

## Chapter 4. From one generation to the next: Mobility of socio-economic status

*This chapter looks at intergenerational mobility in occupational status and earnings. It first investigates the extent to which occupational status is correlated across generations and provides evidence on its evolution over time. It then presents estimates of earnings mobility between fathers and sons for a broad range of OECD countries and emerging economies, as well as some results on the intergenerational mobility of daughters. The chapter decomposes earnings persistence into an educational and an occupational component. It also looks beyond individual earnings by exploring intergenerational social mobility in terms of household income. Finally, it discusses the transmission of earnings and wealth at different points of the distribution.*

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.

## Introduction

Concerns about the extent of equality of opportunity have triggered research on the extent to which an individual's economic outcome is independent of his or her family's socio-economic standing. A higher association of socio-economic status – that is, social class, occupational status, individual earnings or family income – means less mobility. Measuring mobility by the statistical association of income or earnings across generations is a rather recent literature, with most empirical work occurring since the 1990s as new longitudinal data has become available (see Chapter 2). More established is the measurement of mobility by the links between social classes, most often captured by the occupational status of fathers and sons.

This chapter discusses intergenerational mobility in terms of social class based on occupational status and in terms of earnings. Whether individuals obtain their social status through their own achievements or whether it is more likely to be inherited is a question that has generated a great deal of empirical research in sociology. The analysis of class mobility has many advantages in terms of data requirements, although international comparisons remain challenging because detailed occupations are coded differently across countries and over time. At the same time, data restrictions are much less stringent than for earnings or income since retrospective information on the father's occupation is more widely available. Occupations can provide an indication of the position an individual occupies in the economic system of production and classify individuals into social classes.<sup>1</sup>

Looking at social class, the sociological literature has often portrayed the United States through the lens of so-called “American exceptionalism”, whereby it was believed that in the US it is easier for children to choose occupations and careers different from those of their parents and that the class structure is less rigid than in other countries. This stands in contradiction with later findings in terms of earnings correlations, which highlighted the relative absence of mobility for the US compared, for instance, with Nordic countries (a similar finding to that found for intragenerational mobility in Chapter 2). Similarly, a debate emerged in the UK between findings from the sociological literature that emphasised the stability of intergenerational mobility and results in terms of intergenerational earnings that hinted at a declining trend (Blanden, 2013). While interrelated – the prestige of occupations is partly expressed in terms of earnings – social class and earnings mobility hence do not need to lead to the same country-specific results and conclusions. Both need to be analysed in detail.

The following main findings emerge from the analyses below:

- There is nothing inevitable about socio-economic advantage or disadvantage being passed from one generation to another. Earnings and social class mobility is high in Nordic countries, and the reverse is true in some central European countries. The cross-country variation shows that policies can make a difference in the degree of mobility.
- With two-thirds of individuals having a different social class than their parents on average across OECD countries, total absolute social class mobility based on occupation is high. Upward class mobility is more common than downward mobility on average.

- In the southern and some central European countries, upward mobility is low while downward mobility is above average. By contrast, downward mobility is low and upward mobility high in most other European countries, the US and Korea. The Nordic countries have above average levels of both upward and downward social class mobility.
- Despite the rise in inequality over the past decades, there is no particular evidence of a generalised decline in mobility over time. If anything, absolute social class mobility tended to decline over time in half of the countries studied and did not change much in the other half. There are no clear cross-country trends in earnings mobility depicted by the analyses as well as national studies, with a set of OECD countries becoming more mobile over time while others remain with the same levels or declining mobility over time.
- Those at the top of the distribution are effective in ensuring that advantage is passed on to their children. Children end up in similar occupations to their parents. Close to 50% of children whose parents are in the managerial class become managers themselves. There is also a sticky ceiling at the top of the earnings distribution with 40% or more of the sons of rich fathers remaining in the top quartile. The risk of sliding down from the top earnings quartile is particularly low in the US and Germany, as well as in Luxembourg, Hungary and the UK.
- There is also a high transmission of wealth from parents at the top of the distribution to help their children stay at the top. The share of wealth which is inherited increases greatly across the wealth distribution, especially in Belgium, France, Luxembourg and Spain. The value of inheritances and gifts received by households in the top quintile amounts, on average, to 72% of the mean net wealth across all households, while for those in the bottom quintile it represents less than 1.5%.
- There is less of a sticky floor than there are sticky ceilings, with 72% of people moving up the earnings ladder if their father was in the bottom quartile. In some countries -- the US, Germany and Luxembourg -- children of poor parents have more chances to remain stuck at the bottom of the distribution with 40% of the children remaining in the lowest quartile.
- Also in the middle, earnings prospects are partly determined by the parents' position in the earnings distribution. Sons with a father in the lower middle class are more likely to fall down to the bottom 25% than to reach the top 25%, particularly in Hungary and Germany.
- Overall, in absolute terms social class mobility is lower for women than for men, meaning that parents influence their daughters' social positions more than their sons'. At the same time, in relative terms, for earnings and, in particular for family incomes, intergenerational mobility for daughters tends to be more similar to that for sons.

The first section of this chapter presents estimates of absolute and relative intergenerational mobility of occupation. Absolute mobility captures the extent to which children's social class is different from that of their parents, while relative rates of mobility describe the chances of individuals to be in a certain class or income category, given their parents' classes or income of origin. This section also examines changes in

relative occupational mobility over time. The second section presents new and updated estimates for earnings mobility, captured by earnings elasticities between fathers and sons<sup>2</sup> for a series of countries published previously (OECD, 2010), and for additional countries where no information on intergenerational earnings mobility had previously been available. Most past and recent analyses relate to earnings of sons and fathers, as women have more career breaks, which makes estimating lifetime earnings more difficult. One novel contribution of the third section is the analysis and estimation of earnings elasticities also for daughters and so not just restricted to fathers and sons. This section also explores intergenerational persistence in terms of household income beyond individual earnings. Finally, this section discusses the transmission of high and low earnings and of wealth inheritance.

#### 4.1. The link between parents' and children's social class

This section investigates the extent to which social class is correlated across generations and its evolution over time. Using social class to examine mobility is important, because where an individual fits into society is largely determined by what that person does for a living and, in turn, this is influenced by what your parents did for a living. Class positions are largely determined by how employment relations affect important aspects of individuals' lives in terms of income security and chances of economic advancement but also in their degree of autonomy and control over their work.<sup>3</sup>

##### 4.1.1. Defining social class mobility based on occupation

There are several ways to investigate social class mobility in terms of occupations. The first possibility is to use a continuous measure to rank classes on a scale from 0 to 100 based on the prestige of the job. The second approach is to group occupations into large classes, such as professionals and the self-employed, and compare their class to the parents' class. These are categorical class schemas intended to measure relational issues. The third approach is a continuous measure, not based on occupational prestige or the relationship between education, income and occupation, but rather on patterns of social interaction. The three approaches are discussed in more detail in Box 4.1.

The empirical analysis here follows the work of the second strand, which has been widely replicated and can be more easily mapped for a wide range of countries based on occupation data. This approach was greatly influenced by Erikson, Goldthorpe and Portocarero (1979) and can be performed mapping social classes from the occupational classification (see Box 4.1). Findings from the original work of Erikson and Goldthorpe (1992) revealed a significant association between the class of origin (parental social class) and the class of destination (i.e. offspring's class) in all countries. However, significant differences across countries were shown in the rate of *absolute* social mobility (i.e. the share of offspring with an occupational level different from that of their parents), with higher intergenerational mobility in Sweden and Norway, and lower mobility in Germany, Italy and France (Breen and Luijckx, 2004; Bjorklund and Jäntti, 2000; Blanden, 2013). Class inheritance effects are stronger for employees, small employers, self-employed and farmers (Erikson and Goldthorpe, 2002; D'Addio, 2007). Further, educational attainment is a crucial "mediating" factor for occupational mobility. At the same time, there were lots of similarities across countries in the degree of *relative* mobility or immobility (i.e. looking at movements across occupational groups depending on parental education), measured by a similar degree of association between parents' and children's social class.

#### Box 4.1. Different approaches to classifying social class

The first type of social class scheme focuses upon the relationship between status or prestige attainment of two generations, in general fathers and sons, and constructs a continuous measure, an index of occupational prestige. Occupation is used as the basis to define status, and alternative scales that attach status levels to occupations have been suggested in this literature. Two main scales exist: the Standard International Occupational Prestige Scale (SIOPS) and the Socio-economic Index (SEI). The SIOPS was based on matching occupational titles from national and local prestige studies conducted in 60 countries to occupational classification (Treiman, 1977). Treiman's SIOPS showed that variation in the prestige allocated to occupations was minimal across societies and time. For the SEI (Duncan, 1961) the construction of prestige scales is based on the weighted average of the mean level of earnings and education of detailed occupations. This was later modified for an international analysis by Ganzeboom in the ISEI (Ganzeboom et al., 1992). It is, however, not possible to formulate a robust picture of differences across countries from these data, as the conclusions are highly dependent on the cohort and level of experience for which the correlation across generations is calculated (Blanden, 2013). Besides occupational titles, additional information on either the degree of occupational prestige or education and income levels is necessary to derive the weighted sum of the socio-economic characteristics in order to construct the index.

The second strand of research defines socio-economic status by social class. A person's occupational class position implies a definite set of social relations, such as control or subordination, with others in different class locations. Social classes are discrete, and the analysis relies on mobility tables looking at the shares of individuals' social class based on their parents and the proportion that is either immobile or follows upward or downward mobility. One of the most widely used class classifications was devised by Erikson, Goldthorpe and Portocarero – hence the EGP classification (1979, 1987, 1992) – and is based on employment relations, and this has been undertaken for several European countries, Australia, the US and Japan. Employment relations in the labour market are used to allocate individuals into social class categories. The EGP schemes identified 11 classes, which can be aggregated into seven, five and three class versions. Later variations of the EGP scheme have been undertaken by Rose and Harrison (2010) in the European Socio-Economic Classification (ESEC) and by Ganzeboom and Treiman (2010) in the International Socio-Economic Classification (ISEC). The ESEC comprises a nine-class categorical measure, with reduced versions of five or three classes. The advantage of this approach is to understand which occupations are linked across generations, but the disadvantage is that it cannot be easily summarised, contrary to the first one, which results in an index.

The third strand of research is the so-called CAMSIS (Cambridge Social Interaction and Stratification) scales of social distance which estimate distances between social relationships, such as who befriends whom and who marries whom. The main idea is that persons sharing a similar social position, in terms of social class or status group membership, are more likely to interact socially on the basis of equality with members of the same group than with members of other groups, and a scale of social interaction distance is created to map a hierarchy of social groups based on the social interaction distance. The scale estimates the relative position of occupations by looking at interaction patterns between persons with different occupations (Prandy and Lambert, 2003). The scale shows that scores for professional and managerial occupations (particularly those requiring high levels of education or training) are placed toward the top of the scale, and labouring and lower-skilled occupations are placed toward the bottom (Bergman et al., 2002). An international version (ICAMS) was developed by De Luca et al. (2010), and the authors suggest that the ranking yields similar results to the ISEI. Chan and Goldthorpe (2004) also constructed a scale extracting social status from the importance of social interactions attached to occupations.

The economic literature on the intergenerational transmission of occupation is more recent and scarce than sociologic literature. It generally also reports a significant correlation between parental and children's occupation (Carmichael, 2000; Ermish and Francesconi, 2002; Di Pietro and Urwin, 2003). Long and Ferrie (2013) find that the United States exhibited a more fluid occupational structure than Great Britain. Checchi and Dardadoni (2002) show that the United States and the Netherlands rank among the most mobile countries, while in Austria and Germany mobility across generations in

terms of occupation is low. Most of the literature focuses on male occupations, but a few studies also document the impact of fathers on daughter's occupations (Hellerstein and Morrill, 2011).

The analysis below is based on pooled data of the European Social Survey (ESS), which is a bi-annual cross-national representative survey for European countries. For Australia, Korea and the US, panel surveys are used, but the analysis is based on the comparison of the average differences across time between parents and children, relying on the highest level of occupation attained.

#### **Box 4.2. How to analyse mobility using social class categories**

To analyse absolute occupational mobility, tables with the frequencies in each combination of parent's and respondent's class (usually called origin and destination classes) are used (Sobel, Hout, and Duncan, 1985). The analysis in this section follows the construction of discrete social classes as suggested by EGP and is based on the work of Ganzeboom and Treiman (1996), which suggests a consistent methodology to recode ISCO 88 codes at various digit levels (4, 3 and 2-digit levels) into nine categories based on the ESEC. In addition to the ISCO codes, employment relations (self-employment and supervision status) are used. The advantage of the ESec is that it is a classification that is harmonised across countries and is specifically designed for international research, but it is limited in the degree of detail of categories and in the correspondence with the national classification. Cross-national comparisons are still problematic due to variations in occupational classification schemes and they are subject to measurement errors.

The categories include: 1 "Higher Managerial and Professional Workers"; 2 "Lower Managerial and Professional Workers"; 3 "Routine Clerical Work"; 4 "Routine Service and Sales Work"; 5 "Small Self-Employed with Employees"; 6 "Small Self-Employed without Employees"; 7 "Manual Supervisors"; 8 "Skilled Manual Workers"; 9 "Semi- and Unskilled Manual Workers" (and "Agricultural Labour"). In addition, for the most recent data, the new ISCO 2008 has been mapped into the former ISCO-88, using a correspondence table. Information about whether individuals are employed or self-employed and whether they have employees is also used to allocate respondents to some classes. Respondents' class is measured between ages 25 and 64. If both parents are employed, the highest-ranked social class category among the two is used. ISCO categories are provided at 4-digit levels for the children in the ESS (European countries), while it is at the 3-digit level for Korea and at the 2-digit level for Australia. Information from the US is first recoded from the US occupational category into ISCO based on Meyer and Osborne (2005). Analyses for Canada are based on the Standard Official Classification (SOC 1991) – eight categories.

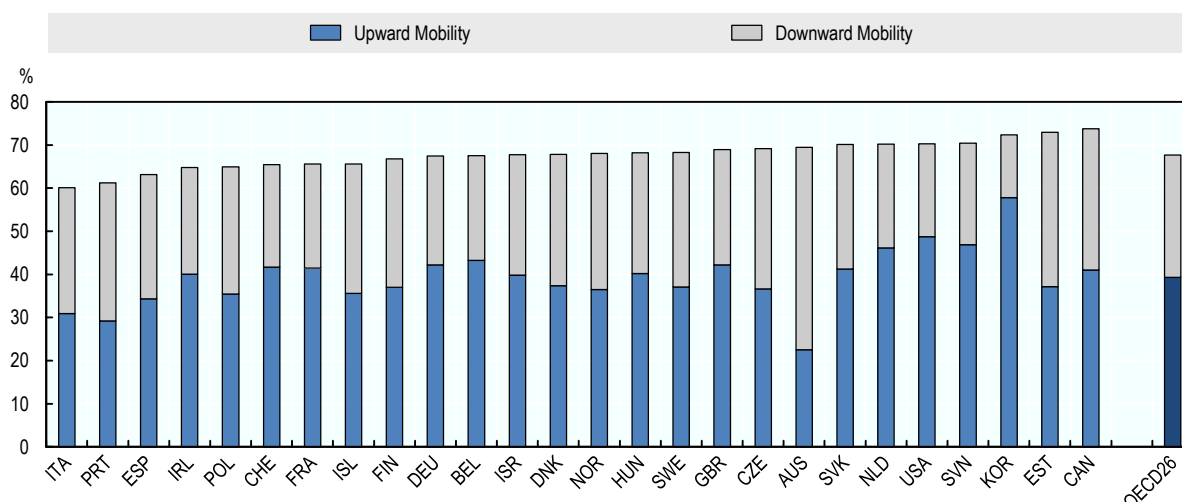
The nine categories are combined into seven categories to avoid having cells with too small sample size to generate mobility tables (7X7) that look at children's social class for each of the parent's social class. Absolute mobility is the percentage of individuals found in the cells of the mobility table that are not in the main diagonal and have a different class than their parents. Upward mobility is calculated using a hierarchical notion of the social class, with class 7 being the lowest class and class 1 the highest class, and thus classes 6 and 7 representing the lower classes and classes 1 and 2 representing the upper classes. Total mobility includes the share of individuals experiencing both upward and downward mobility. Mobility within the classes 3, 4 and 5 is not necessarily considered as ordered between more or less advantaged and is not included in total mobility, and is often labelled horizontal. For the presentation of relative mobility and for the cohort comparisons, an analysis with three classes is also used.

#### **4.1.2. Absolute social class mobility is high but declining**

Absolute rates of intergenerational class mobility for parents and children are high, with two-thirds of children being in a different social class than their parents across the OECD ranging from 60-63% in the southern European countries to 72-74% in Korean, Estonia and Canada (Figure 4.1). These results confirm previous studies which estimated total mobility rates for men in a similar range of close to 70-80% for European countries using a similar methodology (Bukodi et al., 2015; 2017).

**Figure 4.1. Absolute social class mobility, 2010s**

Percentage of 25-64 years old whose social class is higher or lower than that of their parents, 2002-14



*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

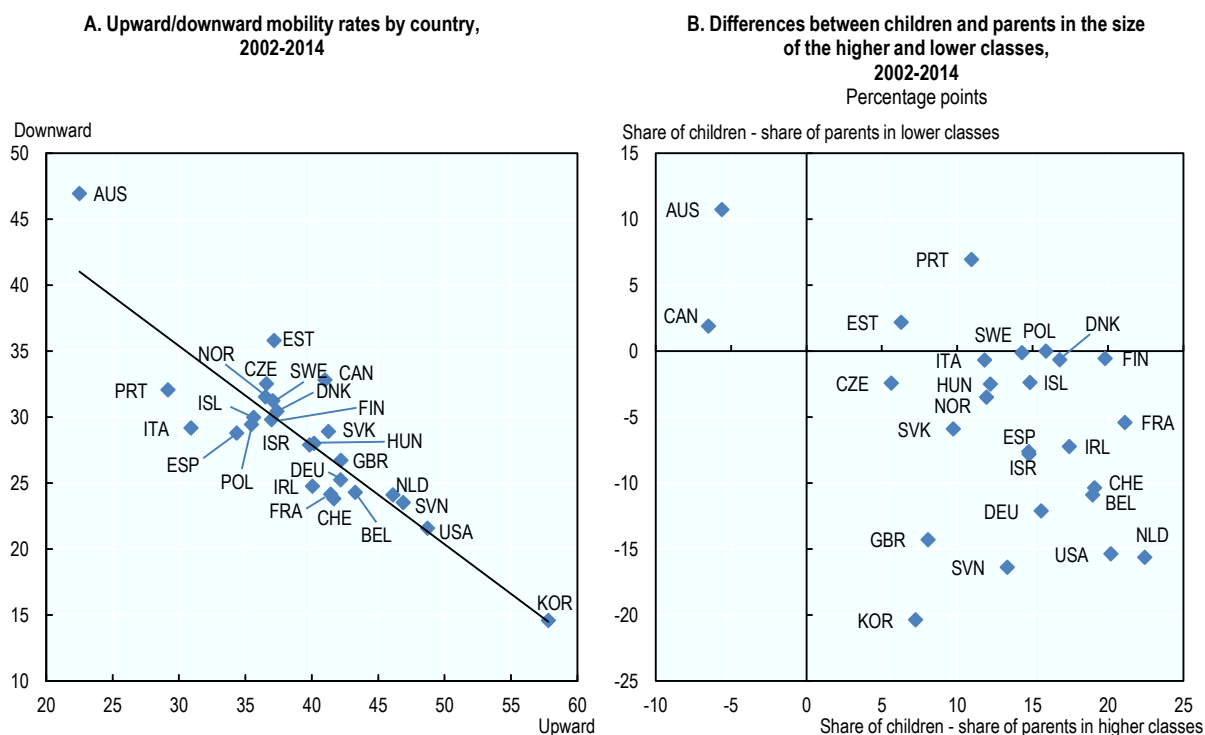
*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-2014), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14) and the GSS cycle 15 for Canada.

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With the exception of Australia, upward class mobility is more common than downward class mobility, in particular in the United States and Korea where almost 50% and 60% of children are in a higher occupational class than their parents, respectively. Downward mobility ranges from 15% in Korea and 22% in the United States to 36% in Estonia and 47% in Australia. The extent of downward mobility is significantly larger than what was reported in previous studies for earlier years (Erikson and Goldthorpe, 1992; Breen, 2004) but similar to what has been found for the past decade (Bukodi et al., 2017), indicating that downward mobility may have increased.

Overall, countries with higher occupational upward mobility tend to have lower downward mobility. (Figure 4.2, Panel A). In Australia and southern European countries, upward mobility is low. Nordic countries and Canada combine average level of upward with above-average levels of downward mobility. At the other extreme, another group of countries have low rates of downward mobility and high rates of upward mobility, including the Netherlands, Belgium, Slovenia, the United States and Korea.

In countries with high upward and low downward mobility, there has been a continuous and marked expansion of the upper classes, while there has been shrinkage of the lower working classes and more moderate change for the middle classes, resulting in a high likelihood of upward mobility (Figure 4.2, Panel B). In countries with a medium level of both types of mobility, the expansion of the managerial classes occurred earlier, and there was less growth for their children, while there was little change in the lower classes and shrinkage of the middle classes, which increases the chances of downward mobility. In Australia and, to a lesser extent, Canada, the upper classes have declined while the lower classes have expanded between the two generations.

**Figure 4.2. Understanding cross-country variation in absolute class mobility**

*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-14), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14) and the GSS cycle 15 for Canada.

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Traditionally, most measures of occupational mobility are based on labour-market participation and have excluded women. Exceptions included when there was no household male head or if women were in a higher social class, in which case the dominance approach was used where the highest social class irrespective of gender is used for the parents. Several studies of class mobility examine men and women, but few directly compare across gender. One exception is Erikson and Goldthorpe (1992), who find a slightly weaker intergenerational association among women across European countries and. Studies of class mobility in the United States suggest no gender differences or a weaker association among men (Hout, 1988; Beller, 2009). Gender variation in mobility would emerge if parents invested differently in the education of their sons compared to their daughters and if such gender difference varied by socio-economic status.

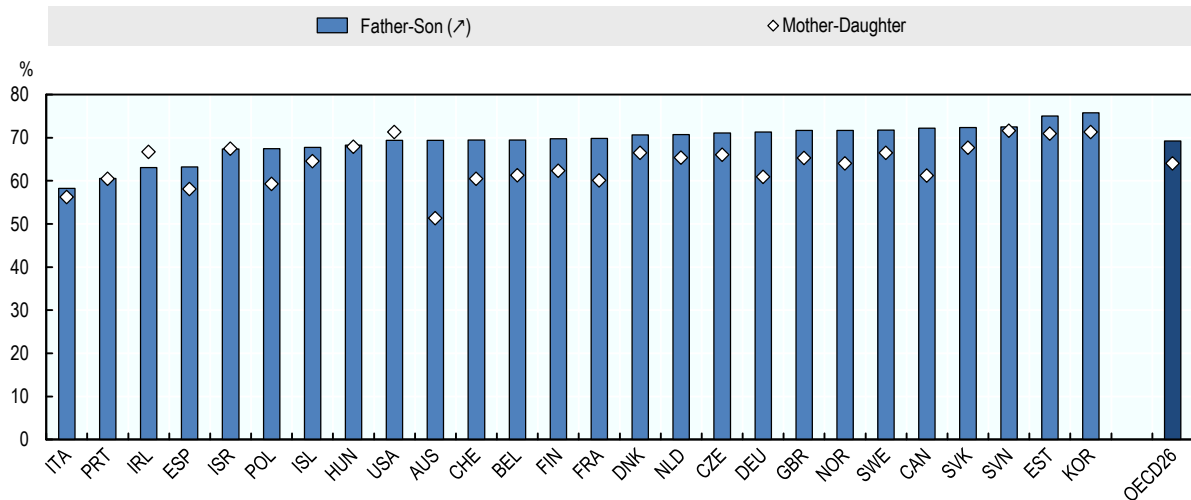
According to our findings, absolute class mobility tends to be higher when comparing fathers and sons (70%) than mothers and daughters (64%) (Figure 4.3). In particular, higher absolute mobility for sons is noticeable in Australia, Canada, most Nordic countries, and many central European countries as well as in France, Germany and the United Kingdom. In other countries mobility does not differ significantly by gender, and



only in Ireland is it slightly higher for daughters. Gender differences in total mobility are driven by lower downward mobility for women in the case of Australia and Estonia, by lower upward mobility for women in the Netherlands, Norway, Belgium and France, and by both lower upward and downward mobility for women in other countries (see Figure 4.A1.1).

**Figure 4.3. Absolute class mobility by gender, 2010s**

Percentage of 25-64 years old whose social class is higher or lower than their parents, 2002-14



*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-14), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14) and the GSS cycle 15 for Canada.

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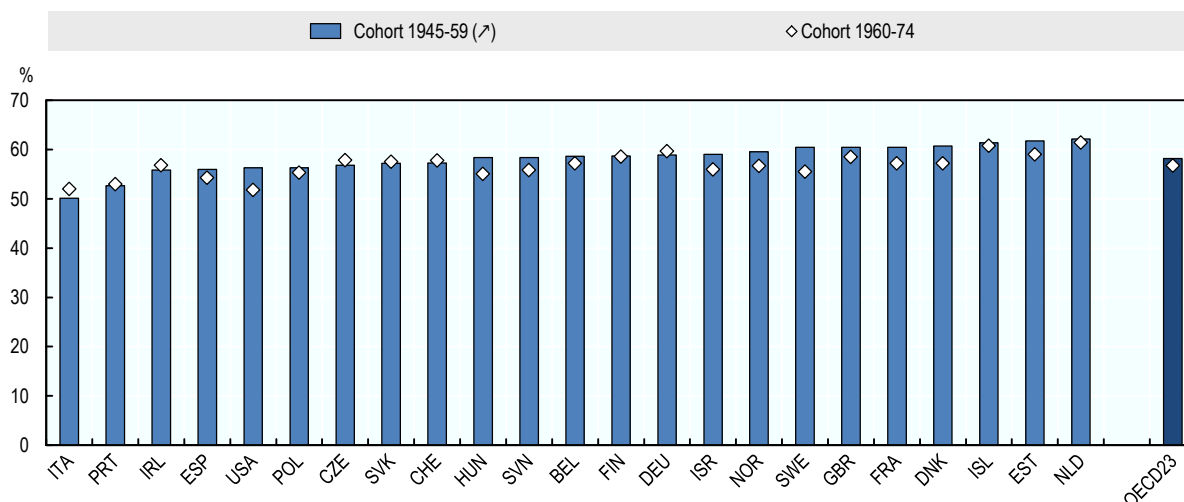
With a few exceptions, absolute class mobility for cohorts born after the middle of the 20<sup>th</sup> century has not gone up. Trends reveal a broad stability across time in about half of the countries, and a decrease of mobility for the more recent cohort in the other half (Figure 4.4). Countries where absolute mobility has declined by 3 points or more include most Nordic countries (Denmark, Norway, Sweden), Hungary, Israel, France and the US. In some of those countries, such as the Norway and Sweden, this is driven by a combination of a stronger decline in upward mobility and a smaller increase in downward mobility. In other countries (Hungary, US), it is driven by a decline in downward mobility, while in a third group, both upward and downward mobility were lower for the 1960-74 cohort compared with the 1945-59 cohort.

Different cross-country patterns and trends of absolute mobility also depend on the transformation of the class structure over time, or ‘structural mobility’ (Hout, 1988). Goldthorpe (2013) documented that absolute class mobility steadily increased during the twentieth century, primarily as a consequence of the expansion of the professional and managerial professions and the decline of agricultural work. This transformation has led to a significant upgrade in national class structures, creating “room at the top” – in the professional and non-manual classes – and reducing positions in agriculture. This has

induced a large amount of upward class mobility, but such changes have not occurred at the same pace or time in different countries. At the same time, Goldthorpe's more recent analysis for the United Kingdom (2016) showed what emerges in Figure 4.4 for several countries, that is, that younger generations now face less favourable prospects of upward mobility than did their parents. More individuals are now starting out in life from more advantaged class positions, thus, the numbers of those who could face downward mobility are rising, and those who could benefit from upward mobility are falling.

**Figure 4.4. Trends of absolute class mobility**

Percentage of 25-64 years old whose social class is higher or lower than their parents, 2002-14



*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-14), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14).

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### **4.1.3. Relative social class mobility shows high persistence at the top and diverging trends over time**

Relative social mobility can be described as the probability that the offspring of members of a particular social class remain in that same social class, indicating how open a society is. One way to assess relative class mobility is to look at the share of individuals in the lower and higher social classes whose parents were in the same classes. The analysis below is shown for social classes based on occupation, aggregated into three broad categories for presentation purposes: manual workers, routine workers and managers.

The risks of downward mobility for individuals whose parents were in higher class occupations are limited, indicating sticky ceilings. Close to 50% of children whose parents are in a managerial class become managers themselves (Figure 4.5, Panel A); this share is close to 70% in the US. Very few children of managerial parents end up doing manual work: this percentage ranges from 7% in Canada to a maximum of 24% in Estonia where downward mobility from the upper classes is higher.

Upward mobility for those born from parents who had manual occupations is high but varies widely: 24% attain a managerial occupation, and this share reaches one third in the Netherlands and the United States (Figure 4.5, Panel B). At the same time, persistence in lower manual occupations – sticky floors – is still higher: it concerns 36% of individuals whose parents were in manual occupations. With close to 50% or more, sticky floors are highest in the US, the Czech and Slovak Republics, Hungary, Australia and especially Portugal. In only a handful of countries, there are more children of manual workers who become managers than those remaining in a manual occupation (Iceland, Netherlands, Switzerland and Israel).

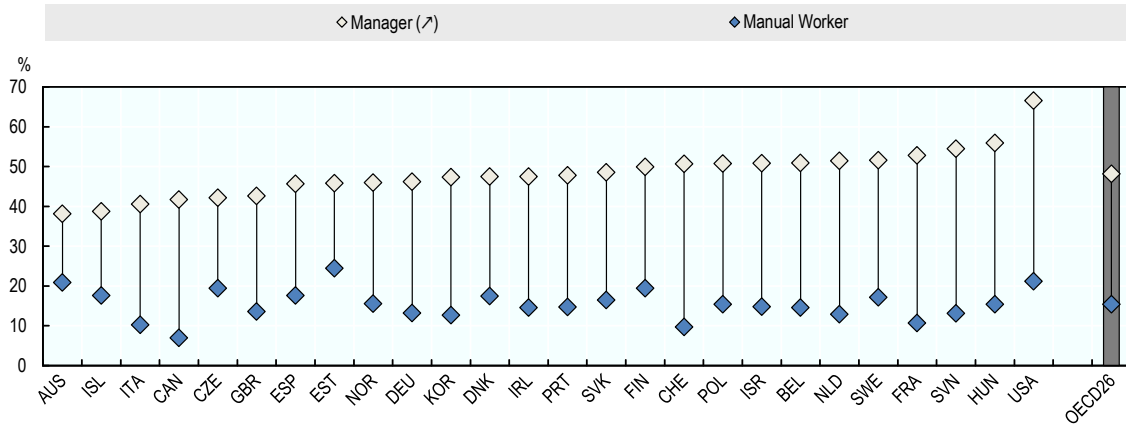
The picture is more mixed for children born from parents who had a routine occupation, with similar levels of upward and downward occupational mobility of about 30% on average (Figure 4.5, Panel C). Still, while a higher share of these children work in a manual occupation in most of Eastern and Southern European countries, Australia and Korea, more of them reach a managerial position in Western Europe, Northern Europe, Israel and the US.

What can explain such sticky floors and sticky ceilings and the degree of cross-country variation? Some types of occupations are transmitted more often than others in that they require job-specific human capital that can be easily and cheaply transmitted from fathers to children. Entrepreneurs and the self-employed but also the liberal professions, where the transmission of skills and knowledge that help to lower the entry barrier to the profession are important, could be among such professions. Hence, there should be more intergenerational association in countries where there are more self-employed (see Laband and Lentz, 1983; Dunn and Holtz-Eakin, 2000; Sørensen, 2007; and Lindquist et al., 2015). This could help explain why persistence in managerial classes is, for instance, higher in Poland, Portugal, Ireland and the Netherlands. At the same time, there is no such association in other countries, suggesting that other factors play a role to explain differences in persistence too.

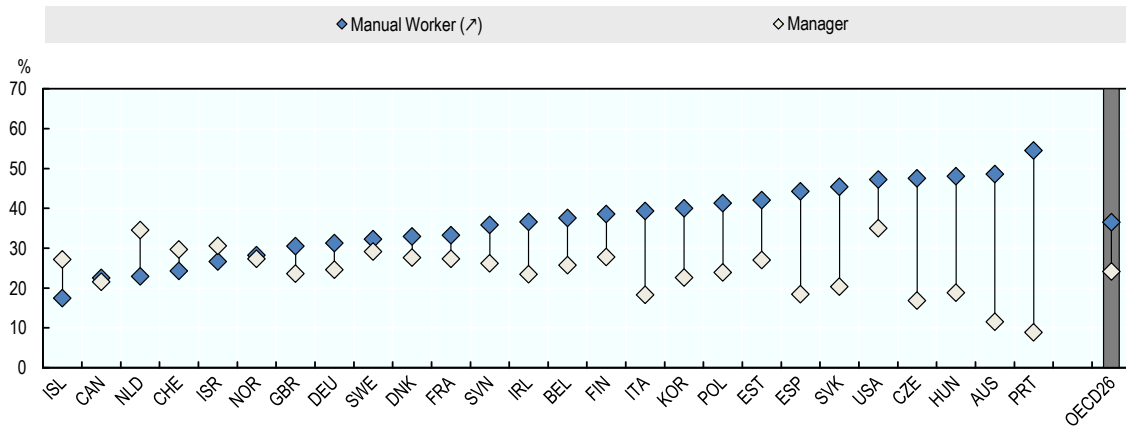
In particular, differences in social class persistence may also be linked with various other labour market characteristics such as the sectoral composition of higher classes. For instance, there might be some difficulties in entering more prestigious occupations in some professional areas, such as law, medicine, engineering and journalism, which may recruit directly from privileged class backgrounds. Some studies have documented the intergenerational transmission of high skilled jobs, as for example chief executive officers, liberal professionals and doctors (see Lentz and Laband, 1989; Perez-Gonzalez, 2006; Bennedsen et al., 2007; Pelizzari and Pica, 2011; Pelizzari et al., 2011; Aina and Nicoletti, 2014). On the other hand, technical or emerging high-status occupations, particularly those related to IT, appear to recruit more widely. Furthermore, intergenerational class persistence may be related to the existence of entry barriers that limit access to certain professions, such as occupational licensing. Finally, another channel through which persistence in occupations works are family ties, for many jobs are filled through social referral (Mocetti, 2007).

**Figure 4.5. Sticky floors and sticky ceilings in occupation**

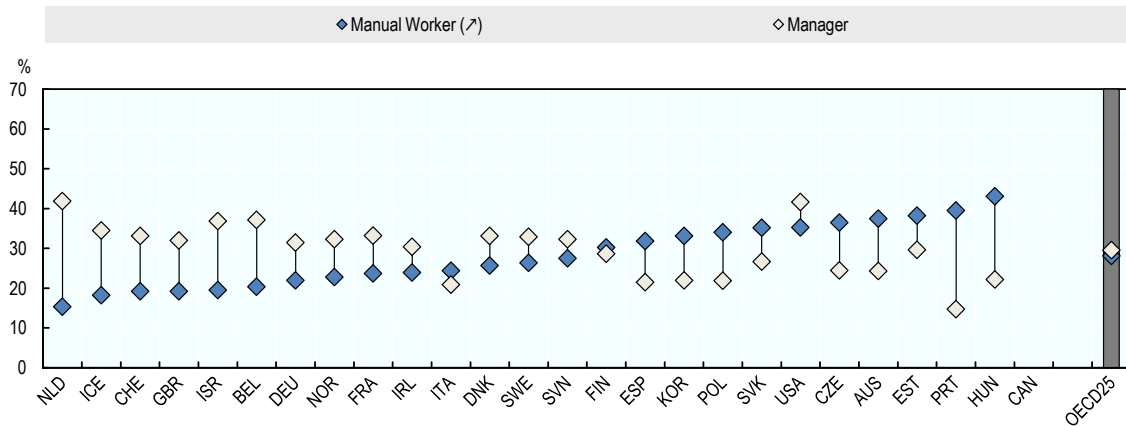
**A. Percentage of managers and manual workers if parents are managers, 2002-2014**



**B. Percentage of managers and manual workers if parents are manual workers, 2002-2014**



**C. Percentage of managers and manual workers if parents are routine workers, 2002-2014**



*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation. Canada is excluded from Panel C for comparability reasons regarding the definition of routine workers.

*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-14), the PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14) and the GSS cycle 15 for Canada.

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To fully capture the extent of overall relative social class mobility and to be able to trace changes over time, we look at the probability of moving across *all* different social classes, using odds ratios (instead of the simplified picture with only three broad classes given above). Such relative rates indicate the net association – the inherent “stickiness” – that exists between the class positions of children and their parents when all effects of class structural change are discounted. If there were only two classes, for instance managers and manual workers, the odds ratio gives the chance that an individual whose parents were in the managerial class is found to be a manager rather than a manual worker relative to the chance of an individual originating in the manual class being found to be a manager rather than a manual worker. When the odds ratio is at unity, it reflects equality of opportunity, since this means that these chances are equal, and that there is no association between class origin and destination. But if the odds ratio is above 1, this shows a stronger association between the class of origin and of destination. To calculate odds ratios including more than two classes, a uniform difference (UNIDIFF) model is used (see Box 4.3).

#### Box 4.3. Models for relative social class mobility rates

Relative mobility is defined in terms of log-odds ratios, which for a 2x2 model is:

$$\log \frac{F_{11} \times F_{22}}{F_{12} \times F_{21}}$$

where  $F_{ij}$  is the frequency in cell (I,j) of the contingency table with the parents’ class (origin) and children’s class (destination).

To compare relative mobility for several classes across countries with a simple indicator, the uniform difference model (Unidiff) is used (Erikson and Goldthorpe, 1992):

$$\text{Log}F_{ijk} = \mu + \lambda_i^O + \lambda_j^D + \lambda_k^C + \lambda_{ik}^{OC} + \lambda_{jk}^{DC} + \beta_k X_{ij}^{OD}$$

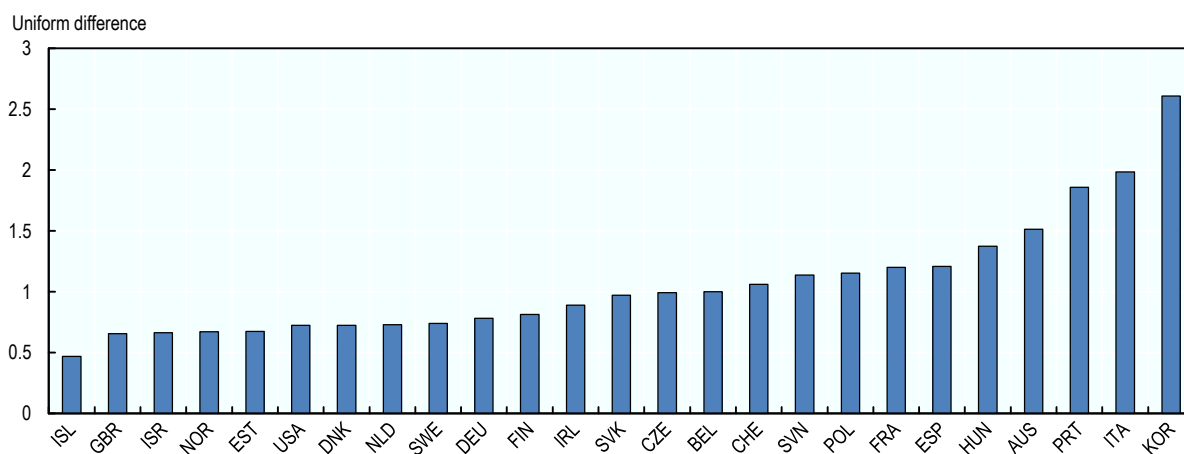
where  $F_{ijk}$  is the expected frequency in cell  $ijk$  of a three-way table comprising origin  $i$  (O), destination  $j$  (D) and country  $k$  (C). On the right-hand side of the equation,  $\mu$  is a scale factor, and  $\lambda_i^O$ ,  $\lambda_j^D$  and  $\lambda_k^C$  represent the main effects of the distributions of individuals over origins, destinations and countries. The  $\lambda_{ik}^{OC}$  and  $\lambda_{jk}^{DC}$  terms refer to the associations between origin and country and destination and country. Finally,  $X_{ij}^{OD}$  represents the general pattern of the origin-destination association across countries and  $\beta_k$  the relative strength of this association that is specific to a country  $k$ . A country with a higher  $\beta_k$  therefore exhibits a stronger origin-destination association, or a lower social fluidity or mobility.

The hypothesis of the Unidiff model is that from cohort to cohort, the odds ratios underlying our mobility tables all change by some common multiplicative factor. If the factor is set at 1 for a particular cohort and then moves below 1 for the next cohort, this means that all odds ratios are decreasing – i.e. the association between class origins and destinations is weakening and social fluidity is rising. If it moves above 1, the reverse is the case. The same is used for comparing mobility or fluidity across countries with one country being set at 1: those below 1 will show lower association between parents and children while those above 1 will show more association.

Another possibility is to assume that the association between class origins and destinations is the same across countries, as in the common social fluidity model (CmSF). Following Bukodi et al. (2017), the Unidiff is preferred as the different approaches lead to largely similar conclusions and Unidiff produces somewhat more differentiated results.

Relative class persistence shows little variability across *most* but not all countries, since it is high for Korea, Australia, southern European countries and Hungary, and low in Iceland, Norway, the UK, Israel and Estonia. The values in Figure 4.6 represent the relative strength of the association between parents and children’s for each pair of the 7 social classes, standardised to a value of 1 with respect to the country that has the average value (Belgium). In terms of country rankings, some of the findings are in line with what is reported by Blanden (2013), with Norway having high mobility while France, Poland and southern European countries having low mobility. Another recent cross-country study suggests similar findings (Bukodi et al., 2017).

**Figure 4.6. Relative persistence in social class**



*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

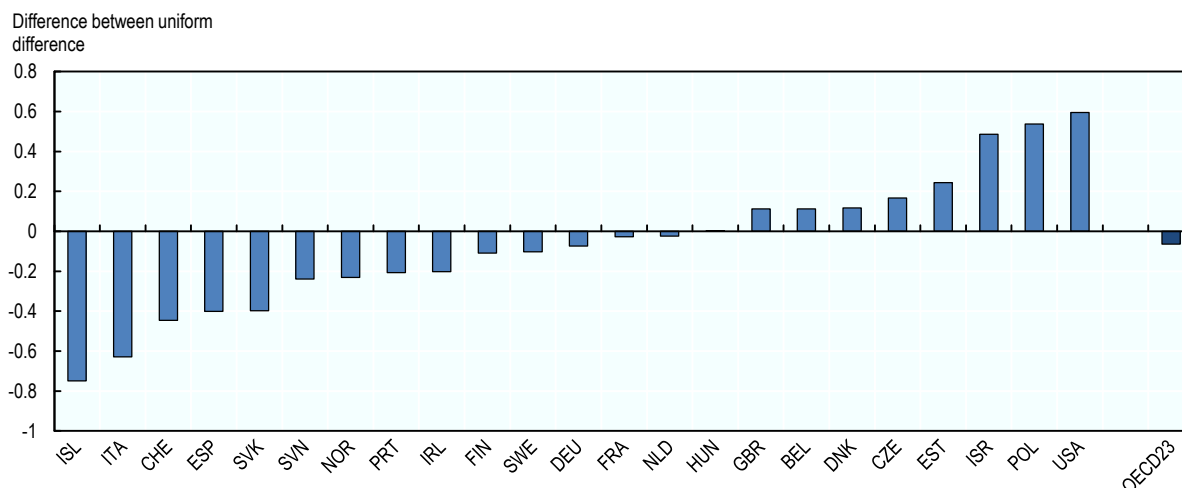
*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-14), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14).

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As for trends of relative social class mobility, previous work suggested conflicting findings. Erikson and Goldthorpe (1992) showed that relative social mobility has remained fairly stable up to the beginning of the 1970s in 12 countries despite significant expansions in the public education system. Other empirical studies have challenged this view and argued that social class mobility in industrialised nations increased between the 1970s and the year 2000, albeit slowly (Breen and Lujkx, 2004). Eurofound (2017) showed that social class mobility increased in some countries such as Belgium, Denmark, Finland, Greece, the Netherlands and Slovakia, while in others (Austria, Bulgaria, France and Sweden) it declined and in the remaining ones (Germany, Ireland, Poland and the United Kingdom) it remained stable when comparing cohorts born previous to 1945, between 1946-1964 and between 1965-1974.

**Figure 4.7. Changes in relative social class persistence over time**

Difference between the 1945-59 and 1960-74 cohort, 2002-14



*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-14), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14).

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The analysis of OECD countries reveals that for most countries, relative social class mobility is similar between the 1945-1959 cohort and the 1960-1974 cohort. Figure 4.7 portrays the difference in the strength of association between parents and children for these two cohorts, with a positive difference indicating more persistence (less relative mobility), in the younger compared with the older cohort. In a few countries, Italy, Spain, Switzerland, Slovak Republic and Iceland, relative social class mobility has increased by more than 30%, while in Israel, Poland and the United States, it has declined substantially.

What could explain the diverging trends? Previous studies put forward that countries where relative social class mobility increased also experienced growth in average educational attainment and there was a narrowing of the gaps between people from different social class origins in their attainment. In turn, greater equality in education helped weaken the degree to which class destinations are linked to class origins. Furthermore, if class origins are less important in shaping destinations among highly educated people, then as more people come to acquire higher levels of education, the overall association between origins and destinations will decline (Breen, 2004). In countries where social mobility has declined, changes in education such as unequal access to quality education for some groups may also create barriers to relative mobility.

## 4.2. Levels, trends and drivers of earnings mobility for sons

This and the subsequent section looks at another measure of socioeconomic status: earnings. Several authors state that intergenerational earnings mobility and intergenerational class mobility are different aspects of a person's position in society and are not necessarily correlated (Bjorklund and Jäntti, 2000; Erikson and Goldthorpe,

2010). Indeed, people's earnings vary significantly even if they share the same social class based on their occupation. There is a large amount of earnings inequality within classes that is transmitted to the next generation (Bjorklund and Jäntti, 2000). For instance, parents may influence their children's outcomes, such as job referrals, nepotism and the transmission of employers, in ways that are not captured in social class but translate into earnings (e.g. Magruder 2010; Corak and Piraino, 2011). Finally, several authors suggest that measurement errors in both earnings and social class mean that measured rankings differ.

This section presents evidence on the strength of the association between fathers' and sons' earnings and the sources of such earnings transmission. Most of the research has focused on fathers' and sons' earnings because in the past married women's labour force participation rates were lower than men's and they had more career breaks, making estimates of lifetime earnings more difficult.

#### *4.2.1. Like father, like son: assessing earnings mobility across generations*

The most commonly used measure of intergenerational earnings mobility (or, more accurately, its opposite – *persistence*) is the elasticity of earnings across generations, which explains how closely related an offspring's economic status is to that of his or her parents. This measure can be interpreted as follows: If the elasticity is zero, that means that a child's adult earnings is not related at all to parental status and that there is highest relative earnings mobility, while if it is 100%, it will mean that all earnings are determined by the father's earnings and that mobility is lowest. Intergenerational persistence in earnings in OECD countries ranges from an elasticity of 12% to 76% (Figure 4.8).

However, measuring the degree of intergenerational earnings mobility in a society is not straightforward. Sources of estimation biases include measurement error in the recording of parental earnings and the sensitivity of estimates to the life cycle. It requires detailed data on parents' and children's earnings, ideally measured at several points in time to capture permanent earnings. Obtaining estimates of permanent earnings by averaging earnings over several years and measuring fathers' and sons' earnings at prime age to avoid life-cycle bias are proxies to capture the most accurate picture of persistence. International comparisons of intergenerational earnings mobility based on individual country studies should therefore be interpreted with caution, since mobility differences may reflect differences in measurement and the statistical approach (Jäntti et al., 2006). New and improved data and methodology, for instance, show much higher estimates for Australia, Canada and Korea than those previously reported, indicating that these countries are rather closer to middle-ranking countries in terms of mobility rather than being among the most mobile as formerly estimated (Mendolia and Siminski, 2016; Kim, 2013; Chen et al., 2017).

In addition, data limitations currently do not allow for a systematic cross-country analysis using the same methodology. Estimates presented here rely for many countries on a two-step approach, where earnings of parents are predicted based on parents' characteristics using another source of data (see Box 4.4). In addition, estimates for Germany and the United States use information on both fathers' and sons' longitudinal data. The analysis is supplemented by the most recent or reliable estimates from the literature for other OECD countries, some of them based on longitudinal data or administrative tax records and others on the two-sample, two-step method, which makes the comparability of estimates across countries challenging. Taken together, this means that results will not be perfectly comparable across countries and need to be interpreted with great caution.



#### Box 4.4. Measurement issues to calculate earnings elasticities

Intergenerational elasticity estimates may suffer from various measurement errors, which are discussed below. In addition, as it is difficult to obtain estimates of earnings for both fathers and sons in the same dataset, alternative estimation methods are also discussed.

Life-cycle bias may arise in parent-children earnings when children's permanent earnings are approximated by yearly current earnings; this is likely to introduce measurement errors due to the variation of transitory earnings components. Several studies have shown for income in particular that when only one year is used, the degree of persistence across generations tends to be underestimated (Solon, 1992; Zimmerman, 1992). This is also compounded by underestimation due to the usage of sons' earnings early in their career.

In addition, estimates may also be affected by another bias coming from the lack of appropriate estimates from fathers' lifetime earnings, because this results in significant errors-in-variables (downward) biases. To avoid this problem, multi-year averages have been used. The age at which fathers' incomes are averaged also matters, as they may be too young or old to capture permanent income. Prime-time age multi-year (5 years or preferably at least 10 years) is therefore preferred for both fathers and sons (Mazumder, 2005; Chen et al., 2017). Estimates computed by the OECD for Germany and the US are thus produced with earnings information for at least 8 years for parents and where parents and sons are of a similar age range of 30 to 55.

An additional challenge is to compute elasticities when there is no information on fathers' earnings in the same dataset. In this case, an earlier survey is used to obtain a sample of "synthetic fathers". The technique of two-sample, two-stage least squares (TS2SLS) is used to predict the earnings of fathers in the sample, following the work of Björklund and Jäntti (1997). This methodology has been used in the literature to construct the elasticities for Australia, Chile, France, Italy, Japan, Korea, Spain, Switzerland and in emerging economies (see Mendolia and Siminski, 2016; Nuñez and Miranda, 2010; Lefranc, 2011; Mocetti, 2007; Lefranc et al., 2013; Kim, 2013; Cervini-Plá, 2015; and Bauer, 2006).

The same methodology is applied here for countries for which information is currently not available in the literature: Austria, Belgium, Greece, Hungary, Ireland, Luxembourg, the Netherlands and Portugal, and updated estimates are provided for Chile, Spain and the UK.

In the first sample, there is information about pseudo-fathers' earnings and their socio-economic characteristics. In this regression,  $W_{it}^f$  are the fathers' earnings of individual  $i$  at time  $t$  in the supplemental sample and this can be seen as the sum of the fathers' permanent earnings  $W_i^f$  plus time-variant characteristics such as age  $A_{it}$  and a disturbance term  $v_{it}$ . Permanent income, in turn, may be defined as the sum of time-invariant determinants, such as education and occupational classification (matrix  $Z_i$ ), and time-invariant disturbances ( $n_i$ ).

$$W_{it}^f = W_i^f + A_{it}^f + v_{it}^f = Z_i \delta + A_{it}^f + n_i^f + v_{it}^f \quad (1)$$

This allows to obtain the predictor of fathers' permanent earnings based on parental characteristics (education, occupation and age) included as dummy variables:

$$\hat{W}_i^f = Z_i \hat{\delta} \quad (2)$$

This is regressed with the data on sons' log earnings to estimate the intergenerational income elasticity coefficient  $\beta$  from:

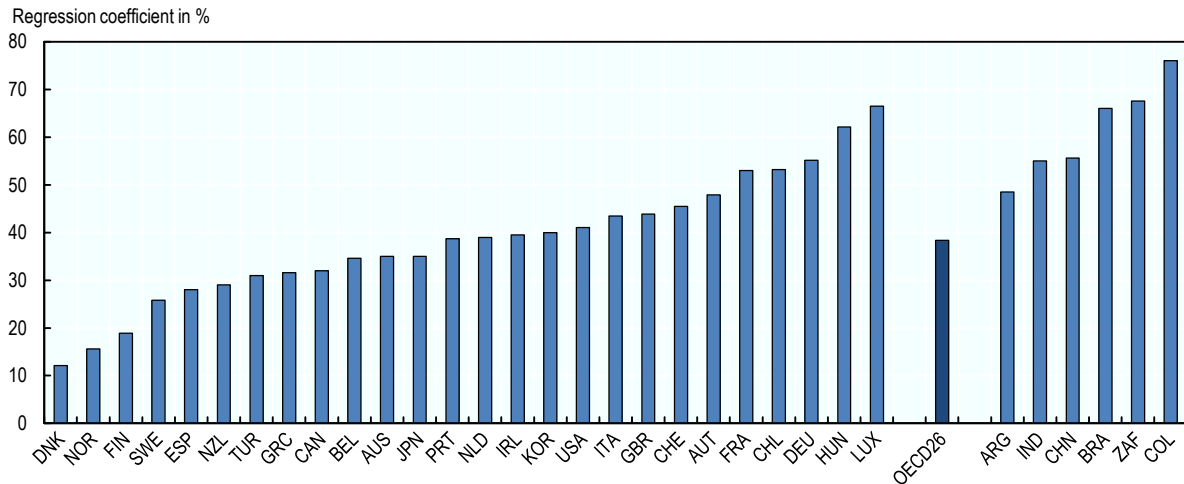
$$W_{it}^s = \beta(z_i \hat{\delta}) + A_{it}^s + u_{it} \quad (3)$$

$$\text{Where } u_{it} = \mu_i + \beta n_i^f + v_{it}^s + \beta Z_i (\delta - \hat{\delta})$$

Age is controlled for as incomes are affected by age. At the same time, individuals in both samples are selected between 30-50 years of age to minimise life-cycle bias and to avoid measurement errors in earnings for the sons, which, if measured at a young age, will be negatively correlated with long-run income. Several years are used for both fathers' and children's earnings to reduce measurement error in transitory earnings. Sensitivity analysis shows that the coefficients are fairly similar when the sample is restricted to parents having at least two or three years of earnings compared with estimates when all years are used without restrictions. Standard errors are estimated using the bootstrap procedure in order to take into account that fathers' earnings in the second-stage regression are an estimated value.

The TS2SLS estimator of the intergenerational elasticity could be under- or overestimated when the auxiliary variables are endogenous and do not perfectly explain the fathers' log earnings. Indeed, in this case omitted variables in the error term are correlated with the auxiliary variables. Moreover, variables commonly used to predict parental earnings (e.g. education, occupation, geographic location, etc.) are likely to be correlated with sons' earnings. If the first-stage variables have a separate positive impact on the child's earnings, this will result in an upward bias in the TSTSLs estimate of  $\beta$ . Previous studies that have used this methodology acknowledge this possibility and tend to treat their estimates as upper bounds of the "true" intergenerational elasticity. At the same time, Björklund and Jäntti (1997) take advantage of good quality US data to compare their TSTSLs estimate with the value found by averaging actual fathers' earnings over five years. They conclude that single-equation estimates of the intergenerational elasticity (IGE) obtained from longitudinal data are about 0.1 lower than those obtained from the TSTSLs method.

Across OECD countries, intergenerational earnings mobility is lowest in Chile and some central European countries, and highest in the Nordic countries. It is also very low in the emerging economies. The results shown in Figure 4.8 imply, for instance, that if one father had twice the earnings of another father, the richer father's child would then have 76% more earnings than the child of the poorer father in Colombia, while the earnings would be 12% more in Denmark and 40% more in Korea.<sup>4</sup> The findings mirror those found for relative social class mobility above for Nordic countries but also point to a number of differences: 1) earnings mobility is below average level for the UK and the US, while it is high in terms of social class, 2) southern European countries and Korea have low social class mobility while, in terms of earnings, they appear to have higher mobility for Spain or medium levels for Italy and Korea. However, cross-national variation in intergenerational earnings mobility may be overstated by the simple picture provided in Figure 4.8, as this includes "best point estimates", which are nonetheless not perfectly comparable across countries and, for a number of countries, alternative specifications or sources exist. Intervals of values obtained from different specifications and sources can be large and are provided in Annex 4.A1, Figure 4.A1.4.

**Figure 4.8. Earnings elasticities for father to son, late 2000s**

*Note:* The height of each bar represents the best point estimate of the inter-generational earnings elasticity. The higher the parameter, the higher is the persistence of earnings across generations, and thus the lower is inter-generational mobility. The estimate for Luxembourg is not strictly comparable with those of other OECD countries as it exhibits a specific migration pattern, with 46% of people who were foreign born in 2015, compared to 13% on average in the OECD (OECD, 2017b). Many of these individuals did not grow up and study in Luxembourg.

*Source:* OECD calculations based on the GSOEP (all waves: 1984-2013) for Germany, the PSID (all waves: 1968-2013) for the United States. Based on the ECHP and EU-SILC 2011 module using the two-sample two-stage least squares estimator for Austria, Belgium, Ireland, Luxembourg, the Netherlands, Portugal, Spain, Greece, Italy, and the United Kingdom, based on the MHP and the EU-SILC 2011 module for Hungary, on CASEN 2009 for Chile. For other countries, estimates from Jiménez, Maribel and Mónica Jiménez (2009) for Argentina, Mendolia and Siminski (2015) for Australia, Guimões Ferreira and Veloso (2006) for Brazil, Chen et al. (2017) for Canada, Nuñez Miranda (2010) for Chile, Chyi et al. (2014) for China, Ramirez Zuloaga (2016) for Colombia, Bratsberg et al. (2006) for Denmark and Finland, Lefranc (2011) for France, Hnatkowska et. al. (2013) for India, Lefranc et al. (2014) for Japan, Kim (2015) for Korea, Gibbons (2010) for New Zealand, Jantti et al. (2006) for Norway and Sweden, Bauer (2006) for Switzerland, and Mercan (2016) for Turkey. All estimates except for Canada, Denmark, Finland, Norway and Sweden are based on the two-sample, two-stage least squares estimator.

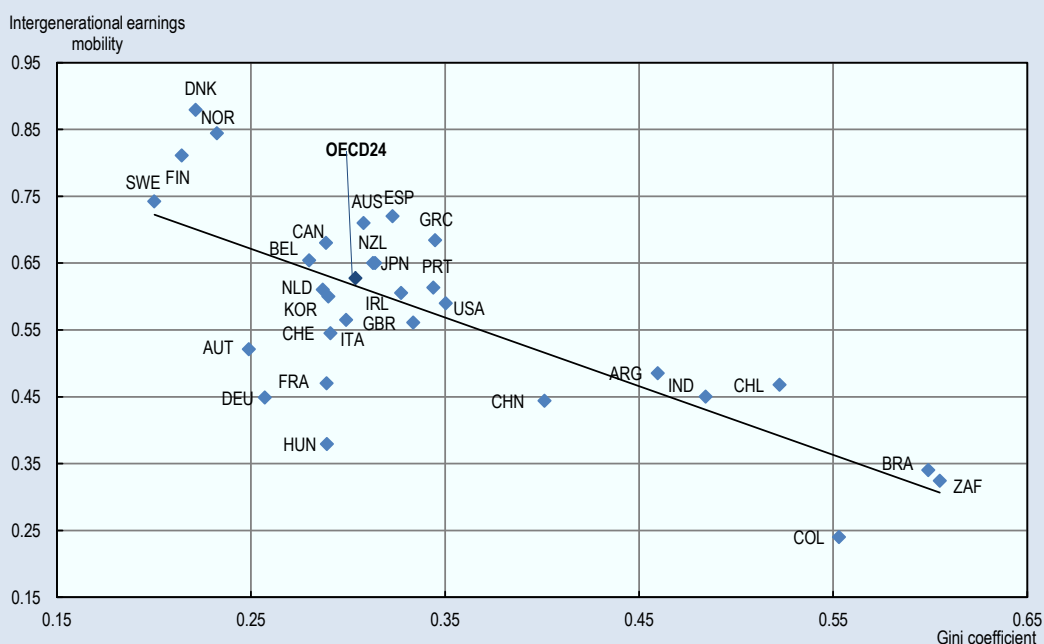
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### Box 4.5. The Great Gatsby Curve

The extent to which conventional measures of income inequality at a point in time reflect people's opportunities to move up the income ladder during their lifetime is likely to matter a lot for how income inequalities are perceived by individuals and policy makers. Given that measures of intergenerational earnings mobility provide one yardstick against which statements about equal opportunities are often assessed, the relationship between income inequality and mobility has raised an increasing interest. While there is no clear-cut theoretical association between income mobility across generations and income inequalities at a point in time, this relationship has been examined empirically on a cross-country basis first based on data gathered by the economist Miles Corak (2006) and extended by OECD (2008). The resulting “Great Gatsby curve” – the term was first used by Alan Krueger in a speech in 2012 -- is the graphical representation of the negative relationship between inequality and intergenerational earnings mobility across countries: higher inequality of outcomes (proxied by Gini coefficients of income inequality) is related to lower equality of opportunities (proxied by earnings mobility between fathers and sons). On the assumption of such negative association, one would expect mobility to have declined in the OECD area given the trend increase in inequality since the 1980s.

The Gatsby curve displayed in Figure 4.9 shows that the negative association between inequality and intergenerational mobility still holds but gets more complex compared to OECD (2008) when including additional countries and newer estimates. In particular, the association is weakened by the inclusion of some low-inequality low-mobility European countries (Hungary, Austria) and new, lower estimates of mobility for France or Germany. By contrast, new estimates for emerging economies strengthen the relationship by exhibiting both high Gini coefficients and low levels of mobility.

**Figure 4.9. Intergenerational earnings mobility and income inequality**



Note: Mobility is proxied by 1 minus the intergenerational earnings elasticity (see Annex 4.A1). Income inequality measured by the Gini coefficient of the mid-1980s to early 1990s.

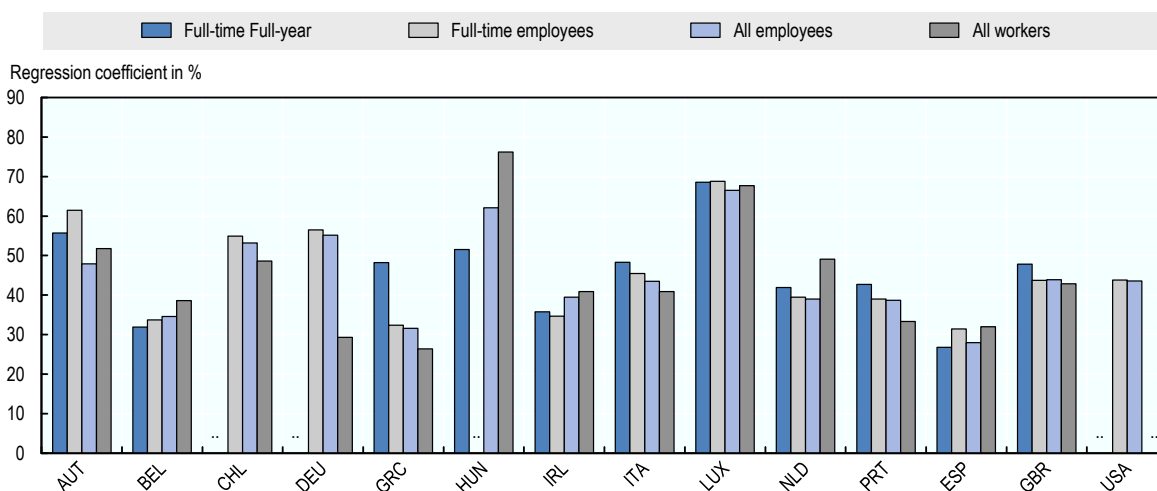
Source: OECD calculations for Austria, Belgium, Greece, Hungary, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom based on EU-SILC ad-hoc module and ECHP (MHP for Hungary), for Germany based on the GSOEP, and for the United States based on the PSID. Jiménez, Maribel and Mónica Jiménez (2009) for Argentina, Mendolia & Siminski (2015) for Australia, Guimões Ferreira and Veloso (2006) for Brazil, Chen et al. (2017) for Canada, Nuñez Miranda (2010) for Chile, Chyi et al. (2014) for China, Ramirez Zuloaga (2016) for Colombia, Bratsberg et al. (2006) for Denmark and Finland, Lefranc (2011) for France, Hnatkovska et. al. (2013) for India, Lefranc et al. (2014) for Japan, Kim (2015) for Korea, Gibbons (2010) for New Zealand, Jantti et al. (2006) for Norway and Sweden, and Bauer (2006) for Switzerland. Gini based on the *OECD Income Distribution Database* for total population, late 80s and early 90s and Milanovic (2014) for Argentina.

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It should be noted that these elasticity estimates partly differ for some countries from the ones presented in OECD (2008). Beyond the use of updated data, this is to a large extent due to the sensitivity of these estimates to the selected proxy for permanent income or the age at which fathers' earnings are measured (Corak, 2006). For Australia, Mendolia & Siminski (2015) used 11 waves of HILDA data, while Leigh (2006) used the 2004 wave only. Estimates for Germany and the United States were computed by the OECD Secretariat based on all available waves of respectively SOEP (1984-2013) and PSID (1968-2013) data, and by averaging income over a minimum of 8 years to obtain more appropriate estimates for permanent income. For the same reason, Chen et al. (2017) averaged fathers' earnings over at least 10 years to compute their estimate for Canada. By contrast, Grawe (2004) used only 5 years averages for Canada, Germany or the United States. Finally, for France, Lefranc (2011) used predicted pseudo fathers' earnings at age 40, while Lefranc and Trannoy (2003) assigned children to several pseudo father selected at different ages. Luxembourg estimates have been excluded as it exhibits a very specific migration pattern, with 46% of people who were foreign born in 2015, compared to 13% on average in OECD countries (OECD, 2017b). Many of these individuals did not grow up and study in Luxembourg. Therefore, the level of mobility cannot be meaningfully related to the level of cross-sectional inequality. For elasticity estimates obtained from different specifications and sources intervals can be large and are provided in Annex 4.A1, Figure 4.A1.4

Hours worked and the type of employment affect the degree of earnings mobility across generations. Looking at full-time and full-time, full-year employees instead of all employees will obtain a more homogeneous sample and possibly will exclude employees less attached to the labour market, with less irregular and possibly lower earnings. There is some evidence in the literature of the transmission of work hours, suggesting that fathers that work more hours than their cohort's average tend to have children who also work more hours than their cohort's average. This is possibly related to a transmission of leisure preferences from parents to children (Toledo, 2007).

The estimates above refer to all employees and exclude the self-employed. Figure 4.10 shows intergenerational earnings elasticities between fathers and sons for a more selective sample in the left-bar, which includes only full-time full-year employees, to the right-hand bar, which includes all workers, i.e. all employees and the self-employed. For most countries, hours worked or type of employment matter little for earnings mobility, although it can have an impact on the country ranking. There are however some noteworthy exceptions. For Greece, mobility is much lower for full-time, full-year employees (more than 50%), related to a much higher intergenerational persistence of earnings at the top of the earnings distribution. If the analysis would exclude part-time workers or would focus on full-time, full-year employees, Greece would have much higher levels of earnings persistence among OECD countries. In contrast, persistence is lower when including the self-employed for some countries: it is 50% lower in Germany and 15% lower in Greece and Portugal. For Hungary and the Netherlands, the reverse is found with a degree of persistence 23% and 25% higher when including the self-employed.

**Figure 4.10. Individual earnings elasticities by employment status**

*Note:* The height of each bar represents the point estimate of the inter-generational earnings elasticity. The higher the parameter, the higher is the persistence of earnings across generations, and thus the lower is inter-generational mobility. ..: not available.

*Source:* OECD calculations based on the GSOEP for Germany (all waves: 1984-2013), the PSID (all waves: 1968-2013) for the United States, the ECHP and EUSILC 2011 module for Austria, Belgium, Ireland, Luxembourg, the Netherlands, Portugal, Greece, Italy, and the United Kingdom, the MHP and the EU-SILC 2011 module for Hungary, CASEN 2009 for Chile.

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#### 4.2.2. What drives the degree of intergenerational earnings mobility?

Education and the labour market are the two most important factors to affect intergenerational earnings mobility. Some part of lack of mobility refers to the transmission of both cognitive and non-cognitive skills. Education attainment can be influenced by more educated parents being more aware of the psychological and economic value of education, and therefore putting more pressure on their children to achieve more at school.<sup>5</sup> How the labour market rewards education and how families help their offspring enter into the labour market is another channel through which earnings are correlated.<sup>6</sup> Family ties can have an impact on access to jobs through family connections.<sup>7</sup> At the same time, different choices in public policy influence all of these factors as well as the cross-national variation in earnings mobility. The decomposition described in Box 4.5 presents a method to assess national differences in the degree to which earnings persistence is influenced through either persistence in education or persistence in occupation.

The correlation between children's and fathers' occupations is the most important component of intergenerational earnings elasticity, accounting for, on average, 35% of elasticity, and more than half in Austria, France, Ireland and Spain. The father's occupation also influences intergenerational elasticity through its effect on children's education, especially in Belgium, the Netherlands and southern Europe. This confirms the findings from previous research in Spain and Italy (Cervini-Plá, 2009; Piraino, 2007).

#### Box 4.5. Decomposing intergenerational earnings elasticity

To understand whether the correlation of occupation or education across generations is the most important component of the intergenerational elasticity between earnings, a decomposition analysis is performed. Two-sample instrumental variable estimation allows for a decomposition of the sources of earnings elasticity across generations. Using the decomposition developed by Bowles and Gintis (2002) and followed by Lefranc and Trannoy (2005),

$W_{it}^f$  fathers' earnings and  $W_{it}^c$  offsprings' earnings can be expressed as:

$$W_{it}^f = \alpha^f E_i^f + \gamma^f O_i^f + n_i^f \quad (4)$$

$$W_{it}^c = \alpha^c E_i^c + \gamma^c O_i^c + n_i^c \quad (5)$$

Where  $E_i^f$  and  $E_i^c$  refer respectively to the education of fathers and sons, and  $O_i^f$  and  $O_i^c$  the occupation of fathers and sons respectively.

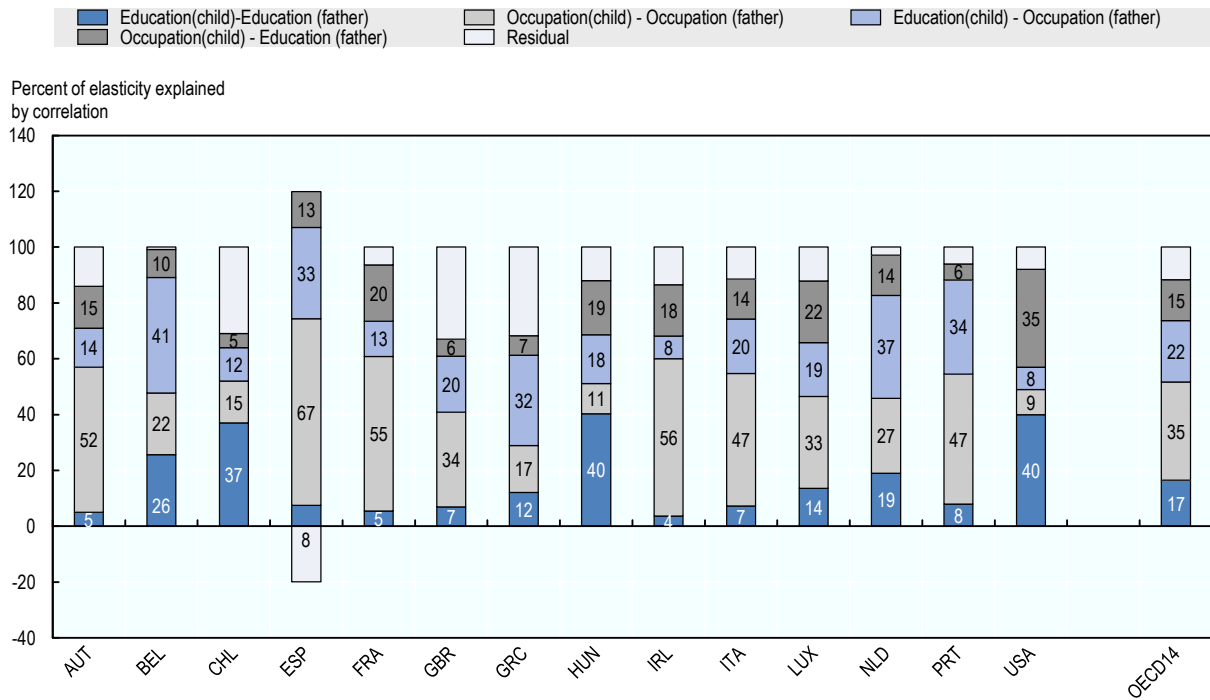
The elasticity of  $\beta$  from the intergenerational elasticity equation (3) in Box 5.4 can be expressed as:

$$\begin{aligned} \beta &= \frac{\text{cov}(W_{it}^c, \alpha_i^f E_i^f + \gamma^c O_i^f)}{V(\alpha_i^f E_i^f + \gamma^c O_i^f)} \\ &= \frac{1}{V(\alpha_i^f E_i^f + \gamma^c O_i^f)} \times [\alpha^c \text{cov}(E_i^c, \alpha^f E_i^f) + \gamma^c \text{cov}(O^c, O^f) \gamma^f + \alpha^c \text{cov}(E_i^c, O^f) \gamma^f \\ &\quad + \alpha^f \text{cov}(E_i^f, O^c) \gamma^c + \text{cov}(n_i^c, E_i^f) \alpha^f + \text{cov}(n_i^c, O_i^f) \gamma^f] \end{aligned}$$

$\beta$  can be decomposed into the sum of six terms corresponding to the covariance of fathers' education and social status on children's education, occupation and the earnings residual, each multiplied by the effect of the relevant variable on children's and fathers' permanent incomes, respectively. This decomposition should be seen only as a descriptive device along the lines suggested in Bowles and Gintis (2002) and not as an analysis of causal effects.

Comparatively, father's education accounts for a smaller share of intergenerational persistence in earnings. On average, around 17% of elasticity is driven by the correlation between a father's and child's education. Only in Hungary and the United States does the intergenerational transmission of education explain as much as 40% of the earnings association, and this effect is also larger in Belgium and the Netherlands. In the United States, the pathway through offspring education is relatively more important, primarily because of the higher returns to education and skills and the stronger relationship between income and tertiary education in the United States (Bladen et al., 2013). If in addition to the transmission of education, the impact of a father's education on his son's occupation is accounted for, the father's education helps to explain 75% of the earnings elasticity in the US and 60% in Hungary. In the case of Chile, education also appears as the main explanatory factor of persistence, but this result could also be related to the lack of precision in measuring fathers' occupations.

**Figure 4.11. Drivers of intergenerational earnings elasticities between fathers and sons, early 2010's**



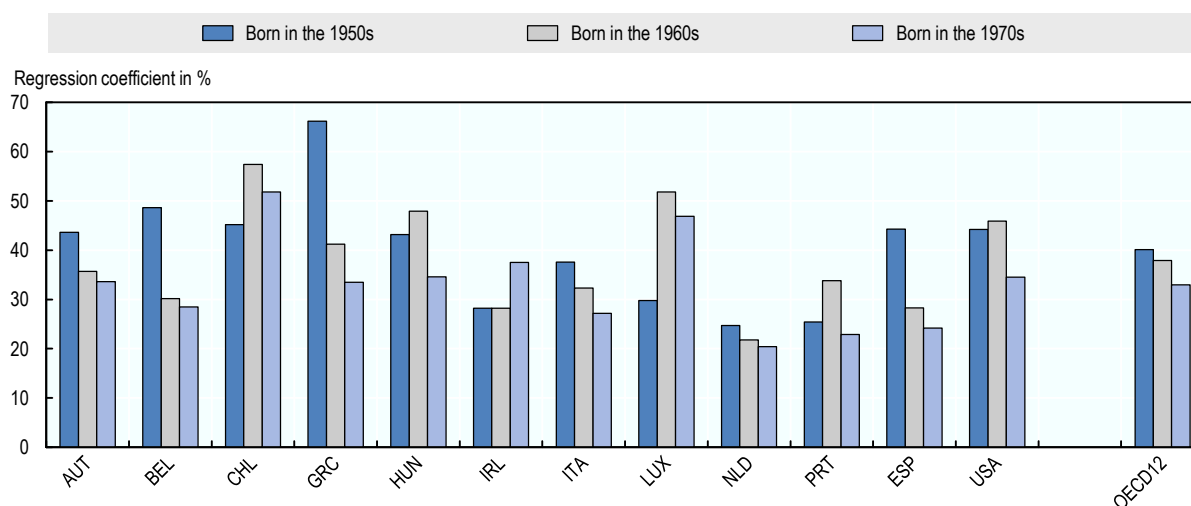
Source: OECD calculations based on the ECHP and EU-SILC 2011 module for Austria, Belgium, France, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom, based on the MHP and the EU-SILC 2011 module for Hungary, on CASEN 2009 for Chile and the PSID (all waves: 1968-2013) for the United States.

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### 4.2.3. Has relative earnings mobility declined?

OECD analysis does not confirm generalised trends across countries (Figure 4.12). Because the analysis, with the exception of the Germany and the US, is based on one year of cross-sectional data, it is difficult to disentangle age and cohort effects. Persistence may be falling for younger cohorts because the age at which earnings is observed is lower. To avoid such bias, the elasticity is calculated using predicted earnings for both fathers and sons at the same age (40) for each cohort. Comparing trends across three 10-year cohorts, between those born in the 1950s, in the 1960s and in the 1970s, there are different groups of country trends. In one group of countries, which includes Austria, Belgium, Greece, Italy and Spain, earnings mobility has continuously increased across the three cohorts (i.e. the elasticity became lower). In Hungary Portugal and the United States, mobility was lower for the second but higher for the last cohort. In Chile and Luxembourg which have the lowest mobility estimates, the decline occurred mostly between the first and second cohort.



**Figure 4.12. Cohort analysis of intergenerational earnings persistence**

*Note:* The height of each bar represents the point estimate of the inter-generational earnings elasticity. The higher the parameter, the higher is the persistence of earnings across generations, and thus the lower is inter-generational mobility.

*Source:* OECD calculations based on the PSID for the United States, based on the ECHP and EUSILC 2011 module for Austria, Belgium, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom, based on the MHP and the EU-SILC 2011 module for Hungary, on CASEN for Chile.

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This mirrors the inconclusive results across different national studies. For the US, the literature finds no consensus on the evolution of mobility when looking at cohorts born between the 1920s and the early 1970s. A set of studies based on the PSID shows little systematic trend among men (Hertz, 2007; Lee and Solon, 2009), while other findings suggest that there has been a rise of intergenerational mobility (Fertig, 2003; Mayer and Lopoo, 2004), though this may be driven by imprecise earnings estimates. The estimates for women in Hertz (2007) and Lee and Solon (2009) suggest decreasing mobility for the early cohorts but little change for those born in 1960 and onwards. More recent work from Chetty et al. (2017) looking at absolute mobility suggests that the share of children having higher real earnings than their parents has fallen in the US from 90% for those born in 1940 to 50% for those born in the 1980s. In Japan, results indicate that intergenerational mobility has been roughly stable over the last decades. One particularly contested UK finding is that mobility has decreased, based on the finding that the intergenerational earnings elasticity estimated for the cohort born in 1958 (NCDS) is greater than for the cohort born in 1970 (BCS), but the results could be driven by differences in the data sources used.

For other European countries, there is more of a consensus on the increase in mobility for post-WWII cohorts while more research is needed for the more recent cohorts, born since the 1970s. In Finland, the mobility for cohorts born between 1930 and 1970 increased substantially and this has been related to comprehensive school reforms (Pekkala and Lucas, 2007). For Norway, Bratberg et al. (2005) find broad stability over time if not a small increase in father–son and father–daughter earnings mobility from 1950 to 1965 cohorts. They suggest that the series of educational reforms, with equality of opportunity as a central aim, also have contributed to this result. In Sweden, there is a

large increase in mobility between pre- and post-war cohorts while the association is flat across post-WWII cohorts (Bjorklund, Jantti and Lindquist, 2009). Finally, in France there is evidence of a V-shaped trend in mobility with the lowest point pertaining to males born in 1930s, after which it increased for those born in the period from 1940 to 1950 due to the benefits of educational and social equality policy, but then fell again for people born in 1970 (Lefranc, 2011).

### 4.3. Going beyond average father-son correlations: How parental background affects resources at different points of the distribution and for daughters

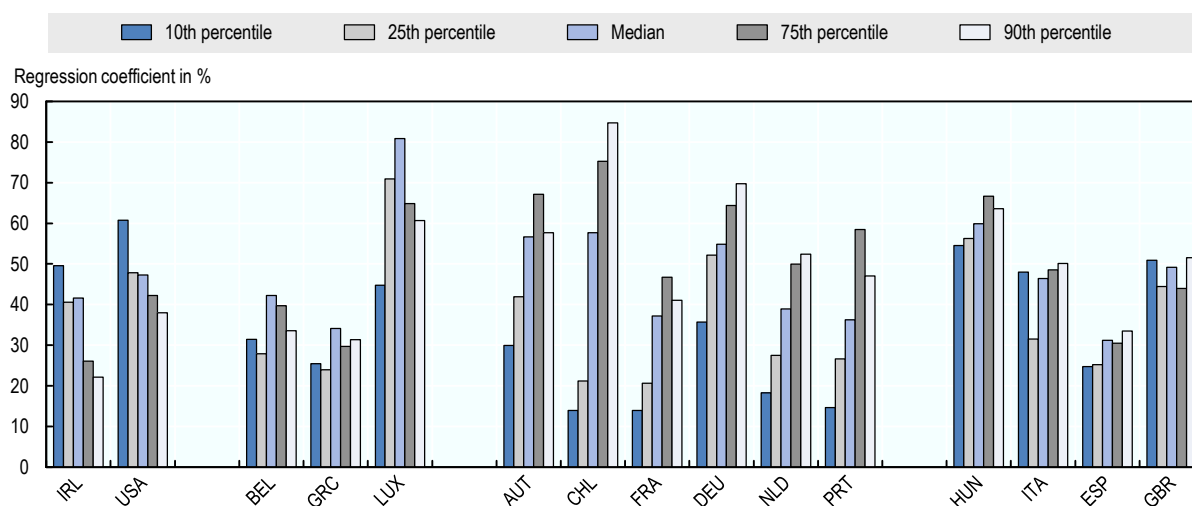
Research on the distribution of earnings from an intergenerational perspective has shown that there is more persistence at both ends and that affluence and poverty are both partially inherited. The section below therefore examines how mobility depends on the part of the earnings distribution where the individual is situated. The second section examines wealth rather than earnings at different points of the distribution. The final section provides estimates of the degree of mobility of earnings for daughters – an area where empirical evidence has been notoriously scarce.

#### 4.3.1. Are mobility patterns different at the top and bottom of the distribution?

Estimates of average mobility patterns such as the elasticities presented above mask heterogeneity in the degree of mobility or persistence across the population, namely that that earnings persistence is not the same nor does it increase or decrease linearly along the distribution.<sup>8</sup> Quantile regressions for a selection of OECD countries are used below to evaluate the influence of fathers' earnings at each specific quantile (the 10<sup>th</sup>, 25<sup>th</sup>, 50<sup>th</sup>, 75<sup>th</sup> and 90<sup>th</sup> percentiles).

Such cross-country analysis confirms that the intergenerational persistence of earnings varies greatly across the distribution and differs by country (Figure 4.13). Four country groups emerge. In a first set of countries, mobility is highest for those at the bottom percentiles of the father's earnings distribution (bottom 10%). Such higher degree of upward mobility for sons born to low-earning fathers exists in Austria, Chile, France, Germany, the Netherlands and Spain. In all those countries persistence increases linearly for those with higher earnings until the 75<sup>th</sup> percentile but then falls again for the 90<sup>th</sup> percentile, except in Chile, Germany and the Netherlands. In contrast, in a second set of countries, Ireland and the US, intergenerational mobility is highest for those born of richer fathers and lowest for those born of the poorer fathers.

In a third group of countries, mobility is higher on both ends of the distribution and lowest among the middle classes, i.e. those with median earnings: Belgium, Greece and Luxembourg. Finally in the fourth group of countries (Hungary, Italy, Spain and UK), differences in mobility across the father's earnings distribution are less pronounced. That said, there is a slight tendency for lower mobility at the top in Hungary, Italy and Spain. This is in line with previous findings for Spain and Italy, which show a higher stickiness at the top (Cervini-Plá, 2015; Mocetti, 2007) and compares this with results for Canada (Chen et al., 2016).

**Figure 4.13. Earnings elasticities for different quantiles of the distribution, early 2010s**

*Note:* The height of each bar represents the point estimate of the inter-generational earnings elasticity. The higher the parameter, the higher is the persistence of earnings across generations, and thus the lower is inter-generational mobility.

*Source:* OECD calculations based on the GSOEP for Germany, the PSID for the United States, the ECHP and EU-SILC 2011 module for Austria, Belgium, France, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom, the MHP and the EU-SILC 2011 module for Hungary, CASEN 2009 for Chile.

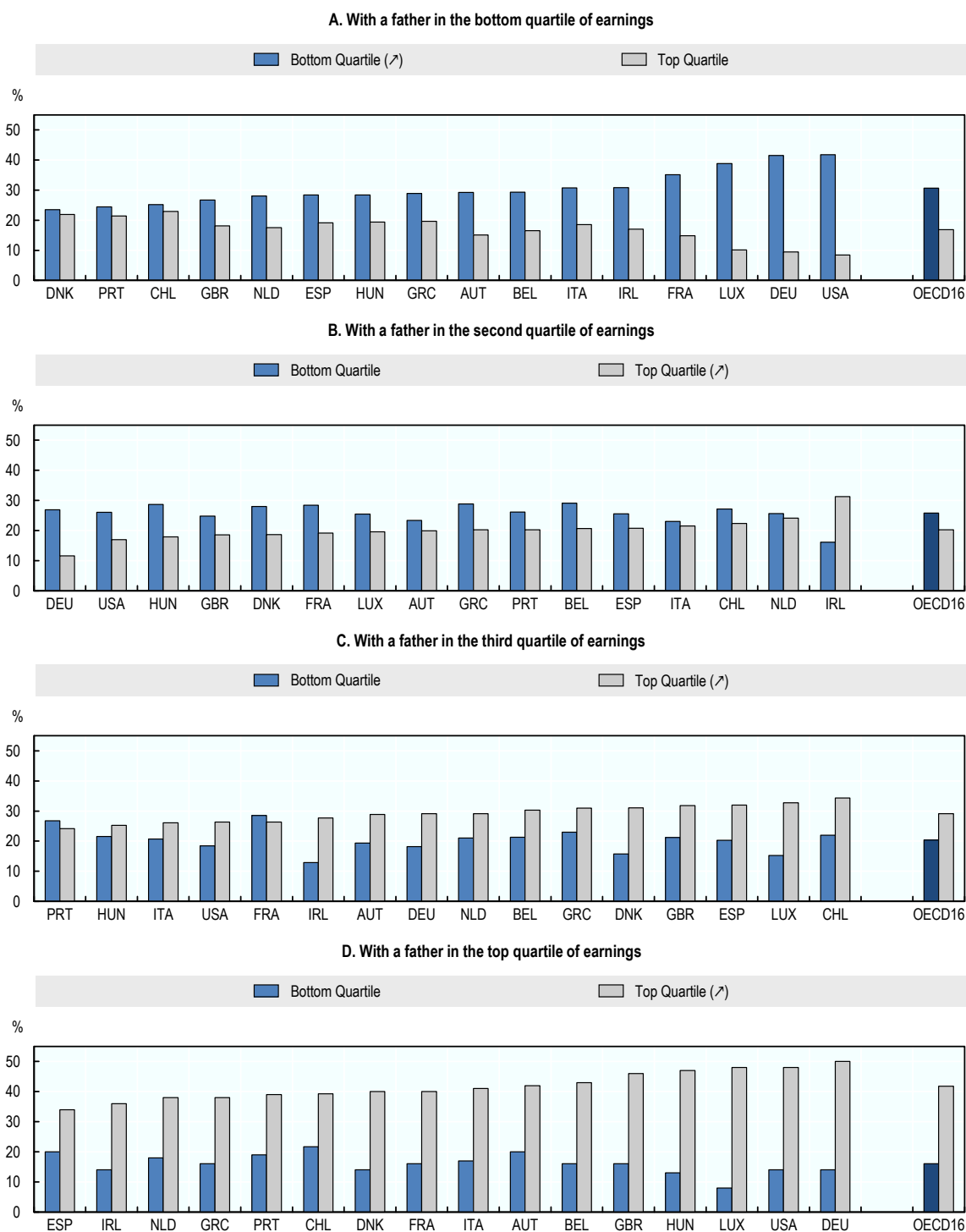
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Children born into lower-income families may face familial, educational, informational and cultural barriers and remain stuck on the bottom rung of the ladder. A useful way to distinguish the patterns of intergenerational upward mobility and downward mobility is provided by transition matrices, which can be interpreted as the probability of a son being in quantile  $i^{\text{th}}$ , conditional on his father being in the same quantile or in another earnings quantile. For instance, this will show which percent of adult children in the top quintile come from parents who are also in the top and which percentage of adult children whose parents were in the bottom parent quantile move up the ladder and make it to the top. Upward mobility from the bottom quantile is actually high: on average, 71-72% of individuals are in a higher earnings quartile than the bottom one if their father was in the bottom quartile (Figure 4.14, Panel A).

However, most upward mobility from the bottom quantile is to the immediately higher quantile (the second), except in France where there is also more upward mobility from the bottom to the third quantile but, at the same time, there is more of a sticky floor than in other countries at the bottom (35%). A smaller fraction of sons reach the top earnings quantile when their fathers were in the bottom quantile: around 15-20% in most countries, but it is 10% or lower in the US, Germany and Luxembourg. By contrast, upward mobility from the bottom is high in Portugal and Denmark since the shares of sons of low-earning fathers remaining at the bottom and reaching the top quantile are almost the same. This confirms other findings that show significantly lower rates of upward mobility from the bottom of the distribution in the United States compared to the Nordic countries (Jantti et al., 2006).

At the same time, those born into more affluent families may be protected from falling by a “sticky ceiling”, i.e. the fact that parental income and advantage can help their offspring limit the risk of downward mobility (Reeves and Howard, 2013). The implications of the stickiness at both ends of the distribution are that relative intergenerational upward mobility will be limited by equivalent rates of downward mobility. Sticky ceilings range from 35% in Spain to close to 50% in the UK, Hungary, Luxembourg, the US and Germany (Figure 4.14, Panel D). Downward mobility from the top is fairly low in the UK, while overall upward mobility from the bottom is above average. In turn, downward mobility from the top to the bottom quartile ranges from 8% in Luxembourg to 22% in Chile.

Also in the middle, earnings prospects are largely affected by the parents’ position in the earnings distribution. In all countries with the notable exception of Ireland, sons with a father in the lower middle income class (the second quartile of the earnings distribution) will be more likely to fall down to the bottom quartile than reaching the top (Figure 4.14, Panel B). In Germany, 27% of children with a father in the second quartile reach the bottom quartile, while only 11% of them reach the top quartile. At the same time, the chances for sons with a father in the higher middle income class (third quartile) to reach the top are generally higher than to fall to the bottom quartile (Figure 4.14, Panel C). Only in France and Portugal the risk to slide down to the lowest quartile is slightly higher.

**Figure 4.14. Percentage of sons in the top and bottom earnings quartile by father's quartile**

Source: OECD calculations based on the GSOEP for Germany, the PSID for the United States, the ECHP and EU-SILC 2011 module for Austria, Belgium, Denmark, France, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom, the MHP and the EU-SILC 2011 module for Hungary, CASEN 2009 for Chile.

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### 4.3.2. Intergenerational transmission of wealth status

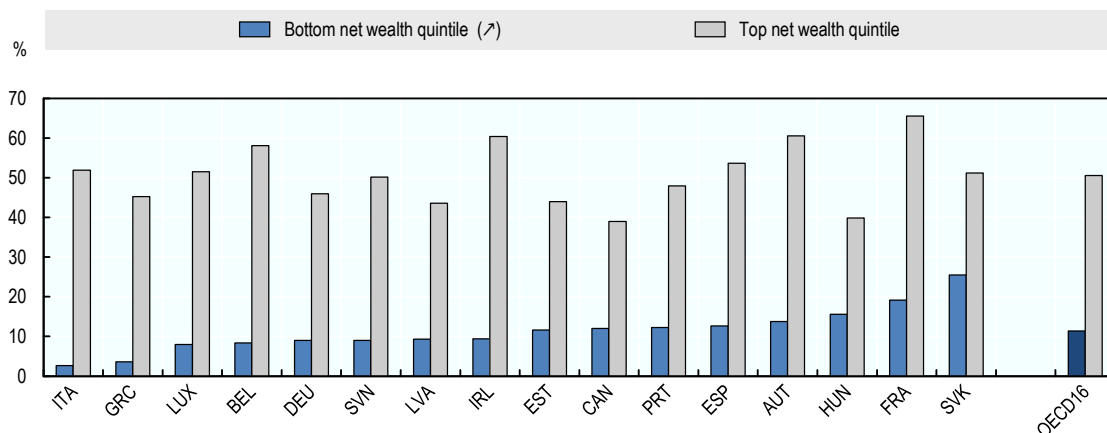
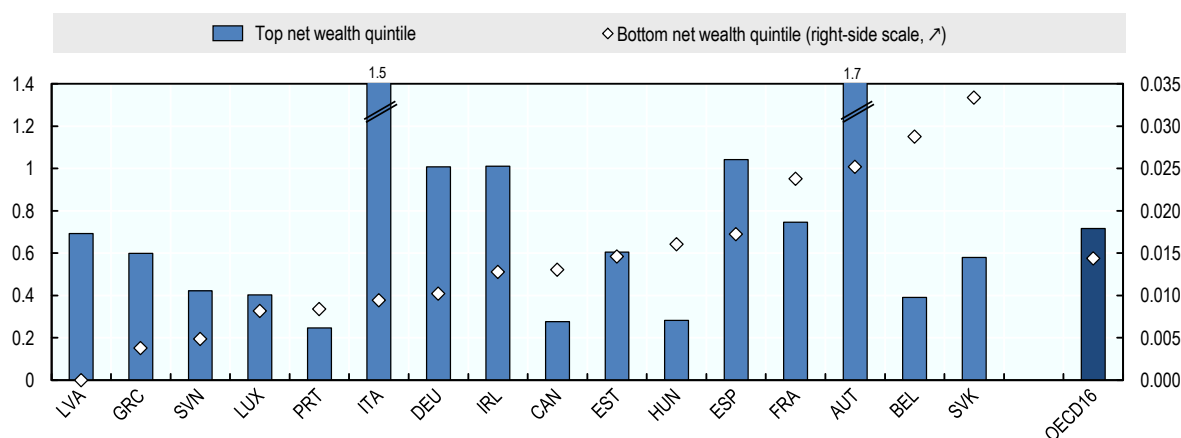
While there has been much interest and research on the association of earnings across generations, much less is known about the transmission of wealth status from parents to their children. The available literature for a few countries suggests that children of wealthier parents are more likely to be wealthy relative to children of less wealthy parents, but evidence on the strength of this association vary largely within and across countries (Charles and Hurst, 2003; Pfeffer and Killewald, 2015, for the US; Boserup et al., 2014, for Denmark; Adermon et al., 2016, for Sweden).

Inheritance is an important factor in wealth associations. There is nevertheless much discussion about the actual share of inheritance in wealth, and, depending on the country and study, estimates for the share of inheritance in net wealth vary from 10% to over 50% (Kotlikoff and Summers, 1988; Modigliani, 1988; Wolff and Gittleman, 2011; for the US; Karagiannaki, 2011, for the UK; Kessler and Masson, 1989, for France; Klevmarken, 2006, for Sweden). More recent work suggests that inheritance can explain between half and as much as three-fourths of wealth persistence (Adermon et al., 2016).

New OECD data on the transmission of wealth from parents to children allow partly filling this gap, shedding light on the importance of inheritances and gifts as a source of people's wealth (Figure 4.15, Panel A). On average, across the 16 OECD countries for which information is available, about one in three households declared having received gifts or bequests in their lifetime. Large cross-country variation exists: in Latvia, only one in four households reports having received inheritances or gifts while, at the other end of the spectrum, this share is almost two times larger in France. National variations are also evident when considering patterns along the wealth distribution. While, in all the countries considered, there is a positive gradient in the chance of inheriting across wealth quintiles, this gradient is particularly strong in Belgium, Greece and Italy. In France, the annual inheritance flow has been increasing since the 1950s, after a decline between the 1930s and 1950s, generating a growth in wealth driven by inheritance and leading to a debate about the so-called "*société d'héritiers*" (Piketty, 2011).

Across the OECD countries with available information, the actualised value of the inheritances and gifts received by households in the top net wealth quintile amounts, on average, to 72% of the mean net wealth across all households, while for those in the bottom net wealth quintile it represents less than 1.5% of the mean net wealth of the total population (Figure 4.15, Panel B).

Many different drivers help explain such differences. First, countries differ widely in the overall mean wealth held by households and in the concentration of wealth. Austria, for instance, which shows a high share of inheritance in the top wealth quintile, also has a high wealth concentration, contrary to Greece. At the same time, some countries have more stringent taxation of inheritance and gifts while others, such as the Slovak Republic, do not tax wealth transfers. The composition of wealth in terms of the distribution of financial and non-financial assets also plays a role, as do the corresponding rules on property taxes. Finally, differences in population ageing across countries are another driver as accumulation of wealth tends to increase with age.

**Figure 4.15. Inheritances and gifts, by net wealth quintile****A. Share of households who received an inheritance, top and bottom wealth quintile, 2015 or latest available year****B. Mean actualised value of received inheritances as share of mean net wealth, top and bottom wealth quintile, 2015 or latest available year**

Source: OECD (2017), *How's Life? 2017: Measuring Well-being*, OECD Publishing, Paris, [http://dx.doi.org/10.1787/how\\_life-2017-en](http://dx.doi.org/10.1787/how_life-2017-en).

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### 4.3.3. Is mobility higher or lower for daughters?

A few studies have compared intergenerational earnings mobility between sons and daughters and suggest that daughters have a similar degree of mobility or are somehow even more mobile than sons. Indeed, some studies find that elasticity is rather similar for sons and daughters in Japan, Spain and the US (Mazumder, 2005; Lefranc et al., 2013; Cervini-Plà, 2009). Scandinavian evidence suggests that intergenerational earnings mobility is somewhat greater for women than for men, when measured by individual earnings – see Österberg (2000), Österbacka (2001), Bratberg et al. (2005; 2007), and Jäntti et al. (2006) – but another multi-country study including Denmark, Finland, Norway, the UK and the US found that women's intergenerational income persistence is very similar across countries when relying only on individual earnings (Raaum et al., 2007). Other countries such as Canada, France, Italy and New Zealand show slightly

lower elasticity for daughters (Lefranc, 2011; Moroni, 2015; Chen et al., 2017; Gibbons, 2010).

Estimating the earnings mobility of daughters entails a problem of selection because earnings are observed only for those employed and are affected by the lower participation of women. For instance, women are more likely to experience career breaks related to child-bearing and child-rearing during the early stages of their working life, and they are generally not as strongly attached to the labour market as men. Employed women are a self-selected sample, and estimates will therefore be biased if the interpretation is to be extended to the entire sample of daughters. In addition to the father-son's estimation requirement, a Heckman-type of correction estimation for sample selection needs to be used (see Box 4.6).

**Box 4.6. Correction for sample selection when calculating daughters' individual elasticities**

As for sons, the intergenerational earnings elasticity will be estimated using the information from pseudo-father's earnings and their socio-economic characteristics to predict the father's permanent earnings  $W_{it}^f$  :

$$W_{it}^f = W_i^f + A_{it}^f + v_{it}^f = Z_i \delta + A_{it}^f + n_i^f + v_{it}^f \quad (1)$$

Where  $W_{it}^f$  is the father's earnings of individual  $i$  at time  $t$ , which can be decomposed into permanent earnings  $W_i^f$  and time-variant characteristics  $A_{it}^f$ . Permanent earnings is decomposed in time-invariant determinants  $Z_i$  and time-invariant disturbances  $n_i$ .

This allows to obtain the predictor of the father's permanent earnings based on parental characteristics (education, occupation and age) included as dummy variables:

$$\hat{W}_i^f = Z_i \hat{\delta} \quad (2)$$

And regress it with the data on the daughter's log earnings to estimate the intergenerational income elasticity coefficient  $\beta$  from:

$$W_{it}^d = \beta(z_i \hat{\delta}) + A_{it}^d + u_{it} \quad (3)$$

$$\text{Where } u_{it} = \mu_i + \beta n_i^f + v_{it}^s + \beta Z_i (\delta - \hat{\delta})$$

The selection equation is a probit model where the dependent variable,  $d$ , is a dichotomous variable which is equal to 1 if the daughter works and zero otherwise and is represented by:

$$d_i = Z_i \gamma + u_i$$

Where  $Z_i$  contains marital status, a dummy variable for having children and the log of the spouse's earnings. Since these variables are unlikely to affect earnings through other channels than the probability to work, the exclusion restriction holds and the Heckman correction can be used.

Heckman suggests estimating the probit selection equation using maximum likelihood for the whole sample and compute the inverse Mills ratio which is then used as an additional regressor in the intergenerational equation as:

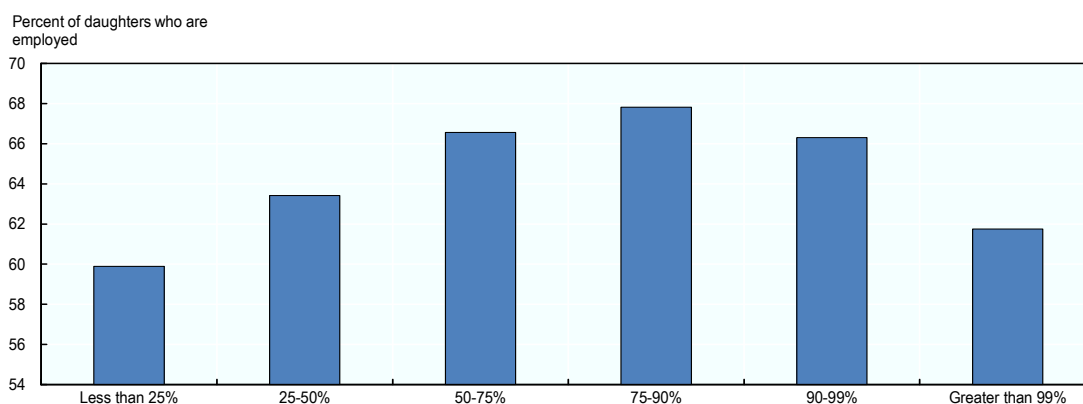
$$W_{it}^d = \beta(z_i \hat{\delta}) + A_{it}^d + \mu \hat{\lambda} + u_{it} \quad (3)$$

Where  $\lambda$  is the inverse Mills ratio.



**Figure 4.16. Employment rate for daughters by father's earnings percentile**

Employment rate for daughters by father's earnings percentile, average for 13 OECD countries, around 2011



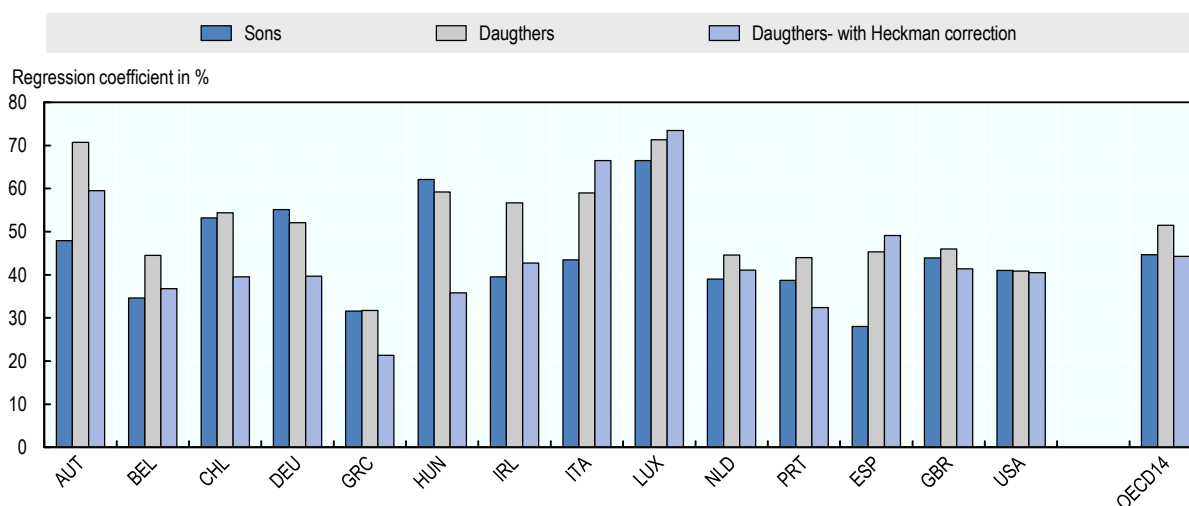
*Source:* OECD calculations based on the GSOEP for Germany, the PSID for the United States, based on the ECHP and EU-SILC 2011 module for Austria, Belgium, Ireland, Luxembourg, the Netherlands, Portugal, Greece, Italy, and the United Kingdom, based on the MHP and the EU-SILC 2011 module for Hungary, on CASEN for Chile.

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Overall, the elasticity between fathers' earnings and daughters' earnings is smaller (i.e. mobility is higher) when we correct for the employment selection with a Heckman selection model. This suggests that women with the lowest earnings potential are less likely to participate in the labour market. Figure 4.16 suggests an inverted u-pattern: employment rates tend to be the lowest for the women of low-earning fathers, but they are also lower for the daughters of very high earners.

Figure 4.17 compares elasticities for sons with elasticities for daughters, also correcting for participation. Correcting for participation reduces the estimates for elasticity in most countries, particularly in Greece, Hungary, Ireland and Portugal. In Italy, by contrast, the elasticity for daughters increases when correcting for participation, indicating that women with the greatest earnings potential are less likely to participate in the labour market. Lower participation for women with higher expected earnings has also been found in Japan (Lefranc et al., 2013).

Intergenerational earnings mobility for daughters tends to be similar to mobility for sons in most countries. Mobility is significantly higher for daughters than for sons (more than 10 points) in Chile, Germany, Greece and Hungary, while it is lower for daughters in Austria, Luxembourg and, in particular, Italy and Spain.

**Figure 4.17. Earnings elasticity between fathers and daughters compared with sons**

*Note:* The height of each bar represents the point estimate of the inter-generational earnings elasticity. The higher the parameter, the higher is the persistence of earnings across generations, and thus the lower is inter-generational mobility. Results for daughters presented in the third bar use Heckman's correction for selection bias.

*Source:* OECD calculations based on the GSOEP for Germany, the PSID for the United States, based on the ECHP and EUSILC 2011 module for Austria, Belgium, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom, based on the MHP and the EU-SILC 2011 module for Hungary, on CASEN for Chile.

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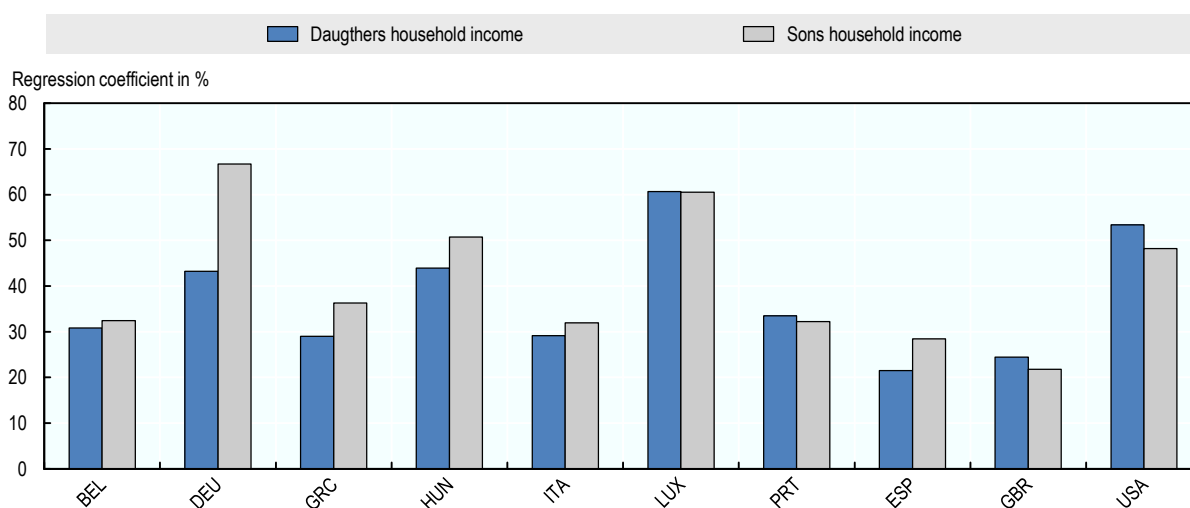
High rates of part-time work and long-term economic inactivity and occupational sex segregation complicate the analysis and interpretation of these results. In addition, assortative mating –the growing tendency of people to live together with spouses with similar education or earnings levels – may also affect the extent of the intergenerational association, so one alternative is to look at household income instead of individual earnings. How inequality evolves over generations depends on more than just one's own labour income or human capital, but also on who marries whom. Sons and daughters eventually become someone's spouse, and the way in which this matching occurs may have consequences for their own socio-economic position.

According to Raaum et al. (2007), country differences in intergenerational family earnings mobility are potentially driven by four factors: (1) individual wage mobility across generations, (2) labour supply responses with respect to own wage, (3) the degree of assortative mating, and (4) labour supply responses with respect to the spouse's wage, arising from joint labour supply decisions in households. A number of studies have shown that assortative mating contributes significantly to intergenerational income elasticity (Raaum et al., 2007; Black and Devereux, 2011; Chadwick and Solon, 2002; Ermisch et al., 2006). With respect to labour supply decisions in countries, there could be negative cross elasticities of labour supply/wages in couples because women marrying rich men respond to the high wage of their husband by working fewer hours or by withdrawing from the labour market. In the UK and the US, this cross-wage labour supply response turns out to be stronger than the direct labour supply effect arising from the fact that women marrying rich men also tend to have high earnings potential

themselves. A similar finding emerges from Japan. On the other hand, in the Nordic countries, the latter effect (i.e. direct labour supply) dominates.

Household disposable income is, in principle, a better measure of the intergenerational association in living standards than looking at individuals and individual earnings only (Jenkins and Jantti, 2013). Such analysis can be done, however, only for a subset of countries (see Box 4.7). Comparing mobility between sons and daughters using household income for this sub-set of countries shows that differences in mobility between sons and daughters are much less pronounced than in the case of individual earnings, with the notable exception of Germany. As is the case for earnings mobility, income mobility for daughters is considerably higher than for sons in Germany (Figure 4.18). For the remaining countries, if anything, income mobility for daughters is higher than for sons in Greece, Hungary and Spain, and lower in the United States.

**Figure 4.18. Comparing daughters and sons' income elasticities based on household income, 2011**



*Note:* The height of each bar represents the point estimate of the inter-generational earnings elasticity. The higher the parameter, the higher is the persistence of earnings across generations, and thus the lower is inter-generational mobility. ...: not available.

*Source:* OECD calculations based on the GSOEP for Germany, the PSID for the United States, based on the ECHP and EU-SILC 2011 module for Belgium, Greece, Italy, Luxembourg, Spain, Portugal and the United Kingdom, based on the MHP and the EU-SILC 2011 module for Hungary.

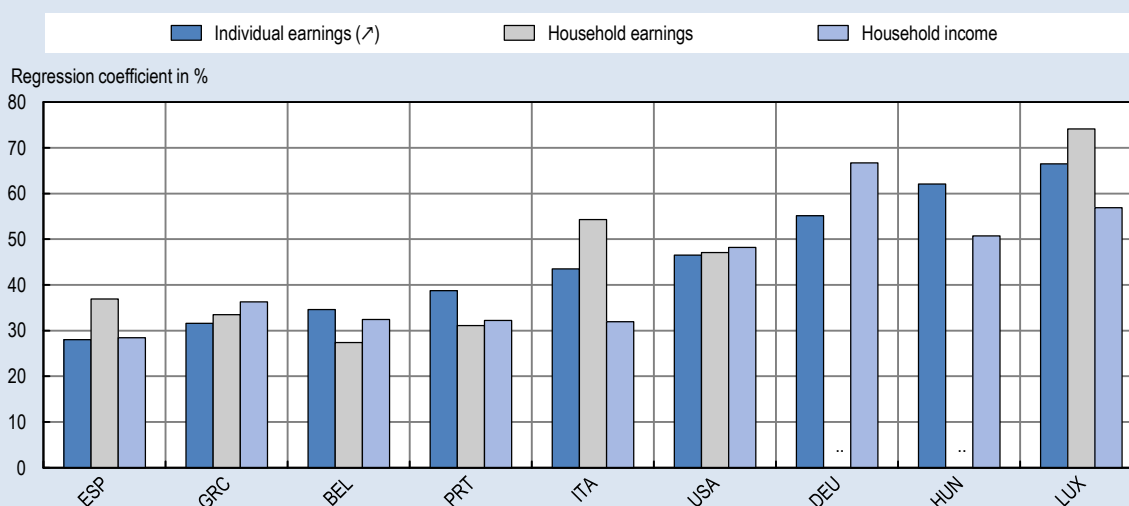
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### Box 4.7. How moving from earnings to income affects the intergenerational association

The majority of studies have focused on individual labour market earnings. However, household incomes are less volatile than earnings and should be better predictors of permanent living standards. Looking at income requires including other income components (capital income, transfers) and individuals who are not working and receiving benefits, and it is uncertain how this will affect mobility estimates. For instance, there could be a stronger correlation because of government assistance being correlated across generations.

The use of income rather than earnings affects the degree of mobility in different ways across countries. In Germany and Greece, mobility is lower when using household income. In Belgium, Portugal and Luxembourg, on the other hand, mobility is higher when using household income rather than individual earnings. In other countries, mobility is similar or slightly higher if income is used but mobility is lower if household earnings are compared.

Figure 4.19. Comparing earnings and income elasticities, late 2000's



Note: The height of each bar represents the best point estimate of the inter-generational earnings elasticity. The higher the parameter, the higher is the persistence of earnings across generations, and thus the lower is inter-generational mobility. \*\*: not available.

Source: OECD calculations based on the GSOEP for Germany, the PSID for the United States, the ECHP and EU-SILC 2011 module for Belgium, Greece, Italy, Luxembourg, Portugal and Spain, and the MHP and the EU-SILC 2011 module for Hungary.

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## 4.4. Conclusion

This chapter has analysed the mobility of socio-economic status across generations first using social class rankings based on occupation and, second, looking at the association of earnings and incomes between parents and children. The analysis suggests that while absolute social class mobility in terms of occupations is high, it has declined over time in half of the countries studied and did not change much in the other half. In particular, upward mobility has declined and downward mobility has increased in some countries as a result of structural social changes. This implies that to increase upward

mobility, further upgrading of the occupational class structure is needed with policies aiming to create more top-end jobs.

In terms of intergenerational earnings mobility, the chapter has documented a wide variation in the levels of relative mobility across countries and along the earnings distribution. In particular, in most countries there is less earnings mobility at the top of the distribution. In spite of the rise in income inequality over the past decades, there is less of a consensus on the evolution of earnings mobility across generations. The relative significance of the transmission of occupations and education levels across generations and returns to education explain part of this cross-country variation in earnings mobility. Diverging trends appear across countries, between men and women and depending on the cohorts examined. More research, across multiple cohorts of parents and offspring, is needed to understand whether there has been a decline in relative earnings mobility for more recent generations.

Some countries fare better with regard to social mobility in all dimensions of socioeconomic status, while the ranking of others depends on the particular dimension. For instance, most Nordic countries have below-average transmission of advantages and disadvantages in terms of earnings but also in terms of social class based on occupation.<sup>9</sup> At the same time, some countries in western and central Europe show fairly low mobility in earnings: this is the case for Austria, France, Germany, Hungary and Switzerland. On the other hand, southern European countries have low mobility in terms of social class but not in terms of earnings. Low mobility in social classes in these countries is partly explained by relatively larger agricultural sectors and the prevalence of small-scale enterprises where there is an important intergenerational transmission of professions but where the earnings dispersion can be large. In the US, there is more mobility when looking at the transmission of social class from parents to children than in terms of earnings. Higher economic returns to education in the US than in other countries and the importance of parental income in promoting educational attainment and higher earnings via parental networks, together with a higher degree of assortative mating, may help explain why earnings persistence is higher than persistence in social class.

## Notes

1. Social classes are deemed to include members who should be typically comparable, on the one hand, in terms of their sources and levels of income, their degree of economic security and chances of economic advancement, and, on the other hand, in their degree of autonomy in performing their work tasks and roles and the socio-economic relations that individuals share with each other on the basis of their occupations.
2. Earnings elasticities are a measure of intergenerational earnings persistence and range between zero, which means that a child's adult earnings are not related at all to parental status (high relative mobility), and 1, which means that all earnings are determined by parental earnings (low relative mobility).
3. While the labour market has changed significantly since the 1980s, researchers have provided empirical evidence that individuals in different classes do inhabit different economic worlds, as characterised by security, stability and prospects, and that this arises not from the attributes of individuals per se but from their location within the social relations of labour markets (Goldthorpe and McKnight, 2006).
4. Ueda (2013) finds lower values of 0.22 – 0.25 for earnings elasticities for father to sons aged 30-39. Intervals of values obtained from different specifications and sources are provided in Annex 4.A1.
5. Blanden et al. (2007) and Buchner et al. (2012) suggest that the role of cognitive skills is important for mobility and operates mainly via educational attainment.
6. Mood et al. (2012) suggest for Sweden, that the transmission of personality traits (social maturity, emotional stability and leadership capacity) also has an important impact on the labour market outcomes of children.
7. Pellizzari (2010) and Kramarz and Skans (2014), for instance, show that, given the level of education, in EU countries family networks affect the probability of a person finding a good job or of being employed.
8. Such 'non-linearities' have been explained by credit constraints (Becker and Tomes, 1979, 1986): low-earning parents are constrained in the possibility to finance the education of their children; hence, the latter's earnings fall below the earnings of non-constrained children with the same ability. Other researchers argue that findings are at odds with this hypothesis, because low-earning families actually show higher mobility, likely related to the support by the education systems (Grawe, 2004).
9. That said, when looking at the very long term, according to a study of surnames, there is low social mobility across most countries, including Sweden, England, Japan and the United States (Clark, 2014). The study suggests that it would take several generations – 10 to 15 – to remove the advantage transmitted through family wealth.

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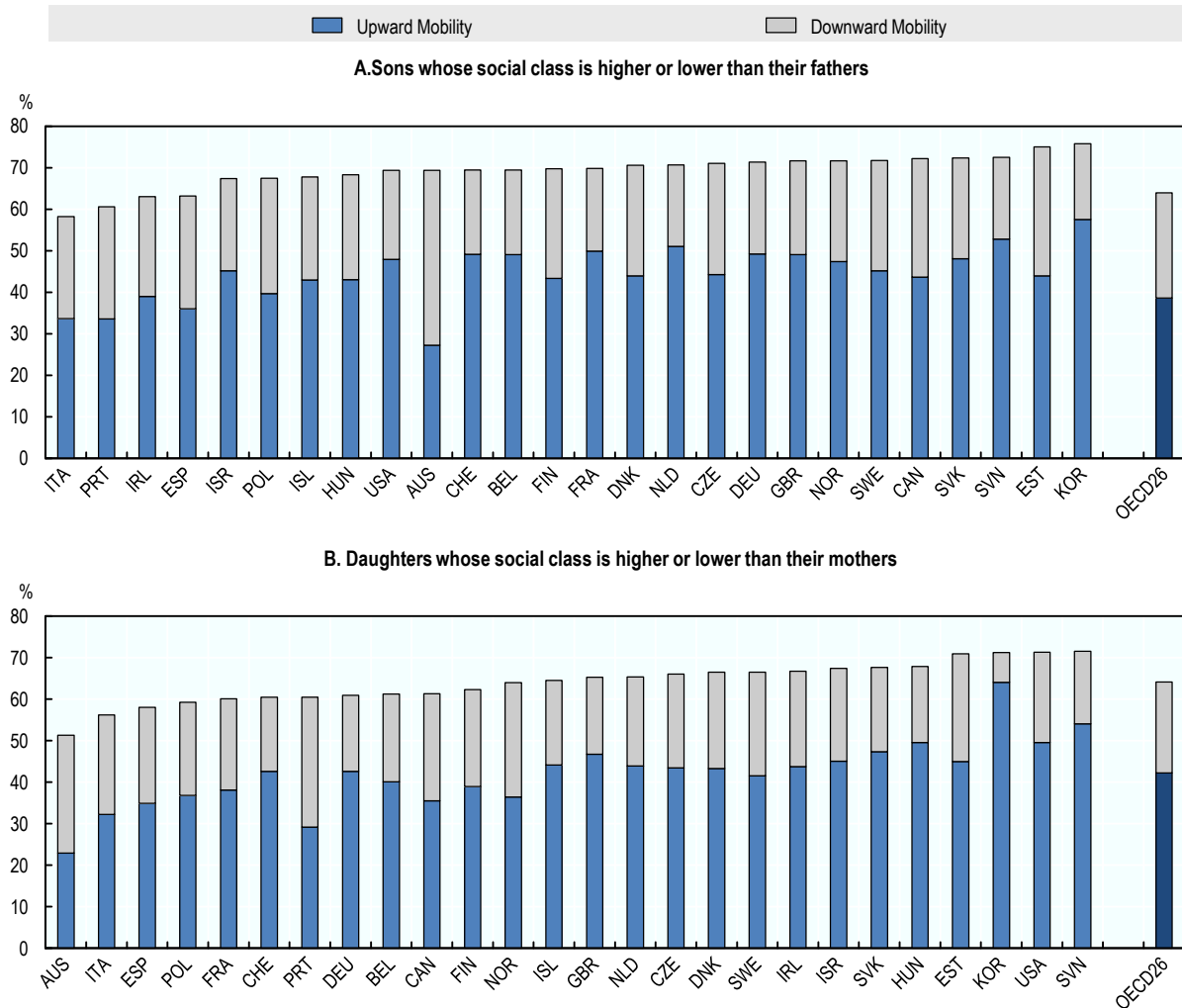
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## Annex 4.A1. Additional analyses

**Figure 4.A.1.1. Absolute social class mobility by gender, 2010s**

Percentage of 25-64 years old whose social class is higher or lower than that of their parents by gender, 2002-14



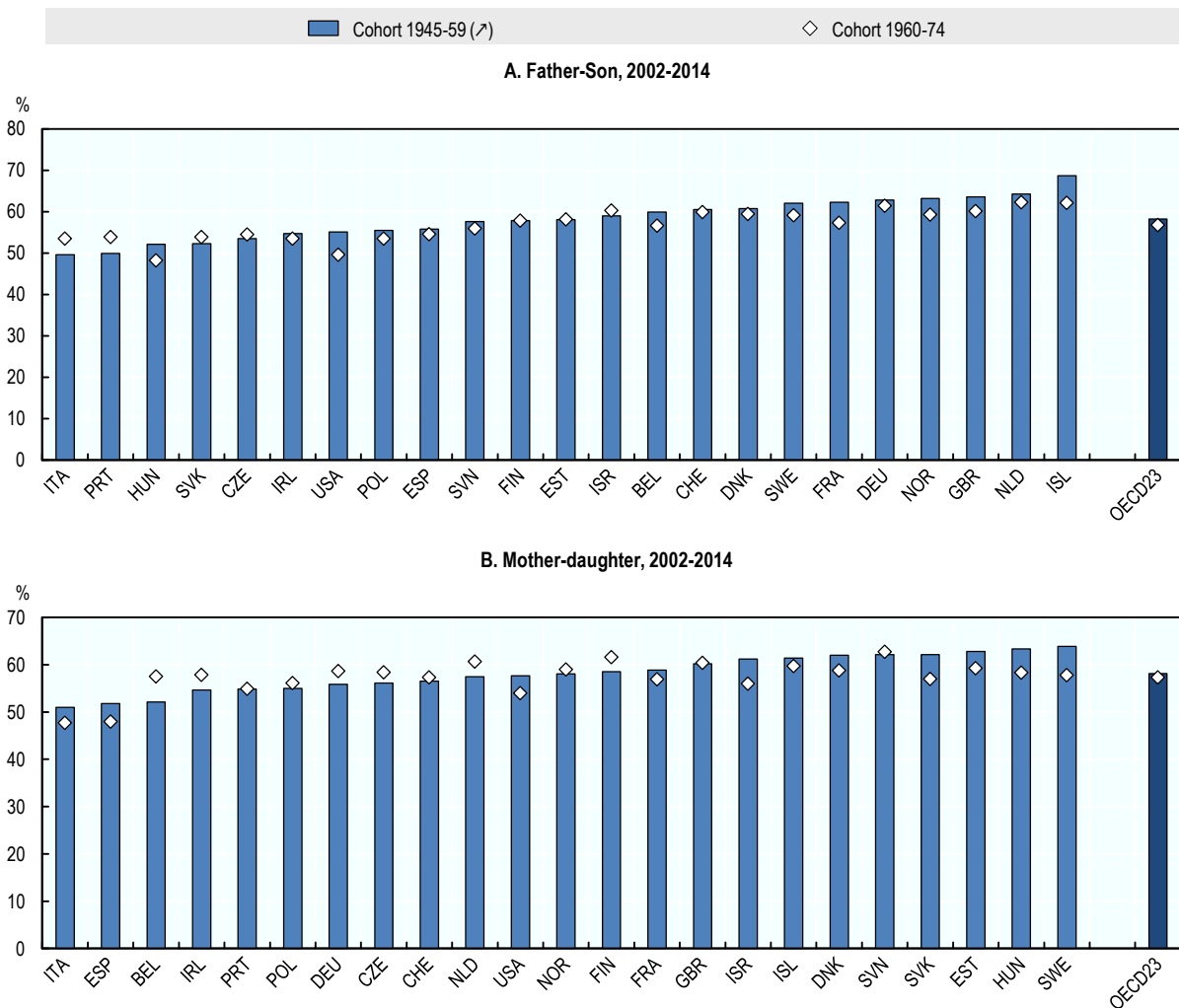
*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-14), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14).

Section 4.1.2 above documented trends in absolute class mobility for all persons, comparing cohorts born 1945-59 with cohorts born 1960-74. No overall difference emerges from the analysis of cohort changes for men and women but gender differences in trends in absolute mobility depend greatly on the country (Figure 4.A1.2). In a group of countries absolute mobility became lower for the 1960-74 cohort: this includes most Nordic countries, Estonia, Slovenia, Hungary, France, Israel, the UK and the US. In the rest of countries, which comprise Southern European countries, Belgium, Ireland and some Central European countries, absolute social class mobility was stable over time. For the countries with downward mobility over time, this trend is driven by different gender patterns: there is lower mobility among women in several countries (Denmark, Estonia and Norway) or for both men and women (Hungary, Sweden and the US) while it is driven by lower mobility among men in France and the UK. In countries where stability in absolute mobility is observed, there are some diverging trends between men and women. This is the case in Belgium and Ireland where absolute mobility declined for men while it increased for women and the reverse was found in Italy. Overall there is more stability in upward mobility for women across countries while for men, in six out of 23 countries, there was a decline in upward mobility and in other six countries there was an increase. On the contrary, more countries showed a decrease in downward mobility for women than an increase (nine and three respectively).



Figure 4.A.1.2 Changes in absolute class mobility by gender



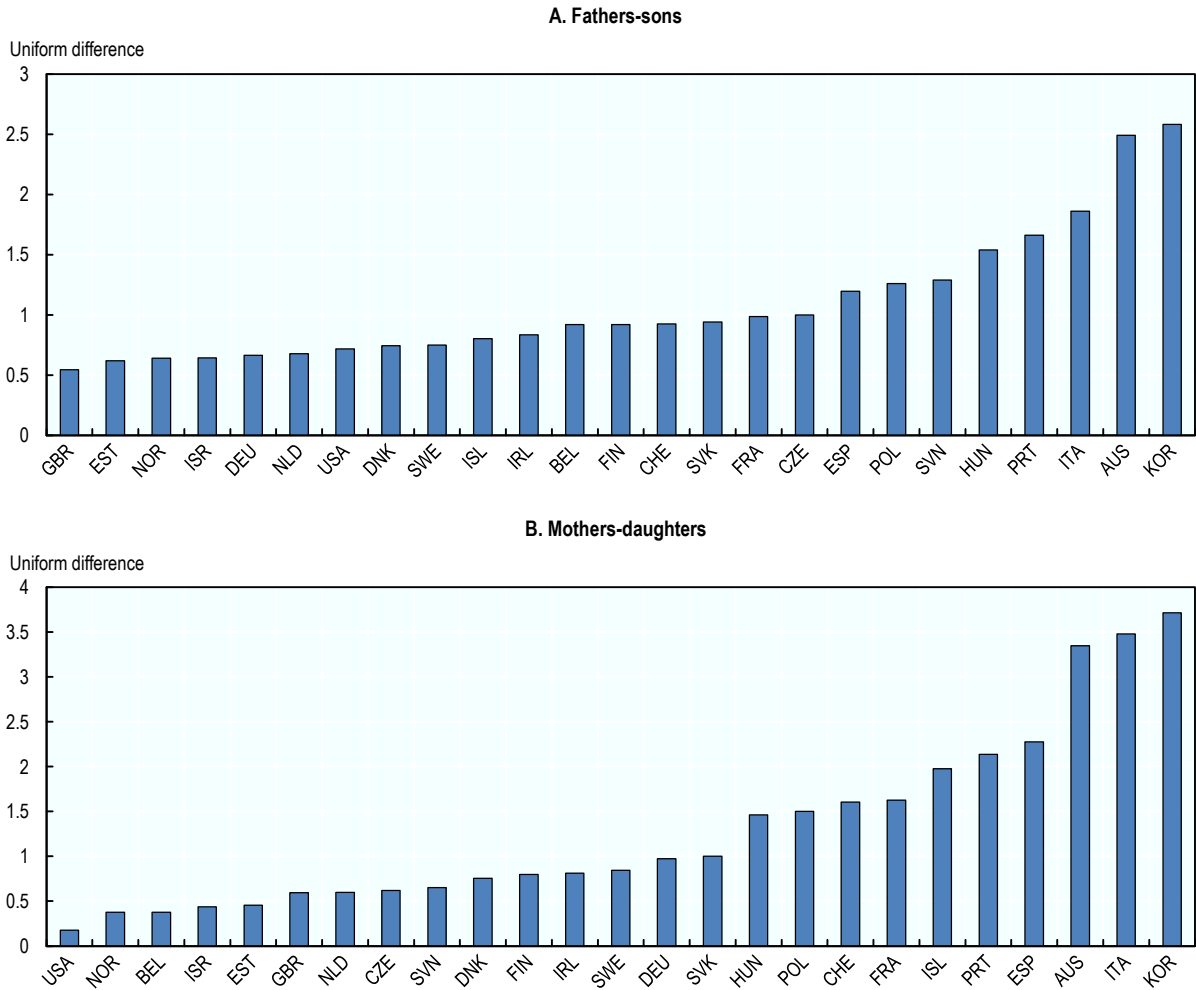
*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-2014), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-2014).

Figure 4.6 in Section 4.1.3 above suggests that relative social class mobility shows little variability across most but not all countries, for all persons. That said, relative mobility for daughters is more diverse across countries, with a wider set of countries having either high or low relative mobility (Figure 4.A1.3, Panel B). Although the model used to estimate relative persistence does not allow for a straightforward gender comparison, relative mobility appears similar by gender in 11 out of 25 countries, while it is lower for men in nine countries and lower for women in five countries. For both sons and daughters, mobility is low in Southern European countries, Australia and Korea though mobility appears lower for daughters than for sons. In such countries, higher persistence for daughters might be driven by the selection effect of participation where predominantly women are working who are highly educated, likely to be in a high social class and whose parents were also in a high social class are working. In countries with

higher mobility for women, this might also be related in part to a participation effect of women, whereby more women are participating in lower classes because they work part-time or have interrupted careers, although their parents came from a high social class. Bukodi et al. (2016) found for instance that in Great Britain increasing fluidity for women was indeed related to part-time work.

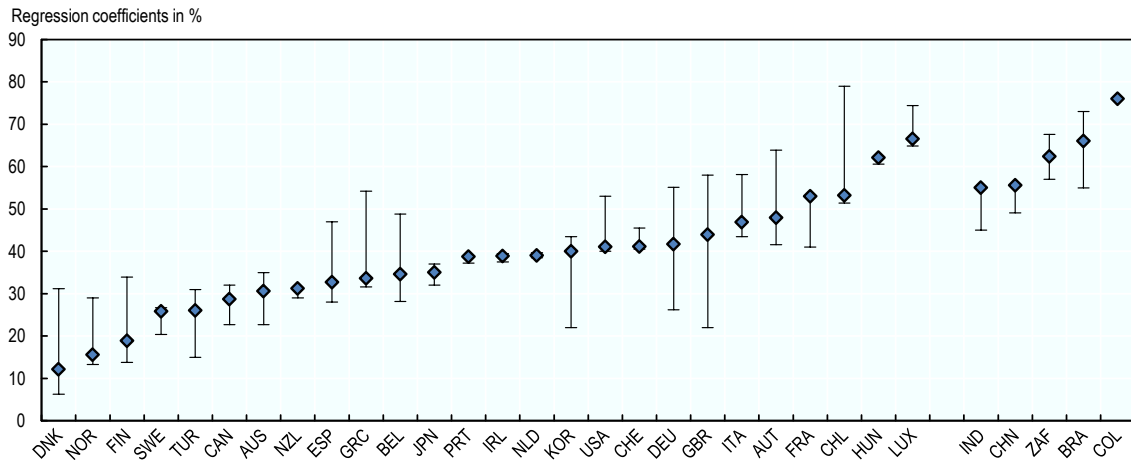
**Figure 4.A.1.3 Relative persistence in social class by gender**



*Note:* Social class is based on the nine European Socio-Economic Classification (ESEC) categories constructed based on occupation.

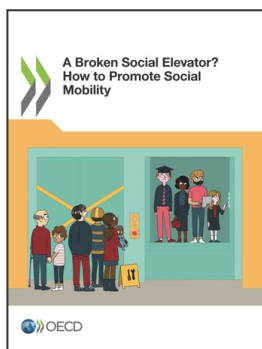
*Source:* OECD calculations based on the ESS all seven waves for European countries (2002-14), PSID for the United States (1999-2013), CNEF for Australia and Korea (2000-14).

**Figure 4.A1.4. Estimates for earnings elasticities for fathers to sons for different specifications and sources, late 2000s**



Source: OECD calculations based on the GSOEP for Germany, the PSID for the US. Based on the ECHP and EUSILC 2011 module using the two-sample two-stage least squares estimator for Austria, Belgium, Ireland, Luxembourg, the Netherlands, Portugal, Spain, Greece, Italy, and the UK, based on the MHP and the EU-SILC 2011 module for Hungary, on CASEN for Chile. This calculations are complemented by estimates from Mendolia & Siminski (2015) for Australia, Chen et al. (2017) for Canada, Nuñez and Miranda (2010) for Chile, Bratberg et al. (2007) for Denmark and Finland, Lefranc (2011) and Lefranc and Trannoy (2003) for France, Schnitzlein (2012) for Germany, Kim (2013) for Korea, Lefranc et al. (2012) for Japan, Jantti et al. (2006) and Jantti et al. (2006) for Norway, Cervini-Plá (2015) for Spain, Jantti et al. (2006) for Sweden, Gibbons (2010) for New Zealand, Bauer (2006) for Switzerland, Mercan and Barlin (2016) for Turkey, Dearden Machin Reed (1997) for the UK, Hyson (2003) and Hertz (2007) for the US, Chyi et al. (2014) for China, Ramirez-Zuluaga (2016) for Colombia, Hnatkovska et al. (2012) for India, Piraino (2015) for South Africa, Guimaraes-Ferreira and Veloso (2006) for Brazil.





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