On Shaky Ground? Income Instability and Economic Insecurity in Europe

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Foreword

This is the inaugural report of the OECD Observatory on Social Mobility and Equality of Opportunity, and it is most timely given the rising concerns about economic insecurity following the onset of COVID-19 and the subsequent cost of living crisis, and with the digital transformation of economies underway. These concerns are well placed, since economic insecurity is associated with a raft of negative well-being outcomes, including poor health, anxiety, food insecurity and delays in childhood development. Understanding who is most at risk of economic insecurity is crucial for designing policies that support people to reduce and manage their risks.

The main contribution of this report is in examining an often overlooked aspect of economic insecurity: infra-annual income instability. This report marks the first time that within-year income changes have been examined in European OECD countries, and the results shed new light on the extent and consequences of economic insecurity. The report then assesses the degree to which people have sufficient liquid assets to manage frequent changes in their incomes and concludes by considering policies that can help people to smooth their incomes and build their financial buffers.

This report benefited from contributions from a team of analysts from the OECD Centre on Well-Being, Inclusion, Sustainability and Equal Opportunity (WISE). The team was led by Carlotta Balestra and Michael Förster, with analysis and inputs from Federico Attili, Carlotta Balestra, Irene Bucelli (London School of Economics), Emanuele Ciani, Suzana Hardy, Luiz Hermida and Claudia Samano Robles (University of Essex). The report was drafted by Suzana Hardy and published under the direction of Romina Boarini. Martine Zaïda provided communications support throughout the project, with the assistance of Erin Bush, and Anne-Lise Faron prepared and formatted the manuscript for publication. Patrick Hamm contributed to editing the report.

The team thankfully acknowledges the comments and suggestions on earlier drafts of the report from delegates of the OECD Employment, Labour and Social Affairs Committee, Elena Miteva and Chiara Monticone from the OECD Directorate for Financial and Enterprise Affairs, Vanda Almeida, Sebastian Königs and Julie Lassébie from the OECD Directorate for Employment and Labour and Social Affairs, and Jakub Caisl and Katarina Jaksic from the European Commission's Directorate-General for Employment, Social Affairs and Inclusion.

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Executive summary

Many people will experience income instability at some stage in their life

Changes in income are a routine part of life and often signify milestones like entering the labour market, career advancement, caring for children or retiring. While some income shifts can be beneficial, not all of them contribute to people's overall well-being. Income losses can have far-reaching negative consequences on people's lives and on society, especially when precipitated by unexpected events such as job loss or illness. Concerns about job losses and working hours rose recently with the onset of COVID-19 and even though labour markets are currently tight in most OECD countries, long-term structural changes – including digital transformation, globalisation and population ageing – mean that some people perennially face the risks of job insecurity.

People's circumstances change frequently in European OECD countries – with one-third of working-age people who changed their employment status in the 48-month reference period doing so multiple times a year. In many cases, employment statuses changed in ways that did not imply sustained income growth. For instance, across all European OECD countries, only 20% of individuals in working-age households experienced sustained, upward income growth of at least 25% in the 48-month reference period. In contrast, the majority of income instability comprised either volatile changes in income or a downward trend. These estimates are likely conservative, as they focus only on income instability linked to changes in employment status, rather than other sources of income shocks, like family breakdown.

Income instability is concentrated among people who are already susceptible to falling into poverty, such as those who are unemployed, workers on temporary or no employment contracts, or those in single-income or young households. As a consequence, people with unstable, low incomes have limited upward social mobility and tend to stay in the bottom of the income distribution (rather than moving into higher income brackets), and their children are more likely to face developmental delays and have poorer educational performance than children from families that do not experience income instability. Income instability is therefore likely to impede upward infra- and inter-generational social mobility.

More than one in six people in working-age households do not have sufficient financial buffers to manage their highly unstable incomes

Even when people experience income fluctuations, they may have the financial means to cope. People may be able to draw on liquid assets, take out loans, receive support from family and friends or reduce their consumption, at least in the short term. However, it is becoming increasingly difficult for some people to cut back on spending in the context of the cost-of-living crisis or to take out loans, given the already high levels of household debt and over-indebtedness. Financial buffers are low for large swathes of the income distribution. About 67% of people in lower-income working-age households, 50% of people in middle-income households, and even 20% of those in high-income households have insufficient liquid assets to stay above the poverty line for at least three months.

This lack of financial buffers often co-occurs with income instability. One in six people in working-age households in European OECD countries not only do not have sufficient liquid assets to stay out of poverty for at least three months, but also have highly unstable incomes. These households are considered to be economically insecure. The burden of economic insecurity falls predominantly on people who lack job security, are unemployed or are in single-income-earning households. Women face relatively high risks of

economic insecurity, as they are more likely than men to be single-income-earners and have weaker attachments to the labour market. Nevertheless, anyone who has insufficient financial buffers is at risk if they experience a negative income shock.

People who experience economic insecurity are more likely to believe themselves to be at risk in the future. Almost 70% of those who are economically insecure believe they have a high chance of losing their job in the next year compared to a quarter of those who are economically secure. They also tend to be in occupations that have a higher risk of automation (such as elementary workers) than those who are not economically insecure (professionals and managers). The risks of future economic insecurity are particularly high for elementary workers, since they have the fewest opportunities to transition into viable and desirable jobs, are less likely to benefit from emerging technologies such as artificial intelligence, and have fewer opportunities to build up financial assets, given their low wages.

A broad range of policies is needed to address economic insecurity

Given the consequences of economic insecurity, its concentration among disadvantaged groups, and the likelihood that it will remain a problem in the future, the need for government action is clear. Policies should target both the exposure, and the vulnerability, to economic insecurity – by reducing the likelihood of adverse economic shocks, helping people to smooth their incomes, and building their financial resilience.

The role of social protection systems in insuring against economic insecurity is increasingly being recognised, and this report finds that social benefits are tremendously important in reducing income instability. Across European OECD countries, unemployment benefits, old age pensions and education allowances reduce income instability by 42%. Other social benefits, such as child and housing allowances, can also help to reduce income instability. However, social protection systems are not always responsive to people's needs and circumstances. For example, in many European countries, people receive social benefits every four weeks, which can make it difficult for people on low incomes to make ends meet at the end of the month. Long periods between social benefits are associated with stress, difficulty paying bills and food insecurity. Similarly, it can take weeks to receive the first benefit payment, which can cause financial distress and increase the risk of poverty. Efforts should be made to increase the frequency of payments and to reduce waiting and processing times, including by simplifying means testing.

In addition, policies that promote financial literacy are important for boosting financial resilience and well-being, particularly in times of constrained fiscal environments when governments may have less capacity for largescale social expenditure. Matched savings schemes and effective financial education strategies, advisory services, and debt relief can help at-risk people to build up their financial buffers and smooth their incomes. Recent advances in data mining techniques and artificial intelligence can also be used to identify people before they become over-indebted, which can then help governments to direct services to those most vulnerable and to develop payment plans.

1. Income instability

Incomes vary over time as people enter the labour market and progress in their careers, take time off work to care for children or other family members, and retire. But not all changes in work patterns are predictable or welcome. Unexpected job loss, variable working hours or illness can create income shocks that are difficult to manage. In European OECD countries, it is common for people's employment status to change multiple times per year, and for the most part, these changes do not result in sustained income growth. Being exposed to frequent changes in income is linked with stress, anxiety, poor health and worse childhood development outcomes; this is particularly troubling as income instability is concentrated among people who are susceptible to poverty, such as those who are unemployed or lack job security, or from single-income or young households.

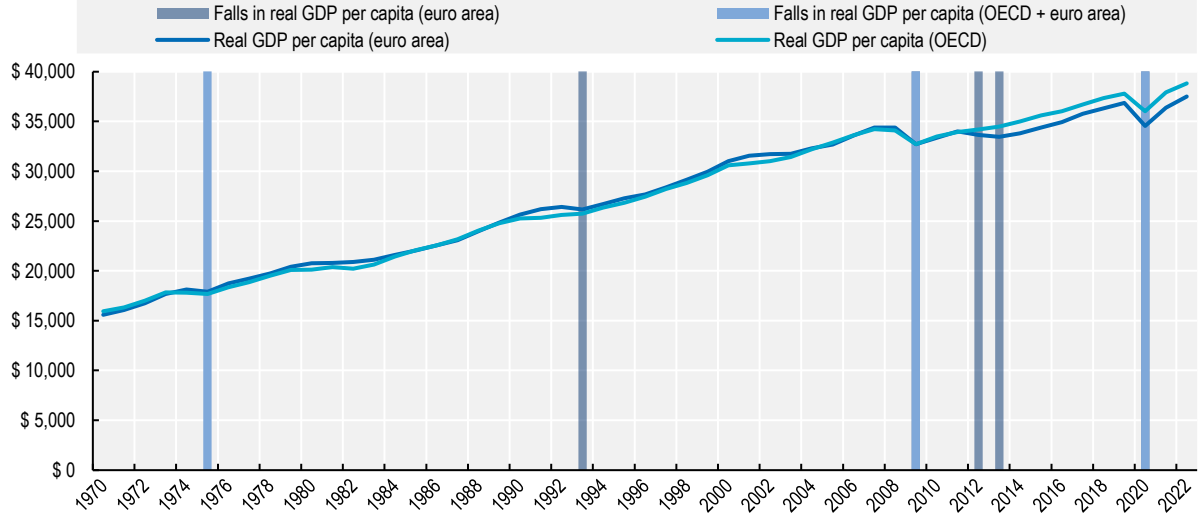
1.1. Why should we focus on income instability?

Most, if not all, people will experience changes in their incomes at some point in their lives – often termed income instability in the literature. Income instability arises as people enter the labour market, advance in their careers, reduce their working hours to care for children or transition to retirement. While some of these life events are planned and likely to have positive effects on individuals' income and overall well-being, falls in income can have adverse consequences. Unforeseen events like illness, family breakdowns, job loss or involuntary reductions in working hours can significantly disrupt individuals' ability to plan for the future and meet their daily financial obligations. The resulting income instability can have detrimental effects on individual well-being, such as by exacerbating financial stress, limiting access to resources and opportunities, contributing to poor health, heightening the risk of poverty and impeding upward social mobility – see Section 1.2; (Hill et al., 2013[1]; Wolf et al., 2014[2]; Hill et al., 2017[3]; Morduch and Siwicki, 2017[4]; Wolf and Morrissey, 2017[5]).

Concerns about income instability intensified following the Global Financial Crisis and more recently during the COVID-19 pandemic, when many people faced a heightened risk of unemployment and reduced working hours. Unemployment in the OECD rose from 4.9% in December 2019 to a peak of 8.8% in April 2020 in the midst of COVID-19 (OECD, 2022[6]). In most OECD countries, unemployment has now fallen below pre-pandemic levels, and labour markets are tightening (OECD, 2023[7]). However, income instability is likely to remain a risk, given weak prospects for economic growth in the next year (OECD, 2023[8]) and signs that European and OECD economies have become more unstable over the past few decades. People are on average more exposed to instability, as economic contractions have become more frequent, while at the same time, average living standards have not risen as quickly, limiting people's capacity to build financial buffers to use in times of need (Figure 1.1).

Figure 1.1. Shocks are more common and living standards rising less rapidly than in the past

Annual real GDP per capita and periods of negative GDP growth in the euro area and the OECD



Note: Falls in annual real GDP are used as markers of economic shocks, because quarterly real GDP data – conventionally used to indicate recessions – are not available for the entire period.
Source: World Development Indicators (2023), https://databank.worldbank.org/home.aspx.

StatLink https://stat.link/1fx6ue

Further, the megatrends of digital transformation, globalisation and population ageing are shaping labour markets in ways that may bring greater income unpredictability (OECD, 2018[9]). For instance, people in emerging parts of the labour market, such as those in the gig economy, are likely to fall into a "grey zone" – neither being employees with predictable hours and conditions nor having the bargaining power of the self-employed (OECD, 2019[10]).

Despite the growing recognition of the persistent (and potentially increasing) risks of income instability in the face of megatrends, income instability is not well-tracked or regularly measured in household surveys. In most OECD countries, little is known about how much employment and income vary over shorter time intervals. Due to data limitations, studies tend to focus on annual income changes, which "smooth out" some of the volatility in incomes and hence conceal the difficulty of living with incomes that change at more frequent intervals. The main exception is the United States, where monthly income data are available and a handful of studies have examined the extent and effects of infra-annual income instability.

This chapter extends previous analysis by estimating month-to-month changes in income (infra-annual income instability) and changes in income across years (inter-annual income instability) for European OECD countries. Examining both infra-annual and inter-annual income instability can help identify those most at risk of economic insecurity (i.e. who do not have the means to cope with income shocks), as frequent changes in income increase exposure to economic insecurity (Chapter 2), and in designing policies to deal with this (Chapter 3). This chapter first sets out an empirical approach to measuring income instability (Section 1.2) and then examines the extent of income instability in selected European OECD countries (Section 1.3). It concludes by identifying the groups that are most likely to experience income instability, which heightens their exposure to economic insecurity (Section 1.4).

1.2. Measuring income instability and understanding its impacts on people's well-being today and tomorrow

Most of the literature on instability focuses on annual changes in income in the United States, which finds that income instability has increased since the 1970s – particularly for men and low-income families (Moffitt and Gottschalk, 2010[11]; Moffitt and Gottschalk, 2002[12]; Hyslop, 2001[13]; Haider, 2001[14]; Heathcote, Storesletten and Violante, 2010[15]; Moffitt and Gottschalk, 2012[16]), see Annex 1.A for a detailed literature review. More recently, some American studies have started to examine the month-to-month variations in income, adding to the understanding of the experience of income instability at a household and societal level.

Income instability rarely leads to an upwardly trending income for low-income earners, and as such income instability makes it exceedingly difficult for those on low incomes to move up the distribution (so-called infra-generational upward social mobility). Infra-annual instability is in fact associated with growing income inequality. Between the 1980s and 2008 in the United States, the growth of income instability among the poorest 10% of households with children was not matched by an increase in instability at the top end of the income distribution. Indeed, income instability has fallen for the top 10% of households, creating a four-fold increase in the "instability gap" between the rich and poor (Morris et al., 2015[17]).

Infra-annual income instability places the greatest risk on the current and future well-being of low-income families, who are more exposed. Low-income families are more likely to have a single source of income, and when they are dual-earning households, there is evidence that both earners tend to experience income changes at the same time (Hardy and Ziliak, 2013[18]). Further, instability does not often occur in isolation, but rather as a "domino effect", with one form of instability (e.g. income) precipitating instability in other domains (e.g. childcare and housing) (Sandstrom and Huerta, 2013[19]). Such a domino effect can be extremely stressful, contributing to poor physical and mental health and making it harder to manage finances and plan for the future.

Over the longer term, income instability can undermine the economic prospects and opportunities of the next generation, especially those who grow up in low-income families (thereby inhibiting inter-generational upward social mobility). Families with low, unstable incomes can face challenges in devoting enough resources to their children, for instance, as they struggle to find childcare options that meet their frequently changing circumstances or delay investments in child education (Hill et al., 2013[1]; Wolf et al., 2014[2]; Carrillo et al., 2017[20]; Wolf and Morrissey, 2017[5]). The lack of consistent investment in education, and exposure to parental stress, can create barriers for children's educational attainment, particularly for those growing up in low-income families. Exposure to low, unstable incomes in childhood is associated with poor educational performance, mental ill-health, cognitive development delays and school suspensions and expulsions (Sandstrom and Huerta, 2013[19]; Hill et al., 2013[1]; Wolf et al., 2014[2]; Wagmiller, 2015[21]; Gennetian et al., 2015[22]; Hardy and Ziliak, 2013[18]; Hardy, 2014[23]; Balestra and Ciani, 2022[24]). A lack of educational attainment, in turn, contributes to weak labour force attachments as adults and to fewer economic opportunities to get ahead (Balestra and Ciani, 2022[24]). Even if the episodes of instability experienced in childhood are short, the effects on children can be long-lasting and detrimental – indeed, they may be comparable to experiencing sustained (or chronic) poverty (Navarro, 2021[25]; Wagmiller, 2015[21]).

The existing literature on the effects of infra-income instability on individual well-being, social mobility, inequality and society focus on the American experience. Nevertheless, there are a few studies of income instability in European countries, which for the most part, are based on annual changes in income.[1] These studies have pointed to different trends in income instability in recent times: with income instability increasing in Germany (Myck, Ochmann and Qari, 2011[26]) and Italy (Menta, Wolff and D' Ambrosio, 2021[27]), but declining in Luxembourg (Sologon and Van Kerm, 2017[28]), Spain (Cervini-Plá and Ramos, 2011[29]) and the United Kingdom (Daly and Valletta, 2008[30]; Ramos, 2003[31]; Avram et al., 2021[32]; Kalwij and Alessie, 2007[33]; Cappellari and Jenkins, 2014[34]).

Despite the dearth of research on infra-annual income instability outside of the United States, it is possible to extend the analysis of infra-annual income instability to European countries using the monthly employment status information contained in the European Union Statistics on Income and Living Conditions (EU-SILC). Monthly employment status information is mapped to various market income sources in the EU-SILC, such as income from employment and private pensions (Box 1.1). This mapping exercise can capture changes in income that are attributable to shifts in work patterns, such as movements into and out of the labour market, switches to and from full-time work, the end of studies, and retirement. However, because the EU-SILC does not include monthly income, it is not possible to identify all the drivers of infra-annual income instability, including wage rate increases and paid overtime, and as such estimates of infra-annual income instability are likely underestimated. Further, the analysis focuses on employment-related shocks, and as such examines only households that do not change their composition during the 48-month reference period. This methodological choice is also likely to lead to conservative estimates of income instability, as it does not capture the income instability that arises from family breakdowns or other major life events.

Box 1.1. Constructing monthly income using the EU-SILC

No European datasets collect information on monthly income across countries, so this report uses a novel way to construct monthly income from the European Union Statistics on Income and Living Conditions (EU-SILC). The survey includes information on people's employment status in each calendar month, which is used to estimate variability in income within each year and across years. The EU-SILC includes a longitudinal component, which is used for the analysis of income instability, wherein

the same people are interviewed over four years, and each year a quarter of all respondents are replaced by new respondents.[1] The period of analysis is between 2013 and 2018.[2]

Survey respondents are asked to report whether they work full- or part-time and whether they are employees or self-employed each month during the income reference period. Using this employment status information, this chapter allocates income sources in the following way for each individual.

- Employment income is split between the months that an individual reports to have been an employee or self-employed. Periods of part-time work are assigned half the value of full-time work. In the small handful of cases where individuals earn employment income but have not reported being employed, it is assumed that income was derived from a secondary activity, and this income is divided equally across the year.
- Private pensions are split between months in which the individual reports to have been retired or unemployed. If an individual who is always employed reports having a private pension, this income is split over 12 months.
- Capital income is divided equally across the year, as it is usually accrued as part of a long-term investment, even though returns are distributed at discrete points in time.
- Private current inter-household transfers (received or paid) are split by 12, as they are regularly received or paid transfers, such as alimony.
- Household own-consumption is split by 12, as there is no information to justify an alternative allocation, and this income stream is small and not uniformly collected across countries.

These income sources are then summed together and aggregated at the household level to create a measure of market income, which is used to analyse income instability. Households are included in the analysis if the reference person is aged 18 to 59, and the composition of the household stays the same for the entire 48-month period. In addition, some government benefits and allowances are included in Chapter 3 when considering the role of social protection systems in countering income instability. To assess social protection systems, social benefits are added to market incomes by:

- splitting unemployment benefits between months in which individuals report being unemployed or outside of the labour market (in cases where they have not been unemployed). If individuals are employed every month, it is assumed they had a minor unemployment spell, and the benefits are split over 12 months;
- distributing old-age benefits in the same way as private pensions;
- allocating education-related allowances to the months in which an individual reports being a student, or split by 12 if they were never a student during the year.

Notes:
1. The analysis is conducted for 48-month periods between 2013 and 2018. These periods were chosen because they correspond to the timing of the third wave of the Household Finance and Consumption Survey (HFCS), which is used in the analysis of economic insecurity in Chapter 2. Further, using data that were collected before COVID 19 is likely to give a better indication of the long-run, structural levels of income instability than data collected during or immediately after the pandemic.
2. One risk of using longitudinal data is that survey respondents drop out over time before the end of the 48-month period. This can bias the results if certain types of people are more/less likely to stop responding (i.e. dropouts do not occur randomly). Eurostat (Jenkins and Van Kerm, 2017[35]) has investigated the pattern of dropouts in the EU-SILC and found that rates are highest among poor, young and unemployed people. For the purposes of this report, higher dropout rates among these groups are likely to lead to conservative estimates, since it is expected that these groups have higher-than-average income instability.

This report mainly uses equivalised household market income to measure income instability, but this is supplemented with non-market income sources to (partially) assess the role that social protection systems play in smoothing out income instability (see Chapter 3). As explained in Box 1.1, unemployment benefits, old-age pensions and educational allowances are allocated monthly based on each individual's

employment status. However, a comprehensive analysis of other benefits and taxes is not possible, because many taxes and social benefits contained in the EU-SILC are not closely linked to employment, and some cannot be easily allocated within a year, because it can be difficult to determine when they were received by households. Examples include child allowances, tax credits and disability pensions.

Nevertheless, the EU-SILC enables an examination of various aspects of income instability at the household level. To measure household-level income instability, this chapter estimates the extent to which the incomes vary over the reference period of 48 months using the squared coefficient of variation.[2] This method enables income instability to be measured in terms of income changes between months (infra-annual) and across years (inter-annual).

With these measures, it is possible to examine the extent to which households experienced upward income mobility, which is important for assessing social mobility. Upwardly mobile households are defined as those that experienced overall income growth of at least 25% in a 48-month period, no large monthly drops in income (greater than 25%) and no more than two minor monthly drops in income (less than 25%). Households that do not fit this definition either experienced downward income mobility (or, in other words, had a downward trend in income) or had volatile incomes, which varied over time without a discernible trend.[3] In this chapter, trends are assessed at the household level and are averaged across households to estimate the contribution of upward mobility to overall income instability in each country.[4]

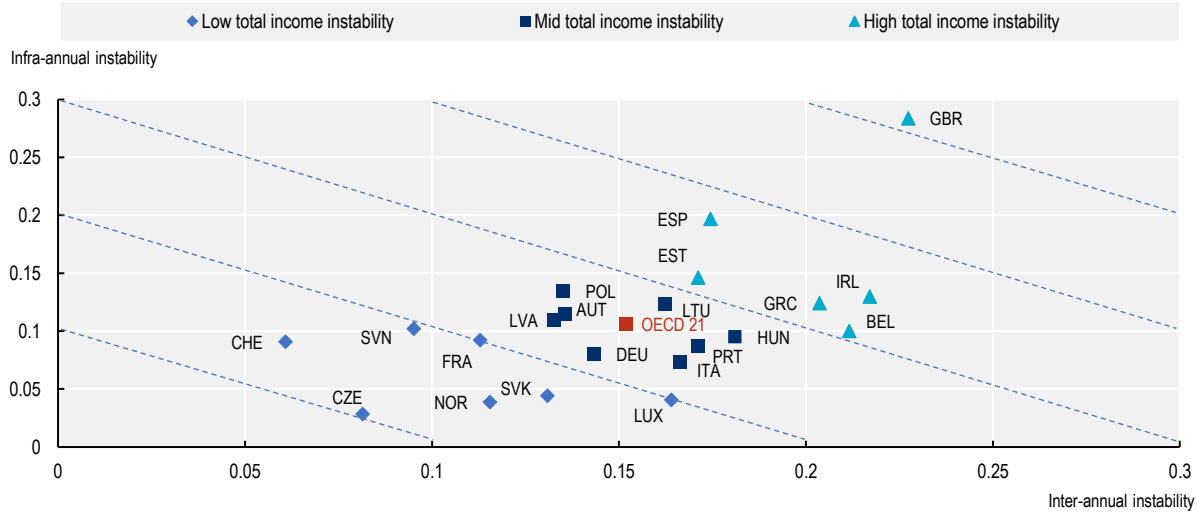
1.3. Infra-annual changes in income are common in European OECD countries

Changes in employment status, a common precursor to income instability, were widespread even before the turbulence of COVID-19. In the lead-up to the pandemic, almost one in ten individuals aged 18 to 59 (the so-called prime working-age population)[5] changed their employment status at least once per year. Temporary changes – those lasting less than a year – were also common, as one-third of working-age people who changed their employment status did so multiple times per year. Given the high likelihood of experiencing or being exposed to temporary changes in employment status, it is not surprising that infra-annual income changes substantially contribute to total market income instability.

On average across European OECD countries, month-to-month changes in income account for about two-fifths of total instability (measured as the sum of infra- and inter-annual household market income instability). There are, however, differences in the extent of infra-annual income instability across countries (Figure 1.2). For example, countries with above-average total instability – Belgium, Greece, Ireland and the United Kingdom – all display similar levels of inter-annual instability (x-axis), although the United Kingdom is characterised by a much higher level of infra-annual instability (y-axis). Similarly, two countries with low total instability – the Czech Republic and Norway – have low levels of infra-instability but differ in terms of inter-annual income instability.

Figure 1.2 Infra-annual income instability contributes to a substantial fraction of total instability

Average squared coefficient of variation of market income, averaged over 48 months ending in 2016-18



Note: Instability is measured by the average squared coefficient of variation of monthly household equivalised market income over 48 months. Infra-annual instability refers to deviations of monthly income from each year's household average; inter-annual instability refers to deviations of household annual average income from the average across the entire period of observation. Dotted "iso-instability" lines mark similar levels of total instability. The analysis is carried out only on households with stable composition over 48 months and whose main employment income earner is aged between 18 and 59.

Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

StatLink https://stat.link/g3ipnz

Income instability is not necessarily detrimental to households. Over time, individuals might experience upward mobility – for example, as a result of career progressions, work experience and tenure – that has positive consequences for well-being. In addition, periods of economic recovery can improve upward income mobility (Box 1.2). However, only one-fifth of individuals in European OECD working-age households experienced upward income mobility over the 48-month period of analysis, as defined in this chapter. As a result, upward mobility makes a small contribution to total income instability in most European OECD countries – although its contribution is sizeable in the Slovak Republic (one-third of total instability is derived from upward mobility), Czech Republic, Ireland, Latvia and Portugal (about a quarter of total instability in each of these countries (Figure 1.4).

Box 1.2. Periods of economic recovery are an opportunity for upward income mobility

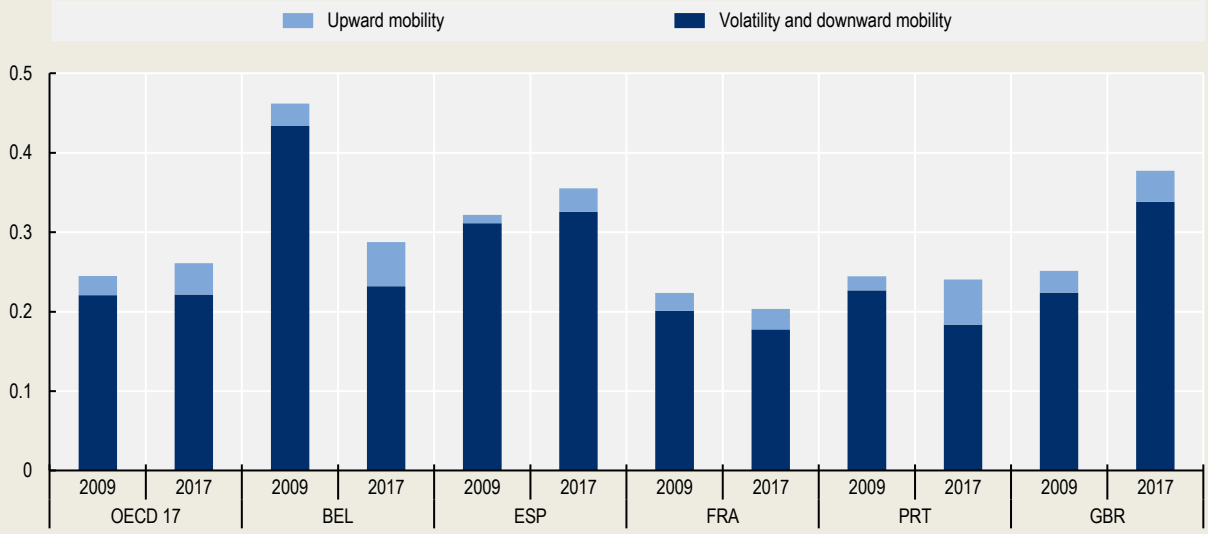
The experience of many European OECD countries during and after the Global Financial Crisis (GFC) demonstrates the potential for upward income mobility. During the GFC, the level of income instability rose and then returned to pre-crisis levels for all but a handful all European OECD countries. As economies recovered and unemployment fell, incomes grew and the proportion of people experiencing episodic poverty (of at least two months) declined in many countries.

Meanwhile, upward mobility became more common. For instance, upward mobility accounted for 10% of total income instability in 2009 and grew to 15% by 2017 in European OECD countries (Figure 1.3). The growth in upward income mobility was relatively strong and persistent in Portugal and Spain, and clearly linked to the recovery phase – as these countries overcame the falls in upward income instability, they

experienced in the years following the GFC as unemployment surged. For other countries, such as the United Kingdom, the rise in upward income mobility during the recovery phase was temporary, and upward income mobility has returned to its pre-GFC levels.

Figure 1.3. Upward mobility increased in many European OECD countries after the GFC

Average squared coefficient of variation of market income for selected European OECD countries, 48-month average



Note: Upwardly mobile households are those that experienced overall income growth of at least 25%, no major income drops (greater than 25%) and no more than two minor drops (less than 25%) in 48 months. All other households experienced volatility or downward income mobility. The year refers to the last year of the 4-year panel over which the dynamic of household income is observed. The time series in this figure is smoothed further by averaging between t and t+1 (e.g. 2009 refers to the average instability observed in the 4-year panels ending in 2009 and 2010).
Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

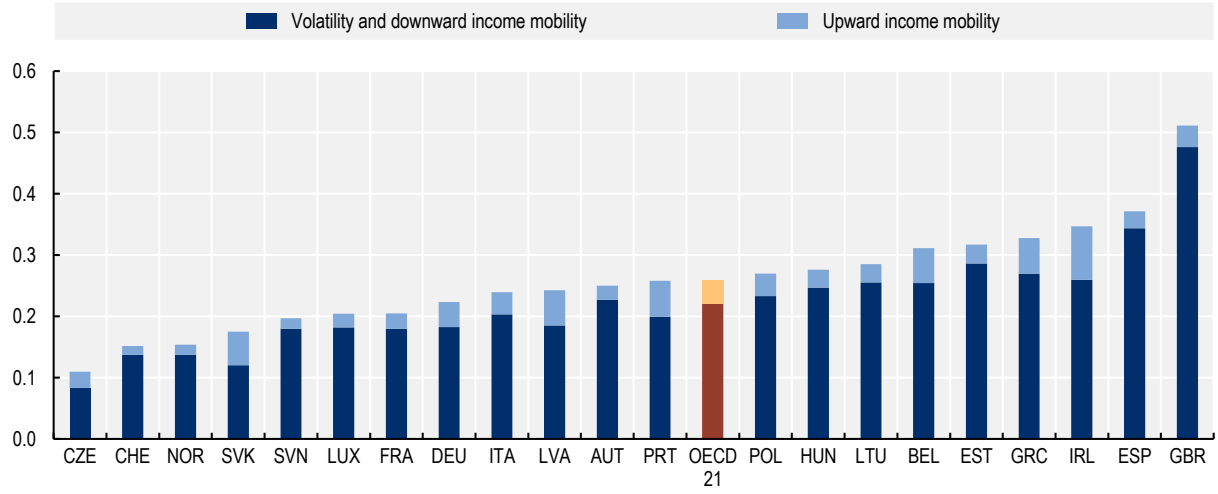
StatLink https://stat.link/mbqzdh

Despite the positive movements in upwards income mobility across European OECD countries on average, it continues to comprise only a small proportion of income instability a decade after the GFC. In addition, a growing share of people experienced chronic poverty (spending at least three of the past four years in poverty) during the recovery phases. The average share of chronic poverty across the European OECD countries was about 11% at the onset of the GFC, which increased to 14% a decade later. In Spain, the United Kingdom, Italy and Luxembourg, episodic poverty increased along with chronic poverty.

These outcomes suggest that economic recoveries can provide an impetus for lifting people out of poverty and promoting upward mobility, although they need to be supported by governments to ensure the benefits are shared broadly. Alongside measures to financially support vulnerable and disadvantaged groups, governments should design policy packages that "build back better" by investing in opportunities with enduring payoffs (OECD, 2020[36]; 2022[6]). A range of policy options is considered in Chapter 3.

Figure 1.4. Upward mobility makes a small contribution to total income instability in most European OECD countries

Average squared coefficient of variation of market income, averaged over 48 months ending in 2016-18



Note: Upwardly mobile households are those that experienced overall income growth of at least 25%, no major income drops (greater than 25%) and no more than two minor drops (less than 25%) in 48 months. All other households experienced volatility or downward income mobility.
Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

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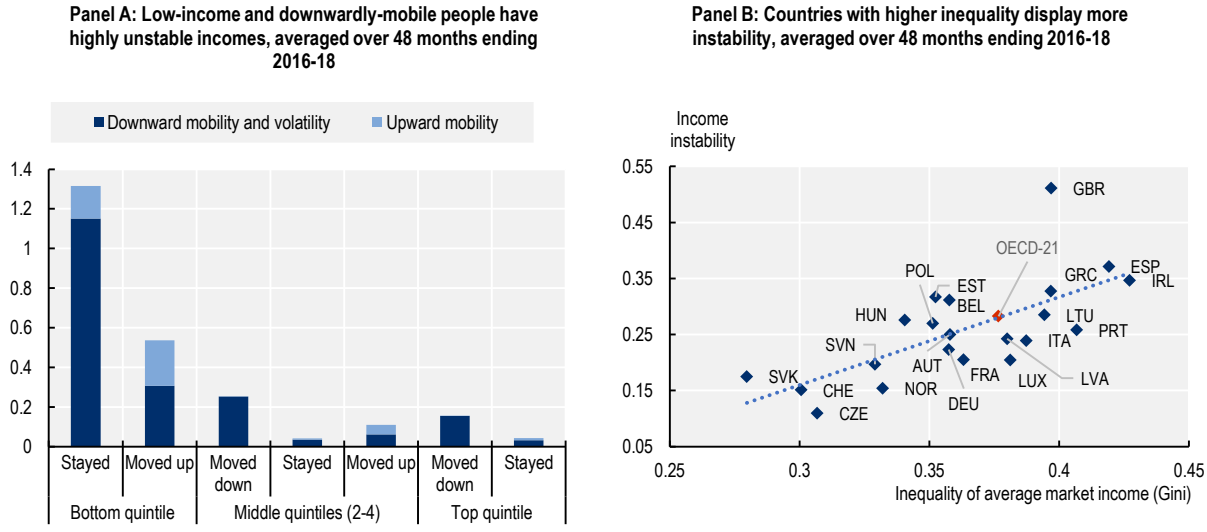
In addition, upward mobility is not evenly spread across the income distribution. People in the bottom income quintile who move into higher quintiles by the end of the 48-month reference period are the most likely to experience upward mobility. Upward mobility is also relatively high for people who stay in the bottom quintile for the entire 48-month period, but it is insufficient to move them into a higher income quintile. Further, people who remain in the bottom quintile are much more likely to have downward or volatile incomes than experience upward mobility – and indeed, their incomes are the most unstable of any quintile (Figure 1.5, Panel A). Total instability decreases across the income distribution, although people who move down the distribution after 48-months experience more instability than people who stay in their quintile or move up. Taken together, these dynamics contribute to higher levels of income inequality and dampen upward social mobility, as people on low incomes see their incomes go backward or bounce around erratically, while people on higher incomes are largely unaffected. In general, countries with higher income inequality (as measured by the Gini Index) display more income instability, although there are some differences in the degree of income instability for countries with similar levels of inequality – especially for high-inequality countries (Figure 1.5, Panel B).[6] For instance, the United Kingdom has a markedly higher level of income instability than other comparable high-inequality countries such as Ireland. The differences are less pronounced among low-inequality countries, as they have similarly low levels of income instability.

Figure 1.5. Income instability is associated with higher levels of downward mobility and inequality in European OECD countries

Average squared coefficient of variation of market income, averaged over 48 months ending in 2016-18



Note: Income instability is measured by the average squared coefficient of variation of monthly household equivalised market income over 48 months. In Panel A, quintiles are based on annual market household income in the first 12 months of the time series, and then compared with the annual market household income distribution in the last 12 months of the period. Households are split into groups depending on whether their income quintile in the last 12 months (fourth year) of the series is higher ("Moved up"), lower ("Moved down") or the same ("Stayed"), compared to the first 12 months. In Panel B, the Gini index is calculated over the average of monthly household equivalised market income over the same period. The unit of reference is the individual. The analysis is carried out only on households with stable composition over 48 months and whose main employment income earner is aged between 18 and 59.

Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

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1.4. The experience of income instability for at-risk groups

People with characteristics that are correlated with low income are most likely to experience income instability, such as those who are unemployed or lack job security (i.e. on temporary or no contracts) (Figure 1.6). Those who are unemployed experience the largest amount of infra-annual instability in absolute terms, and as a share of total instability. Women have a 0.7 percentage point higher unemployment rate than men, indicating that they are more likely to experience income instability. Further, people who are unemployed experience frequent income changes, as about two-thirds of the total income instability experienced by unemployed people is generated by infra-annual income changes.

High rates of chronic poverty – defined as spending at least 36 out of 48 months below the OECD income poverty line – are coincident with high income instability for people who are unemployed. In contrast, insecure workers have the highest rates of episodic poverty (lasting 2-11 months). These employment effects contribute to instability in most European OECD countries, as countries with higher employment rates and lower rates of insecure work tend to have lower levels of instability, and vice versa (Box 1.3).

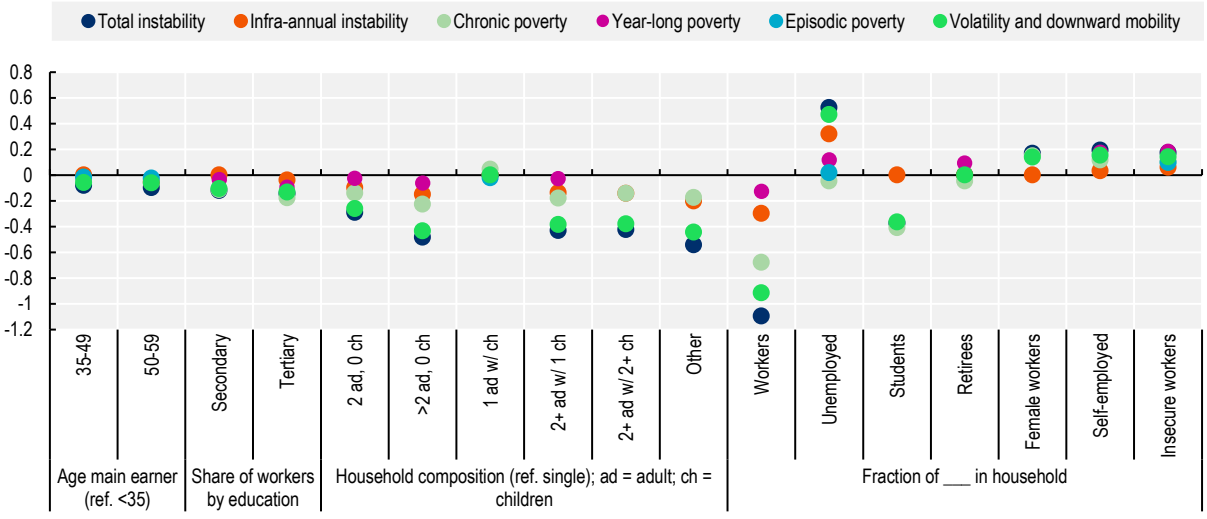
Single-income households, lacking the security of a second income source, are also more exposed to income instability and chronic poverty than households with two income earners. Women are more likely than men to head up single-income households, as they comprise the majority of single parents and tend

to face more career disruptions – such as dropping out of the labour market or switching from full-time to part-time employment to care for children or other family members (OECD, 2017[37]).

People with low educational attainment and young households, where the main income earner is under age 35, are also more at risk of income instability than older and more educated households. In part, the higher income instability among younger households reflects their status as new entrants to the labour market – a time when career progression is more rapid. Indeed, upward income mobility accounts for about half of the total income instability for young households. However, income instability is not unanimously positive for young households. When young households see their incomes trend downward, they are more likely to experience poverty than older households with similar income dynamics.[7]

Figure 1.6. Household market income instability is lower when more household members have job security

Increase in the squared coefficient of variation (SCV) or in the probability of being in poverty before taxes and transfers associated with one unit increase in the explanatory variables, averaged over 48 months ending in 2016-18



Note: Results based on OLS regressions (Annex 1.C), with standard errors clustered at the household level in brackets. Weights have been rescaled to sum to 1 in each country. Instability and poverty are evaluated over 48 months, and estimates are pooled over the period 2016-18. Insecure workers are people who are employed on temporary or no contracts. Chronic poverty is defined as consecutive spells of poverty lasting at least 36 months (out of 48); year-long poverty spells last between 12 and 35 months; episodic poverty spells last between 2 and 11 months.
Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

StatLink https://stat.link/itkgd7

Box 1.3. Employment factors are important contributors to instability in most countries

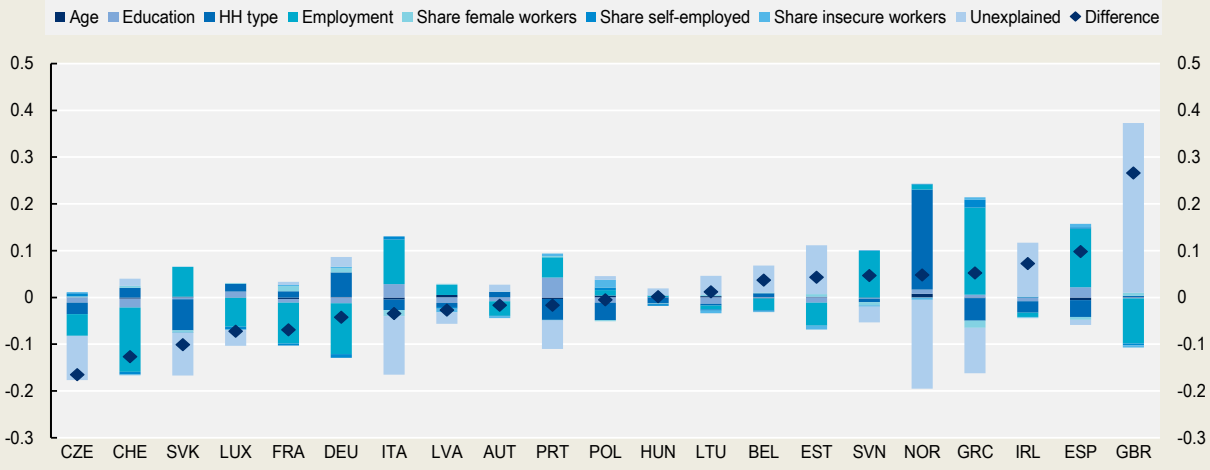
The size of the effects of family composition, employment and education on income instability differ across countries – although there are broad similarities (Figure 1.7). In southern European countries and Ireland, higher unemployment levels contribute to their higher levels of instability, while their larger family sizes act as a partially countervailing factor. In addition, higher shares of self-employed and insecure workers make a non-negligible contribution to instability in Italy, Portugal, Greece and Spain.

In contrast, good employment prospects in Switzerland, Norway, Luxembourg, Germany and Austria reduce the size of instability in these countries, and therefore instability is driven mainly by family composition – particularly small and single-income-earning households. Nevertheless, the high employment rates more than compensate for the effects of family composition on income instability, and thus total income instability is lower than average in these countries.

Employment, educational and family-level factors do not, however, explain all (or even the bulk) of instability in all European OECD countries. In several countries, a large fraction of the instability is due instead to other contextual and institutional factors – such as the strength of employment protection legislation and collective bargaining. In Estonia, Ireland and the United Kingdom, these broader contextual and institutional factors add to the level of instability, while they reduce instability in some southern European countries (Greece, Italy and Portugal). The role and design of institutional factors are considered in Chapter 3.

Figure 1.7. Household composition and employment levels explain an important fraction of country differences

Differences in total income instability (squared coefficient of variation) with respect to the OECD 21 average, decomposed by factors



Note: The decomposition uses the coefficients from Table 1.C.1 and accounts for differences in each factor from the pooled mean across all countries (weighting each country equally). Age, education and employment refer to the household head's characteristics, while shares of female workers, self-employed and insecure workers are based on each household's share of adults with these characteristics. Insecure workers are on temporary or no contracts. HH type refers to household type.
Source: OECD calculations are based on the the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

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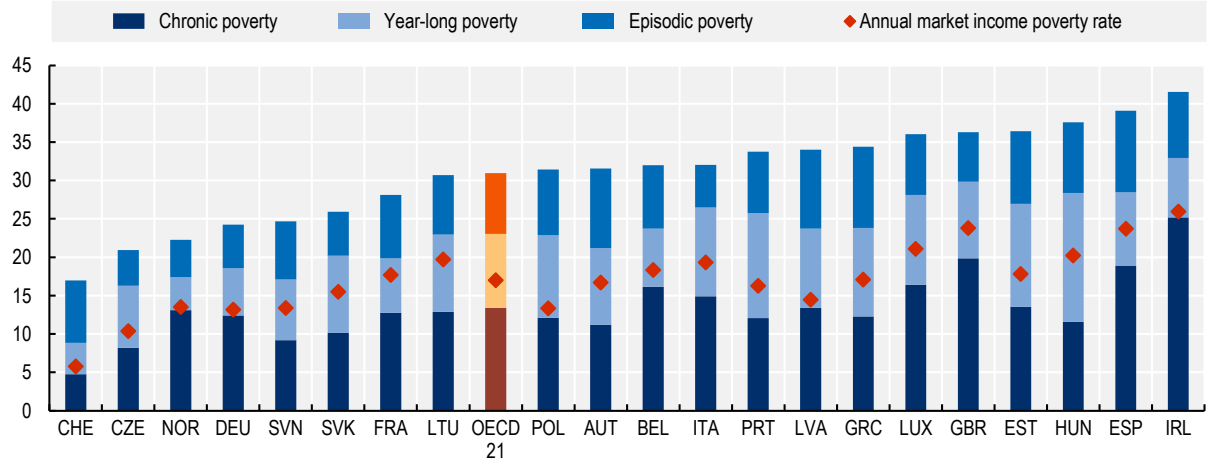
Where there is a high prevalence of income instability, the experience of poverty expands beyond those groups who are most at risk, such as the unemployed. Almost one-third of people in working-age households experienced income falls so large that their market income fell below the poverty line for at least part of the year (Figure 1.8).[8] Of these people, 43% were chronically in poverty (spending at least three years of the four-year period of analysis in poverty – dark blue bars in Figure 1.8), 31% spent between a 12 and 35 months in poverty (light blue bars), and the remaining 26% (medium blue bars) had short spells of income drops. Episodic poverty ranged between one-fifth of all poverty spells in Italy and the United Kingdom to a third in Austria and almost half in Switzerland. These results mirror the findings in the American poverty literature, which have revealed that the traditional picture of poverty as a persistent state is not true for most (Morduch and Siwicki, 2017[4]).[9] The prevalence and impact of episodic poverty thus has policy implications (Chapter 3).

Figure 1.8. One-third of individuals in working-age households spend at least a few months in poverty

Percentage of the population, only households whose main earner is aged 18-59, averaged over 48 months ending in 2016-18



Note: Poverty is measured as a headcount of households whose market income falls below 50% of median disposable income. Market income includes employment earnings and income from financial assets. Chronic poverty is defined as consecutive spells of poverty lasting at least 36 months (out of 48); year-long poverty spells last between 12 and 35 months; episodic poverty spells last between 2 and 11 months.
Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

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While these results suggest that vulnerable and disadvantaged groups are most exposed to income instability and poverty, they do not give any indication of people's ability to cope. Some households may be less vulnerable to income shocks because they can draw on their savings, take out loans, reduce discretionary consumption and/or rely on friends and family for support. The next chapter examines the sufficiency of households' financial buffers to manage income instability, and then assesses economic insecurity as the intersection of people's exposure and vulnerability to income instability.

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Annex 1.A. Research literature on income instability

Annex Table 1.A.1. Studies on income instability

Study	Country	Data	Method	Main results
Methods that decompose permanent and transitory components				
Gottschalk et al. (1994[38])	United States	Panel Study of Income Dynamics (PSID); 1970-1987; white male household heads aged 20-59; earnings	Window averaging method to annual changes with unit root permanent effect and ARMA transitory effect	Increase (both permanent and transitory components) in earnings volatility between 1970s and 1980s
Moffitt and Gottschalk (2010[11])	United States	PSID; 1970-1987; white male household heads aged 20-59; earnings	Error component model to annual changes	Increase (both permanent and transitory components) in earnings volatility between 1970s and 1980s
Gittleman and Joyce (1999[39])	United States	PSID; 1968-1991; families; equivalised gross income	Window averaging method to annual changes	Increase in income volatility
Haider (2001[14])	United States	PSID; 1967 – 1991; white male household heads aged 25-60; labor earnings	Error component model to annual changes with heterogeneous growth component	Increase in earnings volatility between early 1970s and late 1980s
Hyslop (2001[13])	United States	PSID; 1979-1985; men and women aged 18-60; labour earnings	Error component model to annual changes allowing husband and wife permanent and transitory components to be correlated	Increase in earnings volatility in 1980s
Moffitt and Gottschalk (2002[12])	United States	PSID; 1970-1996; men household heads; aged 20-59; wages and salaries	Error component model to annual changes	Increase of earnings volatility in early 1980s and early 1990s
Baker and Solon (2003[40])	Canada	Income tax records; 1976-1992; men; earnings	Error component model to annual changes	Growth in earnings inequality reflect an increase in long-run inequality and earnings instability
Ramos (2003[31])	United Kingdom	British Household Panel Study (BHPS) 1991-1999; males' earnings	Error component model to annual changes	Increase in earnings dispersion. During the 1990s the persistent component played a larger role. Then, earnings dispersion became more transitory and less persistent.
Kalwij and Alessie (2007[33])	United Kingdom	New Earnings Survey (NES); 1975-2001; men; earnings	Error component model to annual changes	Strong increase in transitory wage inequality
Keys (2008[41])	United States	PSID; 1970-2000; men and women household heads and families; earnings and family income	Window averaging method to annual changes	Increase in family income volatility and male earnings between 1970 to 1990, then flattened in the 2000s. Permanent variance for female heads fell and transitory rose.

Study	Country	Data	Method	Main results
Daly and Valleta (2008[30])	United States, Germany and United Kingdom	Cross-National Equivalent Files (CNEF); 1979-1996 for US, 1983-1997 for Germany and 1990-1997 for United Kingdom; male households head aged 25 and 61; earnings	Window averaging method to annual changes and error component model	Despite the differences in overall cross-sectional inequality across these countries, the persistent component of earnings inequality was similar in the 1990s
Gottschalk and Moffitt (2009[42])	United States	PSID;1974-2000 working males, aged 30-59. earnings, family income	Window averaging and percentage point methods to annual changes	Transitory variance for males increased from the 1970s to the late 1980s
Heathcote et al. (2010[15])	United States	PSID; 1967-2006; household heads and spouses, earnings	Error component model to annual changes with unit root in permanent component	Increase of earnings volatility
Cervivni-Plá and Ramos (2011[29])	Spain	European Community Household Panel;1993-2000; males aged 21-61; earnings	Error component model to annual earnings	Decline in earnings instability
Myck, Ochmann and Qari (2011[26])	Germany	German micro panel data (SOEP); 1994-2001; male wages	Error component model to annual wages	Increase in cross-sectional inequality due to transitory component
Moffitt and Gottschalk (2012[16])	United States	PSID; 1970-2005; men household heads; earnings	Error component model with window averaging and non-parametric method to annual changes	Transitory variance increased between 1970s to mid-1980s, then remained at this level until 2005
DeBacker et al. (2012[43])	United States	Male primary or secondary earner W-2 data merged with IRS tax return data; 1987-2009; earnings and household income	Two window averaging methods and error component model	Permanent variance of male earnings increased but transitory component was stable. Transitory variance of household income increased
Jensen and Shore (2015[44])	United States	PSID; 1968-2009; men household heads; earnings	Error component model with evolving permanent effect and correlated transitory effect that captures heterogeneity in permanent and transitory variances to annual changes	Variances have not risen for most of the population but have risen strongly for those with high past volatility levels
Sologon and Van Kerm (2017[28])	Luxembourg	Administrative data; 1988-2009; men aged 20 to 57; earnings	Window averaging method	Earnings instability declined
Hryshko et al. (2017[45])	United States	Married couples in matched SSA-SIPP data; 1987-2009; earnings	Window averaging method to annual changes	Husband volatility fell between 1980 – 2000 then rose. Couple earnings volatility fell
Aggregate methods or non-parametric methods				
Dynarski and Gruber (1997[46])	United States	PSID; 1970-1991; men household heads; earnings	Variance of residuals from a first-difference regression of earnings	Increase in earnings stability which is countercyclical

Study	Country	Data	Method	Main results
Van Kerm, (2004[47])	16 EU countries (including Poland and Hungary, which were not yet members in the 1990s)	Consortium of Household Panels for European Socio-Economic Research (CHER) Households with positive incomes. 1990s household income	Change in the natural logarithm and absolute value of the change in log-income (Percentile ranks)	High levels of income volatility in southern and central European countries, followed by Ireland and United Kingdom during the 1990s
Hills, McKnight and Smithies (2006[48])	United Kingdom	Survey collecting weekly income from 93 households in the financial year 2003-04	Standard deviation and coefficient of variation of weekly income	Increase in monthly income variation without a clear pattern
Bania and Leete (2009[49])	United States	Survey of Income and Program Participation (SIPP); Households; 1991-1992 and 2001 panels	Coefficient of variation of monthly household income over 12-month period	Increase in income volatility, especially for low-income households
Sabelhaus and Song (2010[50])	United States	Social Security; 1980-2005; individuals; earnings	Permanent variance identified change in variance of change in log earnings by lag length	Earnings volatility declined
OECD (2011[51])	OECD countries	Panel Data; Workers aged between 25 and 59 years. Mid 2000s; earnings	Increase in the gross annual labour earnings by 20% or decrease by 20% in real terms	Nordic countries and the Netherlands have less earnings volatility compared with eastern European countries, Spain, Portugal, Austria and Korea
Rohde, Tang and Rao (2011[52])	Germany, United States and United Kingdom	CNEF; 1991-2005; household income	Standard deviation of two-year arc percent change	Britain had the highest level of income insecurity, followed by Germany, then United States, when measuring with pre-government income (income of household members before tax). When using post-government income (income of households after taxes and transfers) United States had the highest insecurity estimate, followed by Britain and Germany
Shin and Solon (2011[53])	United States	PSID; male head of the household aged 25 to 59; 1969-2004; earnings	Standard deviation measures of year to year	Men´s earnings volatility increased during the 1970s but did not show a clear trend afterwards
Ziliak, Hardy and Bollinger (2011[54])	United States	Current Population Survey (CPS); Individuals between ages of 16 and 60; 1973-2009 earnings and income	Standard deviation of the arc percentage change	Male volatility rose from the early 1970s to the mid-1980s, was at same level by 2009; female volatility declined
Dahl et al. (2011[55])	United States	Social Security; 1984-2005; individuals; earnings	Dispersion of arc earnings changes greater than 50 percent between years	Decline in volatility in late 1980s and then through 2005
Amuedo-Dorantes and Pozo (2011[56])	Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares; 2000-2008; households; income	Standard deviation of month-to-month percentage change in income flows	Female-headed households and larger households appear more prone to experiencing greater income instability, as well as households in rural areas

Study	Country	Data	Method	Main results
Dynan et al. (2012[57])	United States	PSID; men and women household heads, and spoused, households; 1967-2008; labor earnings	Standard deviation of two-year arc percent change	Increase in volatility through the 1970s, 1980s and 1990s. Households´ labor earnings and transfer payments have both become more volatile over time
Celik et al. (2012[58])	United States	Longitudinal Employer-Household Dynamics (LEHD - UI earnings records) in 12 states; 1992-2008, men earnings compare to CPS, SIPP and PSID	Standard deviation of change in log earnings residuals	LEHD shows little or no change in volatility during the entire period; PSID and CPS show rising volatility from 1970s to 1980s, then decline and increase in early 2000s; SIPP shows a decline between 1984 and 2006
DeBacker et al. (2012[43])	United States	Tax returns merged with male primary or secondary earner W-2 data; 1987-2009; earnings	Standard deviation of percent change in earnings one year and two years	No clear trend in earnings volatility
Hardy and Ziliak (2013[18])	United States	Matched CPS data, 1980-2009; household income	Variance of arc percentage change	Volatility doubled over the entire period, most pronounced among the top incomes
Cappellari and Jenkins (2014[34])	United Kingdom	BHPS Individuals between ages of 16 and 59 (drop self-employed individuals) 1992-2008 Earnings	Standard deviation of the arc percentage change, two years	Fall in labour market volatility
Hannagan and Morduch (2015[59])	United States	United States financial diaries; income and spending	Average coefficient of variation on monthly income	High volatility within a year in income and spending. Poorest households face greater volatility and better-off families experience substantial swings
Edwards (2015[60])	United States	SIPP Individuals; January 2009 to December 2012; income	Arc percentage change in monthly income	Population that is chronically poor experience small fluctuations, pushing them into or out of poverty
Moffit and Zhang (2018[61])	United States	PSID; 1970-2014; male aged 30-59; earnings	Variance of the two-year change in log earnings regression residuals	Volatility increases from the 1970s to the mid-1980s; stable trend from mid-1980s to the mid-2000s, and rising thereafter
Menta, Wolff and D'Ambrosio (2021[27])	Italy and United States	Panel Data (PSID and Survey on Household Income and Wealth – SHIW) Men and women older than 15. 1998-2016 Household income and wealth	Standard deviation of the two-year percentage changes	Higher wealth volatility in both countries than income volatility. Increased income and wealth volatility over time for both countries
Avram et al. (2021[32])	United Kingdom	UK Household Longitudinal Study (UKHLS) Households and individuals aged 25 and over (they include self-employed workers). 2009-2017; earnings and income	Standard deviation of the arc percentage change in annual earnings and income	Volatility of individual earnings declined as well as household income

Study	Country	Data	Method	Main results
Chauvel and Hartung, (2014[62])	United States and Europe	PSID and EU-SILC Households with head of the household between 25 and 59 1970-2007 household income	Percentile ranks changes using continuum of ranks	Volatility is lower in Nordic countries, Portugal and Italy compared to the United States, higher in the United Kingdom, Austria and Spain
Egbom et al. (2022[63])	Brazil	Administrative (*Relação Anual de Informações Sociais* (RAIS)) and survey (*Pesquisa Mensal de Emprego* (PME)) data; 1985-2018; workers aged 25-55; earnings	One-year residual log earnings changes	Since mid-1990s, instability of earnings declined for formal sector, while informal workers have experienced higher earnings instability between 2002 and 2015
Larrimore, Mortenson and Splinter (2022[64])	United States	Administrative tax data. Form W-2 and 1099-G; 2003-2020, individuals aged 25 and older; earnings	Increase in labour earnings by 10% or decrease by 10%	In 2020, workers with earnings in the bottom two quintiles were more likely to have experienced large earnings declines than in the Great Financial Crisis, while workers in the top quintile were less likely to have experienced large earnings declines than in the Great Financial Crisis.

Annex 1.B. Methodological details

Decomposing monthly income instability into infra- and inter-annual components

Income instability is measured as the average individual squared coefficient of variation of household monthly equivalised incomes. In the population, it is defined as:

$$E(CV^2) = \frac{1}{n}\sum_{i=1}^{n} CV_i^2$$

where n is the population size and the CV_i^2 for each individual-household is given by:

$$CV_i^2 = \frac{1}{T}\sum_{t=1}^{T}\left(\frac{x_{it} - x_{i.}}{x_{i.}}\right)^2$$

with T standing for temporal horizon (usually $T = 48$) and $x_{i.}$ for the mean of individual monthly incomes.

$E(CV^2)$ can be decomposed into infra-annual and inter-annual components of instability. At the individual level, the variations with respect to the average can be decomposed as:

$$\sum_{t=1}^{T}(x_{it} - x_{i..})^2 = \sum_{y=1}^{Y}\sum_{m=1}^{M}(x_{iym} - x_{i..})^2 = \sum_{y=1}^{Y}\sum_{m=1}^{M}(x_{iym} - x_{iy.})^2 + M \cdot \sum_{y=1}^{Y}(x_{iy.} - x_{i..})^2$$

where M is the number of sub-periods in a year (such as months) and x_{ym} is income in month m of year y. Overall infra-annual instability arises from averaging the first addenda, which compares monthly income with the average of its year, over the population:

$$E(CV_m^2) = \frac{1}{n}\sum_{i=1}^{n}\frac{1}{T \cdot x_{i..}^2}\sum_{y=1}^{Y}\sum_{m=1}^{M}(x_{iym} - x_{iy.})^2$$

while the income instability between years comes from averaging the second addenda, which compares yearly averages with the overall mean:

$$E\left(CV_y^2\right) = \frac{1}{n}\sum_{i=1}^{n}\frac{1}{Y \cdot x_{i..}^2}\sum_{y=1}^{Y}(x_{iy.} - x_{i..})^2$$

With the same approach, $E(CV_m^2)$ can be further decomposed to account for the contribution of seasonality to instability by observing that:

$$\sum_{y=1}^{Y}\sum_{m=1}^{M}(x_{iym} - x_{iy.})^2 = \sum_{y=1}^{Y}\sum_{m=1}^{M}(x_{iym} - x_{iy.} + x_{i..} - x_{i.m})^2 + Y \cdot \sum_{m=1}^{M}(x_{i.m} - x_{i..})^2$$

where the first sum considers the income of each month and year and adds up (the square of) its deviation from the year average, after correcting for the peculiarity of its month (i.e. the difference between the overall mean and the month average across years); the second sum compares each month average across years with the overall mean. Hence:

$$E\left(CV_{infra}^2\right) = \frac{1}{n}\sum_{i=1}^{n}\frac{1}{T \cdot x_{..}^2}\sum_{y=1}^{Y}\sum_{m=1}^{M}(x_{iym} - x_{iy.} + x_{i..} - x_{i.m})^2$$

is the infra-annual component of instability net of seasonality, and

$$E(CV_s^2) = \frac{1}{n}\sum_{i=1}^{n}\frac{1}{M \cdot x_{i..}^2}\sum_{m=1}^{M}(x_{i.m} - x_{i..})^2$$

is the contribution of seasonality to overall instability. Summing up, the squared coefficient of variation is decomposable as follows:

$$E(CV^2) = E\left(CV_{infra}^2\right) + E(CV_s^2) + E\left(CV_y^2\right)$$

Annex 1.C. Determinants of income instability and poverty

Annex Table 1.C.1. Factors associated with measures of income instability and poverty

	(1)	(2)	(3)	(4)	(5)	(6)
	Total income instability (SCV)	Infra-annual income instability (SCV)	Chronic market income poverty	Episodic market income poverty	Upward income mobility (SCV)	Downward income mobility (SCV)
Age main earner 35-49 (ref. aged < 35)	-0.081***	-0.036*	-0.027***	-0.059***	-0.023***	-0.058**
	(0.029)	(0.020)	(0.008)	(0.008)	(0.004)	(0.029)
Age main earner 50-64	-0.099***	-0.056***	-0.035***	-0.073***	-0.037***	-0.061**
	(0.027)	(0.017)	(0.007)	(0.008)	(0.004)	(0.026)
Fraction adults with secondary schooling degree	-0.119***	-0.026	-0.114***	-0.027**	-0.013**	-0.106***
	(0.033)	(0.020)	(0.010)	(0.011)	(0.006)	(0.032)
Fraction adults with tertiary degree	-0.145***	-0.039**	-0.177***	-0.096***	-0.013***	-0.132***
	(0.030)	(0.019)	(0.009)	(0.011)	(0.005)	(0.029)
2 adults without dependent children (ref. single)	-0.291***	-0.098***	-0.140***	-0.035***	-0.031***	-0.260***
	(0.030)	(0.018)	(0.008)	(0.009)	(0.004)	(0.029)
2+ adults without dependent children	-0.483***	-0.149***	-0.226***	-0.062***	-0.049***	-0.433***
	(0.036)	(0.023)	(0.008)	(0.010)	(0.005)	(0.035)
Single parent hh with dependent children	-0.082	0.024	0.046***	-0.015	-0.013	-0.069
	(0.124)	(0.088)	(0.018)	(0.015)	(0.010)	(0.121)
2 (or 2+) adults with 1 dependent child	-0.432***	-0.137***	-0.179***	-0.034***	-0.047***	-0.385***
	(0.032)	(0.021)	(0.008)	(0.010)	(0.004)	(0.032)
2 (or 2+) adults with 2 (or 2+) dependent children	-0.423***	-0.143***	-0.143***	-0.025***	-0.044***	-0.379***
	(0.031)	(0.019)	(0.008)	(0.010)	(0.005)	(0.030)
Other family composition	-0.542***	-0.202***	-0.174***	0.165	-0.098***	-0.444***
	(0.078)	(0.032)	(0.060)	(0.114)	(0.012)	(0.072)
Fraction of workers among adults (at the beginning of the period)	-1.095***	-0.298***	-0.678***	-0.128***	-0.181***	-0.915***
	(0.060)	(0.036)	(0.014)	(0.017)	(0.011)	(0.058)
Fraction of unemployed among adults (at the beginning of the period)	0.525***	0.320***	-0.045**	0.135***	0.056***	0.469***
	(0.100)	(0.066)	(0.017)	(0.020)	(0.015)	(0.097)
Fraction of students among adults (at the beginning of the period)	-0.375***	-0.049	-0.410***	-0.002	-0.010	-0.365***
	(0.070)	(0.041)	(0.021)	(0.023)	(0.015)	(0.066)
Fraction of retirees among adults (at the beginning of the period)	-0.008	0.049	-0.046**	0.082***	-0.044***	0.036
	(0.082)	(0.051)	(0.019)	(0.021)	(0.012)	(0.079)
Fraction of female workers among adults (at the beginning of the period)	0.170***	0.036	0.149***	0.018	0.030***	0.139***
	(0.037)	(0.025)	(0.010)	(0.013)	(0.005)	(0.036)
Fraction of self-employed among adults (at the beginning of the period)	0.193***	0.034***	0.118***	0.182***	0.040***	0.153***
	(0.018)	(0.011)	(0.010)	(0.014)	(0.004)	(0.017)
Fraction of insecure workers among adults (temporary or no contract; at beg. of period)	0.174***	0.059***	0.104***	0.283***	0.032***	0.142***
	(0.024)	(0.014)	(0.012)	(0.017)	(0.005)	(0.023)
Country dummies	X	X	X	X	X	X
Year dummies	X	X	X	X	X	X
N	124460	124460	125698	125698	124460	124460
R2	0.103	0.034	0.366	0.068	0.124	0.082

Note: *** statistically significant at the 1% level, ** at the 5% level, * at the 10% level. Results based on OLS regressions, with standard errors clustered at the household level in brackets. Weights have been rescaled to sum to 1 in each country. Instability and poverty are evaluated over 48 months, and estimates are pooled over the period 2016-18.
Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

Notes

[1] One exception is a small-scale study in the United Kingdom, in which 93 families were surveyed about their weekly income in the 2003-04 financial year. The study found that only seven families had stable incomes (varying less than 10% from their average annual income). Low-income and single-parent families, renters, and those with periods of unemployment were less likely to have stable incomes than other family types – the very families that have to carefully budget week-to-week because they have fewer resources to buffer income shocks, even though they are much more likely to experience income shocks (Hills, Mcknight and Smithies, 2006[48]).

[2] The squared coefficient of variation captures the average (squared) variations of monthly income with respect to the average over the entire period, rescaled (i.e. normalised) by average income. This measure is used in other studies of infra-annual instability because it enables total income instability to be decomposed into its infra-annual, inter-annual and seasonal parts (Bania and Leete, 2009[49]; Hannagan and Morduch, 2015[59]); Annex 1.B. The advantage of decomposing income instability in this way is that that it captures the effect of many important changes in work patterns. Further, the instability levels can be averaged across households to estimate the overall level of income instability in each country. The average squared coefficient of variation method is also consistent with other approaches, such as “window averaging” and “arc percentage change”. See Annex 1.A for more information on these methods.

[3] In theory, there are also households that have completely stable incomes that do not change at all during the 48-month period. However, none were identified in the sample, which means all households that do not experience upward mobility either have volatile incomes or incomes that exhibit a downward trend.

[4] An alternative way to measure income mobility is to estimate a linear trend in income over 48 months, and then decompose each household’s instability into two components: the combined downward trend and associated volatility around the trend (termed “bad instability”) and the upward income trend (“good instability”) (Raitano and Subioli, 2021[65]). The results obtained using this method are similar to those presented in this chapter, which are estimated by designating households as being upwardly mobile or not depending on their overall income dynamics over the entire period.

[5] All further analysis in this report is for households with employment income for at least part of the 48-month reference period and a reference person who is aged between 18 and 59 at the beginning of the period. Prime working-age households and working-age households are used interchangeably to refer to this group. The analysis excludes workers aged 60 and over so as to focus on employment changes that are more likely to be shocks rather than transitions to retirement.

[6] The Gini Index reported in this chapter differs from that published in the OECD’s Income Distribution Database (IDD) due to differences in age groups (IDD calculates the Gini Index for the working-age population aged 15 to 64, whereas this chapter uses prime-age workers aged 18 to 59), time periods (this chapter uses monthly income over 48 months instead of one year used by the IDD), and different data

sources for some country (e.g. the IDD uses administrative data sources for France and Germany and a different survey for the United Kingdom).

[7] Households with downwardly trending incomes are those which experience at least one large income drop (of at least 25%) or three minor monthly income drops (less than 25%) in the 48-month reference period.

[8] The poverty line is measured as having a household market income that is less than 50% of the national median disposable income.

[9] For example, almost one-third of Americans experienced episodic poverty (lasting 2-12 months) in 2009-11, more than double the annual poverty rate of 14% (Edwards, 2014[66]).

2. Economic insecurity

When individuals have highly unstable incomes and do not have the financial means to cope, they are said to be economically insecure. Economic insecurity is thus marked by an exposure, and a vulnerability to income instability. While low-income individuals are the most vulnerable to income shocks – in terms of having insufficient liquid assets to draw on – almost 50% of people on middle incomes in working-age households and 20% of higher income earners are at risk too. Given the frequency with which people experience income shocks, and the inadequacy of people's financial buffers, economic insecurity affects one in six people in working-age households in European OECD countries. The burden of economic insecurity falls predominantly on the unemployed and insecure workers, who are likely to face a heightened risk of economic insecurity going forward, given the digital transformations occurring in labour markets, which appear to affect people disproportionately and negatively in occupations with already high rates of economic insecurity

2.1. Why should we focus on economic insecurity?

Economic insecurity refers to a person's exposure, and vulnerability, to an economic loss (Hacker, 2018[1]). The previous chapter highlighted that many people in European OECD countries are exposed to economic losses, in the form of income instability. However, people may have the capacity to withstand fluctuations in their income by virtue of drawing on their assets, taking on loans, reducing their consumption or relying on friends and family for support – which makes them less vulnerable to economic loss.

Managing income shocks is becoming increasingly difficult in the context of COVID-19 and the cost-of-living crisis, which are eroding the purchasing power of people's real incomes[1] and leading some to draw down their savings and take on more debt (Box 2.1). More than 90% of European respondents to the recent OECD Risks that Matter survey reported that they are concerned about inflation and the cost of living in their country, and almost half are worried about paying for all of life's essentials, such as food, energy and housing, and servicing their debt.[2] The COVID-19 and cost-of-living crises have come at a time when many, particularly those at the bottom of the income and wealth distributions, already have low financial buffers and high levels of indebtedness and are thus in a more vulnerable position to manage future shocks. Even before these crises, almost one in ten households in the bottom 40% of the income distribution were over-indebted (that is, they had debt levels over three times their disposable income) (OECD, 2021[2]).

Further, these challenges to financial self-management are occurring at a time when governments have started to withdraw the extraordinary fiscal support that they introduced to deal with the twin COVID-19 and cost-of-living crises and now have less room for future large-scale fiscal stimulus. While governments acted swiftly to cushion the impacts of the cost-of-living crisis, policy measures were relatively expensive, as they were overwhelmingly broad-based (OECD, 2023[3]). Unlike the cost-of-living measures, government responses to COVID-19 tended to be targeted at those most vulnerable to employment and income loss. However, most of the OECD countries that expanded unemployment benefits in response to COVID-19 have now wound them back, and many countries have ended their job retention schemes or tightened their eligibility or generosity (OECD, 2022[4]). Nevertheless, governments still play an important role (considered in Chapter 3) in providing financial support to people with unstable incomes and in delivering programmes to boost private means of managing income shocks.

Economic insecurity is therefore a pressing concern and risk for many. Like income instability, it is associated with serious negative effects in terms of individual and societal well-being. It dampens living standards, fertility rates and general economic activity; and it is associated with food insecurity, poor adult health, mortgage delinquency, anxiety, fractured family formation, geographic immobility, political discontent and worse childhood outcomes in education, health and behaviour (Hacker and Jacobs, 2008[5]; Guiso et al., 2020[6]; Avram et al., 2019[7]; Rohde et al., 2017[8]; Smith, Stoddard and Barnes, 2007[9]; Reeves, McKee and Stuckler, 2014[10]; Stiglitz, Sen and Fitoussi, 2009[11]; Bhargava and Lown, 2006[12]; Mansour, 2018[13]; Stoetzer, Giesecke and Klüver, 2021[14]). The effects on childhood outcomes, health and geographic immobility have important implications for social mobility and human capital accumulation, which in turn highlights the influence of economic insecurity on current and future well-being (Boarini and Osberg, 2014[15]).

This chapter begins by analysing how vulnerable individuals in OECD countries are to potential economic losses (Section 2.2). It then combines the estimates of income instability in Chapter 1 with this analysis of vulnerability to measure economic insecurity (Section 2.3). Finally, Section 2.4 discusses the extent of economic insecurity in European OECD countries and describes the characteristics of people who are currently experiencing economic insecurity or are likely to be at risk of it in the future.

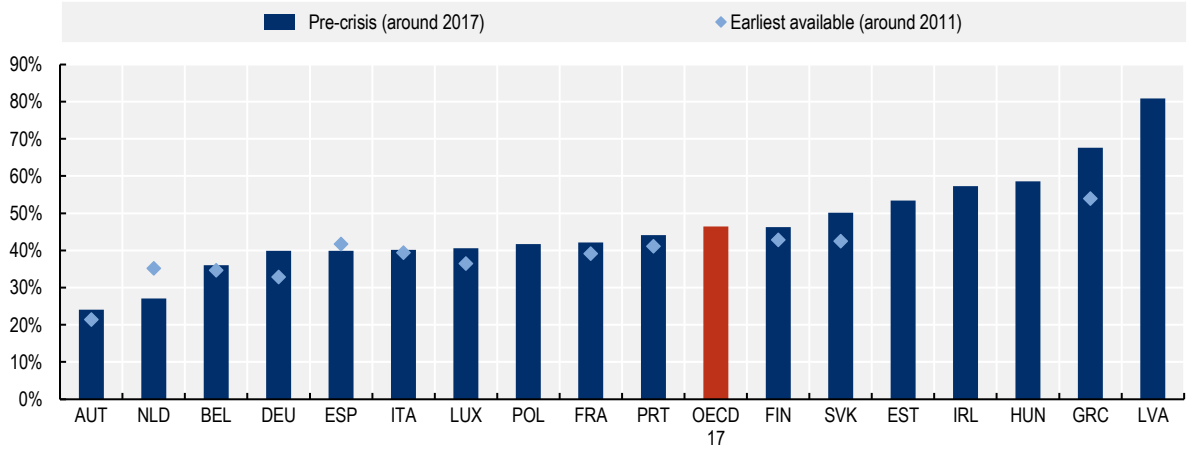
2.2. How vulnerable are individuals to economic loss?

To determine whether individuals are vulnerable to economic loss, this chapter uses the measure of asset inadequacy, which is common in many studies (Demertzis, Domínguez-Jiménez and Lusardi, 2020[16]; McKnight and Rucci, 2020[17]; Hacker, 2018[1]). Vulnerable (or financially fragile)[3] individuals are those who do not have sufficient liquid assets[4] to stay above the poverty line – with the threshold set at 50% of national median income – for three months (Balestra and Tonkin, 2018[18]; OECD, 2020[19]). In contrast, financially resilient individuals are those who have sufficient assets to stay out of poverty for at least three months.

On average across European OECD countries, 45% of people living in working-age[5] households are financially fragile, ranging from less than 30% in Austria and the Netherlands up to more than 60% in Greece and Latvia[6] (Figure 2.1). Financial fragility is more severe in countries where it is more prevalent. While, in Austria, the median financially fragile person holds almost enough liquid assets to keep themselves out of poverty for roughly a month, their Greek counterpart only has about a week's worth. Indeed, Greece is one of the few countries where the rate of financial fragility increased markedly in the past decade (along with Germany and the Slovak Republic) – as holdings of liquid assets fell significantly during the Global Financial Crisis.

Figure 2.1. Almost one-in-two people living in working-age households are financially fragile

Share of individuals living in working-age households whose liquid financial assets are insufficient to support them at the level of the OECD income poverty line for at least three months, around 2010-2017



Note: Liquid assets are defined as the sum of currency and deposits; bonds and other debt securities; mutual funds and other investment funds; and other non-pension financial assets. The pre-crisis data refer to: 2016 for Finland, Italy, Lithuania, and Poland; 2017 for Austria, Belgium, Estonia, France, Germany, Hungary, Latvia, the Netherlands, Portugal, and the Slovak Republic; 2018 for Greece, Ireland, Luxembourg, and Spain. The earliest available year refers to: 2009 for France, Finland, and Greece; 2010 for Belgium, Italy, the Netherlands, and the Slovak Republic; 2011 for Austria, Germany, Luxembourg, and Portugal; and 2012 for Spain. The poverty line is based on disposable income, which is estimated by using a Machine Learning algorithm to impute disposable income from the gross income variable (the sum of wages and salaries, self-employment income, and property income and social transfers received all recorded before the payment of income taxes) available in the HFCS dataset. The analysis focuses only on those countries for which the results of the statistical matching procedure are highly satisfactory for 17 out of the 19 OECD-EU countries covered in the third wave of the HFCS. See Annex 2.A for more information on the method for estimating disposable income.

Source: OECD computations based on the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

StatLink https://stat.link/bogvhi

Box 2.1. Financial fragility in times of economic crises

Recent crises have affected households' finances in different ways and left them with varying abilities to respond to future challenges. Even before the onset of COVID-19, almost half of low-income individuals lacked emergency savings, and households in the bottom half of the wealth distribution had little to no net wealth (OECD, 2021[2]). Moreover, the scant liquid assets held by low-wealth households were primarily in bank accounts or bonds, which earned low rates of return (OECD, 2021[2]). In contrast, the top 10% experienced the fastest growth in their wealth in the decade leading up to the pandemic and by 2018 held 50% of total household wealth in OECD countries (OECD, 2021[2]).

Households' financial prospects during COVID-19 depended largely on where they sat on the wealth distribution. In Europe, households in the top wealth quintile increased their savings more than other households, as asset prices quickly recovered after the initial shock to the point where prices in 2021 were markedly higher than in 2017, and they had limited opportunities for discretionary spending in the form of travel and going to restaurants (Household Finance and Consumption Network, 2023[20]). In contrast, households with little wealth to begin with ran down their savings or incurred debt (OECD, 2021[2]). Indebtedness rates declined for European households in the top three income quintiles, but there were increases in the shares of households with at least one unemployed adult and of young households (aged under 35) in debt (Household Finance and Consumption Network, 2023[20]).

While governments' fiscal measures and the European Central Bank's monetary policy settings helped to maintain household incomes, some European households saw their incomes fall during the pandemic. In Spain and Portugal, for example, 40% of households had lower income levels than in 2019. Households that experienced income losses during COVID-19 most frequently cut back on spending on food, clothing, travel and other non-durable consumer goods and services, although drawing down savings, selling assets and deferring debt were also common, particularly in France, Greece, Italy and Portugal (Household Finance and Consumption Network, 2023[20]). These households tended to have limited financial buffers to manage COVID-19, which put them at a disadvantage in dealing with the subsequent cost-of-living crisis.

Low-income households were at a disadvantage for a few reasons when the cost-of-living crisis hit. First, they bore the brunt of the initial price spikes, as a higher proportion of their spending is on energy and food (OECD, 2022[4]). Recent OECD analysis (OECD, n.d.[21]) reveals that, all other things being equal, low-income households spend 4.2 percentage points more on food and 1.8 percentage points more on domestic energy than households in the middle of the income distribution (and 9.4 and 3.5 percentage points more on food and energy, respectively, than higher-income households). Second, low-income households have less capacity to absorb increases in their cost of living even when facing similar rates of inflation as other households (OECD, 2022[4]). They have less scope to substitute for lower-price alternatives when they are often already buying cheaper versions of a given item (Argente and Lee, 2020[22]) and typically have lower savings and borrowing capacity to buffer the rise in the cost of living (OECD, 2022[4]; Balestra and Oehler, 2023[23]; OECD, 2021[2]). Further, low-income and/or low-wealth households tend to earn relatively lower rates of return, since most of their meagre liquid assets are held in bank accounts with rates that do not keep pace with inflation.

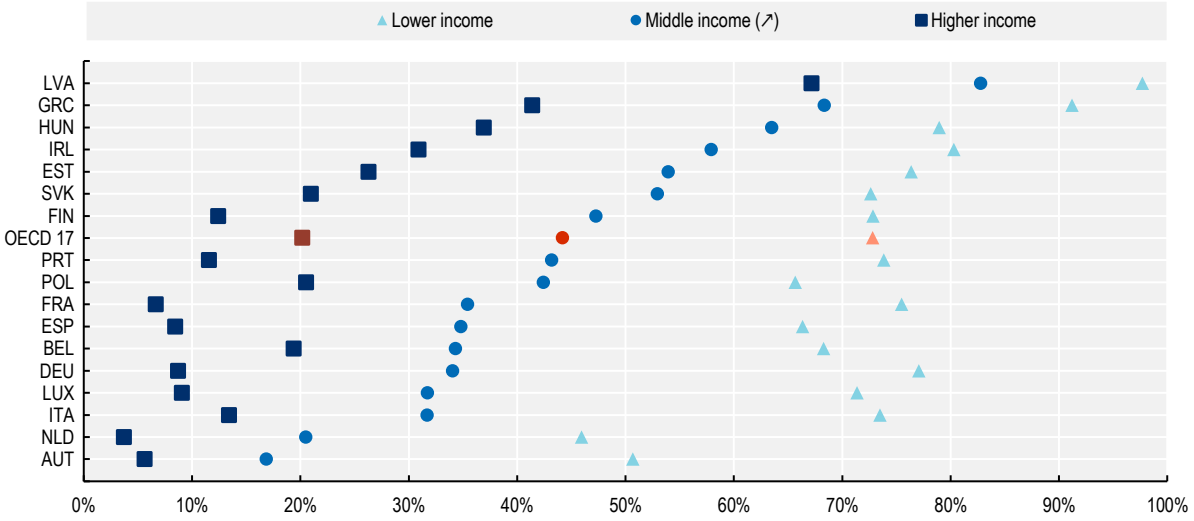
In effect, successive recent shocks have had cumulative, negative effects on households with low incomes and/or low wealth – leaving them vulnerable to future shocks in the absence of opportunities to build their financial buffers.

Who are the financially fragile?

Financial fragility is not confined to the bottom of the income distribution. While more than two in three individuals living in working-age lower-income households[7] are financially fragile, almost one in two individuals living in working-age middle-class households are too, on average (Figure 2.2). In Ireland, Estonia, Greece, Hungary and Latvia, financial fragility affects the majority of middle-class individuals. Moreover, on average, financial fragility also affects one in six higher-income individuals, with this share being above 30% in Greece and Hungary and as high as 60% in Latvia.

Figure 2.2. More than 40% of individuals in middle-class households are financially fragile

Percentage of individuals in working-age households who are financially fragile by income group, OECD 17 around 2017



Note: The third wave of the Household Finance and Consumption Survey (HFCS) is used because it contains micro-level structural information on European households' assets and liabilities, e.g. real assets and their financing, liabilities/credit constraints, private businesses, financial assets, intergenerational transfers and gifts, and consumption and saving. However, the HFCS does not include information on household disposable income, and so a Machine Learning algorithm has been used to impute disposable income from the gross income variable (the sum of wages and salaries, self-employment income, and property income and social transfers received, all recorded before the payment of income taxes) available in the HFCS dataset (see Annex 2.A). The analysis focuses only on those countries for which the results of the statistical matching procedure are highly satisfactory: 17 out of the 19 OECD-EU countries covered in the 3rd wave of the HFCS. Lower income: <75% of the median equivalised disposable income. Middle income: >=75% and <200% of the median equivalised disposable income. Higher-income: >=200% of the median equivalised disposable income. Data are from 2016 for Finland, Italy and Poland; 2017 for Austria, Belgium, Estonia, France, Germany, Hungary, Latvia, the Netherlands, Portugal and the Slovak Republic; 2018 for Greece, Ireland, Luxembourg and Spain.
Source: OECD estimates based on the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

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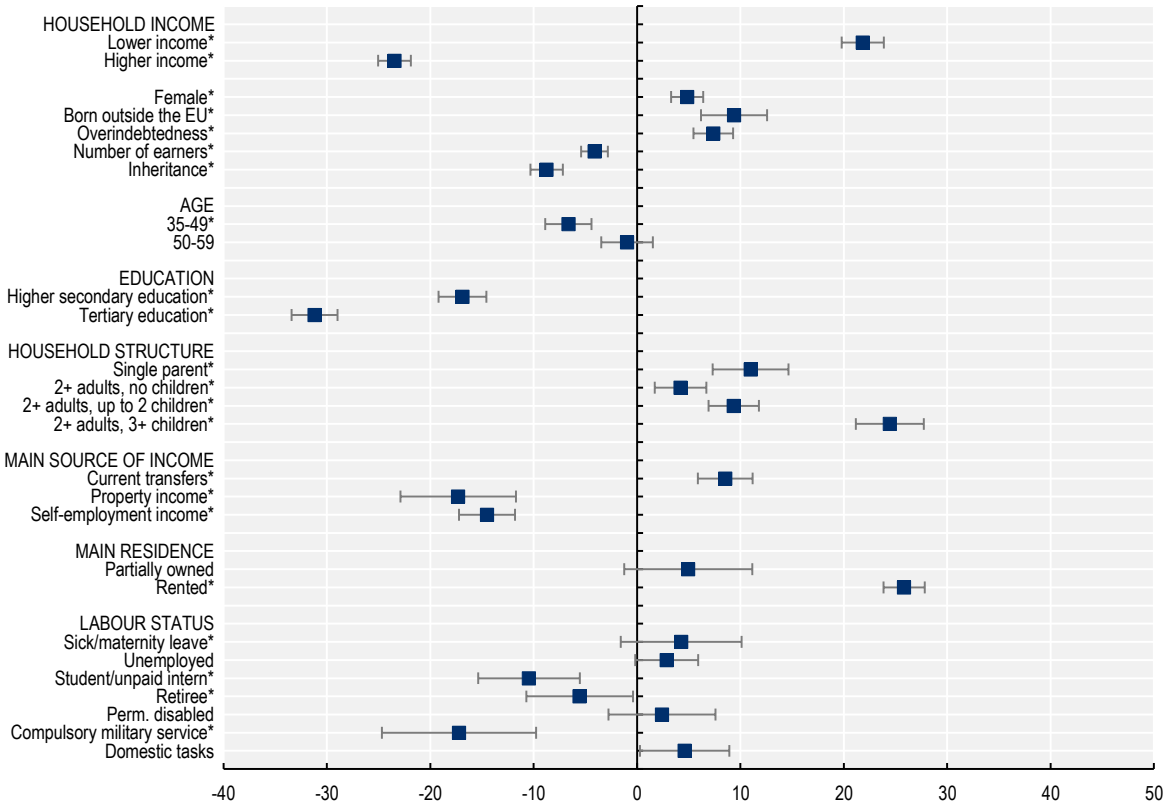
Since financial fragility is widespread across the income distribution, income is unlikely to be the sole determinant of an individual's vulnerability to a potential economic loss. Education, housing tenure and number of children are equally, if not more, important than income (Figure 2.3). For instance, households headed by someone with a tertiary degree have a 33 percentage point lower likelihood of being financially fragile, while higher-income individuals have a 23 percentage point lower chance of financial fragility. These individuals have more opportunities to save and invest in assets, which reduces the risk of financial fragility. On average, among households with higher incomes, 60% of those who are not financially fragile manage to save, compared to 37% of the financially fragile. (For individuals in lower-income households, the rates are as low as 28% and 16%, respectively.) Similarly, housing is another important source of financial resilience, providing a large, even if illiquid, financial buffer (for example, re-mortgaging or

downsizing can release housing equity into liquid financial assets, if needed). As a result, renters are 24 percentage points more likely to be financially fragile than homeowners.

Figure 2.3. Low education, low income, renting and having multiple children are strong predictors of financial fragility

Marginal effect for the average individual in a working-age household (in percentage points), OECD 17



Note: * significant at the 5% level. Marginal effects from a logit model. The sample includes individuals in households with working-aged (18-59) employed heads. For the entire regression table with odds ratios, see Annex 2.B. The sample includes Austria, Belgium, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Spain and the Slovak Republic. Data are from 2016 for Finland, Italy and Poland; 2017 for Austria, Belgium, Estonia, France, Germany, Hungary, Latvia, the Netherlands, Portugal and the Slovak Republic; 2018 for Greece, Ireland, Luxembourg and Spain.

Source: OECD estimates based on the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

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2.3. Estimating economic insecurity as the interplay between income instability and financial fragility

The results presented in the previous section revealed that people across the income distribution are vulnerable to potential economic losses, but they did not reveal who is most likely to experience an economic loss. In the remainder of this chapter, these two strands are combined to estimate economic insecurity.

Economic insecurity can be challenging to measure, as, conceptually, it is people's anxiety or fear of the prospect of facing adverse events and having difficulty recovering (Osberg, 1998[24]; Hacker, 2008[25]; Stiglitz, Sen and Fitoussi, 2009[11]; Bossert and D'Ambrosio, 2013[26]; Boarini and Osberg, 2014[15]). In operational terms, economic insecurity is estimated as people's exposure and vulnerability to the risk of unexpected, negative income shocks (Osberg, 1998[24]; Boarini and Osberg, 2014[15]). Most research measures *observed* (current or recent) economic insecurity based on prior experiences of income instability and predicts future risks (Hacker, Rehm and Schlesinger, 2013[27]; Hendren, 2017[28]; Rhem, 2016[29]). Such an approach uses widely available data on individual or household income and wealth, but requires the assumption that recent past experiences are a good approximation of the future risks of economic insecurity (Hacker, Rehm and Schlesinger, 2013[27]; Hendren, 2017[28]; Rhem, 2016[29]).

In contrast, *perceived* economic insecurity measures exposure to negative income shocks by using individuals' view of their risk of income instability in the future – measured in terms of individuals' worry or anxiety about the likelihood of an economic shock, such as the risk of job loss (Hacker, Rehm and Schlesinger, 2013[27]; Hendren, 2017[28]; Dominitz and Manski, 1996[30]; Green, Felstead and Burchell, 2000[31]; Mau, Mewes and Schöneck, 2012[32]; Nau and Soener, 2019[33]; Burgoon and Dekker, 2010[34]). This forward-looking approach has the benefit of capturing the uncertainty that is inherent in the concept of economic insecurity and encapsulates individuals' own estimates of the risks they face, which cannot be done using measures of past experiences of income instability. However, information on people's anxiety about their future incomes is rarely captured in international household income and wealth surveys. One exception is the Household Finance and Consumption Survey (HFCS), which includes a survey question asking respondents to estimate the precise numerical probability that they will lose their jobs in the near future.[8]

Given the availability of European surveys with information on income, wealth and perceptions, this chapter estimates the likelihood of currently or recently experiencing economic insecurity and the perception of experiencing economic insecurity in the near future in European OECD countries. To supplement the forward-looking approach taken in the chapter, the link between economic insecurity and the digitalisation of the labour market is also examined, which gives an indication of economic insecurity over the longer term (Box 2.2).

Box 2.2. Estimating current or recent economic insecurity using the HFCS and EU-SILC

This chapter cannot directly measure *observed* economic insecurity, because there is no single European data source that includes all requisite information – namely, monthly income/employment status and liquid asset holdings. Instead, this chapter *predicts* the chance of an individual experiencing economic insecurity using the Household Finance and Consumption Survey (HFCS) and the European Union Statistics on Income and Living Conditions (EU-SILC).

The HFCS is used to estimate economic insecurity, because it contains rich information on individuals' asset holdings and their perceptions of future income loss. However, the HFCS does not contain information on infra- and inter-annual income instability, which is why the EU-SILC was used in Chapter 1. As a result, this chapter predicts who is likely to experience income instability in the HFCS

based on their shared characteristics with people who experience income instability according to the EU-SILC. Fortunately, the HFCS includes the same set of economic and socio-demographic variables used in the EU-SILC to predict income instability. Further, most of the predictors are coded equivalently and distributed similarly in both surveys.

In order to predict income instability in the HFCS, a statistical model is first estimated in the EU-SILC. The model – based on a Random Forests algorithm estimated separately for each country – predicts the probability of an individual's total income instability being above a threshold (the top quartile for income instability, averaged across all countries). The model is then used to predict the probability of having an unstable income in the HFCS using the socio-economic characteristics that are common to both surveys, including household disposable income, which is predicted in the HFCS based on a machine learning approach (see Annex 2.A for further details).

Finally, individuals who have (predicted) highly unstable incomes are considered to be economically insecure if they do not have liquid assets to support themselves at the level of the OECD income poverty line – 50% of the national median – for at least three months. More information on the prediction model is in Annex 2.C.

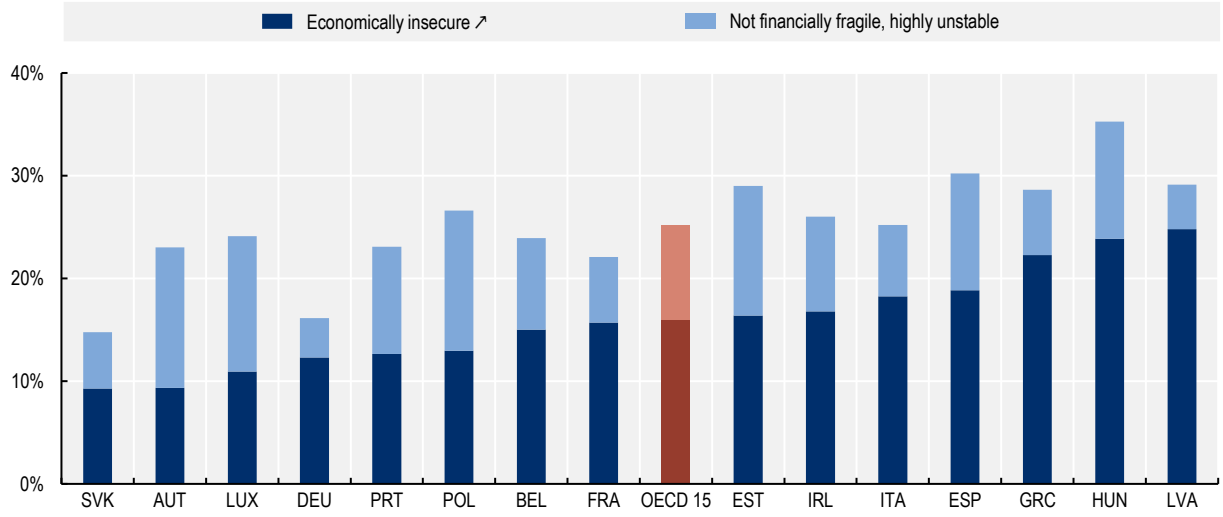
2.4. Who has experienced economic insecurity and who is at risk in the future?

On average, in the European OECD countries studied, 17% of people in working-age households are estimated to be economically insecure, since their incomes are predicted to be highly unstable (in the top quartile for income instability, averaged across all countries) and they do not have sufficient liquid financial assets to support themselves at the level of the OECD income poverty line – 50% of the national median – for at least three months (Figure 2.4). Another 13% of people in working-age households have highly unstable incomes, but enough financial assets to cushion themselves (Figure 2.4). Despite their assets, however, having an unstable income can make it difficult for these people to save, which in turn can increase their risk of economic insecurity in the future.[9]

The extent of economic insecurity spans from 9% in the Slovak Republic and Austria to 25% in Latvia (Figure 2.4). In general, countries with high rates of economic insecurity tend to have both high levels of financial fragility (Figure 2.1) and higher-than-average levels of income instability (Figure 1.2) – except for Latvia, which has a medium level of income instability, but a very high rate of financial fragility, and Spain, which has a low level of financial fragility, but high income instability. Luxembourg and Germany, on the other hand, have low levels of economic insecurity, income instability and financial fragility.[10] However, levels of income instability, financial fragility and economic insecurity do not always go hand-in-hand. For example, Italy has a medium level of income instability and below-average financial fragility. Despite this, Italy has a rate of economic insecurity that is higher than countries with more income instability and financial fragility, such as Estonia and Ireland – indicating that income instability and financial fragility are more likely to co-occur in Italy than in these other countries.

Figure 2.4. Almost one in six people in working-age households are economically insecure

Percentage of individuals in working-age households who are economically insecure or have highly unstable incomes but sufficient liquid assets to cope with an income shortfall, averaged over 48 months ending in 2016-18



Note: The economically insecure are people living in working-age households who are likely to have highly unstable incomes and insufficient liquid assets to support them at the level of the OECD income poverty line for at least three months. Liquid assets represent those that can more easily be liquidated if needed urgently, including currency and deposits; bonds and debt securities; mutual funds and other investment funds; and other non-pension financial assets. The chart only shows countries for which information on both instability and fragility is available.
Source: OECD estimates based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions; and the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

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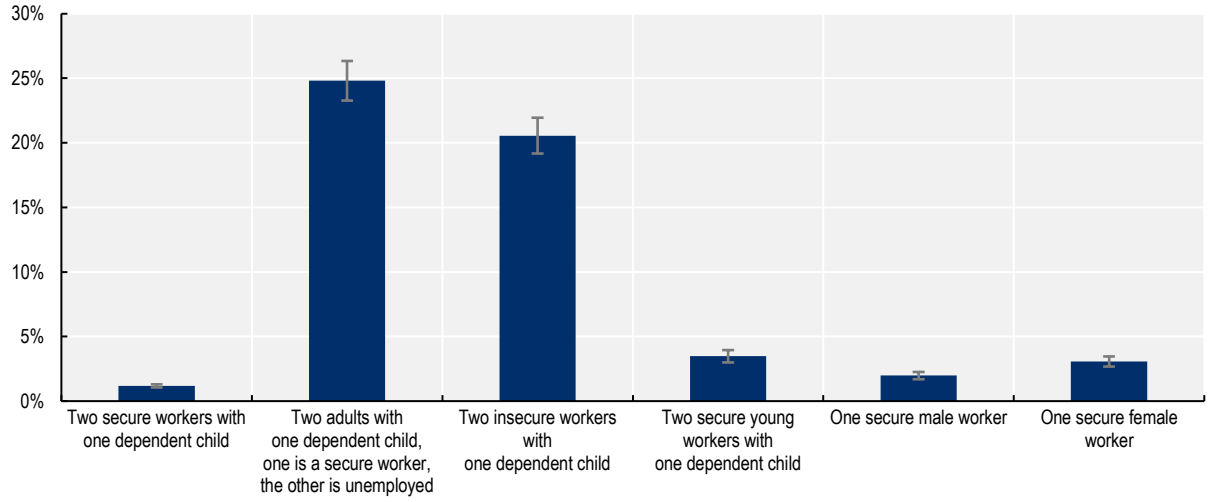
People who face the highest probability of experiencing economic insecurity are those who are in households with lower employment intensity, on average, across European OECD countries (Figure 2.5). This includes households with a single income earner, or where both adults lack job security (on temporary contracts or no contract at all). The probability of experiencing economic insecurity is also high for young couples and single, female-headed households – reflecting gender imbalances in employment intensity. Women have lower participation rates and higher unemployment rates and are more likely than men to be in single-income-earning households. Indeed, while 78% of working-age men in the sample are employed, the same is true for only 68% of women.

Figure 2.5. Economic insecurity is greatest in households with children and an intermittent attachment to the workforce

Predicted probabilities of experiencing economic insecurity based on a range of household characteristics, averaged over 48 months ending in 2016-18



Note: The predictions are obtained using a logit model, which accounts for differences in educational level and household head age, family size, employment levels and job security. The sample includes Austria, Belgium, Estonia, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Poland, Portugal, Spain and the Slovak Republic. Data are from 2016 for Italy and Poland; 2017 for Austria, Belgium, Estonia, France, Germany, Hungary, Latvia, Portugal and the Slovak Republic; 2018 for Greece, Ireland, Luxembourg and Spain. The term "secure worker" is used to refer to employees who have permanent contracts. "Insecure workers" have temporary or no contracts.
Source: OECD estimates based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions; and the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

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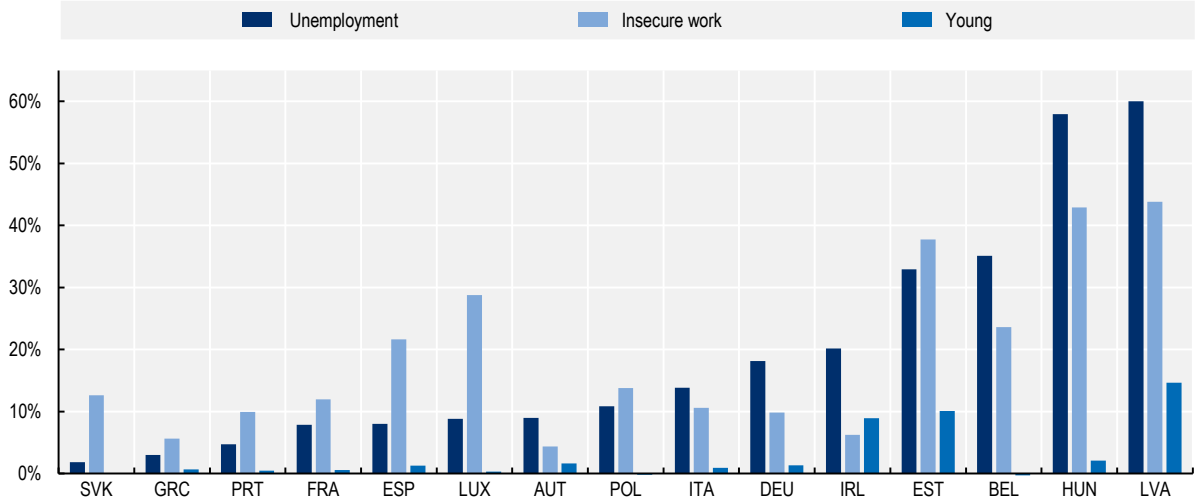
While households with weaker attachments to the labour market along with young households are most likely to experience economic insecurity in Europe, the risks they face differ across countries (Figure 2.6). Individuals who have an unemployed person in their household face the highest chance of being economically insecure in Latvia, Hungary, Estonia, Belgium and Ireland, while workers who lack job security in Spain, Luxembourg, Poland, France, the Slovak Republic and Poland face relatively high risks (along with Latvia, Hungary, Belgium and Estonia). Belonging to a young household generally has a small effect across countries, except in Latvia.

Figure 2.6. The economic insecurity penalty associated with employment varies across countries

Predicted probability of experiencing economic insecurity for households headed by an unemployed person, a worker without job security, or a person aged below 35, averaged over 48 months ending in 2016-18



Note: The predictions are obtained using a logit model, which accounts for differences in educational level and household head age, family size, employment levels and job security. The sample includes Austria, Belgium, Estonia, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Poland, Portugal, Spain and the Slovak Republic. Data are from 2016 for Italy and Poland; 2017 for Austria, Belgium, Estonia, France, Germany, Hungary, Latvia, Portugal and the Slovak Republic; 2018 for Greece, Ireland, Luxembourg and Spain.
Source: OECD estimates based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions; and the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

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Who is at risk of economic insecurity in the future?

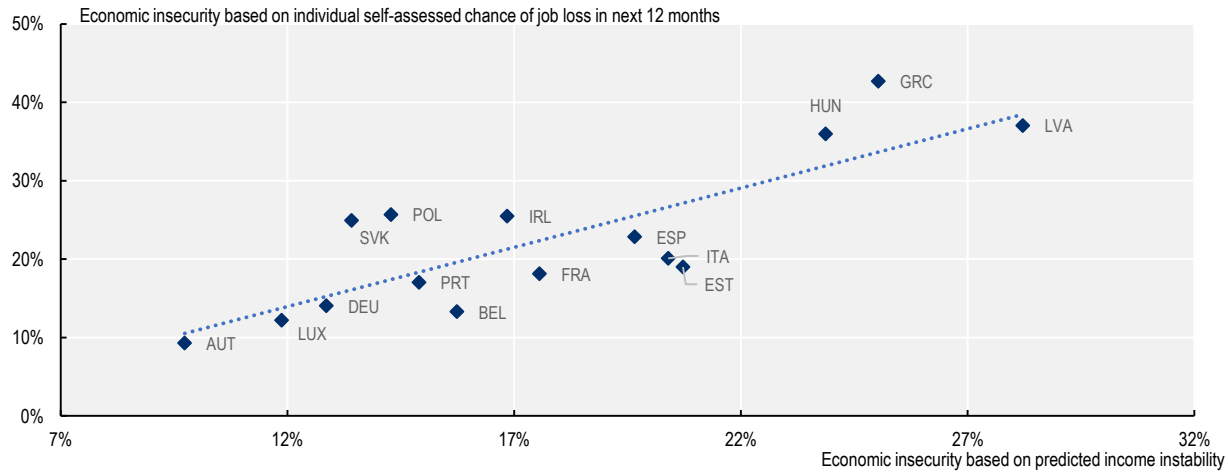
One in five people in European OECD countries believe they are at risk of economic insecurity in the near future – as they are financially fragile and perceive a high risk (50% or more chance) of losing their job in the next year.[11] About 15% of people perceive that they are highly likely to experience income instability in the next year and currently have enough assets to stay out of poverty for at least three months (they are not financially fragile). Meanwhile, one-quarter of people are financially fragile but do not believe that they have a high chance of losing their job in the next twelve months – indicating that a substantial share of people who are financially fragile do not expect to experience income instability in the near future.

People who have experienced economic insecurity perceive themselves as facing higher risks of negative shocks in the near future compared to the economically secure – 68% of those who are economically insecure believe they have a high chance of losing their job in the next year compared to a quarter of economically secure people. Further, 30% of men perceive a high risk of losing their job in the near future compared to 34% of women, which reflects the latter's weaker attachment to the labour market.

The relationship between lived experience of economic insecurity and anxiety about future economic insecurity plays out at the country level. There is a positive correlation between rates of economic insecurity and near-term future risk in European OECD countries (Figure 2.7). Countries like Latvia and Greece, with high levels of economic insecurity, also have high levels of perceived insecurity, while Austria and Luxembourg have low levels of both. These results – coupled with the frequent changes in income that people experience (Chapter 1) – suggest that people in European OECD countries face repeated spells of economic insecurity, or at least they believe that economic insecurity is unlikely to be a one-off experience.

Figure 2.7. Economic insecurity is strongly correlated with perceived risk of unemployment over the next 12 months

Correlation between different measures of economic insecurity, averaged over 48 months ending in 2016-18



Note: Data are from 2016 for Italy and Poland; 2017 for Austria, Belgium, Estonia, France, Germany, Hungary, Latvia, Portugal and the Slovak Republic; 2018 for Greece, Ireland, Luxembourg and Spain.
Source: OECD estimates based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions; and the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

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The risks of economic insecurity may persist beyond the next twelve months, as a consequence of the incipient technological changes in the labour market, such as the rise of artificial intelligence (AI) and other forms of automation (for example robotics). While firms' AI adoption is still relatively low, the technologies are progressing rapidly, costs are falling and workers are increasingly developing AI skills – which indicates that OECD countries could be on the brink of an AI revolution (OECD, 2023[35]).

AI is making its greatest gains in non-routine and cognitive tasks – demarcating it from previous automation technologies. As such, occupations with lower rates of economic insecurity, such as professionals and managers, are more exposed to AI than workers who face higher risks of economic insecurity, including cleaners, food preparation assistants, labourers, rubbish collectors and other elementary workers (Figure 2.8, Panel A). A high exposure to AI does not necessarily translate to employment precarity or increase the risk of economic insecurity. AI has not (yet) led to a reduction in employment: some high-skilled workers have had better employment prospects after the introduction of AI, and there is some evidence that those exposed to AI have seen their wages increase, as they spend more time on complex work tasks, while AI undertakes simpler tasks (OECD, 2023[35]).

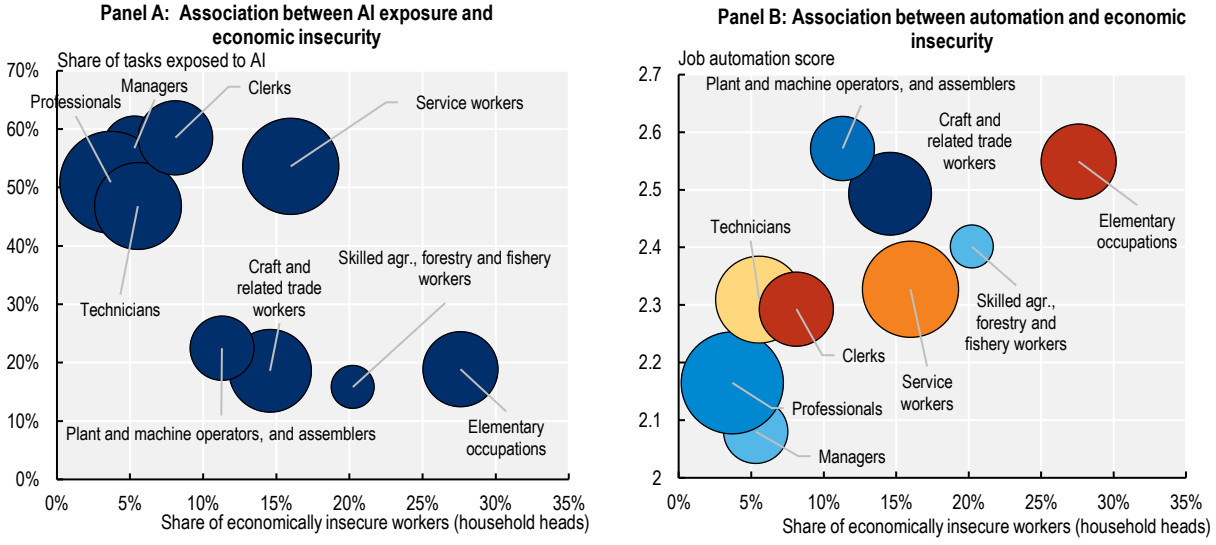
In contrast, occupations with higher rates of economic insecurity face relatively high risks from automation more broadly (OECD, 2023[35]). At-risk occupations tend to have fewer skills that are difficult to automate (so-called bottleneck skills), which places them at greater risk of job loss – although, even for occupations at high risk of automation, only a moderate amount (15-25%) of important skills and abilities are automatable (Lassébie and Quintini, 2022[36]).

Some workers with a high risk of automation, such as those in elementary occupations, face the extra burden of having few viable and desirable job transitions[12] they can make in the event they lose their jobs (as demonstrated by the dark red bubble in Panel B of Figure 2.8). While craft workers, plant and machine operators, and assemblers face high automation risks and have a medium rate of economic insecurity, they have the greatest number of viable and desirable jobs they can transition to (represented by the dark blue bubbles), which indicates they have the best opportunities to move into new roles if their current

occupations are automated. In effect, these workers may not see their rates of economic insecurity rise markedly, even though they are in highly automatable roles.

Figure 2.8. Workers in occupations that are exposed to economic insecurity are less likely to reap the benefits of AI and are more at risk of automation than workers in more secure occupations

Economic insecurity and its association with exposure to AI and automation risk, major ISCO-08 occupation groups



Note: Exposure to artificial intelligence (AI) is based on Kanders et al (2020[37]), who map the suitability for machine learning scores developed by Brynjolfsson, Mitchell and Rock (2018[38]) to thousands of tasks in European countries. Exposure is measured as the share of tasks that are not bottlenecks to AI. Automation risk is based on Lassébie and Quintini (2022[36]), who surveyed experts on the degree of automatability for 98 skills and abilities. The risk of automation is then calculated for each occupation as the average rating for each skill or ability used in the occupation across all expert responses weighted by the skills or abilities' importance in the occupation as rated by O*NET. Finally, the scores are applied to European Skills, Competencies, and Occupations in the HFCS using the Kanders et al. (2020[37]) crosswalk. Scale is 0-5 for all occupations. Each bubble's size indicates the share of workers in a given occupation. In Panel B, bubbles are coloured based on the number of highly viable and desirable job transitions that are likely in each occupation group – ranging from dark red (5 transitions), to orange (7), yellow (8), light blue (10), medium blue (11), and finally dark blue (19-22). Highly viable transitions are those with a good fit for an individual's current occupation (based on their education, skills, experience and types of work activities), while desirable transitions are those where the job mover can make at least 75% of their current occupation's median earnings (Kanders et al., 2020[37]). Unweighted average of Austria, Belgium, Estonia, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Poland, Portugal, the Slovak Republic and Spain.
Source: Kanders et al (2020[37]), Lassébie and Quintini (2022[36]) and OECD estimates based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions; and the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

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Taken together, these results indicate that people who currently face high risks of economic insecurity tend to be in occupations that are more likely to be negatively affected by the digital transition. They may be less likely to reap the gains of AI, while facing higher risks of automation, and in some cases, with fewer options for job transitions. If such risks were to precipitate, people who are currently economically insecure may have difficulty escaping in the future. This underscores the need for policies to help people reduce their risks of economic insecurity by smoothing their incomes and imbuing them with the financial literacy necessary to keep their finances under control, manage their expenses and plan to weather potential future shocks.

This chapter also shows that financial fragility and economic insecurity are distinct, although intertwined, phenomena. While financial fragility affects nearly half of the middle-income population in European OECD countries, and a large share of higher-income earners, these groups are much less likely to experience (or

be at risk of) economic insecurity than lower-income earners. This is because lower-income earners, such as the unemployed and workers who lack job security, are more often subjected to high income instability (Chapter 1). Conversely, more than one in ten people with highly unstable incomes have sufficient assets to avoid financial fragility – which indicates that they can smooth their incomes, at least in the short term. Thus, by examining each element of economic insecurity in isolation and as an ensemble, this chapter has been able to identify different at-risk groups.

While the novel approach used in this report has shed new light on the extent and risks of income instability and economic insecurity in European OECD countries, it is possible to extend the analysis to examine other forms of instability, such as family breakdowns, and the effects of economic insecurity. For example, the effects of experiencing economic insecurity on a range of well-being outcomes, such as health, housing insecurity, social exclusion and investments in education, could be analysed using the data sources and methods in this report. Focusing on the effects of economic insecurity in European OECD countries would close a gap in the research literature, as the majority of studies examine the effects of economic insecurity only in the United States. Further, such analysis could lead to new insights for health, education and labour market policies. Nevertheless, this report's analysis highlights the pressing need for a range of policies that support people at risk of income instability and/or financial fragility. The next chapter considers a selection of such policy options.

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Annex 2.A. Methodology used for estimating disposable incomes in the HFCS

The Household Finance and Consumption Survey (HFCS), the primary source of microdata on households' wealth holdings in European countries, provides information on *market* incomes (i.e. incomes before taxes and transfers) and social benefit receipt, but not on taxes and social insurance contributions paid (except for Finland and Italy). Jointly analysing wealth holdings and *disposable* incomes of European countries is therefore not directly possible. It is also not possible to study the wealth holdings of (income) poor households, as poverty is traditionally defined with reference to the median equivalised disposable household income.

To address this limitation, this chapter makes use of novel methods in statistical matching to impute disposable income from the gross income variable available in the HFCS dataset. To do so, a predicted distribution of disposable income in each country and year was derived, using ensemble methods of machine learning. The model was trained on the EU Statistics on Income and Living Conditions (EU-SILC) micro-dataset data from the corresponding income years 2010 to 2018, which contains reliable information on both disposable and gross income and for which a large set of socio-demographic variables were harmonised to match those in the HFCS dataset. The distribution of gross income is very similar between the HFCS and EU-SILC, although incomes tend to be higher at the top in the HFCS, which is likely due to oversampling.

The main challenge of the statistical matching exercise was to find a well-functioning approach that could allow the predicted disposable income to be a function of the entire gross income distribution and an array of socio-demographic variables. A machine learning approach was preferred over other viable options (e.g. hot-deck imputations) not only because it retained better predictive power, but also because it did not require assumptions about the nature of the relationship between disposable income, gross income and socio-demographic characteristics.

The machine learning method chosen, called "Xgboost", relies on boosted regression trees. It has become widely acknowledged for its very good performance and has recently been used in Blanchet, Chancel and Gethin (2019[39]) for a very similar matching exercise in which the authors match different income concepts together in multiple datasets over a relatively long time period.

Similarly to Blanchet, Chancel and Gethin (2019[39]), both the donor (EU-SILC) and recipient (HFCS) samples were harmonised, and the distribution of both gross and disposable income was segmented into percentiles. As the models are in a Gaussian (or continuous) form, the predicted disposable income distribution was defined in a continuous space despite the fact that the main predictor, gross income, was restricted to percentile levels. Other predictors included: household type, marital status, weekly number of hours worked for the household head and the second household head (when applicable), labour status for the household head and the second household head (when applicable), occupation type for the household head and the second household head (when applicable), and variables decomposing individual gross income for both household heads. Following good practice, first all input variables were standardised, then the model output was de-standardised by applying the same scaling factor used for standardisation. Cross-validation was also used to reduce the risk of overfitting. Finally, we decided to top-code gross and disposable income variables when training the model, as it significantly increased performance between the 1st and the 99th percentile. All observations above the 99th percentile were given the value of the 99th percentile. The model was also tested by gathering all available waves for each country separately; however, the results obtained by restricting the predictions to each country and wave were more

satisfactory. As the HFCS dataset contains five different imputations, after training the model, predicted income was matched on all five imputations separately.

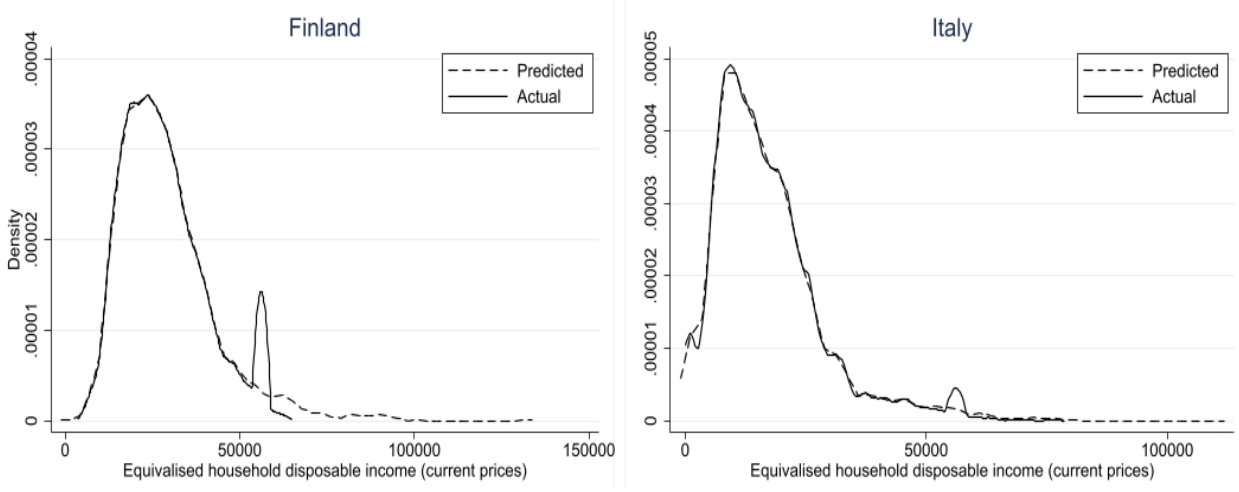
For each country and year, EU-SILC observations were split into a training sample (75%) and a testing sample (25%). The model was then run separately for each country and year, and the results were assessed on the testing sample. For those countries where information on disposable income is available in the HFCS, i.e. Italy and Finland, the model's performance was evaluated by comparing the predicted and observed distributions. The model can be summarised with the following specification:

$$\mathrm{E}[F_i^{disposable}(\mathrm{p})] = \varphi(F_i^{gross}(p_1), \ldots, F_i^{gross}(p_{99}), \mathrm{p}, X_i)$$

In each wave and country, the predicted disposable income percentiles are therefore an arbitrary function of all gross income percentiles until the 99th, and of the socio-demographic and income covariates listed above.

The results from the machine learning model are highly satisfactory. The mean cross-validation prediction errors across years and countries remain below 7% at the very most, and the mean squared error on the test sample does not go past 4% of a standard deviation in most countries. For those countries where information on disposable income is available in the HFCS, i.e. Italy and Finland, the model's performance was evaluated by comparing the predicted and the observed distributions. Figure 2.A.1 compares the distribution of predicted and actual household disposable income (at the individual level) for both countries. The model performs rather well along the entire distribution bar at the very top end (top 1%). The discrepancy at the top is caused by the top-winsorisation that was implemented to improve the general performance of the matching algorithm. This, however, does not represent a major source of concern for the analysis in this chapter, since the prevalence of financial fragility at the very top of the income distribution is almost negligible.

Figure 2.A.1. Kernel density plots of predicted and actual equivalised household disposable income for Finland and Italy



Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions; and the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

Annex 2.B. Odds ratios of the logit model

Annex Table 2.B.1. Full logit results

Dependent variable: Financial fragility	Odds ratios
Age: 35-49	0.83***
	(0.03)
Age: 50-59	0.96
	(0.04)
Lower income	2.27***
	(0.08)
Higher income	0.27***
	(0.02)
Born outside Europe	1.64***
	(0.10)
Any substantial gift or inheritance received	0.60***
	(0.02)
Over-indebtedness	1.61***
	(0.06)
Number of household members in employment	0.89***
	(0.02)
Upper secondary education	0.52***
	(0.02)
Tertiary education	0.24***
	(0.01)
One adult, at least one child	1.69***
	(0.12)
Two or more adults, no children	1.22***
	(0.05)
Two or more adults, one or two children	1.62***
	(0.08)
Two or more adults, at least three children	3.05***
	(0.19)
Female	1.16***
	(0.03)
Main income *Source:* Current transfers	1.64***
	(0.07)
Main income *Source:* Property income	0.36***
	(0.05)
Main income *Source:* Self-employment income	0.68***
	(0.05)
Main residence: Partially owned	1.32**
	(0.16)
Main residence: Rented	2.82***
	(0.10)
Labour status: Sick/maternity leave	1.16
	(0.15)

Dependent variable: Financial fragility	Odds ratios
Labour status: Unemployed	1.45***
	(0.08)
Labour status: Student/pupil/unpaid intern	0.49***
	(0.05)
Labour status: Retiree or early retiree	0.79***
	(0.07)
Labour status: Permanently disabled	1.11
	(0.10)
Labour status: Compulsory military service or equiv. social service	1.61
	(0.48)
Labour status: Domestic tasks	1.29***
	(0.11)
Constant	0.20***
	(0.02)
Observations	171,629

Note: Robust s.e. in parentheses. *** p<0.01, ** p<0.05, * p<0.1
Source: OECD computations from the Eurosystem Household Finance and Consumption Survey (HFCS), https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

Annex 2.C. Predicting income instability in the HFCS

The analysis on economic insecurity in this chapter combines information about financial fragility from the Household Finance and Consumption Survey (HFCS) with information on income instability from EU Statistics on Income and Living Conditions (EU-SILC). The HFCS dataset is augmented with a variable indicating whether an individual is predicted to be in the top quartile in terms of income instability, based on the squared coefficient of variation of monthly income described in Chapter 1. The prediction is carried out with a country-specific algorithm estimated (or "trained") on the EU-SILC dataset, where income instability is observed. This Annex describes the methodological details of the prediction procedure.

The algorithm only keeps individual variables for the household head along with household variables, and only considers households whose household head is aged below 60 both in the HFCS and in the first year of the four-year panel in the EU-SILC. The household head is defined as the person with the highest individual employment income in the (first) year of the survey (panel). Only households with stable composition – with nobody leaving or entering the household (including no new-born children) – over four years are kept from the panels in the EU-SILC.

The predictions are based on the set of variables that are expected to be relevant in predicting the probability of having income instability above the selected threshold (the average 75th percentile of the distribution across the included countries) and are consistently reported in both the EU-SILC and the HFCS. Most of the predictors go through a rigorous process of transformation and harmonisation aimed at making them equivalently coded and similarly distributed in the two surveys. Annex Table 2.C.1 describes each predictor and, if applicable, reports whether any transformation has been applied.

Annex Table 2.C.1. Variables used as predictors for the algorithm

Type of predictors	Name of variable	Transformations
Household economic situation	Total household gross income	Applying square root equivalence scale; convert to constant euros, if needed
	Current rent related to occupied dwelling	Applying square root equivalence scale; convert to constant euros, if needed
Household head individual variables	Age of the household head	
	Sex of the household head	
Household socio-demographic predictors	Household size	Censored at 11, meaning that household with more than 10 members are recoded to 11
	Share of workers	Number of workers divided by uncensored household size. Variable defining occupational status is recoded for comparability
	Share of unemployed	Number of unemployed divided by uncensored household size. Variable defining occupational status is recoded for comparability
	Share of students	Number of students divided by uncensored household size. Variable defining occupational status is recoded for comparability
	Share of retired	Number of retired divided by uncensored household size. Variable defining occupational status is recoded for comparability
	Share of female workers	Number of female workers divided by uncensored household size. Variable defining occupational status is recoded for comparability
	Share of secured workers	Number of workers with long-term contract divided by uncensored household size. Variable defining job contracts is recoded for comparability
	Share of young workers	Number of young workers divided by uncensored household size. Variable defining occupational status is recoded for comparability

Type of predictors	Name of variable	Transformations
	Share with primary education or below	Number of individuals with primary education or below divided by uncensored household size. Variable defining education is recoded for comparability
	Share with secondary education	Number of individuals with secondary education divided by uncensored household size. Variable defining education is recoded for comparability
	Share with tertiary education or above	Number of individuals with tertiary education or above divided by uncensored household size. Variable defining education is recoded for comparability
	Share of children younger than 16	Number of children younger than 16 divided by uncensored household size
	Share of children younger than 3	Number of children younger than 3 divided by uncensored household size
	Presence of married person in the household	Dummy equal to 1 if there is at least one married person in the household. Variable defining marital status is recoded for comparability

When missing values prevent the count of members with certain characteristics from being reliable (for example, an adult having missing employment status leads to an unreliable count for the share of workers), then the related variable (such as the share of workers) is set to missing, regardless of what is reported for the other household members.

As for the classification algorithm, an appropriate choice for the classification problem is the Random Forest algorithm. Three parameters require optimisation to run the algorithm. They are (partially) optimised on a three-dimensional (discrete) grid minimising the out-of-bag misclassification rate. The number of trees is the best in a grid from 100 to 1 500, with a pace of 50. The number of variables to use at each split is the best between the integers from 1 to 15 (the number of predictors). The action to be taken on missing values is the best between omitting the household with missing values or imputing with the median.

Random forest is trained on two pooled waves of the EU-SILC (2018 and 2019, so that the model is trained on a period of time similar to the HFCS) and tested for overfitting on the two previous waves (2016 and 2017). In the EU-SILC, monthly income instability is measured by the squared coefficient of variation of monthly household market income and defines the dummy reporting which households belong to the high instability group, as previously defined.

The evaluation of the prediction quality is performed on the test sample. A crisp assignment to the highest quartile is also done using a cut-off that ensures the share of 1 in the test set is to be approximately equal to the true share of 1 in the training set. Annex Table 2.C.2 summarises the main indicators of classification performance for each country, i.e. the misclassification rate in the test set as compared to the expected error rate of the random classifier, and the area under the receiving operator curve (AUC). These indicators demonstrate the good performance of the algorithm in most countries: the misclassification rates range from 15% to 25%, which is always far below the random classifier expected error rates, and the AUC ranges between 0.77 and 0.89.

The final prediction on the HFCS can be performed only on individuals belonging to households without missing information. This leads to a dataset with merged information consisting of almost 102 000 individuals, with each country counting from more than 2 000 (Latvia) to more than 24 000 (France) individuals. Individuals with high income instability on the HFCS are selected as those with the highest predicted probability, in a number such that, for each country, the share of *predicted* highly unstable in the HFCS is equal to the share of *observed* highly unstable in the training sample in the EU-SILC.

Annex Table 2.C.2. Performance of the classification algorithm

Error rate in the test set, expected error rate of the random classifier and Area Under receiving operator Curve (where an area score closer to 1 implies a better prediction)

Country	AUT	BEL	DEU	ESP	EST	FRA	GRC	HUN	IRL	ITA	LUX	LVA	POL	PRT	SVK
Error rate in test set	0.22	0.17	-	0.21	0.24	0.16	0.28	0.24	0.23	0.21	0.19	0.26	0.25	0.22	0.18
Expected error rate of the random classifier	0.35	0.35	0.27	0.42	0.41	0.34	0.41	0.46	0.38	0.38	0.36	0.41	0.38	0.35	0.26
AUC	0.79	0.86	0.85	0.84	0.79	0.85	0.73	0.8	0.77	0.79	0.79	0.77	0.75	0.78	0.69

Note: The error rate in the test set is the share of misclassified individuals in the test set. Expected error rate of the random classifier is the share of misclassified individuals that are expected if the algorithm randomly classifies the individuals in the two classes (0 and 1) with the constraint of reproducing their true known proportions. AUC stands for Area Under receiving operator Curve, it usually takes values between 0.5 (random classification) and 1 (perfect classification); compared to the error rate, it evaluates classification performance at different values of the probability cut-off.

Notes

[1] In this report, analysis is based on changes in nominal, rather than real, income that are the result of employment shocks in the years leading up to the COVID-19 pandemic. Before the pandemic and the cost-of-living crisis, differences between real and nominal incomes were negligible and so are unlikely to influence the results presented.

[2] The OECD Risks that Matter survey (2023[3]) covered the following European Union countries: Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, the Netherlands, Poland, Portugal, Slovenia and Spain.

[3] In previous OECD work, financial fragility has also been termed financial vulnerability (Balestra and Tonkin, 2018[18]) or financial insecurity (OECD, 2021[2]).

[4] Liquid assets can be more easily converted into cash if needed urgently, and include currency and deposits, bonds and other debt securities, mutual funds and other investment funds, and other non-pension financial assets. This chapter uses the terms liquid assets and financial buffers interchangeably.

[5] Similar to Chapter 1, this chapter examines prime-age households where the household head is aged 18-59 at the beginning of the period. To aid readability, working-age household is used instead of prime working-age household and working-age household.

[6] For the remainder of this chapter, the third wave of the Household Finance and Consumption Survey (HFCS) from 2017 is used to assess financial fragility and economic insecurity, even though the fourth wave from 2022 is available. The third wave of the HFCS maps more closely to the EU-SILC data from 2013-2019, which was used to estimate income instability. Using data that were collected during, or immediately following, COVID-19 is unlikely to give a realistic indication of the long-run, structural levels of income instability that countries could return to as economies recover.

[7] In line with OECD (2019[40]), this chapter groups people by whether they are in working-age households with disposable income less than 75% of the median national income (lower income), or in working-age households with disposable income between 75% and 200% of the median national income (middle income), or in working-age households with disposable income above 200% of the median national income (higher income). Working-age households are those headed by someone aged 18 to 59.

[8] The OECD Risks That Matter Survey (2023[3]) includes questions about people's concerns about various economic risks in the next year, including their risk of losing their job. However, the Risks That Matter Survey does not ask people about their household's assets, which means the survey cannot be used to measure economic insecurity as the combination of income instability and financial fragility.

[9] This section uses the terms "estimated economic insecurity" and "economic insecurity" interchangeably to refer to estimates of economic insecurity based on the predictions described in Box 2.2. These terms are used in contrast to "near future risk of economic insecurity", which is based on individuals' perceptions of their chance of losing their job in the next year.

[10] A complete analysis of countries with low levels of income instability is not possible because some of the European countries covered in Chapter 1 are not included in the Household Finance and Consumption Survey. This includes Czech Republic, Switzerland, Norway, Slovenia and the United Kingdom.

[11] The near future risk of economic insecurity is estimated in terms of individuals' perceptions of their risk of losing their job in the next twelve months. People who stated in the Household Finance and Consumption Survey (HFCS) that they believed they face a 50% or greater risk of losing their job in the next year were identified as having perceived highly unstable incomes. Those who are perceived to be economically insecure are financially fragile and expect that they are highly likely to lose their job (and hence experience a fall in their income) in the near future.

[12] Viable transitions are those that are a good fit for workers in terms of their skills, education and experience; the types of work activities; and the interpersonal, physical and structural aspects of work. Desirable transitions have similar expected earnings to a person's current occupation (Kanders et al., 2020[37]).

3. Policies to reduce economic insecurity

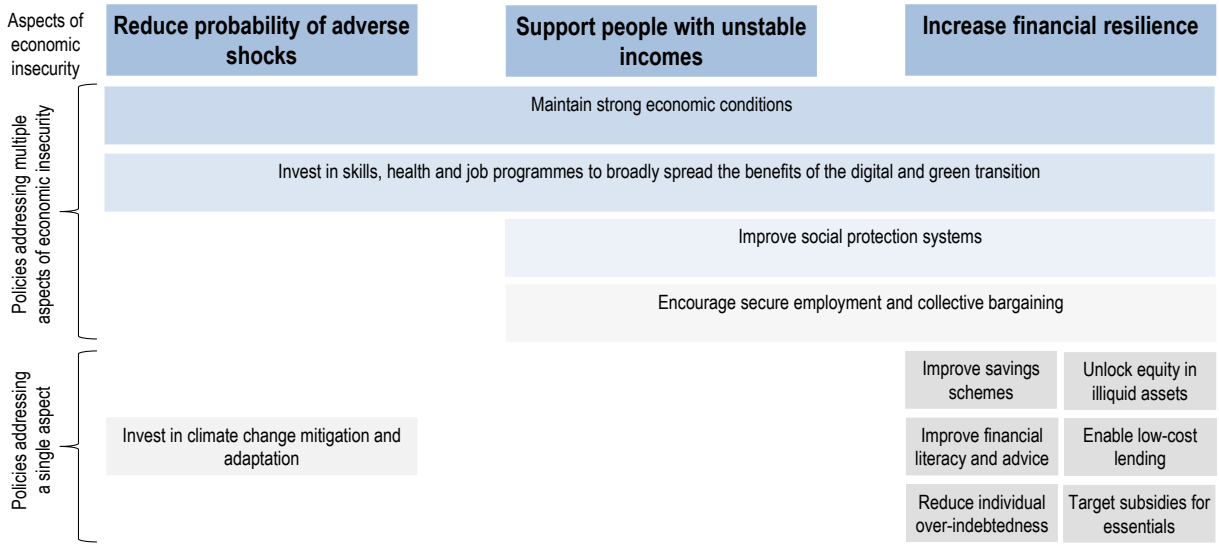
The risk of economic insecurity is ever-present in European OECD countries – as individuals often face employment changes and income shocks and may lack sufficient liquid assets to cope with them. The burden of economic insecurity falls heavily on those who are disadvantaged and in a precarious position – people on low incomes, the unemployed and insecure workers – but the consequences are felt more broadly across society. Governments have a role in reducing people's exposure to adverse economic events and enhancing their ability to manage risk. Social benefits, in particular, play an important role in reducing income instability – notably when they are responsive to changes in people's circumstances, which can vary dramatically from month to month. In addition, policies that support financial literacy and help people to build their savings and manage debt are important for financial resilience and well-being, especially in constrained fiscal environments. More broadly, policies should work in concert to reduce the risks of economic insecurity.

3.1. How can policies address economic insecurity?

The preceding chapters revealed the extent and negative consequences of economic insecurity on individuals, their families and society at large. Nearly one in six people in working-age households face economic insecurity, with the burden falling disproportionately on the unemployed and insecure workers – the very people who often rely on social protection and other government support. Governments should ensure that their policies and programmes are tailored to the needs and circumstances of people who experience or are vulnerable to economic insecurity – noting that people's circumstances and needs can change suddenly and frequently, as demonstrated throughout this report.

Policies should address people's exposure to negative shocks and help them to better manage risk. Government policies may directly target a single aspect of economic insecurity (for instance policies that seek to boost individuals' capacity to acquire financial resources, or policies that supplement incomes during unemployment). Alternatively, some policies act on multiple aspects of economic security by reducing the risk of negative economic effects and smoothing incomes, which in turn set the conditions for individuals to build financial buffers. Figure 3.1 depicts a suite of policies that can address (aspects of) economic insecurity. The policies are grouped by what they aim for: ensuring general economic stability, developing conditions for more secure and higher-paying jobs, supplementing incomes when individuals experience a shock, assisting individuals in generating wealth, or maintaining individuals' consumption of essential goods and services as prices rise (see the columns in Figure 3.1).

Figure 3.1 Policy options for addressing different aspects of economic insecurity



This is not an exhaustive list – nor an indication of the relative sizes of the policy impacts – but rather an illustration of the wide variety of policies that can be used to tackle economic insecurity. For example, governments can:

- promote strong economic conditions to maintain price stability and foster quality job creation and income growth that benefits all segments of the population;
- encourage people to invest in skills development to improve their job prospects, particularly for people working in occupations, industries or geographic areas facing structural change;
- provide financial support (social protection) to people experiencing financial hardship or unemployment; and

- introduce regulation to enable low-cost lenders such as credit unions and to limit predatory lending practices.

The effects of these policies will depend on the contexts in which they are implemented, including how they function within the broader suite of policies. They are, however, all important and should work in concert as a policy package to mitigate economic insecurity (Sologon and O'Donoghue, 2014[1]).

Rather than discussing each of these policy areas, this chapter focuses on ways to improve policies based on the findings in the previous chapters that monthly income changes are a key driver of economic insecurity and that many of those on highly unstable incomes have limited financial buffers. As such, this chapter focuses on the timeliness of social protection payments (Section 3.2) and programmes aimed at strengthening people's financial well-being and resilience by boosting their savings, improving their financial literacy and increasing their access to low-cost financial services and debt relief (Section 3.3). While social protection is the primary way to reduce income instability for lower-income earners, policies to increase financial literacy, resilience and well-being are becoming more important, as countries face a limited scope for future public spending given the large-scale fiscal responses to COVID-19 and the subsequent cost-of-living crisis. The stocktaking of policies includes non-European OECD countries and is informed by desk research and validated by national administrations. A high-level overview of policy options and programmes for a selection of OECD countries (i.e. Germany, Greece, France, Ireland, Latvia, Spain, Sweden, the United Kingdom and the United States) covering policies up to July 2022 is provided in Annex 3.A.

3.2. Making social protection more timely

While social protection systems have traditionally been designed to provide a safety net, their role in reducing economic insecurity is increasingly recognised given labour-market digitalisation (OECD, 2019[2]). People who experience economic insecurity face the greatest risk from automation and have fewer opportunities to benefit from artificial intelligence technologies than people in occupations that face a lower risk of economic insecurity (Chapter 2). Those who experience economic insecurity are also more likely to lack job security (i.e. to be on temporary or no employment contracts), which makes them vulnerable to falling through the cracks of social protection systems that have not adapted to modern labour markets (OECD, 2019[2]). Prior to COVID-19, two-thirds of job seekers in the OECD did not receive unemployment benefits because they were ineligible – as they were self-employed, temporary workers who did not meet minimum contribution durations, or unemployed for so long they went over the maximum duration of benefits (OECD, 2023[3]). COVID-19 exposed the gaps in social protection systems, and some countries including Italy, Germany, France and South Korea, are considering extending income protection to those who have not typically been eligible (OECD, 2023[3]).

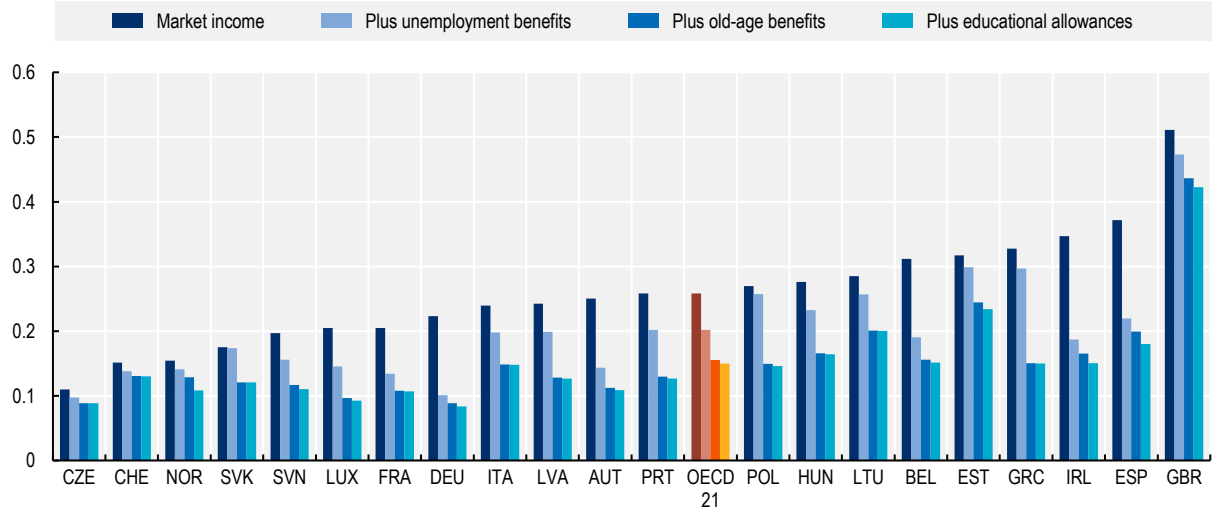
Even with the gaps in coverage, social protection systems play an incredibly important role in reducing income instability, and thereby the risk of economic insecurity (Salgado et al., 2014[4]). Unemployment benefits, old-age pensions and education allowances reduce income instability in total by 42% on average in the European OECD countries covered in the analysis (Figure 3.2). The total effect of social protection systems on income instability is likely to be even higher, as important benefits, such as child allowances and disability pensions, could not be incorporated into this analysis, because they are difficult to attribute to individuals' employment patterns.[1]

The size of the effect of social protection on income instability differs widely across countries (Figure 3.2) (Rohde, Tang and Prasada Rao, 2014[5]). Social benefits reduce income instability by more than half in Germany (63% reduction), Ireland, Austria, Luxembourg, Greece, Spain, Belgium and Portugal. The reductions in social protection are more modest (less than 20%) in the Czech Republic and Switzerland, which have low levels of instability, and in the United Kingdom, which has the highest level of income instability among the countries studied. Indeed, even once social benefits are accounted for, the level of

income instability in the United Kingdom is still higher than the level of instability unadjusted for social benefits in all other countries. And while unemployment benefits make the largest contribution to the reduction in instability in most countries, old-age pensions have a relatively larger effect on instability in Greece, Portugal, Latvia, Poland, Hungary, Italy, Slovakia, Lithuania and Estonia. Education allowances play a minimal role in smoothing incomes in all countries (as illustrated by the negligible difference between the third and fourth bars in Figure 3.2).

Figure 3.2. Social benefits reduce instability by 40% on average across European OECD countries

Average squared coefficient of variation of total monthly income pre- and post-social benefits, averaged over 48 months ending 2016-18



Note: Income instability is measured by the average squared coefficient of variation of monthly equivalised household income over 48 months. The dark blue bars measure instability before accounting for social benefits by using the market incomes constructed in Chapter 1. The light blue bars add unemployment benefits to market incomes to measure instability after accounting for unemployment benefits. Next, the third set of bars adds old-age benefits to market incomes and unemployment benefits. The final set of bars adds in educational allowances and thus represents the total measurable effect of social benefits on instability. However, the total measurable effect does not include all social benefits, such as child allowances. See Chapter 1 for more information. The analysis is carried out only on households with stable composition over 48 months and whose main employment income earner is aged between 18 and 59. The unit of reference is the individual.
Source: OECD calculations based on the European Union Statistics on Income and Living Conditions (EU-SILC), https://ec.europa.eu/eurostat/web/income-and-living-conditions.

StatLink https://stat.link/4wq3li

Box 3.1. Policy measures to reduce economic insecurity during economic crises

Governments use various fiscal policy measures to smooth incomes and maintain real living standards during periods of heightened economic uncertainty. For instance, in response to the recent cost-of-living crisis, many governments introduced inflation relief measures to reduce prices (such as energy price caps and lower taxes on energy) and/or boost household incomes via transfers and tax credits. However, due to difficulties in identifying energy users most in need of support, more than three-quarters of measures were untargeted. Consequently, this worsened economy-wide inflationary pressures and entailed a high total gross fiscal cost of 0.7% of GDP in 2022 and 0.8% in 2023 in the median OECD country, and in excess of 3% of GDP in Greece, Austria, Poland, Portugal, Italy, France, Slovenia and the Slovak Republic (Hemmerlé et al., 2023[6]). Further, energy price measures may reduce incentives to save energy and switch to low-carbon alternatives (although some countries,

including Germany, Italy and France, rolled out energy-saving campaigns as well) (Hemmerlé et al., 2023[6]).

Coupled with measures to reduce the burden of price increases, governments raised minimum wages to boost the incomes of vulnerable households. These measures were targeted to those most in need of assistance and were often linked to consumer price changes. Almost all OECD countries raised their minimum wages between January 2021 and September 2022, but most increases were too modest to maintain the real minimum wage rate. In some countries, such as Latvia, Slovenia, Luxembourg, Lithuania, France, Ireland and the United Kingdom, increases in minimum wages were almost entirely cancelled out by the withdrawal of social benefits or higher income taxes – highlighting the importance of the interactions between minimum wages, taxation and social protection (OECD, 2022[7]).

However, some countries are adapting their social protection systems in light of recent labour market developments and to be more responsive to economic crises. For example, in France, the duration of unemployment benefits now depends on macroeconomic conditions, such as the strength of the labour market. Greece is considering similar changes. Moreover, Italy, Germany and France are considering permanently extending social protection to people not traditionally covered – including non-standard workers and the self-employed – following the expansion of their social protection systems during COVID-19. Germany is also removing sanctions in the first six months of an unemployment spell to improve incentives to train or find better jobs rather than take the first available job (OECD, 2023[3]).

Finally, governments expanded or introduced short-term work schemes to stabilise incomes and maintain people's employment connections during COVID-19, given their success in preventing unemployment in the aftermath of the Global Financial Crisis (Kopp and Siegenthaler, 2021[8]; Christl et al., 2022[9]). All European countries except Malta and Finland had short-term work schemes that subsidised companies to maintain their workforces (European Training Foundation, 2021[10]). Pre-existing schemes were adapted in several ways: softening eligibility rules and extending coverage to include atypical employment and the self-employed, as well as other sectors not previously covered.

Given the income-smoothing effects of social protection systems, it is crucial that they operate in ways that are responsive to the needs and circumstances of people experiencing, or at risk of, economic insecurity. There are large differences in the design of social protection systems in OECD countries in terms of the types of benefits and tax credits, the amounts recipients receive, their duration, the accessibility requirements and the take-up rates.[2] Many governments have also introduced inflation relief, raised minimum wages and designed short-term work schemes that operate alongside social protection systems to support people at risk of economic insecurity, particularly during economic crises (Box 3.1). These are all important considerations when designing social protection systems, and they may all have implications for economic insecurity – especially the size of payments, the interactions with work incentives and payment take-up rates. However, this chapter focuses on an often overlooked design feature that affects people with unstable incomes – the timeliness of social protection payments.

The frequency of benefits and tax credits can affect people's financial stability

The frequency of unemployment and other benefit payments differs across countries, typically in line with how often people are paid when they have a job – weekly (e.g. in New Zealand), fortnightly (e.g. in Australia and Norway) or monthly (in most OECD countries) (Summers and Young, 2020[11]). Matching the frequency of social protection payments to the employment payment cycle can help people maintain a familiar routine for managing household expenses. However, the lengthier the frequency, the more difficult it can be for people to budget, particularly if they have low incomes or are liquidity constrained. Having difficulty managing household expenses due to infrequent social protection payments is associated with a range of negative well-being effects, including stress and feelings of lack of control (Scottish Government, 2021[12]),

electricity service disconnection and bill-related debt (Barrage et al., 2019[13]), increased hospital admissions and mortality (Seligman et al., 2014[14]) and food insecurity. Anecdotally, in the United States, food banks stock extra supplies at the end of the month to meet the surge in demand from people whose social benefits have run out (Seligman et al., 2014[14]). Indeed, one American study found that increasing the frequency of unemployment benefit payments produces a similarly sized effect as raising the payment amount, without materially increasing administrative costs for governments (Zhang, 2021[15]).

Like unemployment and other social protection payments, the frequency of tax credits for people in work (but on low incomes) can have a marked effect on well-being. When tax credits are calculated and delivered on an annual basis, they may fail to be responsive to changes in people's circumstances. For instance, the annual lump-sum payment of the Earned Income Tax Credit in the United States increases income volatility (Maag, Congdon and Yau, 2021[16]), while, based on small-scale demonstration projects in Chicago and in Colorado in 2013 and 2014, periodic payments can improve households' financial stability and help with keeping up with bills, paying down debts, covering essential expenditures such as food, and decreasing borrowing (both formal and informal) (Maag, Congdon and Yau, 2021[16]; Bellisle and Marzahl, 2015[17]; Kramer et al., 2019[18]; Greenlee et al., 2021[19]). Some emerging research on the recent temporary expansion of Child Tax Credits under the America Rescue Plan Act also indicates that periodic payments reduce material hardship, particularly in relation to food insecurity (Perez-Lopez, 2021[20]; Roll et al., 2021[21]; Parolin et al., 2021[22]).

Striking the right balance with waiting times for benefits

Another key factor affecting the timeliness of social protection is how long it takes to receive the first payment after applying. About half of OECD countries have waiting periods, and many others have long processing periods. While it takes on average two weeks for people in OECD countries to receive unemployment benefits after they apply, in some countries people can wait up to five weeks, as payments are made monthly in arrears.

Waiting periods are used to review applications, to reduce administrative costs (by deterring people from making claims for short periods of unemployment) and to promote job stability by disincentivising people from alternating between temporary jobs and unemployment (OECD, 2018[23]). However, waiting many weeks for a first payment can cause severe financial distress and is associated with increased food bank use and a heightened risk of falling into poverty (Cooper and Hills, 2021[24]; O'Campo et al., 2015[25]). In the United States, the first payment takes place about two weeks after an application (Greig et al., 2022[26]), whereas in Canada it can be up to 28 days before claimants receive the first payment, for instance in Ontario (Employment and Social Development Canada, 2022[27]). In the United Kingdom, Universal Credit is paid monthly in arrears, resulting in a five-week wait for the initial payment. Recipients can request advance payments from the government, which are then paid back as deductions from the benefits received.

Some countries tailor their waiting periods to people's circumstances. In order to prevent economically insecure people from waiting too long for their first payment, the United Kingdom and France waive waiting periods for those who have long or repeated spells of unemployment (Carter, Bédard and Bista, 2013[28]). Conversely, people who leave their jobs voluntarily face a prolonged waiting period in a number of countries: an extra three weeks in Denmark, twelve weeks in Germany and Norway, three months in Japan and New Zealand, and four months in France (Carter, Bédard and Bista, 2013[28]).

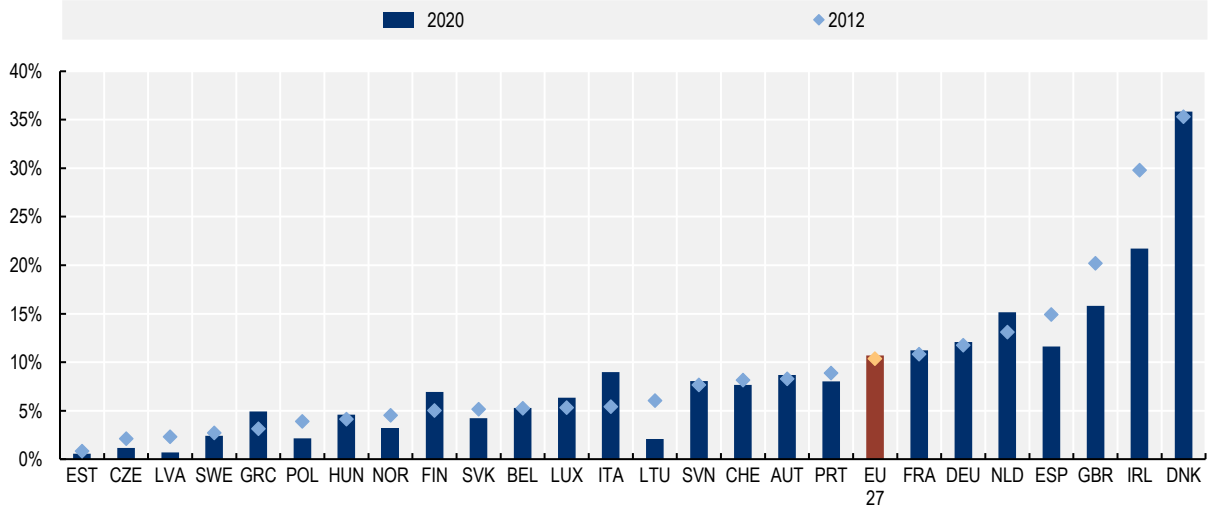
Reducing delays due to means testing and having payments that reflect people's current circumstances

Many European countries do not means test their unemployment benefits – as they are based on individual contributions to insurance schemes – although they use means testing to allocate family and housing

benefits. Over the past decade, 11% of all social benefit expenditure has been means tested in Europe on average, although the range spans from 36% in Denmark and 20% in Ireland to only 1% in the Czech Republic, Poland and the Baltic countries (Figure 3.3). However, the shares may have fallen in 2022, as many European governments introduced temporary measures to combat rising inflation that were predominately untargeted (including non-means-tested benefits (Hemmerlé et al., 2023[6]).

Figure 3.3. The share of means-tested benefits varies widely across European OECD countries

Means-tested payments as a share of total social benefits



Note: The most recent data point for the United Kingdom is 2018.
Source: Eurostat Social Protection Statistics, https://ec.europa.eu/eurostat/web/social-protection/data.

StatLink https://stat.link/jeca7i

Means testing helps to target social protection to those most in need; however, it can also make application processes more complicated and time-consuming, which can discourage people from taking up benefits and tax credits (Eurofound, 2015[29]). In France, the *Prime Pour l'Emploi* tax credit had complex arrangements and was paid up to 18 months after individuals became eligible, which obscured the link between individuals' behaviour and financial reward and constrained take-up (Immervoll and Pearson, 2009[30]). In addition, long waits can translate to payments that do not reflect people's current circumstances, which may undermine households' financial security (Millar and Whiteford, 2020[31]) On the other hand, if income assessment periods are too short, people with highly unstable incomes may be penalised (OECD, 2019[2]). For households that have fluctuating incomes in the short-term (say for example because their employment changes seasonally) but who can smooth consumption over time, a longer time frame would give a more accurate assessment of their financial welfare.

Some countries use automatic enrolment and have redesigned their means-testing arrangements to make it easier for people to access all payments for which they are eligible (Ambegaokar, Neuberger and Rosenbaum, 2017[32]). For instance, in Canada, citizens who file tax reports are automatically reviewed for their eligibility for the Canadian Work Benefit tax credit. Canadians are paid quarterly in advance (max 50% of the entitlement) based on their estimated income, while the remaining part of the award is paid following the yearly tax assessment. This approach incorporates both individuals' current circumstances and their average circumstances over the longer term – thereby comprising the benefits of both short- and long-term assessment periods. As the scheme can be modified in different provinces, some have also opted to increase the responsiveness of the system by introducing quarterly assessments (Kesselman and Petit, 2020[33]).

3.3. Government programmes to build financial literacy and resilience

In contrast to social protection (which provides financial support to people with low, unstable incomes), government-backed saving, advice and financial literacy strategies aim to enhance people's financial resilience to shocks. This includes providing incentives for building up financial buffers or equipping people with the knowledge and skills to improve their financial well-being.

Improving the targeting of savings incentives

A range of schemes have been developed to help boost people's savings, including:

- tax incentives such as removing tax on the interest earned on savings;
- matching people's savings;
- index-linked bonds or guaranteed minimum interest rates; and
- prize-linked savings accounts, whereby higher interest rates, cash prizes or in-kind benefits are randomly distributed to savers.

Tax-incentives and index-linked bonds are the most popular schemes in the selected OECD countries studied, although all countries use a mix of schemes to encourage savings among lower-income people or for particular purposes, such as retirement – see Annex 3.A, (OECD, 2019[34]). Schemes that encourage people to save cushion them from negative shocks and have been shown to benefit employment, earnings, family stability, physical health and psychological well-being (Bynner and Paxton, 2001[35]; Sherraden, 2009[36]; McKnight, 2011[37]). The protective effect on subjective financial well-being from savings appears to be larger than other forms of liquidity – such as credit card use (Bufe et al., 2022[38]).

However, the effectiveness of these schemes depends on their design, as some tend to lead to asset reallocation rather than to new savings, and they are under-subscribed by people on low incomes – those most at risk of economic insecurity. There is a strong consensus among researchers that tax incentives lead to a reallocation of assets, particularly for voluntary schemes (Breunig and Sobeck, 2020[39]; OECD, 2018[40]; Fadejeva and Tkacevs, 2022[41]). Further, people on low incomes have lower take-up rates of tax incentives than higher-income people, because they pay less tax and thus have a smaller incentive than higher-income people to participate in tax-advantaged savings schemes.

People on low incomes are more likely to use prize-linked schemes, matched savings schemes and index-linked schemes than tax-based schemes. Studies have shown that, unlike tax-based schemes, programmes that encourage savings through financial incentives such as contributions from governments or more attractive interest rates are popular among people on lower incomes, particularly those with little savings. These schemes have been shown to increase savings for people on low incomes, build savings habits among people with little history of savings, bring forward home ownership and the purchase of household durables, increase educational investments, encourage people to start small businesses, and have broader social benefits, such as reducing spending on lotteries (Atalay et al., 2012[42]; Kearney et al., 2011[43]; Schreiner, 2004[44]; Harvey et al., 2007[45]; Azzolini, McKernan and Martinchek, 2020[46]). In the case of index-linked schemes, there are other benefits, including hedging inflation risks, which is especially important in the context of a cost-of-living crisis where non-indexed savings accounts can be eroded by inflation (OECD, 2022[47]).

When designing savings schemes, governments should consider how features interact, and what other supports can encourage savings by targeted groups. For instance, evidence suggests that the matching threshold (the point at which co-contributions cut out) is more important than the contribution rate in influencing how much people save (Madrian, 2012[48]). The threshold acts as a natural reference point for savers and may be interpreted as a recommended savings level (Madrian, 2012[48]). As discussed below, savings schemes could also include reminders and smartphone notifications to prompt people to make a

deposit; automatic deposits or other commitment devices; planning aids; and automatic enrolment, alongside coaching and financial education (Madrian, 2012[48]).

Finally, matching schemes should be tailored to people's circumstances, such as by linking thresholds and contribution rates to individual income and by only opening the scheme for people on low incomes. This would attract more people on low incomes, and in turn, make the schemes more progressive (Azzolini, McKernan and Martinchek, 2020[46]). For example, the United Kingdom's Help to Save scheme is open only to people who receive social protection benefits, such as the Working Tax Credit, Child Tax Credit and Universal Credit. People who open savings accounts through the scheme can receive a 50% bonus payment of up to GBP 1 200 over four years. Three-quarters of participants were not regular savers before they opened an account as part of the scheme, and 86% are saving more than they previously did (HM Treasury, 2023[49]). However, participants only save a modest amount through the scheme, GBP 48 per month, which indicates that savings schemes for low-income people are unlikely to fully address financial precarity, nor vastly improve their savings capacity. As such, these schemes should be seen as complements, rather than substitutes, to well-functioning social protection systems (McKnight and Rucci, 2020[50]).

Improving financial literacy

Financial literacy is an essential life skill that gives people the awareness, knowledge, skills and confidence to make sound financial decisions and ultimately improve their material conditions and opportunities (OECD, 2020[51]) This can involve building and managing wealth, avoiding high-cost lenders and using new technologies to find the best financial offers (French and McKillop, 2016[52]; European Union/OECD, 2022[53]; Blanc et al., 2015[54]). Unfortunately, there is a dearth of financial literacy skills.Three-quarters of people surveyed from 26 OECD and non-OECD countries could not answer questions about simple and compound interest correctly, and less than half met the minimum targets for financial attitudes and behaviours, such as saving, planning for the future and keeping control of personal finances (OECD, 2020[55]) . These consequences are more pronounced in people who are at risk of economic insecurity, as they tend to have lower levels of financial literacy than people with higher incomes (Collins, 2012[56]).

Governments have developed national financial literacy strategies and implemented a plethora of financial education programmes, in a range of settings such as schools, universities and workplaces, and as part of targeted savings schemes, active labour market programmes and debt counselling services (OECD, 2015[57]; McKnight, 2018[58]; OECD, 2022[59]). Evaluations of financial education programmes have found that they are most effective when tailored to people's specific needs – such as individualised financial counselling, programmes designed for target groups, including young people and those with low incomes, or programmes delivered when people are making key financial decisions like retiring (Miller et al., 2015[60]; Kaiser and Menkhoff, 2017[61]; Lusardi and Mitchell, 2014[62]; Goyal and Kumar, 2020[63]; OECD, 2020[51]; OECD, 2017[64]). Many effective financial education programmes are underpinned by holistic national financial literacy strategies, which promote a long-term, co-ordinated approach to financial literacy (Box 3.2).

Box 3.2. Characteristics of successful national financial literacy strategies

Over the past decade, many countries have developed comprehensive national strategies, which have been guided by the OECD International Network for Financial Education (OECD/INFE) (OECD, 2022[65]; 2013[66]; 2012[67]; 2020[51]; 2017[64]). The keys to successful national financial education strategies include:

- recognising the importance of financial literacy – through legislation where appropriate;
- coherence with strategies for fostering economic and social prosperity;
- cooperation with relevant stakeholders and identification of a national leader or coordinating body; evidence-based roadmaps or action plans to achieve objectives within set timeframes;
- guidance on implementing individual programmes;
- monitoring and evaluation to assess the progress of the strategy and propose improvements;
- earmarking sustained funding for financial literacy programmes;
- instituting flexible governance structures that involve public, private and civil society stakeholders;
- providing information to the public in different ways such as interactive web-based tools and awareness campaigns;
- tailoring programmes to the needs, circumstances and contexts of the audience through life-cycle approaches and leveraging trusted intermediaries and learning environments (such as workplaces and schools); and
- empowering people to engage in the programmes and apply what they learn by using the insights of behavioural economics and social marketing (OECD, 2015[57]).

National strategies for financial literacy are complex, multi-year, multi-stakeholder public policy projects that can strongly benefit from comprehensive evaluation designs. Recent OECD/INFE work (2022[65]) has focused on monitoring and evaluating the national strategies of 29 jurisdictions and shows that one-fifth of countries do not have an evaluation plan, and a quarter articulate aspirational goals that are not linked to quantitative measures, which makes it difficult to assess strategy effectiveness.

Countries that have evaluated their national strategies and used the results to inform the development of successive strategies have found that evaluation needs to be embedded from the outset. This is based on the design of indicators, the collection of data and transparency with stakeholders – which enhances stakeholder trust and "buy-in" (OECD, 2022[65]). In turn, these ingredients build confidence in the results of the evaluation and in the subsequent adjustments made to the strategies.

Increasing access to high-quality financial advice

Financial advice is an important enabler of financial literacy, but often people on low incomes and other vulnerable consumers face barriers to accessing high-quality advisory services (Collins, 2012[56]; OECD, 2022[68]). Individuals with higher income, education and financial literacy levels are more likely to receive financial advice, which boosts their confidence in engaging with financial services and improves their investment performance (von Gaudecker, 2015[69]; Collins, 2012[56]; Lusardi, Michaud and Mitchell, 2017[70]). In contrast, low-income households find financial advice too costly or do not have the financial knowledge to seek out support (Lusardi, Michaud and Mitchell, 2017[70]). As such, those on lower incomes and with lower financial literacy rely, to a greater extent, on social networks and family rather than on professionals for financial advice (Lu and Lim, 2022[71]). Taken together, disparities in access to financial

advice, and to financial knowledge more generally, contribute to wealth inequalities (Lusardi, Michaud and Mitchell, 2017[70]).

To increase the availability of high-quality financial advice, governments have made regulatory changes to reduce fees for advice, remove conflicts of interest such as commission-based advice and encourage new digital advice options (Financial Conduct Authority, 2020[72]; OECD, 2017[64]). While these measures have improved the quality of advice, the cost of advice is still prohibitive for people on low incomes, and they are still unlikely to use advisory services for financial planning or to make investments (Burke and Hung, 2015[73]; Krishnamurti et al., 2022[74]; Financial Conduct Authority, 2020[72]).

Targeted financial support, such as rebates for people with low incomes or wealth, could expand their access to financial advice (Krishnamurti et al., 2022[74]). Indeed, one area where people with low incomes use advisory services is in relation to debt – where public funding and provision are more common. Debt advice can assist people with low incomes to manage their finances and reduce debt (Eurofound, 2020[75]; Hartfree and Collard, 2014[76]; Orton, 2010[77]). These services can help people identify the causes and extent of their debt problems, maximise their income, minimise expenses, prioritise debts, exercise their consumer rights and make realistic repayment plans with creditors (Stamp, 2012[78]). Debt advice can be particularly important for addressing economic insecurity, as people with limited financial buffers often rely on borrowing to meet their living expenses. In the absence of debt advice, low-income people may be unable to pay off their debts (resulting in delinquency) or rely on loans from high-cost lenders – putting them at a greater risk of over-indebtedness.

Many countries provide publicly funded debt advice services for people with low incomes. For example, Norway offers free advice on individuals' financial situation, debt settlement and debt write-offs through financial advisors at their local Labour and Welfare Administration office (NAV, 2023[79]). Effective programmes provide personalised advice from trained advisers, who build trusted relationships with customers, creditors and authorities. In addition, debt advisory services can be especially effective when paired with other social services typically used by people with low incomes or those experiencing poverty, including mental health care, employment and welfare services (Eurofound, 2020[75]; Stamp, 2012[78]). These holistic services can help with early intervention and increase people's awareness of available debt solutions, which are often lacking.

While debt advisory services alleviate pressing debt problems for people with low income, they do not address the underlying causes of over-indebtedness, which include job loss, poor health or the absence of low-cost financial products (Stamp, 2012[78]). A different, complementary suite of policies is needed to target the deeper causes of indebtedness, some of which are discussed in the next section.

Ending the cycle of over-indebtedness and debt delinquency

The past two decades have witnessed an increase in household debt and over-indebtedness (with debt levels over three times households' disposable income) in the United States and Western Europe (Angel and Heitzmann, 2015[80]; Fligstein and Goldstein, 2015[81]; Jappelli, Pagano and Di Maggio, 2013[82]; OECD, 2021[83]). Over-indebtedness levels are highest amongst people with low incomes, but the middle class is increasingly at risk, particularly during times of economic crises, given its high rates of financial fragility (see Chapter 2 and OECD (2021[83])).[3] The cost-of-living crisis is likely to be pushing even more households into over-indebtedness – and increasing its severity for already-over-indebted households – as monetary policy tightening pushes up borrowing costs relative to incomes.

Some countries, such as Poland, have introduced temporary mortgage moratoria to help households struggling to make their repayments in a tight monetary policy environment. Households in Poland could suspend their mortgage repayments for four months in 2022 and another four months in 2023 (Ptak, 2022[84]). This effort comes off the back of Poland's loan repayment holiday during COVID-19, which enabled households and businesses to pause their payments for three to six months so long as they could

document that they were in financial stress (Hogan Lovells, 2021[85]). Other European countries[4] also introduced loan repayment holidays to respond to COVID-19, including Belgium, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom (Hogan Lovells, 2021[85]). Countries' schemes were designed for their individual contexts and so varied considerably in terms of the duration of the payment pause and the types of debts and groups covered: low-income debtors, all consumers and/or businesses (Hogan Lovells, 2021[85]). In some countries, banks agreed to loan repayment holidays without the force of legislation.

While governments and banks introduce loan repayment holidays during times of crisis, it is not the first line of defense against over-indebtedness. People experiencing, or at risk of, economic insecurity may struggle to access low-cost financial services and resort to high-cost options such as payday lending to purchase essential goods and services or to pay down existing debts (OECD, 2022[68]). High-cost borrowing options keep people on low incomes in a vicious cycle of debt, as large proportions of their income go towards paying their debts. This in turn makes it difficult for them to meet their basic costs of living without resorting to more debt and to fully participate in the economy and live without financial stress.

In an attempt to break the debt cycle, governments have regulated the financial system by limiting the supply of high-cost lenders or capping interest rates. For instance, The EU Directive on Consumer Credit (Directive 2008/48/EC amended in 2011, 2014, 2016 and 2019) has provided a broad framework for member states to implement their own legislation on consumer credit. The Directive has focused on "unfair terms in consumer contracts", online marketing and misleading advertising. Proposals for further amendments of the directive include extending its scope to cover loans below EUR 200 (common threshold for payday loans), interest-free credit, all overdraft facilities and all leasing agreements, credit agreements concluded through peer-to-peer lending platforms as well as prohibition of the unsolicited sale of credit products and establishment of the obligation to set caps on interest rates.

There are, however, risks to limiting access to high-cost borrowing. Bans on high-cost credit services in the United States shifted customers to other high-cost alternatives that use emerging digital technologies (Friedline and Kepple, 2017[86]; Bhutta, Goldin and Homonoff, 2016[87]). Similarly, interest rate caps often result in limiting access to finance, particularly for younger and poorer segments of the population, as high-risk borrowers end up being excluded from the formal financial system (Ferrari, Masetti and Ren, 2018[88]; Ellison and Forster, 2006[89]; Madeira, 2019[90]; Financial Conduct Authority, 2017[91]). Other side effects are increases in non-interest fees and commissions (which reduce price transparency and complicate the system), as well as reductions in the number of lending institutions and branch density.

Nevertheless, regulation can play an important redistributive and inclusive role by increasing access to financial services for people at risk of economic insecurity (Ferretti and Vandone, 2019[92]). Access to low- or no-cost bank accounts and formal and regulated credit opportunities are essential to avoid the increased risks and vulnerabilities associated with informal borrowing (Eurofound, 2013[93]). Indeed, governments should create regulatory environments that promote an inclusive financial system, which is amenable to low-cost banking options such as credit unions, cooperative banks and non-profit microfinancing (OECD, 2022[68]). For instance, legislative changes in the United Kingdom enabled credit unions and cooperative banks to offer a wide range of products to low-income people and use dormant assets to support community economic development (United Kingdom Government, 2021[94]; Fair4All Finance, 2022[95]). In the United States, credit unions are now eligible for government grants and can seek regulatory exemptions on lending caps if their customers are predominantly low income.

Beyond regulation, governments can consider various debt relief and settlement policies (including on debts to public authorities) to assist people who are over-indebted. All OECD countries have debt relief policies – usually requiring people to sell specified assets, remit income above a threshold, or pay instalments for a specific period before the remainder of the debt is waived. Debt relief schemes are typically designed to allow people to have a basic standard of living. This is usually determined with reference to people's circumstances (such as having children), but in some cases, is based on countries'

wages policy and benefits (Eurofound, 2020[75]). In France, the income threshold is re-calculated on a monthly basis to keep up with changes in individual circumstances, while changes to Sweden's scheme in 2016 gave more relief to people with children (Eurofound, 2020[75]). The United Kingdom, Ireland and New Zealand have more generous low-fee schemes for low-income people (Ramsay, 2020[96]). For example, the United Kingdom launched a debt respite scheme in 2021 that pauses enforcement action and freezes interest and charges for 60 days (Money and Pensions Service, 2022[97]).

However, debt relief schemes tend to offer only short-lived benefits and do not fundamentally address the underlying drivers of debt problems (Ramsay, 2017[98]). Strict application criteria and high administrative costs represent barriers to access for people on low incomes. In some countries, costs have increased over time – for instance, the 2005 Bankruptcy Abuse Prevention and Consumer Protection Act increased the financial and time cost of filing in the United States. While in European Union member states, there has been a trend to make debt relief more available and accessible, the extent to which debtors can get a fresh start depends on the types of debts they have accrued. People with debts to public authorities, student loans, tax arrears, fines, healthcare costs or debts resulting from informal borrowing are often excluded from debt relief schemes, even though these represent a large share of low-income individuals' debts (Eurofound, 2020[75]); see also Box 3.3.

Box 3.3. Debts to public bodies

Debts to public bodies – such as tax arrears, fines, overpayments of benefits, and healthcare costs – are often excluded from debt settlement procedures, even though they are becoming a growing concern (Eurofound, 2020[75]). In the United Kingdom, complaints about debts to public bodies have increased from 21% of all debt problems in 2010-11 to 42% in 2018-19 (Evans, Bennett and Browning, 2020[99]). Indeed, the IMF (2015[100]) has identified the exclusion of public debts from debt relief schemes as a challenge to countries' personal insolvency regimes because it prevents people from making a fresh start. Further, the exclusion of public debt creates incentives for debtors to pay their public debts instead of those owed to other creditors, which gives creditors a disincentive to agree to restructure debt.

In countries with specific measures for low-income, low-asset debtors, debts related to taxes, benefit overpayments and service charges owed to local authorities can be discharged in certain circumstances. Examples include the No Asset Procedure in New Zealand and the Debt Relief Order in the United Kingdom, while for Debt Relief Notices in Ireland, such debts fall among those which are "excludable" but can be discharged upon agreement with creditors.

While these measures are important, governments should also consider ways to prevent vulnerable households from accruing debts with public bodies and to improve engagement between governments and debtors before commencing enforcement measures. Work on debt management in relation to tax debt has produced cross-country comparisons to highlight best practices and successful strategies, such as using data-mining techniques to identify people at risk of getting into debt with public bodies (OECD, 2019[101]). Other key recommendations involve reforming government affordability assessments, establishing a common framework across different public bodies and implementing changes to benefit deductions, which are often unaffordable and cause substantial hardship. For example, government departments in the United Kingdom now have to take steps to improve debt collection practices, such as by offering tailored payment plans and additional support (Evans, Bennett and Browning, 2020[99]).

While governments should pursue opportunities to improve access to low-cost credit providers and debt relief policies, they should also consider ways to prevent people from becoming over-indebted in the first instance. Data mining and predictive models can be used to identify people at risk of getting into debt, direct services to those who are most vulnerable, and develop payment plans (OECD, 2019[101]). For example, artificial intelligence has been shown to accurately identify households at risk of indebtedness across the income distribution (Ferreira et al., 2021[102]). When trained on Portuguese households, artificial intelligence techniques found three main at-risk groups:

- those on low incomes who are at risk of over-indebtedness at all times, even during periods of economic stability;
- higher-income households with large personal and credit card debts; and
- households that are vulnerable to economic crises (generally due to facing heightened risks of unemployment).

These groups have very different characteristics and experience over-indebtedness for different reasons, which indicates the need for a range of financial resilience and social protection policies. Indeed, these findings reiterate the main takeaways from this chapter: a suite of policies is needed to address economic insecurity, as it is a multi-faceted problem. When designing policies, governments should ensure they respond to people's changing needs and circumstances, as frequent changes make it difficult for people to set themselves up for the future by escaping over-indebtedness, building their financial literacy, smoothing their incomes, and saving. The following Annex provides more detail on the policies reviewed in this chapter for a selection of countries.

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Annex 3.A. Review of policies and interventions targeting economic insecurity in selected OECD countries

Annex Table 3.A.1. Timeliness of unemployment benefits, tax credits and other national social benefits

France	• Unemployment insurance - Exceptions to standard waiting period: No waiting period for those who are unemployed again within 12 months; those on paid leave at the end of employment and non-statutory severance pay (150 days max waiting period, 75 if dismissal due to economic reasons); those who voluntarily resigned (4 months) • Unemployment assistance (Allocation de solidarité spécifique) for those who have exhausted their unemployment insurance benefits, those over 50 opting for ASS over ARE, fishermen, dock workers and artists if not benefitting from ARE, fulfilling other behavioural and employment conditions • Tax credits: Prime d'activité, merged Prime Pour l'Emploi (2001) and the Revenue de Solidarité Active (2009) • Other benefits: Revenue de Solidarité Active (RSA) Paid in conjunction with other family and housing benefits. Open to young adults aged 18-24 only under certain conditions • Other national categorical benefits directed at the over 65, people with disability, lone parents, large families, students, young children, plus general family benefits and three housing benefits (prior 12 months initial assessment, reassessment quarterly, paid against rent, directly to landlords or to tenants)
Germany	• Unemployment Insurance (Arbeitslosengeld I) - Exceptions to standard waiting period: those who resign without valid reason or following misconduct (up to 12 weeks benefit entitlement also cut by a quarter); those receiving severance pay • Unemployment assistance (Arbeitslosengeld II) for those who have exhausted their unemployment insurance benefits or whose income is not sufficient to secure their own and their family's (need unit) livelihood • Tax credits: Mini-jobs and Midi-Jobs are calculated on gross monthly earnings. People with Mini-jobs, are exempt from most social security contributions and personal income tax. For Midi-jobs, employees make lower social security contributions. These tax credits (formerly Gleitzone, now Übergangsbereich) were created as part of the Hartz reforms between 2003 and 2005 and are being further developed and extended between 2019 and 2023 • Child benefit (Kindergeld), monthly refundable tax credit, not means-tested • Other benefits: Social assistance (Sozialhilfe), paid monthly • Two types of housing benefits, Wohngeld and Leistungen für Unterkunft und Heizung. Housing benefits are not compatible with Hartz IV and ALGII, as costs of accommodation and heating are included in these • Child supplement (Kinderzuschlag), plus categorical benefits for lone parents, educational needs, one-off payments for specific needs such as heating
Greece	• Unemployment insurance benefit (Τακτική Επιδότηση Ανεργίας) - Flat rate with increases by 10% for every member of the family • Unemployment benefit for long-term unemployed (Επίδομα Μακροχρονίως Ανέργων) for those who have exhausted unemployment insurance. Paid monthly • Special aid after the end of payment of the unemployment allowance. No waiting period. Unemployed for 1 month after unemployment insurance expired. Lump-sum payment • Special aid for the unemployed after a three-month registration. No waiting period. 3 payments 3 months apart • Tax Credits (Μείωση Φόρου), non-refundable, based on annual income • Other benefits: Guaranteed minimum income scheme Ελάχιστο Εγγυημένο Εισόδημα, paid monthly • Housing benefits, monthly rent subsidy • Child allowances and benefits, paid monthly. Support for households living in mountainous disadvantaged areas, paid annually

Ireland	• Jobseeker benefit – Flat-rate payments with increases for dependent children or adults. Exceptions to standard waiting period: disqualification for 9 weeks for those who voluntarily left their job with no just cause, misconduct, not accepting an offer of suitable employment or training, over 55 with redundancy payment of more than EUR 50 000 • Jobseeker allowance – For those who have exhausted or did not qualify for unemployment insurance. Exceptions to standard waiting period: disqualification for 9 weeks for those who voluntarily left their job with no just cause, misconduct, or not accepting an offer of suitable employment or training • Tax Credits: Working Family Payment. For low-income working families (employees only). Implemented through the benefit system, paid weekly • Other benefits: Basic Supplementary Welfare Allowance (SWA), paid weekly. Housing benefits such as rent supplement and categorical family benefits, mainly for lone parents
Latvia	• Unemployment benefit (Bezdarbnieka pabalsts). Exceptions to standard waiting period: those who terminated employment voluntarily 2 months • Other benefits: Minimum income benefits (Garanteta minimala ienakuma pabalsts), amount varies depending on the municipality and the available resources; the benefit can be paid monetarily or as the equivalent sum in goods or services to meet the basic needs of the family or person, for example, granting children free lunches at school or kindergarten Additional housing benefits are available: Dzivokla pabalsts is estimated as the difference between housing costs (up to maximum standard levels) minus net income of claimant above the guaranteed minimum income
Spain	• Unemployment assistance (Prestaciones por desempleo de nivel asistencial), for those who have exhausted their unemployment insurance (Prestacion por desempleo) benefits (depending on age and caring status conditions) or were not eligible for unemployment insurance - waiting period of one month except for those not eligible for unemployment insurance benefits • Tax credits: Non-refundable national tax credits for maternity benefits and large families • At a regional level, there are several tax credits, including some linked to minimum income schemes, e.g. in the Basque Country (Supplementary Benefit to Work Income – *Renta* Complementaria de Ingresos de Trabajo) and Navarre (Work Incentives of the Guaranteed Income Estimulos al empleo de la Renta garantizada*)* • Minimum income schemes were mainly provided by the regions through Rentas Mínimas, with regionally varying entitlement criteria and benefit amounts. During the COVID-19 crisis in 2020, the national-level scheme Ingreso Mínimo Vitalhas was established • Other national categorical benefits are directed to the unemployed, pensioners, persons with disabilities and low-income families with children
Sweden	• Income-related unemployment insurance (Arbetslöshetsförsäkring inkomstrelaterad) • Basic unemployment insurance (Arbetslöshetsförsäkring grundniv) – For those not insured or not insured long enough to qualify for income-related benefits. • Other benefits: Minimum income benefits (Ekonomiskt bistånd) regulated by national law, but financed and administered at the local municipality level, with substantial local leeway. Paid normally on a monthly basis, but acute help may be available more quickly • Housing benefits, which can supplement social assistance delivered separately, are calculated on a monthly basis according to the expected income during the calendar year, checked against the final income assessment • Child allowances and lone-parent benefits are set annually
United Kingdom	• Universal Credit advances are repaid as deductions from monthly payments. Fortnightly payments in Northern Ireland and the possibility to choose frequency in Scotland • New Style Job Seekers Allowance (to be claimed with, or instead of, Universal Credit depending on your National Insurance record, unemployed or work less than 16 hours a week, no conditions based on savings or assets, other behavioural conditions) – 7-days waiting time except for claims made within 12 weeks of the end of a previous award • Universal Credit has incorporated 6 previous benefits including Working Tax Credits • Other benefits: Separate benefits for the elderly, those with disability or unable to work, and carers. Child benefit (paid every four weeks)

Annex Table 3.A.2. Savings schemes and other efforts to support households' financial capacity

France	• Livret d'Epargne Populaire (LEP) – for low-income savers, tax exempt, favourable interest rates. Other tax-exempt products not specifically aimed at low-income households (e.g. Livret A, Livret Bleu, Livret de Développement Durable, Livret Jeune) • Index-linked bonds: OATi and OAT€i (euro-zone linked) • *Large co-operative bank sector with special obligations to tackle financial exclusion (e.g. Crédit Agricole* through Points Passerelle and Caisse d'Epargne through Parcours Confiance*;* Sociétés coopératives d'intérêt collectif) • Banque de France chairs the French Observatory for Banking Inclusion, which includes monitoring microcredit activities and awarding outstanding initiatives. Special regulation on microcredit allowing non-banks to operate
Germany	• Municipal savings banks provide safe and interest-bearing investment opportunities • Index-linked bonds: Bund and Bubil • Large co-operative and public savings sector key to high financial inclusion: Credit cooperatives and savings banks are required by law to serve all the inhabitants of the local areas (including low-income and vulnerable ones) • Regulatory framework restricting non-bank activities from operating in the lending market. Microfinance institutions collaborate with cooperative banks
Greece	• GGB€i was introduced in 2003, and reissued in 2019 and 2021 • High levels of financial exclusion. There is a small cooperative sector, which grew before the Global Financial Crisis, but then declined. Since 2020, legislation has allowed and regulated microcredit offered by non-bank microcredit institutions
Ireland	• Special Savings Incentive Account discontinued – government top-up in the new automatic enrolment supplementary pension savings plan • Inflation-linked bonds, Indexed Eurozone Government Bonds • Prize-linked Savings: Prize Bonds • *Large credit union sector, largest penetration rate in Europe, offering products such as* Personal Micro Credit
Latvia	• Savings bonds held by Latvian Central depository with maturity at 6 months, 12 months, 5 years or 10 years • Some non-bank microfinance providers
Spain	• Collapse of savings banks after the 2008 financial crisis affected access to savings products for low-income individuals • Index-linked saving bonds since 2014 *(*Bonos indexados del Estado and Obligaciones indexadas del Estado) • Prize-linked savings accounts (e.g. through Banco Bilbao Vizcaya Argentaria) • Credit cooperatives (especially in rural areas) and savings banks (presence substantially reduced after the Global Financial Crisis, with many converted into banking foundations) – historically active in preventing credit exclusion and supporting community welfare projects, including microcredit programmes, and widening access to credit for disadvantaged individuals. Commercial banks also historically offered microcredit products and other services to people with low incomes
Sweden	• Swedish Lottery Bonds; Swedish inflation-linked bonds • High levels of financial inclusion and high levels of innovation. Besides savings banks and a small number of co-operative banks, crowdfunding platforms and fintechs also offer microcredit products, operating under the national consumer law

United Kingdom	• Matching saving schemes: Help to Save (2016); Saving Gateway (cut by the Coalition Government) • Index-linked Saving Certificates • Prize-linked savings: UK Premium Bonds; Credit Union PrizeSaver • Child Trust Fund closed in 2011 • Credit unions; Community Development Finance Institutions; UK Affordable Credit Challenge Fund promotes innovation in the sector and partnerships between credit unions and fintechs • Grants and loans from local authorities and registered social landlords (e.g. to support acquiring essential housing goods); retail finance schemes for low-income consumers
United States	• Individual Development Accounts; Assets for Independence programme • Series I Inflation-Indexed Savings Bonds • Save to Win and several other prize-linked savings across a number of states • Baby bonds are part of the American Opportunity Accounts Bill introduced in the Senate (2021) • High penetration of credit unions (over 50%), special arrangements for credit unions with low-income designation • Community Development Finance Institutions

Annex Table 3.A.3. Improving financial literacy and access to high-quality financial advice

France	• Minister of National Education and Youth, the Minister of Economy and Finance, coordinated and implemented by the National Banque de France • Financial advice market regulated (*Autorité des marchés financiers)*
Germany	• Financial education policy is decentralised • Association of German Banks acts as a unifying body to provide such strategies • Financial advice market regulated (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin)
Greece	• The national strategy is under development, and no designated responsible public body. Large role played by the Hellenic Bank Association in creating programmes and material and supporting other stakeholders in promoting financial literacy • Bank of Greece is the main financial regulator – no specifics on financial advice regulation could be found
Ireland	• There is no national strategy, but the Competition and Consumer Protection Commission organises a number of programmes and public awareness campaigns (e.g. workplace-based, targeting youth) and provides online tools for personal finance information • The financial advice market is regulated by the Central Bank of Ireland
Latvia	• National Strategy for Financial Literacy in Latvia 2014-2020 developed by the Financial and Capital Market Commission and its partners. The Ministry of Education and Science of Latvia is responsible for financial education • The Strategy includes a new Financial Literacy Index that covers the results of a national survey on financial literacy • The Financial and Capital Market Commission is the main regulator – no specifics on financial advice regulation could be found
Spain	• The Ministry of Education and Bank of Spain created the third National Plan of Financial Education for 2018-21, having completed two already (2008-12 and 2013-17) • The National Plan acts as a framework to help coordinate programmes delivered by public or private stakeholders • Largely aspirational goals but planning to introduce quantifiable objectives • Financial advice market regulated (Comisión Nacional del Mercado de Valores)
Sweden	• Swedish Financial Supervisory Authority (Finansinspektionen), financial education is a compulsory subject, with the curriculum decided by the Swedish National Agency for Education • Financial advice market regulated (Swedish Financial Supervisory Authority)
United Kingdom	• National Financial Wellbeing Strategy is the responsibility of the Money and Pensions Service • There is a systemic approach to evaluation based on a theory of change and desired outcomes mapped in a participatory process with stakeholders • Money and Pensions Service encourages policy makers to adopt evaluation as a regular activity, part of implementing financial education strategies and programmes • Financial advice market regulated (Financial Conduct Authority)
United States	• US National Strategy for Financial Literacy. The Financial Literacy and Education Commission is tasked with creating, implementing and regularly reviewing and updating the National Strategy. Short-term performance metrics and intermediate-term indicators, including a focus on financial well-being • Financial advice regulation is fragmented, with multiple overlapping regulators at the federal and state levels

Annex Table 3.A.4. Implementing protective and rehabilitating measures

France	• Licensing requirements for credit providers, adjusted caps depending on the credit amount, and fixed statutory ceilings on default interest rates • Debt advice is provided mainly by Crésus Associations, Points conseil budget (PCB) (semi-public bodies) • Many small NGOs such as Débiteurs Anonymes, l'Association Française des Établissements de Crédit et des Entreprises d'Investissement (Afecei), Association nationale de défense des consommateurs et usagers (CLCV), Fédération Léo Lagrange, Union Nationale des Associations Familiales (UNAF), Agence Nationale pour l'Information sur le Logement (ANUL), Centres communaux d'action sociale (CCAS) • Debtors submit applications to household debt commissions (HDCs), who prescribe a repayment plan personal recovery procedure (immediate if eligible) – If unable to pay, cancellation of debts and liquidation of qualifying assets. Repayment plan (7-year max) – HDC mediates negotiations between debtor and creditor(s) or imposes a repayment plan • Taxes and debts to social security organisations are not excluded from debt relief unless fraudulently incurred, for both judicial liquidation and personal recovery procedure (for low-asset individuals)
Germany	• Central Bank (BaFin) calculates interest at the market rate, used to adjust caps (prohibition of APR to be more than double); explicit default interest rate ceilings; and fixed statutory default interest rates • Debt advice provided by Caritas, German Red Cross, Der Paritätische, Arbeiterwohlfahrt (AWO) (welfare organisations), municipalities, private and consumer organisations • Consumer insolvency – Debtor first submits settlement plan via court to creditors. If they reject the plan, the debtor's assets are sold and income above a minimum is designated to the creditors • No measures specific for "no-income, no-asset" debtors but shortened discharge procedures, conditional upon the fulfilment of minimum payments • Public claims are included in the discharge, except taxes or social security contributions criminally evaded or withheld (non-dischargeable only after the final criminal verdict)
Greece	• Absolute interest rate ceiling on non-banks. Contractual interest rate as a maximum for default interest rate • The main providers are Consumer organisations: Consumers' Federation (INKA) and Consumers' Association The Quality of Life (Ekpizo) (consumer organisations), and smaller providers include KEYD-GEYD (public organisation), Union for Working Consumers of Greece (EEKE) • Bankruptcy – debts in excess of EUR 30 000 towards the Greek State, Social Security Institutions and financial institutions (max 5 years, with a 2-year extension) • New provisions for LILA or NINA debtors (e.g. leasing primary residence) • Debts to public bodies included in debt settlement procedures since 2015. The Debt Settlement and Facilitation of a Second Chance Act in 2020 introduces out-of-court mechanisms specifically for public institutional creditors, including social security institutions for debts over EUR 10 000
Ireland	• Central Credit Register for all moneylenders reporting on loan agreements. Obligations to assess creditworthiness, a cap on cost of total credit, and annual license renewal. Consumer Credit (Amendment) Bill 2022 introduced interest rate caps. The number of providers has declined in the past 5 years. • Main debt advice provider: Money Advice and Budgeting Service (MABS). Other smaller providers: Irish Mortgage Holders Organisation (IMHO), Free Legal Advice Centres (FLACs), Phoenix Project, Society of Saint Vincent de Paul (SVP) and private for-profit businesses • The number of procedures depending on the amount and type of debts a person has, with generally lighter processes for people with smaller debts and "unsecured debts" (such as credit card, health care, utility, telephone or tax arrears). Debt relief notice (max 3 years, early discharge if 50% paid back before 3 years); Debt settlement arrangement – Unsecured debts of any level (max 5 years, 1-year extension possible); Personal insolvency arrangement – Unsecured and secured debts of any level (max 6 years, 1-year extension possible); Bankruptcy (1 year to sell assets, 3-year subsequent repayment plan) • Individualised assessment, considering dependents (need for childcare, household goods, etc.) when determining thresholds • Debt relief notices – debts to public authorities are "excludable" and can be discharged upon agreement with creditors

Latvia	• The share of high-cost products to total consumer credit is very large, one of the highest levels in Europe. Baltic countries all have high interest rate levels. For a long time no interest rate ceilings (contractual or default) existed; instead, the government opted for a definition of an honest practice, limited the total cost of credit and reduced the hours for credit issuance. Interest rate caps and regulation of roll-over were introduced in 2019 • No main provider, relying on legal services and consultants. Small role is played also by Latvijaskreditnemejuasociacija (Latvian Borrowers' Association), Maksatnespejas kontroles dienestsi (insolvency control service), Pateretaju tiesibu aizsardzibas centrs (consumer rights protection centre), Finance Latvia, Zverinatu tiesu izpilditaju padome (Latvian Council of Bailiffs) • Bankruptcy – a repayment plan is agreed for a maximum of 3 years (6 months if debtor can repay 50% of debts, 12 months if 35%, 18 months if 20%) In 2022, new debt relief support was introduced for low-income individuals and benefit recipients with consumer debts of a total size exceeding one national minimum monthly salary, but not greater than EUR 5 000 • Protection of dependents/children during debt settlement procedures (e.g. protecting child benefits)
Spain	• Prohibition of "interest on interest", tightening licensing requirements and imposing default interest rate ceilings • No main debt advice provider but several consumer organisations such as the Asociación de Usuarios de Bancos, Cajas y Seguros (Adicae), FACUA – Consumers in Action, debt advice organisations at regional and municipal levels • Royal Decree Second Chance Act 2015. The debtor and mediator negotiate out-of-court a repayment and/or liquidation plan with creditors. If no agreement can be reached, in-court bankruptcy liquidation/repayment can be initiated (5-year max). During the COVID-19 emergency, Royal Decree-Law 16/2020,30 established an insolvency moratorium for all debtors, be they firms or individuals • Public claims excluded from out-of-court restructuring processes and from discharge after liquidation
Sweden	• Interest rate cap for the nominal interest rate corresponding to the reference rate plus 40 percentage points and a cost cap limiting the total costs of credit (2018). Fixed default statutory interest rates. Regulation of creditworthiness assessments (2014). All credit providers have to be authorised by the Swedish Financial Supervisory Authority • No main debt advice provider but several consumer organisations such as the Asociación de Usuarios de Bancos, Cajas y Seguros (Adicae), FACUA–Consumers in Action, and debt advice organisations at regional and municipal levels • Personal bankruptcy; ordinary reconstruction, regular – If there is a capacity to pay above a reserved amount, a repayment plan to the creditors is established. Without having the capacity to pay, the reconstruction will not entail any requirement for the debtor to pay. Usually 5 years (possibility to shorten/prolong the repayment plan); maximum 7 years. Tight access screening to evaluate contextual conditions and needs, with the notion that NINA debtors should receive quicker relief • No priority for public claims, all debts included aside from debts accrued during the period of debt reconstruction
United Kingdom	• Stricter regulation was introduced in 2015, with price caps on high-cost short-term credit, limits on rollover, and guidance on affordability checks • Debt advice is provided mainly by the National Association of Citizens Advice Bureaux; StepChange as well as Debt Advice Foundation, Money and Pensions Service, (MaPS), plus other private for-profit businesses • During COVID-19, there was a boost in public funds to support free-to-client debt advice through MaPS in England • Debt Advice services can activate a Respite Scheme (Breathing Space), offering legal protections from creditor action for up to 60 days • Debt Management Plans (DMP) (informal, no limitations); Individual Voluntary Arrangements (IVA) (5-year max, 4 in Scotland); Debt Relief Orders (DRO) (12-month moratorium) for LILA/NINA debtors; Administration Order (up to 3 years); Bankruptcy • Rise in use of IVA and DMP; declining use of DRO and bankruptcy • Public claims included in the discharge for DRO (and the possibility of inclusion for IVA). The debt threshold was increased to GBP 30 000 to expand the scheme • Consultation on "fairness" of government debt management • Extension of benefit deductions to 24 months for new Universal Credit claimants in 2021

United States	• Some elements of regulation are easing to facilitate consumer access to credit: in 2019 the Bureau of Consumer Financial Protection revoked the mandatory underwriting provisions that required ability-to-repay assessments 17 states prohibit payday loans, while 33 impose limitations (e.g. on price, amounts, rollover) • The National Foundation for Credit Counseling (NFCC) and the Financial Counseling Association of America (FCAA) are the main non-profit membership organisations, accrediting and training a network of consumer credit counselling agencies. Services are also provided by credit unions, extension offices, religious organisations, military bases, housing authorities and other non-profit agencies • Bankruptcy, Chapter 7 and Chapter 13 (filing decreasing since 2010, 2005 Bankruptcy Abuse Prevention and Consumer Protection Act increased financial and time cost of filing) • Debt relief modification through Credit Counseling, Debt Settlement Companies, Non-intermediated settlements; Government-sponsored debt relief • Home Affordable Modification Program (HAMP) during the Great Financial Crisis and the Coronavirus Aid, Relief, and Economic Security (CARES) Act included debt relief provisions • Chapter 7 excludes priority tax claims, for claims incurred by fraud, fines and penalties, and overpayment of government benefits (some can be discharged). Chapter 13 has similar provisions for non-dischargeable debts while it also requires a plan to pay all priority claims • Extended Benefits (an additional 13 or 20 weeks of compensation to those who have exhausted their regular benefits) and waivers are available in certain states, depending on their unemployment rates and unemployment insurance laws • Temporary schemes fully funded by the Federal Government are available at times of recession: e.g. Pandemic Emergency Unemployment Compensation (no waiting time upon exhausting regular state unemployment insurance benefits) • Tax credits: Earned Income Tax Credit (EITC) – refundable tax credit targeted to households on low income, possible advanced payment option, low take-up Child Tax Credit (partly refundable), non-refundable CTC part of the calculation for EITC. Delivered monthly under the America Rescue Plan Act, introducing advance payments based on estimated taxes • Other benefits: Temporary Assistance for Needy Families calculated and issued monthly, 60-month lifetime limit Supplemental Nutrition Assistance programme – calculated and issued monthly Three major federal rental assistance programmes with long waiting lists and admission substantial discretion, plus housing assistance for very low-income households in some states

Notes

[1] Some benefits play a role in smoothing income instability, but their effects cannot be reliably estimated, because it is difficult to attribute to changes in an individual's employment intensity (in the case of disability benefits) or they are paid at the level of the household rather than the individual (in the case of child allowances). See Chapter 1 for more information on the allocation of social benefits to individual income.

[2] For example, in the United States, Norway, Israel and Canada, social protection is primarily an insurance scheme that people pay into while they are employed and draw down on when they are unemployed. The amount they draw down is usually based on the amount they contributed. In contrast, in Australia people do not contribute to an unemployment insurance scheme, but receive an allowance for as long as they are unemployed so long as they meet means and activity tests. In addition, some countries have guaranteed minimum incomes for people who are unable to work and tax credits that supplement employment earnings. However, there are differences in the purposes of tax credits. In anglophone countries, tax credits are primarily aimed at poverty alleviaiton, while in continental European countries, they have a stronger employment focus.

[3] The share of over-indebted and/or financially fragile middle-income households increased in previous economic crises. During the Global Financial Crisis, 2.6 million of the roughly 10 million households in Portugal were over-indebted, and financial fragility dramatically increased in Greece, Ireland and Spain (Ferreira et al., 2021[102]).

[4] In addition, the European Banking Authority (2021[103]) published guidelines on legislative and non-legislative loan repayment moratoria to respond to the COVID-19 crisis.

On Shaky Ground? Income Instability and Economic Insecurity in Europe

Over the past few decades, economies and technologies have changed in ways that have made people's economic prospects more insecure. While non-standard work and digital transformation have created opportunities for many, they have also exposed individuals to fluctuations in their incomes, known as "income instability", as have major recent shocks. Recognising that individuals' jobs and circumstances can change multiple times in a year, this report uses novel techniques to identify who is most exposed to income instability in European OECD countries, and the examines the effects it has on their lives, social mobility, and inequality. Income instability can be difficult to manage for individuals who lack financial resources to smooth their incomes. In this report, people facing the twin problems of exposure and vulnerability to income instability are considered to be economically insecure. Economic insecurity falls predominantly on people with weak attachments to the labour force and on those who are not well-placed to leverage the benefits of digitalisation. People at risk of economic insecurity are more likely to worry about losing their jobs in the future than economically secure individuals and, as shown in other research, experience poor health, food insecurity, and poor childhood development outcomes, which can impede social mobility. Finally, the report reviews a range of policies to improve the timeliness of social protection to better support people with highly unstable incomes and explores options to help those most at risk of economic insecurity build financial buffers.

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