# *Chapter 2* *

## *Inequalities of income, wealth and well-being*

What lies behind the increase in income inequality in most advanced countries over the last three decades? What is the picture in key emerging economies? Has the growth of income inequality been mirrored by rising inequalities of wealth, well-being and opportunity? This chapter charts the drastic rise of income inequality in OECD countries since the 1980s, examining the key drivers over the short and longer term with a focus on the role of technological change, reforms to labour market institutions and the advance of globalisation. The chapter also considers the more heterogeneous picture found in key emerging economies where overall, despite declines in some places, inequality remains at very high levels. It then goes on to explore trends in inequalities in wealth and such important determinants of well-being as access to employment, education outcomes and health. Finally, the chapter looks at how multidimensional inequalities tend to be mutually reinforcing, as is suggested by their concentration in disadvantaged areas.

* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

The decline in aggregate productivity growth has taken place against a backdrop of rising interpersonal inequalities of income, along with large wealth and well-being disparities in several OECD economies. In many countries, people have not seen their real incomes rise for several years (in some cases, decades), and the gap between rich and poor has widened, with those at the top capturing the 'lion's share' of the income growth. Part of the rise in income inequality over recent years reflects developments during the crisis and its aftermath, which hit the incomes of those at the bottom hardest. Over the longer-term, however, structural adjustments engendered by skill-biased technological change, increased economic integration, and changes to labour market institutions - alongside several other factors - have also contributed to the rise in inequality. In terms of well-being the picture is starker still, as in just about every area of life - whether it be educational attainment, life expectancy, or employment prospects - success seems disproportionally determined by socio-economic status, wealth and assets, sex, age or the places where people live.

Drawing on recent OECD analysis of trends in inequalities of income, wealth and well-being this chapter argues that:

- Income inequality rose in most advanced economies over the past three decades reflecting long-term structural factors, including technological progress, and changes in product and labour market regulations, institutions and policies.

- Income inequality has continued to increase in many advanced economies over recent years as the incomes of those at the bottom have fallen behind in the wake of the crisis, and the cushioning role of redistribution policies has become weaker.

- In several emerging markets inequality has shown signs of narrowing, albeit from far greater heights than in advanced economies.

- The distribution of wealth is considerably more unequal than that of income, and has likely become more unequal since the crisis in some countries. High wealth inequality may have potentially important consequences for equality of opportunities and for patterns of growth, but further work is required to fully understand these effects.

- There is great divergence in outcomes across a broad range of well-being dimensions in OECD countries. Many of these multidimensional inequalities tend to cumulate with each other in disadvantaged regions.

This chapter is organised as follows. It first examines trends in income inequality and its drivers over the short and longer-term in OECD countries and selected emerging market economies, before considering inequality of wealth (Section 1). It then goes on to examine inequalities of well-being, considering some of their causes and their distribution across regions (Section 2).

## 2.1 Inequalities of income and wealth

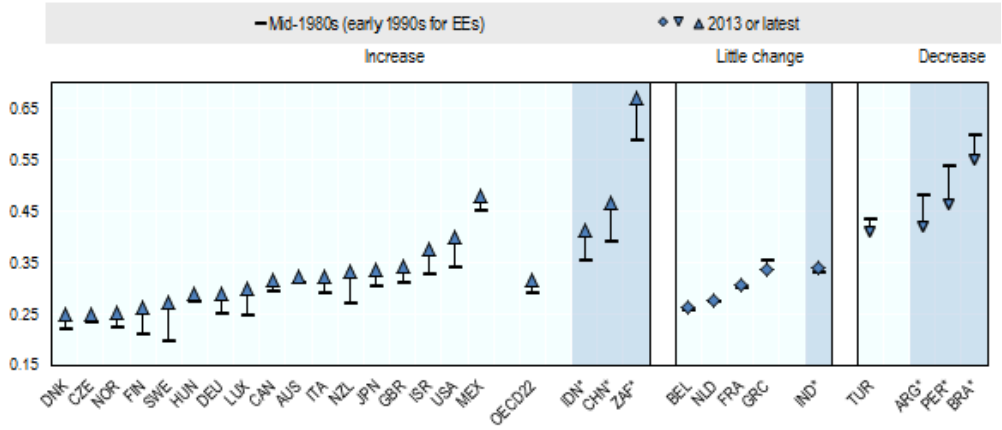
### *2.1.1 Income inequality has risen in most advanced economies, whilst in several emerging markets it has shown signs of narrowing in recent years, albeit from far greater heights.*

Income inequality has risen in a majority of advanced economies over the last three decades. In the mid-1980s, the top 10% of the income distribution in OECD countries earned around seven times the income of the bottom 10%. However, by 2013 that ratio had increased markedly to almost ten times. Over the same period the Gini co-efficient[8] was up by some 10% in the OECD area as a whole, from 0.29 to 0.32 (**Figure 2.1**).

8 This standard measure of inequality ranges from 0 when everybody has identical incomes and 1 when all the income goes to only one person.

**Figure 2.1 Income inequality increased in most OECD countries**

Gini coefficients of income inequality, mid-1980s (early 1990s for emerging economies) and 2013, or latest available year




*Note*: "Little change" in inequality refers to changes of less than 1.5 percentage points. Data year for 2013 (or latest year): Data refer to 2014 for China, 2013 for Finland, Hungary, Netherlands and the United States and India, 2011 for Canada, Chile, Israel, Turkey and Brazil, 2010 for Indonesia, 2009 for Japan, and 2012 for the other countries. Data for Argentina, Brazil, China, India, Indonesia, Peru and South Africa (different background) come from external sources are not strictly comparable with the OECD Income Distribution Database data. The Gini coefficients are based on equivalised disposable incomes for OECD countries, and per capita incomes for other countries except India and Indonesia for which per capita consumption was used. Mid-1990s data for Peru and Indonesia refer to 1997 and 1996 respectively.

Source: OECD Income Distribution Database (IDD), www.oecd.org/social/income-distribution-database.htm, for OECD countries. World Bank, Poverty and Inequality Database for India. Statistics Indonesia (Susenas) for Indonesia. SEDLAC database for Argentina Brazil and Peru. National Bureau of Statistics of China for China. National Income Dynamics Survey, for South Africa.

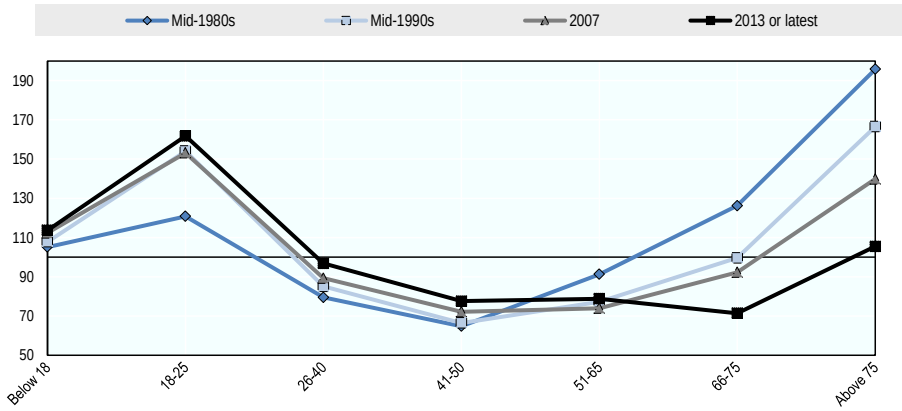
The growth in income inequality over this period was the result of a surge in top incomes accompanied by stagnation at the bottom of the pile. In broad terms, the increase in income inequality was the result of both rapid growth in incomes at the very top of the distribution, particularly amongst the top 1% (OECD 2014), and relatively stagnant income growth - punctuated by occasional periods of decline in real terms during recessions - at the bottom.

Yet, despite the overall increase, the evolution of income inequality was far from uniform across OECD countries. Sweden (with a Gini-coefficient moving from 0.20 to 0.28), the US (from 0.34 to 0.40), and New Zealand

(from 0.27 to 0.32, which, however, mostly happened prior to 2000[9]) all experienced significantly high increases in inequality, albeit from very different starting points. Countries like Belgium (hovering around 0.26) and the Netherlands (from 0.27 to 0.28) and the UK (around 0.34) experienced very little change. The average also conceals the fact that distinct groups fared differently within countries, with the working-age population tending to bear the brunt of increased inequality (consistent with rising unemployment in the last years of the period. The widening of the income distribution has been accompanied by a shift in the age profile of income poverty, with young people replacing the elderly as the group most at risk of relative poverty, a trend which began to emerge in the mid-1980s (**Figure 2.2**).

**Figure 2.2. The risk of income poverty has shifted from the elderly to the young**

Relative poverty rate of the entire population in each year = 100, mid-1980s to 2013, or latest available year




*Note:* OECD unweighted average for 18 OECD countries for which data are available from the mid-1980s: Canada, Denmark, Finland, France, Germany, Greece, Israel, Italy, Japan, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Sweden, Turkey, the United Kingdom, the United States. Relative poverty defined as having disposable income below 50% of the median income.

Source: OECD Income Distribution Database (IDD), www.oecd.org/social/income-distribution-database.htm.

Capital income became a greater source of household income, but mainly in rich households. In terms of income components, changes in the

9 The post-2000 decline in New Zealand's Gini co-efficient was the result of concerted policy action.

earnings distribution account for most but not all of the trends in household income inequality. The distribution of capital income, in particular, grew more unequal in most OECD countries in the two decades up to the crisis. However, since the capital share in income remained below 10%, on average, the contribution of capital income to overall income inequality remained low when compared with labour earnings (OECD, 2011 and Chapter 3 from OECD, 2016).

The picture is quite heterogeneous in emerging economies. Most EMEs recorded dramatic reductions in absolute poverty in recent decades, but this has not always coincided with a reduction in inequality. The available data[10] on inequality *within* emerging markets show that from the mid-1990s, the Gini-coefficient increased in a number of prominent emerging markets, most notably in South Africa (from 0.59 to 0.67), reflecting a rise in unemployment and wage disparities (Leibbrandt et al., 2010; ILO, 2015); and China (from 0.39 to 0.47), following the progressive transition to a market economy.[11] In contrast, several of the largest economies in Latin America, like Brazil (from 0.60 to 0.55) and Peru (from 0.54 to 0.46), experienced sustained declines over the period, as a result of the extension and better targeting of government transfers and a decline in the gap between high and low-skilled earnings (OECD 2015a).

Even in those emerging countries where income inequality is falling, the levels are high by OECD standards. Regardless of the direction of travel, in almost all cases, the levels of inequality in emerging economies remain considerably higher than the OECD average, above or at best close to the level seen in the most unequal OECD countries. Looking at a selection of emerging countries highlighted in **Figure 2.1**, the most recent Gini-coefficient scores of Brazil, South Africa and China all stand some way above the OECD average, although they are close to the levels observed in

10 It is important to stress that the evidence on inequality in household economic resources in emerging countries is very patchy, and that not all data are perfectly comparable with those for OECD countries. The data for the OECD countries are based on the OECD standardised income concept, while other data for emerging countries are based on different concepts; in particular, those for Indonesia and India are based on consumption, which is likely to underestimate the level of inequality as compared to income data.

11 Although in the case of China, the Gini seems to have peaked around 2008, decreasing slightly thereafter with faster wage growth.

the most unequal OECD countries (for instance in the United States [0.40], Turkey, [0.41]; Mexico, [0.48][12]; and Chile, [0.50]).

### *2.1.2 Growth in inequality has been exacerbated by the crisis and its aftermath which hit the incomes of those at the bottom hardest.*

The crisis hurt those on low incomes most. Real average disposable household income stagnated or fell in most OECD countries between 2007 and 2011. The declines were particularly striking in those countries which were struck most severely by the crisis. In Greece, the average household lost over 8% of its real net income per year[13], and in Spain, Ireland and Iceland, average annual losses exceeded 3.5%. [14]The collapse was due in large part to the loss in employment and, to a smaller extent, to falling wages. In many cases, the groups at the bottom of the income scale were hardest hit. Even in those countries where average income continued to grow during the crisis, half saw the top 10% do better than the bottom 10%. In several countries, including Austria, Denmark, France and the United States, incomes at the top increased in real terms over the period 2007 to 2011 whilst those at the bottom fell (OECD 2015a).

As market income inequality rose during the crisis, the cushioning role of redistribution policies was important. In the early years of the crisis, income inequality before taxes and benefits[15] increased substantially, but out-of-work benefits and other redistribution measures, succeeded in cushioning at least part of the rise, particularly in advanced economies. This reversed a long-term trend which had seen the impact of taxes and benefits in reducing inequality decline (**Figure 2.3**). Subsequently, however, soaring public debt led governments to shift their focus towards fiscal consolidation, limiting public spending and investment. Whilst income inequality before taxes and benefits has continued to rise, the cushioning effect of taxes and benefits has weakened in several OECD countries as a consequence of fiscal consolidation, accelerating the overall upwards trend in *disposable* income

12 In Mexico the tax reform approved in 2013 is expected to help reduce inequality going forward. Before the tax reform, Mexico was the OECD country where the tax and transfer system was doing the least to reduce income inequality.

13 Household equivalised disposable income, deflated by the CPI (http://stats.oecd.org/Index.aspx?DataSetCode=MEI_PRICES)

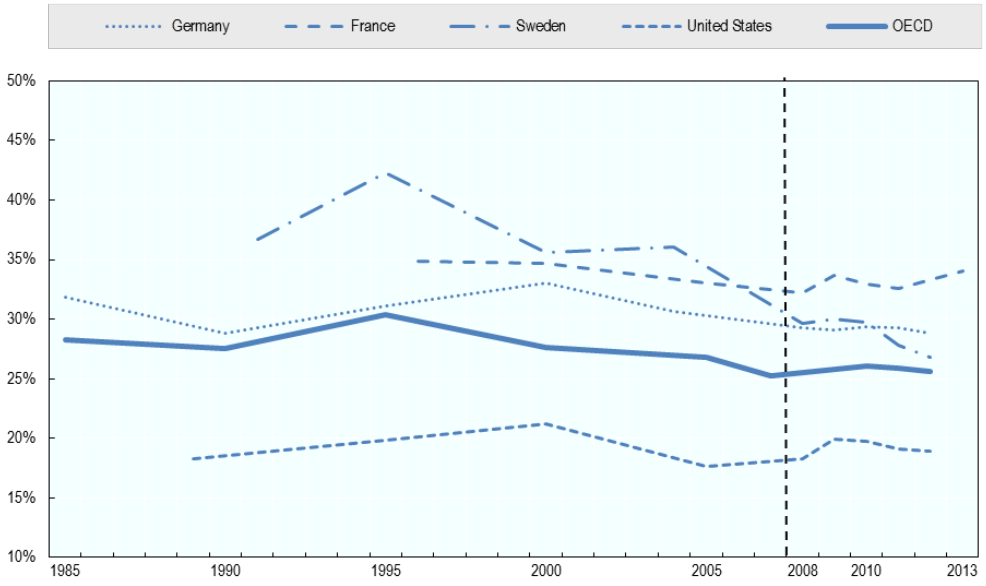
14 Because of data breaks, the comparison for Spain refers to 2008-2012. Due to methodological differences in the income definition and equivalence scale used, these numbers differ from those produced by INE or Eurostat.

15 Or what is usually termed: *market income inequality*.

inequality. In emerging economies, the redistributive cushioning effect of the tax and transfer system is much smaller than the one typically observed in OECD countries (OECD/CAF/ECLAC 2014). Though redistribution policies have been strengthened in many emerging economies, with several countries making their cash transfers more generous and others widening their coverage of unemployment benefits, there is considerable scope to make the tax system more progressive. Most emerging markets also have ample scope to increase tax revenues by promoting formal employment and enlarging the tax base. The level of social spending is also relatively low in emerging economies, though there is large country diversity, with very low spending levels in India and Indonesia, but spending just below the OECD average in Brazil (OECD 2015a).

**Figure 2.3 Redistribution became weaker in most countries until the onset of the crisis**

Percentage difference between inequality (measured by the Gini coefficient) of gross market income and inequality of disposable income, working age population




*Note*: OECD average: un-weighted and based on 10 countries for which data are available at all points (Canada, Denmark, Germany, Israel, Italy, Netherlands, New Zealand, Sweden, United Kingdom and United States).

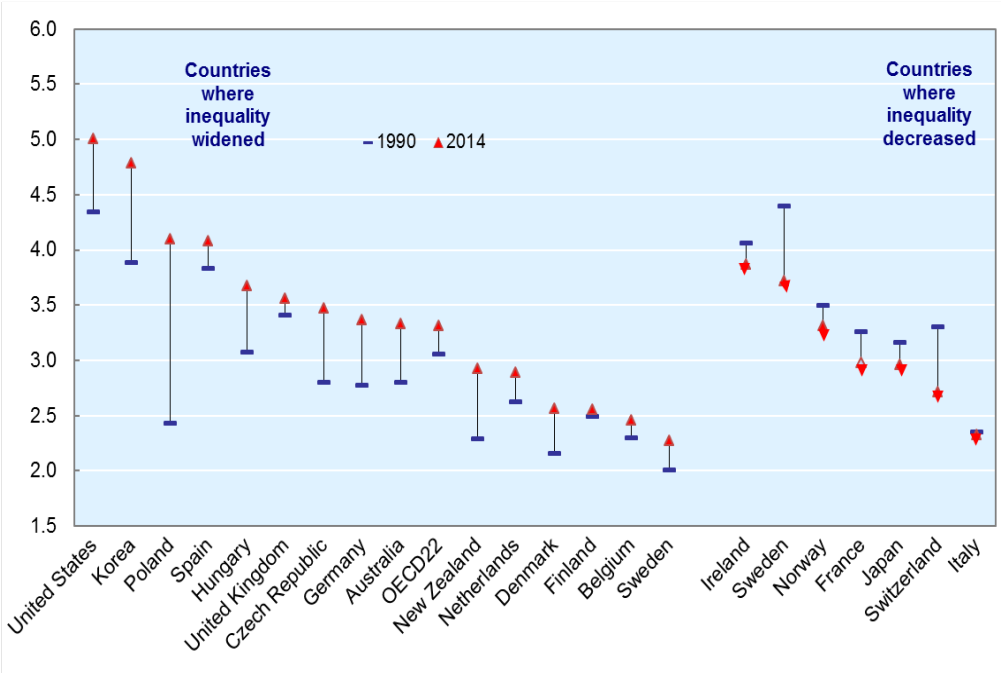
Source: OECD Income Distribution Database, www.oecd.org/social/income-distribution-database.htm.

### *2.1.3. Over the longer-term, growth in income inequality has been driven by a variety of factors, including technological progress and changes in product and labour market regulations, institutions and policies.*

Over recent decades, labour markets have been transformed by the interplay of globalisation, technological change and regulatory reform. These changes have had a major impact on earnings and incomes, as technological progress has shifted production processes in favour of skilled labour – the so called 'skill-biased technological change' hypothesis. If the supply of skilled labour does not increase at the same rate as the demand for it, this leads to increased wage dispersion between high-skilled workers and their lower-skilled counterparts. While technological change has driven increases in productivity, it may have also contributed to growing inequality, including through the reduction in the labour share in income. In an environment, characterised in a number of countries by a weakening of workers' bargaining power, this has been associated with increases in labour earnings inequality (OECD 2011). Overall, earnings dispersion has widened in the majority of OECD countries since the early 90s (Figure 2.4) – with the exception of France, Ireland, Italy, Japan, Norway, Sweden and Switzerland - as the earnings of the top 10% of most well-paid workers increased more than the earnings of the bottom 10% of least well-paid workers.

**Figure 2.4 Earnings inequality has widened in a majority of OECD countries from the mid-90s**

Ratio of the 90th to 10th percentile earnings




1. Earnings refer to earnings of full-time employees. The data shown are consistent over time, but not entirely comparable across countries owing to differences in pay reporting periods and coverage of workers.

2. Unweighted average of countries shown in the figure.

Source: OECD Earnings Distribution database.

The skill-biased technological change hypothesis tells part of the story, but other factors make the picture more complex. There is much talk of 'job polarisation' and the hollowing out of the middle of the job and wage distribution as a growing share of the workforce is working either in high-skill, high-wage jobs characterised by abstract tasks, or in low-skill, low-paid jobs characterised by non-routine manual tasks.[16] New OECD research

16 See Goos, Manning and Salomons, 2009; Fournier et al., 2012; Koske, I., J. Fournier and I. Wanner, 2012; OECD (2015b), *OECD Employment Outlook 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/empl_outlook-2015-en.

(Marcolin, et al., 2016) shows that the relationships between globalisation, technology and skills are complex. It suggests that comparatively higher skills are associated with higher employment in both non-routine (NR) and low routine-intensive (LR) occupations. Moreover, employment in all types of occupations, both routine and non-routine, is positively related to innovation, as measured by patents. Taken together, these results point to the existence of complex interactions between the routine content of occupations, skills, technology, industry structure and trade, which do not allow for a neat identification of "winners" and "losers" in the context of global value chains.

Structural changes in the labour market and labour market policies have been a key driver of income inequality trends. The last thirty years have seen major structural changes in employment. This is in part due to the growth in services and knowledge jobs and to a greater use of ICTs, and in part due to reforms of labour market regulations that have created greater flexibility at the "margin" by liberalising atypical labour contacts and thus contributing to labour market segmentation. Collectively these have affected the demand and supply drivers of non-standard forms of work. Temporary, part-time work and self-employment now account for about a third of total employment in OECD countries and nearly half of all jobs created since the mid-1990s (OECD 2015a). Naturally, such non-standard work need not be poor quality, and many workers have benefitted from the associated improvement in opportunities to enter the labour market. Yet, it is also the case that many non-standard workers are worse-off in several aspects of job quality, such as earnings, job security or access to training. In particular, low-skilled temporary workers face substantial wage penalties, higher earnings instability and slower wage growth. Additionally, more than half of non-standard workers are the main breadwinners in their household, so the growth of this type of work can lead to worsening income inequality.

Even prior to the crisis, reforms to tax and benefit systems had reduced their redistributive effectiveness. Taxes and benefits became less redistributive between the mid-1990s and the crisis. At present, cash transfers and income taxes in OECD countries reduce income inequality by slightly over one quarter among the working-age population, down from 30% in the mid-1990s. The main reasons for the decline in redistribution prior to the crisis are found on the benefit side: cuts to benefit levels, tightening of eligibility rules to limit social protection expenditure, and the failure of transfers to the lowest income groups to keep pace with earnings growth, all contributed. This loss in redistributive capacity has been felt most keenly by low-income working-age households (OECD 2011).

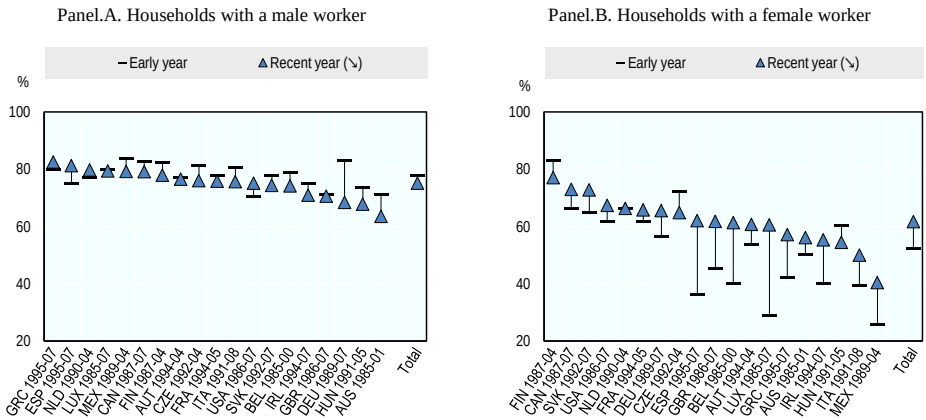
Rising or persistently high inequalities in emerging market economies share many of the same roots as those seen in OECD countries, but also

have specific drivers. The underlying causes of pressures on income distribution and redistribution – technological change, globalisation, structural labour market change, labour market regulations – affect advanced and developing economies alike, albeit via different channels. Some drivers are, however, specific to emerging economies. Despite enormous progress, the size and persistence of the informal sector, the existence of informal labour relations in the formal sector, access to and the quality of education, discrimination based on gender or ethnic origin, or widespread regional divides all weigh heavily on inequality. Another factor contributing to high income inequality in these countries is the limited role of redistribution mentioned above.

In many instances, the rise in income inequality would have been worse were it not for improved access to education and higher female participation in the workforce. The expansion of education and the rise in the supply of skilled workers contributed to offsetting the increase in wage inequality which resulted from technological progress and labour market changes. Raising the skill level of the labour force had a significant positive impact on employment growth. In a similar vein, the increase in women's employment had an equalizing effect on distribution of incomes over the past few decades. If the proportion of households with working women had remained at the levels of 20 to 25 years ago, income inequality would have increased by almost 1 Gini point *more* on average across the OECD (OECD, 2015a). Substantial progress has also been made in narrowing women's education, employment participation, pay and career gaps with men and this has put a brake on rising inequality. Despite this progress the size of the gender gap regarding labour force participation and earnings is still large in many OECD countries (**Figure 2.5**).

**Figure 2.5 Gender gaps decreased, but still persist**

Changes in male/female labour participation among households




*Note:* Sample restricted to households with a working-age head (25-64). A male/female worker refers to someone who is either the head or spouse in a household.

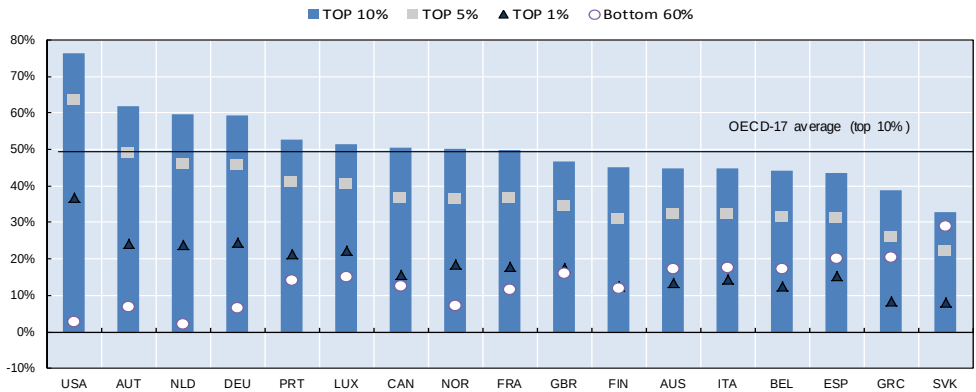
Source: OECD Secretariat calculations from the Luxembourg Income Study (LIS).

### *2.1.4. The distribution of wealth is considerably more unequal than that of income.*

Across the OECD, wealth is much more unequally distributed than income. On average, the top 10% (of households) accounts for about 50% of total household wealth, while the top 10% (of individuals) accounts for about 25% of total household income. Similarly, across those OECD countries for which data are available, the top 5% and 1% wealthiest households own 37% and 18% of total household wealth respectively, while the bottom 60% of the distribution owns only 13% of total household wealth (**Figure 2.6**). Wealth inequality is very large in the United States, Austria, the Netherlands and Germany, where the share of the wealth distribution of the top percentiles is significantly above the OECD average.

**Figure 2.6 The top 10% own around 50% of net wealth on average across the OECD**

Wealth shares of top percentiles of the net wealth distribution 2010 or last available year




*Note:* Countries are ranked from left to right, in decreasing order of shares of wealth owned by the top 10%. The bottom 60% refers to the share of quintiles I, II and III in the total wealth.

Source: Sources: OECD Wealth Distribution Database.

Part of the large differences in household wealth within countries is explained by socio-economic determinants such as education, age and gender. In particular, evidence drawn from the OECD Wealth Database shows that human capital is correlated with higher wealth as well as higher incomes and earnings: households headed by a college graduate have a net wealth that, on average, is significantly higher than households whose head has an upper secondary education, and more than three times higher than those with only a primary education. In terms of age patterns, over-indebtedness mostly affects households with a young head, while both the prevalence and depth of debt are particularly high in the United States, the Netherlands and Norway (OECD 2015a). Finally, single male households hold significantly higher levels of financial wealth than single female households (OECD 2015c).

From a longer-term perspective, there is evidence that both household wealth and its concentration have increased markedly over the last four decades. Household wealth as a share of national income almost doubled in eight OECD countries since 1970, and according to Piketty's estimates, the concentration of wealth[17] has increased markedly in Sweden, the United

17 As captured by the shares of the top decile and the top centile of the wealth distribution. Piketty T. (2014). *Capital in the 21st Century*, Harvard University Press.

Kingdom and the United States over the past three decades. The rise recorded over this period stands in sharp contrast to the long-term decline recorded in the interwar period. Higher prices of shares and housing relative to consumer goods have been one of the main drivers of both higher household wealth and its increased concentration (OECD 2015a). This trend was not reversed by the financial crisis, and in the United States, the Netherlands and the United Kingdom, wealth inequality at the top of the distribution has grown, while smaller changes have been observed in Australia, Canada and Italy.

The distribution of wealth may have important implications for equality of opportunities and economic growth, but further work is required to fully understand these effects. How wealth is distributed is important for equity and inter-generational mobility, as low asset holdings have been shown to affect the ability of poorer and lower middle-class households to invest in human capital; this implies that the outcomes of one generation frame the opportunities of the next. Such inequalities can also be exacerbated by financialisation (i.e. the increasing weight of financial activities and institutions in our economies), as people with higher incomes have benefitted more than their poorer counterparts from credit-financed investment opportunities, (Denk and Cazeneuve-Lacroutz, 2015), leaving lower-income groups with fewer opportunities to invest in housing, education and other assets. At the same time, a high concentration of wealth can also weaken potential growth, by encouraging the under-utilisation of individuals' potential, by discouraging risk-taking and reducing the resilience of the economic system to shocks (OECD 2015a).

## 2.2 Inequalities of well-being

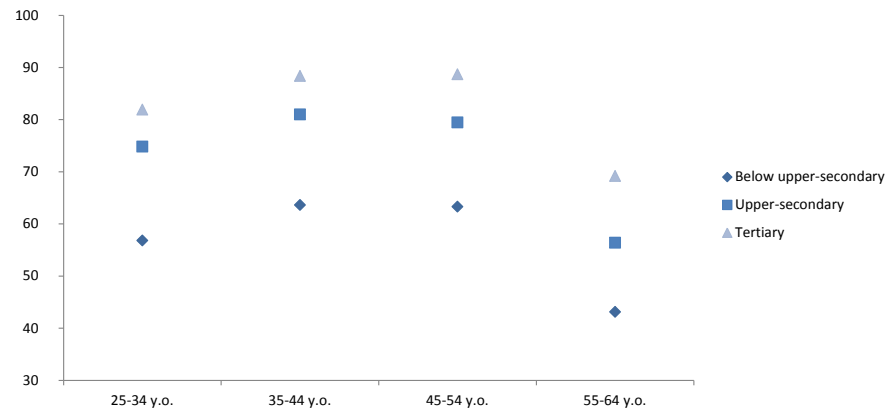
### *2.2.1 There are large gaps in outcomes across a broad range of well-being dimensions.*

Well-being outcomes, beyond those pertaining to household economic resources, are also unevenly distributed, with evidence of steep social gradients. Living standards, broadly defined, encompass non-income dimensions that matter to people such as health status, access to jobs, skills, social relations, and the degree of exposure to environmental hazards. Large inequalities persist in the distribution of all well-being outcomes across OECD countries. In particular, in all countries, the better-off report better health status, benefit from greater access to training opportunities, and can expect their children to attain stronger educational results. In many other areas too, from access to quality public services, to opportunities to succeed in life, the distribution of most well-being outcomes tends to be correlated with, and compounded by, income inequality.

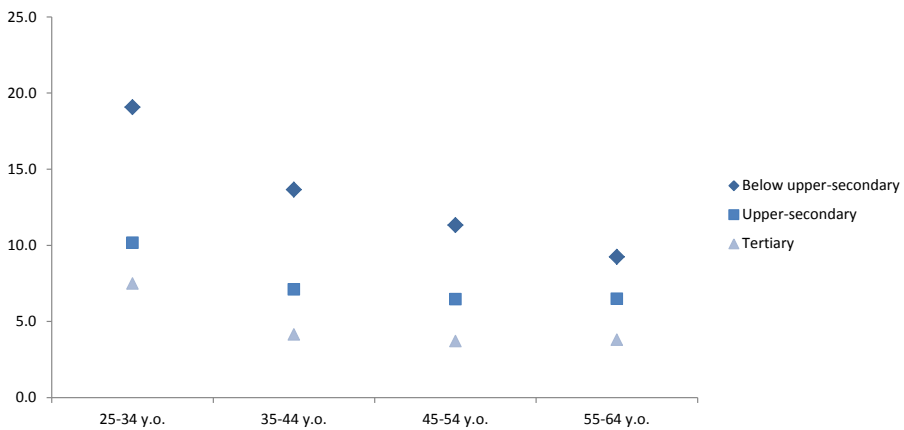
Access to jobs constitutes a fundamental aspect of well-being, but varies significantly across educational groups and people of different ages (**Figure 2.7**, upper panel). Better educated people display higher employment rates at all ages. Employment differentials between the most educated and the least educated are broadly constant across the four age groups, while the employability premium from upper-secondary to tertiary education is higher among the elderly. Higher education also reduces the probability of being unemployed, although this impact decreases with age (**Figure 2.7**, lower panel). The risk of being unemployed is almost three times higher among low-educated youth than tertiary-educated youth, while this proportion stands at two among the oldest individuals.

**Figure 2.7 Job opportunities vary significantly across educational groups and people of different age**

Employment rates by education and age, 2014




Unemployment rates by education and age, 2014




Source: OECD (2015d), *Education at a Glance* 2015: *OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/eag-2015-en.

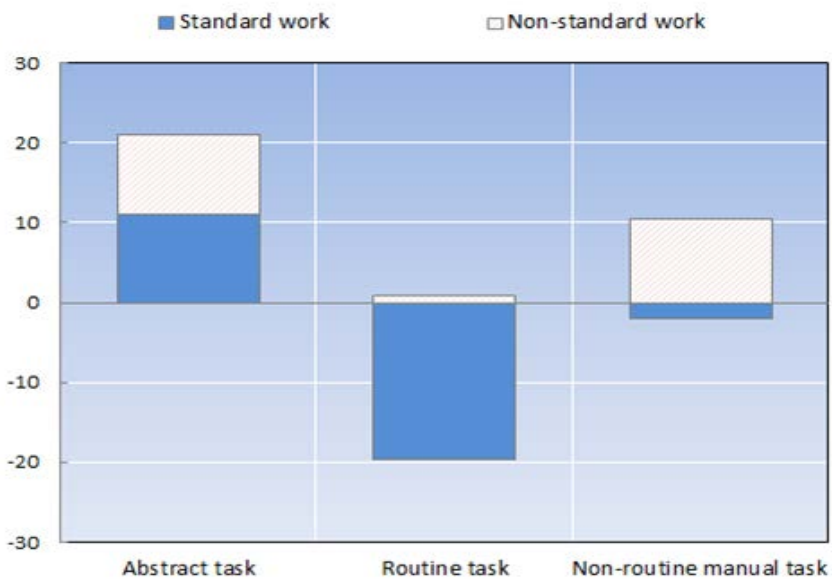
Job quality is also important to well-being, and some groups, like youth and low-skilled workers appear to cumulate many disadvantages on this front. For example, youth and low-skilled workers experience low employment rates and, once employed, low earnings, high job insecurity, and a poor working environment. This demonstrates the need to get both

structural and demand policies right, to enable young people to enter the work force and start on a career path.

The polarisation of jobs and wages and the impact of skill-biased and routine-biased technological change are likely to have increased economic insecurity for low-skilled and low-paid workers. As highlighted earlier, OECD evidence shows that there has been a large decline in the share of medium-skill jobs based on routine tasks, while the shares of both high-skill, high-wage, jobs and low-skill, low-wage, jobs have grown (Figure 2.8) (OECD 2015a). Over the past two decades, most employment losses took the form of standard work (i.e. full-time, permanent jobs), while a substantial share of jobs added were non-standard jobs, especially for the low-wage, low-skill, group.[18] This pattern suggests that the same economic and policy drivers that raise earnings inequality may also increase inequality along other dimensions of job quality.

**Figure 2.8 Non-Standard work contributed to job polarisation**

Percentage change in employment shares by task category, 1995/98-latest available year




18 Non-standard work includes temporary employment contracts which may imply considerable insecurity, particularly for workers who lack advanced skills that are in high demand.

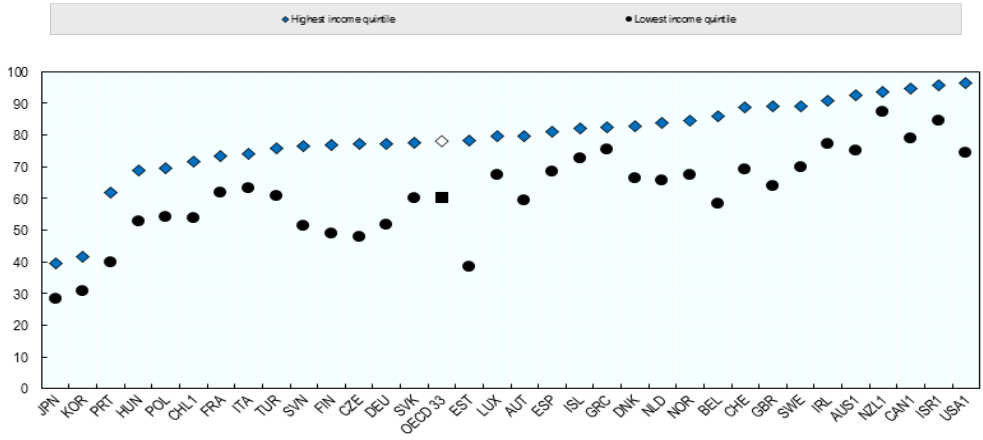
*Note*: Abstract occupations (ISCO88: 12-34); Routine (ISCO88: 41-42, 52, 71-74, 81-82 and 93); Non-routine manual (ISCO88: 51 83 and 91). The overall sample restricted to workers aged 15-64, excluding employers as well as students working part-time.

Source: OECD (2015a),

Large health inequalities are a cause for concern as health has an important impact on people's productivity, income and well-being. A stark social gradient exists for perceived health in OECD countries: while 78% of people with incomes in the highest quintile report being in good or better health, only 60% of those with income in the lowest quintile do so (Figure 2.9). Inequalities in self-reported health status are particularly large in Estonia, the Czech Republic, Finland, Belgium, Germany, the United Kingdom and Slovenia, where the gap in perceived health status between the highest and lowest income quintile is 25 percentage points or greater. By contrast, the gap is less than ten points in New Zealand, Greece and Iceland. At the same time, inequalities in people's ages of death according to their education are similarly striking.

**Figure 2.9 All OECD countries have a substantial gap in perceived heath between low and high-income groups**

Percentage of adults reporting "good" or "very good" health, 2013 or latest available year




Note: Data refer to 2014 for New Zealand; 2011 for Chile; and 2007 for Australia. Adults are generally defined as people aged 15 years and over. Results for countries marked with a "1" are not directly comparable with those for other countries, due to differences in reporting scales, which may lead to an upward bias in the reported estimates. The OECD average is population-weighted.

Source: "Health status", OECD Health Statistics (database).

Adopting an approach centred on multidimensional living standards helps to underline the extent to which different types of inequalities cumulate and reinforce one another. Taking education as an example, experimental OECD work shows that the income gap between people with upper-secondary education relative to those with primary education is on average 15%. Large though this gap is, it fails to capture the full extent of the education premium for those who have completed upper-secondary education relative to their primary-educated peers. Adopting an approach focussed on multidimensional living standards (Box 2.1), an experimental measure of well-being incorporating household-disposable income, longevity, and employment opportunities, the gap is three times larger (Figure 2.10). This suggests that inequality in multidimensional well-being across educational groups is much higher than inequality in income between these groups. While the living standards premium associated with moving from primary to upper secondary education is mostly explained by the effect of schooling on non-income dimensions (with longevity accounting for 28% of the total gap, unemployment for 38% and income for 34%), the gap in multidimensional living standards when moving from upper secondary to tertiary education is mostly explained by the household income gap.

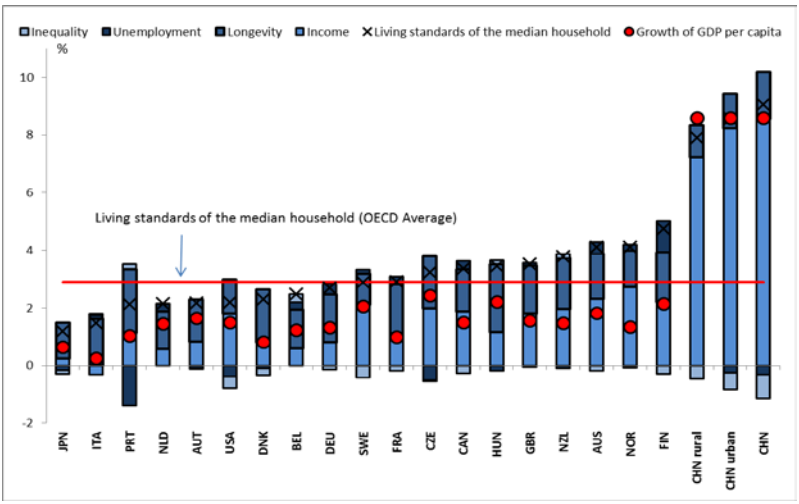
## Box 2.1. Research in Progress: Measuring Multidimensional living standards (MDLS)

Measuring multidimensional living standards (MDLS) is a complex undertaking. The OECD is still exploring robust ways of using the measure for policy purposes. Any inference drawn from the MDLS in this paper is done only for research purposes.

MDLS reflect outcomes in income and non-income components of well-being and their distribution across households. MDLS at aggregate level are computed in three steps: first, one needs to measure *income-based* living standards at the individual level. Second, it is necessary to bring one or several *non-income* dimensions into the analysis and measure these dimensions at the level of individuals or groups of individuals in order to combine them with money income. Lastly, the broader living standard measure is aggregated across individuals.

For measuring the **income dimension** of MDLS, gross household real disposable income has been chosen as the relevant indicator. Then, for **non-income dimensions**, *jobs and of health* were retained, and measured respectively by unemployment rate and life expectancy. Although these do not cover all well-being dimensions, they are highly significant determinants of people's life assessment. The second step entails the valuation of non-income factors using the method of "equivalent income" (Fleurbaey and Blanchet, 2013), which is defined as the *hypothetical income that would make an individual indifferent between her/his current situation in terms of non-income aspects of life and a benchmark situation*. The monetisation of the benefits from non-income components requires the computation of 'shadow prices'. These shadow prices can be based on several methods (see Boarini et al., 2015, for a review and Murtin et al., 2015, for in-depth analysis), but it is possible to reconcile results from various methods and obtain robust estimates that fall in a relatively narrow range. Based on these estimates, a reduction of the unemployment rate by one point is deemed to be equivalent to a gain in household income of 2%, and the increase in longevity by one year to an income gain by 5%. On a third step, MDLS measures are aggregated across individuals through the use of a generalised mean, which is equal to average living standards minus a penalty reflecting the inequality in living standards across individuals. Standard calibration is used to adjust the inequality penalty to the gap between average and median living standards, so that the resulting index of MDLS reflects the situation of the median household. A significant amount of empirical research has already been conducted in the area and continues to ascertain the robustness of results and the expansion of the measure to other dimensions of well-being and their distribution.

**The Figure below** displays estimates of the changes in MDLS over the past two decades for OECD countries as well as China (urban and rural). This figure graph shows that living standards for the median household in China increased by as much as 9% per year, as compared to less than 3% on average among OECD countries, during this period. This gap largely reflects much stronger growth in household disposable income, which increased almost 6 times faster in China than in OECD countries (about 8.6%[1] versus 1.4%). Among OECD countries, MDLS for the median household increased the most in Australia, Norway and Finland due to strong gains in income and longevity and lower unemployment. Overall, progress in longevity accounts for about half of the growth of MDLS for the median OECD household over the period. A similar conclusion is also reached by Murtin (2015) when valuing global progress in health over the 20th century.

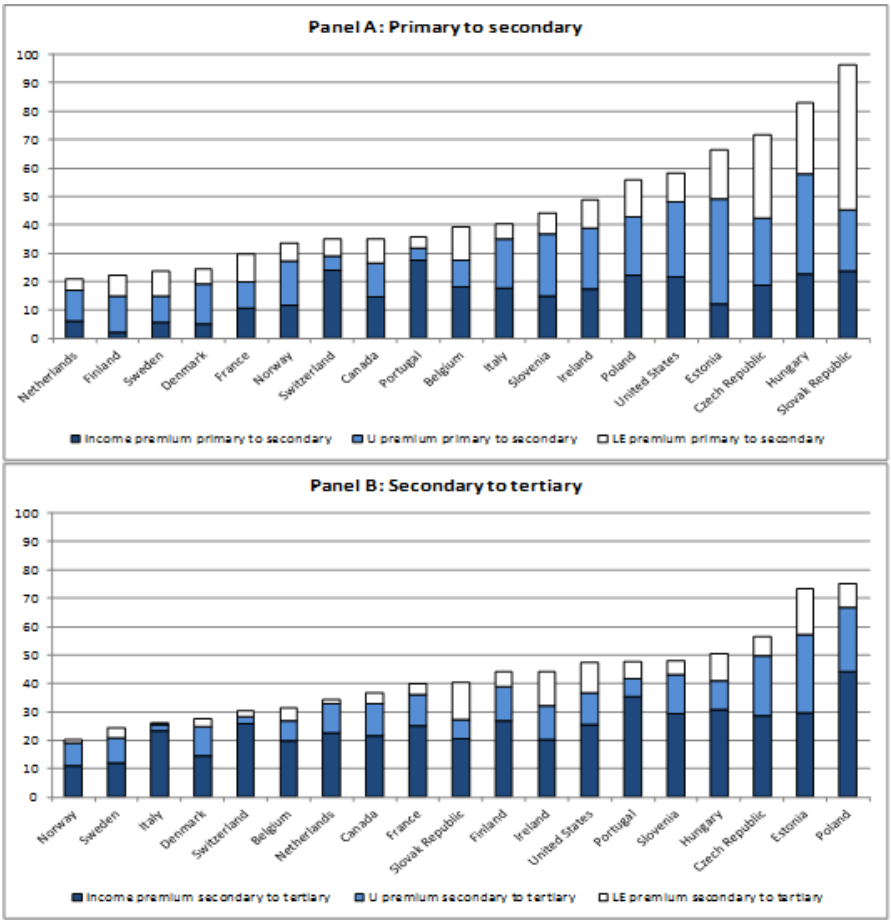



Source: OECD calculations based on Inclusive Growth Database.

Source: Fleurbaey, M. and D. Blanchet (2013). *Beyond GDP*. Princeton University Press; Boarini R., F. Murtin and P. Schreyer (2015), "Inclusive Growth: The OECD Measurement Framework", OECD Statistics Directorate Working Paper No. 64, OECD Publishing, Paris; Murtin F., R. Boarini, J. Cordoba and M. Ripoll (2015), "Beyond GDP: Is There a Law Of Shadow Price?", OECD Statistics Department Working Paper No. 63, OECD Publishing, Paris; OECD (2015e) *All On Board: Making Inclusive Growth Happen in China*, OECD Publishing, Paris; Murtin, F. (2015), *Health and Prosperity*, Palgrave McMillan.

Note: The basic approach towards the MDLS was discussed by the OECD Committee of Statistics and Statistical Policy in 2015 (STD/CSSP(2015)1). Since then, additional robustness tests (on the weights, variables included, model specifications) have been performed and were published in OECD Statistics Directorate working papers (Boarini et al., 2015 and Murtin et al., 2015). A third piece of research is forthcoming ("Multidimensional Living Standards: a Welfare Measure based on Preferences") and also currently subjected to an academic review process. It contains a meta-data analysis as well as a comparison with related empirical results, forthcoming in the American Economic Review (Jones and Klenow 2016) so as to establish convergent validity. Further tests may also be conducted when the measure is used in conjunction with policy variables. In line with academic standards and to ensure transparency and replicability of results, the data set used to derive components and weights of the MDLS is being made available on the OECD website.

**Figure 2.10 Inequality in MDLS across educational groups is much higher than inequality in income between these groups**




Source: Diaz, M. and F. Murtin (2016), Socio-economic Inequality in Living Standards, OECD Statistics Directorate Working Paper, No. 71, OECD Publishing, Paris.

### *2.2.2. Many multidimensional inequalities are spatially concentrated.*

How people fare in the many dimensions of well-being is to a great extent determined by where they live. The difference in the unemployment rate between the best and worst performing subnational entities (or regions) in the OECD area is almost twice as high as the difference between the best and worst performing OECD countries. Many OECD countries also feature

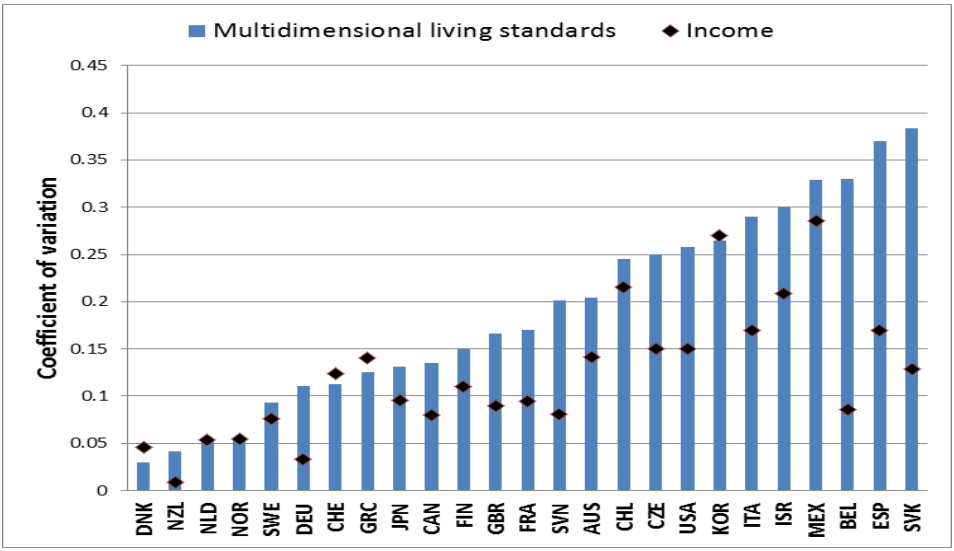
large differences in life expectancy and income levels between the best and worst performing regions. Additionally, the spatial disparities in productivity outlined in the previous chapter may have contributed to higher inter-personal income inequalities, due to limited mobility of the population across regions which in some cases has further declined due to problems in the housing market.

Taking into account the local conditions experienced by individuals is essential, as they affect opportunities to achieve better outcomes throughout life. In the case of education, for example, the availability of good schools for children can shape their future opportunities. Analyses for the United States show that average income in the neighbourhood has a large impact on individuals' future earnings capacity, an effect that is roughly half of that related to parental income (Rothwell and Massey, 2015). Intergenerational social mobility also differs substantially across cities in the United States and it is higher, on average, in less unequal and less spatially segregated cities with better primary schools (Chetty, R., N. Hendren, P. Kline and E. Saez, 2014). The fact that funding for local education relies heavily on local property taxes is probably one reason for such strong effects. Funding education through a "consolidated revenue fund" such as the case in Canada, provides more equal opportunity among children.

Spatial inequalities in multidimensional living standards within countries are much higher than spatial income inequalities. This reflects the correlation of well-being outcomes in space (Veneri and Murtin, 2015) that is depicted in **Figure 2.11**. When looking at regional disparities using the OECD's research on multidimensional living standards in a sample of 26 OECD countries, the highest regional disparities are observed in the Slovak Republic, Spain, Belgium and Mexico. Overall, existing disparities in health and unemployment rates amplify those that would be observed by looking at household income only. Regional disparities in the growth of multidimensional living standards between 2003 and 2012, as measured by the gap between the top and the bottom performing regions, were primarily driven by different trends in income and jobs.

**Figure 2.11 Regional disparities in MDLS are greater than inequalities in household disposable income**

Coefficient of variation (higher values mean larger disparities), 2012

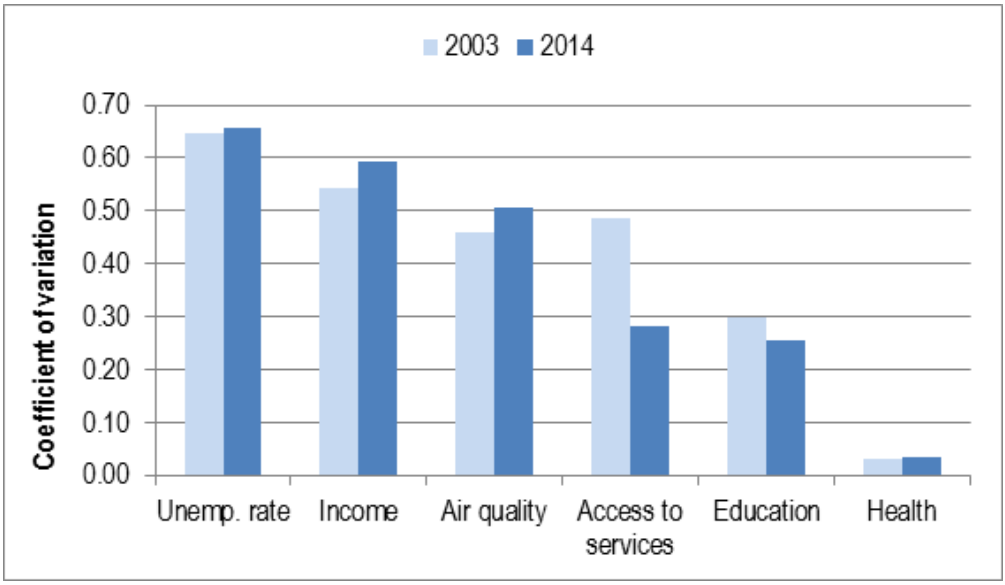



Source: Veneri, P. and F. Murtin (2015). Where is Inclusive Growth Happening? Mapping Multidimensional Living Standards in OECD Regions, forthcoming OECD Statistics Directorate Working Paper. Calculations based on OECD Regional Well-being database and national income surveys.

Over the past decade, regional disparities in the OECD have evolved differently across well-being dimensions. When considering the whole set of regions in 33 OECD countries, the largest regional disparities are those referring to unemployment rates, household income levels and air quality (share of people exposed to PM2.5), while disparities in terms of life expectancy are significantly lower. In terms of the changes in regional inequalities since the early 2000s, regional disparities in access to services and education have decreased, while disparities in household income, air quality, unemployment rates and life expectancy have increased (**Figure 2.12**).

**Figure 2.12 Regional disparities between OECD regions have evolved differently across well-being dimensions**

Regional disparities in well-being dimensions OECD (TL2)




Note: The higher the coefficient of variation, the higher is the level of regional disparities

Source: Elaborations on OECD Regional Database.

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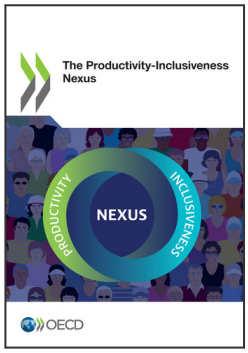


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