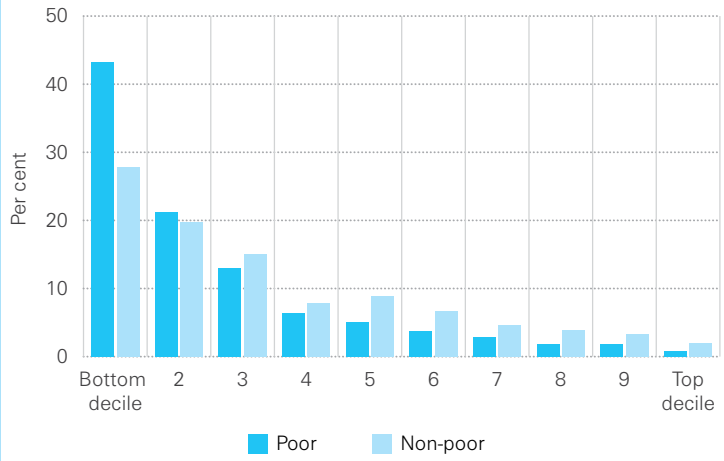
Box 2 A 'sticky floor' in poor children's cognitive development: evidence from the UK's Millennium Cohort Study

From as early as the age of 3, children from more affluent backgrounds tend to do better in cognitive tests.[i] The Millennium Cohort Study (MCS) has tracked around 19,000 children born at the turn of the century across the United Kingdom from the age of 9 months. They were followed up at ages 3, 5, 7 and 11 and will be surveyed into adulthood.

Although at each sweep of the MCS, one child in 10 falls into the bottom decile of the cognitive ability distribution, each child's chances of ending up in the bottom depend on their family background. At age 5, children from income-poor families are around three times more likely to be in the bottom 10 per cent than are their peers from non-poor households.

Figure 11 shows the shares of MCS children who scored in the bottom decile of the cognitive ability distribution in a given year (i.e. at ages 3, 5 or 7) and who remained in the bottom decile or moved up the distribution the next time they were tested. Children from poor households (43 per cent) are substantially more likely to get stuck in the bottom of the distribution than are their counterparts from non-poor households (28 per cent), but the differences are smaller among those who do make the transition from the bottom decile. Most of both poor and non-poor children who exit the bottom decile move up only one or two deciles. Thus, there is a 'sticky floor' for all children with low cognitive scores; but it is far stickier for those from income-poor families.

Figure 11 Transitions from the bottom decile of cognitive ability distribution



Source: UK Millennium Cohort Study; Bruckauf, Z. and Y. Chzhen (2016). 'Poverty and Children's Cognitive Trajectories: Evidence from the UK Millennium Cohort Study'.

[i] Hansen, K. and H. Joshi (2007). *Millennium Cohort Study Second Survey: A user's guide to initial findings*, Centre for Longitudinal Studies, London.

Figure 12 displays trends in absolute educational disadvantage between 2006 and 2012 for the 38 countries included in the PISA study. It shows:

- The largest reductions in cross-subject low performance were found in Bulgaria, Israel, Romania and Turkey. However, despite positive developments, these four countries remained among those with the highest overall levels of absolute educational disadvantage in 2012.
- Reductions in the share of children performing at below proficiency level 2 in all three subjects occurred in the Czech Republic, Germany, Latvia and Poland; this improvement resulted in them joining the top third of countries (those that performed best) in terms of absolute educational disadvantage in 2012.
- Absolute educational disadvantage remained broadly static between 2006 and 2012 in a number of other countries. Some countries with the highest proportions of children falling below proficiency level 2 in all three subjects, such as Chile, Greece and Luxembourg, struggled to reduce the proportion of low performers.
- Finland and Sweden saw a notable increase in the proportion of 15-year-olds who failed to achieve proficiency level 2 in all three subjects between 2006 and 2012, suggesting that there is a growing group of very disadvantaged children in these two countries.

Reducing inequality is compatible with academic progress for all

While some countries are moving 'upward' (by raising academic standards and reducing absolute levels of educational disadvantage), others demonstrate a worrying regressive trend in terms of their support for children at the 'bottom'. The evidence presented here shows that large relative educational achievement gaps are not inevitable. The strong all-round performance seen in countries such as Estonia, Denmark and Poland shows that there is no need to sacrifice a rise in overall educational achievement in order to reduce relative achievement gaps or absolute educational disadvantage.

The primary focus of this *Report Card* is to compare the overall levels of bottom-end inequality across countries; but analysis of within-country differences underlines significant ways in which social inequalities shape educational disadvantage. *Boxes 2* and *3* and Section 7 examine some of the key issues here in more detail.

Figure 12 Change in educational disadvantage

Country	Below level 2 in all three subjects 2006	Below level 2 in all three subjects 2012	Change (2006–2012)
Romania	36	24	-11.9
Turkey	25	16	-9.8
Israel	26	19	-7.4
Bulgaria	35	29	-6.5
Mexico	35	31	-4.2
Portugal	16	13	-3.8
Poland	9	6	-3.7
Italy	15	12	-3.3
Spain	13	10	-2.7
Germany	11	9	-2.2
Japan	8	6	-2.2
Latvia	10	8	-2.0
Estonia	5	3	-1.7
Czech Republic	11	9	-1.7
Switzerland	9	7	-1.5
Lithuania	13	12	-1.4
Norway	12	11	-1.2
Ireland	8	7	-0.8
Chile	25	25	-0.7
Croatia	12	12	-0.5
France	13	13	-0.4
Austria	11	11	0.0
Luxembourg	14	14	0.0
Greece	15	16	0.3
United Kingdom	11	11	0.3
Republic of Korea	4	4	0.5
Belgium	11	12	0.7
Canada	5	6	1.0
Denmark	8	9	1.1
Netherlands	7	9	1.3
Australia	7	9	2.0
Slovenia	8	10	2.0
Hungary	11	13	2.5
Iceland	10	14	3.1
New Zealand	8	11	3.3
Finland	2	5	3.5
Slovakia	13	19	5.7
Sweden	9	15	6.1
OECD average	12	12	0

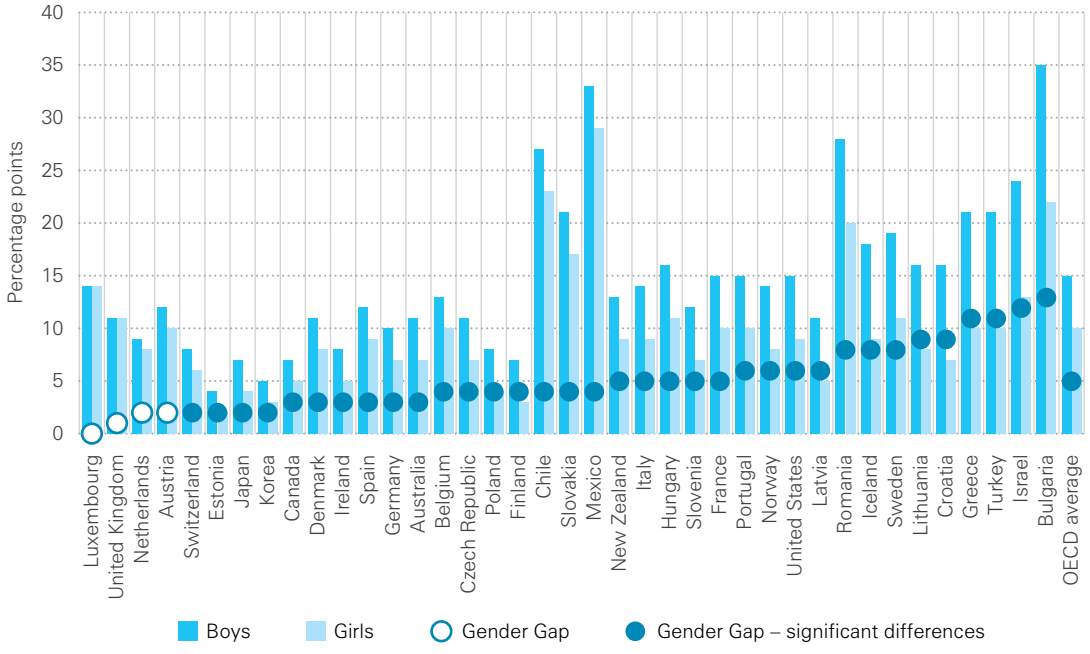
Source: PISA 2006 and 2012.
Note: no trend data available for the United States.

Box 3 Educational disadvantage through a gendered lens

Since the first PISA study in 2000, 15-year-old boys have consistently done worse than girls in maths, reading and science. The gaps in favour of girls are largest in reading: in 2012, girls outperformed boys in reading by a good margin (38 score points, or nearly one year of schooling) on average across OECD countries. In 37 of the 39 countries studied, boys were significantly more likely to be in the bottom decile of reading achievement than girls.

Boys are also more likely to be in the group of cross-subject low performers in 35 of the 39 countries (*Figure 13*). Although the scale of gender disparity (in favour of girls) for those who fall below proficiency level 2 in all three subjects is lower than in reading, for example, it nevertheless overwhelmingly points to boys' educational disadvantage. On average across the OECD countries, the probability of boys being in this group is around 4 percentage points higher than it is for girls. But in Bulgaria, Greece, Israel and Turkey, the difference is 10–14 percentage points. The gap is statistically significant in all but four countries (Austria, Luxembourg, the Netherlands and the United Kingdom). This gender gap is also highly persistent over time. In a few countries where the change is significant between 2006 and 2012 (for example, the Czech Republic, Finland, Lithuania and Sweden), the disparity increased.

Figure 13 Gender gap in low educational achievement: boys vs girls



Source: PISA 2012.

SECTION 5
HEALTH SYMPTOMS AND BEHAVIOURS

League Table 3 highlighted bottom-end inequality in *self-reported health symptoms* in 2014. This section considers three additional variables – *physical activity, healthy eating* and *unhealthy eating* – to present a fuller picture of change in adolescent health and health-related behaviours. Bottom-end inequality is measured in the same way for all four indicators. For each country, the relative gap is computed by comparing a child who reports relatively low scores (represented by the mean of values below the median) and the 'average' child (represented by the median itself). The gap is measured as the difference between the two, calculated as a share of the median. It captures the extent to which children at the bottom fall behind the 'average' child in their own country.

Figures 14–17 show the changes in bottom-end inequality for each of the four indicators between 2002 and 2014. Countries are grouped in order to clarify the reasons behind these changes. The first group includes countries where the relative gap decreased because both the bottom and the middle improved over time, but the bottom advanced faster; this positive scenario represents not only overall progress but also declines in bottom-end inequality. Countries in the second group also saw a decrease in the relative gap, but the middle regressed while the bottom improved. The third group includes countries where the

Figure 14 Change in health inequality

Country	Relative gap 2002	Relative gap 2014	Change (2002–2014)
Countries in which the relative gap remained stable (-/+ 2 ppt)			
United States	29.2	28.0	-1.2
Estonia	28.8	27.7	-1.1
Spain	27.8	27.3	-0.5
Lithuania	29.2	29.3	0.1
Austria	23.2	23.6	0.4
Greece	26.2	27.4	1.2
Hungary	27.3	28.8	1.5
United Kingdom	27.3	28.9	1.6
Finland	24.0	25.9	1.9
Countries in which the middle improved more than the bottom			
Romania	31.6	34.0	2.3
Sweden	26.2	29.1	2.8
Slovakia	25.5	29.0	3.5
Portugal	22.5	26.4	3.9
Israel	31.2	38.9	7.7
Countries in which the bottom declined more than the middle			
Norway	23.1	25.2	2.0
Luxembourg	28.2	30.3	2.1
Bulgaria	27.2	29.4	2.2
Croatia	25.3	27.6	2.3
Belgium	25.7	28.1	2.5
Switzerland	22.4	25.0	2.5
Canada	26.6	29.3	2.7
Latvia	25.4	28.6	3.3
Iceland	27.7	31.1	3.4
Italy	26.4	30.1	3.7
Denmark	21.8	25.5	3.8
Czech Republic	22.8	26.8	4.0
Germany	20.5	24.8	4.3
Netherlands	22.2	26.7	4.6
France	24.4	29.2	4.8
Turkey	29.7	34.5	4.9
Slovenia	22.2	28.3	6.1
Ireland	22.5	28.9	6.4
Malta	24.0	30.6	6.6
Poland	26.3	34.1	7.8

Source: HBSC 2002–2014.
Note: Israel and the United States, 2002–2010; Bulgaria, Iceland, Luxembourg, Romania and Slovakia, 2006–2014; Turkey, 2006–2010.

relative gap increased because either the middle improved faster than the bottom, or the middle improved while the bottom lost ground. In the fourth group, health in both the bottom and the middle worsened, but the decline was greater at the bottom. This trend deserves the most attention.

Changes in the relative gap of within 2 percentage points are deemed too small to be indicative of a real trend, and so only changes above or below this benchmark are considered here.

Inequality in health increased in the majority of the countries

No country saw a decline in bottom-end inequality in adolescent health over the decade under consideration. The relative gap in self-reported symptoms widened by 2 percentage points or more in 25 of the 34 countries, remaining stable elsewhere (*Figure 14*). The largest increases (of at least 6 percentage points) are found in Ireland, Malta, Poland and Slovenia, where the bottom regressed more than the middle, and in Israel, where the middle gained ground while the bottom lost out. Poland and Israel lie at the bottom of the Health League Table (see Section 2, page 8).

The chances of falling behind in health are not the same for all children. In the majority of the countries studied, those from less-affluent households have the poorest health outcomes.[8] However, the difference between girls and boys is even larger, more widespread and persistent (see *Box 4*).

Figure 15 Change in inequality in physical activity

Country	Relative gap 2002	Relative gap 2014	Change (2002–2014)
Countries in which the bottom improved more than the middle			
Malta	64.6	55.6	-9.0
Finland	51.0	42.5	-8.5
Norway	55.7	47.6	-8.1
France	58.3	50.3	-8.0
Spain	51.4	45.1	-6.3
Bulgaria	56.9	51.1	-5.8
Estonia	52.8	47.8	-5.0
Portugal	51.0	46.9	-4.1
Ireland	49.8	46.1	-3.7
Switzerland	48.7	45.3	-3.4
Croatia	50.1	46.8	-3.3
Czech Republic	49.3	46.2	-3.1
Latvia	49.6	46.5	-3.1
Iceland	50.3	47.7	-2.6
Belgium	51.5	49.2	-2.3
United States	54.3	52.1	-2.2
Hungary	54.4	52.3	-2.1
Netherlands	49.4	47.5	-2.0
Countries in which the relative gap remained stable (-/+ 2 ppt)			
Slovakia	49.6	47.7	-1.9
Denmark	51.8	50.3	-1.5
Luxembourg	49.4	48.2	-1.2
Canada	47.9	46.9	-1.0
United Kingdom	47.7	47.3	-0.4
Austria	47.3	47.0	-0.4
Lithuania	48.1	47.9	-0.2
Slovenia	47.7	48.2	0.5
Sweden	47.9	48.6	0.7
Greece	50.3	51.2	0.9
Germany	46.8	47.7	0.9
Israel	61.8	62.9	1.1
Countries in which the middle improved more than the bottom			
Poland	45.6	48.5	2.9
Romania	55.9	58.8	2.9
Countries in which the bottom declined more than the middle			
Italy	54.2	56.8	2.6
Turkey	55.5	60.9	5.3

Source: HBSC 2002–2014.
Note: Israel and the United States, 2002–2010; Belgium, Bulgaria, Iceland, Luxembourg, Romania and Slovakia, 2006–2014; Turkey, 2006–2010.

Inequality in physical activity decreased in the majority of the countries

Regular exercise is key to adolescent well-being. Children in the HBSC survey report the number of days in the preceding week on which they engaged in physical activity for a total of at least 60 minutes a day, as recommended by the World Health Organization. The HBSC questionnaire defines physical activity as "any activity that increases your heart rate and makes you get out of breath some of the time".[9] Children's responses are on a scale from 0 to 7 days a week.

Bottom-end inequality in physical activity narrowed in 18 of the 34 countries over the previous decade, with pronounced reductions of 6 percentage points or more in Finland, France, Malta, Norway and Spain (*Figure 15*). In all the countries where the relative gap decreased, gains at the bottom outpaced those in the middle.

In 12 of the 34 countries, the relative gap remained within 2 percentage points in 2002 and 2014. But there were notable increases in bottom-end inequality in the remaining four countries. These changes occurred for two different reasons: in Poland and Romania the relative gap increased because children were more physically active in 2014 than in 2002, but improvements in the middle outstripped gains at the bottom; meanwhile, in Italy and Turkey the gap increased because children at the bottom lost out disproportionately more than those in the middle.

Figure 16 Change in inequality in healthy eating

Country	Relative gap 2002	Relative gap 2014	Change (2002–2014)
Countries in which the bottom improved more than the middle			
Malta	52.9	40.3	-12.6
Hungary	58.8	50.5	-8.3
Denmark	49.8	42.2	-7.6
Norway	51.2	44.0	-7.2
Spain	53.8	47.4	-6.3
Sweden	51.2	45.5	-5.7
Greece	49.8	45.0	-4.8
Italy	51.8	48.0	-3.8
Estonia	49.9	46.4	-3.5
Bulgaria	47.6	44.6	-3.0
United States	52.1	49.6	-2.5
Lithuania	47.4	45.4	-2.1
Countries in which the relative gap remained stable (-/+ 2 ppt)			
Iceland	49.6	47.9	-1.8
Germany	50.3	48.6	-1.7
Latvia	47.6	46.0	-1.6
Ireland	48.2	46.7	-1.5
Switzerland	45.7	44.6	-1.0
Slovenia	45.4	44.4	-1.0
United Kingdom	50.1	49.6	-0.5
Turkey	43.9	43.4	-0.5
Austria	47.4	47.2	-0.2
Canada	42.8	43.0	0.2
Romania	45.2	45.5	0.3
Netherlands	35.0	35.4	0.3
Slovakia	45.6	46.3	0.7
Israel	49.2	50.3	1.1
Belgium	40.7	41.9	1.2
Luxembourg	47.1	48.7	1.5
Countries in which the middle improved more than the bottom			
Finland	42.7	48.6	6.0
Countries in which the bottom declined more than the middle			
Czech Republic	43.8	45.9	2.1
France	44.4	47.2	2.8
Poland	43.2	46.4	3.2
Croatia	43.9	48.4	4.4
Portugal	41.6	48.2	6.6

Source: HBSC 2002–2014.
Note: Israel and the United States, 2002–2010; Bulgaria, Iceland, Luxembourg, Romania and Slovakia, 2006–2014; Turkey, 2006–2010.

There are mixed trends in inequality in healthy eating

Fruit and vegetables are essential components of a healthy and balanced diet. HBSC respondents indicate how many times a week they usually eat fruit and vegetables. Their answers to these two questions are combined to create an indicator of healthy eating (on a scale from 0 to 14).

Bottom-end inequality in healthy eating narrowed in 12 of the 34 countries (*Figure 16*). All 12 countries saw improvements at the bottom that outpaced any gains in the middle. The largest decreases in the relative gap – of at least 6 percentage points – were in Malta, Hungary, Denmark, Norway and Spain, suggesting that these countries made notable progress over the previous decade in improving children's access to healthy food.

The relative gap remained stable in 16 countries and increased in the other six. The largest increases were in Portugal (where the bottom lost out, while the middle remained the same) and in Finland (where the middle improved more than the bottom, against a backdrop of an overall rise in healthy eating among adolescents).

Inequality in unhealthy eating decreased in most countries

In contrast to fruit and vegetables, excess consumption of added sugar in food and beverages is often linked to poor health outcomes – especially in dental health. HBSC respondents indicate how often during the past week they have consumed "sweets (candy or chocolate)" and "Coke

Figure 17 Change in inequality in unhealthy eating

Country	Relative gap 2002	Relative gap 2014	Change (2002–2014)
Countries in which the bottom improved more than the middle			
Netherlands	89.1	69.4	-19.7
Slovenia	73.2	53.8	-19.4
Iceland	61.9	44.5	-17.4
Norway	71.1	57.8	-13.3
Greece	66.0	52.7	-13.3
Bulgaria	89.5	77.8	-11.7
Israel	90.3	79.8	-10.4
Spain	75.0	64.6	-10.4
Italy	77.1	66.7	-10.4
Canada	68.1	57.8	-10.4
Ireland	76.0	66.5	-9.5
Germany	77.0	67.8	-9.2
Luxembourg	74.7	66.4	-8.3
Malta	77.7	69.7	-8.0
Portugal	73.5	66.1	-7.4
Finland	61.8	55.9	-5.9
Czech Republic	70.6	66.2	-4.4
Denmark	64.3	60.0	-4.3
United States	76.9	72.6	-4.3
United Kingdom	72.5	68.2	-4.3
Latvia	67.7	63.7	-4.1
Croatia	74.2	70.5	-3.6
Austria	69.2	65.7	-3.5
Sweden	60.9	58.5	-2.5
France	74.9	72.5	-2.3
Countries in which the relative gap remained stable (-/+ 2 ppt)			
Hungary	80.8	79.1	-1.7
Switzerland	75.0	73.6	-1.4
Poland	74.0	73.0	-1.0
Estonia	63.9	63.3	-0.6
Lithuania	63.5	65.4	1.9
Countries in which the middle improved more than the bottom			
Romania	75.2	78.4	3.2
Slovakia	70.9	75.2	4.3
Belgium	71.2	76.3	5.1
Countries in which the bottom declined more than the middle			
Turkey	68.7	76.9	8.2

Source: HBSC 2002–2014.
Note: Israel and the United States, 2002–2010; Bulgaria, Iceland, Luxembourg, Romania and Slovakia, 2006–2014; Turkey, 2006–2010.

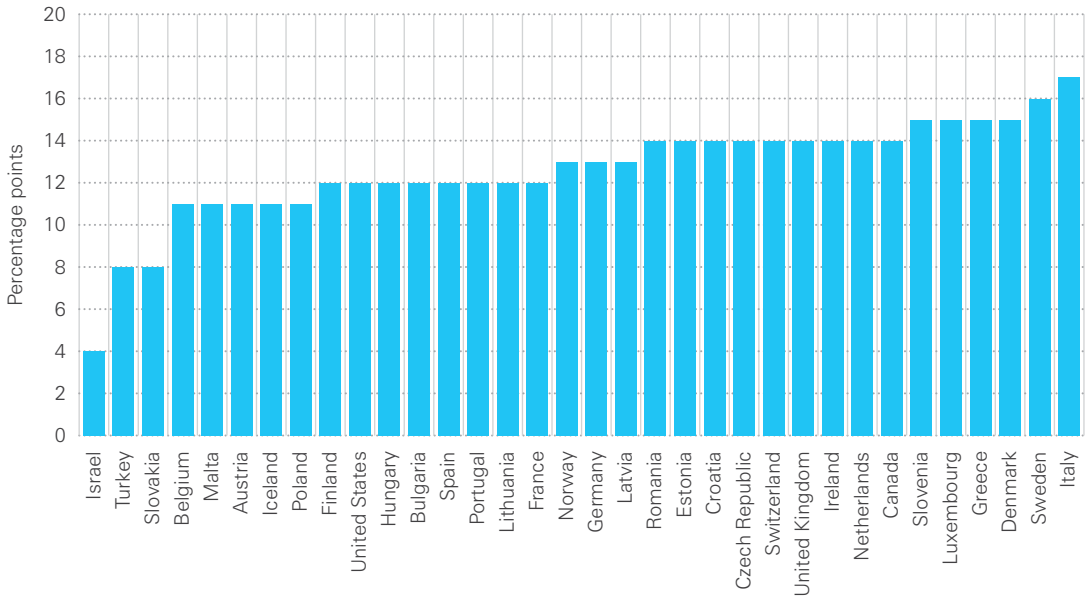
Box 4 Adolescent girls persistently more likely to fall behind in health

Figure 18 shows the gender gap in poor health among adolescents in the 2014 HBSC survey. The bars display the percentage-point difference between girls and boys in terms of the chances of falling furthest behind the 'average' (i.e. children with health scores below the mean in the lower half of the distribution in their country). Differences in age and family affluence are held constant. In all 34 countries under review, girls are significantly more likely to fall behind in health. Since adolescence is a formative stage for adult health, these differences are likely to endure into adulthood.

Notably there is no correlation across countries between bottom-end inequality in health and the gender differential in the chances of falling furthest behind. Indeed, the countries with the largest differences between girls and boys (15 percentage points or more) are Denmark, Sweden and Italy. They place in the top, middle and bottom, respectively, of *League Table 3* in Section 2. The gender differential is lowest in Israel, the country with the largest level of bottom-end inequality in adolescent health in the comparison.

Gender gaps in adolescent health are not only widespread, but persistent; and in some cases, they widen over time. In all 34 countries, girls are significantly more likely to fall behind in health in all four HBSC cycles between 2002 and 2014. In 10 of these countries, the gender gap has increased since 2002: Belgium, Canada, the Czech Republic, Estonia, Ireland, Italy, Slovenia, Sweden, the United Kingdom and the United States.

Figure 18 Gender gap in poor health: girls vs boys



Source: HBSC 2013/2014; Chzhen, Y., et al. (2016). 'Family Affluence and Inequality in Adolescent Health and Life Satisfaction'.
Note: data for 2010 used for Israel, Turkey and the United States.

or other soft drinks that contain sugar". Their responses are converted into an indicator of unhealthy eating (on a scale from 0 to 14), with higher values corresponding to less-frequent consumption of added sugar.

The vast majority of countries, 25 out of 34, had reduced bottom-end inequality in unhealthy eating by at least 2 percentage points over the previous decade (*Figure 17*). In all cases, this came about because the bottom improved faster than the middle – a veritable 'win-win' scenario. The Netherlands, Slovenia and Iceland saw considerable reductions in the relative gap of over 17 percentage points. A sizeable improvement of 19 percentage points places Slovenia alongside Greece and Iceland as one of the best-performing countries in bottom-end inequality in terms of (abstinence from) unhealthy eating.

The relative gap in unhealthy eating decreased in more countries – and by a greater margin – than in any other health-related indicator in this section, albeit from a higher base. This indicates that today's adolescents consume less sugar than their counterparts did at the turn of the century, while even those who eat less healthily than their peers no longer fall so far behind.

Nevertheless, bottom-end inequality in unhealthy eating tended to exceed that in the other three indicators in 2014, and there were four countries – Belgium, Romania, Slovakia and Turkey – where the relative gap in unhealthy eating had increased by 2 percentage points or more since 2002. The sizeable increase of 8 percentage points in the relative gap in Turkey is due to worsening outcomes overall, and especially at the bottom. By contrast, inequality widened in the other three countries because, in spite of an overall reduction in the prevalence of unhealthy diets, outcomes at the bottom improved more slowly than in the middle.

Reductions in inequality in healthy and unhealthy eating can go hand in hand. Ten out of the 12 countries that showed progress in reducing bottom-end inequality in the consumption of fruit and vegetables also reduced bottom-end inequality in the consumption of added sugars. The relative gap in unhealthy eating remained stable in the other two countries, Hungary and Lithuania. Norway and Spain stand out in particular, achieving large reductions in bottom-end inequality of 6 percentage points or more in both diet-related indicators.

Explaining trends in bottom-end inequality

Growing up in unequal, harsh social environments may pose a barrier for children to a healthy, happy and productive life.[10] Although there are no clear relationships between income inequality and the health-related indicators in this section, income inequality can have a lagged effect on health and well-being in adolescence.[11] Cultural factors may also be important, but the influence of such factors is quite difficult to detect in cross-national analyses.

The complexity of the processes driving bottom-end inequality in health is underlined by the fact that the vast majority of countries examined here have seen inequality in health-related outcomes widen in some of the four areas considered here, yet narrow in others. Indeed, Spain and the United States are the only countries that have reduced inequality among adolescents across all four measures. A similar picture exists in terms of country rankings in 2014, with most countries placing in the top half for some measures and in the bottom half for others. This is true even for some of the best overall performers: the Netherlands shows relatively large bottom-end inequality in unhealthy eating, Finland in healthy eating, and Denmark in physical activity.[12]

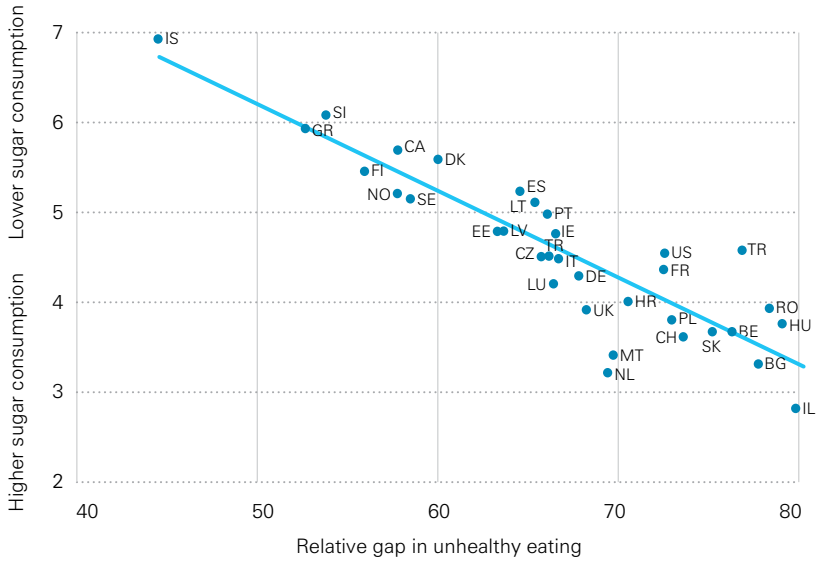
What we do know is that, based on data from the HBSC survey for 2013/2014, average levels of self-reported health, physical activity, healthy and unhealthy eating vary with the relative health inequality gaps for each of these outcomes. The country-level averages for all these measures are highly correlated with the respective relative gaps in health-related outcomes studied here.[13]

More precisely: children are more likely to report more frequent health symptoms and to have lower average physical activity, lower

average healthy eating and higher average unhealthy eating in countries where children at the bottom are allowed to fall further behind the middle. The relationship between relative inequality and average levels of unhealthy eating is particularly strong (*Figure 19*).

It is difficult to draw general lessons on why exactly countries end up at the top or the bottom of rankings in these four indicators. The consistent findings of a close relationship between general progress and bottom-end inequality in children's health and health behaviours suggest that overall improvement in health outcomes is very difficult to achieve without closing the gap at the bottom of the distribution.

Figure 19 Relative inequailty and average level of unhealthy eating



R-squared=0.79

Source: HBSC 2014.
Note: data for 2010 used for Israel, Turkey and the United States.

SECTION 6
LIFE SATISFACTION

Inequality in life satisfaction remains stable in most countries

Figure 20 supplements the findings presented in *League Table 4*, detailing changes in bottom-end inequality in children's life satisfaction between 2002 and 2014. The relative gap in life satisfaction has narrowed in six out of the 32 countries under review; increased in another seven; and has remained stable (i.e. within 2 percentage points) in over half of the countries.

Among the six countries that have seen reductions in inequality are four that experienced economic transition in the 1990s – Estonia, Latvia, Lithuania and Slovakia – as well as two Nordic countries – Denmark and Norway. In the three Baltic countries (Estonia, Latvia and Lithuania), both the median life satisfaction (i.e. the middle) and the mean score for children below the median (i.e. the bottom) increased between 2002 and 2014, suggesting a notable improvement in children's life satisfaction levels across the distribution. In Denmark, Norway and Slovakia, the median remained the same in both years, but scores at the bottom improved.

By contrast, life satisfaction scores increased both in the middle and at the bottom of the distribution in Israel, but the median advanced faster, leading to an increase in bottom-end inequality in life satisfaction. Meanwhile, increases in the relative life satisfaction gap in Belgium, Germany, Luxembourg, Spain and Turkey occurred because

Figure 20 Change in inequality in life satisfaction

Country	Relative gap 2002	Relative gap 2014	Change (2002–2014)
Countries in which the bottom improved more than the middle			
Norway	29.2	26.4	-2.9
Latvia	28.9	26.1	-2.8
Estonia	29.6	27.0	-2.6
Slovakia	31.9	29.4	-2.5
Lithuania	31.9	29.4	-2.5
Denmark	27.6	25.1	-2.5
Countries in which the relative gap remained stable (-/+ 2 ppt)			
United States	30.5	28.7	-1.9
Greece	27.1	25.7	-1.3
Bulgaria	29.1	27.9	-1.2
Austria	27.7	26.9	-0.8
Portugal	28.7	28.0	-0.7
Slovenia	27.7	27.2	-0.5
Croatia	29.6	29.1	-0.5
Switzerland	26.8	26.3	-0.4
Sweden	28.1	28.0	-0.1
Ireland	27.4	27.4	0.0
Poland	31.1	31.1	0.1
Iceland	28.3	28.4	0.1
Hungary	27.6	27.9	0.3
Canada	28.8	29.4	0.6
Italy	28.1	28.8	0.7
United Kingdom	27.5	28.4	0.9
Finland	25.5	27.0	1.5
Netherlands	22.5	24.0	1.5
France	27.7	29.6	1.9
Countries in which the middle improved more than the bottom			
Israel	28.0	30.0	2.0
Countries in which the bottom declined more than the middle			
Luxembourg	27.8	30.0	2.2
Turkey	33.4	36.0	2.5
Germany	26.9	29.6	2.7
Spain	26.3	29.2	3.0
Czech Republic	28.0	31.5	3.6
Belgium	26.3	30.0	3.7

Source: HBSC 2002–2014.
Note: Israel and the United States, 2002–2010; Bulgaria, Greece, Iceland, Luxembourg, and Slovakia, 2006–2014; Turkey, 2006–2010. No trend data for Malta or Romania.

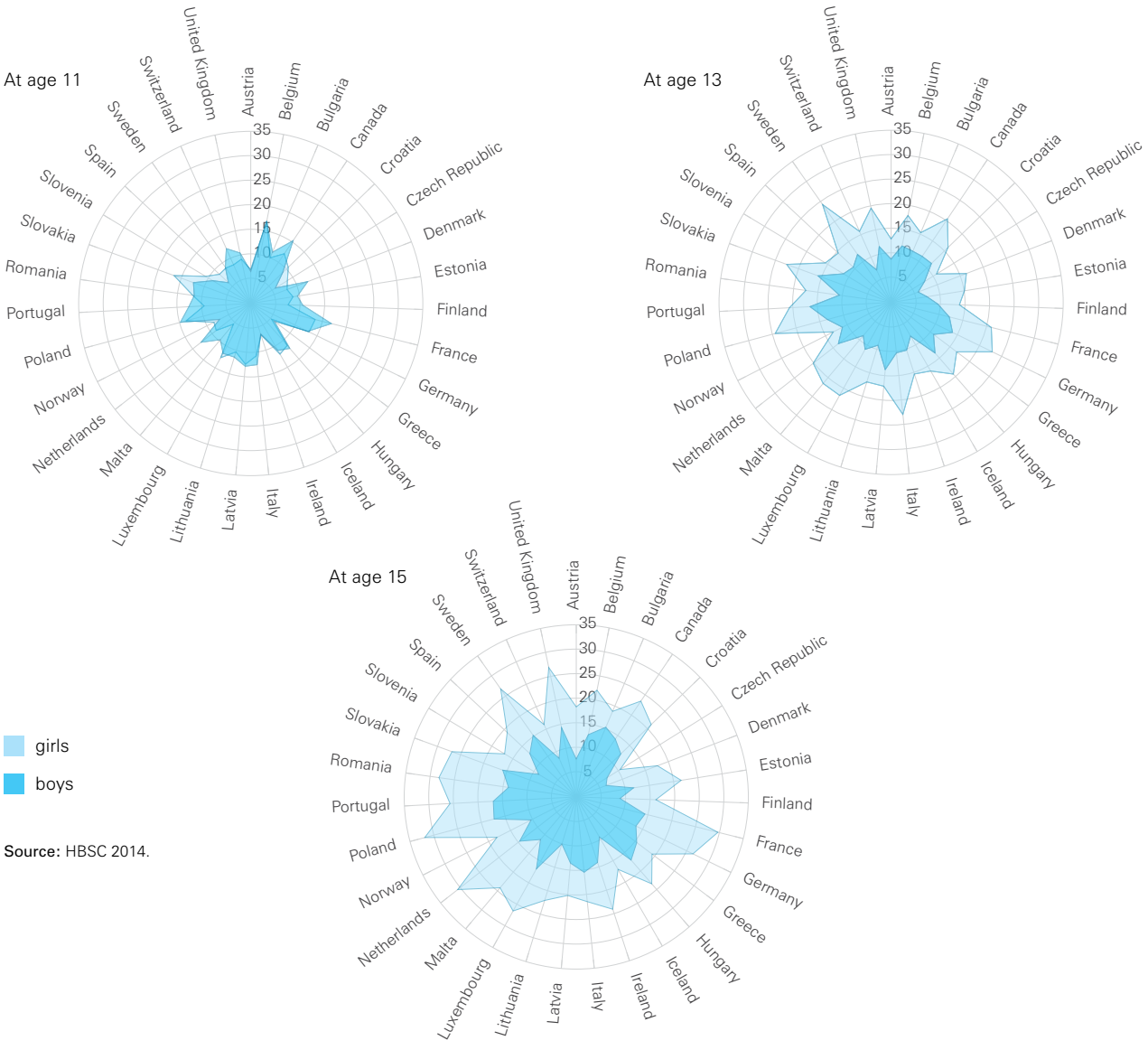
the median life satisfaction scores remained the same, while the mean scores for children at the bottom decreased. In the Czech Republic, the relative gap widened because both the bottom and the middle worsened, with a relatively greater decline at the bottom, suggesting a widespread and inequitable fall in children's life satisfaction levels.

Against these examples of change, it should be noted that in the majority of the countries, overall movements in the relative life satisfaction gap were trivial: in 19 of the 32 countries surveyed, the life satisfaction gap remained within 2 percentage points. In part because of this broad stability over time in its life satisfaction gap, the Netherlands recorded the lowest gap not only in 2014 but also in 2002, 2006 and 2010.

Girls more likely to be in the bottom end for life satisfaction

The three radar charts in *Figure 21* break down the risks of falling into the bottom group for life satisfaction *(children with life satisfaction below the mean of the lower half of the distribution)* for each country, by age and gender. Differences between the darker and lighter-shaded areas show the gap between girls and boys.

Figure 21 Gender gap in life satisfaction: girls vs boys



Source: HBSC 2014.

While the picture is mixed across countries at 11 years, at ages 13 and 15 girls are more likely than boys in all countries to have fallen behind in life satisfaction, with the gap being larger at 15 than at 13 nearly everywhere. At age 15, the largest gender gaps are in France and Poland. At age 13, the largest gaps are in Malta and Sweden. Across all countries, older children are generally more likely to be in the bottom group than are younger children, illustrated by the overall size of the shaded areas.

While the primary focus of this *Report Card* is to compare overall levels of life satisfaction cross-nationally, it is clear that there is significant social patterning of life satisfaction within rich countries that must be considered if bottom-end inequality in life satisfaction is to be reduced.

Why inequality in life satisfaction matters

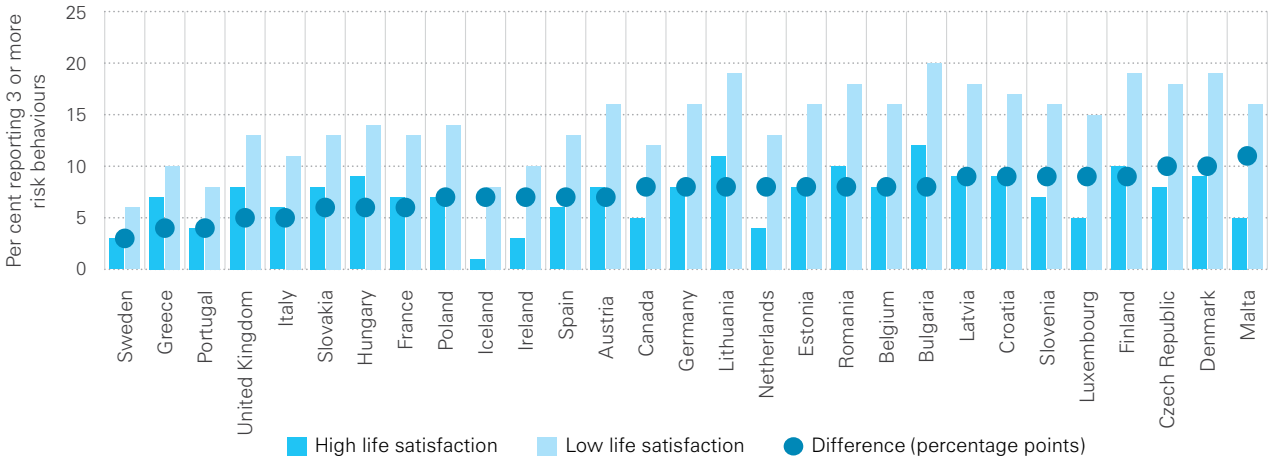
Debates about the validity of subjective well-being measures such as self-reported life satisfaction or happiness have arguably dissipated in recent years, as policy makers in many countries have begun to engage more openly and directly with such measures. However, understanding why, and in what ways, policy makers might address low life satisfaction remains an issue.

Adolescence can be a time of big transitions, new experiences and risk taking. Analysis of how low life satisfaction may overlap with adolescents' risk or problem behaviours provides compelling reasons for addressing inequality. Analysis of HBSC data[14] shows that children with low life satisfaction (i.e. those with scores below the mean of the lower half of the distribution in their country) are, on average, twice as likely to report three or more different types of risk behaviours as are their peers. This association holds even after controlling for children's age, gender and family socio-economic status. Across more than 20 of the countries studied, children in the bottom group for life satisfaction are up to three times more likely than their peers to experience regular fighting, to be victims of bullying and to smoke regularly. In 19 of those countries, this group is also more likely to report bullying others; and in 11 they are more likely to experience a higher level of injuries.

Figure 22 shows that there is a clear relationship between low life satisfaction and cumulative risk behaviours. The direction of causality – i.e. whether low life satisfaction leads to greater exposure to health risks or whether greater exposure to health risks leads to lower life satisfaction – is open to debate.

In short, while tackling bottom-end inequality in children's life satisfaction may seem a more abstract policy goal than addressing the inequalities examined in the income, education and health sections of this *Report Card*, life satisfaction cannot be disregarded as irrelevant to policy agendas concerned with child well-being. Indeed, the HBSC data suggest that taking low life satisfaction seriously may help us understand how better to address inequalities in health and risk behaviours.

Figure 22 Risk behaviours and life satisfaction



Source: HBSC 2013/2014.
Note: Multiple risk behaviours include smoking, drinking and binge drinking, fighting, frequent injuries, and bullying.

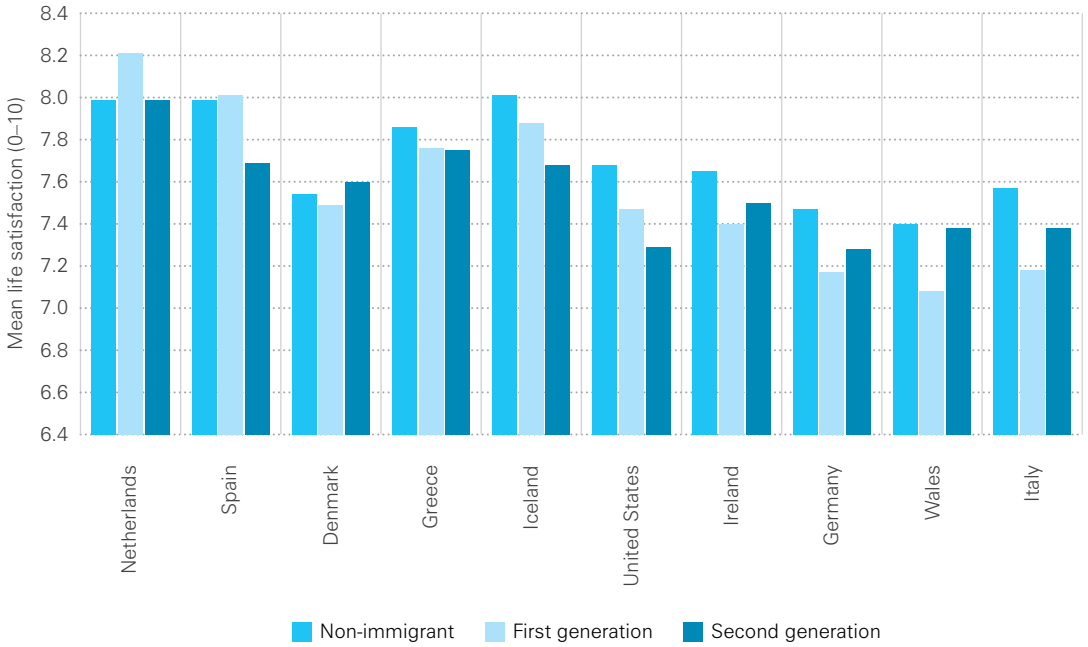
Box 5 Immigration and adolescent life satisfaction

Migration is high on the agenda in Europe and beyond, but little is known about the needs of migrant children. In many countries they are afforded opportunities and resources that differ from those of children from non-immigrant families. Several countries in the HBSC network collect data on children's country of birth. Eleven countries did so in 2009/2010: Denmark, Germany, Greece, Iceland, Ireland, Israel, Italy, the Netherlands, Spain, the United Kingdom (Wales) and the United States.

Analysis of HBSC 2010 study for 10 of these countries shows that in Germany, Iceland, Ireland, Italy, Spain and the United States, either first- or second-generation (or both) migrant children reported lower life satisfaction than non-immigrant children (*Figure 23*).[i]

HBSC data found that schools with a higher proportion of immigrant children also had higher levels of fighting and bullying, but that classmate support played an important role. When classmate support was high, regardless of the proportion of immigrant children in the school, levels of violent behaviour were lower.[ii]

Figure 23 Life satisfaction and migrant background



Source: HBSC 2009/2010; Stevens, G.W., S.D. Walsh, T. Huijts, M. Maes, K. Rich Madsen, F. Cavallo and M. Molcho (2015). 'An Internationally Comparative Study of Immigration and Adolescent Emotional and Behavioral Problems: Effects of generation and gender', *Journal of Adolescent Health*, vol. 57, no. 6, pp. 587–594.

[i] Stevens, G.W., S.D. Walsh, T. Huijts, M. Maes, K. Rich Madsen, F. Cavallo and M. Molcho (2015). 'An Internationally Comparative Study of Immigration and Adolescent Emotional and Behavioral Problems: Effects of generation and gender', *Journal of Adolescent Health*, vol. 57, no. 6, pp. 587–594.

[ii] Walsh, S.D., B. De Clercq, M. Molcho, Y. Harel-Fisch, C.M. Davison, K. Rich Madsen and G.W. Stevens (2015). 'The Relationship between Immigrant School Composition, Classmate Support and Involvement in Physical Fighting and Bullying among Adolescent Immigrants and Non-Immigrants in 11 Countries', *Journal of Youth and Adolescence* (published online 26 October 2015).

SECTION 7
FAIRNESS FOR CHILDREN

In this section, we investigate the extent to which the socio-economic status (SES) of a child's family predicts his or her outcomes in education, health and life satisfaction – what social scientists refer to as the 'social gradient'. With income inequality rising in most rich countries,[15] analysts have asked whether this will affect equality of opportunity in the future.[16] Indeed, the OECD recently warned that rising income inequality can "stifle upward social mobility".[17]

An examination of how strongly factors such as family background shape inequalities in health, education and life satisfaction can help us to understand some of the ways in which economic inequality affects children's lives now and in the future – particularly the lives of the most disadvantaged children. If income or family background strongly predict children's life chances, and if income inequality is widening in most rich countries, that will exacerbate inequality in children's outcomes, raising important questions about fairness for children.

Life satisfaction

The HBSC study includes an indicator of family SES – the family affluence scale – allowing examination of the degree to which the SES of the household in which a child grows up predicts their life satisfaction and health outcomes. For each of the outcomes, we show the likelihood that a child from the lowest SES category is at the very bottom of the distribution of life satisfaction and health, compared with a child from the highest SES category.[18]

Figure 24 shows the influence of SES on children's lowest reported life satisfaction in 2014. In all 34 countries the bars are above 0, indicating that children with the lowest SES are more likely to be at the bottom of the life satisfaction scale, though there is a considerable range across the countries. The largest effects of SES are found in Hungary, Israel, Luxembourg, Poland and Portugal, where children in the lowest SES group are between 18 and 27 percentage points more likely to report extremely low life satisfaction.

Crucially, this effect can be seen just as clearly in 2002, 2006 and 2010 as in 2014.[19] These four cycles of the HBSC survey capture the voices of some 700,000 children in countries of the EU and OECD. In short, there is clear evidence that over the course of the twenty-first century, children from the lowest SES households are consistently more likely to fall behind their peers in terms of life satisfaction.

Health

The relationship between SES and poor health is most pronounced for physical activity and healthy eating. The interpretation of these figures is the same as before – the likelihood that a child from the lowest SES category will be at the very bottom of the scale for the outcome being measured, compared with a child in the top SES category. The figures show that, for 2014:

- SES influences inequalities in **physical activity** across rich countries (*Figure 25*). In all 34 countries in the analysis, children from the lowest SES group are significantly more likely to fall behind in physical activity. The largest social gradients are in Belgium, Latvia and Luxembourg, where children in the lowest SES group are over 20 percentage points more likely to be at the bottom than are children from the highest SES group. The social gradient in physical activity has widened over time in six countries: Belgium, Italy, Latvia, the Netherlands, Sweden and the United Kingdom.
- SES influences inequalities in **healthy eating** across rich countries (*Figure 26*), with children from the lowest SES households significantly more likely to fall behind in consumption of fruit and vegetables. Only in three countries, Israel, Malta and Romania, is there no significant correlation between SES and falling behind in healthy eating. The largest social gradients (of 20 percentage points or more) can be seen in Canada and the United Kingdom, where they have widened over the past

Figure 24 Socio-economic status and life satisfaction

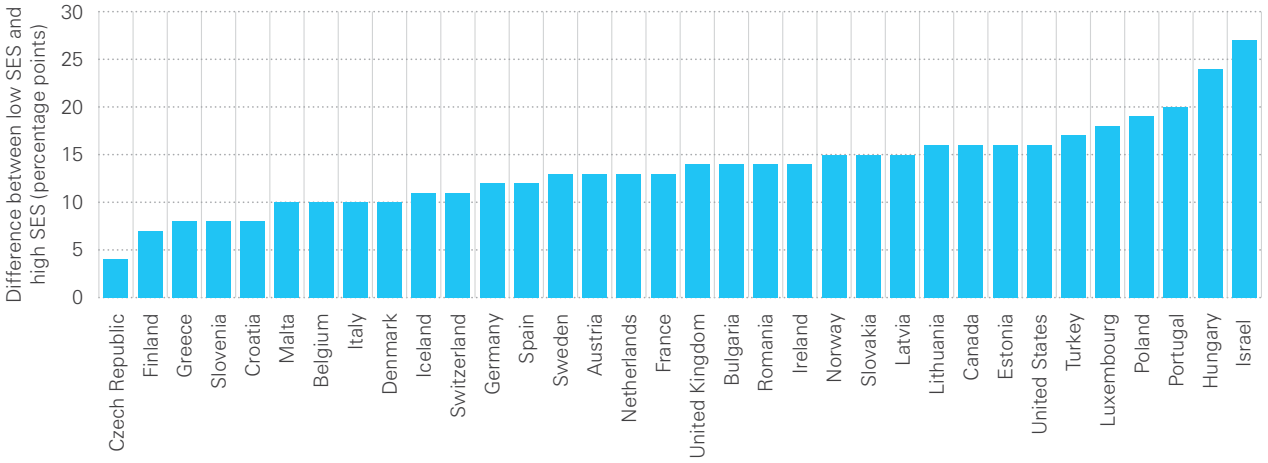


Figure 25 Socio-economic status and physical activity

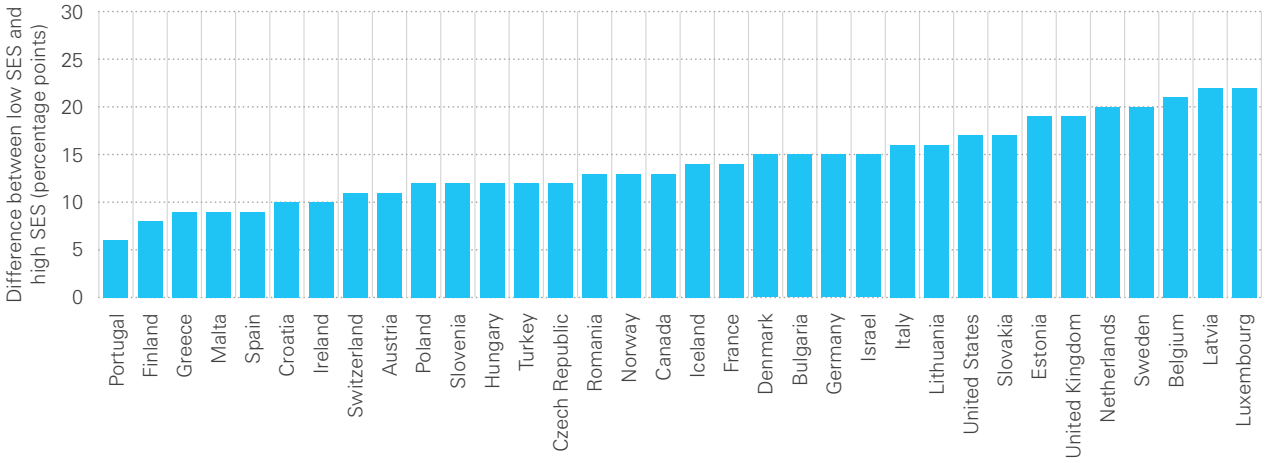
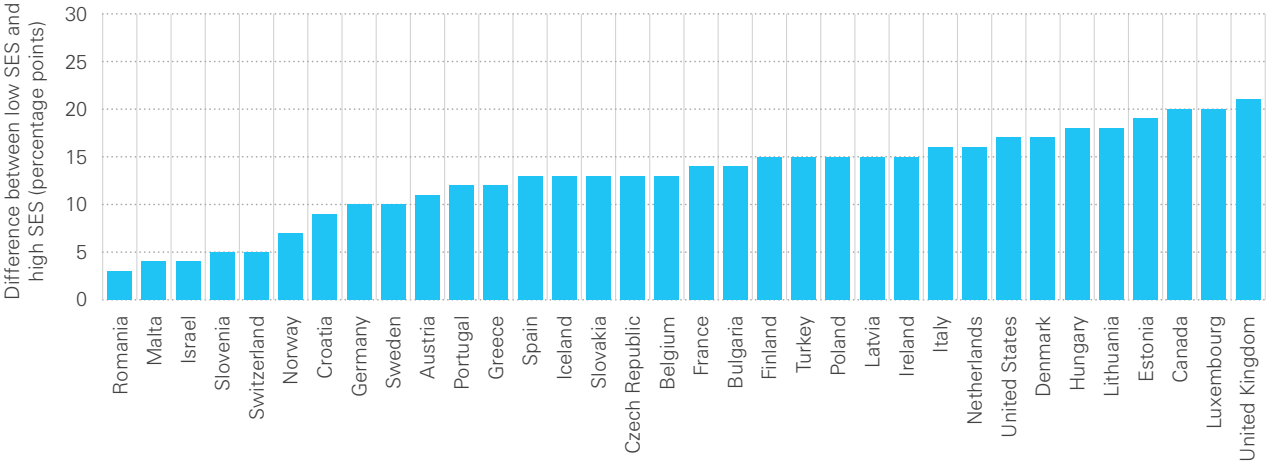


Figure 26 Socio-economic status and healthy eating



Source for Figures 24–26: HBSC 2013/2014.
Note: data for 2010 used for Israel, Turkey and the United States.

decade, and in Luxembourg, where the gradient has remained stable. On the other hand, progress was made in Latvia, Lithuania and Romania, where the effect of SES was reduced significantly between 2002 and 2014.

Educational achievement

The PISA data set constructs an index of economic, social and cultural status which acts as a useful proxy for the broad SES of the household and is the indicator we use to estimate the influence of family background on children's educational outcomes.

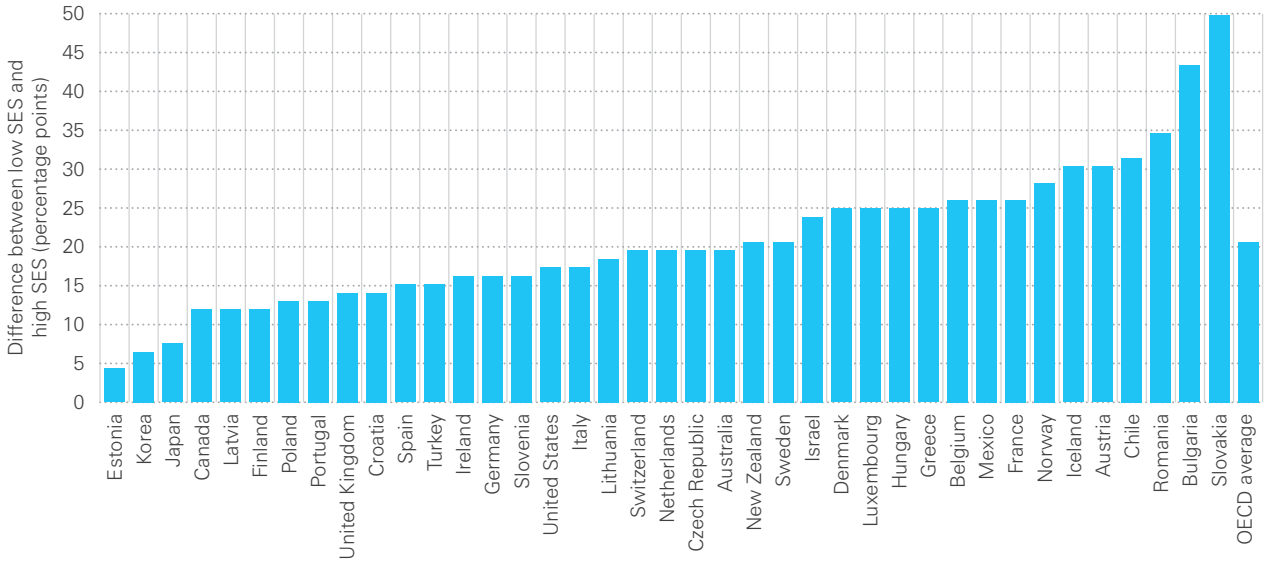
In a similar way to life satisfaction and health, we estimate the probability that a child from the lowest SES category will not reach proficiency in all three subjects, relative to a child from the highest SES group. In every single country under review, the likelihood that the least privileged students fall into the bottom achievement group is higher than for the most privileged students (*Figure 27*).

Across OECD countries, students from the most disadvantaged backgrounds were on average 18 percentage points more likely to fall into the bottom achievement group than were children from the highest SES group. However, the strength of this social patterning varies across countries. In a third of the countries, the SES achievement gap is 20 percentage points or higher. In only four countries is this difference 10 points or less – Canada, Estonia, Japan and Korea – showing that the powerful effects of family background can be overcome.

Although the PISA measure of SES is a useful proxy for economic disadvantage, it does not have the granularity that would be gained by actual household income data. In Section 3 of the *Report Card*, data from the EU-SILC were used to explore bottom-end inequalities in income. The 2009 wave of the survey also collected information on children's access to several education-related items.

Differences in household income affect children's access to educational resources. *Figure 28* and *Figure 29* show that a child's access to books that are suitable for his/her age group and a child's participation in school trips, respectively, depend on the income of the household. In countries with high bottom-end income inequality, these differences can be very large: in Romania, a 1 per cent increase in household disposable income is associated with nearly a 25 percentage point rise in the probability of a school-age child participating in school trips; and there is a similarly large income gradient when it comes to having suitable books at home. In countries with lower relative income gaps among children, access to these educational opportunities depends less on household income.

Figure 27 Socio-economic status and educational achievement



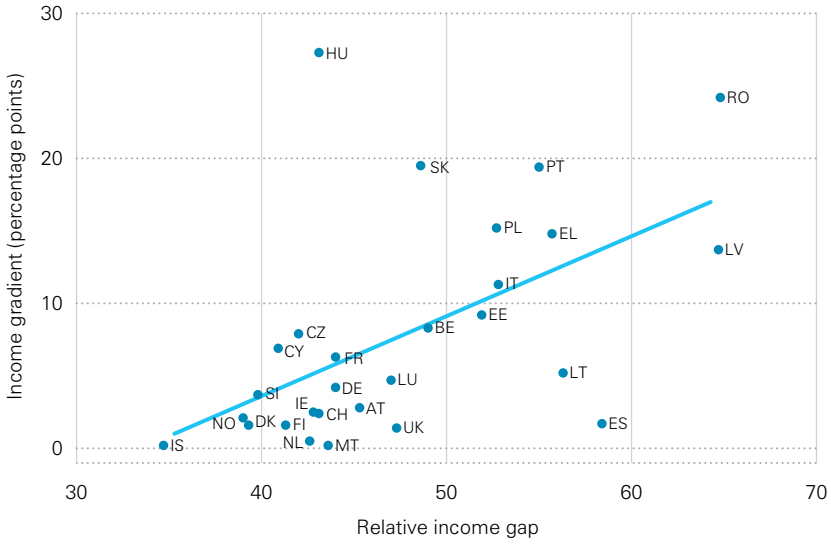
Source: PISA 2012.

Fairer policies for children

Limits in the available cross-national data mean that the analysis presented here cannot do justice to the depth of disadvantage that many children face, particularly some of the most disadvantaged children, whose voices are often marginalized in the surveys drawn on for this *Report Card* (*Box 6*). Moreover, while the league tables presented in this *Report Card* examine inequalities in income, education, health and life satisfaction separately, in reality they are interrelated aspects of children's lives, and disadvantage in one area may lead to, or reinforce, disadvantage in another.

Nonetheless, the data examined here show that, across rich countries, those children who are allowed to fall furthest behind do so in part because of general social and economic inequalities in the societies in which they live. The fact that SES continues to be an important predictor of a child's success in health, schooling and life satisfaction indicates that not all children are given an equal opportunity to develop. These inequalities are unfair to children, disadvantaging them in the early stages of life and weakening their futures. The fact that social inequalities are smaller and have weaker impacts on health, education and life satisfaction in some countries than in others shows, at the very least, that the lives of children can be made fairer by policies that directly address the inequalities examined here.

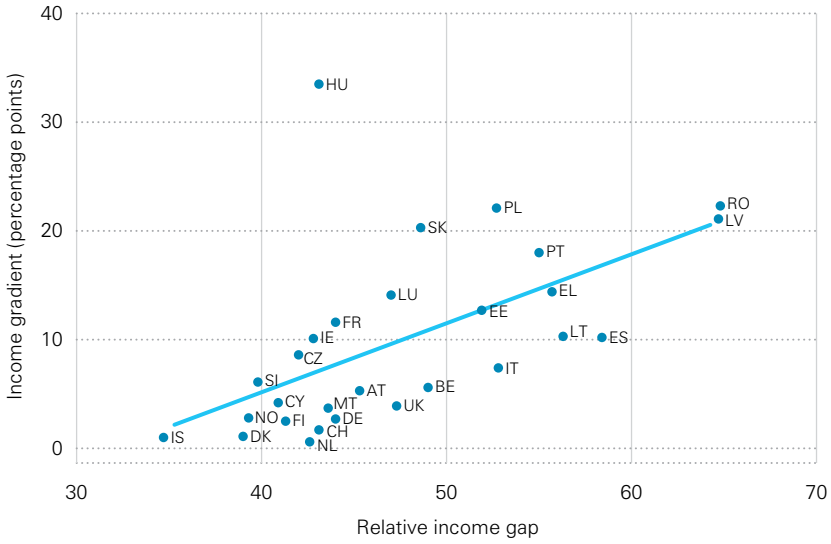
Figure 28 Income inequality and income gradient in possession of books



R-squared=0.29

Source: EU-SILC 2009.

Figure 29 Income inequality and income gradient in going on school trips



R-squared=0.32

Source: EU-SILC 2009.

Box 6 Who is missing from the surveys?

The analysis in this *Report Card* has drawn, wherever possible, on the best available child surveys, in order to reflect the voices of children themselves. However, while they represent the best sources available, all surveys have their limits, and so we need to ask: Do these surveys cover the life experiences of all children adequately? If not, which children are missing? Does this vary by country? And what does this mean for the analysis presented here?

Why are some children's voices missing?

School-based surveys, such as the OECD PISA survey and the HBSC study, have many advantages, but they are not able to collect information that is truly representative of the life experiences of *all* children. While acknowledging that some children will be left out of these surveys, it is important to know which ones are most often in the missing, or hidden, groups.

Children taught in schools that provide special educational support and children out of school altogether (e.g. in institutions, home taught, or who have severe health problems or physical disabilities) are missing from the studies.[i]

Children missing from the collection process include those who did not attend school on the survey day because they had health problems, had played truant, or had been excluded for disciplinary reasons.

Children who do not fully complete the survey often miss out questions they find complex or on too sensitive a topic, and sometimes a child does not answer all the questions because of time constraints or ability.[ii]

The *Report Card's* analysis of income gaps draws on household income surveys. Here, too, children can be missing if, for instance, families are homeless or in temporary accommodation; if the children live in undocumented or unregistered families or households; or if the parents are institutionalized.

Do the missing or hidden groups vary by country?

The missing or hidden child populations do vary by country. For example, the level of school enrolment at age 15 varies across the OECD countries. In 2012, drop-out rates in Mexico (around one in three) and Turkey (around one in five) were much higher than in the other OECD countries – so much so that their PISA results are not included in the *Report Card's League Table 2*. In other OECD countries, enrolment rates are around 100 per cent, though some countries had drop-out rates of 4 per cent or more.

There are also wide variations in the proportion of children in special schools across rich countries. Different legislative frameworks and differing definitions of special educational needs are factors in this variation. Indeed, the proportion of children with special educational needs is 1 per cent in Korea, compared with 10 per cent in the United States and almost 25 per cent in Iceland, where a very wide definition operates.[iii]

Hidden groups can also vary by country due to differences in the types and rates of 'at risk' populations in rich countries. For example, analysis of the Roma population in many European countries, and of indigenous populations in countries such as Canada and Australia, is central to understanding inequality in child well-being in those countries. These same groups are often underrepresented in data collections;[iv] however, improved survey design can address these issues.

What does this mean for the analysis of child well-being?

Many of these missing or hidden children are at a disadvantage across all the measures of child well-being examined in this *Report Card*. Truants, children who need tailored educational support, children who are ill, or children who are unwilling or unhappy about addressing questions they find sensitive, are among the most likely to be left behind. Therefore, we can be fairly sure that all estimates of inequality between those on the bottom rung of the ladder and their better-off peers are an underrepresentation of the reality, and that there are more children being left behind in education, health and income in rich countries than our data can show.

[i] Richardson, D. and N. Ali (2014). 'An Evaluation of International Surveys of Children', *OECD Social, Employment and Migration Working Papers*, No. 146, OECD Publishing, Paris.

[ii] OECD Social Policy Division (2012). CX3.1 Special Educational Needs (SEN), OECD Social Policy Division, Paris.

[iii] ibid.

[iv] Richardson, D. and N. Ali (2014). 'An Evaluation of International Surveys of Children', *OECD Social, Employment and Migration Working Papers*, No. 146, OECD Publishing, Paris.

SECTION 8
CONCLUSION

When are gaps too big?

This *Report Card* has documented the extent to which children at the bottom are allowed to fall behind their peers in rich countries.

The scale of the gaps between children at the bottom and in the middle can be very large. For example, the income of a child at the bottom end in Bulgaria, Mexico and Romania is only a third of that of an average child in the same country. In Sweden and Finland, the gap in reading between a 15-year-old student at the bottom end and the average student is the equivalent of more than three years of schooling.

Questions about when inequalities become so large as to become unfair defy easy answers; but the figures presented in this *Report Card* set out some stark facts about the degree to which children at the bottom are being allowed to fall behind their peers.

Smaller gaps are associated with improved outcomes

The evidence suggests that reducing bottom-end inequality is an effective way of improving child well-being outcomes for all.

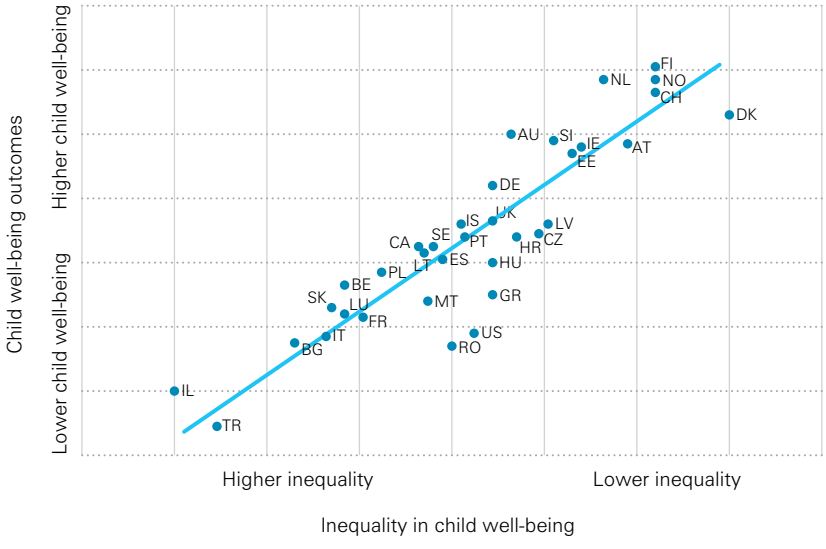
In Section 2, in addition to showing how far children at the bottom are allowed to fall behind their peers in their own country, we provide context for each of the league tables, by using an indicator that captures how many children fall below a basic minimum threshold in income, educational achievement, health or life satisfaction. *Figures 1–4* showed that, for each domain of child well-being, outcomes are better in countries with lower levels of inequality.

Figure 30 brings this evidence together, plotting the average rank of each country for the bottom-end inequality measures against its average rank on the four contextual indicators. The two are closely related: countries that rank higher on equality also rank higher on minimum standards. In other words, countries with lower bottom-end inequality in child well-being have fewer children living in poverty, fewer children with very low educational achievement, fewer children reporting frequent health complaints, and fewer children reporting very low life satisfaction. None of the countries with low gaps has traded equality off against minimum standards.

The persistence of gaps

Sections 3–6 showed that, in all countries, bottom-end inequality has persisted over time, and progress in reducing gaps has often been limited. Ten years might seem too short a time frame in which to expect gaps to be significantly reduced, but for the individual child this covers most of their childhood. Not only does this mean that they are being denied the best possible start in life, but that their opportunities to flourish in adult life are often being harmed, too.

Figure 30 Bottom-end inequality and child well-being outcomes



R-squared=0.80

Source: see page 44.

Governments, of course, face many competing demands on resources. Yet it is precisely because childhood is such a formative but short stage in the life course that taking children's rights seriously means acting with urgency to address the disadvantages faced by those children who are falling furthest behind.

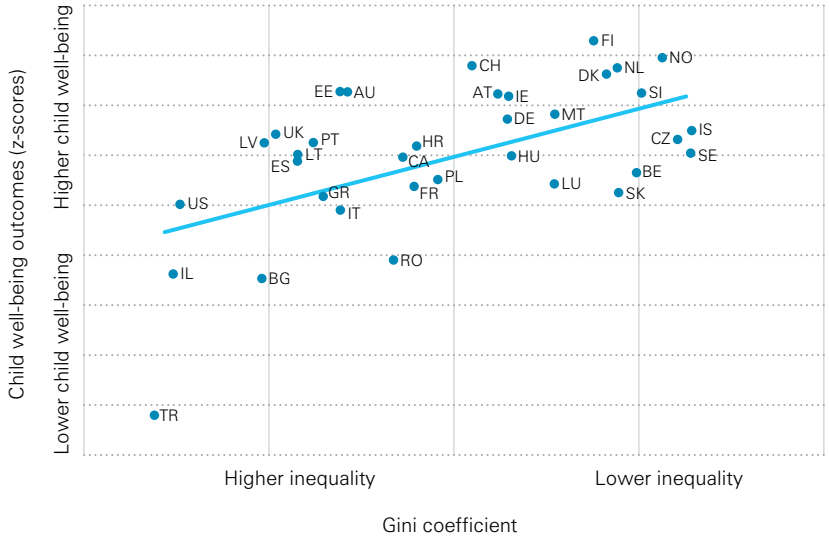
None of this is to underestimate the challenges that can be faced in addressing the issues explored in this *Report Card*. However, the fact that children fall less far behind in some countries than in others demonstrates that large gaps are not inevitable.

How inequality affects child well-being

Inequalities in the 'adult world' often impact on the 'children's world'. Section 7 documents the strong association between family background and children's outcomes. This strong and persistent social gradient is linked to overall societal inequality, which affects the extent to which children are left behind.

It may, therefore, be the case that, for some countries, further progress in reducing inequalities in child well-being will require broad social and economic inequalities to be addressed. *Figure 31* shows the relationship between the mean proportion of children at the very bottom of our four domains and overall income inequality, as measured by the Gini coefficient. Indeed, as *Figure 31* shows, in the main those societies with more equal income distributions also tend to be those that do better at minimizing poor child well-being outcomes (top-right quadrant).

Figure 31 Income inequality and child well-being outcomes



Source: see page 44. Solt, F. (2014). 'The Standardized World Income Inequality Database (SWIID) Version 5.0'.

Addressing the gaps

The complex and varied policy frameworks found in rich countries mean that many different pathways for reducing bottom-end inequality exist. But analysis in this *Report Card* suggests the following principles and recommendations for governments to consider in strengthening child well-being:

» *Protect the incomes of households with the poorest children.* Boosting employment opportunities for parents, implementing progressive taxation and effective service provision all have a role to play. However, it is evident that large income gaps tend to go hand in hand with less-extensive social transfer systems.

- *Focus on improving the educational achievements of disadvantaged learners.* The Convention on the Rights of the Child requires recognition not just of the right to education, but also "achieving this right progressively and on the basis of equal opportunity". This means preventing children from falling far behind in their educational achievement. Evidence from the PISA surveys shows that there is no inevitable trade-off between reducing achievement gaps and overall outcomes, and so this agenda can be both fair and effective.
- *Promote and support healthy lifestyles for all children.* Promoting healthy lifestyles at an early age is likely to pay short- and long-term dividends, but the fact that such large relative child health gaps exist in many countries is a cause for concern. This is particularly so for inequalities in physical activity, given that these seem more tightly bound to inequalities in income. This would suggest that there is particular scope for governments to do more to open up opportunities for less-affluent children to participate in physical activity in and out of school. Evidence from the EU-SILC shows that low income is a barrier to participation in extra-curricular activities in European schools.
- *Take subjective well-being seriously.* Data gathered over a period of more than 10 years for the HBSC survey show stable patterns of inequality in children's life satisfaction. While this stability confirms that subjective well-being data reveal meaningful information about children's lives in rich countries, the fact that some countries have had persistently large gaps is a cause for concern. Moreover, the findings that children with low life satisfaction are more likely to be exposed to risky health behaviours and outcomes underlines the fact that subjective well-being also matters for health and education.
- *Place equity at the heart of child well-being agendas.* The leave-no-one-behind principle should form the foundation of future social strategies. The evidence presented in this *Report Card* suggests that to improve overall child well-being the most disadvantaged must not be ignored.

Better monitoring and measurement of child well-being

Producing better data for informed public debate and a more comprehensive picture of child well-being is essential. To this end we recommend:

- *The availability, timeliness and usefulness of information about the well-being of children in rich countries should be improved.* As part of this process, governments and national statistical agencies should continue to work together more closely to harmonize surveys, wherever possible, in order to allow for fruitful cross-national comparison of child well-being outcomes and to foster cross-national policy learning.
- *Data sets should track children through different stages of their life.* Such analysis is particularly powerful for an exploration of the temporality of child well-being and the factors that shape child well-being. Governments should increase their support for these longitudinal data sources.
- *Children's voices should be built into data-collection processes.* While children's voices are heard more clearly than ever before in the key data sets used in this *Report Card*, further efforts can still be made to capture child-derived measures of well-being more systematically and to understand better the particular contexts in which child well-being improves and worsens. Children need to be able to shape the questions asked in surveys of their own lives and well-being.

INTERNATIONAL ABBREVIATIONS

International abbreviations (ISO) for countries covered in the *Report Card*

AT	Austria
AU	Australia
BE	Belgium
BG	Bulgaria
CA	Canada
CH	Switzerland
CL	Chile
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
ES	Spain
FI	Finland
FR	France
GR	Greece
HR	Croatia
HU	Hungary
IE	Ireland
IL	Israel
IS	Iceland
IT	Italy
JP	Japan
KR	Republic of Korea
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
MX	Mexico
NL	Netherlands
NO	Norway
NZ	New Zealand
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
TR	Turkey
UK	United Kingdom
US	United States

DATA SOURCES – THE LEAGUE TABLES

League Table 1 – Income

Data refer to children aged 0 to 17.

Sources: The calculations for *League Table 1* are based on micro-data from the European Union Statistics on Income and Living Conditions (EU-SILC) 2013 for European Union countries and Iceland, Norway and Switzerland.

For the remaining countries:

- Australia: Household, Income and Labour Dynamics in Australia 2013;
- Canada: Canadian Income Survey (CIS) 2013. The 2007 estimates (Figure 5) are based on the Survey of Income and Labour Dynamics (SLID) 2007 (from Luxembourg Income Study). The CIS and the SLID use different methodologies, and so the results are not directly comparable;
- Chile: La Encuesta de Caracterización Socioeconómica Nacional (CASEN) 2011;
- Israel: Household Expenditure Survey 2012 (from Luxembourg Income Study);
- Japan: Ministry of Health, Labour and Welfare's Comprehensive Survey of Living Conditions 2013;
- Mexico: Household Income and Expenditure Survey 2012 (from Luxembourg Income Study);
- New Zealand: Household Economic Survey 2013/2014 (estimates taken from B. Perry, *Household Incomes in New Zealand: Trends in indicators of inequality and hardship, 1982 to 2014*, New Zealand Ministry of Social Development, Auckland, 2015);
- Republic of Korea: Household and Income Expenditure Survey and Farm Household Economy Survey 2013;
- Turkey: Income and Living Conditions Survey 2013;
- United States: Current Population Survey 2013, Annual Social and Economic Supplement (from Luxembourg Income Study).

League Table 2 – Education

Data refer to children aged 15 (between 15 years 3 months and 16 years 2 months).

Source: The calculations for *League Table 2* are based on micro-data from the OECD Programme for International Student Assessment (PISA) 2012.

Mexico and Turkey are excluded from the main ranking because of low school enrolment rates of 15–19-year-olds in 2011 (56 per cent in Mexico and 64 per cent in Turkey).*

More detailed information on the OECD PISA survey can be found at: www.oecd.org/pisa and in OECD (2014). *PISA 2012 Technical Report*, OECD Publishing, Paris.

League Table 3 – Health and League Table 4 – Life satisfaction

Data refer to children aged 11, 13 and 15, except in Australia (age 13–14).

Source: The calculations for *League Table 3* and for *League Table 4* are based on micro-data from the Health Behaviour in School-aged Children (HBSC) 2013/2014.

Data from the 2009/2010 cycle of the HBSC are used for Israel, Turkey and the United States.

Detailed information on HBSC can be found at: www.hbsc.org

Identical survey questions from the 2014 Australian Child Wellbeing Project (ACWP) are used for Australia.

For more information about ACWP see: www.australianchildwellbeing.com.au

League Table 5

League Table 5 summarizes League Tables 1–4 and thus uses all the above sources.

* http://www.oecd.org/edu/educationataglance2013-countrynotesandkeyfacttables.htm

DATA SOURCES – THE BACKGROUND PAPERS

The original research for this report, including further methodological explanations, can be found in the Innocenti Working Papers detailed below and available at www.unicef-irc.org

Aleman-Diaz, A., E. Toczydlowska, J. Mazur, D. Frasquilho, M. Melkumova and G. Holmqvist (2016). 'Why Do Inequalities Matter? A look at the evidence', *Innocenti Working Paper 2016-06,* UNICEF Office of Research – Innocenti, Florence.

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4. UNICEF (2010). 'The Children Left Behind: A league table of inequality in child well-being in the world's rich countries', *Innocenti Report Card 9*, UNICEF Office of Research, Florence, p. 3.

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