4 A spotlight on social mobility in the German middle class

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This chapter examines short-term income dynamics in Germany since the mid-1990s. It first focuses on the mobility patterns of people in the middle-income group over a four-year interval, looking at trends in their risks of sliding out of the middle, and of experiencing poverty, and their opportunities of rising out towards the top. It then looks at changes in the upward mobility into the middle-income group for low-income households. The last part of the chapter zooms in on the changes in income dynamics for different socio-economic groups, disaggregating results by age, level of educational attainment and occupational class, migrant background, and region of residence.

4.1. Income mobility in the German middle class: risks and opportunities

The level of social mobility[1] is an important characteristic of a social market economy. The promise of moving up the income ladder, and the welfare state's capacity to protect people from substantial income losses and to guarantee a minimum standard of living are cornerstones of an inclusive growth regime that encourages risk taking by limiting possible downsides for each individual. At the same time, access to economic opportunities for all groups in society is important to promote social cohesion and secure broad support for democratic institutions. This increases economic stability.

The general claim towards the social market economy in Germany is that educational achievement and hard work are rewarded with palpable opportunities for upward mobility independently of one's socio-economic background and thus pay off over the course of a career. A certain degree of downward mobility from higher-income groups is acceptable, and even desired, but should be cushioned by the welfare state, offering social security to everyone.

This section analyses social risks and opportunities in Germany, in particular for middle-income people, by analysing mobility patterns in relative income[2] positions over time using data from the German Socio-Economic Panel (SOEP). Specifically, the section examines:

- *Trends in upward and downward mobility for people on middle-incomes*, i.e. their chances of rising out into the high-income group and the risk of dropping out into the low-income group;

- *Trends in upward mobility into the middle-income group*, i.e. low-income people's chances of rising up;

- *Socio-economic differences in these opportunities and risks*, i.e. the extent to which upward and downward mobility vary, and have evolved differently, across people depending on their age, level of educational attainment and occupational class, on where they live, and on whether or not they have a migration background.

The chapter's analytical approach differs from that in the previous chapters in that it employs a *longitudinal* perspective, i.e. traces income mobility patterns for working-age people over time (see Box 4.1). It focusses on the changes people experience in their relative income position from one period to another and thereby complements the previous assessment of risks and opportunities for aggregated groups of the German middle class.

4.1.1. Incomes in Germany are highly persistent, more so than they were in the late 1990s
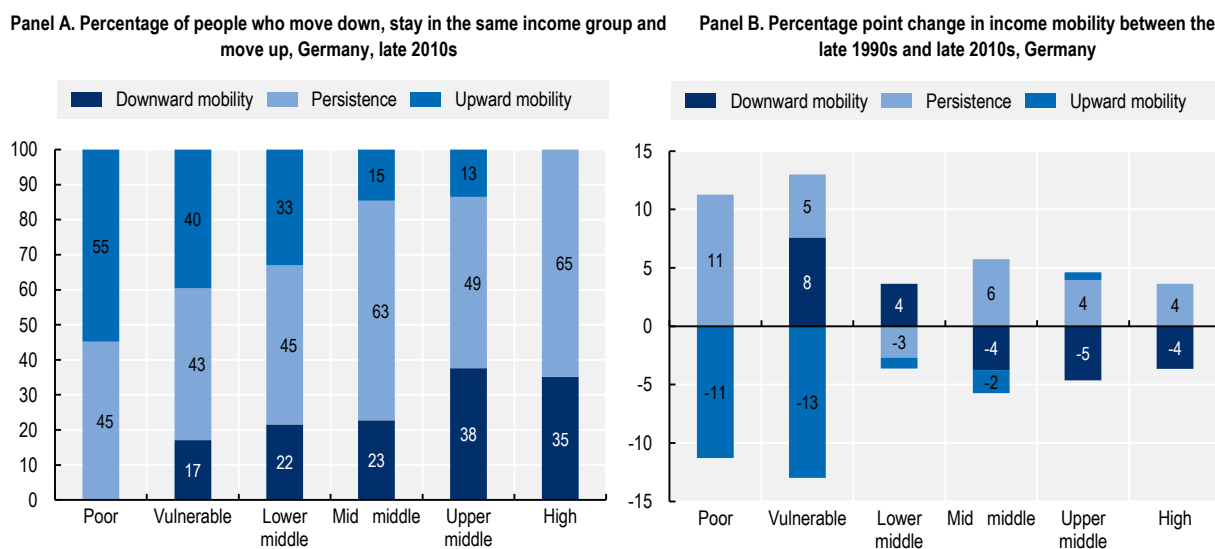
Incomes in Germany are quite persistent over short time periods, particularly in the middle and at the top of the income distribution. About 63% of the people who live on incomes towards the middle of the distribution (mid middle-income group; 100-150% of the median)[3] are still in that same income group four years later (Figure 4.1, Panel A). Also 65% of high-income people (incomes above 200% of the median)[4] remain in their income group. For people in the other income groups, persistence rates average around 43 to 49%.

Since the late 1990s, income persistence in Germany has risen across income groups (Figure 4.1, Panels A and B). In five out of the six income groups, people tracked over a four-year period were more likely to stay in their income group in the late 2010s than in the late 1990s. Only for people in the lower middle-income group (75-100% of the median), income persistence has decreased. The likelihood of remaining in the same income group has risen most strongly in the lower parts of the distribution, i.e. for the poor (less than 50% of the median), by 11 percentage points from 34 to 45%, and for the vulnerable (50-75% of the median), by 5 percentage points from 38 to 43%. This implies a decrease in upward mobility for people on low incomes (-11 and -13 percentage points for the poor and vulnerable). Meanwhile, the risk of moving down the income ladder decreased for people in the mid middle, the upper middle

(150-200% of the median), and the high-income group (Figure 4.1, Panel B). These developments are consistent with the increase in income inequality that Germany has witnessed up until the mid-2000s (see Chapter 2, Figure 2.4 and Grabka, Goebel and Liebig (2019[1])).

For people in lower income groups, greater income persistence between the late 1990s and late 2010s came at the cost of reduced upward mobility; for people on upper-middle and high incomes, it is mirrored in reduced downward mobility (Figure 4.1, Panel B).

Figure 4.1. Incomes have become more persistent over time, especially so for the poor

Panel A. Percentage of people who move down, stay in the same income group and move up, Germany, late 2010s

Panel B. Percentage point change in income mobility between the late 1990s and late 2010s, Germany

Note: Persistence, upward and downward mobility shares are calculated for the working age population (18-64) for a four-year period as described in Box 4.1. Results included for the period 1995-98 ("Late 1990s") and 2014-17 ("Late 2010s").
Source: OECD calculations based on the SOEP v36.

Box 4.1. Analysing income mobility dynamics

The analysis of income mobility draws on data from the German Socio-Economic Panel (SOEP), a household survey conducted annually since 1984 (Goebel et al., 2018[2]). Currently, around 15 000 households with about 30 000 individuals are surveyed. With the most recent wave (v36), the SOEP provides annual income data up to 2018. The analysis focuses on the working-age population (18-64 years) during the income years 1994 to 2018. Employing a longitudinal perspective, it traces people's mobility between six different income groups over time. As in previous chapters, the income groups are defined based on equivalised household income relative to the median (see discussion in Chapter 2).

Transition matrices, which relate people's position in the income distribution at a given point in time to their position one or several periods later, are a standard method for describing longitudinal income mobility processes. This chapter focuses on transitions over four years. This is in line with the procedure applied for determining the persistent at-risk-of-poverty rate in the European Social Survey (Guio and Marlier, 2004[3]), and it has been used previously to analyse mobility patterns for the low-wage sector in Germany (see for example Grabka and Goebler (2020[4])). While it can be very interesting also to study transitions over longer periods, this increases panel attrition and hence reduces the number of observations and the representativeness of the sample.

Table 4.1. Mobility amongst six different income groups, 2014-17

		2017						
		Poor <50%	Vulnerable 50-75%	Lower middle 75-100%	Mid middle 100-150%	Upper middle 150-200%	High >200%	Population size
2014	Poor <50%	45%	31%	13%	8%	2%	1%	4 461 294
	Vulnerable 50-75%	17%	43%	26%	11%	2%	0%	7 223 991
	Lower Middle 75-100%	6%	16%	45%	30%	2%	1%	9 064 312
	Mid Middle 100-150%	2%	4%	16%	63%	13%	2%	14 764 063
	Upper Middle 150-200%	2%	1%	5%	29%	49%	13%	7 068 315
	High >200%	1%	1%	3%	11%	19%	65%	4 298 303

Note: The table displays the transition shares after four years averaged over the starting years 2013-15 for different income groups defined in relation to the median of household equivalised incomes for the working age population (18-64), and the population size.
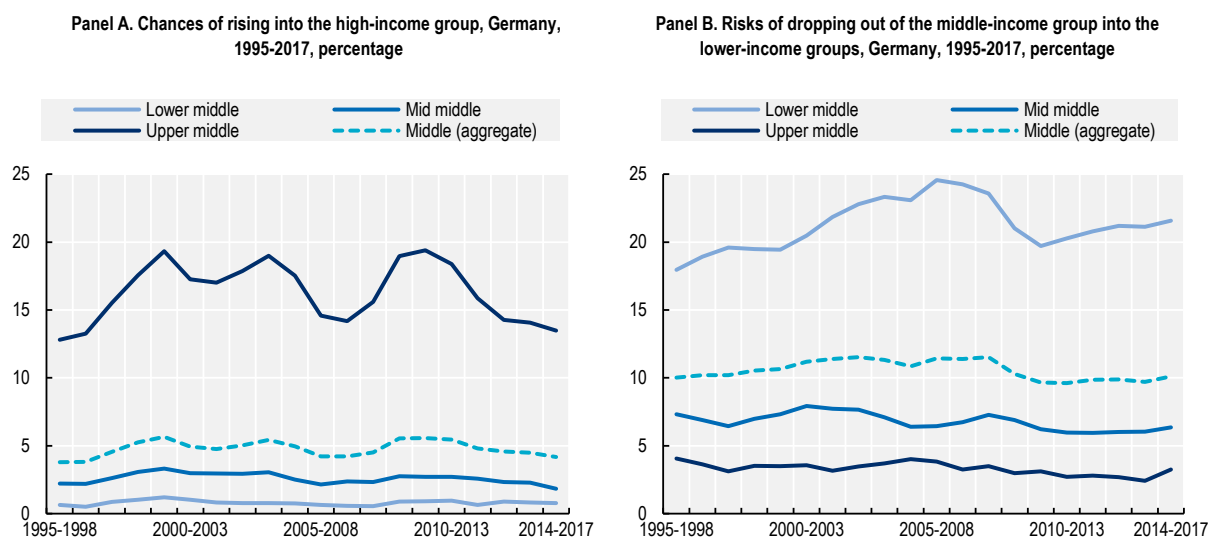Source: OECD calculations based on the SOEP v36.

To smooth mobility patterns, the analysis presents moving averages of transition matrices over three consecutive starting years. Table 4.1. depicts the transition matrix for a four-year transition period from 2014 to 2017 for six different income groups. It indicates what share of people who were in a certain income group in 2014 find themselves in each of the six income groups in 2017. The starting year is compared only with the target year; any changes that may occur between those two years are ignored. For example, looking at the lower middle in 2014, 45% of the people in this income group were still in the lower middle in 2017. Their risk of dropping out of the middle after four years was around 22% – a 6% risk of dropping into poverty plus a 16% risk of dropping into the vulnerable income group. However, lower middle-income people also have relatively high chances of moving upwards within the middle – they had a 30% chance of making it into the mid middle, plus a 2% chance of making it into the upper middle.

4.1.2. People in the lower (and mid) middle have low chances of rising to the top, and face a high and rising risk of slipping out towards the bottom

Middle-income people have – on average – a 5% chance of rising into the high-income group after four years, but upward mobility varies vastly within the middle-income group, particularly between the lower and mid-middle as opposed to the upper-middle income group (Figure 4.2, Panel A). People living on lower and mid-middle incomes only have a negligible chance of moving into the high-income group (between 0.5 and 3%). Meanwhile, between 13 and 19% of upper middle-income people have made it into the high-income group after four years.

Figure 4.2. The lower middle has very low chances of rising into the high-income group over a four-year period, while facing a high and increasing risk of dropping out of the middle

Panel A. Chances of rising into the high-income group, Germany, 1995-2017, percentage

Panel B. Risks of dropping out of the middle-income group into the lower-income groups, Germany, 1995-2017, percentage

Note: Risks are calculated for the working age population (18-64) for a four-year transition period as described in Box 4.1.
Source: OECD calculations based on the SOEP v36.

The average risk of dropping out of the middle-income group is around 10%, but it is twice as high for the lower middle, as more than one-in-five dropped out after four years in the late 2010s. Compared to people in the mid and upper middle, those on lower middle incomes have a three to six times greater risk of sliding down into the low-income group, i.e. into economic vulnerability or poverty (Figure 4.2, Panel B). While people living on lower middle incomes have a notable risk of dropping out of the middle, their chances, more generally, of moving upwards are higher than their risk of moving down (Figure 4.1, Panel A).

Upward mobility has remained largely stable over time for people in the lower and mid middle; for the upper middle, it has fluctuated with a substantial drop in the chances of rising into the high-income group in the mid-2000s and again in the late 2010s. Around the same time, in the mid-2000s, the risk of dropping out of the middle peaked for people living on lower middle incomes. Both, the drop in the chances of rising into the high-income group for people in the upper middle and the peak in the risk of dropping out of the middle for people in the lower middle, coincide with the general economic slump in Germany in the mid-2000s. Notably, the drop in downward mobility for the lower middle-income group between 2008 and 2011, and the following increase in the last four periods, aligns broadly with the trend in the median disposable income, which declined in the aftermath of the global financial crisis and rose again thereafter (see Figure 2.4, Panel A).
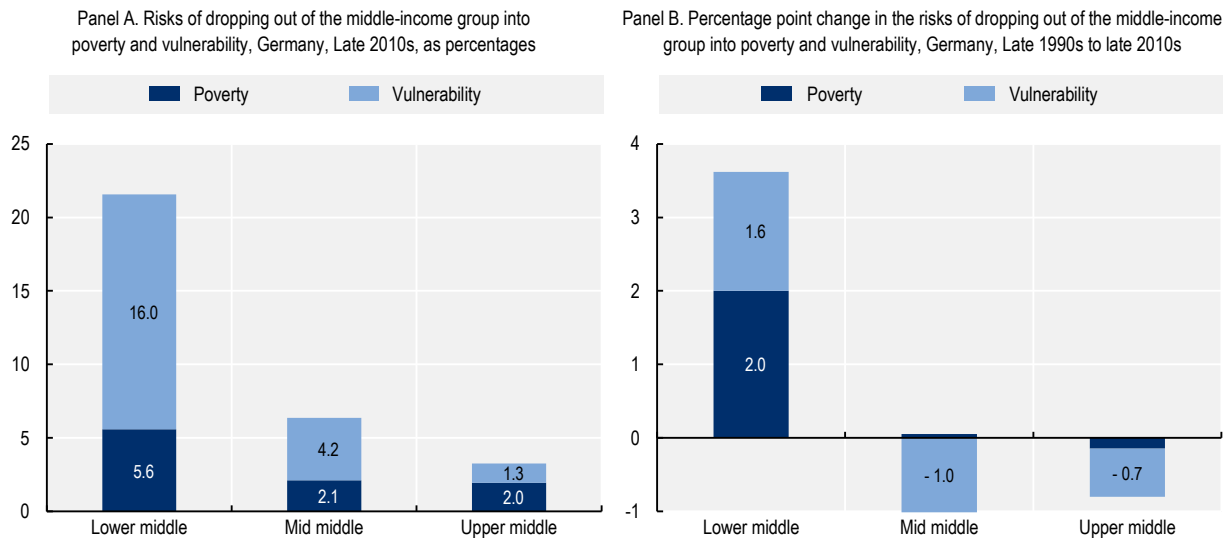
4.1.3. An increasing share of people who drop out of the lower middle fall into poverty

For people on lower middle incomes, the risk of downward mobility into the bottom income groups has increased over time while it slightly decreased for the other middle-income groups (Figure 4.2, Panel B; Figure 4.3, Panel B). For people on lower middle incomes, the risk of sliding into vulnerability or poverty is around 4 percentage points higher today than it was in the late 1990s. This may be a sign of weaker income protection for workers and households in the lower middle of the income distribution following the reforms to the German social protection system in the early 2000s.

Amongst those who drop out of the middle-income group (i.e. below 75% of the median), the situation is more severe for those who slip below the poverty threshold (i.e. below 50% of the median). In the late

2010s, almost one-in-four lower middle-income people who drop out of the middle end up in poverty (Figure 4.3, Panel A). The same holds true for about one-in-three people who drop out of the mid middle, and even for more than half of all people who drop out of the upper middle. However, in absolute terms, the risk of dropping into poverty is three times higher for the lower middle than for the mid and upper middle (6 vs. 2%).

Figure 4.3. One-in-four people dropping out of the lower middle-income group drop into poverty, and the share increased since the late 1990s

Panel A. Risks of dropping out of the middle-income group into poverty and vulnerability, Germany, Late 2010s, as percentages

Panel B. Percentage point change in the risks of dropping out of the middle-income group into poverty and vulnerability, Germany, Late 1990s to late 2010s

Note: Risks are calculated for the working age population (18-64) for a four-year transition period as described in Box 4.1. Results included for the period 1995-98 ("Late 1990s") and 2014-17 ("Late 2010s").
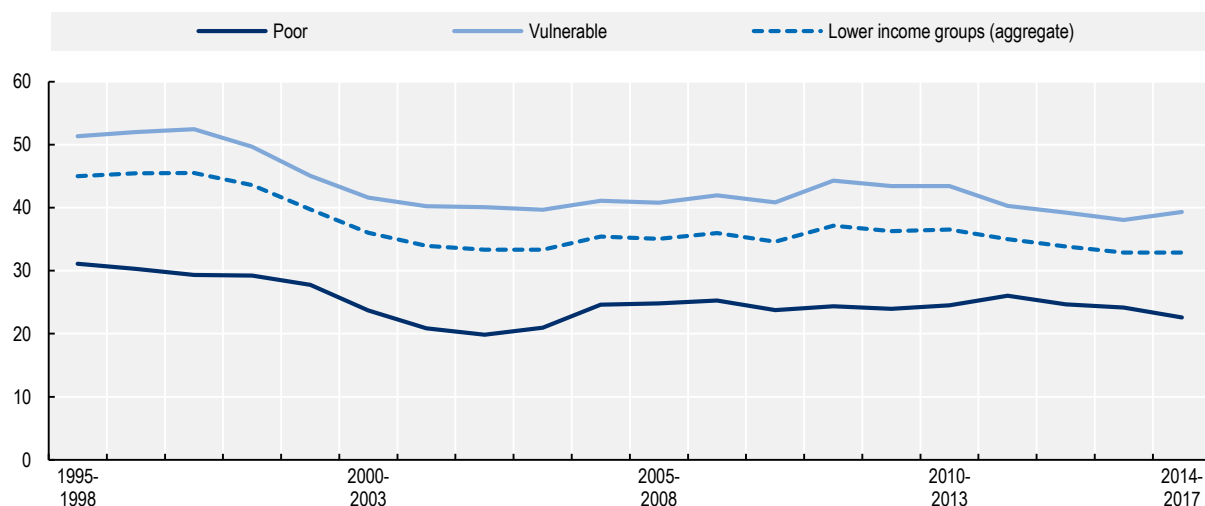Source: OECD calculations based on the SOEP v36.

For all middle-income people, the risk of dropping into poverty is still lower than that of dropping into vulnerability. However, the increase in the general risk of dropping out of the middle-income group for people on lower middle incomes is to a large extent driven by an increase in the risk of dropping into poverty since the late 1990s (Figure 4.3, Panel B). Analysing poverty "spells" further strengthens this finding – the risk of dropping into poverty at least once *within* four years nearly doubled from less than 6 to nearly 10% between the late 1990s and late 2010s (see discussion in Annex 4.A).

4.1.4. Meanwhile, upward mobility into the middle-income group has declined

People living on low incomes in Germany still have substantial chances of moving into the middle-income group. Among those living on incomes that classify them as "poor" or "vulnerable", one-in-three make their way up into the middle over a four-year-period (Figure 4.4, Panel A). However, for people living in poverty, chances are only about half as high as for the vulnerable (23 vs. 39% in the most recent period).

Compared to the late 1990s, people on lower middle incomes are not only more likely to drop out of the middle, but they also find it harder to rise (back) into the middle-income group. The chances of rising into the middle-income group have declined substantially since the late 1990s, reflecting a notable drop in upward mobility around the early 2000s. For people living below the poverty line, the chances of making it into the middle decreased by nearly 9 percentage points over the observation period; for those classified as "vulnerable", chances even decreased by 12 percentage points. These findings are consistent with the decline in the share of people on lower-middle incomes as a driving force of the shrinking middle-income group in Germany overall (see Chapter 2, Figure 2.6).

Figure 4.4. Low-income people in the late 2010s have substantially lower chances of rising into the middle than in the late 1990s

Note: Chances are calculated for the working age population (18-64) for a four-year transition period as described in Box 4.1.
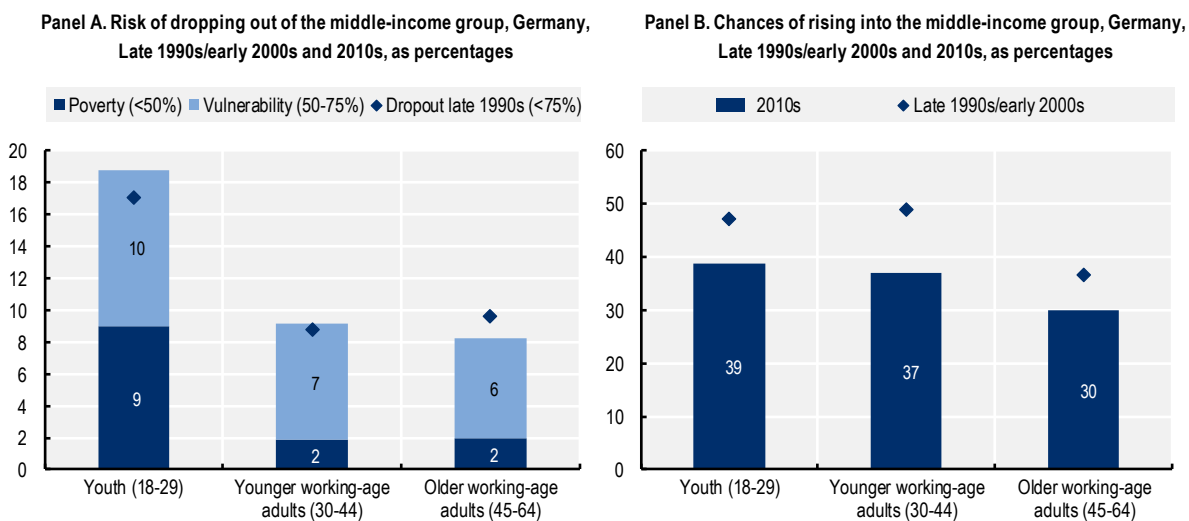Source: OECD calculations based on the SOEP v36.

4.1.5. Income mobility patterns have become less favourable in particular for more disadvantaged labour market groups

Previous subsections have presented evidence on the mobility dynamics for different income groups more broadly, but it is possible to zoom in further and look at the income dynamics of specific population groups.[5] This analysis shows that labour market groups in Germany that are generally considered more vulnerable often also have less favourable income mobility patterns. In particular:
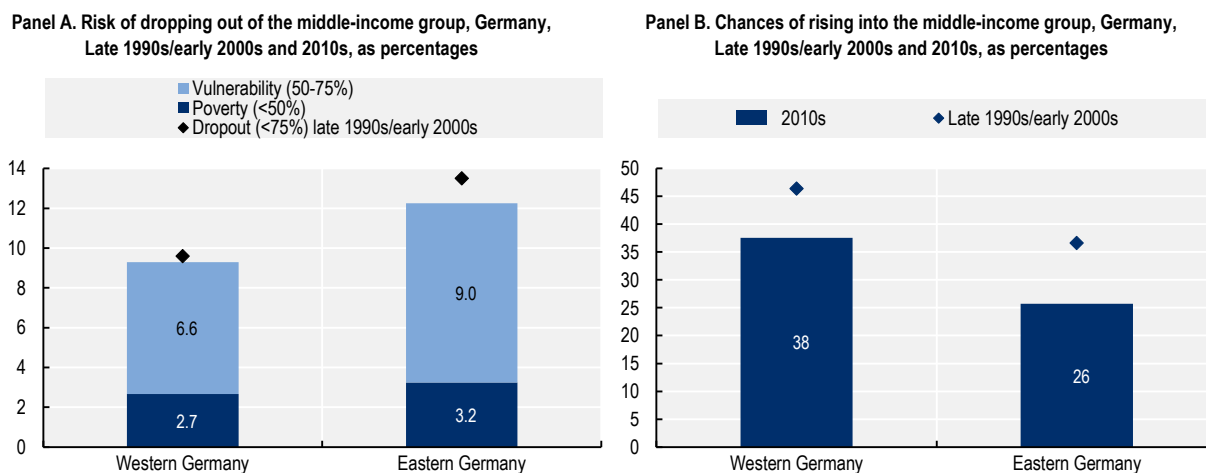
- *Young people experience much stronger income dynamics than other age groups*. One-in-five 18-29 year-olds in the middle-income group slide into one of the two lower income groups over a four-year period – about twice the rate observed among prime working-age (30-44 years) or older working-age (45-64 years) adults (Figure 4.5, Panel A). Around half of them drop into poverty. However, also the chances of rising into the middle-income group are high for young people, particularly when compared to older working-age adults (Figure 4.5, Panel B). Young people's high downward mobility may reflect at least partly that many of them experience a drop in (household) income when they move out of their parents' home (i.e. when picking up academic studies or starting an apprenticeship). High upward mobility will, in many cases, be the result of strong earnings growth at the beginning of their careers.

Figure 4.5. Young people face a greater risk of dropping out of the middle-income group

Panel A. Risk of dropping out of the middle-income group, Germany, Late 1990s/early 2000s and 2010s, as percentages

Panel B. Chances of rising into the middle-income group, Germany, Late 1990s/early 2000s and 2010s, as percentages

Note: Chances and risks are calculated for the working age population (18-64) for a four-year transition period as described in Box 4.1 and averaged over the starting years 1995-99 ("Late 1990s/early 2000s") and 2010-14 ("2010s").
Source: OECD calculations based on the SOEP v36.

Figure 4.6. Eastern Germans still face less favourable income mobility patterns

Panel A. Risk of dropping out of the middle-income group, Germany, Late 1990s/early 2000s and 2010s, as percentages

Panel B. Chances of rising into the middle-income group, Germany, Late 1990s/early 2000s and 2010s, as percentages

Note: Chances and risks are calculated for the working age population (18-64) for a four-year transition period as described in Box 4.1 and averaged over the starting years 1995-99 ("Late 1990s/early 2000s") and 2010-14 ("2010s"). Regions assigned based on place of residence.
Source: OECD calculations based on the SOEP v36.

- *People living in eastern Germany still experience less favourable income dynamics.* Middle-income people in eastern Germany are more likely than Western Germans to drop out of the middle (12 vs. 9%) (Figure 4.6, Panel A). At the same time, those living on low incomes in the east are substantially less likely to rise into the middle than in the west (26 vs 38%; Figure 4.6, Panel B). Mobility patterns have converged only little since the late 1990s/early 2000s: while the risk of dropping out of the middle decreased for eastern Germans, their chances of moving up into the middle even declined more than for people in the west (-11 vs. -9 percentage points). This indicates

that despite considerable efforts to realign living conditions and economic opportunities between the "old" and "new" federal states since the early 1990s, structural differences remain salient.[6]

- *Migrants face a greater risk of downward income mobility than people born in Germany.* The risk of dropping out of the middle-income group is higher for migrants, i.e. people born abroad, than for native-borns (Figure 4.7, Panel A). Among native-borns, downward mobility is greater for those born to migrant parents, but it has substantially decreased since the late 1990s/early 2000s. This indicates an improvement of opportunities for people born to migrant parents compared to the late 1990s/early 2000s. The chances of rising into the middle from the bottom do not differ much across groups in most recent years, meaning that foreign-born people now have similar chances of rising into the middle-income group than those born in Germany (Figure 4.7, Panel B).

Figure 4.7. Migrants have a greater risk of dropping out of the middle-income group
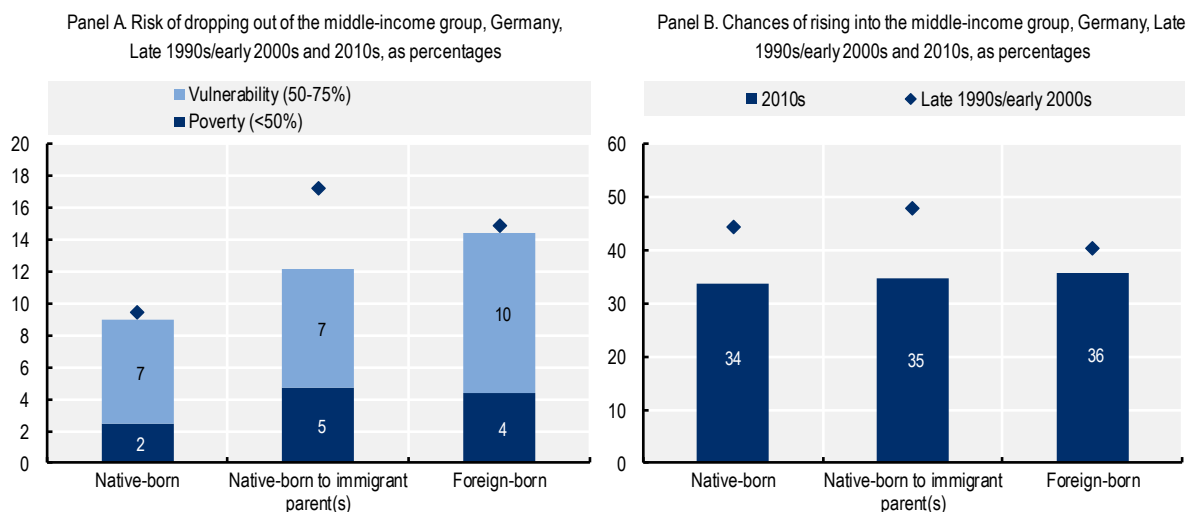
Panel A. Risk of dropping out of the middle-income group, Germany, Late 1990s/early 2000s and 2010s, as percentages

Panel B. Chances of rising into the middle-income group, Germany, Late 1990s/early 2000s and 2010s, as percentages
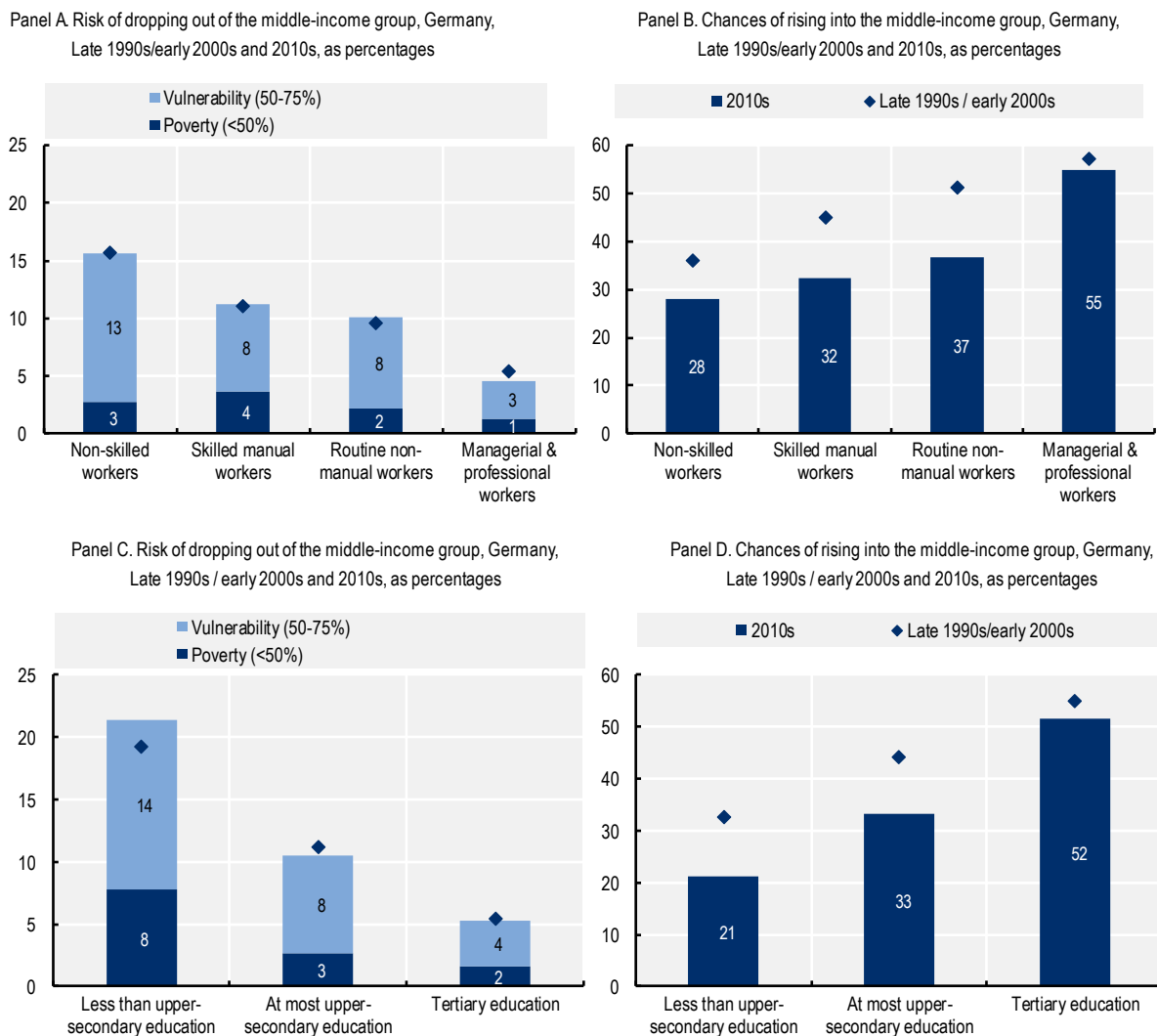

Note: Chances and risks are calculated for the working age population (18-64) for a four-year transition period as described in Box 4.1 and averaged over the starting years 1995-99 ("Late 1990s/early 2000s") and 2010-14 ("2010s"). "Native-born to immigrant parent(s)" is assigned to those with at least one foreign-born parent.
Source: OECD calculations based on the SOEP v36.

- *For workers in "typical" middle-class occupations, the chances of making it into the middle-income group have decreased.* People with low educational attainment and those in lower occupational classes[7] have a greater risk of dropping out of the middle and poorer chances of rising into the middle. The risk of losing a middle-income position is around four times larger for non-skilled workers (16%) and those with less than upper-secondary education (22%) than it is for managerial and professional workers (4%) and for those with tertiary education (6%) (Figure 4.8, Panels A and C). Chances of rising into the middle remained stable only for the highly educated top occupational class (Figure 4.8, Panels B and D), while they declined by more than 10 percentage points for workers in "typical" middle-class occupations, i.e. routine non-manual workers, such as office clerks, and skilled manual workers, such as car mechanics. For non-skilled workers, the decrease in upward mobility is less pronounced (Figure 4.8, Panel B). The decline in the chance of rising into the middle-income group has hence particularly affected workers in "middle-class occupations". Skilled manual and routine non-manual workers saw their opportunities to rise up into the middle-income group deteriorate from around 50% in the late 1990s/early 2000s to 32% and 37% in the 2010s. This confirms the tendency towards greater occupational polarisation in Germany observed in Chapter 3.

Figure 4.8. Income mobility patterns are strongly associated with occupational classes and education

Panel A. Risk of dropping out of the middle-income group, Germany, Late 1990s/early 2000s and 2010s, as percentages

Panel B. Chances of rising into the middle-income group, Germany, Late 1990s/early 2000s and 2010s, as percentages

Panel C. Risk of dropping out of the middle-income group, Germany, Late 1990s / early 2000s and 2010s, as percentages

Panel D. Chances of rising into the middle-income group, Germany, Late 1990s / early 2000s and 2010s, as percentages

Note: Chances and risks are calculated for the working age population (18-64) for a four-year transition period as described in Box 4.1 and averaged over the starting years 1995-99 ("Late 1990s/early 2000s") and 2010-14 ("2010s"). Educational attainment is coded according to ISCED 2011 with "Less than upper-secondary education" comprising the categories 1-2, "At most upper-secondary education" 3-4 and "Tertiary education" 5-8.
Source: OECD calculations based on the SOEP v36.

4.2. Conclusion

Incomes have become more persistent across almost all income groups. People tracked over a four-year period were more likely to stay in their income group in the late 2010s than in the late 1990s, except for those in the lower middle. The increasing persistence came at the cost of reduced upward mobility for low-income groups and at the benefit of reduced downward mobility for the mid middle-, upper middle- and the high-income group.

People living on lower middle incomes face a considerably increased risk of dropping out of the middle-income group, while the chances of rising (back) into the middle shrank substantially for the poor

and the vulnerable. This coincides with the crumbling of the lower middle observed between the late 1990s and mid-2000s (see Chapter 2). As the chances of rising up into the high-income group for the upper middle fluctuated, but have not significantly increased, there is no evidence for increasing polarisation of income mobility *within* the middle. The results rather point towards an opening towards the bottom, with the lower income groups becoming larger and more persistent ("sticky floors").

Income mobility patterns have become less favourable in particular for more disadvantaged labour market groups. The risk of dropping out of the middle is highest for young people (18-29 years), immigrants, eastern Germans, and the low-skilled, and also their chances of moving up into the middle have declined. Workers' chances of making it into the middle-income group declined also for those in "typical" middle-class occupations, confirming the tendency towards greater occupational polarisation in Germany observed in Chapter 3.

References

Erikson, R. and J. Goldthorpe (1992), *The contstant flux: A study of class mobility in industrial societies*, Oxford: Clarendon Press. [6]

Frank, R. (2013), *Falling behind: How rising inequality harms the middle class (Vol. 4.)*, Berkeley/Los Angeles: University of California Press. [5]

Goebel, J. et al. (2018), "The German Socio-Economic Panel (SOEP)", *Jahrbücher für Nationalökonomie und Statistik*, Vol. 239/2, pp. 345-360, http://dx.doi.org/10.1515/jbnst-2018-0022. [2]

Grabka, M., J. Goebel and S. Liebig (2019), "Wiederanstieg der Einkommensungleichheit: Aber auch deutlich steigende realeinkommen", *DIW Wochenbericht*, Vol. 86(19), pp. 343-353, https://doi.org/10.18723/diw_wb:2019-19-3. [1]

Grabka, M. and K. Goebler (2020), *Der Niedriglohnsektor in Deutschland. Falle oder Sprungbrett für Beschäftigte*, http://dx.doi.org/10.11586/2020032. [4]

Guio, A. and E. Marlier (2004), "The Laeken Indicators: Some Results and Methodological Issues in Acceding and Candidate Countries", *Emergo: Journal of Transforming Economies and Societies*, Vol. 11(2), pp. 21-48. [3]

OECD (2018), *A Broken Social Elevator? How to Promote Social Mobility*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264301085-en. [7]

Annex 4.A. Additional results on downward mobility into poverty

The main analytical approach chosen for the social mobility analysis in this chapter only compares the income position of people in a certain starting year *t* with their position in the target year *t+3*. Any changes that may occur *between those two years* are ignored (see Box 4.1). However, when analysing the risk of substantial income losses it can also be interesting to analyse so-called poverty "spells", which take into account any drop into poverty and/or the remaining in the lowest income group within the four-year transition period. Annex Figure 4.A.1 is based on such analysis and displays the risk of living in poverty at least once (i.e. for one, two or a maximum of three years) within the four-year transition period for people living on lower-, mid- or upper-middle incomes in the first year (i.e. in 1995 and 2014).

Annex Figure 4.A.1. The risk of dropping into poverty at least once within four years nearly doubled since the late 1990s

Risk of dropping into poverty at least once within four years, Germany, Late 1990s and late 2010s, as percentages
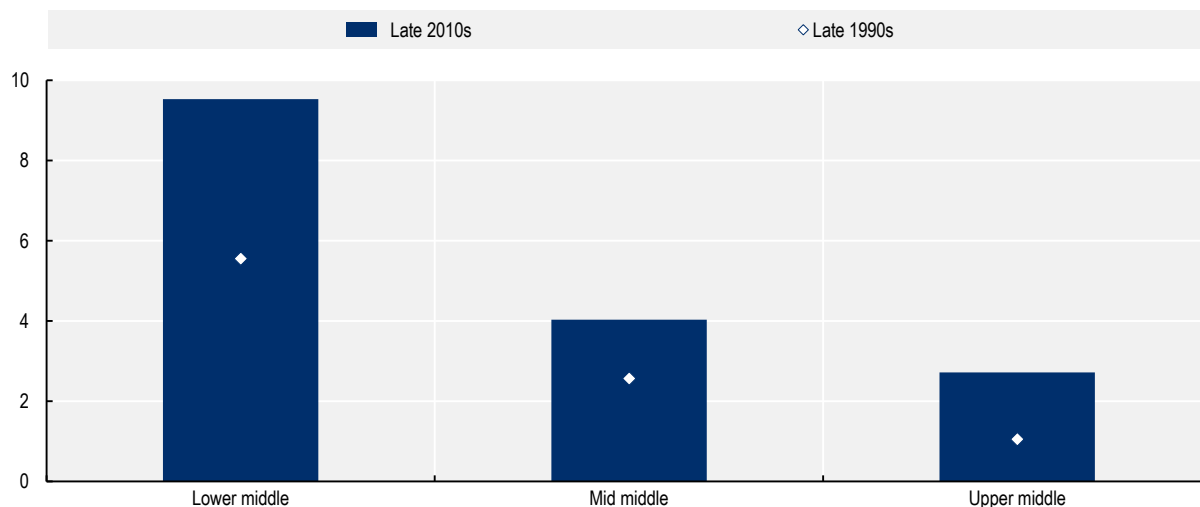
Note: Risks are calculated for the working age population (18-64) within a four-year transition period. Results included for the period 1995-98 ("Late 1990s") and 2014-17 ("Late 2010s").
Source: OECD calculations based on the SOEP v36.

The risk of dropping into poverty at some point over the four-year observation period has risen all across the middle-income group relative to the 1990s. About one-in-ten lower middle-income households in Germany had such a poverty spell in the late 2010s, a risk two-and-a-half to three times as high as for mid middle and upper middle-income households.

Notes

[1] Social mobility can be assessed across generations or over people's lives (OECD, 2018[7]), both in absolute and relative terms. Relative mobility dynamics are particularly relevant for policy makers, especially so in advanced economies with a high average level of material prosperity. Changes in the position and deprivation relative to the overall society are considered as an important indicator for the well-being of the middle class (see for example Frank (2013[5])), and the functioning of the social market economy that emphasises the goal of prosperity for all. This chapter therefore focuses on people's relative chances and risks of moving up or down the income ladder over time.

[2] While this section focuses on income mobility, income is only one of many dimensions that matter, such as educational or occupational mobility (for further analyses see OECD (2018[7])).

[3] For a description of the income concept used in the analysis and a definition of the six different income groups see Box 4.1.

[4] Also, the relatively wide income span defining the mid middle- and high-income group determines that people are less likely to switch groups even after experiencing a negative or positive income shock. At the very top, people have incomes that substantially surpass the threshold of 200% of the median (about half of them have an income above 250% and around one-in-four above 300% of the median).

[5] The periods displayed in the following figures differ from those in earlier figures. To increase the robustness of the results despite smaller sample sizes when zooming into the different subgroups, the chances and risks are averaged over five periods, both in the late 1990s/early 2000s and the 2010s.

[6] As pointed out in Chapter 2, all results are based on nominal disposable household income, meaning that they do not account for regional differences in the cost of living.

[7] Occupational classes are defined according to the Erikson-Goldthorpe-Portocarero (EGP) scheme, a widely used classification with 11 categories that can be further aggregated. For this analysis, the aggregation was chosen according to Erikson and Goldthorpe (1992[6]). The EGP-scheme is based on the German job classification (KldB) and further reflects the following four components: (1) Type of occupation, (2) type of employment, (3) scope of authority, and (4) required qualification for the occupation.

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