RESEARCH REPORT

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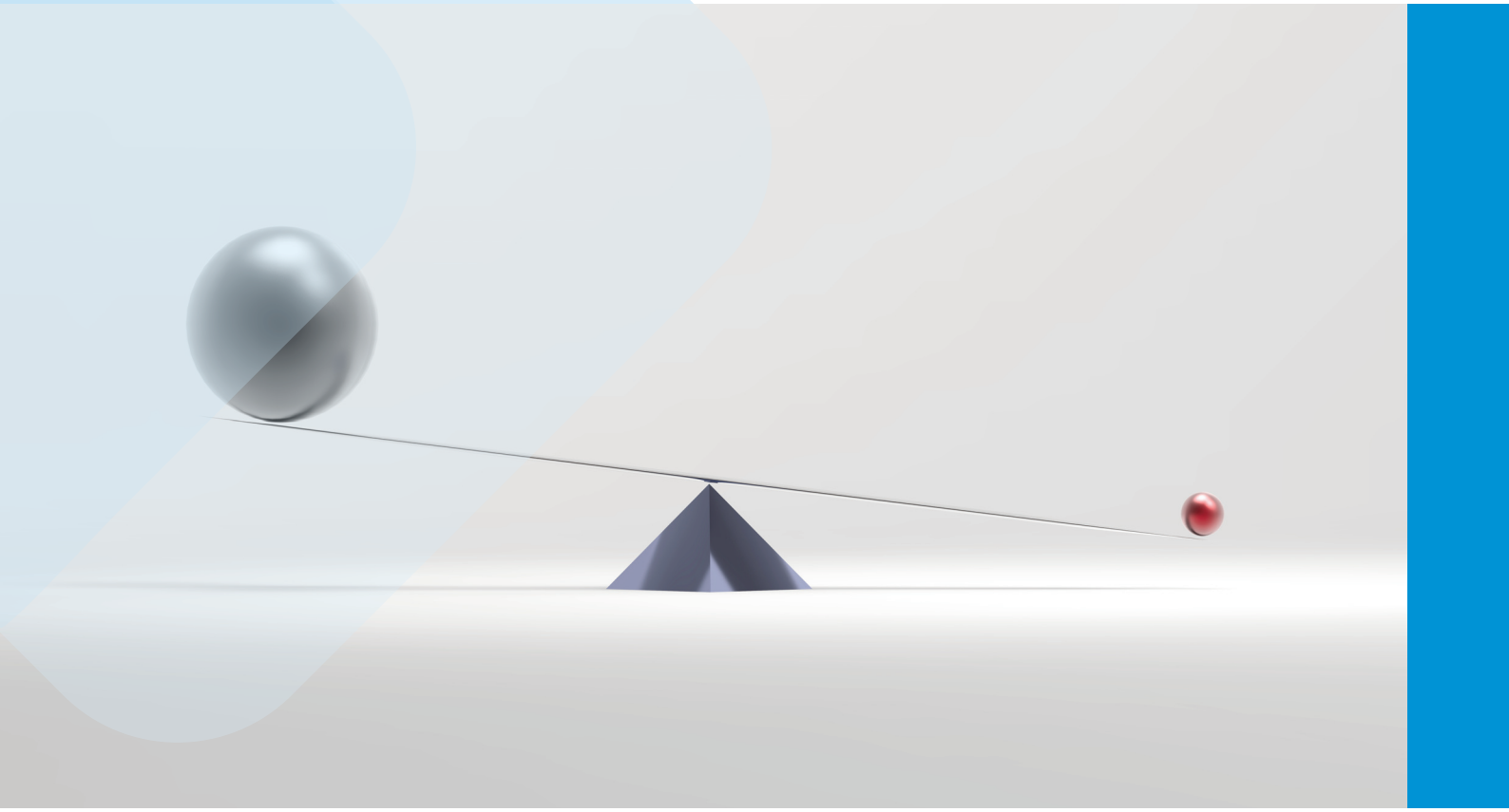
Developments in income inequality and the middle class in the EU



Developments in income inequality and the middle class in the EU

Eurofound

European Foundation for the Improvement of Living and Working Conditions

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Country codes

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Executive summary

Introduction

Public perception is that inequality is on the rise and that the middle class is shrinking. This study analyses empirical evidence over 15 years to clarify the validity of this view. It provides a comprehensive picture of income disparities within and between the EU Member States from 2006 to 2021, covering a wide range of interrelated indicators capturing income inequality, the middle class, the degree of income polarisation and the role of public policies in these trends. It examines the effect of the Great Recession and the COVID-19 pandemic on income inequality and provides insights into the impact of the early stages of the cost-of-living crisis, using 2022 data on the material difficulties faced by European households.

Policy context

After years of being sidelined in the policy debate while European labour markets recovered after the Great Recession, inequality is firmly back on the front page following the COVID-19 pandemic and the ensuing cost-of-living crisis. Growing inequality and a shrinking middle class have emerged as concerns in public discourse since these developments threaten the cohesion of European societies.

Support measures were put in place during the pandemic to maintain employment and help families deal with the consequences of lockdowns, mainly through job retention schemes (and minimum income support systems), facilitated by escape clauses from EU fiscal rules.

In the aftermath of the pandemic, energy prices started soaring. The knock-on effects pushed inflation progressively upwards, leading to a cost-of-living crisis, prompting governments to implement policies to help the most vulnerable households deal with their worsening financial situation.

Labour markets and their institutions are basically national, but adopting an EU-wide approach to monitor income inequality is critical against a background of deepening EU integration and enlargement towards the east since the mid-2000s.

Key findings

- EU-wide income inequality declined significantly between 2006 and 2021. This was entirely driven by strong income convergence between EU Member States. Average income inequality within the Member States has remained broadly similar.
- This convergence is explained by remarkable income growth in the Member States that joined the EU with the 2004 enlargement (the EU13) and sluggish progress (or even declines) in many of the pre-2004 Member States (the EU14). In contrast to central and eastern European (CEE) countries, income levels in Mediterranean countries generally failed to converge with higher-income Member States.
- The stability in average income inequality across countries conceals diverging trends. Income inequality increased in around half of the Member States, especially several Nordic and Continental countries (among them Sweden and Denmark, which were much more egalitarian before), while it declined in just over half, mainly several CEE and Mediterranean countries (among them Romania, Portugal, Greece, Poland and Croatia, which were much more unequal initially).
- One of the factors driving income inequality is a widening of wage disparities (which has occurred in around half the Member States); another is the weakening redistributive role of the family in most countries. On the other hand, rising employment (and activity) rates in most countries have reduced inequality. So too has the welfare state's cushioning of inequality in market income (household income before taxes and benefits are taken into account), although the weakening of welfare states in some countries has contributed to growing inequality.
- The growth in income levels in the EU13 was in many cases stronger among lower-income earners, which reduced income inequality. The most positive examples are the CEE countries, although this was not the case in all, because the Great Recession had a particularly strong impact in the Baltic states and other EU13 Member States in the Mediterranean region.

- On the other hand, the more moderate income growth in the EU14, especially among the lowest-income earners, led to growing income inequality (and a shrinking middle class). This occurred in the Nordic countries and most Continental countries. Mediterranean countries present the bleakest picture owing to the protracted effects of the Great Recession on their labour markets.
- An essential difference between the Great Recession and the COVID-19 pandemic was the coordinated policy response across the EU27 during the pandemic, which resulted in employment levels falling more moderately and in fewer countries than during the Great Recession, continuing income growth across most countries (albeit more moderate than before the pandemic) and less significant increases in income inequality (despite it rising in around half of the countries).
- The welfare state plays a critical role in cushioning the effect of market income inequality, reducing it by an average of around 42% across Member States once social benefits and taxes are taken into account.
- A large middle class is characteristic of European countries, representing a majority of the population in all Member States, and this reflects inclusive societies. The size of the middle class fell in almost two-thirds of Member States; however, the analysis does not indicate a generalised significant shrinking of the middle class. It has become increasingly difficult for people with low educational attainment, young people and those out of work to enter the middle class.
- The share of people below the poverty threshold (60% of median income) increased in two-thirds of Member States between 2006 and 2021, which is consistent with the reduction in the size of the middle class, reflecting a movement from the middle class to the low-income class across many countries.
- The best indication of the early impact of the cost-of-living crisis in 2022 is the higher share of households unable to keep their homes adequately warm, since energy price levels grew well above average inflation in 2022. The most precarious households were hardest hit, especially people with low educational attainment, the young, women and those living in single-adult households (especially with children).

Policy pointers

- One of the main tools available to policymakers to reduce income inequality is a strong welfare state. Therefore policy tackling income inequality needs to focus on strengthening the redistributive role of social protection systems, especially in those Member States where the weakening of this role has contributed to growing income inequality.
- A strong welfare state is especially important during economic downturns. In the case of the COVID-19 pandemic, the massive increase in funds allocated to social benefits in 2020 and 2021, mainly through unemployment benefits to finance job retention schemes, prevented a more negative impact on European labour markets.
- Policymakers should be aware of the need to reach the most disadvantaged groups when designing social benefit policies, since many of the lowest-income earners fail to access the benefits they need.
- Most countries need to redesign benefit systems to make them more progressive. Redistributing income on a larger scale would improve the capacity of the welfare state to cushion market income inequality. Taxes on wealth, which are negligible across most countries, would provide more means for such redistribution.
- The situation of those at the bottom of the income distribution in recent years should be of concern among policymakers. Apart from the increase in the share of people below the poverty threshold in 2021 in half of the Member States, non-income data for 2022 covering the early stages of the cost-of-living crisis reflect the growing financial difficulties faced by households. This hardship could be alleviated by targeted policies addressing the uneven impact of soaring price levels across households.

Introduction

This report aims to provide an evidence-based picture of changes in income inequality and the middle class across the EU27 between 2006 and 2021 to inform both the policy debate and academic discussion. A robust analysis of income disparities across European societies is conducted by examining a wide range of interrelated indicators including income inequality; income levels across Member States and along the income distribution; the size of the middle class and the share of income received by different income groups; and poverty rates and different indicators of economic hardship across European households. The role of public policies in explaining some of these trends is also examined.

Responding to the generally held public perception that inequality is on the rise and the middle class is shrinking across European countries, this report provides empirical evidence to answer questions such as the following: How is income inequality changing in the EU as a whole and how do between-country and within-country dynamics influence such trends? Are these trends similar across EU countries or are there distinct geographical patterns? Are countries converging or diverging in their levels of income, income inequality and the size of the middle class? What has been the impact of the recent COVID-19 pandemic and its aftermath on the lowest-income households?

To answer these questions, the empirical analysis conducted in this report uses the 2007–2022 editions of the European Union Statistics on Income and Living Conditions (EU-SILC). All EU Member States are included, but Croatia is added only from the 2010 edition onwards. The one-year lag in the income data provided by EU-SILC means that the bulk of the analysis refers to the period from 2006 to 2021.

The approach this report takes adds value to the existing research in several ways. First, it permits the analysis of income disparities across the EU Member States over a substantial period spanning 15 years. In doing so, it updates previous Eurofound work on the topics of income inequality and the middle class (Eurofound, 2017, 2019) by adding information covering the years of the COVID-19 pandemic. Moreover, a partial picture of the early impact of the cost-of-living crisis is provided by looking at the material difficulties faced by European households in 2022.

Second, the time span of the analysis permits coverage of two crises that were different in nature: the Great Recession triggered by the 2009 financial crisis and the COVID-19 pandemic. The report provides a comparison of their impacts on European societies and digs into the very different policy responses adopted by governments during the pandemic, which partially explain the contrasting impacts of the two episodes on European labour markets.

Third, the report provides a comprehensive picture of income inequality across the EU27 by using a wide range of indicators. The empirical analysis maps the changes in income inequality by looking at the changes in income levels at different points of the income distribution and the share of the total income received by different income groups. It examines different characteristics of the middle class: its size, income levels and the share of income it obtains. It measures income polarisation by looking both at income development across different income classes and at whether similar or dissimilar patterns emerge within the middle class itself. When mapping developments with all these metrics, an attempt is made to distinguish regional trends emerging within Europe, so that different groups of countries can be identified and characterised in terms of their trajectories in the period.

Fourth, beyond monitoring developments at country level, this report also applies a truly EU-wide perspective when analysing income inequality, an approach that is scarce in the literature. Rather than averaging trends across EU countries, a real EU-level approach implies considering all income earners as part of a single EU-wide income distribution, which is shaped by both income inequality trends across the Member States and income convergence between them. This makes it possible to assess how income disparities progressed in the EU on aggregate between 2006 and 2021 and how far convergence between the Member States explains such trends.

Report structure

The report is divided into eight chapters.

Chapter 1 presents a literature review and briefly introduces the methodology.

Chapter 2 investigates income inequality from a purely EU-wide perspective, while the next two chapters analyse two contributing factors: changes in income levels across Member States (Chapter 3) and changes in income disparities within Member States over the period of study (Chapter 4).

Chapter 5 focuses on the role of European welfare states in cushioning inequality in market income by redistributing income through the tax and benefit systems. It also highlights the role of welfare state interventions in limiting rises in inequality during the COVID-19 pandemic.

Chapter 6 complements the analysis of income disparities by looking at the development of the middle class. It provides estimates of income dispersion and how this is shaped by dynamics within the different income classes and dissimilarity trends within the middle class itself.

Chapter 7 turns the focus towards the most vulnerable segments of society by looking at the share of people below the poverty threshold and reporting on the incidence of financial strain across European households, capturing the first effects of the cost-of-living crisis.

Chapter 8 concludes the report with a summation of the findings.

1 Literature review and methodology

Income inequality is a common topic in both policy discussion and empirical research. The focus placed on it typically varies depending on the particular situation of European labour markets, which have been affected by the business cycle of economic expansion and contraction over the past three decades. Once the financial crisis hit European economies in 2009 and unleashed a protracted economic downturn in the following years, commonly known as the Great Recession, concerns about income inequality became prevalent (Atkinson, 2015; OECD, 2011). Now, after some years of being sidelined against a background of recovering European labour markets, inequality is firmly back on the front page following the COVID-19 pandemic and the cost-of-living crisis that ensued.

Inequality in household disposable income, the most commonly used measure of inequality in research, is related to a variety of other topics covered in the literature, which may also have an influence on it, such as inequality in other sources of income (mainly wages), income polarisation and the situation of the middle class. This chapter summarises the main findings from the literature on these topics, with a focus on more recent studies that address developments in research on income inequality and the middle class since 2017. For empirical studies covering the period before 2017, please see the previous similar exercise by Eurofound (2017).

Income inequality against the background of COVID-19

The measure of income typically covered in empirical studies on income inequality is household disposable income, which is the aggregate of several income components that result from labour market outcomes, capital, household composition, and the progressiveness of the tax and transfer systems (Bonesmo Fredriksen, 2012). Income inequality is expected to behave countercyclically, that is, increasing during downturns and decreasing during upturns (Storesletten et al, 2004; Bonhomme and Hospido, 2012). This is largely due to unemployment, since the loss of labour earnings among people who lose their jobs pushes income inequality upwards.

While empirical studies on income inequality across EU countries during or after the COVID-19 pandemic are still scarce, the small number that have been conducted show that during the pandemic years income inequality remained stable on average across EU countries. For instance, the value of the income quintile share (S80/S20) ratio (comparing the income earned by the top and bottom income quintiles) marginally decreased in 2021 (to 4.74, compared with 4.99 in 2020 and 4.89 in 2019) for the weighted average across EU countries (European Commission, 2023).

There are also simulation studies that estimate income disparities. According to an ex ante empirical study based on a microsimulation, income inequality remained largely stable on average across EU countries during the pandemic, declining by 0.24% (Lam and Solovyeva, 2023). This is because household disposable income remained steady for households in the bottom income quintile, while it declined modestly for those in the top income quintile. Nevertheless, household market income (household income before taxes and benefits are taken into account) visibly suffered during the pandemic, with an average decline of 5.3% across EU countries; households in the lower income quintile were affected somewhat more by this drop in market income levels.

Most empirical studies on income inequality focus on developments within countries, while very few attempts have been made to monitor income inequality in supranational entities such as the EU (with some exceptions, such as empirical studies on global inequality levels, for instance that of Milanovic, 2005). According to some of the few studies on EU-wide income inequality, the impact of the pandemic has been weak so far, and both within-country and between-country disparities have not changed much, as measured by the S80/S20 ratio (Dauderstädt, 2021, 2022).

Research has also identified a trend towards higher wage inequality in all European countries during the COVID-19 pandemic (Palomino et al, 2020), due to the effects of lockdowns and social distancing measures on the labour market. The more a country's labour market and economy are reliant on jobs that are not teleworkable, the bigger the effect of lockdowns and social distancing on jobs, and the greater the effect on wages.

These and other empirical studies estimating income inequality in the EU have been summarised in Table A1 in Annex 2.

Impact of income-support policies during the pandemic

Support measures were the most impactful factor in stabilising household disposable income and absorbing the decline in market incomes during the pandemic. Generally, there is agreement on the effectiveness of fiscal support measures across EU countries during the pandemic (particularly in the form of job retention schemes). Automatic stabilisers also played a part in stabilising household disposable income, as did minimum income support systems (Eichhorst et al, 2023).

Job retention schemes were enforced primarily to preserve jobs and to provide compensation for those workers who experienced a reduction in working hours. Examples of job retention schemes include wage subsidies and short-time work. Across the EU, these two measures have been able to absorb a large part of the drop in market incomes (Lam and Solovyeva, 2023). While comparable data on the composition and financing of pandemic-related income-support policies across EU countries are difficult to obtain, it is possible to assess the effectiveness of different income support policies using microsimulation data. According to calculations based on the tax–benefit microsimulation model Euromod, monetary compensation schemes have generally had the biggest cushioning effect in reducing the impact of the economic shock on household disposable income across EU countries (Gasior et al, 2023), while the role of automatic stabilisers has been smaller.

A shrinking middle class and an income squeeze?

Many empirical studies provide evidence of and discuss the possible reduction in the size of the middle class across Europe. A general issue with these studies is that there is no unanimous definition of the middle class, which is approached differently across disciplines. For instance, economists typically apply the income approach, which defines the middle class based on median income, including for example those households that have more than 75% but less than 200% of the median national income. This is the approach that will be followed in this report, which defines a middle-income class, but it is important to be aware of its limitations.

A common criticism of the income approach to defining the middle class, typically coming from a more sociological perspective, is that it results in a heterogeneous and rather large group. It covers households with very different realities and does not take into account other aspects such as individuals' occupational category, feeling of economic security and status, or expectations about way of life regarding education, property or healthcare. Thus, some studies recommend using more nuanced approaches, for instance through adapting an occupation- or skills-based approach to study the working class in terms of skilled and unskilled working class, and separating the core of the middle class, which is close to the median income, from, for instance, the upper middle class (Gigliarano and Muliere, 2012; Oesch, 2022; Moawad and Oesch, 2023).

Another topic in the literature is that of the middle-class squeeze, which refers generally to an increasingly tight financial situation among the middle class. The established narrative of the middle-class squeeze argues that income groups above and below the middle class have seen better developments when it comes to income and job growth, which means middle-income households face higher risks of becoming low-income households. Recent findings from the Organisation for Economic Co-operation and Development (OECD) show that incomes have been growing less in the middle than higher in the range (OECD, 2019) and that the proportion of people in the middle class is declining. Moreover, the fact that the costs of middle-class lifestyles (including education, housing and healthcare) are rising faster than the incomes of the middle class results in a declining status of the middle class, since it is becoming harder to own homes and afford decent education and healthcare, characteristics of the middle-class lifestyle.

Many studies have measured the growth in economic insecurity among the middle class (Bossert and D'Ambrosio, 2013; Ranci et al, 2021). In addition, the socioeconomic composition of the middle-class group is changing; it is ageing because young people are less likely to earn middle incomes. On top of that, upward mobility in terms of income groups is declining, with a decreasing chance for lower-middle earners to rise into higher income groups. For instance, in Germany, the probability that people in the lower middle class will drop into the low-income class has risen, while the chances for lower-income earners to rise into the middle class have declined (OECD, 2021).

Nevertheless, empirical results are not one-sided. Salido and Carabaña (2020) find that the income share of the middle class remained stable between 1994 and 2013 in the countries that were EU Member States before the 2004 enlargement, even though many members of the middle class cannot buy goods of the same value any more as the context has been changing, and the cost of the middle-class lifestyle has risen. Other studies find that economic developments have had a more negative impact on the low-income class than on the middle-income class: income levels have been declining more in the low-income class than in the middle class (Moawad and Oesch, 2023), while households with 20–40% of the median income have fared worse than the middle class (OECD, 2019).

Measuring income polarisation

In welfare economics, the concept of income polarisation goes beyond the analysis of income inequality and poverty. However, in Europe and for European countries, the issue remains underexplored. Income polarisation captures the shift from the centre of the income distribution out into the tails, where the population clusters around poles of the distribution. A reduction in the size of the middle class (as well as a decline in its homogeneity) would increase polarisation. Recent research findings from a study by Fabiani (2023) show a trend of increasing income polarisation in Europe and especially an increasingly higher concentration of the population in the lower tail of the distribution. Out of the 10 countries covered (mainly northern and western European countries), a hollowing out of the middle class resulting in a higher concentration in the lower tail of the distribution is identified in 8 of them, the exceptions being Denmark and Ireland. The current report has adopted the methodology applied by Gigliarano and Muliere (2012) to estimate income polarisation across EU27 countries.

Inflation has an uneven impact

Rising prices, first triggered by the effects of the worldwide recovery from the COVID-19 pandemic and supply chain disruptions and then aggravated by Russia's invasion of Ukraine, are receiving increasing attention (Jordà and Nechio, 2023), partly because they have differential impacts on different income groups and therefore are a source of inequality (European Commission, 2023). The inflation measures typically used do not account for the fact that inflation affects households differently, resulting in inflation inequality, which depends on which income groups tend to consume the goods that are particularly affected by inflation, and how large a share of one's income is typically spent on a good (Claeys et al, 2022).

In analysing household effective inflation, that is, how inflation is spread across households in the EU, Caisl et al (2023) find that lower-income households are more strongly affected by inflation than higher-income households, and that this inflation gap can be traced back to energy and food prices. In particular, energy for housing is found to be the main contributor to inflation inequalities.

Wealth inequality much larger than income inequality

It should be acknowledged that empirical studies on income inequality underestimate the real extent of inequalities. This is because an analysis of inequality based on household disposable income captures (albeit imperfectly) the income flows generated by capital (such as dividends or rents) but not the stock of capital owned by families (such as houses, bank deposits and other monetary investments). The latter needs to be captured by an analysis of wealth, which is more unequally distributed than income (Bartels and Schröder, 2020).

Wealth is highly concentrated and wealth inequality has been steadily rising since the 1970s across EU countries, largely driven by housing capital (Fuller et al, 2020). Those who were able to buy land and houses in the past have benefited from a rise in value of these assets, while people who would like to purchase housing are increasingly struggling to do so as prices escalate. Wealth inequality has been observed to be lower in southern and eastern Member States, and higher in western Member States such as Austria and the Netherlands (Eurofound, 2021). Recent studies also indicate that wealth is influenced by different determinants from income inequality: while political and institutional determinants (such as job retention schemes during the pandemic) may have a stronger effect on income inequality levels, they have less impact on determining wealth inequality levels. It is precisely wealth disparity that may be fuelling sentiments of unfairness and injustice among many segments of European societies, and fails to be captured by empirical studies on income inequality.

Methodological approach

This report aims to provide a picture of income inequality across the EU that spans more than 15 years. It mainly uses data from the 2007–2022 editions of EU-SILC, which provide income data from 2006–2021, given the one-year lag in the income data in EU-SILC. The empirical analysis uses a wide range of indicators that capture income disparities within European societies and in the EU as a whole.

The report focuses predominantly on disparities in household disposable income (among people aged 16 and over) but examines other measures of income as well. This is why, instead of using the household disposable income variable provided by EU-SILC, different income variables have been constructed using a step by step approach, adding different sources of income at every step. This makes it possible to decompose household disposable income into its different components so that comparisons can be

made, for instance between income and wages, or to analyse the role of the family pooling of resources or that of the welfare state in cushioning income inequality. For full details on the methodology followed in this report, see Annex 1.

Graphical representation of income data

Given the one-year gap between the year of the EU-SILC edition and the income data (which refer to the previous year), the reader must bear in mind that the year indicated in the figures and tables depicting income information always refers to the year of the EU-SILC edition, while the text refers to the actual year the income was received (the previous year).

Use of country groupings

In much of its reporting of results, this report clusters the EU Member States into categories. The top-level categories are the EU14 and the EU13. The EU14 are the Member States that were in the EU prior to 2004.

Within this group, three country clusters may be identified: Continental (Austria, Belgium, France, Germany, Luxembourg and the Netherlands); Nordic (Denmark, Finland and Sweden); and Mediterranean (Greece, Italy, Portugal and Spain). Ireland is not included in a cluster.

The EU13 are the Member States that joined the EU after 2004. Within this group, 11 are in the central and eastern European (CEE) cluster (Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia), although the Baltic states (Estonia, Latvia and Lithuania) are sometimes singled out as a separate subgroup. The remaining two countries within the EU13 (Cyprus and Malta), plus Slovenia, may sometimes be included within the Mediterranean cluster.

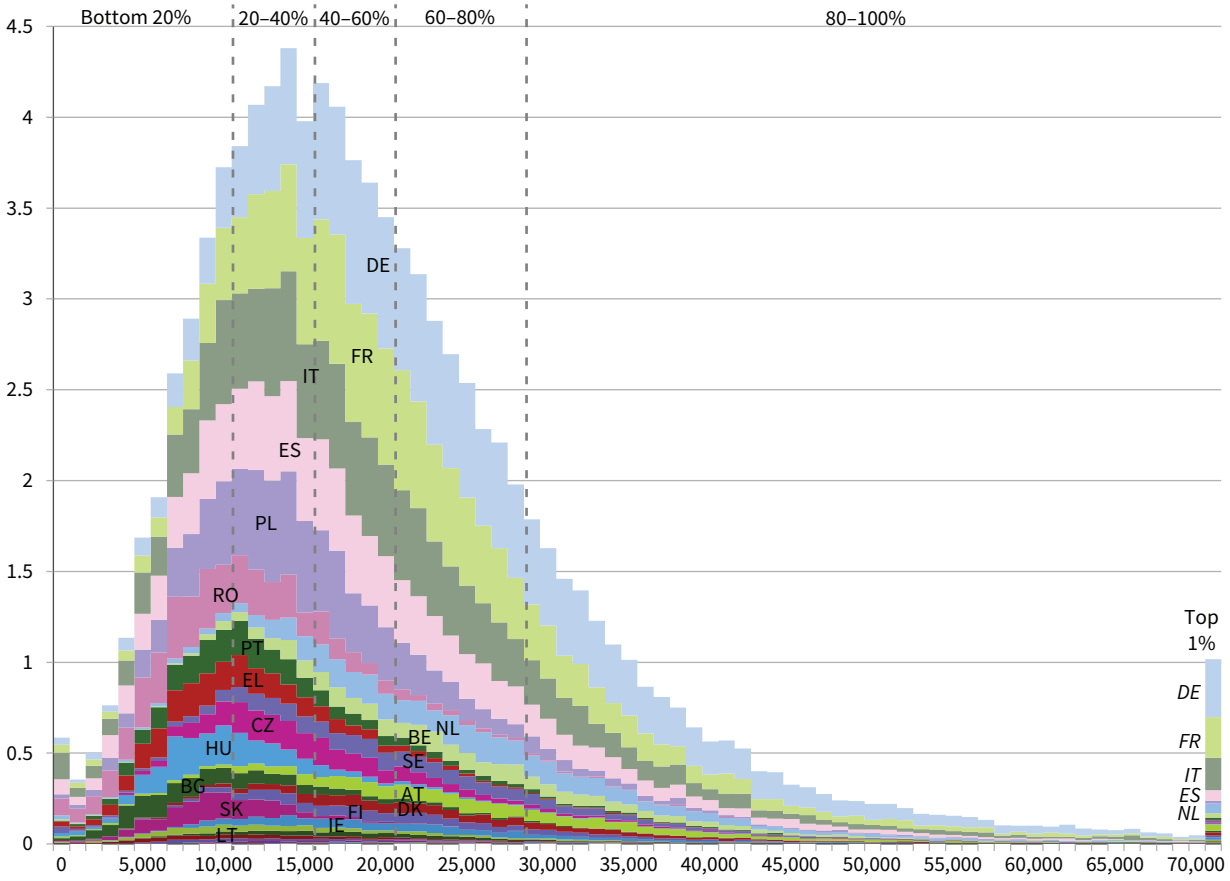
2 EU-wide income inequality declines because of income convergence

This chapter adopts a truly EU-wide perspective in analysing inequality in household disposable income between 2006 and 2021 (using EU-SILC 2007–2022 editions). This means considering all income earners across the Member States as part of a single EU-wide income distribution that is shaped by both the development of income disparities within countries and disparities in average income levels between countries. This is not a common approach, since labour markets and their institutions remain national, but adopting an EU-wide approach is very relevant against a background of deepening EU integration and strong convergence between Member States following the EU enlargement towards the east from the mid-2000s. This approach is one of the added values of previous Eurofound research on income inequality (Eurofound, 2017).

Snapshot of the EU-wide income distribution

The EU-wide household disposable income distribution is depicted in Figure 1, based on the most recent data, which are for 2021 (EU-SILC 2022 edition). All income earners in the EU are part of this single EU-wide distribution: the vertical axis shows the percentage of people who earn a certain yearly income per year, broken down by the different Member States they come from; the horizontal axis depicts the income categories, where each bar represents intervals of €1,000 of equivalised household disposable income, expressed in euro adjusted by purchasing power parity (PPP) to take into account differences in price levels across countries.

Figure 1: EU-wide population by equivalised household disposable income in PPP euro, 2022 (%)



Note: *Data include all EU Member States.*
Source: *EU-SILC 2022 edition (income referring to 2021)*

Figure 1 can be read as follows: the first bar shows that more than 0.5% of Europeans (aged 16 and over) have an equivalised household disposable income below €1,000 per year, while around 4% of Europeans are found in each of the six €1,000 intervals from €12,000 to €18,000 per year. Moreover, the vertical lines divide the European population into income quintiles, each of them containing 20% of the European population. The EU-wide income distribution looks like the typical country-level distribution, with many people concentrated around middle to low income levels (in this case, with 40% of the population earning between €11,000 and €21,000 per year, and 20% earning less than that) and a distribution skewed to the right, with a long tail representing some people with very high income levels.

Two main conclusions can be drawn from the figure. First, a significant share of the lowest-income earners in the bottom quintile (income levels below €11,000) are from EU13 Member States. A significant proportion of the populations of most CEE countries (and Mediterranean countries, although to a lesser extent) falls within the 20% of the European population with the lowest income levels. In contrast, the pre-2004 Member States (referred to henceforth as the EU14) are represented much more in the top income quintile (80–100%), since they account for most of the people earning at least €29,000 per year. Focusing on the top 1% of income earners, almost all people with a yearly income above €71,000 are German, French, Italian, Dutch or Spanish. Information about the highest incomes needs to be interpreted with caution, however, since EU-SILC probably underestimates higher income levels owing to poor coverage of the population at the very top of the distribution, as is commonly the case with surveys (see methodology in Annex 1).

Second, there is also quite an overlap in the distribution of national populations along the EU-wide income distribution. The EU14 countries that dominate the top income quintile also have significant shares of their populations within the EU-wide lowest income quintile, something that is more obvious in the case of the most populous countries such as Germany, France, Italy and Spain. Conversely, Czechia and other large CEE countries such as Poland and Romania have significant parts of their populations spread over the second, third and fourth EU-wide income quintiles.

These two insights suggest that, while notable differences in income levels between countries exist, income disparities within countries may be more important to explain EU-wide income inequality levels. This is confirmed in the next section.

Convergence reduced EU-wide income inequality

The main metrics measuring income inequality for the EU as a whole are presented in Table 1. Two main facts emerge. First, all the different indicators point to a downward trend in income disparities for the EU as a whole over the period. This trend was reversed only between 2008 and 2013, during the Great Recession and its aftermath; income disparities continued declining thereafter, even in the most recent years against the background of the pandemic. Second, this decline in EU-wide income inequality is entirely driven by a strong process of income convergence between EU countries, while income disparities within EU countries have remained constant on average.

The remainder of this section discusses these data in more detail. It should be noted that there is a break in the German income data in the EU-SILC 2020 edition (referring to income in 2019), resulting in higher income levels in Germany, which affects the results presented in Table 1. For this reason, the same indicators but excluding Germany are provided in Table A2 in Annex 2, and the results presented in this section refer to this fact whenever relevant.

EU-wide income inequality is higher than average income inequality across countries. Income inequality for the EU as a whole in 2021 was 0.322 as measured by the Gini index, which ranges from 0 to 1. This is higher than the Gini unweighted average across EU countries (0.292), reflecting the fact that EU-wide income inequality does not only capture income disparities within countries but also incorporates disparities in income levels between countries.

EU-wide income inequality is significantly lower than that of other major economies, such as Mexico (0.42 in 2020), Türkiye (0.403 in 2020), the United States (0.375 in 2021), the United Kingdom (UK; 3.554 in 2021) and Japan (0.334 in 2018).[1] It is also lower than that of some Member States: Bulgaria, Lithuania, Latvia, Italy and Estonia (see Chapter 4).

1 Based on Gini index data for 2020 from the OECD Income Distribution Database, which also shows that income inequality in other major economies such as Australia (0.318 in 2020) and Canada (0.292 in 2021) is lower than in the EU.

Table 1: Multiple indicators demonstrating declining EU-wide income disparities (2007–2022)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Gini indices																
Gini	0.359	0.358	0.350	0.348	0.351	0.351	0.351	0.350	0.348	0.345	0.340	0.336	0.332	0.335	0.332	0.322
Gini (unweighted average)	0.293	0.294	0.292	0.291	0.291	0.292	0.296	0.301	0.300	0.299	0.297	0.294	0.295	0.293	0.293	0.292
Theil index and its components																
Theil total	0.227	0.231	0.219	0.216	0.223	0.222	0.222	0.218	0.217	0.218	0.209	0.207	0.208	0.203	0.199	0.186
Theil between countries	0.071	0.067	0.058	0.057	0.057	0.058	0.058	0.054	0.053	0.050	0.046	0.042	0.038	0.039	0.036	0.029
Theil within countries	0.156	0.164	0.161	0.159	0.166	0.164	0.165	0.163	0.164	0.168	0.163	0.165	0.169	0.164	0.163	0.157
Palma index and its components (income received by top 10% and bottom 40%)																
Palma index	1.49	1.49	1.42	1.40	1.42	1.42	1.43	1.42	1.40	1.38	1.34	1.32	1.29	1.31	1.30	1.23
Top 10% (%)	25.4	25.9	25.4	25.3	25.5	25.4	25.5	25.4	25.3	25.2	25.0	24.9	24.8	25.1	25.1	24.4
Bottom 40% (%)	17.0	17.4	17.9	18.0	17.9	17.9	17.9	17.9	18.1	18.2	18.6	18.9	19.2	19.2	19.3	19.9
Income quintile share (S80/S20) ratio (income received by top 20% and bottom 20%)																
S80/S20 ratio	7.8	7.5	6.9	6.9	7.0	7.0	7.0	7.0	6.9	6.8	6.4	6.2	6.0	6.0	5.9	5.5
Top 20% (%)	41.2	41.4	40.9	40.8	41.0	41.0	41.1	41.0	40.9	40.7	40.3	40.2	39.9	40.4	40.3	39.5
Bottom 20% (%)	5.3	5.6	5.9	5.9	5.9	5.9	5.9	5.8	6.0	6.0	6.3	6.5	6.7	6.7	6.8	7.1

Notes: *The EU aggregate includes all Member States except Croatia. The Gini unweighted average is of the Gini indices across Member States.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Inequality has declined amid two economic crises that had different impacts. The trend in EU-wide income inequality is downward over the period (see Figure 2). Income inequality tends to change countercyclically, declining in times of economic upturns and increasing in times of turbulence in labour markets (captured here by changes in the unemployment rate). This explains why the only two episodes when the reduction in EU-wide income inequality was (at least somewhat) halted over the period correspond to two economic crises.

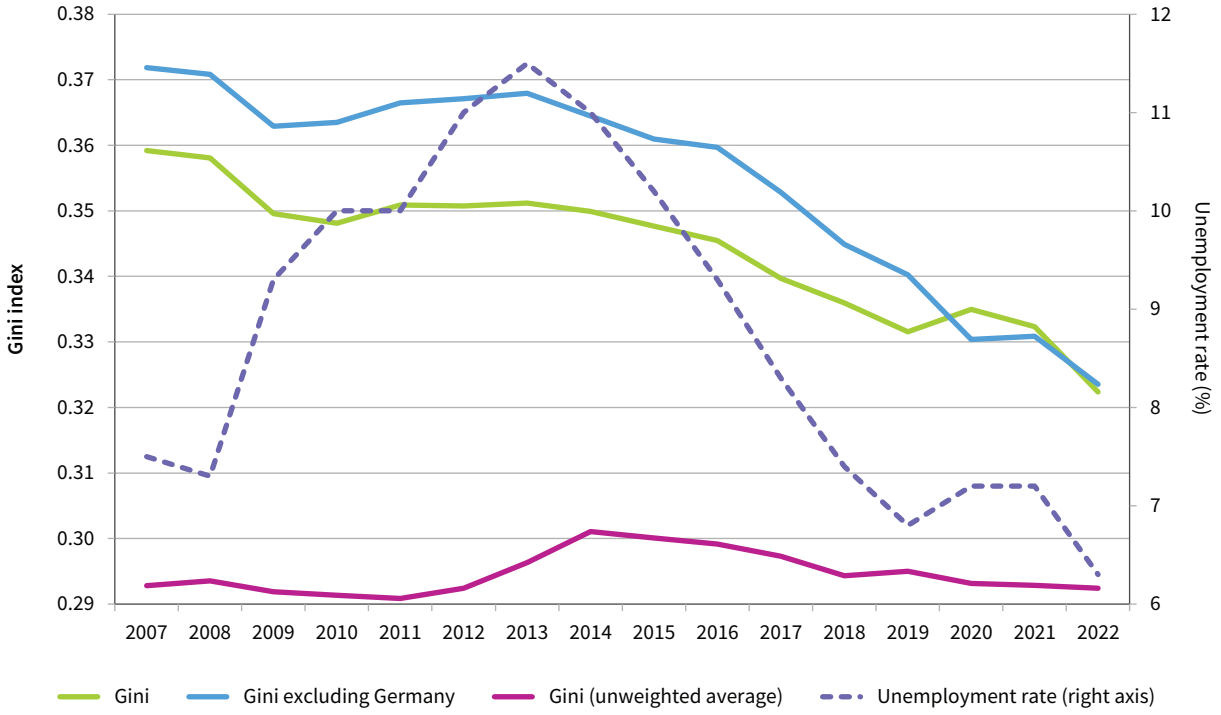
First, the Great Recession and the years of economic hardship that ensued caused a large surge in unemployment and pushed inequality upwards between 2008 and 2013. More recently, the sudden economic recession caused by the outbreak of COVID-19 virus in March 2020 resulted in unemployment levels growing only modestly, and a slowdown in the ongoing decline of EU-wide income inequality.

The picture of the two pandemic years (2020 and 2021) is somewhat nuanced by whether Germany is included in the analysis or not. If it is included, the break in Germany's data series causes a surge in EU-wide income inequality in 2019, before continuing to decline in the two years of the pandemic, more moderately in 2020 and very significantly in 2021. If Germany is excluded, the ongoing reduction in EU-wide income inequality halts in 2020 before continuing with a significant reduction again in 2021.

However, whatever the case, EU-wide income inequality was lower in 2021 than in 2019, which points to the quite different impact of the pandemic from that of the Great Recession a decade before.

Average income inequality within the Member States (the Gini unweighted average) remained relatively constant between 2006 and 2021, although it increased significantly between 2009 and 2013 against the background of the Great Recession and declined thereafter. The same happened, although to a lesser extent, during the pandemic in 2020 and 2021.

Figure 2: EU-wide income inequality falls (EU-wide Gini index including and excluding Germany, Gini unweighted average and unemployment rate, 2007–2022)



Notes: *The EU aggregate includes all Member States except Croatia. The Gini indices refer to EU-wide income inequality (one including and one excluding Germany), while Gini (unweighted average) refers to the unweighted average of the Gini indices across Member States.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

The EU-wide income inequality reduction is due to income convergence between countries. The Theil index is an alternative measure of inequality whose main advantage is that it is decomposable, which makes it possible to divide EU-wide inequality into two explanatory factors: the within-country component, which summarises the income disparities existing in each EU country, and the between-countries component, which captures the cross-country disparities in average income levels.

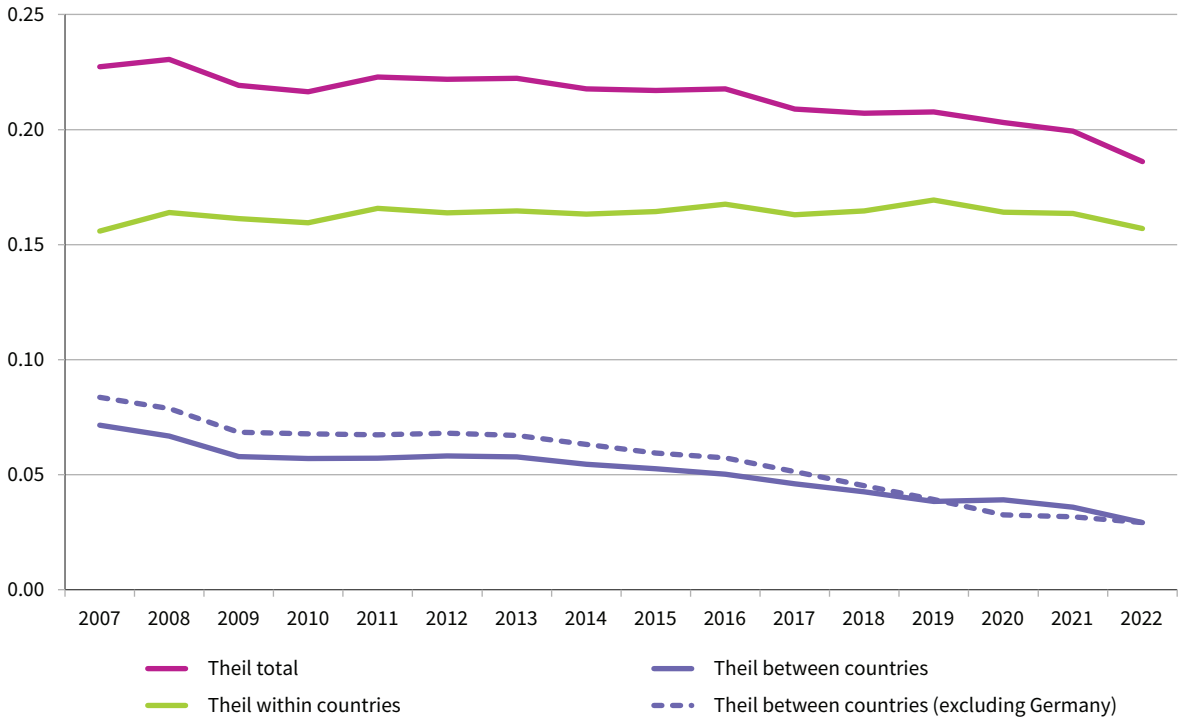
Figure 3 presents the Theil index and its two components, offering three main insights. First, the picture of inequality is largely consistent with that provided by the Gini index: there is a clear downward trend in EU-wide income inequality, reversed only during the years immediately after the Great Recession. In this case, income inequality declines thereafter, up to the end of the period, including the two years of the pandemic.

Second, the fall in EU-wide income inequality is entirely due to the decline in the between-country component, while the within-country inequality component is much more stable.[2] This means a strong process of convergence in average income levels between EU countries is behind the compression of the EU-wide income distribution (depicted in Figure 1). This process was halted only between 2008 and 2013, which together with growing within-country income inequalities pushed EU-wide income inequality upwards during the Great Recession. Nevertheless, income convergence resumed after 2013 and continued up to the end of the period (with the sole exception of 2019, due only to the break in the German data in the EU-SILC 2020 edition, which pushed average income levels upwards in this relatively high-income country).

Third, the within-country component accounts for most EU-wide income inequality, and increasingly so given the strong income convergence between EU countries. Income disparities within EU countries explained less than 68% of the EU-wide income inequality level in 2006 but 84% of it in 2021.

2 Although related, the within-country component of EU-wide income inequality is not the same as the unweighted average of the Gini indices presented earlier. The former is the result of capturing broad income disparities within EU countries, with each country having a different weight, while the latter is unweighted and based on the Gini index.

Figure 3: Income convergence pushes EU-wide income inequality downwards (Theil index, 2007–2022)



Note: *The EU aggregate includes all Member States except Croatia.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Additional measures of income dispersion confirm the decline in EU-wide income disparities. While the Gini index is very sensitive to changes in the middle of the income distribution, the Palma index and the income quintile share ratio (also known as the S80/S20 ratio) are alternative inequality indices, which are affected much more by what occurs at the top and bottom of the income distribution. Nevertheless, the data show they both followed a similar trajectory to the Gini index over 2006–2021 (see Table 1).

The Palma index compares the total income received by the richest 10% with that received by the poorest 40% of the population. It declined from 1.49 to 1.23 over 2006–2021, meaning the richest 10% of Europeans had almost 50% more total income than the poorest 40% of Europeans in 2006, dropping to 22% more total income in 2021. The decline is even stronger when one compares the income that goes to the richest 20% and the poorest 20% of Europeans as indicated by the value of the S80/S20 ratio, which fell from 7.8 to 5.5.

These data reflect the fact that income growth over the period is larger the more one moves down the EU-wide income distribution. Income levels at the bottom of the EU-wide income distribution are key to understanding the trends in income inequality: it is their remarkable growth that has driven EU-wide income inequality downwards, and it is the relatively strong negative impact of the Great Recession at the bottom of the distribution that reversed the decline in income disparities between 2008 and 2013, which resumed their decline thereafter and continued to do so even during the two years of the pandemic.[3]

This remarkable income growth at the bottom of the EU-wide income distribution, which is to a great extent the result of the very notable process of income convergence between countries identified above, is covered in more detail in the next section.

Real income grew more at the bottom of the EU-wide distribution

This section provides comprehensive data on income growth along the EU-wide income distribution that help explain the trends in income inequality described in the previous section. It uses data on income levels broken down by EU-wide income quintiles and deciles, which illustrate the changes in living standards across different groups and how they were affected by economic upturns and downturns. In order to adequately capture these changes in living standards,

3 The changes in the Palma index and S80/S20 ratio depicted are partially explained by the break in the German data in 2019 (EU-SILC 2020 edition), which results in a significant increase in the total income received by the top 10% and 20% of EU citizens (which include many Germans) and a surge in both indicators in 2019, before declining in 2020 and 2021. If Germany is excluded, both indicators decline consistently from 2012 to 2021 because the income received by the richest 10% and 20% of Europeans increased very moderately every year between 2014 and 2021 (without the surge in 2019), while that received by the poorest 40% and 20% of Europeans grew much more significantly (see Table A2 in Annex 2).

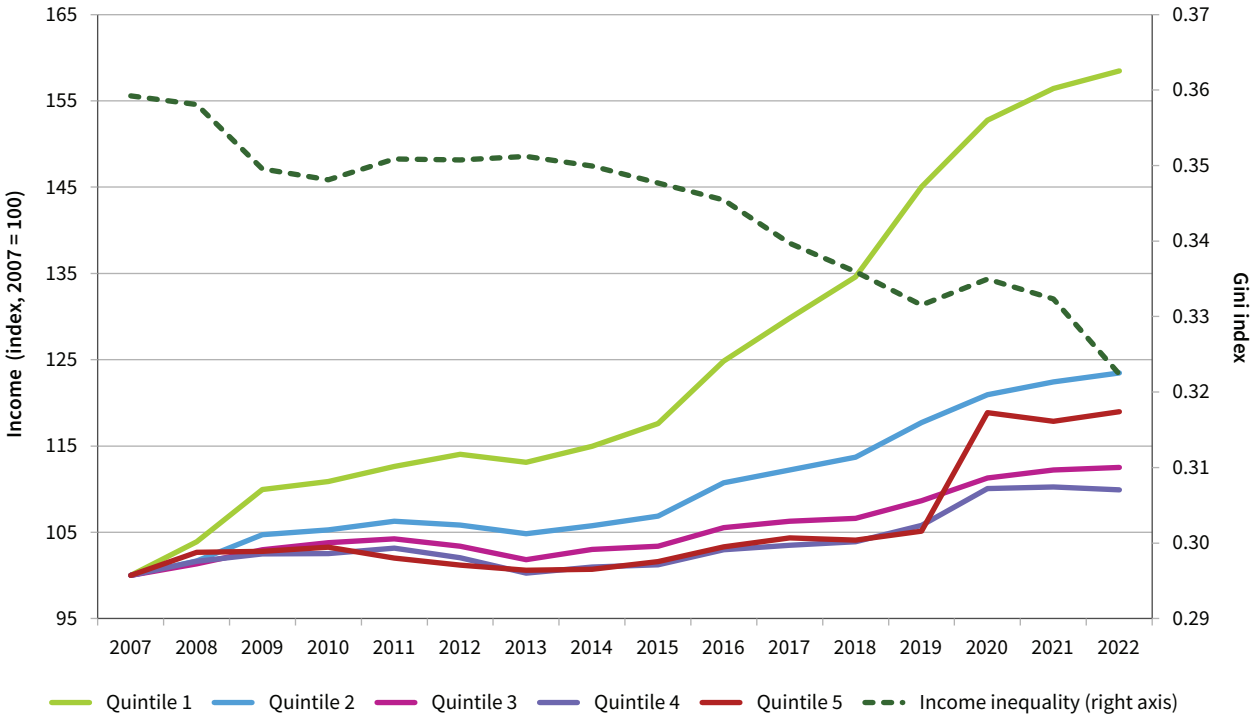
the data on income are calculated in real terms (adjusted by inflation) and expressed in euro adjusted by PPP to take into account differences in price levels across countries.[4]

The rise in income levels has been remarkable at the bottom of the EU-wide income distribution. An initial snapshot of the changes in income levels over the EU-wide income distribution is provided in Figure 4. It depicts the changes in average income levels across the five household disposable income quintiles, which result from dividing the EU's working-age population into five groups of equal size (each of them representing 20% of the population) depending on their income levels, from the lowest-income earners (quintile 1) to the highest-income earners (quintile 5). Two main insights emerge.

One is that income levels increased much more at the bottom of the EU-wide income distribution. They grew by almost 60% between 2006 and 2021 among the 20% lowest-income earners in Europe, and by almost 30% for those in the second EU-wide income quintile. This contrasts with moderate increases among those in the third income quintile (15%) and in the two top income quintiles (slightly above 10%). This confirms the key role played by income growth at the very bottom of the EU-wide income distribution in driving EU-wide income inequality downwards, including during the pandemic.[5]

A reminder is needed when interpreting the results, since these refer to the EU-wide income distribution. Data on income at the bottom of the EU-wide income distribution reflect not only changes within EU societies but also general developments in lower-income countries, where more of the population lies within the bottom of the EU-wide income distribution. Therefore, improving income levels in these countries will be reflected more strongly at the bottom of the EU-wide distribution. That is what occurred in the EU over the period in question. This remarkable income growth at the bottom of the EU-wide distribution and therefore declining EU-wide income inequality are largely the result of a strong process of income convergence between EU countries, by which income growth has been much higher in those countries characterised by lower average income levels (and therefore more often at the bottom of the EU-wide income distribution), such as CEE countries.[6]

Figure 4: Income growth in the EU-wide bottom income quintiles outpaces that in the top quintile (changes in income levels, by quintile, EU-wide, 2007–2022)



Note: *The EU aggregate includes all Member States except Croatia.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

4 Since inflation differentials across countries are already taken into account by PPP, income levels across countries have been adjusted by the general EU inflation rate to obtain real income for the EU as a whole.

5 The noise introduced by the German data break explains the high growth in income levels for quintile 5 (and quintile 4 to a lesser extent) in 2019 (EU-SILC 2020). If Germany is excluded, there is a modest and constant increase in income levels for quintiles 4 and 5 over the most recent years.

6 This very notable income growth at the bottom of the EU-wide income distribution is partially also the result of rising income levels among the poorest people in all Member States, but this cannot be the main reason, because EU14 countries are much less represented at the bottom of the EU-wide distribution and because income inequality within the Member States did not generally decline across all of them over the period.

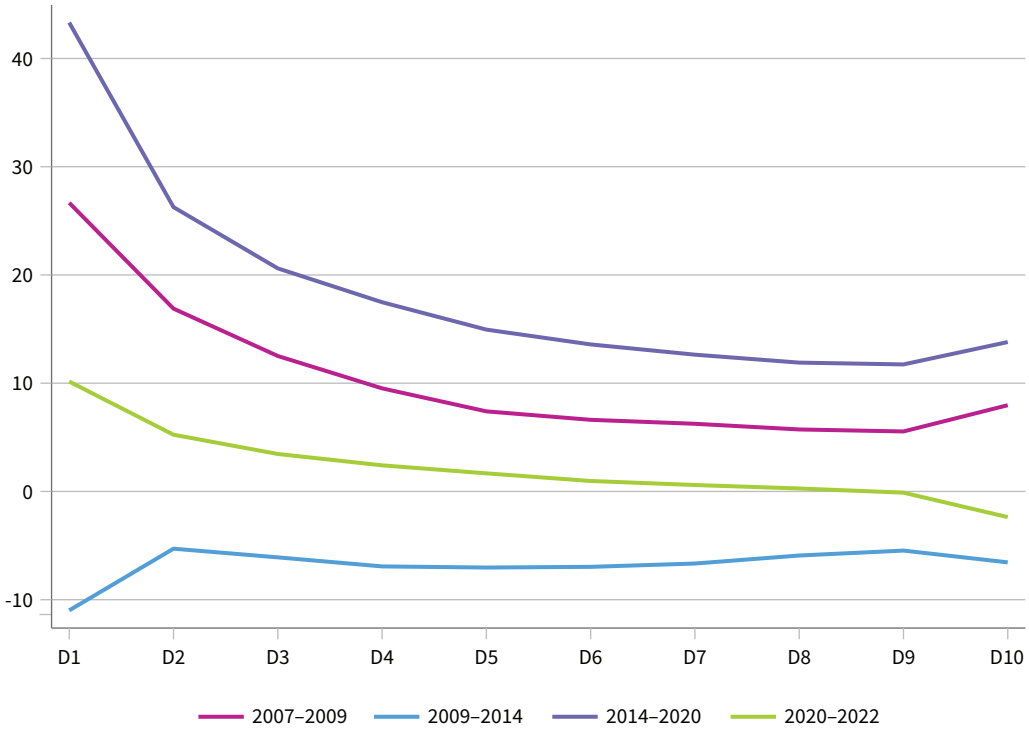
The second main insight from Figure 4 is that income levels at the bottom of the income distribution are generally more responsive to changes in economic conditions. While income growth at the bottom of the EU-wide income distribution tends to be well above average in economic upturns (driving EU-wide inequality downwards), it tends to be more negatively affected in economic downturns (driving EU-wide inequality upwards), as occurred in the Great Recession. The reason for this trend, apart from deteriorating economic conditions having relatively more impact on the more vulnerable people, is the greater vulnerability of lower-income countries to economic shocks, while higher-income countries tend to weather crises better (see Chapter 3).

The business cycle affects income growth over the EU-wide distribution. A more detailed picture of the changes in income levels along the EU-wide income distribution across the different subperiods is provided by Figure 5. It depicts EU-wide household disposable income deciles on the horizontal axis, which result from dividing the EU's working-age population into 10 groups of equal size (each of them representing 10% of the population) depending on their income levels, from the lowest-income earners (decile 1) to the highest-income earners (decile 10). The vertical axis depicts the growth in income levels (in percentages) over each of the four subperiods. The subperiods represent different business cycles and were chosen based on changes in EU27 aggregate data on employment and gross domestic product (GDP) per capita.

These data reflect the same two facts as the quintile-based data but in a way that illustrates the trends in each subperiod more clearly. First, the magnitude of the income growth has almost always been inversely related to the position in the EU-wide income distribution, being much higher at the bottom and moderating progressively towards the top. Second, this is so because income levels at the bottom of the EU-wide distribution are more responsive to changes in the business cycle, so that they rise more during good times in labour markets, therefore reducing EU-wide income inequality (and resulting in income convergence between EU countries). This was the case over most of the period, during the economic expansions of 2006–2008 and 2013–2019, while the Great Recession and the pandemic provide two contrasting examples of labour market behaviour in times of economic crisis.

Between 2008 and 2013, income levels were negatively affected over the entire distribution, but especially at the very bottom of the EU-wide income distribution (mainly in decile 1), which led to growing EU-wide income inequality and reflects the halt in the process of

Figure 5: Bottom EU-wide income deciles perform better in economic upturns while top deciles perform worse (changes in income over four subperiods, by decile, EU-wide, 2007–2022, %)



Notes: *The EU aggregate includes all Member States except Croatia. Owing to the one-year lag in EU-SILC's income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

income convergence between EU countries, as explained earlier. In contrast, despite deteriorating economic activity levels during the pandemic, income levels behaved rather similarly to previous subperiods of economic expansion: income levels continued to grow between 2019 and 2021 (although more moderately than in 2006–2008 and 2013–2019) and they did so relatively more at the bottom of the EU-wide distribution, which explains the decline in EU-wide income inequality. The key difference from the Great Recession was the absence of employment turbulence, due to the job retention schemes deployed during the pandemic, which resulted in the EU27 unemployment rate increasing only from 6.8% in 2019 to 7.2% in 2020 and 2021. Chapter 4 will provide a direct comparison between the Great Recession and the pandemic across EU countries.

Summary

EU-wide income inequality declined significantly between 2006 and 2021. This downward trend was reversed only between 2008 and 2013, during the Great Recession and its aftermath; it resumed thereafter and continued even in the most recent years against the background of the COVID-19 pandemic.

This notable decline in EU-wide income inequality is entirely driven by a strong income convergence between the Member States, since income inequality within these countries was on aggregate broadly similar in 2006 and 2021. This process of convergence is reflected by the remarkable income growth at the bottom of the EU-wide income distribution (where lower-income countries such as the CEE Member States are more prevalent), while growth in income levels has been more subdued in the middle and at the top of the EU-wide income distribution.

The analysis confirms that the remarkable income growth at the bottom of the EU-wide wage distribution has played a key role in driving inequality downwards, which reflects income convergence between Member States. Income levels at the bottom of the EU-wide distribution are more responsive to changes in the business cycle. They have been pushed upwards by higher growth in wage levels and by better employment outcomes. Moreover, the avoidance of an unemployment surge during the pandemic explains the very different changes in EU-wide income levels compared with those of the Great Recession.

3 Central and eastern European countries drive income convergence of Member States

This chapter examines trends in average household disposable income across EU Member States between 2006 and 2021. This indicator represents the financial means available to families to cover their needs and thus is a measure of economic development and well-being. The analysis compares household disposable income levels and looks at their convergence between Member States. It also examines how income levels have been affected by changes in the business cycle, most notably the impact of the Great Recession and the COVID-19 pandemic.

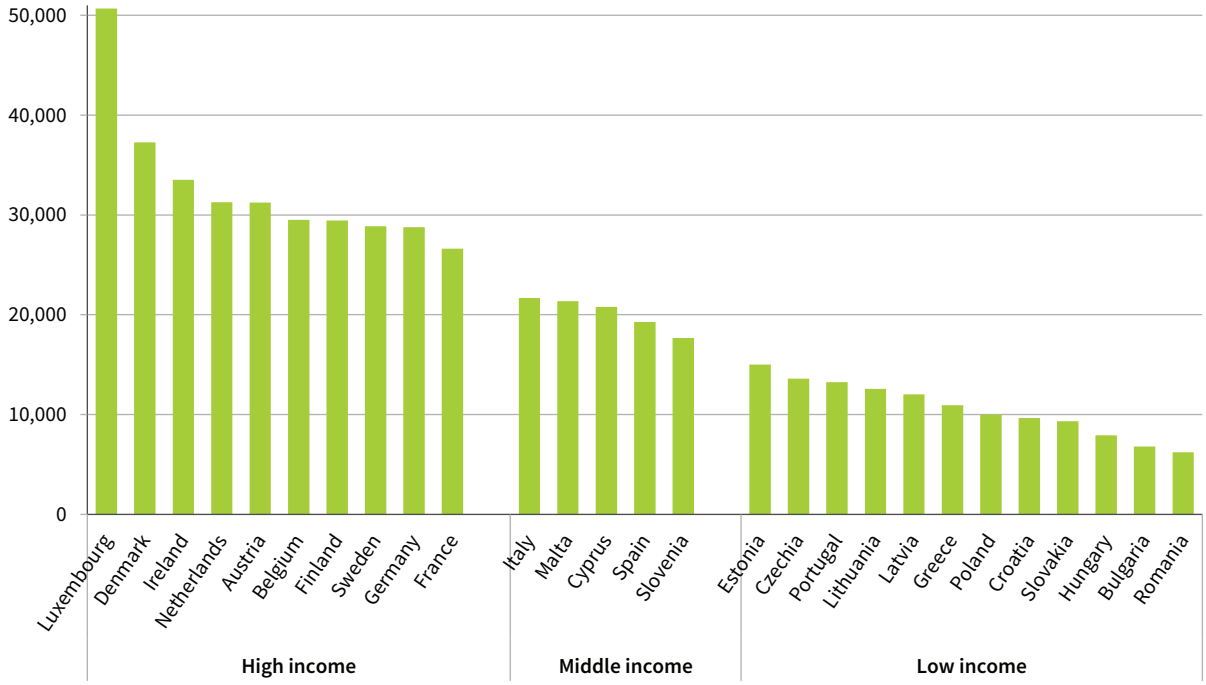
Differences between Member States

Significant income differentials exist between EU countries. Figure 6 shows the yearly equivalised household disposable income reported by survey respondents across EU countries (in terms of average levels in euro in nominal terms, without adjusting for differences in the cost of living) in 2021. It reveals stark differences, with average income ranging from more than €50,000 in Luxembourg to barely more than €6,000 in Romania.

EU Member States can be broadly split into three groups based on their income levels:

- 10 high-income countries, all of them in the EU14, comprising countries from the continental cluster (Austria, Belgium, France, Germany, Luxembourg and the Netherlands), the Nordic Member States and Ireland
- 5 middle-income countries, which can be generally labelled as Mediterranean (Cyprus, Italy, Malta, Slovenia and Spain)
- 12 low-income countries, including the 10 CEE countries, plus Greece and Portugal

Figure 6: Average income levels vary greatly across EU Member States, 2022 (€)



Note: *Data refer to the average yearly equivalised household disposable income in nominal terms.*
Source: *EU-SILC 2022 edition (income referring to 2021)*

Upward convergence in income levels

Strong upward income convergence between EU countries has taken place.[7] Although between-country income differentials are still significant within the EU, they reduced greatly over the period studied. The best way to capture the between-country developments behind the declining trend in EU-wide income inequality described in the previous chapter is to use EU-SILC data on average household disposable income levels across EU countries in real terms (adjusted by inflation) and in euro adjusted by PPP to take into account differences in price levels across countries.[8]

Once these data are used, cross-country differentials are still notable, but less so.[9] This can be seen in Figure 7, which depicts income levels in 2006 in the Member States and the changes over the subsequent 15 years. There is a strong negative association between the two variables, revealing the intensity of the process of income convergence between EU countries that took place over the period and is explained by developments at both extremes of the income level scale, but especially at its lower bound.

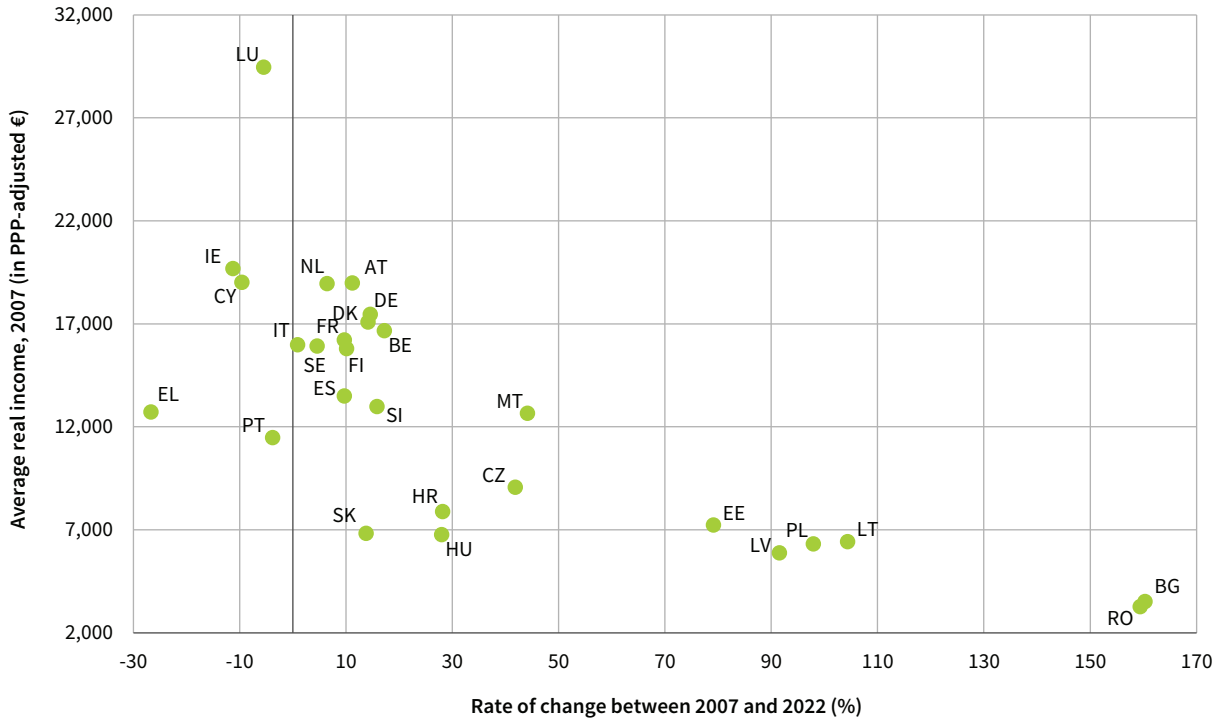
- At the bottom of the income scale, 9 of the 10 CEE countries, which had the lowest income levels in 2006, saw the largest increases by far among EU countries. Real income levels more than doubled in Bulgaria and Romania, doubled in Lithuania, almost doubled in Poland and Latvia (and Estonia, to a lesser extent), increased by more than 40% in Czechia and increased by almost 30% in Croatia and Hungary. Slovakia is the only country whose income growth (14%) was not among the highest, despite still being above the average of all EU countries. This income growth among CEE countries has been remarkable and is the main reason behind the upward income convergence between EU countries, although these 10 countries were still among those with the lowest real income levels in 2021. However, in five of them average income levels had exceeded those of Greece and Portugal.
- At the top of the income scale, in many of the countries characterised by the highest income levels in 2006, real income levels have grown only modestly or even declined. Virtually all of them are from the EU14, mainly Continental and Nordic countries. Average incomes declined in Luxembourg and Ireland (as well as Cyprus outside the EU14), remained stable in Italy, increased negligibly (by less than 10%) in Sweden, the Netherlands, France and Finland, and increased moderately (by less than 20%) in Denmark, Austria, Germany and Belgium. This generally sluggish growth in income levels among most of these high-income countries is another factor explaining income convergence between EU countries, although it is not as significant as the upward push coming from the income increases in CEE countries.
- Convergence between EU countries could have been even stronger if the small group of countries that were characterised by medium income levels in 2006 had managed to converge significantly towards higher income levels, as CEE countries did. Among these countries, which can generally be classed as Mediterranean, the only one that managed to significantly close the gap with those countries characterised by higher income levels (and therefore converge) is Malta. Spain and Slovenia failed to converge significantly because their income growth was rather modest, while real income levels even declined in Portugal and especially in Greece. Italy could also be placed in this Mediterranean cluster as another example of a country with negligible improvement in incomes, but its average income is higher.

7 The degree of convergence is assessed in this report by comparing the starting levels (of income in this case) with their growth rates over the period. This is referred to as beta convergence. It can be characterised as upward convergence when the average income level across countries increases, as is the case. For more details on Eurofound's framework for monitoring convergence, see https://www.eurofound.europa.eu/en/resources/eu-convergence-monitoring-hub.

8 Price differentials between countries are already taken into account by PPP, so all income levels across countries have been adjusted by the general EU inflation rate to obtain the incomes in real terms and in PPP-adjusted euro, which is the appropriate indicator to cover EU-wide income developments.

9 In 2006, real income levels in PPP-adjusted euro ranged from 29,466 in Luxembourg to around 3,266 in Romania. The adjustment by PPP reduces income levels in countries such as Luxembourg (characterised by high incomes but high price levels too) and reduces them in countries such as Romania (characterised by low incomes but lower price levels).

Figure 7: Upward income convergence between EU Member States (real income in PPP-adjusted euro in 2007 and change over 2007–2022)



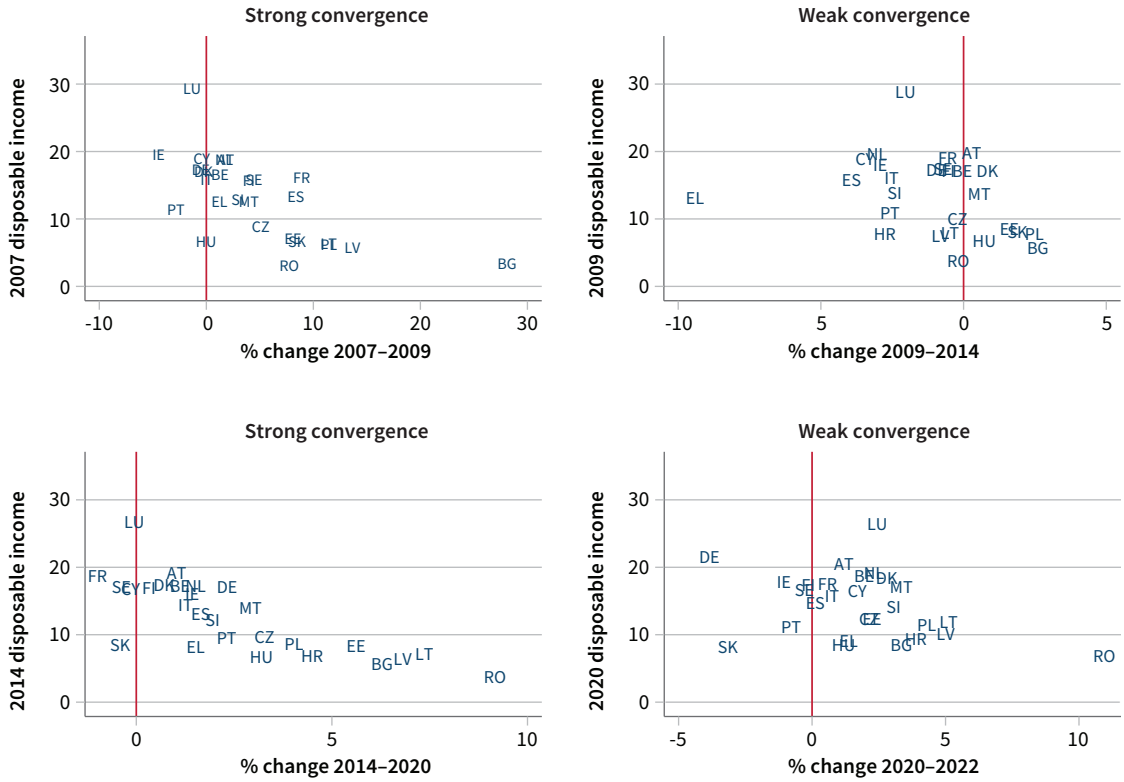
Notes: *The degree of convergence (beta convergence) is assessed by comparing the starting income levels with their growth rates over the period: the correlation coefficient between the two variables shown is 0.54. For Croatia, change is measured using the 2010 EU-SILC edition.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure 8 provides data on the subperiods between 2006 and 2021, which makes it possible to assess the characteristics of income convergence over different economic cycles.

- Income convergence was strong during economic expansion (2006–2008 and 2013–2019), characterised by much stronger income growth among lower-income countries (mainly CEE countries) and more modest growth among higher-income countries.[10] Mediterranean countries generally failed to converge significantly over the period, but in some cases their income levels rose significantly (in Spain between 2006 and 2008 and in most of them between 2013 and 2019).
- Convergence stalled between 2008 and 2013. This is because, despite the Great Recession resulting in income corrections in a majority of countries, it had a very uneven impact within Europe. On the one hand, most higher-income countries weathered the crisis better: average incomes grew in Austria, Belgium and Denmark; fell moderately in France, Finland, Germany and Sweden; and declined more significantly only in Cyprus, Ireland, Luxembourg and the Netherlands. On the other hand, the correction in income levels was generally stronger among many middle- and low-income countries: it was very significant in several Mediterranean countries (Greece and Spain, and to a lesser extent Italy and Portugal), which largely explains why these countries generally failed to converge towards higher income levels during the period, and also in some CEE countries (Croatia, Latvia and Lithuania). Income divergence between EU countries was prevented only by the moderate income falls in some CEE countries (Czechia and Romania) and income rises in some others (Bulgaria, Estonia, Hungary and especially Poland and Slovakia).
- Income convergence largely stalled (although somewhat less thoroughly) during the COVID-19 pandemic (2019–2021). The impact of this crisis on income levels was moderate, as incomes generally continued to increase in a majority of countries (although more moderately than in 2012–2019) and declined only in six of them between 2019 and 2021 (significantly in Germany and Slovakia, moderately

10 The significant progress in France during the first subperiod is largely due to a statistically induced large increase in income levels from the 2008 EU-SILC edition.

Figure 8: Income convergence between EU Member States is stronger in times of economic expansion (real income in PPP-adjusted euro and average yearly change over subperiods, %)



Note: *Owing to the one-year lag in EU-SILC's income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021. Data from EU-SILC 2010 instead of 2009 are used for Croatia in the second subperiod. There is a break in EU-SILC data for Germany from the 2020 edition, so its income growth for the third subperiod is considered using EU-SILC 2014–2019 data. The degree of convergence (beta convergence) is assessed by comparing the starting income levels with their growth rates over the subperiods: the coefficients of correlation between the two variables depicted for each of these subperiods are 0.44, 0.11, 0.57 and 0.13, respectively.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

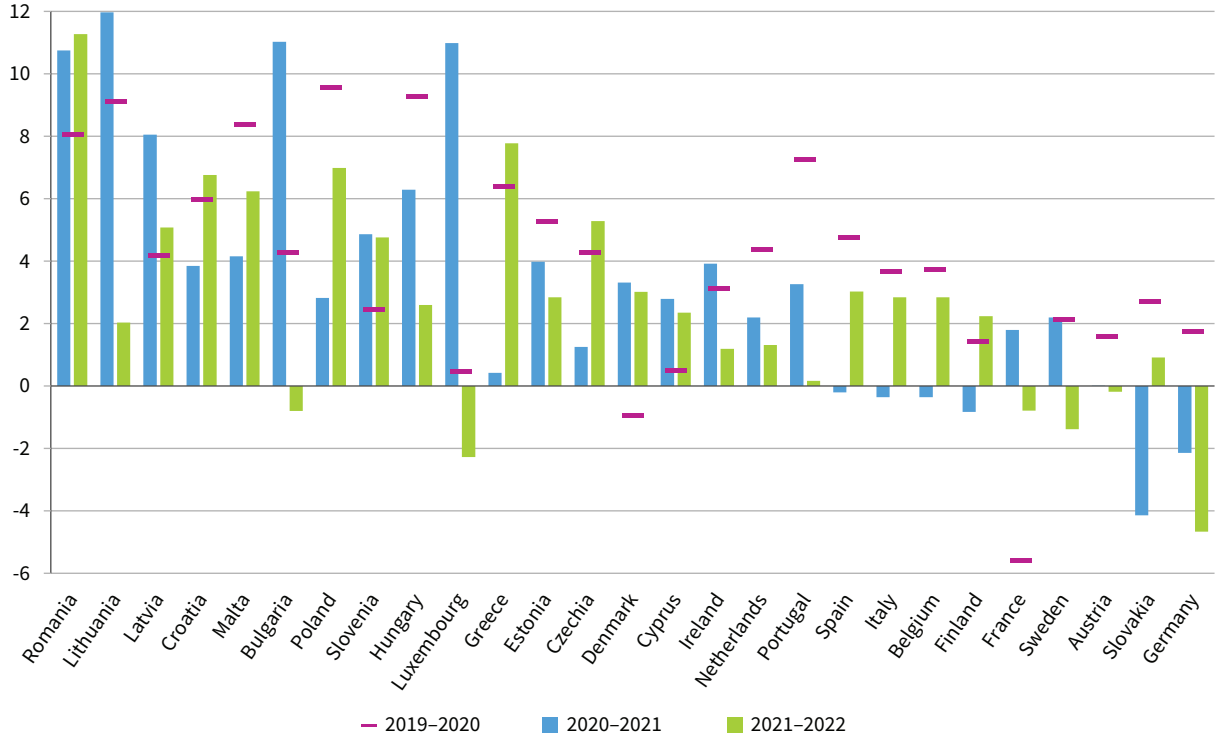
in Ireland and Portugal, and negligibly in Finland and Sweden). Moreover, the very uneven impact of the Great Recession was not repeated during the pandemic: the weak income convergence is again mainly the result of income levels growing more in several CEE countries (especially Romania, Lithuania, Latvia, Poland, Croatia and Bulgaria), and less so in higher-income countries (Austria and France, plus the income declines in Germany, Ireland, Finland and Sweden). Along with these dynamics, the significant growth of income levels among some higher-income countries (Belgium, Denmark, Luxembourg and the Netherlands) and some other developments in lower-income countries (mainly the income decline in Slovakia) explain why income convergence slowed down during the years of the pandemic, between 2019 and 2021.

Income levels continued to grow (albeit more moderately) during the years of the pandemic. To provide a more realistic picture of the impact of the pandemic, Figure 9 shows the changes in real income levels in national currencies (not in PPP-adjusted euro, since the primary objective here is not to assess convergence). The data depict the changes in income levels in the first and second years of the pandemic, and in the year before to provide the context of the trends before COVID-19. These data yield three main insights.

First, the COVID-19 pandemic negatively affected the trends in income growth across EU countries. This is because the expansion in real income levels prior to the pandemic was larger than the subsequent one in 2020 and/or 2021 in a majority of countries.

Second, this downward impact was rather moderate, since income levels continued to rise in most EU countries. In Figure 9, countries are ranked by the change in income levels between 2019 and 2021, revealing a decline over the course of the pandemic in only three countries: Germany (-6%), Slovakia (-3%) and (negligibly) Austria (-0.2%). In contrast, real income levels increased between 2019 and 2021 in the rest of the EU27, especially (above 9%) in most of the EU13 (Romania, Lithuania, Latvia, Croatia, Malta, Bulgaria, Poland, Slovenia and Hungary).

Figure 9: Income levels expanded during the pandemic, albeit more moderately than previously (changes in real income levels in three periods, EU Member States, 2019–2022, %)



Notes: *Owing to the one-year lag in income data, the periods refer to the year before the pandemic (2018–2019, and 2017–2018 for Germany to avoid the data revision), the first year of the pandemic (2019–2020) and the second year of the pandemic (2020–2021). Countries are ranked based on the change in income levels over the two years of the pandemic (between 2019 and 2021, EU-SILC editions 2020–2022), from biggest increase to biggest decline.*
Source: *EU-SILC 2020–2022 editions (referring to income 2019–2021)*

Third, some important differences exist between the impacts of the pandemic in 2020 and in 2021. When economic activity declines, as in 2020, the impact can be uneven because lower-income countries are typically affected more. Income levels declined in six countries in 2020, in both low- and middle-income countries (Slovakia, Italy and Spain) and high-income countries (Germany, Finland and Belgium), while they continued to increase in the other 21 countries, especially in several of the EU13. Nevertheless, the slowdown in income growth compared with before the pandemic was more significant among middle- and lower-income countries (Croatia, Czechia, Estonia, Greece, Hungary, Malta, Poland and Portugal), while it was less significant among high-income countries, several of which even registered higher income growth in 2020 than in the previous year (Luxembourg, Ireland, Denmark, Sweden and France). Although far from what occurred in the Great Recession, this somewhat uneven impact of the first year of the pandemic shows again that higher-income countries tend to generally weather better the negative consequences of crises for their labour markets.

As economic activity recovered during 2021, income patterns returned to the familiar trend of much higher income growth among lower-income countries and much more moderate growth among high-income countries. Real income levels declined in six countries in 2021 (Germany, Luxembourg, Sweden, Bulgaria, France and Austria), all of them except Bulgaria high-income countries, while income levels expanded the most in lower-income countries (above 5% in Romania, Greece, Poland, Croatia, Malta, Czechia and Latvia). This explains why income convergence, which was strong before the emergence of the pandemic, resumed in 2021, after almost coming to a halt in 2020.

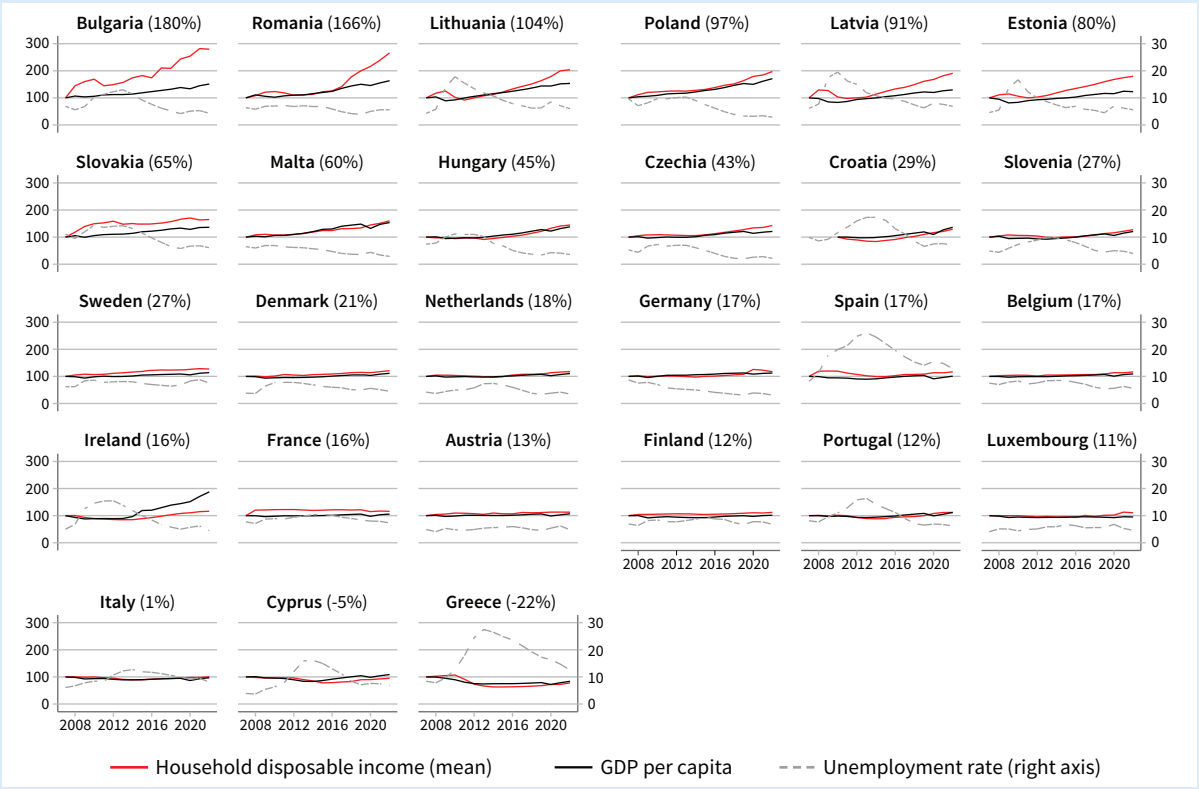
Box 1 provides a more detailed picture of the yearly changes in income levels across EU countries and shows how they are driven by economic growth and employment patterns.

Box 1: Income convergence pushed by economic convergence between EU countries

Income convergence is driven by economic growth, which is reflected by the similar trends in average household disposable income and gross domestic product (GDP) per capita across EU countries depicted in Figure 10. These data are provided in national currencies instead of in PPP-adjusted euro, because the main objective here is not only to examine convergence trends but also to illustrate changes in economic activity and income levels in real terms across EU countries. There are two main takeaways.

First, convergence is ongoing within the EU generally, mainly due to strong economic performance in the CEE countries, which has resulted in converging levels of GDP per capita and of income.[11] The figure reflects the very large gap between the magnitudes of the growth in both indicators between CEE countries and EU14 countries. Countries are ranked in the figure based on the magnitude of the growth in their real income levels between 2006 and 2021 (which is shown next to the country label): the largest expansion took place in the EU13 countries (except Cyprus, where average income declined), and especially in CEE countries. Growth was much more modest among EU14 countries, with income levels even declining between 2006 and 2021 in Greece and remaining stable in Italy. The same occurred with GDP per capita, which grew most among the EU13 and much more moderately among EU14 countries, even declining in a few cases (Greece, Italy and Luxembourg).[12]

Figure 10: Economic convergence explains income convergence between EU Member States (average income, GDP per capita and unemployment rate, 2007–2022, %)



Notes: *Data on average household disposable income and GDP per capita are provided in real terms (adjusted by inflation) and in indices (2007 = 100). Unemployment rate (for people aged 15–74) data are plotted on the right-hand axis. Countries are ranked by the magnitude of the change in real income levels over the period (shown next to the country label), from biggest increase to biggest decline.*
Sources: *EU-SILC 2007–2022 editions for income (income referring to 2006–2021); Eurostat for GDP per capita and unemployment data*

11 The degree of convergence (beta convergence) is assessed by comparing the starting levels (of income or GDP per capita) with their growth rates over the period. This process of convergence has also occurred in wage levels, which are the main component of income levels among households, as is shown in the next chapter, and in more detail in Eurofound (2015) and Vacas-Soriano et al (2020).

12 Ireland is an outlier, because it registered the largest expansion in GDP per capita, although this is largely a statistical effect due the country being a hub for multinational tech and pharmaceutical companies as a result of its generous corporate-tax regime. The income generated by such large firms is accounted for in the Irish GDP, although it is then funnelled to their headquarters or shell companies abroad, which explains the large difference between the GDP and gross national income levels in Ireland.

Second, the figure reflects the influence of changes in economic conditions (income and GDP per capita levels following the business cycle, and unemployment rates moving against it). The Great Recession led to a deep economic contraction that resulted in growing unemployment and loss of labour income among a significant share of the population. As a result, average household disposable income levels declined across most EU countries during 2008–2013, but especially on the European periphery (Mediterranean countries, the Baltic states and some CEE countries plus Ireland). Indeed, some Mediterranean countries have not yet reached pre-2008 levels in either income (Greece, Spain and Cyprus, while Italy is only just at that level) or GDP per capita (Greece and Italy, while Spain is only just at that level), which explains why they have largely failed to converge in the same way as CEE countries over the 15 years.

The figure also shows the much more moderate impact of the pandemic on income levels, which continued expanding (albeit more modestly) across most EU countries (see Figure 9 for more clarity). This resilience is explained by the fact that, although GDP per capita declined across virtually all EU27 countries at some point during the pandemic, unemployment rose only very moderately, thanks to the extensive deployment of publicly funded job retention schemes, as will be shown in the next chapters.

Summary

There are major disparities in average disposable income between the Member States. Average income is relatively high in Continental and Nordic Member States, intermediate in most Mediterranean countries, and lower in CEE countries.

These disparities have been reduced by strong income convergence between EU countries, which was identified in Chapter 1 as the force behind the reduction in EU-wide inequality. This chapter confirms that this convergence was mainly due to catch-up income growth in the EU13, while income growth in many of the EU14 was more sluggish over the period and even declined in some. Unlike CEE countries, income levels in Mediterranean countries generally failed to converge over the period, mainly as a result of the uneven impact of the Great Recession, which was especially negative in Mediterranean (and some CEE) countries.

Income levels are affected by changes in the business cycle, but this chapter shows that the pandemic did not have the strong or uneven impact of the Great Recession. Income levels continued to rise (albeit more moderately) in most countries during the pandemic (with the exceptions of Germany and Slovakia, where they declined significantly), and generally rose more between 2019 and 2021 in several low-income CEE countries than in higher-income EU14 countries.

4 Trends in income inequality differ by Member State and region

This chapter presents an analysis comparing income inequality across the Member States. It starts by examining the different trends over time, where income inequality has been declining in some Member States while it has risen in others. The factors shaping these trends are briefly examined, including the family pooling of resources and the effect of the welfare state. This is followed by an analysis of how changes in income inequality are affected by the business cycle, making a comparison of the different impacts of the Great Recession and the COVID-19 pandemic. Finally, the chapter looks briefly at two other indicators of income inequality, the Palma index and the S80/S20 ratio.

Generally stable income inequality conceals diverging cross-country patterns

The relative stability of household disposable income inequality between 2006 and 2021 on aggregate across the Member States masks diverging cross-country patterns, which deserve close attention. Figure 11, which compares the Gini indices in 2021 with those in 2006, offers three main insights into income inequality in the EU.

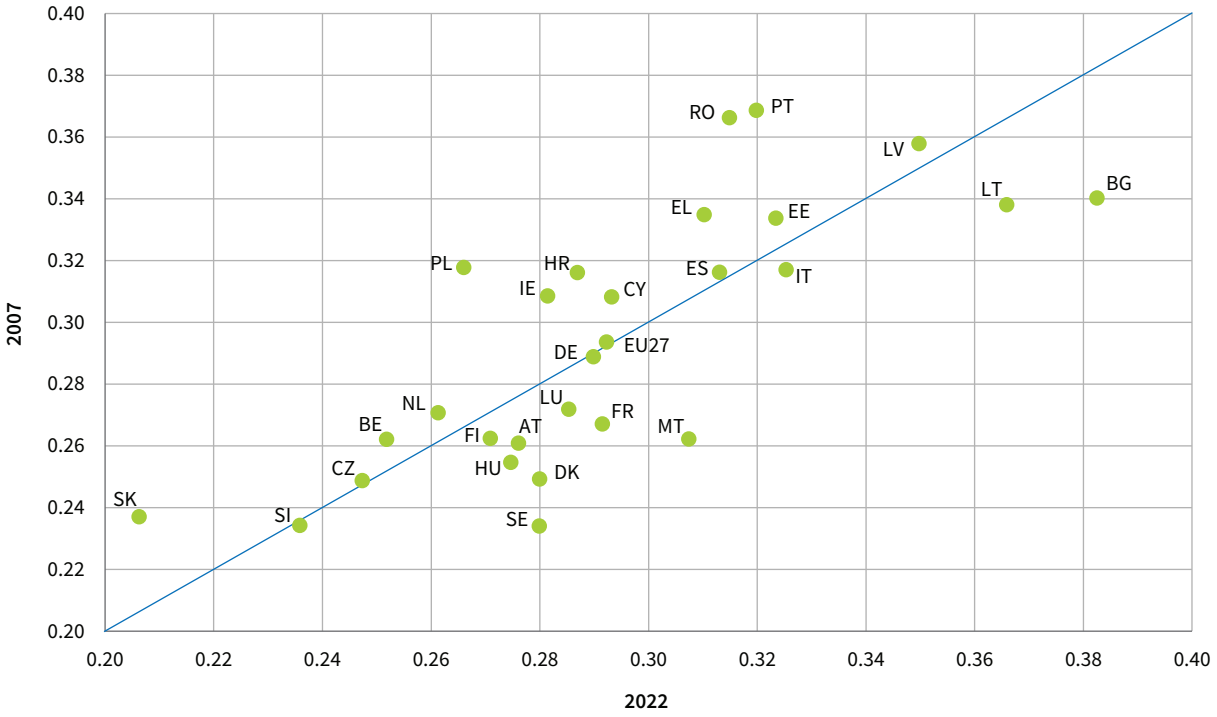
First, income inequality diverges strongly across EU countries. Based on the most recent data available for 2021, income inequality ranges from a Gini index of 0.38 in Bulgaria to below 0.21 in Slovakia, although most countries have a value between 0.25 and 0.35 (the unweighted average across EU countries being 0.29). Income inequality is relatively high in a group of 10 countries (Gini index above 0.3), including both CEE countries (Bulgaria, Lithuania, Latvia, Estonia and Romania) and Mediterranean countries (Italy, Portugal, Spain, Greece and Malta), while it is lowest (Gini index at or below 0.25) in three CEE countries (Slovakia, Slovenia and Czechia) and Belgium, followed by other EU14 countries such as the Netherlands, Austria and the Nordic countries. See Box 2 for a characterisation of countries based on inequality across different measures of income.

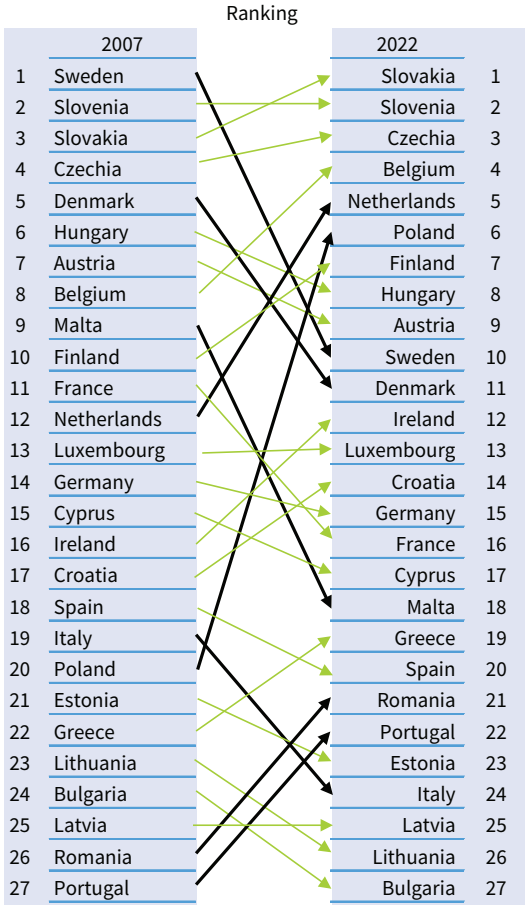
Second, trends over time also diverge across countries: inequality has increased in around half (13) of the countries, especially in Sweden, Malta, Bulgaria and Denmark, while it has declined in the other half (14), especially in Poland, Romania, Portugal and Slovakia. These mixed trends explain the stability of average income inequality across countries over the period.

Third, convergence in income inequality between EU countries took place over the period, although of a smaller magnitude than the convergence in income levels.[13] This convergence results from developments at both extremes: among the countries with the lowest levels of inequality in 2006, significant increases took place in Sweden, Denmark, Malta, Hungary and France; among the countries with the highest inequality levels in 2006, significant reductions occurred in Romania, Portugal, Greece, Poland and Croatia. This has resulted in significant changes in the relative position occupied by EU countries on the inequality scale, shown in Figure 11.

13 To assess this (beta) convergence, the coefficient of correlation between the initial income inequality value in 2006 and its rate of growth between 2006 and 2021 is 0.2, while it is 0.54 for convergence in income levels (see Figure 7).

Figure 11: Diverging cross-country patterns in income inequality leading to significant changes in the positioning of Member States, 2007 and 2022 (upper panel: Gini index; lower panel: ranking)





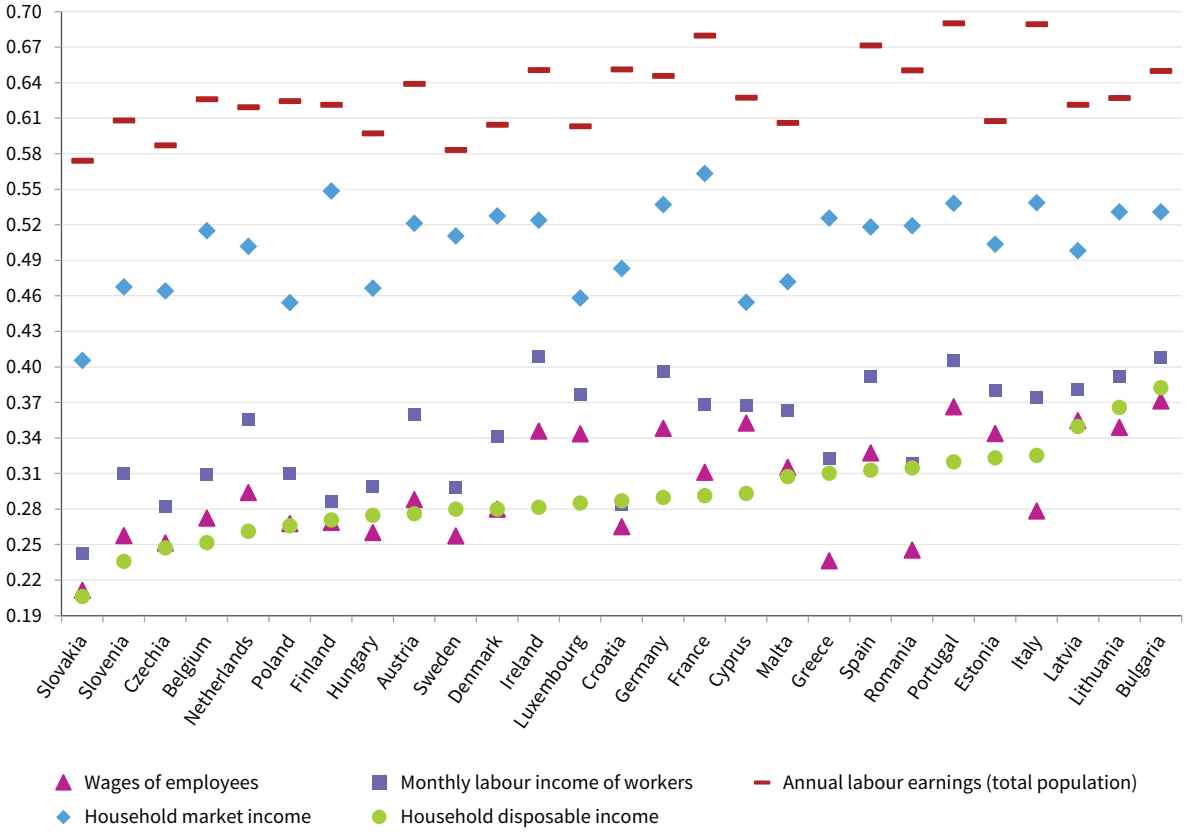
Notes: *In the lower panel, countries are ranked from lower to higher income inequality. Black arrows signify those Member States that have moved five places or more. For Croatia, EU-SILC 2010 data is used instead of 2007.*
Source: *EU-SILC 2007 and 2022 editions (income referring to 2006 and 2021)*

Box 2: Map of income inequality based on different measures of income

The cross-country disparities in household disposable income levels are influenced by a wide range of factors, such as the general level of economic development and total productivity, sectoral structure, economic and labour market outcomes and turbulence, family structures and public policies. Income inequality changes when different measures of income are considered (see Figure 12). The Gini index for the Member States:

- is relatively low when measuring the most restricted sample, that of full-time equivalent monthly wages among employees
- increases when considering total monthly earnings of all workers, which are affected by disparities in working hours and in labour income among self-employed people
- reaches a peak when measuring annual labour earnings of the whole population, as unemployed and economically inactive people with no earnings are brought into the sample (as well as people over 65)
- falls when measuring household market income, since income is pooled at the household level (and some intra-household transfers are taken into account)
- falls further when measuring household disposable income, since income redistribution by the welfare state has a strong role in cushioning income inequality (so much so that inequality in household disposable income is even lower than for monthly wages among employees in a majority of countries)

Figure 12: Differences in income inequality based on different measures of income, EU Member States, 2022 (Gini index)



Note: *Countries are ranked by household disposable income inequality, from lowest to highest.*
Source: *EU-SILC 2022 edition (income referring to 2021)*

The ranking of EU countries in terms of household disposable income inequality depends on many of the abovementioned factors. Since the main component of income earned by families comes from labour earnings, inequality in household disposable income is closely related to inequality in the wages of employees and the

monthly labour income of all workers and much less related to inequality in annual labour earnings and household market income.[14] While a detailed analysis of the impact of each of these factors is beyond the scope of this report, it is possible to draw a general map of inequality across European regions, based on their levels of household disposable income inequality and how these are shaped by some of the most important factors described.

- Mediterranean countries have relatively high household disposable income inequality (Italy, Portugal, Spain, Greece, Malta and Cyprus are among the 11 countries with the highest levels). These countries tend to have relatively high inequality in wages of employees and labour income of workers (except Greece and to a lesser extent Italy in the case of wages of employees) and very high inequality for annual labour earnings of the whole population (except in Malta), due to generally low employment and high unemployment rates. The family pooling of resources and the role of the welfare state (relatively weak in all six) contribute to the position of these countries among the most unequal ones.
- The Baltic states merit a particular characterisation (separate from other CEE countries) as a country group with high income inequality. Lithuania, Latvia and Estonia are among the countries with the highest inequality in wages of employees and labour income of workers, but, unlike the Mediterranean countries, they have an intermediate inequality position when measured by annual labour earnings of the population. They are at the top of the income inequality scale again in terms of household disposable income because the effect of their welfare state income redistribution is particularly poor. Bulgaria, the most unequal Member State, generally presents the same features as the Baltic states. These four countries are among the five with the highest Gini indices in 2021.
- The rest of the CEE countries are among those with the lowest household disposable income inequality (Slovakia, Slovenia, Czechia, Poland and Hungary, and Croatia to a lesser extent, since it occupies an intermediate position). These countries are generally characterised by the lowest inequality in terms of wages of employees and labour income of workers. While Slovenia, Poland and Croatia move up to intermediate inequality positions in relation to annual labour earnings among the whole population, the generally strong effect of the family pooling of resources places these countries again among those with the lowest inequality in market income. They generally maintain those positions in the household disposable income inequality ranking, indicating that welfare state redistribution is around or above average in these countries (with the exception of Croatia).

  Romania shares most features of this country cluster. The main difference is that it is characterised by relatively high income inequality due to the stronger effect of inactivity and unemployment (pushing inequality in annual labour earnings of the whole population upwards) and the weaker role of the welfare state in cushioning market inequality.
- The Nordic Member States have below-average household disposable income inequality, although not so low as in the past, as it has increased strongly in the last 15 years in Sweden and Denmark, and in Finland to a lesser extent. Inequality in wages of employees and labour income of workers is relatively low, and inequality in annual labour earnings of the whole population is even lower, given their high labour market participation rates. They move up the inequality scale very substantially in relation to household market income, since the role of the family pooling of resources in reducing inequality is the weakest in the EU. The relatively strong role of the welfare state in redistributing income, however, places these countries relatively low in the household disposable income inequality ranking.
- The Continental cluster of Member States is harder to characterise because of its heterogeneity. Some of these countries have relatively low household disposable income inequality (Belgium and the Netherlands, and Austria to a lesser extent), but others have intermediate levels (Luxembourg, Germany and France). They generally have intermediate to high inequality in wages of employees and labour income of workers (with the exception of Belgium), intermediate positions in inequality in annual labour earnings of the whole population (which is relatively high in France and low in Luxembourg) and a spread of positions in household market income, with most countries in intermediate positions (but Luxembourg having lower inequality, and France and Germany having relatively high inequality). The welfare state's role in redistributing income is significant in most of these countries, which explains the notable decline in the inequality ranking on moving to the measure of household disposable income (except in Luxembourg).

14 The coefficient of correlation between household disposable income inequality and inequality in other measures of income is 0.43 for wages of employees; 0.49 for monthly labour income of workers; 0.23 for annual labour earnings of the population; 0.27 for household market income.

Different trajectories in the evolution of income inequality across EU countries. Looking in more detail at changes in income inequality across EU countries, several types of trajectories can be identified. Figure 13 depicts the yearly changes in income inequality in the Member States, together with changes in wage inequality and employment levels (since wages are the main component of household income, and employment turbulence also has an impact on income inequality). Moreover, Figure 14 shows the changes in income levels across the 10 deciles of the income distribution, which are behind the trends in income inequality. Although capturing the complexity of each country pattern in household disposable income inequality is beyond the scope of this report, it is possible to cluster the EU27 into three groups.

- **Declining income inequality.** In this group of eight countries, income inequality has declined more or less consistently, resulting in some of the largest inequality reductions. It includes mainly CEE countries (Croatia, Czechia, Poland, Romania and Slovakia), but also Belgium, Ireland and Portugal.

  Data on income growth introduce a nuance within this group. On the one hand, the CEE countries represent the better picture, characterised by stronger income growth, which was higher among the low-income population (with the exception of Czechia, which explains its negligible inequality reduction over the period, mainly due to an increase in the most recent years). On the other hand, Belgium, Ireland and Portugal represent more moderate income growth (also relatively strong at the bottom of the distribution, leading to reductions in income inequality).
- **Mixed trends in income inequality.** This group is a mix of eight Mediterranean and CEE countries, where income inequality varied significantly over the period (mainly due to the impact of the Great Recession), but where the net change between 2006 and 2021 tends to be moderate. The Great Recession had a significant impact across most of these countries (as reflected by the declines in employment levels depicted in Figure 13), pushing income inequality upwards to varying degrees. Following this episode, different trends emerged: income inequality declined notably in some cases (Cyprus, Estonia, Greece, Slovenia and Spain), while it remained fairly stationary at a new higher level in others (Hungary, Latvia and Lithuania), which explains why the net change in income inequality between 2006 and 2021 has different signs in the countries in this group.[15]

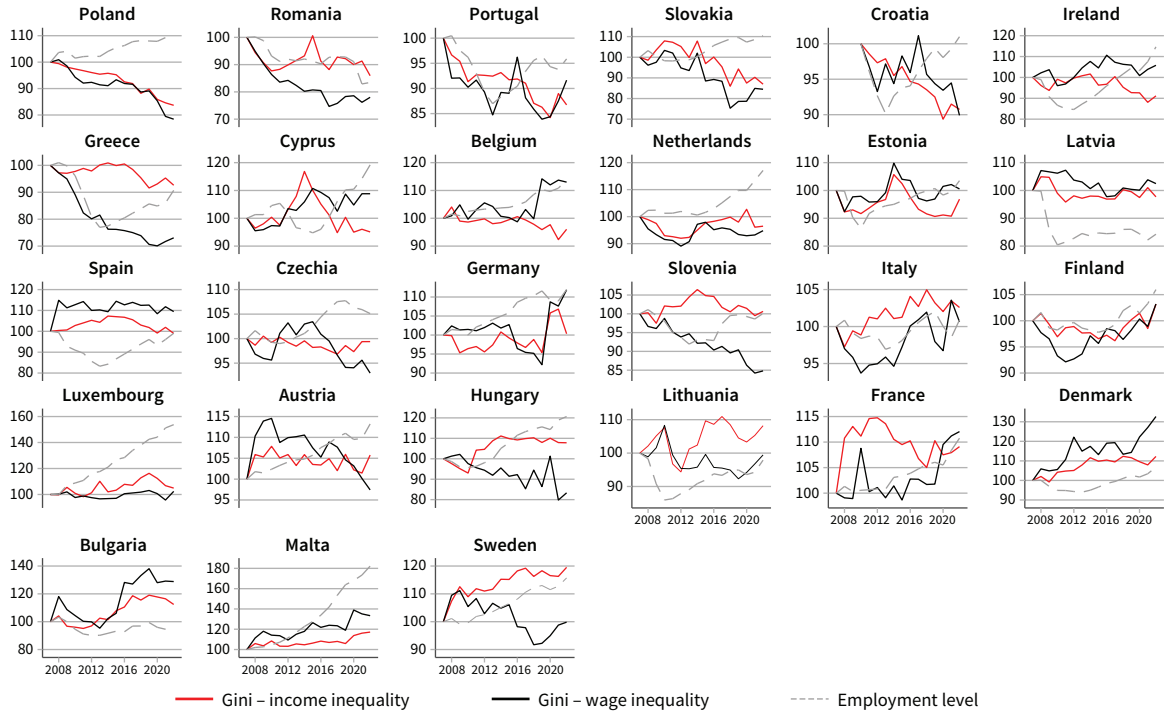
  Data on income growth by income decile help to further characterise this group, since they also reflect the protracted negative impact of the Great Recession. On the one hand, CEE countries (the Baltic states, Hungary and Slovenia) again represent the best picture, since they have much higher income growth. The difference from the CEE countries in the first country cluster is that larger income growth at the bottom of the income distribution does not occur here. On the other hand, income levels increased only moderately (without a clear trend over the income distribution) in Spain, while they even declined over the entire distribution in Cyprus and Greece (less so at the bottom of the distribution, which explains the declining inequality in those countries).
- **Growing income inequality.** This group includes 11 countries where income inequality has tended to follow an upward trend, resulting in some of the largest increases in inequality over the period. It includes mainly EU14 countries: the Continental cluster (Austria, France, Germany, Luxembourg and the Netherlands), the Nordic countries (Denmark, Finland and Sweden) and Italy, plus Bulgaria and Malta from outside the EU14.[16] Unlike the previous group, the impact of the Great Recession has not played such a significant role in driving inequality trends, as reflected by the generally less significant turbulence in employment levels and by the rather consistent upward trend in inequality.

  Data on income growth reveal how this growing inequality was due to subdued growth in income levels among the low-income population. The EU14 represent the worst picture, characterised by generally modest income growth over the period, which was even more sluggish among the lower-income groups (and even declining among the lowest income decile in several cases). On the other hand, the two CEE countries in this cluster are an exception owing to their higher income growth, although it is typically stronger when moving up the income distribution, unlike the CEE countries in the first group.

15 Income inequality declined in five countries (significantly in only Cyprus and Greece, and moderately in Estonia, Latvia and Spain) and increased in three (moderately in Slovenia and more significantly in Hungary and Lithuania) between 2006 and 2021.

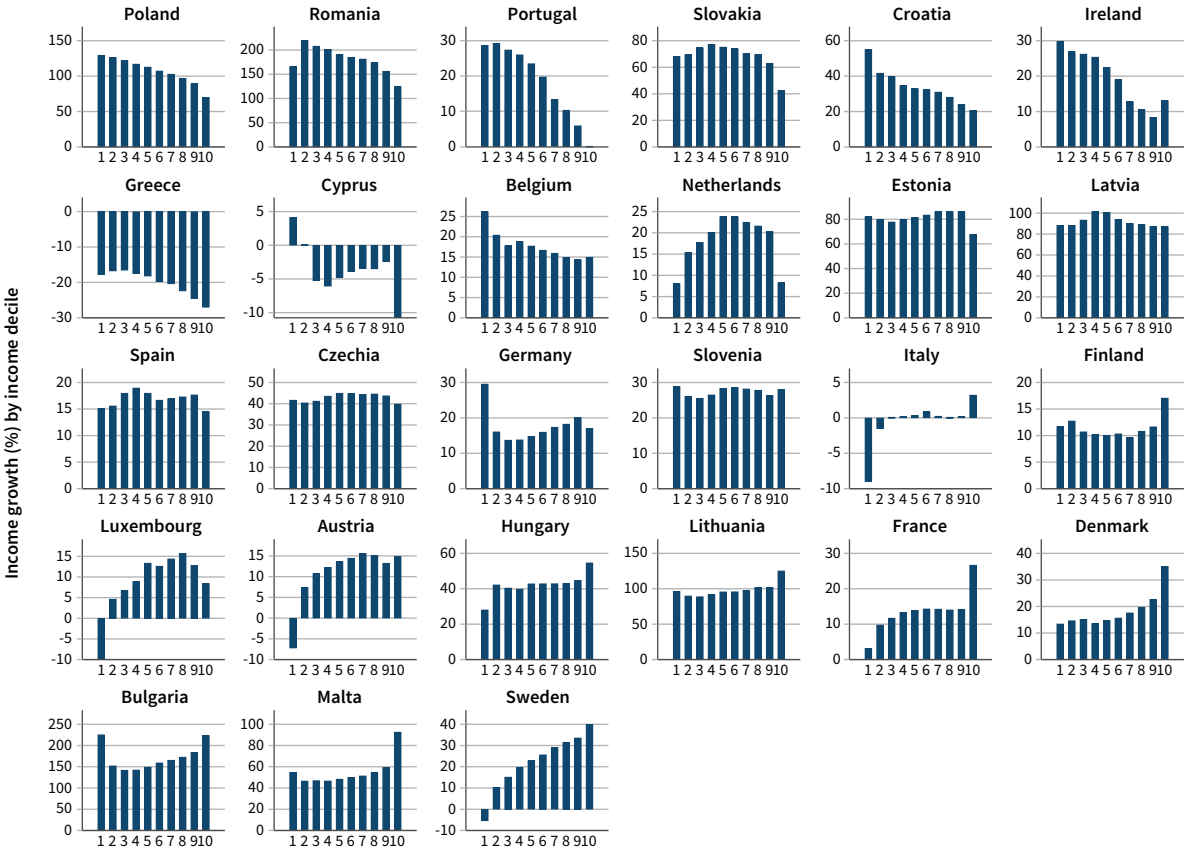
16 In the Netherlands, income inequality declined over the period, but this is entirely due to the large decline in the early years of the period, after which there is a consistent upward trend. In contrast, the increase in inequality in France is entirely due to the initial years, after which it tended to moderate.

Figure 13: Trajectories in the evolution of income inequality, wage inequality and employment level, EU Member States, 2007–2022



Notes: *Data are depicted in indices (2007 = 100). Countries are ranked by the change in income inequality over the period, from biggest decline to biggest increase.*
Sources: *EU-SILC 2007–2022 editions (income referring to 2006–2021); Eurostat for employment levels*

Figure 14: Change in real income level by income decile, EU Member States, 2007–2022 (%)



Notes: *Data for average household disposable income are provided in real terms (adjusted by inflation). Countries are ranked by the change in income inequality over the period, from biggest decline to biggest increase. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Factors shaping trends in income inequality

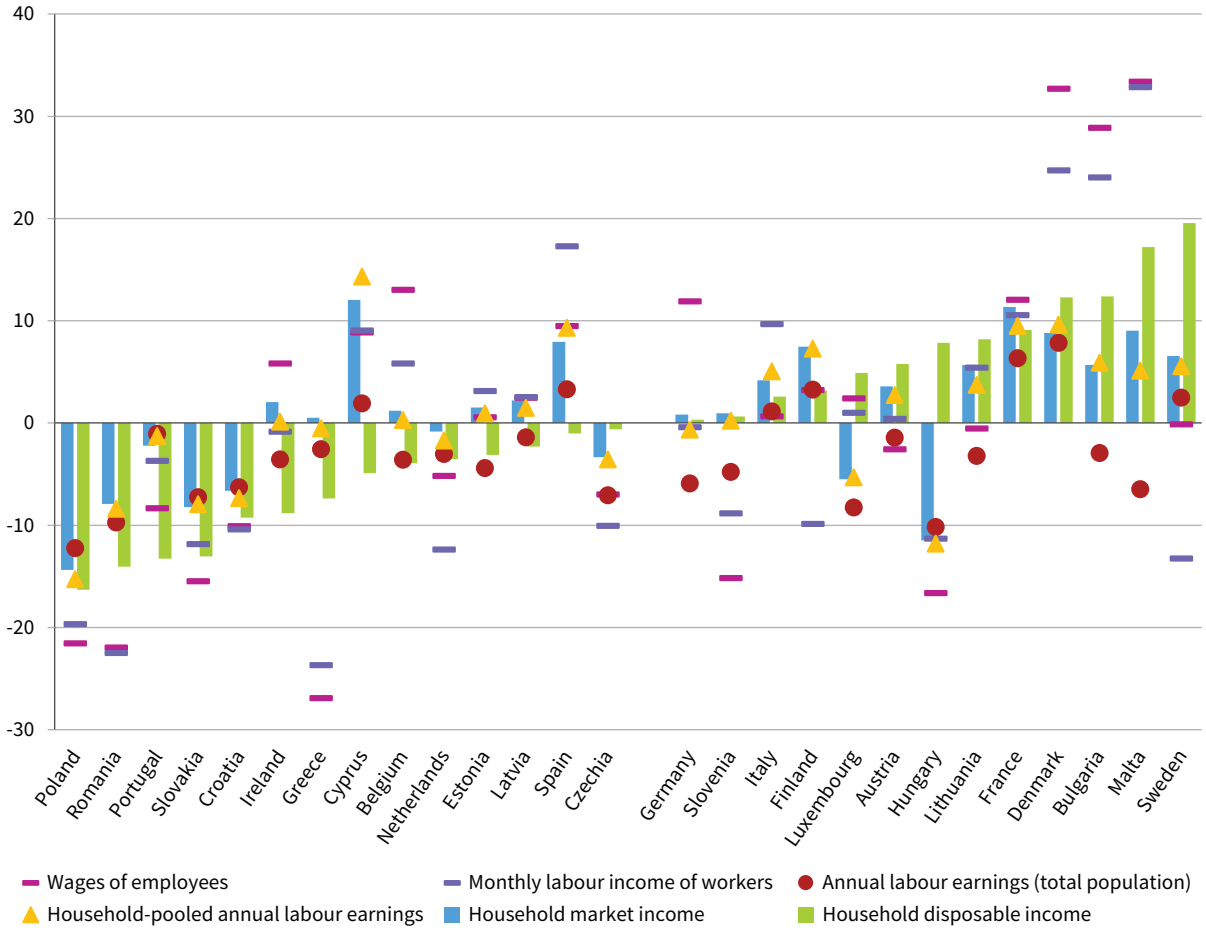
Providing an explanation for the changes in household disposable income inequalities across countries between 2006 and 2021 is beyond the objectives of this report, since there are many factors potentially shaping income disparities, and the relative impact of each of them is specific to each country. Nevertheless, changes in the Gini index over six measures of income, as shown in Figure 15, suggest some pointers about the main factors operating across the EU27.

The six measures of income selected follow a stepwise sequence (see Box A1 in Annex 1 for more details), starting from a more restricted sample and then adding extra sources of income over larger samples: full-time equivalent wages of employees; monthly labour income of workers; annual labour earnings of the population; household-pooled annual labour earnings; household market income; and household disposable income.

Mixed patterns in wage inequality. Labour earnings are the main component of household disposable income in most European households, which explains why trends in both measures of income vary between countries and are quite closely related in most countries. This is reflected in the cases of wages of employees (see Box 3 for more details) and of monthly labour earnings of workers.[17]

Among those countries where income inequality declined over the period, there was a parallel decline in wages more often than not; it occurred in CEE countries (Poland, Romania, Slovakia, Croatia and Czechia),

Figure 15: Evolution of inequality based on different measures of income, change in Gini index, EU Member States, 2007–2022 (%)



Notes: *Countries are ranked by the change in household disposable income inequality over the period, from biggest decline to biggest increase. For details of each of the selected sources of income, see Box A1 in Annex 1. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

17 When looking at the correlation of changes in household disposable income across EU27 countries with that in other sources of income, the strongest correlation is with wages among employees (0.4).

Portugal and Greece (and Ireland in the case of monthly earnings of workers), although wage disparities widened in other countries (Cyprus, Belgium, Estonia, Latvia and Spain). Conversely, among the countries where income inequality surged, there were usually parallel wage inequality increases, as in Malta, Bulgaria, Denmark, France, Luxembourg, Italy and Germany (and in Austria and Lithuania in the case of monthly earnings of workers), although there are a few countries where wage disparities did not widen (Sweden, Hungary and Slovenia, and Finland for monthly earnings of workers).

The growing wage disparities in around half of the Member States over the period may be related to some of the most relevant factors mentioned in the literature: skills-biased technical change, meaning new technologies increase relative productivity, labour demand and wages among high-skilled workers (Violante, 2008); trade specialisation and offshoring, which may have a negative effect on the wages of low-skilled workers in European countries (Blau and Kahn, 2009); and changes in labour market institutions, such as the weakening of trade unions and declining coverage of collective pay agreements (European Commission, 2014) or decentralisation in wage-setting mechanisms in several countries (Visser and Checchi, 2009). Additional factors shaping inequality in monthly earnings of workers are the diversity in working hours (which is hidden when wages are treated as full-time equivalent), which results in temporary and part-time workers occupying the bottom of the wage distribution (Burniaux, 1997); and the inclusion of earnings from self-employment, which are more unevenly distributed than among employees (OECD, 2011).

Box 3: Alignment of wage and income disparities

Apart from other factors described in this chapter, there are two main elements driving changes in income inequality, owing to their effect on labour earnings across countries: employment levels and wages.

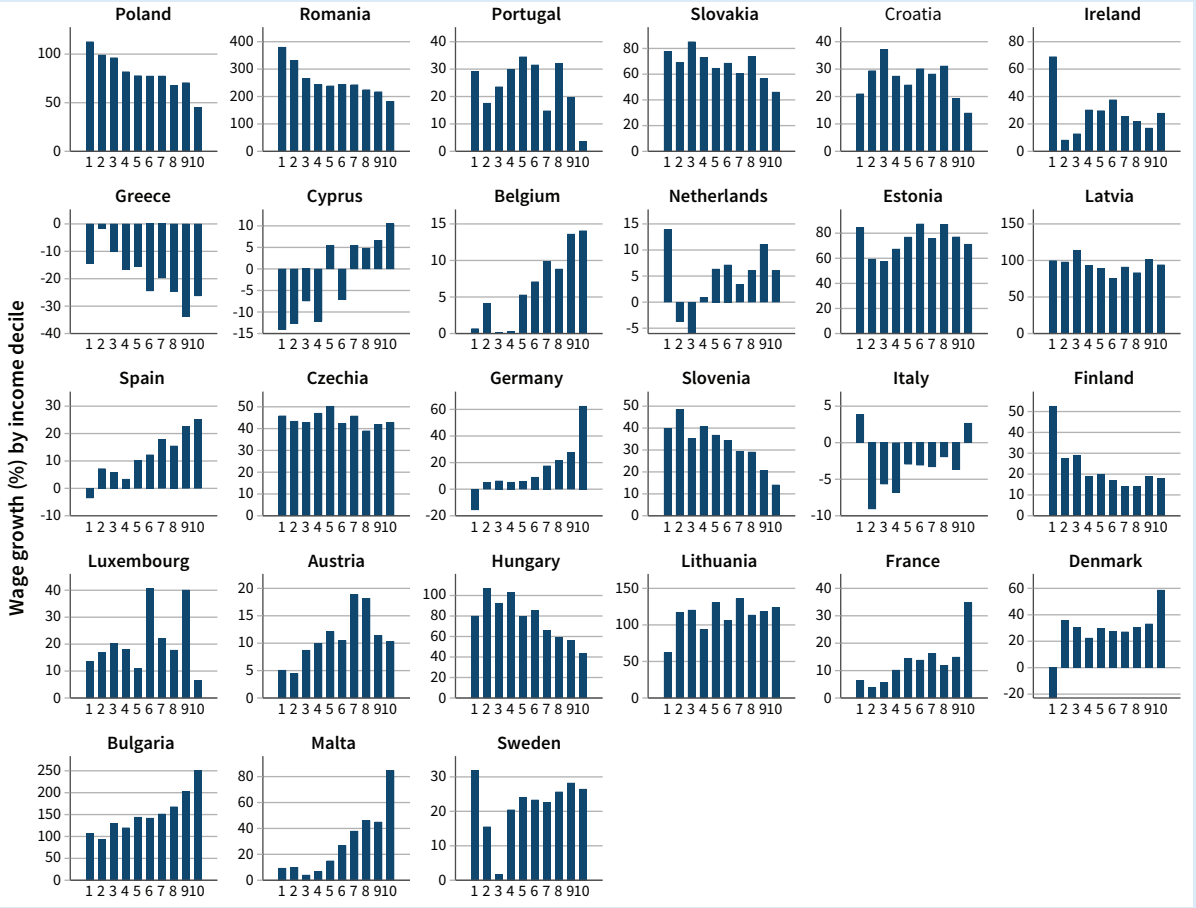
There is almost no correlation between changes in income inequality and changes in employment levels across EU27 countries over the 15 years in question (see Figure 13). The situation in Europe regarding the trend in employment between 2006 and 2021 is not easily related to the three country groupings presented earlier regarding changes in income inequality. There is a clear relationship only for countries that were identified as having a mixed inequality trajectory, most of which experienced a decline in employment levels (Latvia, Greece, Lithuania and Spain) or a negligible expansion (Estonia and Slovenia), because they were heavily affected by the Great Recession. Beyond that, among those countries where income inequality declined the most, there are cases of employment expansion (Poland, Slovakia and Ireland) but also employment contraction (Romania, Portugal and Croatia). Similarly, among those countries where income inequality increased the most, there are cases of both employment expansion (Sweden and especially Malta) and decline (Bulgaria).

Income inequality, however, is more closely related to wage inequality. To start with, average wage and income levels (and change in both over time) are closely correlated across countries (more than 0.9 in both cases). This means the same process of upward convergence between countries in income (and GDP per capita) has occurred in wages as well. It has the same characteristics: a very large rise in wage levels among the CEE countries characterised by the lowest wages at the beginning of the period, and much more moderate progress (or even decline) among many of the EU14 countries with the highest wage levels (see Figure A1 in Annex 2).

Income inequality and wage inequality and changes in these measures over time are closely related as well. The relative rankings of countries in terms of income inequality and wage inequality are quite similar, with only a few exceptions (see Box 2 for more details). Regarding changes over time, the dynamics in wage levels have contributed to shape trends in income inequality, as shown by Figure 16, which depicts wage growth over the income distribution and ranks countries by the change in income inequality over the period. Besides reflecting the much larger general wage growth in CEE countries, the figure shows the rather closely aligned movement of income and wage disparities over the income distribution between 2006 and 2021: among those countries where income inequality declined, wage dynamics contributed to the decline in most cases (Greece, Romania, Poland, Slovakia, Croatia, Portugal, the Netherlands, Czechia and Ireland), although in a few cases such dynamics were neutral over the income distribution (Estonia and Latvia) or drove growing inequality (Belgium, Spain and Cyprus); among those countries where income inequality increased, wage dynamics contributed to the increase in most cases (Malta, Denmark, Bulgaria, Germany, France, Luxembourg, Italy, Lithuania and Austria), although in a few cases such dynamics were neutral (Sweden) or pushed towards declining disparities (Hungary, Slovenia and Finland).

Since income inequality and wage inequality have tended to go together across countries, it is no surprise that cross-country patterns in wage inequality between 2006 and 2021 are mixed as well (see Figures 13 and 15), while a certain convergence in wage inequality between countries has also occurred.[18]

Figure 16: Wages contribute to income dynamics across EU countries (changes in real wage level by income decile, EU Member States, 2007–2022, %)



Notes: *Data shown are full-time equivalent monthly wages among employees in real terms (adjusted by inflation). Countries are ranked by the change in income inequalities over the period, from biggest decline to biggest increase. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Disparities in annual labour earnings of the population have tended to moderate while those emerging after the family pooling of resources have tended to grow. Inequality in annual labour earnings among the whole population and annual labour earnings pooled at the household level present opposite trends over the period (see Figure 15).

On the one hand, inequality in annual labour earnings among the whole population has declined overall (in more than two-thirds of countries), as a result of generally improving employment (and activity) rates. In most countries where inequality in annual labour income surged (Denmark, France, Spain, Finland, Cyprus and Italy), declining employment (and activity) rates emerge as a factor (see Box 4).

On the other hand, inequality in annual labour earnings pooled at the household level increased in almost two-thirds of countries. The pooling of income among household members reduces the extent of inequality significantly, but this inequality-reducing effect

18 Among those countries with higher wage inequality in 2006, significant reductions occurred in Greece, Romania, Poland, Hungary and Portugal, while, among those countries with lower wage inequality in 2006, significant increases occurred in Malta, Denmark, Belgium and France. Nevertheless, the coefficient of correlation between the initial wage inequality level in 2006 and its growth between 2006 and 2021 is 0.21 (it was 0.2 for income inequality), which means these two related processes of convergence are much weaker than those in wage and income levels across Member States.

weakened over the period across most countries, which explains the overall increase in inequality in household-pooled annual labour earnings. Specifically, the only five countries where this role of the household in reducing inequality did not weaken over the period (Croatia, Hungary, Poland, Portugal, Slovakia) are among the few countries where inequalities in household-pooled annual labour earnings declined.

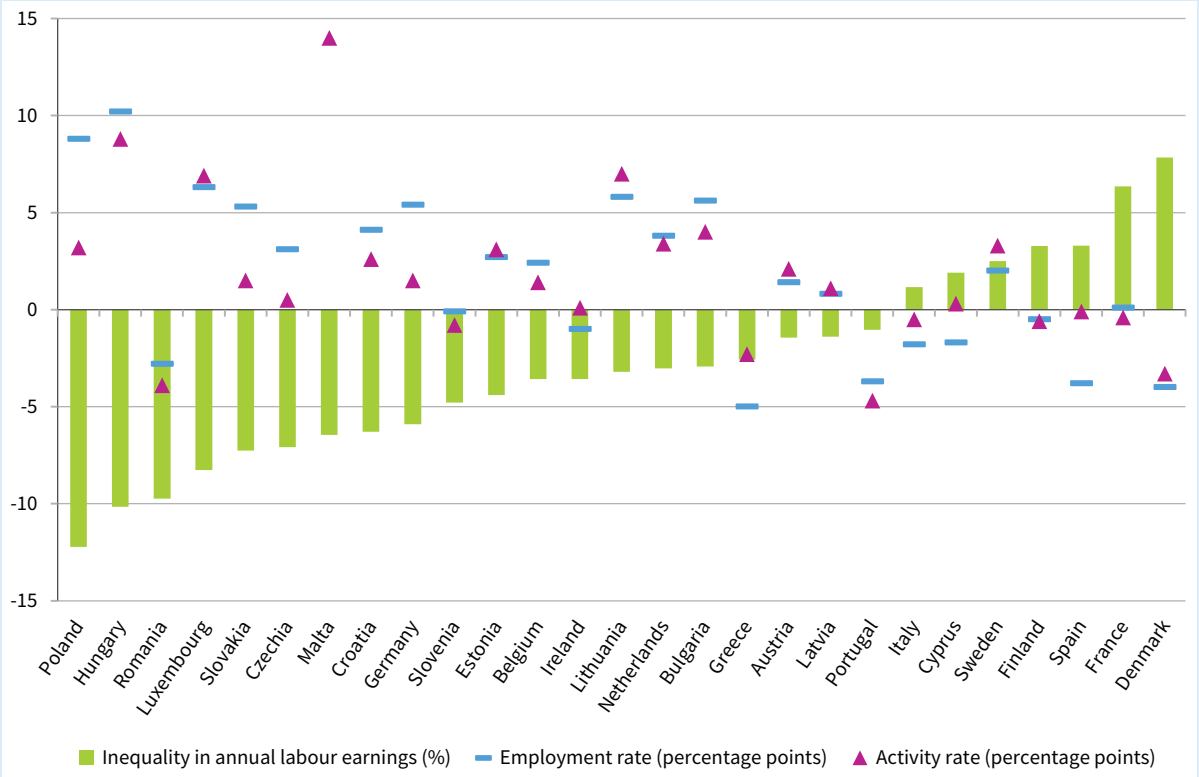
The literature has identified that changes in the family structure (mainly the decline in the average household size due to more people living alone or more single-parent families) have reduced the redistributive impact of households over recent decades (Nolan et al, 2014). Box 4 shows that the reduction in the average size of households across most countries is behind this relative weakening in the redistributive role of the family.

Box 4: Weakening redistributive role of the family

The annual labour earnings of the whole population, before it is pooled at the family level, is the most unequal of all the income variables considered in this report (see methodology in Annex 1). This measure covers yearly labour income among people over 15 years of age, which means that trends will be affected by employment, unemployment and inactivity outcomes, since individuals with no labour income are included in the picture.

This link is clearly confirmed by Figure 17. Among the countries where inequality reduced over the period, employment and activity rates improved in most. Among the only seven countries where inequality surged, employment or activity rates or both declined in most of them (Denmark, France, Spain, Finland, Cyprus and Italy).

Figure 17: Rising employment and activity rates pushed inequality in annual labour earnings downwards (EU Member States, change over 2007–2022)



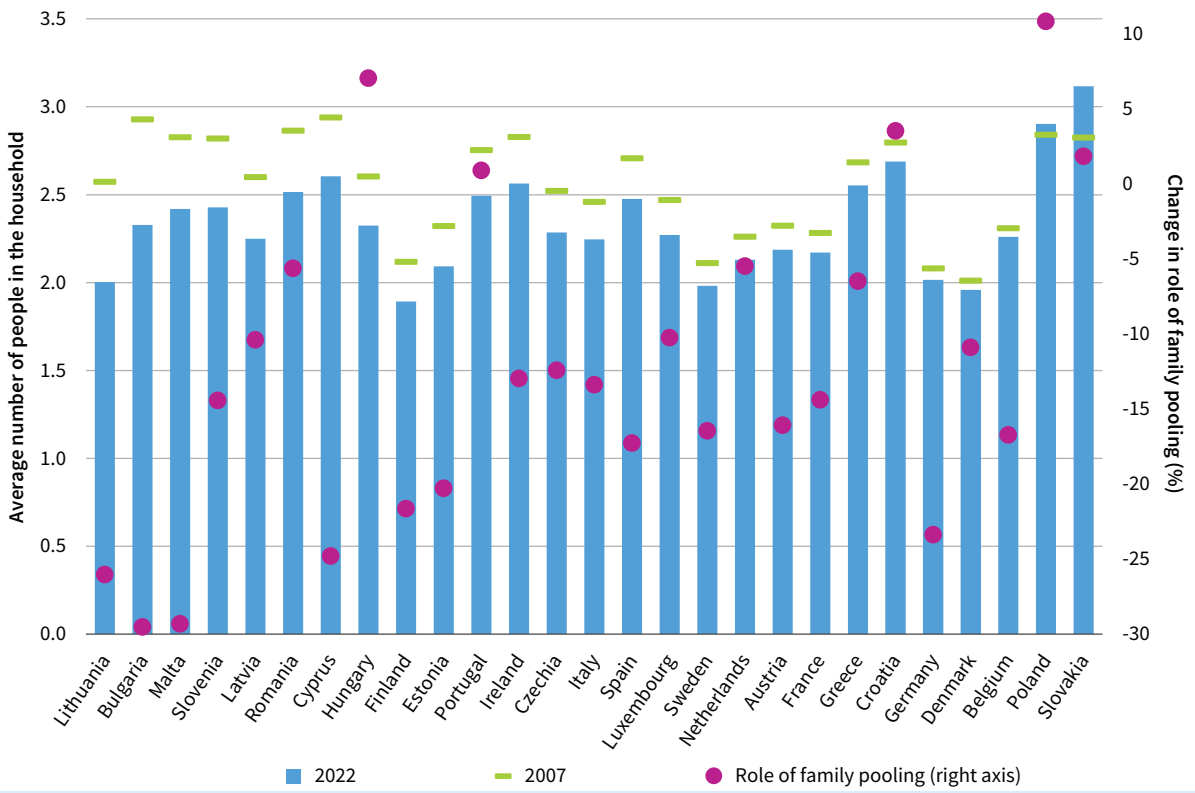
Notes: *Countries are ranked by the change in inequality in annual labour earnings (among the whole population aged over 15) over the period, from biggest decline to biggest increase. Change in inequality is expressed by change in the Gini index (%), while change in employment and activity rates is expressed in percentage points. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EEU-SILC 2007–2022 editions (income referring to 2006–2021)*

The pooling of labour earnings among the different members of the household reduced the level of inequality (as measured by the Gini index) by an average of -20% across countries in 2021, compared with inequality in labour earnings before they are pooled.

Nevertheless, this redistributive role of the family has weakened across most countries, as reflected by the negative value for the change in the role of family pooling in Figure 18. This refers to the change between 2006 and 2021 in the value of the inequality reduction accomplished after the pooling of labour income at the family level is taken into account (a negative value indicates a decline in the relative strength of this inequality reduction, and a positive value indicates an increase in its strength). There are only five countries where the inequality reduction effect of family pooling has strengthened: Croatia, Hungary, Poland, Portugal and Slovakia.

The key factor behind the general weakening of the redistributive role of the family is the reduction in the average size of households across virtually all countries. It is precisely in some of the countries where household size has contracted significantly that the redistributive role of the family has weakened the most (Lithuania, Bulgaria, Malta, Cyprus, Finland and Estonia). Conversely, Poland and Slovakia are the only two countries where the average household size has expanded over the period (while it has only declined slightly in Croatia), which may partially explain why these are among the few countries where the redistributive role of the family has strengthened.

Figure 18: Smaller average household size reduces the redistributive role of the family (EU Member States, 2007 and 2022)



Notes: *Countries are ranked by the change in the size of the household, from biggest decline to biggest increase. The change in the role of family pooling refers to the change in the inequality reduction effect when annual labour earnings are pooled at the household level (measured by the relative change in the Gini index), a negative value indicating a weakening of the inequality-reducing effect. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Welfare states cushion market inequality but are not always able to reverse the trends. Following the redistributive effect of the family pooling of labour income, capital income and some additional private transfers between households are added to produce the household market income variable. Inequality in this variable is higher than in household-pooled labour income (since capital is more unevenly distributed than labour), and it increased across two-thirds of EU27 countries between 2006 and 2021 (see Figure 15).

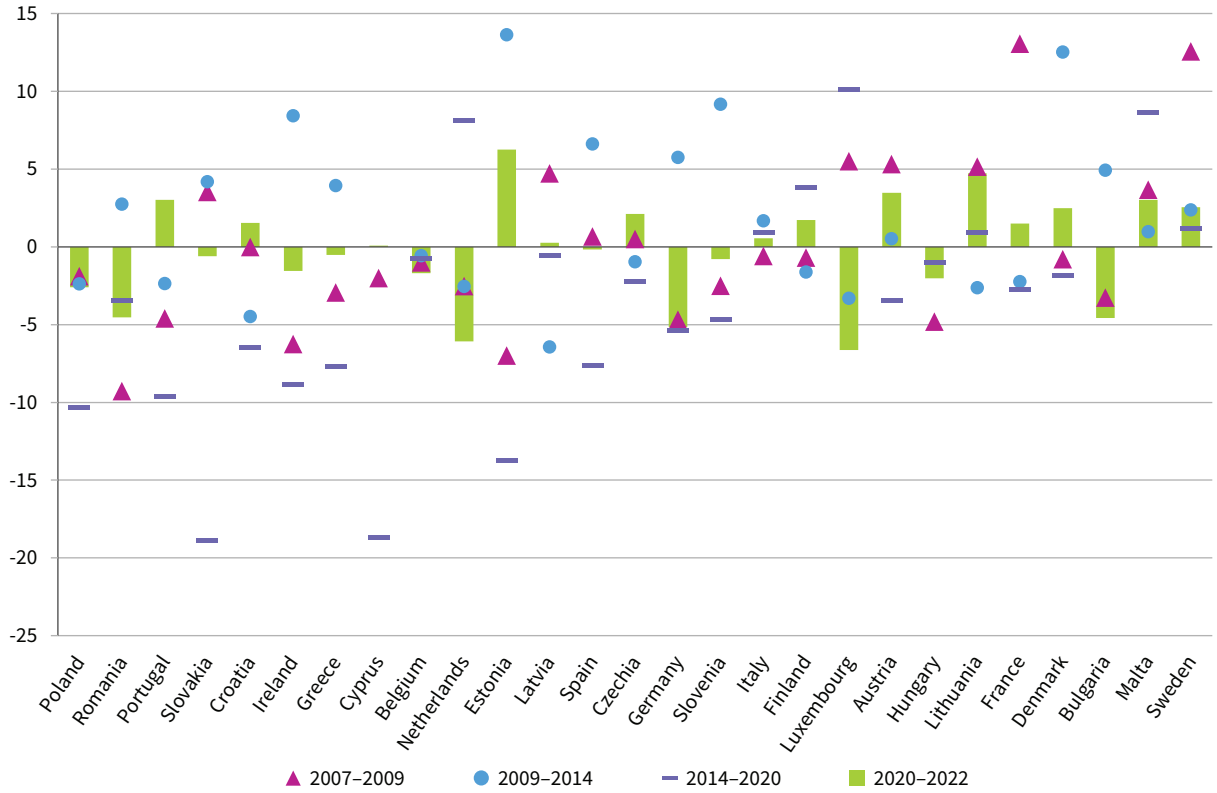
The main and final income measure, household disposable income, is shaped by the action of the welfare state, which redistributes more significantly than the family and therefore reduces inequality more. Trends in household disposable income inequality, similar to other measures, are mixed across countries, declining in just over half of them. On the one hand, among those countries where household disposable income inequality declined, it was because the welfare state either reversed the growing inequality in household market income or furthered the decline in household market income inequality (reflecting a strengthening role of the welfare state in reducing market inequality). On the other hand, among those countries where household disposable income inequality surged, this was because the welfare state was not able to reverse the increase in market income inequality (Hungary and Luxembourg are the only two cases where market income inequality did not increase over the period). Nevertheless, while welfare states lessened the extent of the inequality increase in some cases, there are more cases where the increase in inequality was even larger in household disposable income than in market income, which points to a weakening redistributive role of the welfare state in some countries.

The literature shows how the weakening redistributive role of the welfare system has contributed to growing inequality in household disposable income in some countries (for instance, as a result of reductions in income tax or tightening the criteria to access unemployment benefit and other benefits; see Nolan et al, 2014; OECD, 2008, 2011). Given its policy relevance, a detailed analysis of the role of the welfare state in cushioning market income inequality (and its weakening in some countries) is provided in Chapter 5.

COVID-19 and the Great Recession compared

This section presents a more nuanced picture of how changes in income inequality are affected by the business cycle and provides a direct comparison of the Great Recession and the COVID-19 pandemic. The evolution of income inequality across countries varies between subperiods (see Figure 19), which is reflected by distinctive patterns of income growth over the income distribution (see Figure 20 for average data across countries). Although trends are far from homogeneous between countries, the data generally show that income inequality tends to behave countercyclically.

Figure 19: Changes in income inequality follow the business cycle (changes in Gini index by subperiod, EU Member States, 2007–2022, %)

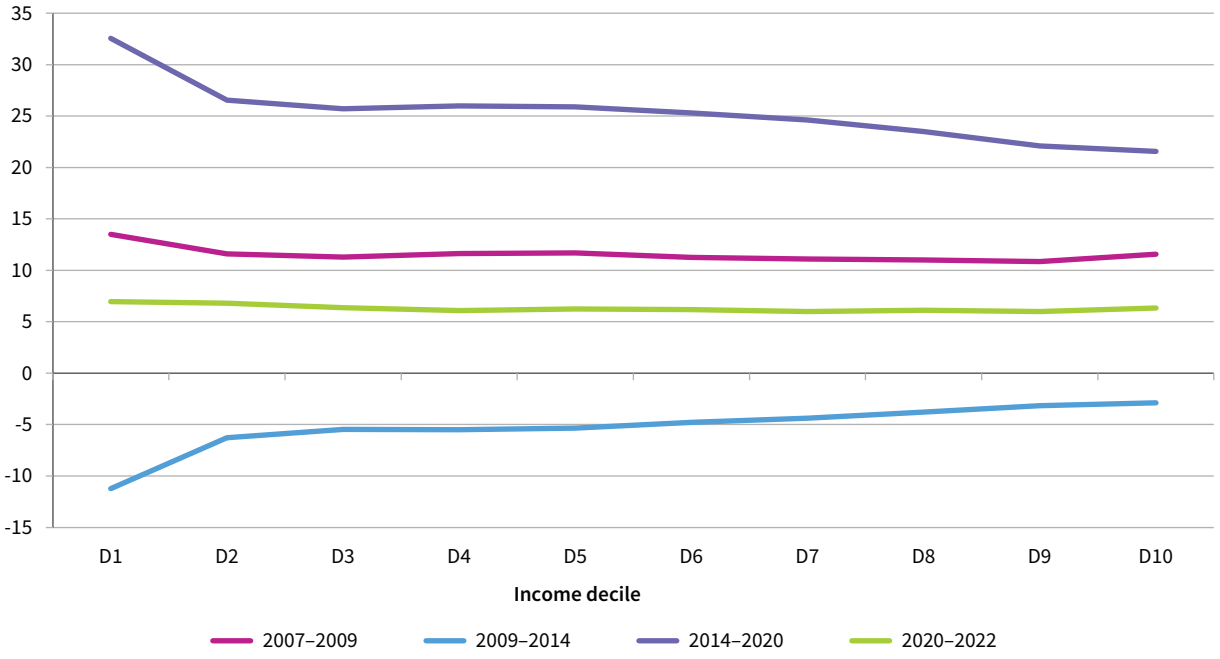


Notes: *Owing to the one-year lag in EU-SILC's income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021. Countries are ranked by the change in income inequality over the whole period, from biggest decline to biggest increase. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

- **Income inequality tends to fall in economic upturns, largely as a result of higher income growth at the bottom of the income distribution.** Inequality declined in a majority of countries in both periods of economic expansion (2006–2008 and 2013–2019). At the beginning of the first period, 16 countries registered falling inequality levels (significantly so in several CEE countries, such as Romania, Estonia, Hungary and Bulgaria, but also in Ireland, Germany and Portugal), although inequality increased significantly in a few cases (mainly in the EU14, including France, Sweden, Luxembourg and Austria, but also in Lithuania and Latvia). When labour markets bounced back from the Great Recession, income inequality declined in more than two-thirds of Member States between 2013 and 2019, again mainly in CEE countries (Slovakia, Poland and Croatia) and in a mix of CEE and Mediterranean countries that had experienced surges in inequality caused by the Great Recession (Cyprus, Estonia, Slovenia, Portugal, Greece and Spain) plus Ireland.

  Cross-country average data on income changes show how this general picture of declining inequality was caused by stronger income growth at the bottom of the income distribution, especially during the longer subperiod between 2013 and 2019 (see Figure 20). Detailed country-level data are provided in Figure A2 in Annex 2, reflecting a clear geographical demarcation. The notable income growth at the bottom of the distribution occurred especially in CEE countries (Bulgaria, Cyprus, Czechia, Estonia, Hungary, Poland, Romania and Slovenia) and Ireland in the first subperiod, and again in most CEE countries and Ireland between 2013 and 2019. Income increased more among lower-income groups in Mediterranean countries as well (Greece, Portugal and Spain), although against a background of more moderate real income growth. Conversely, income growth was much more subdued in other EU14 countries (sometimes especially so at the bottom of the income distribution).[19]
- **Income inequality tends to increase in economic downturns, largely because incomes are more negatively affected among lower-income groups.** This is certainly what occurred in the Great Recession, when inequality surged in a majority of EU countries between 2008 and 2013, significantly so in several CEE and Mediterranean countries that

Figure 20: Inequality trends are largely driven by income growth at the bottom of the income distribution (change in average income levels, by income decile across subperiods, average EU Member States, %)



Notes: *Data on income levels across Member States are calculated in national currencies and in real terms (adjusting for inflation). The change is calculated for each of the subperiods and refers to unweighted averages across countries. Owing to the one-year lag in EU-SILC's income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

19 Real income levels remained rather subdued in Continental and Nordic countries within the EU14, and especially so at the bottom of the distribution in some of them (leading to growing inequality). This happened in Austria, France, Luxembourg and Sweden between 2006 and 2008, and in Denmark, Finland, the Netherlands and, again, Luxembourg and Sweden between 2013 and 2019.

were very heavily impacted by unemployment hikes (Cyprus, Hungary, Estonia, Slovenia, Spain, Bulgaria, Slovakia, Greece and Romania), but also in Ireland and Denmark.

Inequality rose because real incomes were negatively affected and especially so among the lowest-income earners. Detailed country-level data again show the same regional demarcation, but inverted: the notable deterioration in income levels at the bottom of the distribution (leading to growing inequality) occurs mainly in Mediterranean countries (Spain, Italy, Greece, Portugal and Cyprus) and several CEE countries (Bulgaria, Estonia, Hungary, Romania and Slovenia), plus Ireland; conversely, income levels remained much more stable in the other EU14 countries (Austria, Belgium, Germany, France, Finland, Sweden, Denmark and the Netherlands), although again performing relatively worse among lower-income groups in several cases (Sweden, Denmark, Germany and Austria). Box 5 describes how employment turbulence was an important driving force in pushing income inequality upwards, while sometimes having the opposite effect on wage disparities.

- **Trends are mixed during the COVID-19 pandemic.** The pandemic interrupted the overall trend of falling income inequality between 2013 and 2019, although cross-country patterns are somewhat more mixed between 2019 and 2021 than during the Great Recession.

  Across the EU Member States, average income levels continued to expand (albeit somewhat more moderately). This expansion occurred along the whole income distribution, without a very clear distributional pattern, although the growth was slightly higher at the bottom of the income distribution, which explains the moderate decline in average inequality. Detailed country-level data show that the regional demarcation is partially comparable to that of the Great Recession, but with some differences this time: income levels generally continued to rise, and, although the relative slowdown was stronger in some CEE and Mediterranean countries (given their higher ongoing growth before the pandemic), the main difference is that the poorer performance among lower-income earners is not so clear this time (only in Czechia and the Baltic states); conversely, the relative slowdown in income growth may be less relevant in many of the EU14 countries (since their income levels were rising less before the pandemic), but this time income growth among the lowest-paid was much less in some countries (Austria, Sweden, Denmark, Finland and France).

Box 5: Different impacts of wage dynamics and employment trends during economic shocks

Income inequality across the EU27 countries has tended to move in parallel with wage inequality rather than with changes in employment levels over the period (see Box 3). More specific data on different subperiods show that employment turbulence was an important driving force behind rising income inequality during the Great Recession, sometimes having the opposite effect on wage disparities. Trends in income levels along the income distribution are relatively correlated with wage and employment dynamics over different subperiods, as can be observed by means of cross-country average data (see Figure 21 for wages and Figure 22 for unemployment shares), and more detailed country-level data provided in Annex 2 (see Figure A3 for wages and Figure A4 for unemployment shares).

In economic upturns, higher income growth at the bottom of the income distribution (reducing income inequality across many countries) can be related to both higher wage growth and larger declines in unemployment at the bottom of the income distribution.[20] In the case of the former, this association is reflected not by the average data in Figure 21, but by detailed country-level data showing that trends in wage disparities generally moved together

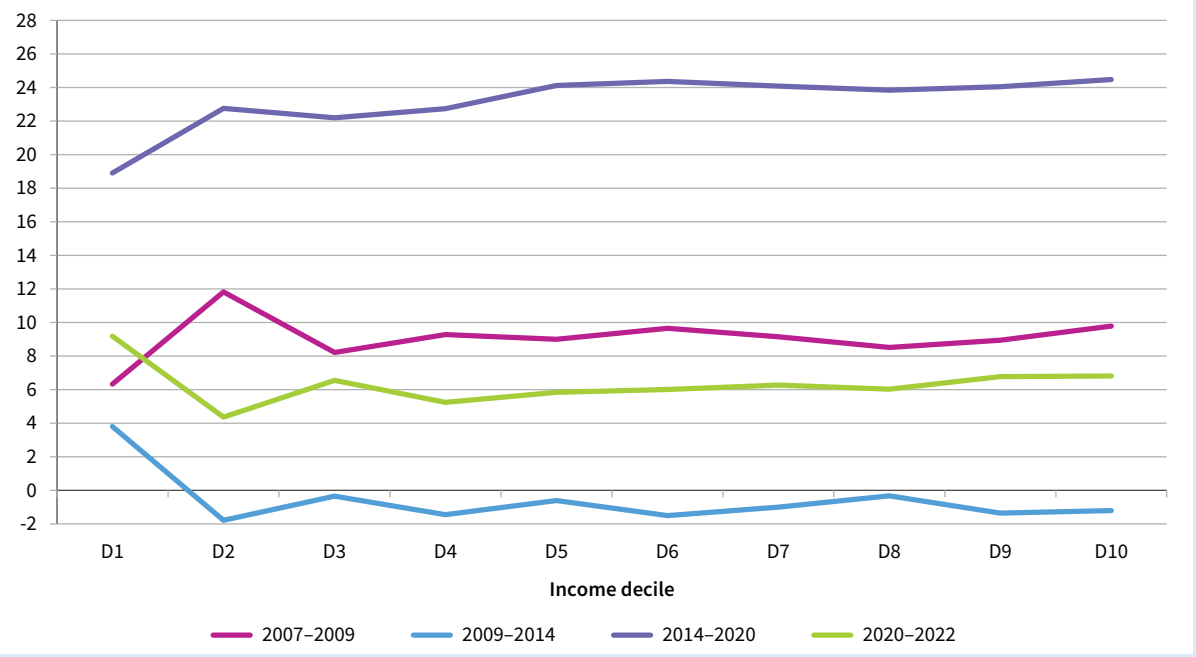
20 It should be noted many of the lowest-income earners (in the first and second income decile) may be inactive and far removed from the labour market, which explains the sometimes modest changes in their unemployment shares when the business cycle changes. Despite this general association, the changes in unemployment shares across countries (see Figure A4 in Annex 2) are unrelated to changes in inequality, while changes in wage and income disparities are closely related between 2013 and 2019. Nevertheless, CEE countries (Bulgaria, Czechia, the Baltic states, Hungary and Slovenia), Ireland and, to a lesser extent, Mediterranean countries (Spain, Portugal and Greece) were characterised by significant unemployment reduction, especially biased towards the bottom half of the income distribution. This employment turbulence emerges then as a clear factor in explaining the notable income growth at the bottom of the income distribution and declining inequality in these countries. In contrast, changes in unemployment levels are less intense and bleaker among those at the bottom of the income distribution in several Continental and Nordic countries (Sweden, Denmark, Finland and the Netherlands), which is related to the more modest income growth at the bottom of the income distribution and the increase in income inequality described in these countries.

with trends in income inequality between 2013 and 2019.[21] Wage disparities narrowed in around two-thirds of countries, which contributed in most cases to reducing income inequality thanks to relatively larger wage growth at the bottom of the income distribution. This occurred mainly in CEE and Mediterranean countries (Slovakia, Estonia, Poland, Croatia, Cyprus, Czechia, Slovenia, Portugal and Greece) but also in Austria, Germany and Ireland. Conversely, among the third of countries where income inequality rose, widening wage differentials along the income distribution contributed to it in several cases (Italy, Luxembourg, Malta and Bulgaria).

During the Great Recession, lower income growth at the bottom of the distribution (driving up income inequality across many countries) can be related to rapidly growing unemployment but not to lower wage growth at the bottom of income distributions. Trends in wage and income disparities decouple and follow opposite trends in more than half of the countries between 2008 and 2013 (which is reflected by the diverging cross-country average picture of wage and income growth over the income distribution). This is because of the compositional effects caused by growing unemployment: lower-paid employees are typically affected more by job loss, which translates into higher income inequality but also, paradoxically, declines in wage disparities, as the exit of these workers from employment increases average wages at the bottom of the distribution. This is why very significant surges in income inequality coexisted with narrowing wage disparities in some of the countries where the Great Recession caused large unemployment spikes (Hungary, Slovenia, Bulgaria, Greece, Spain and Romania).

Things were different in the pandemic. Income levels continued to rise (even slightly more so at the bottom of the distribution), and it is not easy to relate those trends to either wage dynamics or unemployment trends. On the one hand, wage and income dynamics decoupled, although differently from how they did so during the Great Recession: the average cross-country picture is of wage disparities widening over the income distribution (despite the strong growth in the lowest income decile), while the change in income inequality is more mixed across countries. Still, widening wage dynamics are at play in the majority of countries where income inequality surged between 2019 and 2021 (such as Portugal, Denmark, Lithuania, Croatia and Cyprus).

Figure 21: Trends in wage levels largely explain income inequality (change in wage levels by income deciles across subperiods, average EU Member States, 2007–2022, %)

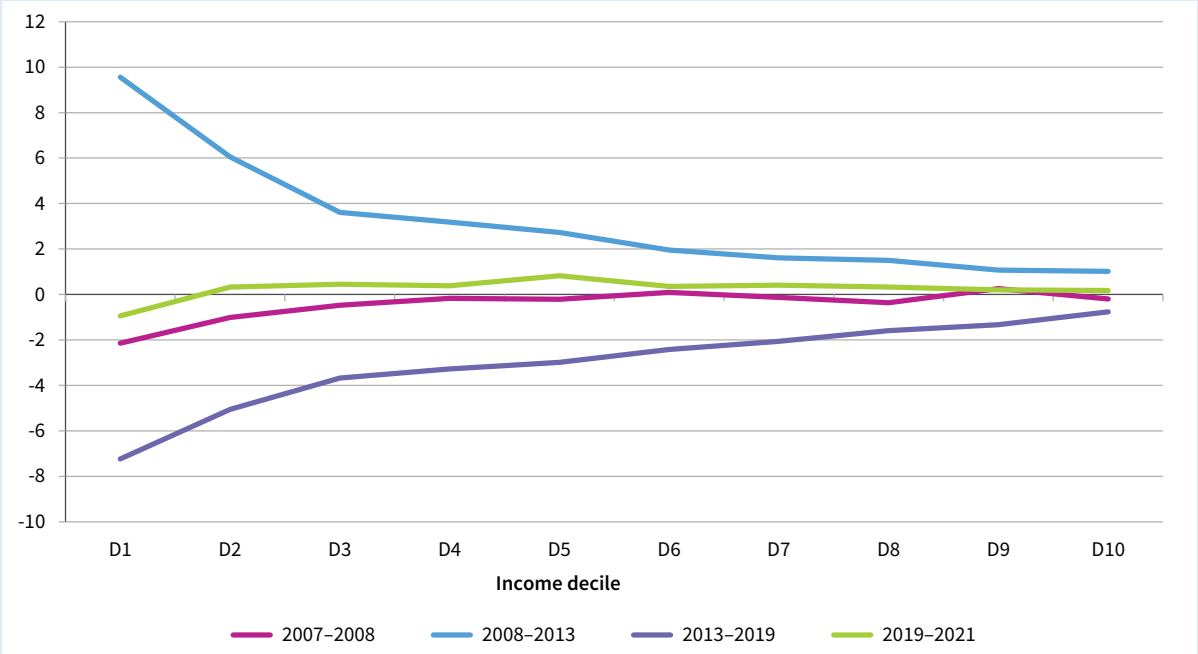


Notes: *Data on income levels across Member States are calculated in national currencies and in real terms (adjusting by inflation). The change is calculated for each of the subperiods and refers to unweighted averages across countries. Owing to the one-year lag in EU-SILC's income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

21 The picture is more mixed for the short period between 2006 and 2008. Although changes in income inequality across the Member States are still related to changes in wage inequality (and not to changes in unemployment shares), the association is weaker than in 2013–2019.

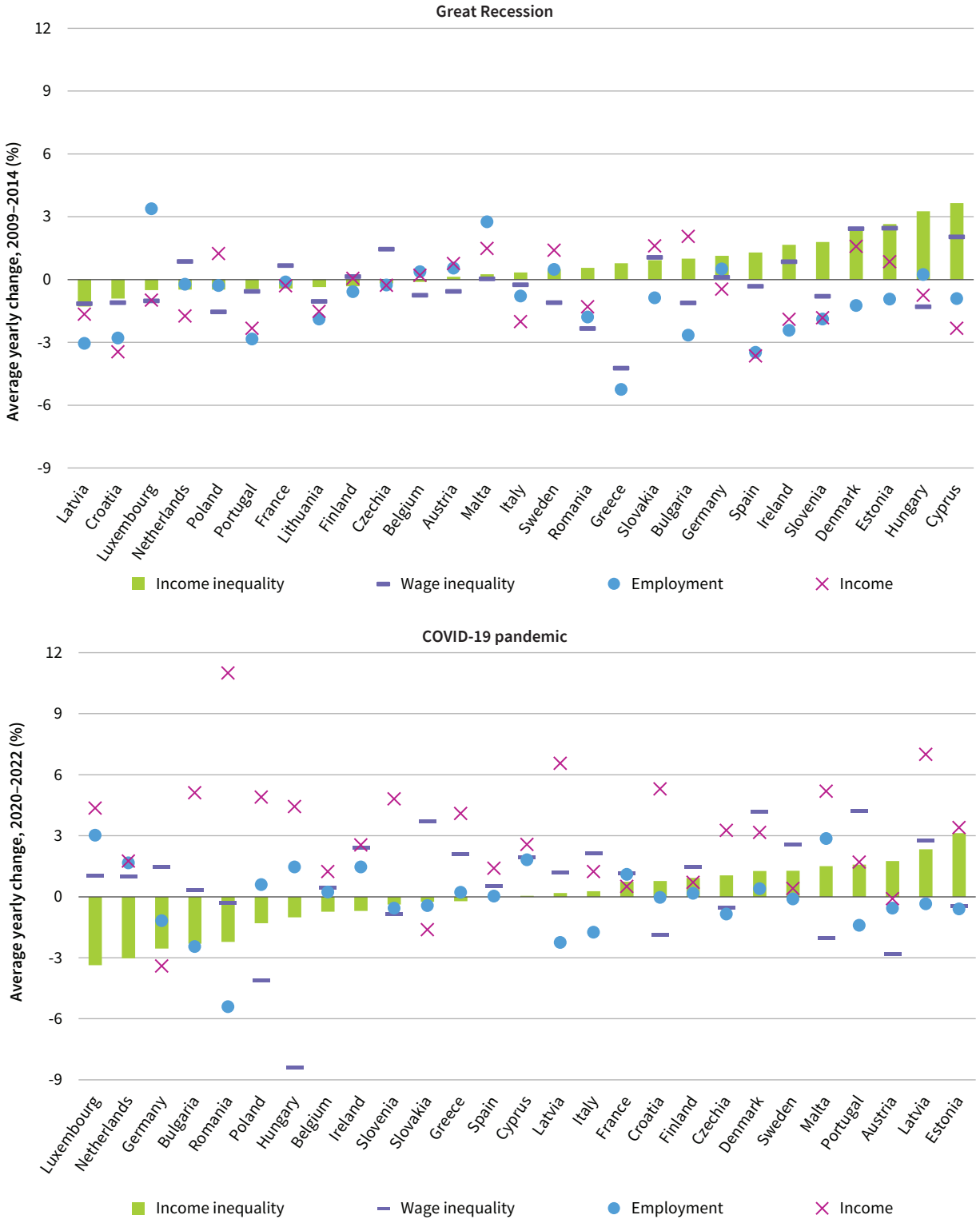
On the other hand, the stability in employment levels prevented employment turbulence from playing a significant role in driving income inequality upwards and avoided the emergence of compositional effects on wage dynamics. This is reflected by the rather negligible increase in shares of unemployment over the income distribution, while unemployment even dropped among the lowest income earners in the bottom quintile (country-level data reflect how the lowest-income earners fared particularly well in several countries such as Austria, Finland, Germany, Italy, Latvia, Luxembourg, Slovakia and Spain). The fact that lower-income earners did not have poorer employment outcomes than their counterparts in other deciles (or had even better outcomes in the case of the bottom income decile) is due to the deployment of job retention schemes and the continuing operation of essential services, in which they are more likely to be employed, during the lockdowns.

Figure 22: Growing unemployment played a role in driving income inequality during the Great Recession (change in shares of unemployed people, by income decile, average EU Member States, 2007–2021, percentage points)



Notes: *The subperiods cover the same years as those of Figure 21 (owing to the one-year lag in income data in EU-SILC), except the first one, which here refers only to change between 2007 and 2008.*
Source: *EU-SILC 2007–2021 editions (income referring to 2006–2020 only for the construction of deciles)*

Figure 23: The pandemic had a milder impact on European labour markets than the Great Recession (average yearly change in income inequality, wage inequality, real income and employment levels during the Great Recession and COVID-19 pandemic, EU Member States, %)



Notes: *Data refer to changes between 2008 and 2013 (EU-SILC editions 2009–2014) for the Great Recession and changes between 2019 and 2021 (EU-SILC editions 2020–2022) for the pandemic. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Sources: *EU-SILC for income and wages; Eurostat for employment*

The COVID-19 pandemic had a much weaker impact than the Great Recession. The contrasting impacts of the Great Recession and the COVID-19 pandemic (and their similarities) deserve a more detailed analysis. A comparison is provided in Figure 23, showing data on changes in income inequality, wage inequality, income

and employment levels. The two crises are of different types: the impact of COVID-19 was limited to the duration of lockdowns and distancing measures implemented by countries, whereas the Great Recession started as a financial crisis that turned into a sovereign-debt crisis (and the bursting of housing bubbles in some countries) and led to a protracted period of economic stagnation.

While in both episodes economic activity levels severely contracted during the first year (2009 for the Great Recession and 2020 for the pandemic), the main contrasting element is the coordinated policy response during the pandemic, when job retention schemes were quickly deployed in order to preserve employment, made possible by a departure from EU fiscal rules. This resulted in employment levels falling rather moderately in around half of the Member States between 2019 and 2021; during the Great Recession, employment declined in most countries and with more intensity.[22]

Despite the difference in the intensity of impact, Mediterranean and CEE countries were the most negatively affected by both episodes, while employment fared relatively better in other EU14 countries.[23]

The fact that employment levels were largely maintained during the pandemic explains why trends in income, income inequality and wage inequality across countries were different from the Great Recession.

- Income levels continued to rise across most countries during the pandemic. Real income levels rose (albeit more moderately) across almost all countries between 2019 and 2021 (except in Germany, Slovakia and Austria), whereas they declined in almost two-thirds of countries between 2008 and 2013. Nevertheless, the countries most affected in both episodes largely coincide when inspected more closely. Although income levels grew relatively more among CEE countries and less so among EU14 countries between 2019 and 2021, Chapter 3 shows that the slowdown in income growth resulting from ongoing trends was more significant among middle- and lower-income countries and less so among high-income countries during 2020. This uneven pattern was much clearer in the Great Recession, when the decline in income levels was especially strong in several Mediterranean and CEE countries, while income levels held up better (either growing moderately or declining negligibly) among Continental and Nordic countries.
- Income inequality increased less during the pandemic. Income inequality increased in a majority of countries during both episodes, but trends are more mixed in the pandemic (14 out of 27 countries) than in the Great Recession (16 out of 27 countries). Moreover, the average cross-country increase was more moderate during the pandemic, while income inequality continued to decline significantly in several countries.[24] The country picture generally coincides again in both episodes, since CEE and Mediterranean countries are more typically among those where income inequality increased the most. Between 2019 and 2021, 9 out of the 14 countries where inequality increased were CEE and Mediterranean countries (Estonia, Lithuania, Portugal, Malta, Czechia, Croatia, Italy, Latvia and Cyprus), while 5 were (other) EU14 countries (Austria, Sweden, Denmark, Finland and France).[25] This was even clearer in the Great Recession, when the largest increases in inequality took place in CEE and Mediterranean countries, while they declined or increased negligibly in most Continental and Nordic countries (except Denmark and Germany).
- Wage inequality increased during the pandemic.[26] Wage inequality increased in two-thirds of countries between 2019 and 2021, whereas it declined in almost two-thirds of them during the Great Recession. The contrasting evolution of employment levels largely explains why this happened. On the one hand, against a background of relative employment stability during the pandemic, widening pay differentials among employees pushed wage inequality upwards in most countries (including CEE and Mediterranean countries such as Portugal, Slovakia, Lithuania, Italy, Greece and Cyprus, but also the Nordic countries, Germany and France). On the other hand, large declines in employment during the Great Recession created compositional effects by which the laying off of lower-paid employees resulted in narrowing wage inequality across many countries (see Box 5 for more details).

22 Data on changes in employment levels in Figure 23 refer to average yearly changes during each subperiod, which means the decline in employment levels was much stronger during the Great Recession for two reasons: it took place over five years (compared with two years in the pandemic), and there were much stronger declines in employment levels (in certain years between 2008 and 2013) than those shown in the figure.

23 In the pandemic, employment levels fell in some CEE (Romania, Bulgaria, the Baltic states, Slovakia and Czechia, and remained stable in Croatia) and Mediterranean countries (Italy and Portugal and remained stable in Spain), plus Germany, Sweden and Austria. During the Great Recession, the largest reductions in employment were also concentrated in the Mediterranean (Greece, Spain, Portugal and Italy) and some CEE countries (the Baltic states, Croatia, Bulgaria, Slovenia and Romania), plus Ireland.

24 The increase in income inequality during the Great Recession is also more significant because it occurred over five years. Moreover, some of the yearly increases in income inequality during that period were much higher than the average yearly increases depicted here.

25 Focusing only on the first year of the pandemic, when economic activity declined, Mediterranean and CEE countries comprise the 12 countries where income inequality increased the most (followed by Germany and France, completing the list of 14 countries where income inequality surged).

26 The wage inequality mentioned here refers to the Gini index for the differences in wage levels among employees. Therefore, they are different from the wage disparities by income quintiles presented before, although they are related to each other and generally move in the same direction.

Complementary indicators

A complementary picture of household disposable income inequality to that provided by the Gini index can be obtained by comparing the shares of total income appropriated by different groups. The S80/S20 ratio (comparing the income owned by the top and bottom quintiles) and the Palma index (comparing the income owned by the bottom 40% and the top 10% of the income distribution) are used because they illustrate more directly how income groups situated far apart in the income distribution are generally performing in comparison with each other. Nevertheless, they are both closely correlated with the Gini index, which confirms the robustness of the results presented in this chapter.

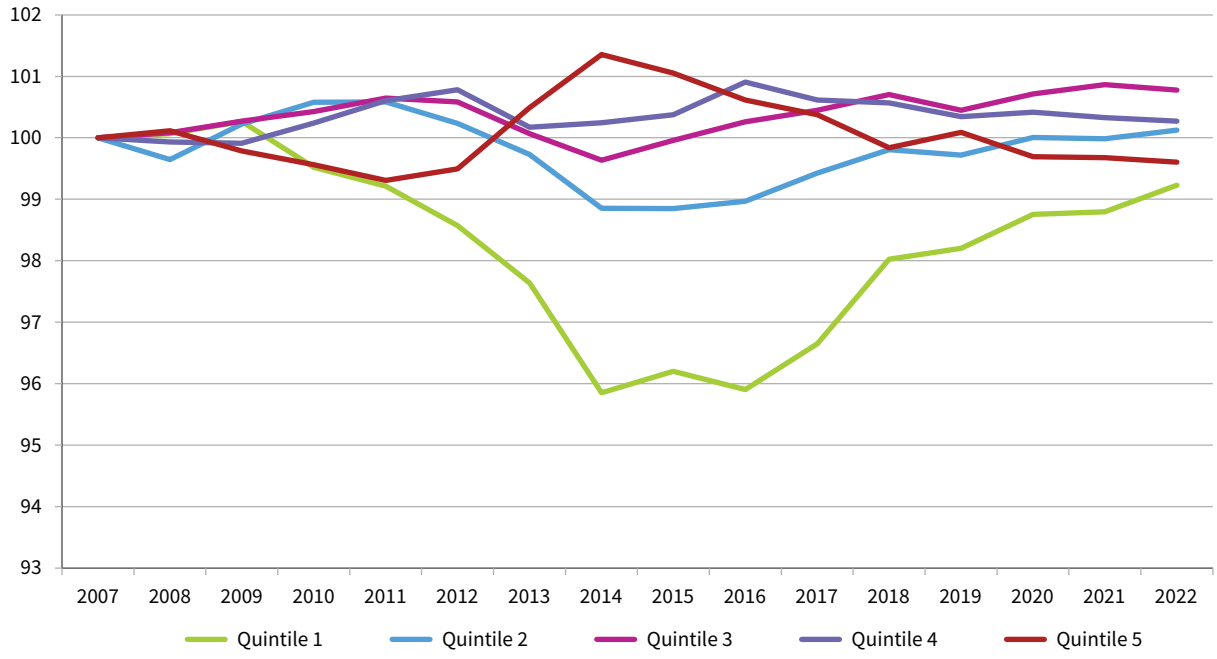
The income of the poorest 20% has lost ground in over half of EU Member State compared with that of the richest 20%. Cross-country average data on each income quintile's share of total income reveal a relative deterioration among the lowest-earning groups (Figure 24). Although differences in the net change between 2006 and 2021 are not so large between the different income quintiles, the poorest 20% of people have tended to fare less well and their relative share of total income has been slightly reduced.

On average across Member States, the S80/S20 ratio widened notably during the years of the Great Recession, owing to its particularly heavy downward impact on the bottom quintile. The S80/S20 ratio has narrowed since 2013, following the steep recovery in the income of the bottom quintile and the deterioration in the share earned by the top quintile, although the gap had not closed completely by 2021.

Country-level data provide a more mixed picture and clarify the countries in which this deterioration at the bottom of the distribution occurred. Figure 25 shows the shares of total household disposable income going to the top and bottom quintiles of the income distribution in 2021 (top panel) and how that ratio changed over the period (bottom panel). Three main insights can be drawn from these data.

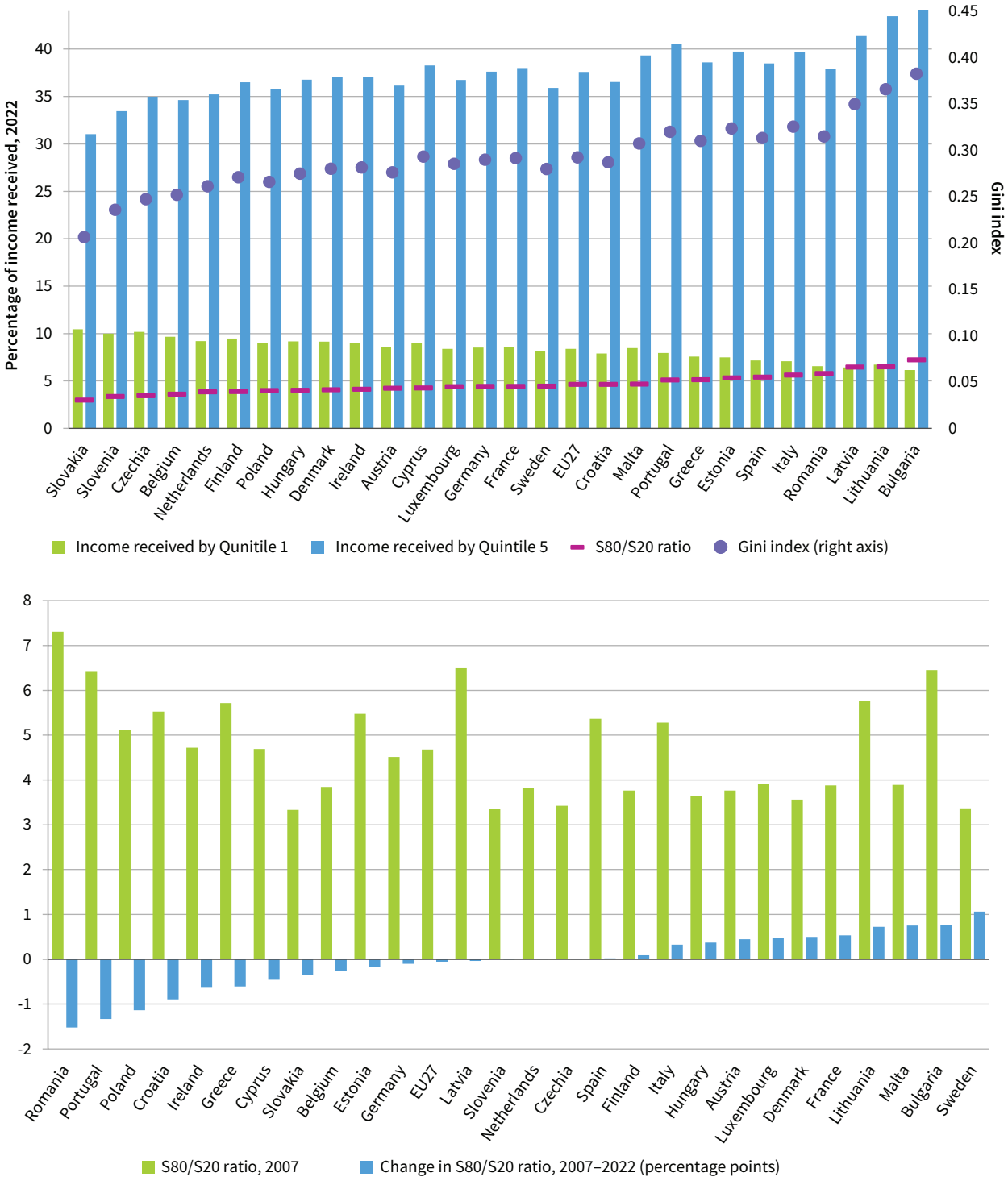
First, the ranking of EU27 countries based on the S80/S20 ratio correlates very strongly with that based on the Gini index for household disposable income. The ratio ranges from 3 in Slovakia to more than 7 in Bulgaria (in the top panel, countries are ranked from lower to higher values of the ratio). Among those countries with lower S80/S20 ratios, below 4 (Slovakia, Slovenia, Czechia and Poland from the EU13, and Belgium, the Netherlands and Finland from the EU14), the bottom income quintile receives around 10% of the total income, while the top quintile receives around 30–35%. Among those countries with higher income quintile share ratios, above 5, Bulgaria, the Baltic states and Romania (CEE countries), and Italy, Spain, Greece and Portugal (Mediterranean countries), the bottom income quintile receives around 6–8% of the total income, while the top quintile receives around 40% or even more.

Figure 24: The relative position of the poorest 20% deteriorated as a result of the Great Recession (share of income, by income quintile, average EU Member States, 2007–2022)



Notes: *Index, 2007 = 100. Data refer to the unweighted average across EU Member States of the share of total income received by each income quintile.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure 25: Shares of income received by top and bottom income quintiles in 2022 (top panel) and changes between 2007 and 2022 (bottom panel), EU Member States



Notes: *In the top panel, countries are ranked by the value of the S80/S20 ratio, from lowest to highest. The correlation between the ratio values and the Gini index measuring household disposable income inequality is 0.94. In the bottom panel, countries are ranked by the change in the ratio over the period, from biggest decline to biggest increase. The correlation between the initial value of the ratio and its change across Member States over the period is 0.23, while the correlation between changes in the ratio and the Gini index across Member States is 0.88. In both panels, EU27 refers to the unweighted average across the Member States. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Second, the S80/S20 ratio has increased in just over half of the countries (shown in the right of the bottom panel of the figure, which ranks countries by the change in the ratio). Again, changes in this ratio are very highly correlated with those of the Gini index: the ratio increases the most in a mix of Nordic countries (Sweden and Denmark) and Continental countries (France, Luxembourg and Austria), plus some of the

EU13 (Bulgaria, Malta, Lithuania and Hungary). In contrast, the ratio declines more significantly in several CEE and Mediterranean countries (Romania, Portugal, Poland, Croatia, Greece, Cyprus, Slovakia and Estonia), plus Ireland and Belgium (and Germany in this case, unlike the Gini index).

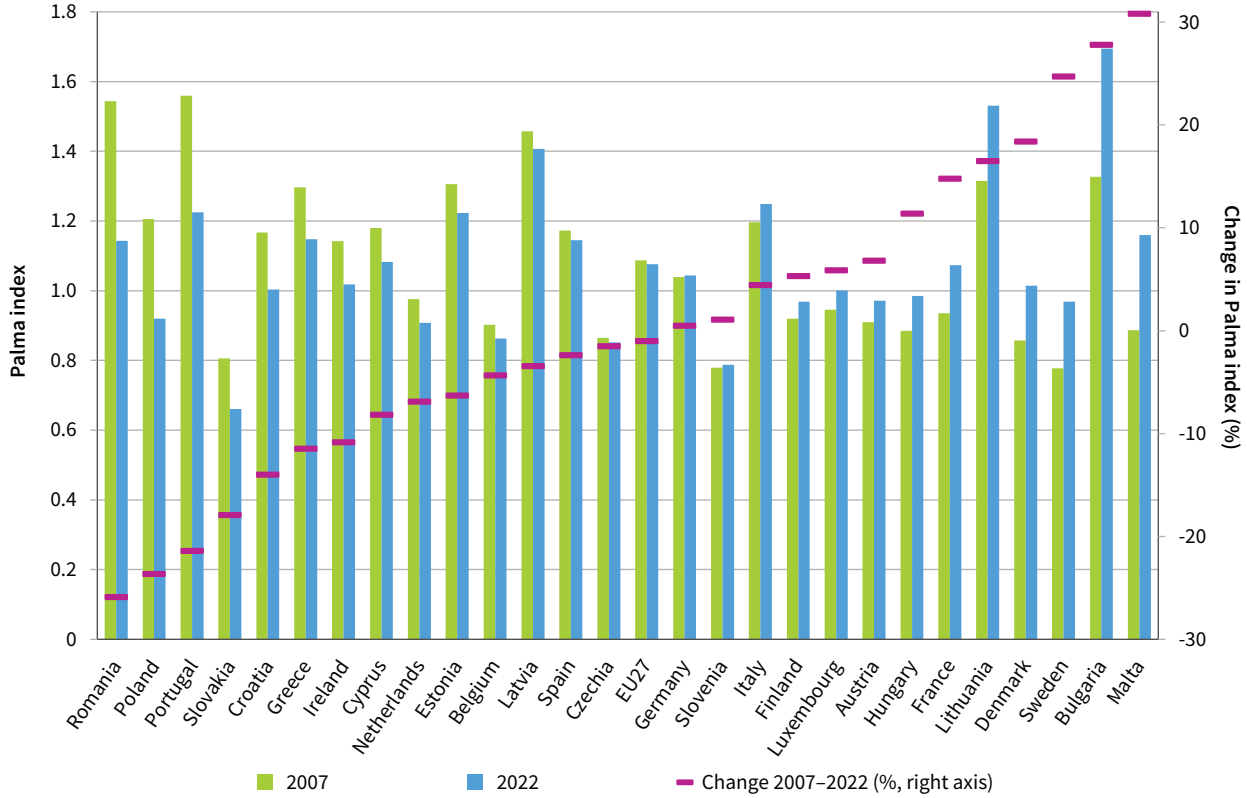
Third, a moderate convergence between countries in the value of the S80/S20 ratio occurs over the period, due to notable declines in the ratio in some CEE and Mediterranean countries where it was initially rather high (Romania, Portugal, Poland, Croatia and Greece), and significant rises in some countries where this ratio was initially rather low, as in several Nordic and Continental countries.

The income of the poorest 40% of the population has lost ground in almost half of EU27 countries compared with the income of the richest 10%. A very similar picture emerges of the change in the Palma index, comparing the share of the total income secured by the richest 10% with that secured by the poorest 40% (Figure 26).

The values of the Palma index in 2021 range from more than 1.5 in Bulgaria and Lithuania (meaning the richest 10% of the population has 50% more income than the poorest 40%) to less than 0.7 in Slovakia. The ranking of EU countries based on the Palma index is extremely closely correlated with that based on the Gini index (even more so than in the case of the S80/S20 ratio). The countries with the largest ratios, above 1 in all cases, are CEE and Mediterranean countries. In contrast, there are several CEE and EU14 countries where the value of the ratio is below 1, meaning the bottom 40% of the income distribution owns more income than the top 10%.

The Palma index has increased in just under half of EU countries. The correlation with changes in income inequality as measured by the Gini index is extremely high, which presents the same regional picture. Among those countries where disparities widen over the period (on the right of the figure), the same mix of Nordic and Continental countries plus some EU13 Member States is apparent. Conversely, disparities decline in just over half of the countries, and more significantly in several CEE and Mediterranean countries (on the left of the figure).

Figure 26: Palma index, 2007 and 2022, and change over time, EU Member States



Notes: *The Palma index is the ratio between the shares of total income received by the richest 10% and by the poorest 40%. Countries are ranked by the change in the index over the period, from biggest decline to biggest increase. EU27 refers to the unweighted average across the Member States. The coefficient of correlation between the values of the Palma and Gini indices in the EU27 (and their changes over the period) is 0.97. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Takeaways: Stylised patterns across EU regions

European regions can be characterised regarding general characteristics and trends in income and income inequality over the 15 years between 2006 and 2021, based on the analyses in Chapters 3 and 4 and summarised in Table 2. Moreover, information about the size of the middle class (covered in Chapter 6) is added to the table to provide a comprehensive picture across countries and regions.

While the exact specifics and trajectory of each country cannot be accounted for within the general characteristics of its country cluster, it is possible to broadly characterise different European regions based on the relative levels of income, income inequality and size of the middle class and how they developed over the period.

The **EU13** are characterised by the strongest income growth and generally represent the most positive developments, which have resulted in very strong upward convergence in income levels (and, to a lesser extent, in income inequality and size of the middle class), since these countries started from the more disadvantaged positions. Different groups can be identified.

- The **CEE countries excluding the Baltic states** represent the most positive developments. Their income levels were the lowest in 2006 and underwent the largest expansion. Moreover, income growth was larger among lower-income earners, reducing income inequality and enlarging the size of the middle class (except in Bulgaria and Hungary, and in Czechia in the case of the middle class).
- The **Baltic states** share the same strong income growth, but the trend in the other dimensions is somewhat less positive, largely because of the strong impact of the Great Recession. These countries are characterised by relatively high income inequality levels and small middle classes. Furthermore, these features were corrected over the period to a lesser extent than in CEE countries: a modest reduction in income inequality occurred in Estonia and Latvia, while only in Latvia did the size of the middle class expand.
- There are three EU13 Member States from the **Mediterranean** area (Slovenia, Malta and Cyprus) that deviate from the trends in CEE countries, largely because of the strong impact of the Great Recession, like the Baltic states and the core Mediterranean cluster presented below. Income growth in these countries is not so large as in CEE countries (even declining in Cyprus), while income inequality increased (except in Cyprus) and the size of the middle classes declined.

The **EU14** present a bleaker picture. While most of these countries are still characterised by the highest income levels, income growth has been much more moderate than in the EU13 and has tended to be more sluggish among the lowest-income earners. This has led to growing income inequality and shrinking middle classes. Three main groups can be identified.[27]

- **Nordic countries** started the period with low income inequality and large middle classes, but the trends over the period go in a negative direction: income inequality surged and the middle class shrank.
- **Continental countries** show similar trends to the Nordic ones, although with more heterogeneity given the larger size of the group: income inequality tended to rise (except in the Netherlands and Belgium) and the middle classes shrank (except in Belgium).
- **Mediterranean countries** probably represent the most negative picture, largely on account of the strong and protracted impact of the Great Recession. Unlike CEE countries, they have generally failed to converge significantly towards higher income levels, since their income levels generally grew even less than among the higher-income regions (the Nordic and Continental countries). Moreover, they are still characterised by high income inequality and small middle classes. Although income inequality declined and the size of the middle class expanded over the period (except in Italy in both cases), this occurred against a background of intermediate income growth only in Spain, while incomes grew sluggishly in Portugal and even declined in Greece.

27 Ireland represents a positive case on its own, where income levels grew at an intermediate rate, income inequality declined, the middle class expanded and the role of the welfare state in reducing market income inequality strengthened.

Table 2: Income levels and income inequality have evolved differently across European regions, from the best performance in CEE countries to the most disappointing in Mediterranean countries (levels in 2022 and change over 2007–2022)

Member State group	Country cluster	Country	Income levels		Income inequality		Middle class size	
			2022	Change	2022	Change	2022	Change
EU13	CEE (excluding Baltic states)	Bulgaria	Low	+++	High	++	Small	—
		Czechia	Medium	+++	Low	–	Large	—
		Croatia	Low	++	Medium	—	Medium	++
		Hungary	Low	+++	Low	++	Large	—
		Romania	Low	+++	High	—	Small	++
		Poland	Low	+++	Low	—	Large	++
		Slovakia	Low	+++	Low	—	Large	+
	Baltic states	Estonia	Medium	+++	High	–	Small	–
		Lithuania	Medium	+++	High	++	Small	—
		Latvia	Low	+++	High	–	Small	+
	Mediterranean	Slovenia	Medium	++	Low	+	Large	–
		Malta	High	+++	Medium	++	Medium	—
		Cyprus	Medium	–	Medium	–	Medium	–
EU14	Ireland	Ireland	High	++	Medium	—	Medium	++
	Continental	Austria	High	+	Low	+	Large	–
		Belgium	High	++	Low	–	Large	+
		Germany	High	++	Medium	+	Medium	—
		France	High	+	Medium	++	Medium	–
		Luxembourg	High	+	Medium	+	Medium	—
		Netherlands	High	++	Low	–	Medium	—
	Nordic	Denmark	High	++	Medium	++	Large	–
		Finland	Medium	+	Low	+	Large	–
		Sweden	Medium	++	Medium	++	Medium	—
	Mediterranean	Greece	Low	–	High	—	Small	+
		Spain	Medium	++	High	–	Small	+
		Italy	Medium	+	High	+	Small	–
		Portugal	Low	+	High	—	Small	++

Notes: *Member States are grouped by geographical area. For levels in 2021 (EU-SILC 2022), countries are split into three groups of nine each, ranked high/large, medium and low/small. For change over the period, +, ++ and +++ denote low, medium and high increases in income levels; + and ++ denote less and more significant increases in income inequality and middle class size; and – and — denote less and more significant declines.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Summary

Income inequality increased in around half of the Member States between 2006 and 2021, especially in several EU14 countries (Sweden, Denmark, France and to a lesser extent Austria, Luxembourg, Finland, Italy and Germany) and some EU13 Member States (Malta, Bulgaria, Lithuania and Hungary). Conversely, income inequality declined in the other half, mainly in several CEE and Mediterranean countries (Poland, Romania, Portugal, Slovakia, Croatia, Greece, Cyprus and Estonia) and Ireland (and Belgium and the Netherlands to a lesser extent). A significant shake-up in their relative positions on the inequality scale has taken place in this period, because inequality has surged in some of the countries that were initially more egalitarian (mainly Sweden and Denmark as well as other EU14 countries) and fallen notably in some of the countries that were initially among the most unequal (mainly Romania, Portugal, Greece, Poland and Croatia as well as other CEE and Mediterranean countries).

Developments at the bottom of the income distribution are the main factor driving inequality trends across countries, as income levels tend to increase relatively more among lower-income earners in times of expansion (pushing inequality downwards) and relatively less in times of economic hardship (driving inequality upwards). These trends are more marked in many CEE and Mediterranean countries, where income levels (especially among the low-income population) have grown remarkably in good times but may suffer significant corrections in downturns as a result of hikes in unemployment. In contrast, income growth has been generally more subdued in EU14 countries (often especially so at the bottom of the income distribution, leading to growing inequality), but these countries may weather times of economic crisis better.

This geographical divide was very evident during the Great Recession but less so during the pandemic. Economic activity contracted severely during the first year of each crisis, negatively affecting income growth and inequality levels. The main differentiating element was the coordinated policy response across EU27 countries during the pandemic, when job retention schemes were quickly deployed in order to preserve employment. As a result, employment levels fell more moderately and in fewer countries during the pandemic, leading to income growth (albeit more modest) across most countries and less significant increases in income inequality.

Summarising the trends in income levels and disparities across EU countries over the 15 years studied, a distinct regional pattern is clear. On the one hand, the EU13 converged within the EU thanks to remarkable income growth, and this progress has been in many cases stronger among lower-income earners (reducing income inequality). The most positive examples are CEE countries, although this was not the case in all of them because the Great Recession had a particularly strong impact in Baltic states; nor was it the case for the EU13 Member States in the Mediterranean region (Cyprus, Malta and Slovenia).

On the other hand, income growth was more moderate in the EU14, especially among the lowest-income earners in many cases, leading to growing income inequality (and shrinking middle classes). This occurred in Nordic and most Continental countries. Mediterranean countries offer the most disappointing picture over the period, due to the protracted effects of the Great Recession on their labour markets: income levels generally grew even less than in Nordic and Continental countries, failing to significantly converge towards higher income levels as the EU13 did, even though most of them registered declines in income inequality (and expanding middle classes).

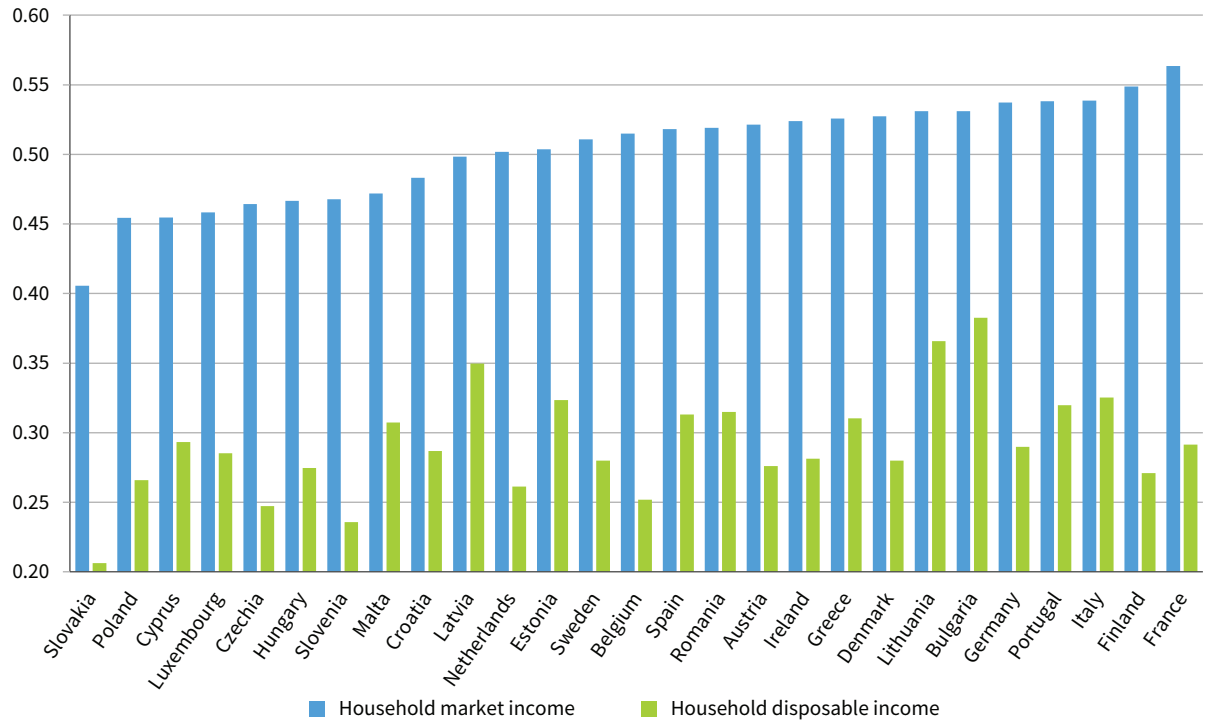
5 Welfare states reduce income inequality

European welfare states redistribute income across individuals and households, very significantly altering the map of income inequality between households. This chapter presents an empirical analysis of this role, identifying the effectiveness of the Member States in redistributing income and reducing inequality. It describes the extent to which income tax and social benefits are progressive – in other words, benefiting those at the bottom of the income distribution more than those at the top. It also describes the effect of welfare state intervention during the COVID-19 pandemic. The analysis is based on EU-SILC data on the main tax and benefit policies that effect such income redistribution. Caution is required when interpreting the results, however, because of important data caveats.[28]

Variation in the extent of income redistribution and inequality reduction by welfare states

Welfare states reduce market income inequality. Income inequality before the intervention of the welfare state (household market income) and after it (household disposable income) are compared in Figure 27. The figure illustrates two main points. First, inequality in disposable income is always much lower than inequality in market income across the Member States, pointing to the very important role of the welfare state in cushioning market income disparities, whose redistributive effect is stronger than that of the family.

Figure 27: Household market income and disposable income inequality are not closely related (Gini indices, EU Member States, 2022)



Note: *Countries are ranked by Gini index values (lowest to highest) for market income inequality.*
Source: *EU-SILC 2022 edition (income referring to 2021)*

28 EU-SILC is not adequate to provide a completely accurate assessment of the workings of welfare state policies. The dataset does not include all social policies and taxes. Moreover, data need to be interpreted with caution, since some of the tax and benefit policies included have a significant number of missing values.

Second, the relative impact of the welfare state varies significantly across countries, as evidenced by the rather weak association between inequality in market and disposable income (for both levels and changes over time).[29] The difference in strength of the redistributive role of the welfare state is also reflected by the notable changes in the country rankings that take place when the analysis moves from market income to household disposable income.

On the one hand, clear regional distinctions are apparent when considering market income inequality (countries are ranked from lower to higher levels in the figure). It is relatively high in many EU14 countries, including Nordic countries (Finland and Denmark), Continental (France and Germany) and Mediterranean countries (Italy, Portugal and Greece) plus Ireland, while there are only two CEE countries (Bulgaria and Lithuania) among those occupying the first 10 positions on the market income inequality scale. Market income inequality is relatively low in the EU13, which occupy almost all the bottom 10 positions (Slovakia, Poland, Cyprus, Czechia, Hungary, Slovenia, Malta, Croatia and Latvia), where Luxembourg is the only EU14 country present.

On the other hand, the ranking of countries changes notably when considered on the basis of household disposable income inequality (see also Figure 12 in Chapter 4). Several of the EU14 move down the inequality scale, to varying degrees: Belgium, France, the Netherlands, Austria and Germany in the Continental cluster and Finland, Denmark and, to a lesser extent, Sweden, in the Nordic cluster. However, Mediterranean countries within the EU14 remain rather unequal. For some of the EU13 Member States that had relatively low market income inequality, their positions worsen on the inequality scale (Cyprus, Malta and Croatia), as do the positions of the Baltic states and Bulgaria.

A more detailed picture of how much the welfare state cushions market income inequality and how this role has changed over time is provided in Figure 28. It takes the comparison between the inequality in market and disposable income shown in Figure 27 and calculates the reduction in the value of the Gini index after the income redistribution of the tax and benefit systems is taken into account, which serves as a proxy to measure the role of the welfare state in reducing market income inequality across EU countries. This inequality-reducing effect of the welfare state is compared across countries in 2006 and as an average over the period, so that changes over time are captured.[30] Three main conclusions can be drawn from the data.

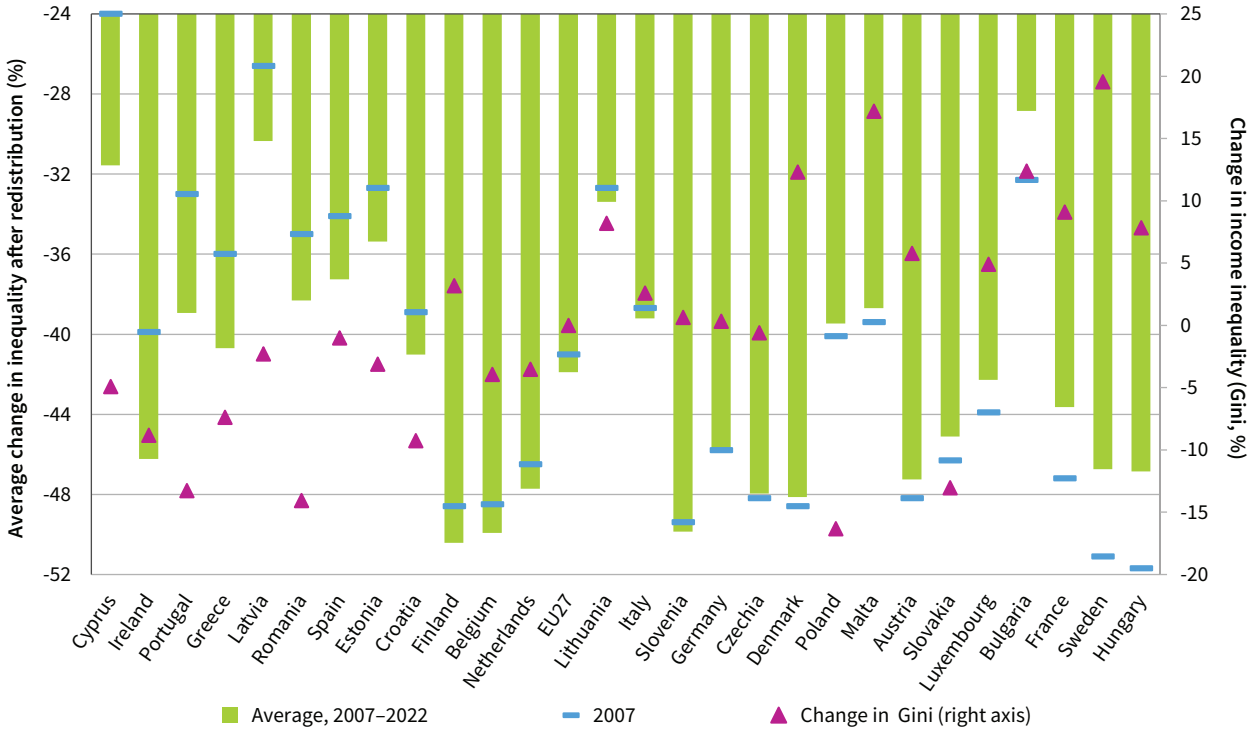
First, the relative strength of the welfare state in reducing income inequality varies significantly between countries, replicating the same regional pattern as described earlier in this section. Based on average values over the period, cross-country average inequality declines by around 42% when the effect of the welfare state is taken into account. The role of the welfare state is stronger in Nordic countries (Finland, Denmark and, to a lesser extent, Sweden) and Continental countries (mainly Belgium, the Netherlands and Austria, although Germany and France are above the EU27 average as well) as well as Ireland, but also in a few CEE countries (Slovenia, Czechia, Hungary and, to a lesser extent, Slovakia). Conversely, the role of the welfare state is weaker in some CEE other countries (Bulgaria, the Baltic states and Romania) and several countries in the Mediterranean area (Cyprus, Malta, Spain, Portugal, Italy and Greece). Box 6 discusses the capacity of each type of welfare state policy to reduce market income inequality.

Second, although the relative strength of the welfare state to cushion market inequality is fairly stable over time, there are some changes over the period that are worth mentioning (countries are ranked in the figure based on how that role has changed, from strengthening to weakening, which is reflected by comparing the values in 2006 and over the whole period). The role of the welfare state has grown (to different degrees) in more than half of the EU countries (the 16 at the left of the figure) and especially in a mix of CEE and Mediterranean countries where it was not so strong at the beginning of the period (Cyprus, Portugal, Latvia, Greece, Romania, Spain, Estonia and Croatia), although also in Ireland (and Finland, Belgium and the Netherlands to a lesser extent). Nevertheless, a weakening in the inequality-reducing role of the welfare

29 The coefficient of correlation for inequality in both indicators is around 0.27 (2022 EU-SILC data), the same as for the changes in inequality in both indicators over the 15 years studied.

30 The change in the capacity of welfare states to reduce inequality over the period would normally be best assessed by comparing the values in 2006 and 2021. However, besides the strengthening of this role across many countries, the change is also in some cases the result of welfare states being especially active against the background of the pandemic in 2021 (2022 EU-SILC data), when welfare states stepped in by means of increased policy intervention, as is shown below. Therefore, it is best to compare the average values over the 15 years with those during the first year of the period, 2006 (2007 EU-SILC data), in order to infer trends.

Figure 28: Reduction in income inequality after welfare state income redistribution, EU Member States, 2007–2022 (%)



Notes: *Data refer to the reduction in the Gini index when moving from market income to disposable income. Average refers to the average yearly value over the whole period between 2006 and 2021 (EU-SILC 2007–2022). Countries are ranked by the difference between that value and the value in 2006 (EU-SILC 2007), a higher value in the average than in 2006 indicating a strengthening of the welfare state's inequality-reducing effect. Change in household disposable income inequality over the period is depicted on the secondary axis (the correlation between these changes in the Gini index and the changes in the inequality-reducing role of the welfare state over the period is 0.4). EU27 refers to the unweighted average across the Member States. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

state is evident in 11 countries (to the right of the figure), including countries where the starting position was better, namely some Nordic (Sweden and Denmark) and Continental (France, Luxembourg and Austria) countries, and in Hungary and Bulgaria (and Slovakia, Malta, Poland and Czechia to a lesser extent).[31]

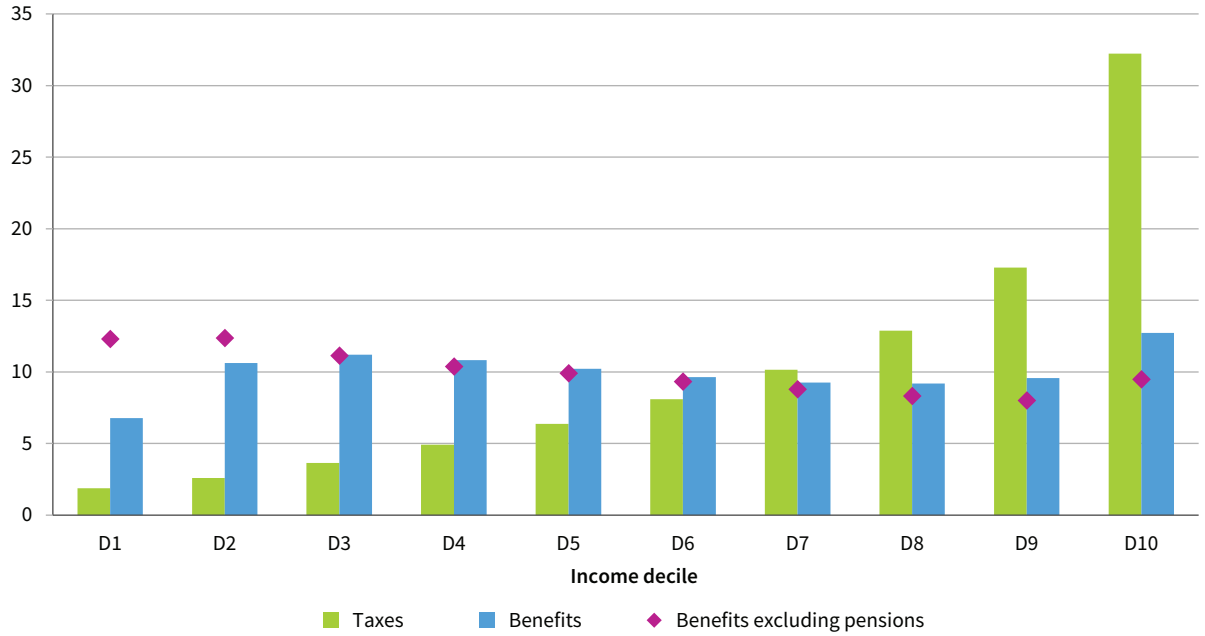
Third, the changes in the role of the welfare state are associated with the changes in income inequality over the period. Among those countries where the role of the welfare state was strengthened (left of the figure), income inequality generally declined, and significantly so in most cases. Conversely, among those countries where the role of the welfare state weakened (right of the figure), income inequality generally increased and significantly so in many cases (Sweden, Denmark, Austria, Luxembourg, Hungary, Bulgaria and Malta), which points to the erosion of the welfare state as a possible cause behind such surges in inequality.

Welfare states redistribute income: taxation is progressive across the Member States, but the benefits system is not in most cases. A different take on the operation of welfare states is provided by data on the relative participation of each income decile in the tax and benefit systems, which allows the redistributive role of public policies to be observed.[32]

31 If a comparison were made between 2006 and 2021 (instead of the average over the period) in order to infer trends in the role of the welfare state, the picture would change slightly. Instead of 11 countries, the weakening would occur in 9 of them (France, Slovakia and Poland would not be included, while Lithuania would).

32 The inequality-reducing role of the welfare state (presented earlier) and its redistributive role over the different income deciles (covered here) are related but are not the same. For instance, pensions result in a strong reduction in market income inequality, because they may be the main source of income in many poor households. Nevertheless, this is compatible with higher-income earners receiving a larger amount of money from pensions, which is analysed later in this section.

Figure 29: Taxes are more progressive than benefits (shares of benefits received and taxes paid, by income decile, EU Member States' yearly average over 2007–2022, %)



Notes: *The figure shows the shares of taxes paid and benefits received by each income decile out of the total amount of taxes and benefits in each country. Values refer to the yearly average across EU27 Member States over the whole period 2006–2021 (EU-SILC 2007–2022).*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

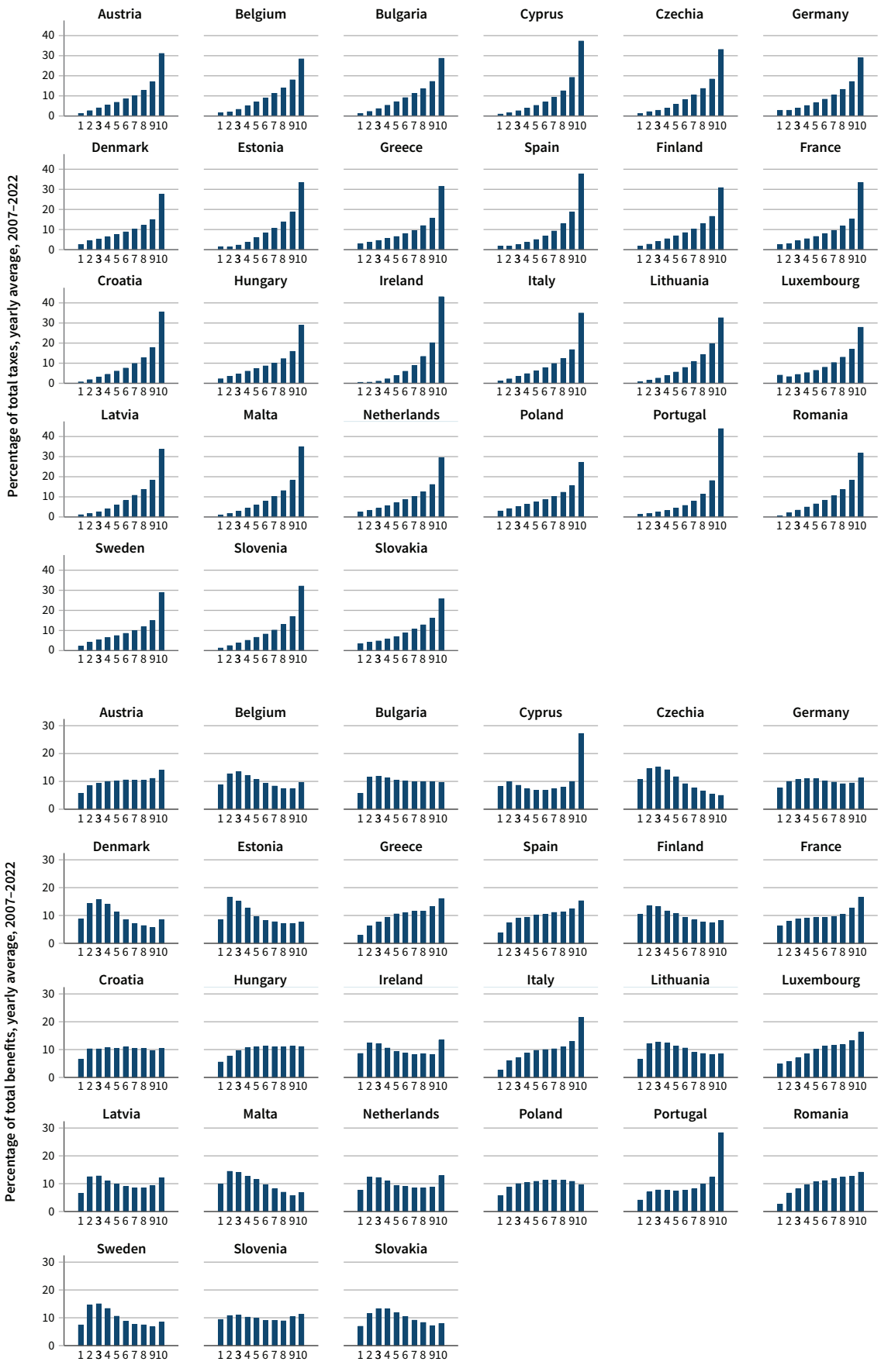
Figure 29, which presents average data for the Member States over the period, offers two main insights.

First, taxes are very progressive, since the relative contribution of each income decile to the total amount of taxes collected increases along the income distribution: the richest 10% pay more than 30% of the total taxes collected, while the poorest 10% pay less than 2%. Taxes on personal income are behind this progressiveness, since wealth tax is negligible (see Box 6) and much less progressive (see Figure A5 in Annex 2).

Second, social benefits are not really progressive on average across countries. They would be to a certain extent if the top and bottom income quintiles were excluded, since the richest 10% receive the largest proportion of the social benefits (around 12%), while the poorest 10% receive the smallest proportion (around 7%), less than that received by all the other income deciles. The allocation of social benefits becomes more progressive (although not as much as taxes) if pensions are excluded, since richer people receive a larger share of pensions (see Figure A5 in Annex 2). People who have higher incomes receive a larger share of sickness benefits as well, although to a much lesser extent than in the case of pensions. For all the other types of benefits, those in the bottom half of the income distribution receive a larger share of them than those in the top half (especially for housing benefits, but also for disability, education, family, survivor and unemployment benefits).

This picture becomes more nuanced once detailed country-level data are analysed (Figure 30). They reveal substantial differences between countries and over time. The progressive nature of taxes is consistent across all countries (Figure 30, upper panel), even though the intensity of this progressiveness may vary somewhat. For instance, the top income quintile contributes well over 30% of the total taxes collected in several countries (such as Portugal, Ireland, Spain, Cyprus, Croatia, Italy and Malta) but well below 30% in some others (Poland, Denmark, Luxembourg, Belgium, Bulgaria and Sweden).

Figure 30: Progressiveness of benefit systems is mixed across the EU Member States (Share of taxes paid (upper panel) and benefits received (bottom panel), by income decile, yearly average over 2007–2022, %)



Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

In the case of benefits, the abovementioned lack of progressiveness conceals the existence of very different realities across countries (Figure 30, bottom panel), which can be clustered into three groups.

- The benefit system is clearly progressive in a group of nine countries, where people in the bottom half of the income distribution receive a larger share of the benefits than those in the top half. These are the Nordic countries (Sweden, Denmark and Finland), Belgium and some CEE countries (Czechia, Estonia, Slovakia and Lithuania) plus Malta.
- The allocation of benefits does not reflect any clear distributional picture in the second group of seven countries: Germany, the Netherlands, Ireland, Latvia, Croatia, Slovenia and Bulgaria.
- The benefit system could be defined as regressive in the third group of 11 countries, where people in the bottom half of the income distribution receive a lower share of the benefits than those in the top half, which happens in a mix of Mediterranean countries (Italy, Greece, Portugal, Spain and Cyprus) and CEE countries (Romania, Poland and Hungary), plus Luxembourg, France and Austria. The 10% of the population with the lowest income levels receive well below 5% of the total benefits in the Mediterranean countries (slightly more in Cyprus) and Romania, while the top income decile receives between 15% and 20% of the total benefits there (even more in Cyprus).

In all three groups, the bottom income decile often receives a relatively small share of the total benefits, reflecting difficulties in accessing those benefits.

As mentioned above in relation to Figure 29, based on average data across Member States, the general progressiveness of the allocation of benefits increases if pensions are excluded. This is confirmed by detailed data for each country (see Figure A6 in Annex 2). In most countries where the bottom half of the distribution does not receive a larger share of benefits when pensions are included, it does receive a larger share when pensions are excluded. The only exceptions are Mediterranean countries (Cyprus, Italy, Portugal, Spain and, to a lesser extent, Greece).[33]

Tax and benefit systems became less progressive over the period in most countries (see Figure A7 in Annex 2 for the situation in 2006). In 2006, in a majority of countries the 10% of people with the lowest income levels received a larger share of the total benefits than on average over the succeeding 15 years, while the top income decile received a lower share.

The design of social benefits systems could be improved. The distributional impact of the allocation of social benefits is one of the factors that determine the capacity of welfare states to cushion market income inequality, among other factors such as the design of the tax system and the scale of the income redistribution. Although the distributional impact of benefit allocation is a different concept from the total inequality reduction effect of welfare states, there are clear similarities between the two across countries and, where they diverge, they provide information for improvement in the design of public policies.

First, the relatively low share of benefits received by the poorest 10% of people in almost all countries is a clear message to policymakers. Many of the most disadvantaged people in European societies find it difficult to access the benefits that would alleviate their situation, probably because they cannot comply with application procedures and fall through the gaps in the process (for instance, because they cannot supply documentation).

Second, making benefit systems more progressive could improve the working of the welfare state in many countries. This is reflected by the fact that in most countries where the welfare state is relatively weak in mitigating market income inequality (Mediterranean countries, Latvia and Romania), benefit systems are not progressive. Moreover, although benefits tend to be designed progressively in many of the countries where the welfare state strongly cushions market income inequality (the Nordic countries and Belgium, and CEE countries such as Czechia and Slovakia), this is not the case in some other Continental countries (Austria, France, Germany and the Netherlands) and CEE countries (Hungary and Slovenia).

Third, a greater scaling up of income redistribution would improve the working of the welfare state as well as reducing inequality. This applies generally to all countries with a progressive benefit system design, including both those where the inequality-reducing role is strong (such as the Nordic countries) and those where the inequality-reducing effect is weaker (Estonia, Lithuania and Malta). Moreover, since most benefit systems are in fact progressive when pensions are not considered (except in the Mediterranean countries), increasing the amount of money allocated to benefits with a progressive impact over the income distribution would both make the benefit allocation more progressive and help welfare states cushion inequality.

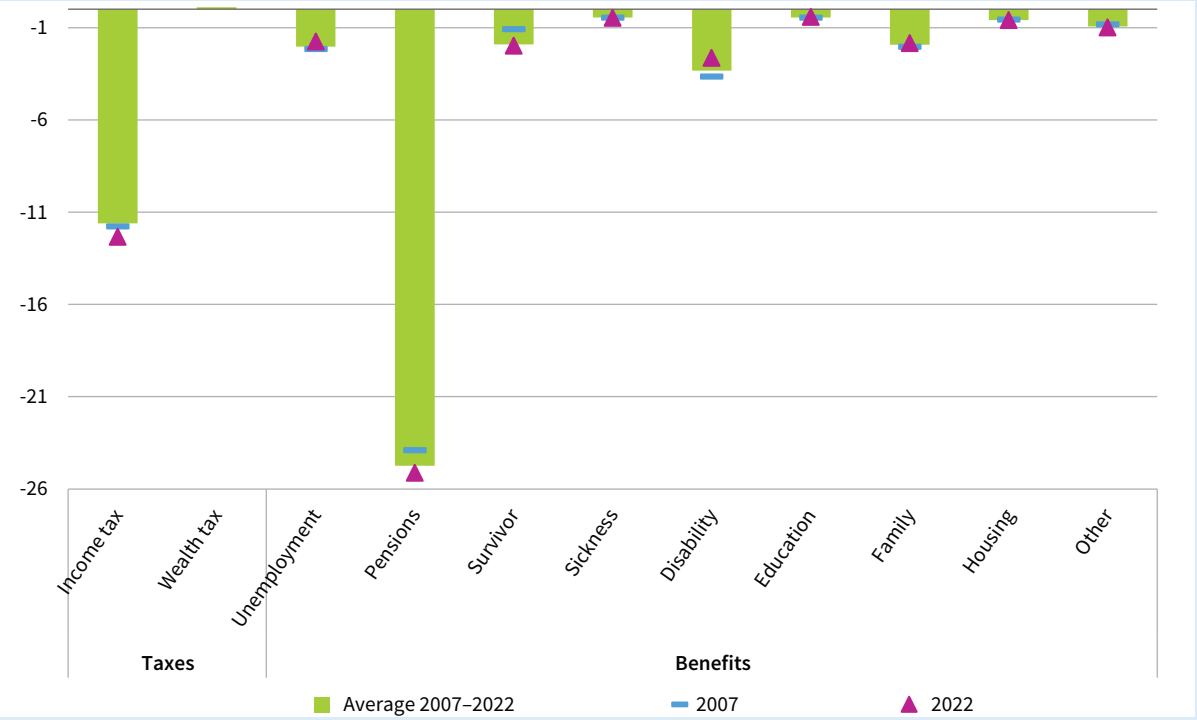
33 There are also some CEE countries (the Baltic states and Bulgaria) where the benefit allocation becomes regressive (the top half of the distribution receiving a larger share of the benefits) when pensions are excluded.

Box 6: Stronger effect of pensions and income tax in cushioning market income inequality

The inequality-reducing effect varies significantly between specific public policies, even though it remained rather stable over the period, as shown by Figure 31 for an average across countries and in more detail for each country in Table A3 in Annex 2.

- Taxes on income and social contributions have the strongest effect in reducing income inequality, especially in Slovenia, Ireland and Continental countries (Belgium, the Netherlands, Austria and Germany) and Nordic countries (Finland, Sweden and Denmark), while the impact is less in several CEE countries. In contrast, taxes on wealth have a negligible effect, although caution is needed when interpreting the results, given the important data caveats of EU-SILC.
- Pensions are the social benefit with the strongest impact in reducing market income inequality (especially in several CEE countries, Greece, France, Luxembourg, Austria and Sweden). This significant inequality-reduction effect of pensions may be due to pensions being the main source of income in many poor households. This is compatible with the fact that pensions are not allocated in a progressive way (people with higher incomes receive a larger share of pension systems, as shown in Figure 32).
- Disability, unemployment and family benefits come next among social benefits in their capacity to reduce income inequality. The effect is especially potent in Nordic countries, Ireland, Croatia and Slovenia in the case of disability benefits (which reduce inequality significantly in most countries, typically more than unemployment benefits); most Continental countries and the Nordic countries, Ireland and Spain in the case of unemployment benefits; and Ireland, Cyprus, Continental countries and some CEE countries in the case of family benefits.
- Survivor, sickness and housing benefits have the lowest impact in reducing income inequality. The effect of survivor policies is more relevant in Mediterranean countries. Sickness benefits reduce inequalities relatively more in Nordic countries. The effect of housing policies is relatively more important in Nordic and Continental countries and in Ireland.

Figure 31: Pensions and income tax have the largest effect in moderating market income inequality (reduction in inequality after welfare state redistribution, by policy type, average EU Member States, %)



Notes: *Average data across countries are shown, referring to the reduction in the Gini index when moving from market income to disposable income, provided for 2006, 2021 and the average yearly value over 2006–2021 (EU-SILC 2007, 2022 and 2007–2022, respectively). The effect of benefits is calculated by comparing market income inequality, on the one hand, with market income inequality incorporating each specific public transfer, on the other. The effect of taxes uses as a reference not the market income but the total household income (including income from public transfers). Data need to be interpreted with caution, since some of these items have a significant number of missing values.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

The redistributive role of the welfare state results in differences in the relative importance of each type of tax and benefit over the income distribution, as reflected by the shares that each represents over the total amount of taxes paid (upper panel in Figure 32) and benefits received (lower panel in Figure 32), by income decile. Taxes and benefits have different prevalences over the income distribution, as reflected in Figure 32. Income tax accounts for almost the entirety of the taxes paid (among those included in EU-SILC), and people in the top income quintile pay the most income tax, which reflects the strength of its progressiveness. In contrast, wealth tax represents a negligible part of the taxes paid by households: according to the latest data referring to 2021, it represents between just 4–6% of the total taxes paid (considering both personal income tax and wealth tax) in a few countries (France, Greece, Spain, Denmark and Sweden) and much less than that across most countries, being even non-existent in several of them (although EU-SILC data caveats should be considered when interpreting the results).

Figure 32: Pensions are more prevalent among high earners (shares of type of taxes (upper panel) and type of benefits (lower panel), by income decile, EU27 yearly average over 2007–2022, %)

Notes: *Data are aggregated across Member States, defining income deciles specific to each country. The graphs show the share of the total benefits and taxes received and paid by each income decile represented by each benefit and tax.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

In addition, despite their much larger effect in reducing market income inequality, the share that pensions represent in the total amount of benefits received increases when moving up the income distribution (lower panel). This reflects the fact that pensions are larger among high-income earners, which also explains why the design of the benefit system is not progressive in many countries. Sickness benefits tend to be more prevalent in the upper half of the income distribution, too, but to a much lesser extent than pensions. In contrast, other benefits (housing, education, other social benefits and, though less so, family and disability benefits) are more prevalent at the bottom of the income distribution.

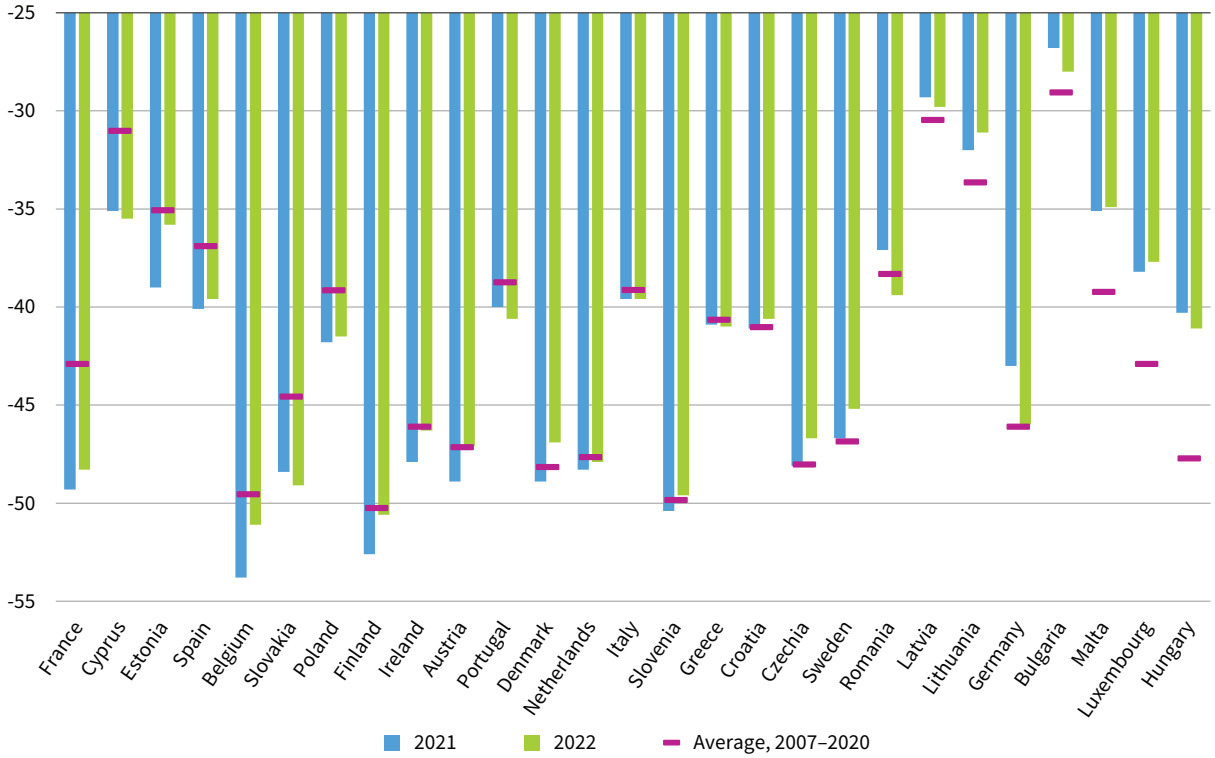
Welfare states stepped in during the pandemic

An enhanced and coordinated policy intervention by welfare states was initiated across EU27 countries to deal with the consequences of the COVID-19 pandemic, facilitated by a departure from EU fiscal rules. The deployment of job retention schemes to avoid employment losses prevented more generalised rises in income inequality and falls in income levels across countries.

The inequality-reducing role of welfare states strengthened in most countries during the first year of the pandemic. Compared with the yearly average between 2006 and 2019, the magnitude of the inequality reduction due to welfare state redistribution increased in a majority of countries in 2020, as shown in Figure 33. This occurred especially in France, Cyprus, Estonia, Spain, Belgium, Slovakia and Poland (on the left of the figure, since countries have been ranked by the relative difference between the magnitude of the inequality reduction over 2006–2019 and that in 2020). The extent of the inequality reduction lessened somewhat in 2021 across almost all countries, although it was still more than before the pandemic in many countries.

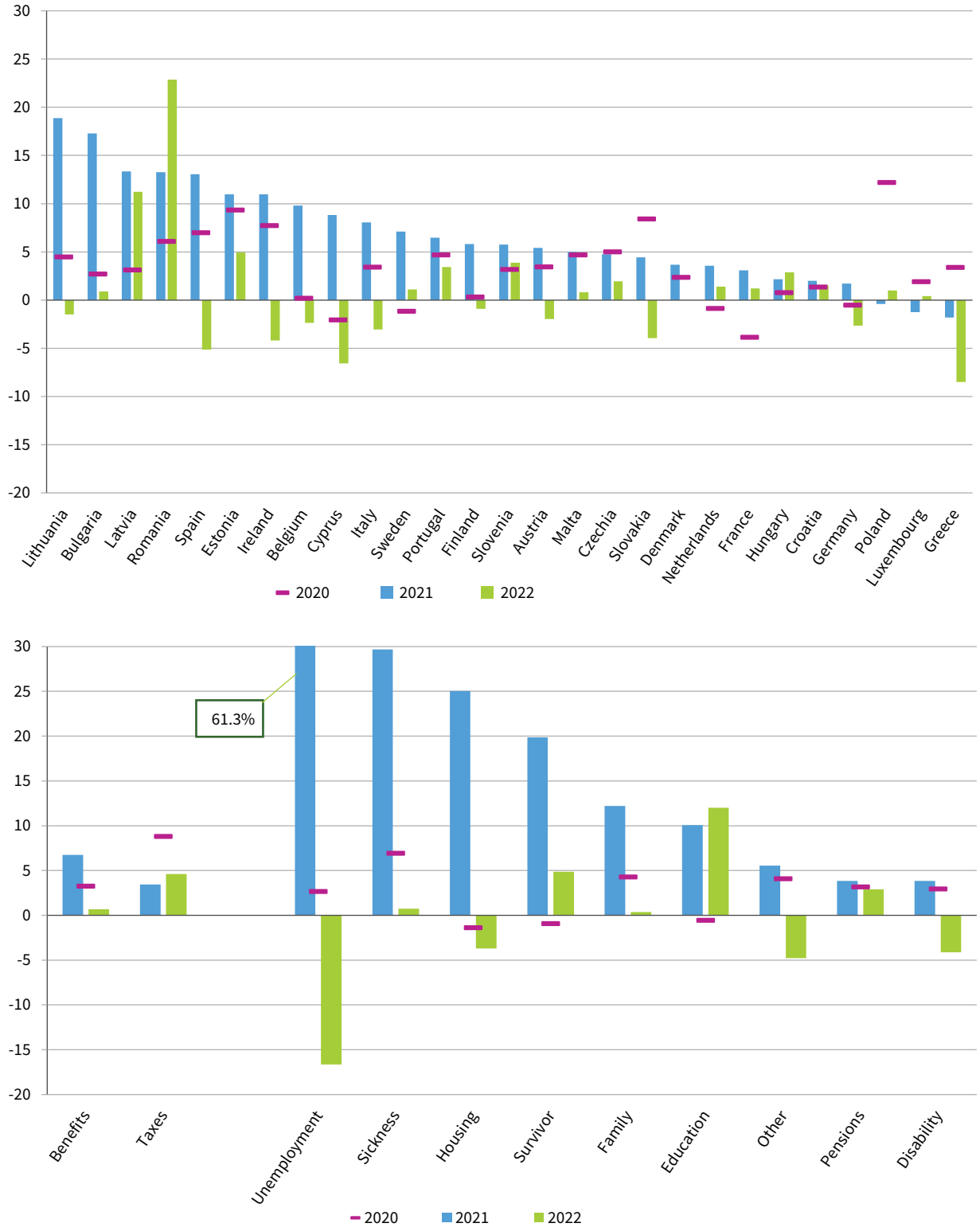
Some characteristics of the coordinated policy intervention during the pandemic can be observed in Figure 34, which shows the yearly changes in the financial resources allocated to social benefits across countries (upper panel) and for each type of social

Figure 33: The inequality-reduction role of the welfare state strengthened during the pandemic (change in income inequality after welfare state redistribution, EU Member States, %)



Notes: *Data refer to the reduction in inequality levels when moving from market income to disposable income. Countries are ranked by the relative difference between the value over 2006–2019 (EU-SILC 2007–2020) and the value in 2020 (EU-SILC 2021), a higher value in 2020 than in the average indicating a strengthening of the welfare state's inequality-reducing effect during the first year of the pandemic.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure 34: Social benefits expanded in the pandemic (change in amount spent on social benefits, by Member State (upper panel) and by type of policy (lower panel), 2020–2022, %)



Notes: *Data refer to the change in the total amount of money spent on social benefits by each country (upper panel) and cross-country averages of the change in the total amount spent on benefits (and by type of benefit) and collected in taxes (lower panel). Data show change the year before the pandemic (2019, EU-SILC 2020), the first year of the pandemic (2020, EU-SILC 2021) and the second year of the pandemic (2021, EU-SILC 2022), when compared with the previous year. Countries in the upper panel and social benefits in the lower panel are ranked by the extent of change in 2020 (EU-SILC 2021).*
Source: *EU-SILC 2020–2022 editions (income referring to 2019–2021)*

policy (lower panel), comparing the trend up to 2019 with the two years of the pandemic, 2020 and 2021. Three points are worth noting.

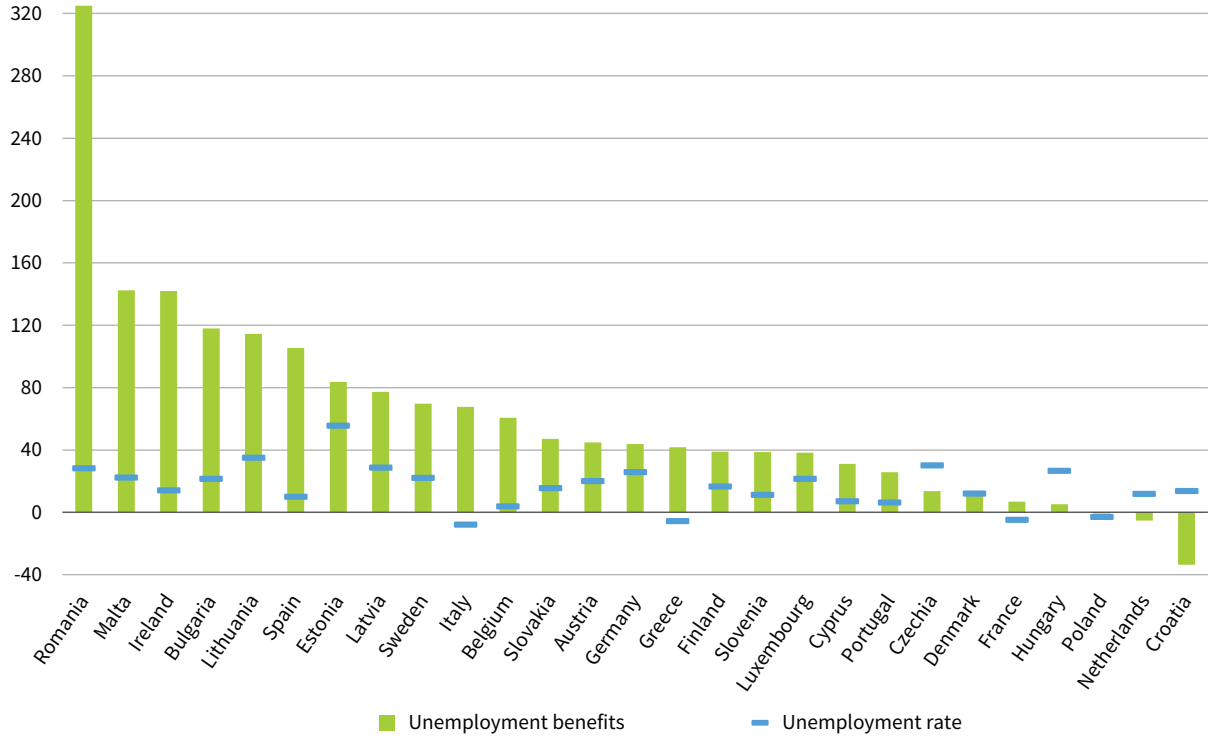
First, countries adopted an extraordinary policy response to address the consequences of the pandemic in 2020, which resulted in a 7% increase in the amount of money put into social benefits, well above the 3% increase in the previous year. Social benefit spending increased in most countries in 2020 (and typically well above that of the previous year): over 10% in the Baltic states, Bulgaria, Romania, Spain and Ireland, and below 10% but still above the EU27 average in Belgium, Cyprus, Italy and Sweden.

Second, the average amount spent on social benefits still increased in the second year of the pandemic, although by less than 1%, since several countries started to roll back and spend less. Nevertheless, a majority of countries continued to increase the resources directed to social benefits in 2021, and even to a larger extent than in 2020 in a few cases (Romania and Hungary).

Third, unemployment benefits expanded far more than any other policy programme. They increased in 2020 by more than 60% on average across countries, before declining from those high levels in 2021. The total amount spent on sickness, housing, survivor and family benefits (as well as education) increased in 2020 too, well above the previous year's increase. In contrast, the money collected in taxes increased less than in the previous year, as the economy slowed down.

The funding of unemployment benefits in 2020 increased most in several CEE countries (Romania, Bulgaria and the Baltic states) and Mediterranean countries (Malta, Spain and Italy) plus Ireland, Sweden and Belgium (Figure 35). This expansion was only partly the result of growing unemployment. Employment levels were largely maintained in most countries thanks to the deployment of job retention schemes, financed by unemployment benefits. In some cases, employees were paid through unemployment benefits instead of by their employer. In other cases, employers continued paying the wages of their employees on short-term working schemes and then received funding from the government to compensate them for those expenses. For full details on the specific operation and impact of job retention schemes across Member States, see Eurofound (forthcoming).[34]

Figure 35: Unemployment benefits expanded due to job retention schemes (change in amount spent on unemployment benefits and in the unemployment rate, EU Member States, 2021, %)



Notes: *Data refer to yearly change in unemployment rates and in the total amount of money spent in unemployment benefits between 2019 and 2020 (EU-SILC 2020 and 2021).*
Sources: *EU-SILC 2020–2021 for income (referring to 2019–2020); Eurostat for unemployment (2019–2020)*

34 The forthcoming analysis by Eurofound shows that the use of job retention schemes absorbed 37% of the shock that the pandemic had on individual incomes. Furthermore, this effect declined to 22% in 2021, amidst a phaseout of the schemes. This phaseout was accompanied by increased importance of automatic stabilisers such as unemployment benefit systems, which absorbed 18% of the income shock in 2021. The analysis also shows that job retention schemes were redistributive in nature in both years and were most protective of the bottom income quintile, for whom they absorbed 47% and 26% of the income shock in 2020 and 2021, respectively.

Box 7: Welfare states prevented a bleaker situation during the pandemic

The pandemic would have had a more negative impact on European labour markets in the absence of welfare state income redistribution. This is illustrated by the difference between the trends in household market income and household disposable income in 2020 (Figure 36).

Figure 36: Welfare states prevented a more negative impact of the pandemic (changes in income inequality (upper panel) and income levels (lower panel), EU Member States, 2021, %)

Notes: *Data refer to change between 2019 and 2020 (EU-SILC 2020 and 2021). The upper panel depicts change in income inequality (Gini index), and countries are ranked by the change in market income inequality, from biggest decline to biggest increase. The lower panel shows changes in average real income levels, and countries are ranked by the change in market income levels, from biggest decline to biggest increase.*
Source: *EU-SILC 2020–2021 (income referring to 2019–2020)*

On the one hand, the increases in income inequality are more generalised (see upper panel): more than two-thirds of countries registered growing market income inequality, including some (Belgium, Ireland, Finland and Austria) where household disposable income inequality did not increase. Moreover, the increases in market income inequality were generally of a larger magnitude, especially in the cases of Spain, Czechia, Italy, Lithuania and France.

On the other hand, average income levels declined in more countries and more significantly in the case of market income (lower panel): although market income levels continued to rise across most countries, they fell relatively more than household disposable income in some cases (Slovakia, Germany, Italy, Austria, Spain, Finland and Belgium) and declined in some countries where household disposable income grew (Czechia and Greece).

Summary

The welfare state cushions market income inequality significantly, reducing it by an average of 42% across countries after taxes are deducted and social benefits distributed. This inequality-reducing effect of the welfare state (whose most impactful policies are personal income taxes and pensions) is stronger in Nordic and Continental countries and in a few CEE countries (Slovenia, Czechia and Hungary, and Slovakia to a lesser extent), while it is weaker in other CEE and Mediterranean countries (Bulgaria, the Baltic states, Romania, Cyprus, Malta, Spain, Portugal, Italy and Greece).

There is a clear association between trends in income inequality and changes in this role of the welfare state over 2006–2021: income inequality tended to decline in countries where the role of the welfare state strengthened (such as several CEE and Mediterranean countries), while it widened in many of the countries where the welfare state's inequality-reducing effect weakened (EU14 countries such as Sweden, France, Denmark, Luxembourg and Austria, and also Hungary, Bulgaria and Malta).

While income tax is progressive across all countries (with higher-income groups contributing much more to the total amount collected), the distribution of social benefits is progressive only in a third of countries (the Nordic countries, Belgium and several CEE countries). In around another third of countries, those in the bottom half of the distribution do not receive a higher share of the benefits, while they receive less in several Mediterranean (Italy, Greece, Portugal, Spain and Cyprus) and CEE (Romania, Poland and Hungary) countries, plus Luxembourg, France and Austria. In some Mediterranean countries, the 10% of the population with the lowest income receive well below 5% of the total benefits, while the top income decile receives between 15% and 20% of the total benefits. The lack of progressiveness in the benefit systems of many countries is due to the effect of pensions, which are more prevalent among higher earners.

The analysis identifies several areas where policy action could improve the design of benefit systems. First, many of the most disadvantaged people find it very difficult to access the benefits they need to alleviate their situation; that points to the need to improve their access to benefits and to close the gaps in the application process. Second, many countries could design their benefit systems to be more progressive, which would imply reversing current trends, since benefit systems have become less progressive since 2006 in most countries. Third, greater income redistribution would improve the capacity of the welfare state to cushion market income inequality and would make benefit allocation more progressive. Taxes on wealth would enhance the available means for income redistribution, since they are negligible across most countries.

Strong welfare states are especially important in difficult times, as was demonstrated during the pandemic, when their intervention prevented greater income deterioration and higher rises in income inequality. The strength of the welfare state in cushioning market income inequality was reinforced across a majority of countries during the pandemic, especially in 2020, when the bulk of the coordinated policy effort through the deployment of job retention schemes was required. This enhanced policy action is reflected by the remarkable increase in funds allocated to social benefits in 2020 and 2021, mainly in the form of unemployment benefits (more than sickness, housing, survivor and family benefits), which was the policy tool used in many countries to finance job retention schemes.

6 The middle class shrank in most Member States

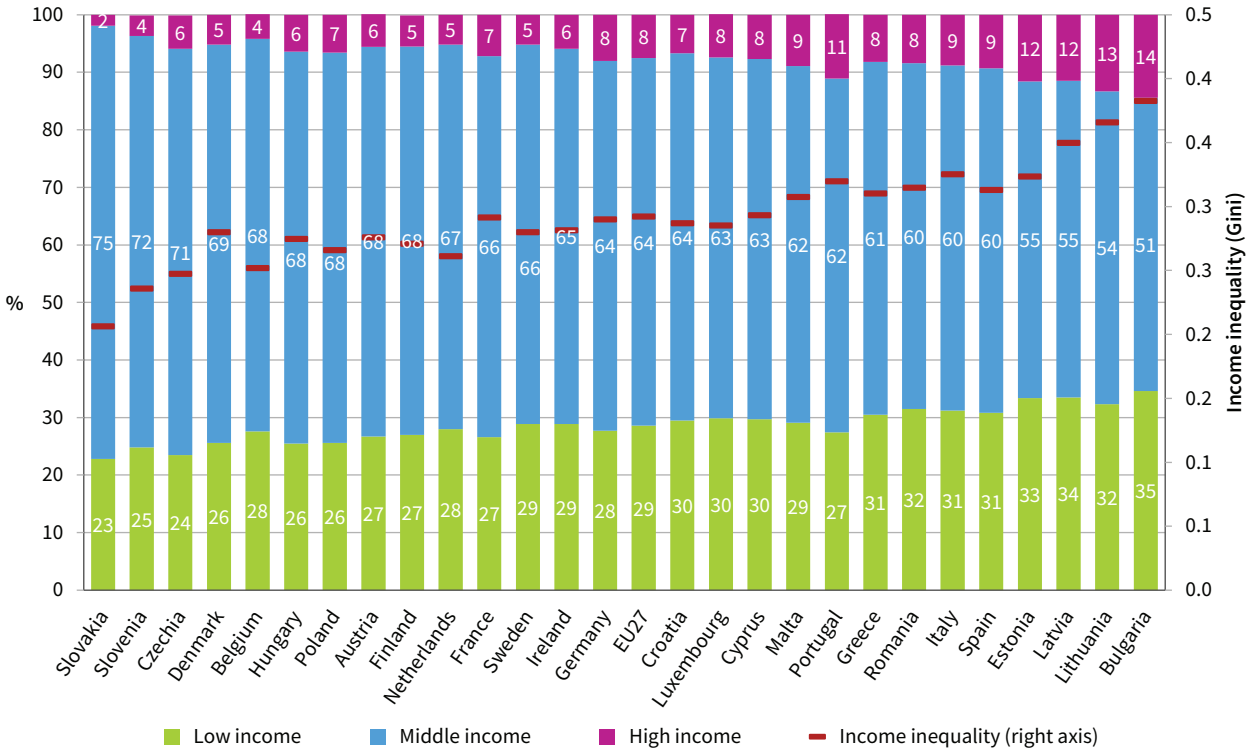
This chapter presents an empirical analysis of income polarisation, which provides a complementary snapshot of the trends affecting income distribution across the Member States. This is done by looking at two areas. First, an approximation of income polarisation is provided by focusing on the middle class, which captures how the income distribution spreads out from its centre. The size of the middle class is calculated across Member States and is examined over time to observe whether it has shrunk, while an analysis of its composition and changes in this over time is conducted. Second, an empirical methodology is applied to measure income polarisation across the whole population. The aim is to investigate whether polarisation is increasing due to a widening gulf between different income groups. Additionally, the analysis explores whether income dispersion within the middle class is contributing to income polarisation.

The middle class: Evolution and composition

This report defines the middle class in terms of income: individuals with an equivalised household disposable income between 75% and 200% of the national median. Based on this definition, European countries are middle class. On average across the EU Member States, the middle-income class comprises 64% of the population, making it more than twice the size of the low-income class (28.5%) and much larger than the relatively small high-income class (7.5%), according to the latest available data for 2021 (EU-SILC 2022 edition) depicted in Figure 37.

A larger middle class means a more cohesive society with a larger proportion of families whose earnings are concentrated around the middle of the income

Figure 37: The middle class constitutes a majority of the population across all Member States (sizes of income classes by household disposable income, 2022, %)



Note: *See methodology in Annex 1 for a definition of each income class.*
Source: *EU-SILC 2022 (income referring to 2021)*

distribution. This is why there is a very high correlation across countries between the size of the middle class and the level of household disposable income equality. The middle class represents a majority of the population across all Member States, but its relative size varies widely. It is above 75% in Slovakia (and above 70% in Slovenia and Czechia) and relatively large in Nordic and Continental countries. However, it falls to 51% in Bulgaria, and it is relatively small in a mix of CEE countries (the Baltic states, Bulgaria and Romania) and Mediterranean countries (Spain, Portugal, Italy, Cyprus and Malta). In this latter group, the relatively weak role of the welfare state in reducing market income inequality (see Chapter 4, Figure 28) is a factor in explaining the relatively small middle classes in these countries (and their relatively high income inequality); see Box 8, which describes how strong welfare states create larger middle classes.

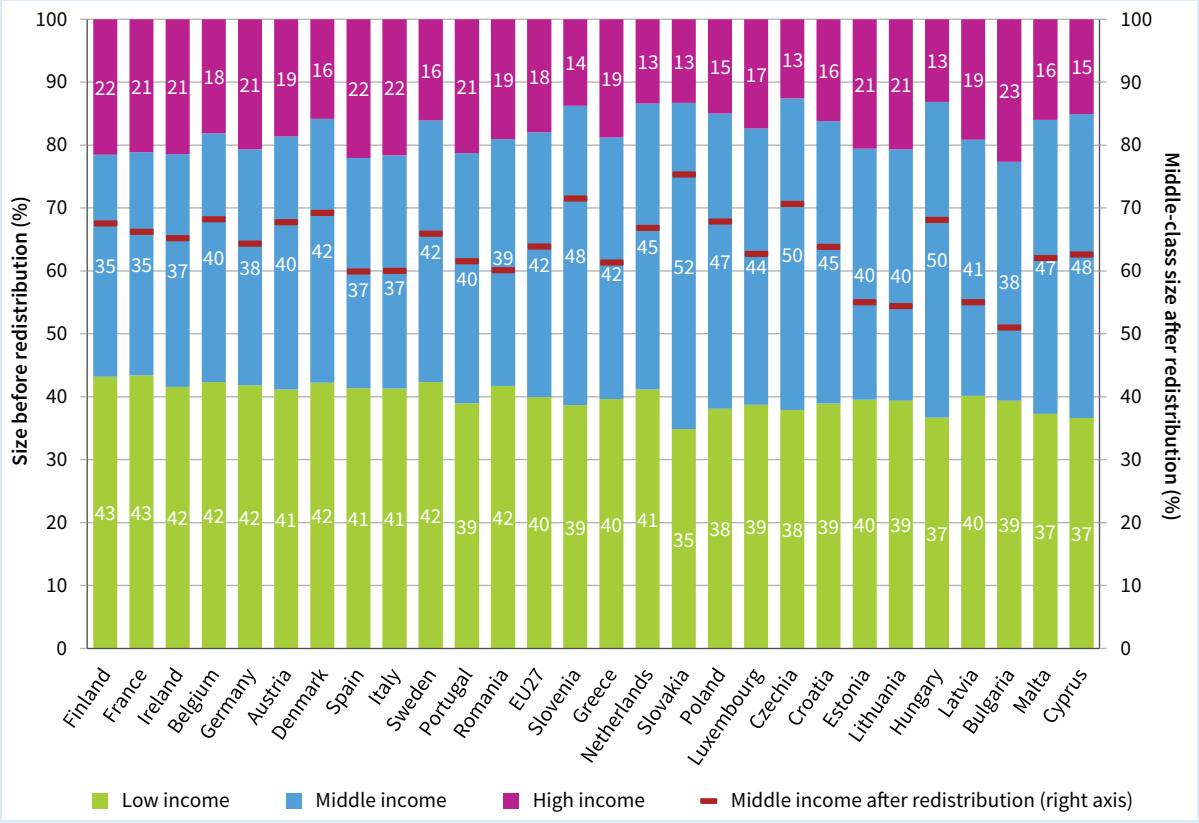
Naturally, the size of the other two income classes is smaller when the middle class is larger. Nevertheless, there is more relative variation across countries in the size of the high-income class than in that of the low-income class: the high-income class ranges from under 2% in Slovakia to over 14% in Bulgaria, while the size of the low-income class ranges from around 23% in Slovakia to almost 35% in Bulgaria.

Box 8: Welfare state income redistribution creates a larger middle class

The very important role of the welfare state in redistributing income across households and compressing the income distribution is reflected by the much smaller size of the middle classes when calculated using market income instead of household disposable income (Figure 38).

The average size of the middle class in EU Member States falls from 64% of the population to 42%, translating into larger high-income (from 8% to 18%) and low-income (from 29% to 40%) classes. Before welfare state

Figure 38: The middle class is much smaller before welfare state redistribution (sizes of income classes by market income, EU Member States, 2022, %)



Notes: *Countries are ranked by the ratio between the size of the middle class after and before redistribution, from higher to lower (a higher ratio meaning a larger relative expansion in the size of the middle class as a result of income redistribution). The coefficient of correlation between the sizes of the middle class across countries using market and disposable income is 0.23.*
Source: *EU-SILC 2022 (income referring to 2021)*

redistribution, the size of the middle class ranges from 52% in Slovakia (and around 50% in Hungary, Czechia, Cyprus, Slovenia and Poland) to 35% in Finland and France (and around 37% in Spain, Ireland, Italy and Germany).

The relationship between the size of the middle class across countries when considered before and after welfare state redistribution is not very strong (the coefficient of correlation is 0.23), given the very different roles of the welfare state in compressing the income distribution across countries, again reflecting the cross-country picture described in Chapter 5.

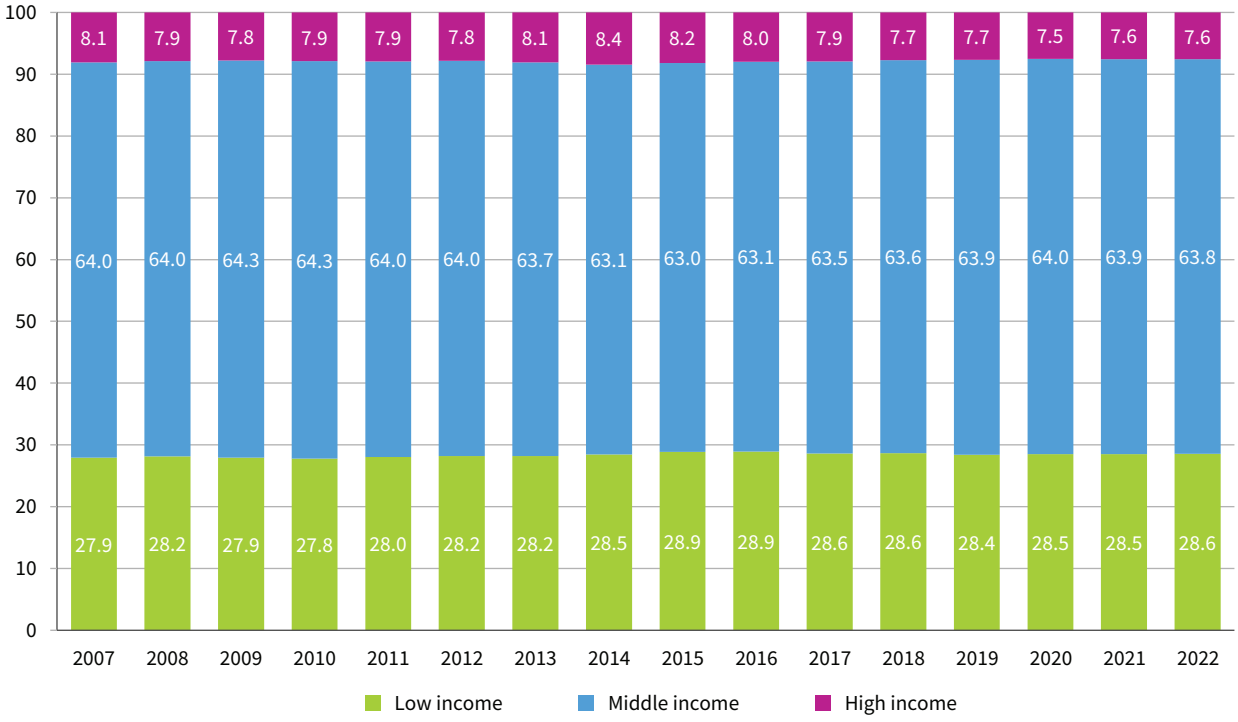
On the one hand, there is a group of countries where the middle class is relatively small before redistribution but expands notably after the effect of taxes and benefits (those to the left of the figure, where countries are ranked by the ratio between the size of the middle class after and before redistribution, from higher to lower). This happens mainly in Nordic and Continental countries (Finland, France, Belgium, Austria, Denmark, Germany and, to a lesser extent, Sweden) and Ireland. It is also the case, though less so, for some Mediterranean countries – Spain, Italy and Portugal – where the size of the middle class increases significantly after the redistribution but not enough to place them among those with a relatively large middle class, like Continental and Nordic countries.

On the other hand, there are countries where the middle class is relatively large before redistribution but then becomes relatively small after the intervention of the welfare state (many of those to the right of the figure). This happens in Cyprus, Malta and several CEE countries (the Baltic states, Bulgaria and Croatia).

A shrinking middle class?

Average cross-country data rule out a generalised and significant shrinking of the middle class in the EU. It was rather stable over the period: the average size declined negligibly from 64% in 2006 to 63.8% in 2021, with a very small expansion of the low-income class and a similar contraction of the high-income class (Figure 39).

Figure 39: Middle class size has remained stable on average across Member States (sizes of income classes, average EU Member States, 2007–2022, %)



Note: *Data refer to averages across countries (excluding Croatia).*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

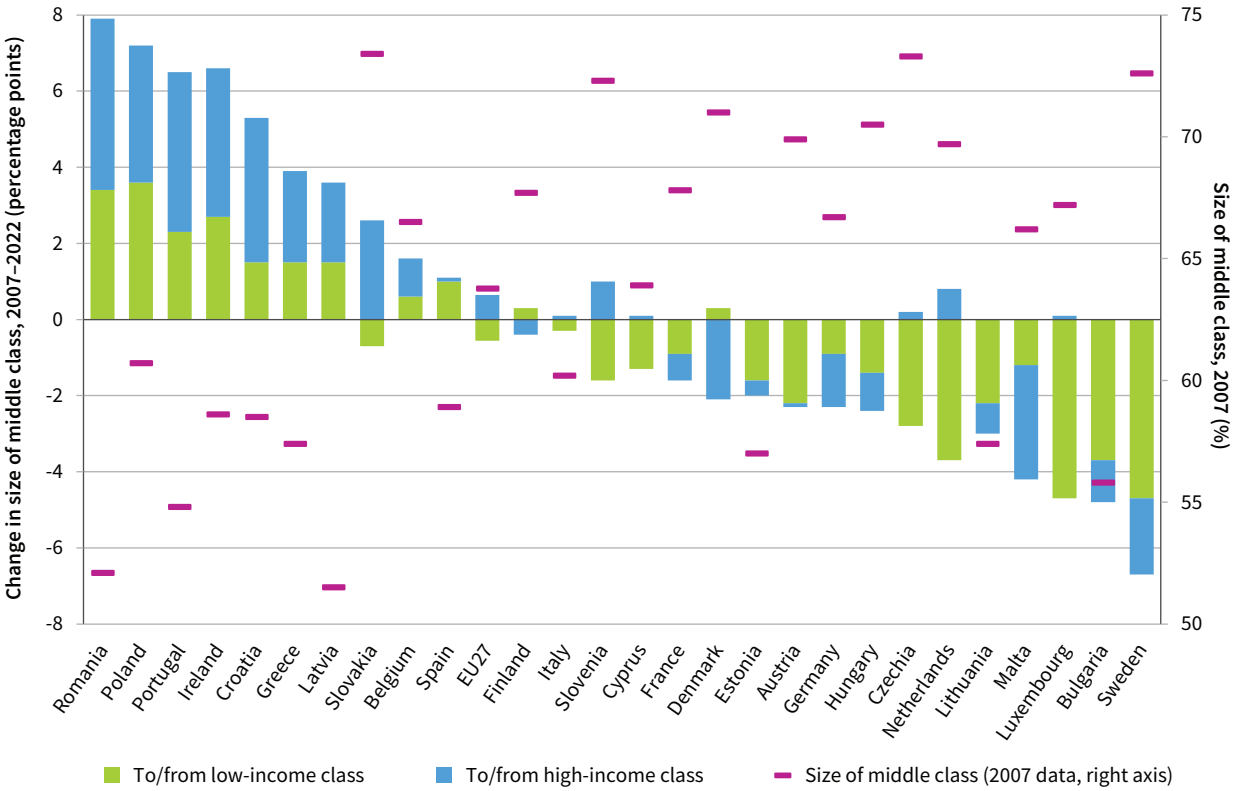
In most Member States, the middle class has shrunk. The relative stability of the average size of the middle class in the EU27 Member States conceals a picture of divergence between countries with a shrinking middle class in almost two-thirds of them.

Figure 40 compares the size of the middle class in 2006 across countries and changes in it over 2006–2021, decomposing the change into its impact on the size of the other two income classes (whose sign of change, plus or minus, has been inverted in the figure). For instance, the middle class expanded notably in Romania (by almost 8 percentage points), causing a reduction in the sizes of both the low-income class (-3.5 percentage points) and, to a greater extent, the high-income class (-4.5 percentage points). Conversely, the middle class shrank significantly in Sweden (by almost 7 percentage points), causing an expansion in the sizes of both the high-income class (+2 percentage points) and mainly the low-income class (almost +5 percentage points). The figure highlights three main points.

First, the middle class becomes smaller over the period in almost two-thirds of the countries (17 out of 27), although to varying degrees: more significantly (around and above 2 percentage points) in 12 countries, half of which are EU14 (especially Sweden and Luxembourg, and also the Netherlands, Germany, Austria and Denmark) and half of which are EU13 (especially Bulgaria and Malta, and also Lithuania, Czechia, Hungary and Estonia); and less significantly in France, Cyprus and Slovenia, and only negligibly in Italy and Finland. Conversely, the middle class expanded in 10 countries: very significantly (above 5 percentage points) in some CEE countries (Romania, Poland and Croatia), Portugal and Ireland; and less significantly in Greece, Latvia, Slovakia, Belgium and Spain.

Second, changes in the size of the middle class are closely related to those in income inequality described in Chapter 4 (with a coefficient of correlation of 0.72). The cross-country picture is more mixed for income inequality, but there is a significant degree of overlap in the trends in the two dimensions: the middle class shrank and income inequality surged in almost half of the countries, many of them Nordic and Continental (notably Sweden, Denmark, Luxembourg, France and Austria) but also Malta, Bulgaria, Lithuania and Hungary; conversely, the middle class expanded and income inequality fell in many other countries, significantly so in several CEE countries (Romania, Poland, Croatia, Slovakia and Latvia) and Ireland, Portugal, Greece and Belgium. From this overlap in trends, it follows that some convergence between

Figure 40: The middle class shrank in most Member States (change in the size of middle class, 2007–2022)



Notes: *Data depict the changes in the size of the middle class, differentiating between people coming from the low- and high-income classes in cases of increases in the middle class, or going into the low- and high-income classes in cases of declines in the middle class. For this reason, the sign of the changes in the size of the low- and high-income classes has been inverted. Countries are ranked by the change in the size of the middle class, from biggest increase to biggest decline. For Croatia, EU-SILC 2010 data are used instead of 2007 data. The EU27 average refers to the unweighted average across the Member States (excluding Croatia).*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

countries has taken place in the size of the middle class as well, mainly due to its expansion in some countries where it was initially rather small and reduction in countries where it was initially relatively large.[35]

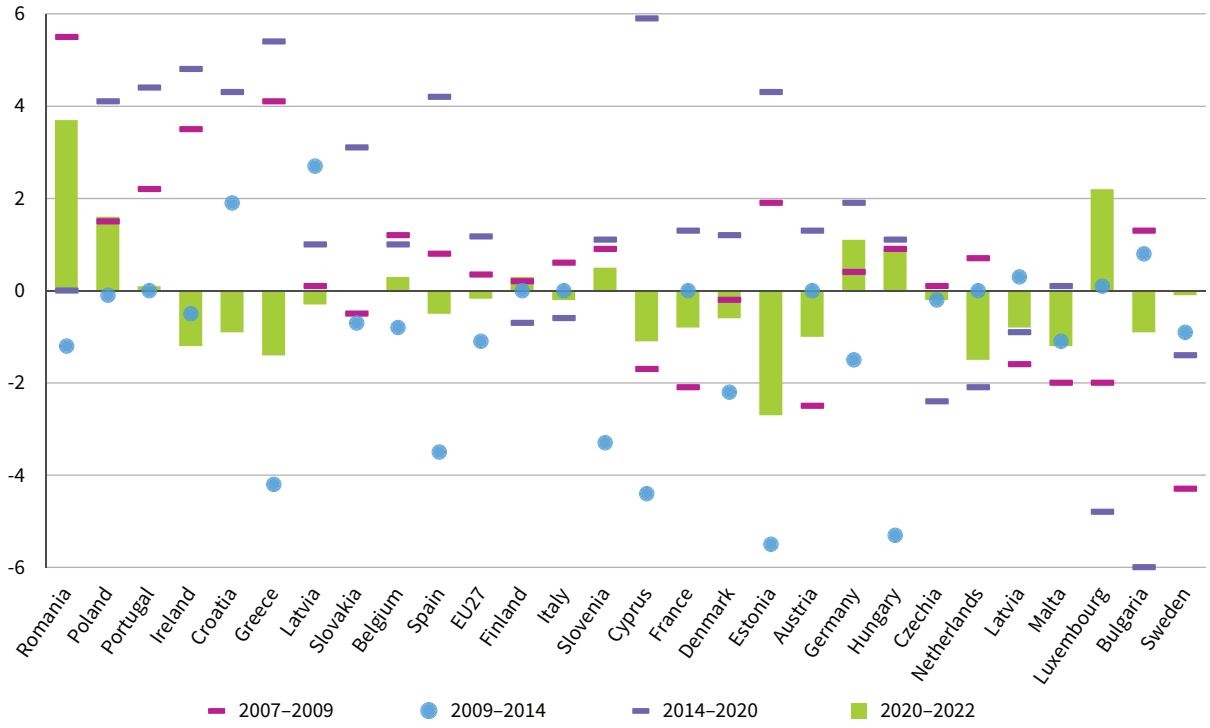
Third, changes in the size of the middle class over the period largely translate into downward movements from or into the other two income classes, reflecting poorer progress in income levels among people around the two income thresholds used to define the middle class. On the one hand, expansions of the middle class generally resulted in reductions in the sizes of the other classes, but downward movements from the high-income class into the middle-income class are more prevalent than upward movements from the low-income class, except in Spain. On the other hand, shrinking of the middle class generally translated into expansions in both of the other two classes, but downward movements into the low-income class are very clearly predominant (except in Malta and Germany).

Mixed patterns in the size of the middle class appear over the business cycle. Like income inequality, the size of the middle class is affected by the business cycle, moving cyclically with it in this case. This is shown in Figure 41, which presents data on the change in the size of the middle class across countries over the different subperiods (Figure A8 in Annex 2 provides information showing how those changes affected the sizes of the other income classes).

In economic upturns, the middle class generally expands, as happened in more than half of countries in 2006–2008 and in two-thirds of them and more intensively in 2013–2019. The largest gains occurred in several CEE and Mediterranean countries (while the middle class shrank in a few Continental and Nordic countries, including Luxembourg, the Netherlands and Sweden). In both episodes, the expansion of the middle class typically resulted in a larger decline in the size of the high-income class than in that of the low-income class.

In economic downturns, the middle class tends to shrink, as happened in almost two-thirds of countries in 2008–2013 (very significantly in those CEE and Mediterranean countries severely hit by the Great Recession such as Estonia, Hungary, Cyprus, Greece, Spain and Slovenia) and 2019–2021. Nevertheless, the

Figure 41: The middle class tends to contract in economic downturns (change in size of middle class by subperiod, EU Member States, 2007–2022, percentage points)



Notes: *Countries are ranked by the magnitude of the increase in the size of the middle class over the whole period. Owing to the one-year lag in EU-SILC income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021. For Croatia, EU-SILC 2010 data are used instead of 2007 data. The EU27 average refers to the unweighted average across the Member States.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

35 The degree of convergence (beta convergence) is assessed by comparing the size of the middle class in 2006 with its growth rate over the period across countries. The coefficient of correlation is 0.32, which is larger than that for convergence in income inequality across countries (0.2, as shown in Chapter 4).

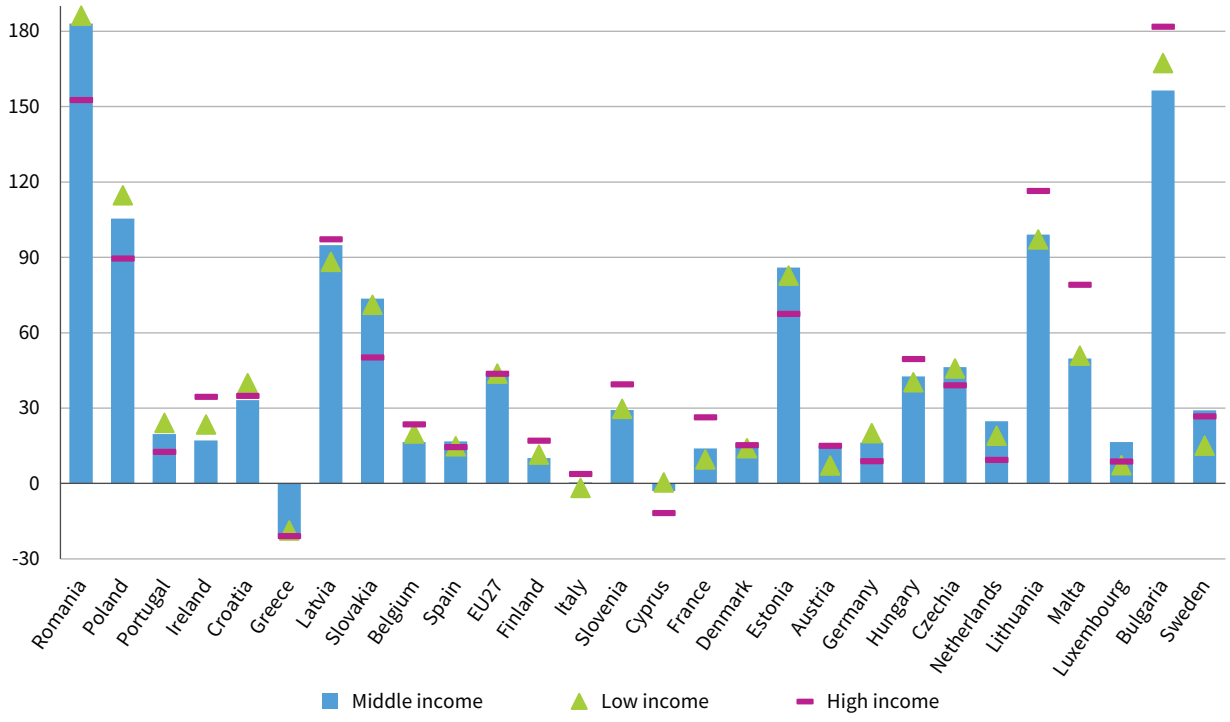
magnitude of the contraction was more moderate during the pandemic; in only a few CEE and Mediterranean countries (Estonia, Greece, Malta and Cyprus) plus the Netherlands and Ireland was it above 1 percentage point. In both episodes, the contraction of the middle class typically translated into a larger expansion in the size of the low-income class than in that of the high-income class.

Middle-class purchasing power has increased, and not by less than that of the other two income classes. Changes in the size of the middle-income class are affected by growth in income among people earning around middle-income levels and by changes in median income, which is used as reference to define the income class thresholds. Against the background of a big reduction to the median income level, the size of the middle class might remain broadly similar and fail to reflect the deterioration in income levels in the middle class. Therefore, the analysis of the sizes of the income classes has to be complemented with information on the changes in their respective income levels, as is done in Figure 42, which provides three main insights.

First, real income levels among the middle class have not generally performed more poorly than those of the other classes. Indeed, they have performed slightly better in the case of the cross-country average: income growth over the period was 44% among the middle class, marginally above income growth in the high- and low-income classes (both 43.7%). Income levels among the middle class have risen in all countries except Greece and Cyprus, and generally to a similar extent to those of the other two classes. Nevertheless, some differences are worth mentioning, with reference to Figure 42, which ranks countries by change in the size of the middle class, from biggest increase to biggest decline. In countries characterised by a significant expansion of the middle class (Romania, Poland, Portugal, Ireland and Croatia), income growth was lowest among the high-income class and highest among the low-income class, which explains the prevalence of flows from the high- to the middle-income class described above. In countries characterised by a significant contraction of the middle class (Sweden, Bulgaria, Luxembourg, Malta and Lithuania), income growth was lowest among the low- and the middle-income class, which explains the prevalence of downward flows from the middle class described above.

Second, income levels among the middle class typically hold up better than others in times of economic hardship (see Figure A9 in Annex 2 for detailed data about subperiods). During the Great Recession, the reduction in income levels was typically stronger for the low- and high-income classes. During the pandemic, middle-class income levels fell only in Germany and

Figure 42: Middle-class income levels grew similarly to those of the other classes (changes in real income levels, by income class, 2007–2022, %)



Notes: *Countries are ranked by the change in the size of the middle class over the period, from biggest increase to biggest decline. The EU27 average refers to the unweighted average across the Member States. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Slovakia, while income deteriorated among the low- or high-income class, or both, in several other countries (Sweden, Austria and France for the low-income class and Sweden, Belgium and the Netherlands for the high-income class). Conversely, during the long period of economic expansion in 2013–2019, middle-class income levels grew less than those in the other two classes across many countries.

Third, there is no relationship between changes in middle-class income levels and changes in the size of this class. Among those countries where the middle class expanded the most (to the left of Figure 42), there are cases of both notable income growth and poor or declining income growth among the middle class, and likewise among those where the middle class contracted most. The interplay between changes in the size of the middle-income class and in their income levels is covered next.

The general economic standing of the middle class is nuanced. The share of total income that goes to the middle class is a proxy for its economic influence, determined by two elements: the changes in the size of the middle class, which has shrunk in a majority of countries; and the evolution of their income levels, which have risen to a similar extent to those of the other income classes in most countries.

A general and strong decline in the social and economic strength of the middle class can be ruled out, but the results of the analysis show that the share of total income going to the middle class declined in half of the Member States over the period (see Box 9 for more details). Moreover, the income approach used here to define the middle class leaves out aspects such as the increasing difficulty of keeping up a middle-class lifestyle, characterised by economic security and stability and access to education, healthcare and home ownership, whose costs are rising faster than middle-class incomes. If these aspects are taken into account, the squeeze on the middle class could be stronger than that identified here.

Box 9: Mixed trends in the middle class's economic influence

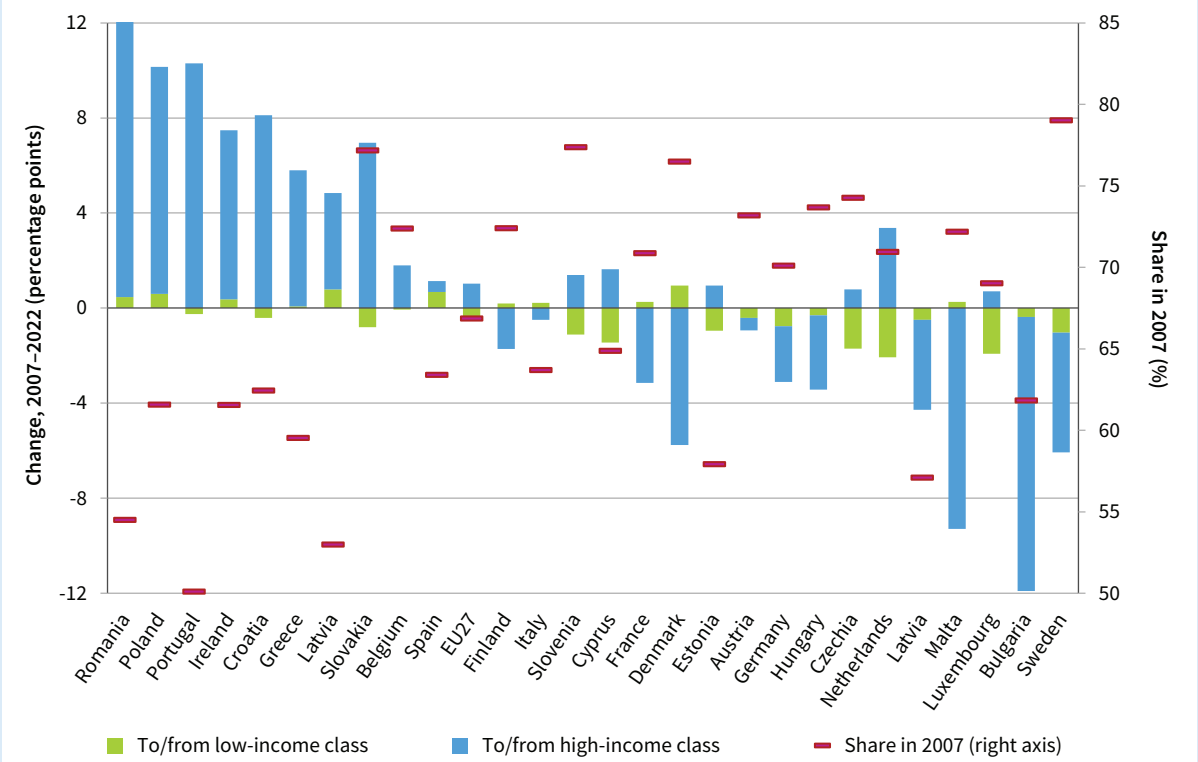
Assessing the overall economic and social power of the middle class may be approached by measuring its share of a country's total income, which results from combining its size and average income level. There is a very high correlation between the size of the middle class and its income share across countries. However, the dominant position of the middle class compared with the other two income classes is stronger when its income share is considered instead of its size: the share of total income taken by the middle class ranges from 83% in Slovakia to 50% in Bulgaria, according to the latest data for 2021. Data on changes in the middle class's income share (and those of the other income classes) across countries over the period are presented in Figure 43, which shows three main findings.

First, trends in the middle class's income share vary between countries, increasing in 13 countries, remaining stable in Estonia and decreasing in the other 13 countries. Although changes in the income share of the middle class are more mixed across EU countries than changes in its size, the latter are very important in driving the former. This explains why the most notable gains in the middle class's income share occur in many of the countries where the size of this class expanded the most (several CEE and Mediterranean countries plus Ireland), while the most significant drops in its income share occur in many of the countries where the middle class shrank notably (Sweden, Denmark, Germany and, to a lesser extent, France, among the Nordic and Continental countries, but also Bulgaria and Malta).

Second, the income share of the middle class converged between countries (the coefficient of correlation between their initial value and change over the period, assessing beta convergence, equals 0.35). The share of total income going to the middle class expanded significantly in some countries where it was rather low initially (CEE and Mediterranean countries including Romania, Latvia, Portugal, Croatia, Poland and Greece). Conversely, the middle class's income share declined notably in some of the countries where it was relatively large initially (Sweden, Denmark, Austria and Germany from the Nordic and Continental clusters but also Hungary, Malta or Czechia).

Third, the related changes in the income shares of the other two classes look somewhat different from the changes in the sizes of income classes (see Figure 40). Among the countries where the middle class's share expanded, this came at the expense of that of the high-income class (to an even larger extent than in the case of the changes in class size). Among the countries where the middle class's income share lost ground, it was largely the high-income class that increased its income share, the opposite of the changes in sizes, which were mostly expansions of the low-income class. This again reflects poor income growth among the low-income class in those countries where the middle class shrank, because the low-income class became larger but its share of total income did not increase.

Figure 43: Trends in the share of income received by each income class are mixed (changes in the middle class's share of income, EU Member States, 2007–2022)



Notes: *Data depict the changes in the middle-class income share, differentiating between gains from the low- and high-income classes in cases where the middle-class income share increases, or losses to the low- and high-income classes in cases where the middle-class income share declines. The sign of the change in the income share of the low- and high-income classes has been inverted. Countries are ranked by the change in the size of the middle class, from biggest increase to biggest decline. The coefficient of correlation between the middle class's income share in 2006 (EU-SILC 2007) and its change over the period is 0.35. For Croatia, EU-SILC 2010 data are used instead of 2007 data. The EU27 average refers to the unweighted average across the Member States.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Composition of the middle class

Some demographic and employment-related characteristics are associated with having higher income levels and determine the likelihood of belonging to each income class. Recent data on the composition of the middle class (and how it differs from that of the other two income classes) are presented in Table 3, which makes it possible to observe how that picture has changed over the period.[36] These are the main findings.

- Among the sociodemographic characteristics, educational level is the most significant factor separating the different income classes. People with low educational attainment are overrepresented in the low-income class (43% having low attainment while they constitute 28% of the total population) and those with high attainment are overrepresented in the high-income class (62% having high attainment while they constitute 29% of the total population). Within the middle class, almost half have an intermediate education level (46%), almost a third have a high level (31%) and only 23% have a lower educational level. The skills profile of the middle class is now characterised by higher educational attainment than before, since almost a third (31%) of this class had a low educational level in 2006.
- Differences between income classes in terms of age are much less pronounced, although younger people are overrepresented in the low-income class and underrepresented in the high-income class. The relative prevalence of different age groups within the middle class is generally in line with their prevalence in the whole population, except for

36 It should be stressed there is not a direct relationship between the characteristics of the individual and their income-class status, since the latter is assigned to the entirety of the household and depends on the personal and job-related characteristics of all its members, and the household's composition.

those aged 60 or above, who are slightly underrepresented in the middle class (despite accounting for 37% of it). It has become more difficult for young people to enter the middle class, given that those aged 15–29 represented almost a quarter of the middle class (22%) in 2006, while they account for much less (15%) in 2021.

- Gender differences are far less important than differences in educational level, although women are overrepresented in the low-income class while men are overrepresented in the other two income classes. Women account for more than 51% of the middle class (while they account for almost 53% of the total population), a similar share to 15 years ago.
- Approximately 84% of middle-class people live in households with at least two adults (with or without children), while fewer than 16% live in a one-adult household (which is more common among the low-income class, of which a third live in one-adult households). Almost 63% of people in the middle class belonged to households without dependent children in 2021, compared with 53% in 2006.
- Almost 55% of the middle class are in employment, which reflects the importance of labour earnings in shaping household disposable income levels (unemployed people represent less than 3% of the middle class, while economically inactive individuals account for almost 43%, most of them retired). The importance of employment to define middle-class status has been reinforced over time, since 48% of middle-class people worked in 2006.
- Focusing exclusively on middle-class people who work, almost 90% are on permanent contracts, 87% work full time and 40% work in establishments employing at least 50 workers. People working on temporary contracts, part time or in smaller companies tend to be underrepresented in the middle class (and overrepresented in the low-income class). In terms of economic sector, almost a third of the middle class work in the public sector (public administration, education and health), whose relative prevalence in the middle class has increased over time. A further 40% work in manufacturing/mining, retail or business services. Regarding occupational categories, professionals, technicians, plant and machine operators, and clerical support workers are all overrepresented in the middle class (these categories account for 55% of middle-class workers).

Table 3: Composition of each income class by sociodemographic characteristics, EU27, 2007 and 2022 (%)

	Distribution by income class (2022)				Distribution by income class (2007)		
Characteristic	Low	Middle	High	Total	Low	Middle	High
Age							
15–29 years	15.6	14.9	11.6	14.8	22.2	21.8	18.2
30–39 years	10.0	13.1	13.0	12.3	13.7	16.4	17.5
40–49 years	13.5	16.6	16.8	15.8	16.4	19.0	19.3
50–59 years	14.6	18.4	24.5	17.8	14.0	18.0	25.7
≥ 60 years	46.3	37.0	34.0	39.3	33.7	24.8	19.3
Gender							
Men	43.5	48.6	51.1	47.4	44.0	48.8	50.8
Women	56.5	51.4	49.0	52.6	56.0	51.2	49.2
Education							
Low	43.4	23.3	9.7	27.7	53.1	30.9	13.7
Intermediate	43.2	45.7	28.4	43.6	39.6	48.8	36.4
High	13.4	31.1	61.9	28.7	7.4	20.3	49.8
Economic status							
Employed	29.0	54.5	67.9	48.6	25.6	48.4	64.4
Unemployed	8.9	2.6	1.6	4.3	6.0	7.5	6.1
Studying	8.5	6.8	5.4	7.1	10.0	3.2	1.8
Retired	36.6	29.1	20.9	30.5	10.2	8.6	6.9
Unfit	4.6	1.9	0.7	2.5	27.7	22.0	14.8
Compulsory military or community service	0.1	0.1	0.1	0.1	4.7	2.8	0.9

Characteristic	Distribution by income class (2022)				Distribution by income class (2007)		
	Low	Middle	High	Total	Low	Middle	High
Economic status							
Domestic	9.5	3.8	2.4	5.2	0.1	0.1	0.1
Other	2.9	1.4	1.0	1.7	12.1	5.7	3.8
Household type							
1 adult	27.6	13.5	12.2	17.1	18.1	8.2	7.3
2 adults	29.6	35.4	43.8	34.5	24.6	27.3	33.7
> 2 adults	7.8	13.7	14.8	12.2	9.7	17.5	20.4
1 adult + child(ren)	5.7	2.3	1.0	3.1	5.2	2.1	0.9
2 adults + child(ren)	21.2	26.2	24.1	24.7	27.9	30.2	28.1
> 2 adults + child(ren)	7.5	8.3	4.7	7.8	14.1	14.4	9.2
Other	0.7	0.6	0.4	0.6	0.5	0.3	0.3
Dependent children							
No	65.0	62.6	69.8	63.8	52.4	53.0	61.4
Yes	35.0	37.4	30.2	36.2	47.7	47.0	38.6
Company size							
< 11 employees	49.9	30.1	28.7	33.2	54.1	32.7	29.9
11–50 employees	27.8	30.1	26.1	29.3	24.4	29.1	28.0
> 50 employees	22.3	39.8	45.2	37.6	21.5	38.2	42.2
Working time							
Full time	78.6	86.7	90.9	85.9	81.1	86.6	91.4
Part time	21.4	13.3	9.1	14.1	18.9	13.4	8.6
Contract							
Permanent	76.6	89.0	92.4	87.5	76.2	87.4	91.3
Temporary	23.4	11.0	7.6	12.5	23.8	12.6	8.7
Sector							
Agriculture, forestry and fishing	10.8	3.2	2.4	4.4	18.2	5.2	3.1
Mining and quarrying, manufacturing, electricity, gas, steam and air conditioning supply, and water supply, etc.	14.8	19.0	15.3	17.9	17.4	21.8	15.9
Construction	9.2	6.6	4.4	6.8	11.6	8.5	6.7
Wholesale and retail trade; repair of motor vehicles and motorcycles	15.0	12.6	9.6	12.7	14.3	13.0	10.9
Transportation and storage	5.4	5.6	4.4	5.4	4.6	5.9	4.6
Accommodation and food service activities	7.6	3.5	1.7	4.0	5.9	3.5	2.2
Information and communication	1.7	3.3	7.0	3.5	1.6	2.7	4.5
Financial and insurance activities	1.1	2.9	6.2	3.0	0.9	2.8	6.6
Business services	9.5	9.3	12.9	9.8	6.4	7.4	11.2
Public administration and defence	4.3	9.1	9.9	8.4	3.7	7.6	9.4
Education	5.0	9.7	10.5	9.0	4.4	8.5	11.4
Human health and social work activities	8.3	10.9	12.4	10.6	5.2	8.9	9.6
Other service activities	7.5	4.3	3.5	4.7	6.0	4.3	3.8

Characteristic	Distribution by income class (2022)				Distribution by income class (2007)		
	Low	Middle	High	Total	Low	Middle	High
Occupation							
Managers	2.5	4.6	13.6	4.8	4.5	6.2	16.1
Professionals	7.3	19.8	42.0	18.4	3.9	12.3	33.2
Technicians and associate professionals	7.9	15.2	15.9	13.4	7.6	16.5	18.3
Clerical support workers	7.3	10.3	8.2	9.4	6.9	11.3	9.8
Service and sales workers	19.2	15.9	7.7	16.1	14.2	13.1	6.3
Skilled agricultural, forestry and fishery workers	10.5	4.0	2.2	5.5	13.1	4.5	2.0
Craft and related trades workers	16.0	12.5	4.6	12.8	18.2	15.6	6.8
Plant and machine operators, and assemblers	10.2	8.8	3.2	8.7	10.3	9.9	3.6
Elementary occupations	19.0	8.6	2.3	10.8	21.1	10.1	3.3

Notes: *Data refer to the EU aggregate and indicate the share represented by each category in each income class (totalling 100% within each variable and income class). For 2021 (EU-SILC data 2022), the shares represented by each category for the total population are also shown to illustrate that a characteristic is overrepresented when its share in that class is higher than in the total of the population.*
Source: *EU-SILC 2007 and 2022 editions (income referring to 2006 and 2021)*

Polarisation between income classes and within the middle class

Beyond the size of the middle class, a second strand of the literature focusing on income polarisation monitors the rise of separate income groups and the extent to which each of them is separating from the others. The empirical approach conducted here to measure income polarisation identifies four income classes: the low- and high-income classes have already been defined, and the middle-income class is divided into middle-low and middle-high. It then calculates the income distance existing within each class and in the whole population. The aggregate indicator of income polarisation summarises the trends over the whole of the income distribution, while the specific indicators for each income class serve to assess whether those income groups have moved further away from each other, and whether the middle-income class has become more dissimilar in terms of income over time (see Box 10 for details on this methodology).

Box 10: Methodology for analysis of income polarisation

The analysis conducted here follows the empirical approach of Gigliarano and Muliere (2012). People are assigned to different income classes depending on their equivalised disposable income level: the low-income class for those below 75% of the median income; the middle-income class for those at or above 75% and below 200% of the median income; and the high-income class for those above 200% of the median income. In addition, a specific median income level within the middle class is calculated, and the members are split into two groups of equal size, the middle-low-income class and the middle-high-income class.

A specific income distance indicator is calculated for each individual in a given country, which measures the relative distance (as a percentage) between the income level of that person and an income threshold used to define the income class this person belongs to:

$$\textit{Income distance indicator}\ (\%) = \left(\left(\frac{\textit{Income of individual i in country j}}{\textit{Income threshold of reference}}\right) - 1\right) * 100$$

The threshold of reference applying to each individual will depend on their income class: 75% of the median income for those in the low-income class; median income within the middle class for those in the middle-low- and middle-high-income classes; 200% of the median income for those in the high-income class. The sign of the income distance indicator is inverted for those in the low-income class and the middle-low income class (since it is negative, given that their income levels are below the thresholds of reference).

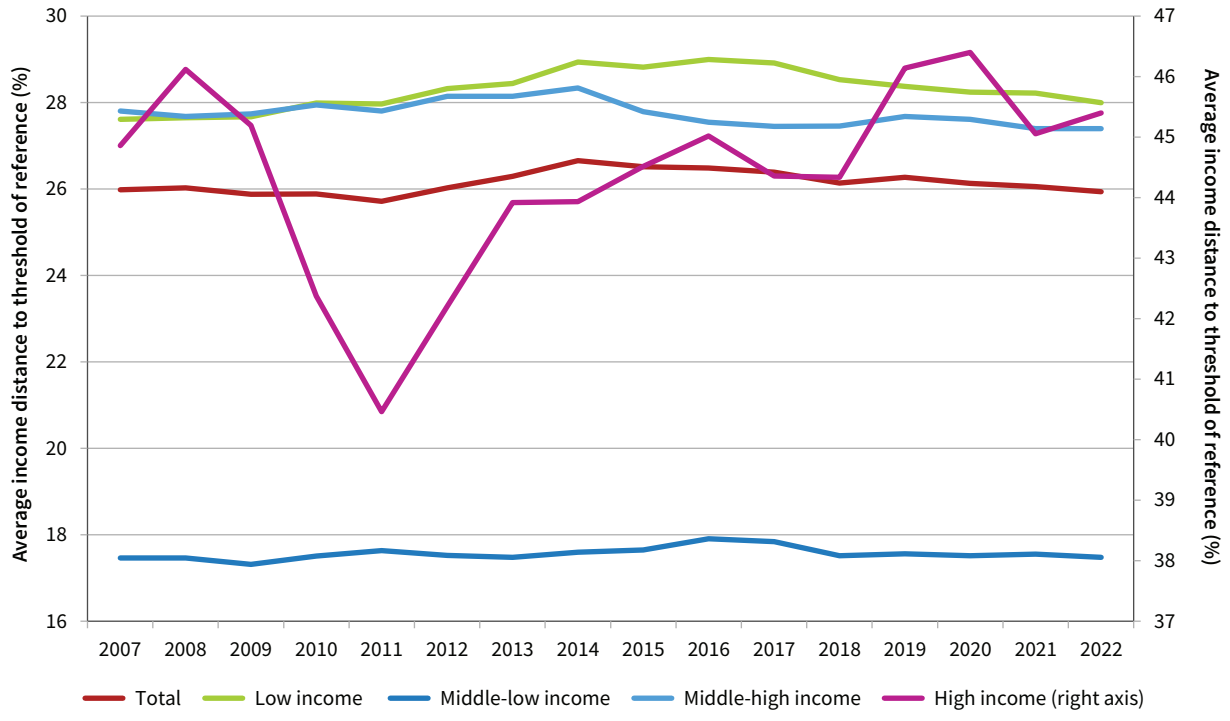
Income polarisation can be calculated for each of the income classes, which is the average of the income distance indicator calculated for each individual within each of those income classes. Then the total income polarisation estimate for each country is calculated as the average of the income distance indicator among all individuals in the population. Based on these indicators, a reduction of income polarisation occurs when a person in the low-income class moves towards the 75% of the median income threshold; a person in the middle-low or middle-high class moves towards the median income among the middle class; or a person in the high-income class moves towards the 200% of the median income threshold.

Figure 44 provides a starting point for the discussion of income polarisation. It depicts the evolution of cross-country averages in total income polarisation and patterns in different income classes over 2006–2021. Total income polarisation was fairly stable on average across countries, increasing up to 2013 against the background of the Great Recession and declining thereafter gradually. Nevertheless, the income polarisation indicators specific to each income class behave somewhat differently.

On the one hand, the average income distance has increased in the high- and low-income classes. Although the increase is moderate, it means average income levels within the low-income class have fallen somewhat farther below the reference threshold (75% of the median income), while income levels in the high-income class have risen farther above their threshold (200% of median income). As a result, the income distance between the low- and high-income classes have widened, mainly due to the years of the Great Recession, which had a more negative and protracted impact on the low-income class.

On the other hand, the average income distance in the middle-low income class remained almost at the same level between 2006 and 2021, while that of the middle-high-income class was slightly reduced. This means the middle class has not become more dissimilar on average across the EU27 countries generally, since the lower half has not drifted downwards, while the upper half has got slightly closer to the median values within the middle class.

Figure 44: Average cross-country patterns of income polarisation are stable (income distance, by income class, average EU Member States, %)



Notes: *Data refer to (unweighted) averages across countries. See Box 10 for details.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Cross-country average data conceal important differences between countries, shown in Figure 45. The figure illustrates the change in income polarisation levels (upper panel) and how that change is explained by patterns of income distance in each income class (middle and lower panels). In each panel, countries are ranked by the magnitude of the change in the total polarisation index, from biggest decline to biggest increase. Several points are worth noting.

First, income polarisation and changes in it are closely related to levels of and changes in income inequality as measured by the Gini index (the coefficient of correlation is 0.97 regarding levels and 0.94 regarding changes over the period). Income polarisation varies widely across countries, being lowest in Slovakia and highest in Bulgaria. Income polarisation patterns over the period are mixed across countries: polarisation declined in just over half of the countries, significantly so in several CEE and Mediterranean countries (to the left of the upper panel); it increased in almost half of the countries, significantly so in several Nordic and Continental countries (on the right of the upper panel), where it was initially rather low (Sweden and Denmark, and to a lesser extent France, Austria, Luxembourg and Finland).

Second, trends in income polarisation can be related to changes in the income distance indicators measured among the income classes. In those countries where income polarisation declined, this occurred because in most cases the high- and low-income classes moved closer together, as reflected by falling income distances in both classes (middle panel). Conversely, in those countries where income polarisation increased, the high- and low-income classes drew further apart in most cases, as reflected by the growing income distance in each of them.[37]

Third, income polarisation trends within the middle class are mixed between countries (lower panel). On the one hand, the middle class has become more similar within itself in 16 countries, signified by both halves coming closer together over the period. This happened most clearly in six countries (Portugal, Poland, Slovakia, Ireland, the Netherlands and Czechia), where both halves moved simultaneously towards each other, as reflected by a decline in the average income distance among both groups of the middle class. There are other countries where the middle class became more similar (to varying degrees and more modestly), although not as a result of both halves moving closer to each other simultaneously: the upper half moved closer to the median value while the lower half remained at the same distance (Belgium and Italy) or even moved slightly away from median values (Luxembourg, Slovenia, Greece, France, and Hungary and Austria to a lesser extent); or the lower half moved closer to the median value while the upper half moved away from it but to a lesser extent (Latvia and Lithuania).

On the other hand, the middle class became more dissimilar in 11 countries, signified by the halves moving apart over the period. This occurred most clearly in six countries (Sweden, Denmark, Germany, Estonia, Cyprus and Malta), where both halves moved simultaneously in opposite directions, as reflected by an increase in the average income distance among both groups. In the other five countries, the middle class became somewhat more dissimilar as well but the two halves moved in the same direction: the lower half moved significantly away from the median value while the upper half moved closer to it but more modestly (Bulgaria, Croatia and Romania); or the lower half moved slightly towards the median value, while the upper half moved more significantly away from it (Spain and Finland).

37 The magnitude of change in the average income distance is higher in the high-income class than in the low-income class. That is due to the much higher income levels in the former (even though significant increases in the income distance in the low-income class occurred in Sweden, Luxembourg and Austria, and some significant declines in Cyprus, Croatia, Germany and Belgium).

Figure 45: Mixed cross-country patterns in income polarisation (total (upper panel); in low- and high-income classes (middle panel); within the middle class (lower panel), EU Member States, 2007–2022)

Notes: *Countries are ranked in all panels by the change in total income polarisation over the period, from biggest decline to biggest increase. See Box 10 for details. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Summary

The middle class (defined as individuals with an equivalised household disposable income between 75% and 200% of the national median) represents a majority of the population across all EU Member States. However, its size varies from more than 75% of the population in Slovakia (and is also relatively high in Slovenia, Czechia, and Nordic and Continental countries) to 51% in Bulgaria (and is relatively low in several CEE and Mediterranean countries, including the Baltic states, Romania, Spain, Italy, Portugal, Malta and Cyprus). Countries with a small middle class have welfare states with the weakest effect in reducing market income inequality. This weakness of the welfare state is a factor explaining their high income inequality and small middle class.

A large middle class is characteristic of European countries and reflects an inclusive society. Nevertheless, although the analysis does not find a generalised and significant shrinking, it identifies a fall in the size of the middle class in almost two-thirds of countries (17 out of 27), especially in several EU14 countries (particularly Sweden, and also Luxembourg, the Netherlands, Germany, Austria and Denmark) and EU13 countries (Bulgaria, Malta, Lithuania, Czechia, Hungary and Estonia). This size reduction largely arises from people moving into the low-income class. Nevertheless, the middle class has expanded in 10 countries, significantly so in some CEE countries (Romania, Poland and Croatia), Portugal and Ireland. The changes in the size of the middle class between 2006 and 2021 are closely related to changes in income inequality.

Although real income levels in middle-class households have not generally performed more poorly than those in the low-income and high-income categories (income levels in the low-income class being more negatively affected in times of economic hardship), the reduction in the size of the middle class has led to a decline in the share of total income received by this class in just over half of countries (mainly in the abovementioned Nordic and Continental countries, plus some CEE countries). This could be interpreted as an erosion of the economic and social influence of the middle class in those countries. Nevertheless, the income approach applied here to define the middle class leaves out other important factors such as the growing challenges of keeping up a middle-class lifestyle characterised by economic security and stability, home ownership, and access to good levels of education and healthcare.

People with lower educational levels, younger people, women, people in single-adult households and unemployed people are underrepresented in the middle class (and overrepresented in the low-income class). Moreover, it has become increasingly difficult for people with low educational attainment, the young and the unemployed to enter the middle class.

An indicator constructed to capture income polarisation was found to be highly correlated with the levels and changes in income inequality levels described in Chapter 4. Therefore, the same country patterns are evident. On the one hand, income polarisation increased between 2006 and 2021 across half of the Member States, significantly so in several Nordic and Continental countries (where it was initially rather low), typically because of increasing separation between the low-income and high-income classes. On the other hand, income polarisation declined in the other half of the Member States, significantly so in several CEE and Mediterranean countries, where the distance between the low-income and high-income classes narrowed.

A specific analysis of income polarisation within the middle class reveals that this class became more dissimilar over the period in fewer than half of the Member States, especially in some cases where the lower half and the upper half of the middle class moved apart from each other (Sweden, Denmark, Germany, Estonia, Cyprus and Malta). In contrast, the middle class gained in cohesion in more than half of the Member States, most clearly in some cases where the income distance was reduced by the two halves of the middle class moving towards each other (Portugal, Poland, Slovakia, Czechia, Ireland and the Netherlands).

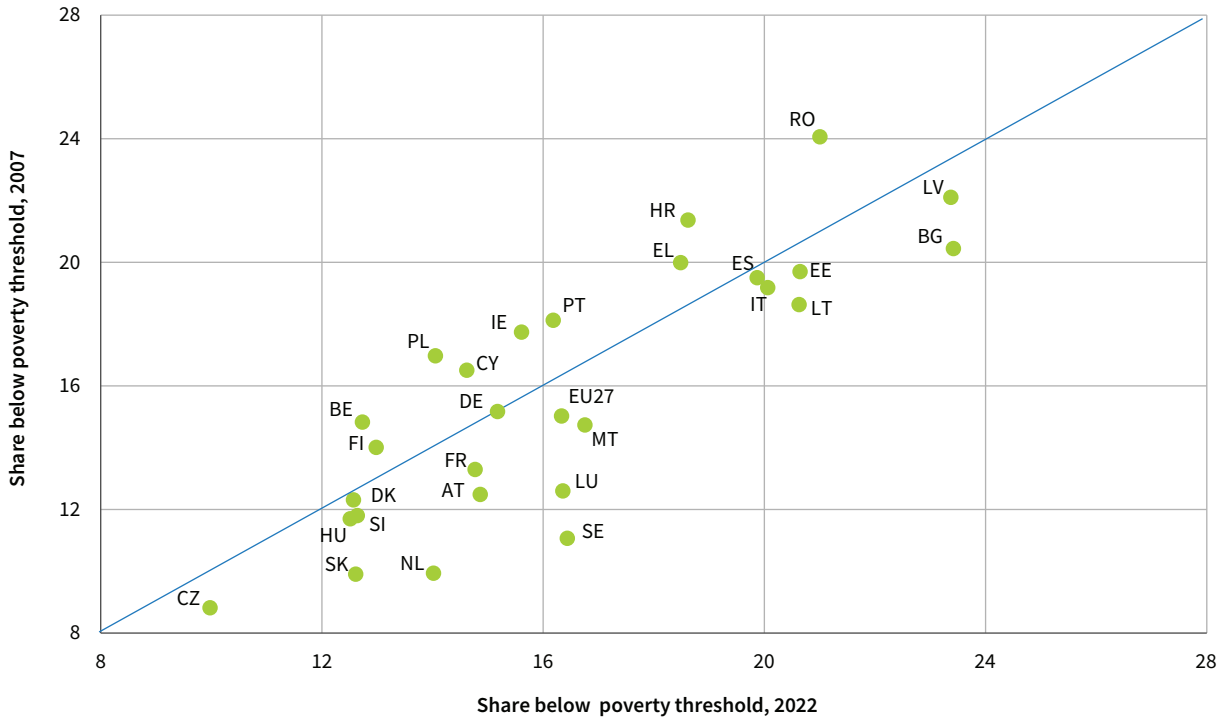
7 Cost-of-living crisis hits the most vulnerable

This report has so far focused mainly on household disposable income between 2006 and 2021 (using data from the EU-SILC 2007–2022 editions) but has omitted two significant issues. First, coverage extends to only the two years of the pandemic (2020 and 2021), excluding the cost-of-living crisis caused by soaring price levels from 2022 onwards. Second, trends in household disposable income in real terms capture the impact of inflation on purchasing power but fail to describe the material difficulties faced by households when their expenses are rising, especially when the impact of inflation is not homogeneous across households. This chapter provides an overview of the trends at the bottom of the income distribution and then addresses these two shortcomings by focusing on the most vulnerable people at the start of the cost-of-living crisis in 2022.

Disappointing results in lifting people above the poverty threshold

A useful indicator to capture the lowest-income earners is the share of the population (aged 16 or over) with an equalised household disposable income below the poverty threshold, set at 60% of the median value.[38] The share of the population in this bracket varies widely across Member States, but only a third have managed to reduce it, as shown by Figure 46, which compares the rates in 2006 and 2021. Three main insights can be derived from the figure.

Figure 46: Shares of people below the poverty threshold increased in most Member States, 2007 and 2022 (%)



Notes: *Data refer to the share of people (aged 16 or over) having an equivalised income level below the poverty threshold (set at 60% of the equivalised national median income), which increased in the countries below the diagonal line. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007 and 2022 editions (income referring to 2006 and 2021)*

38 This indicator is similar to the one used to capture the low-income class in Chapter 6, but the poverty threshold is lower (the equalised household disposable income below 75% and 60% of the median income, respectively). It is different from the two indicators in the EU Social Scoreboard: the at-risk-of-poverty (AROP) rate and the at-risk-of-poverty-or-social-exclusion (AROPE) rate. AROP refers to the share of people (of all ages) whose income is below the threshold of 60% of the national equivalised median income and the comparative level (in PPS) of this threshold. AROPE goes beyond monetary considerations and identifies the share of people (of all ages) who are at risk of poverty, or severely materially and socially deprived, or living in a household with a very low work intensity.

First, the share of people below the poverty threshold ranged widely across countries in 2021: it was highest in several CEE and Mediterranean countries (above 20% in Bulgaria, the Baltic states, Romania and Italy, and just below it in Spain, Croatia and Greece); it was lowest (below 15%) in a mix of several CEE countries (Czechia, Hungary, Slovakia and Slovenia) and EU14 countries (Denmark, Belgium, Finland and the Netherlands). The ranking of countries is closely correlated with that based on the size of the middle class.[39]

Second, changes in the share of people below the poverty threshold over the period are disappointing, as it increased in two-thirds of countries. This is consistent with the middle class shrinking in almost two-thirds of countries (see Chapter 6), which reflects the flows from the middle class to the low-income class in many countries.[40]

Third, the geographical picture is similar to that described for trends in the size of the middle class and income inequality. On the one hand, several CEE and Mediterranean countries (Romania, Croatia, Greece, Portugal, Cyprus and Poland), initially characterised by large shares of people below the poverty threshold, managed to reduce them over the period (although so did Ireland, Belgium and Finland). On the other hand, some Nordic and Continental countries initially characterised by relatively low rates registered surges (Sweden, the Netherlands, Luxembourg and, to a lesser extent, France), although this also occurred in several CEE and Mediterranean countries where these shares were already relatively large (Bulgaria, the Baltic states, Spain, Italy and Malta).

Increased financial strain among lowest-earning households

Against the background of growing shares of people below the poverty threshold, it is worth focusing on the impact of the most recent years of the pandemic and its aftermath, paying special attention to the most vulnerable households and looking beyond income measures, which cover only the years up to 2021. EU-SILC provides data self-reported by households up to 2022, which provide valuable information on the initial impact of the cost-of-living crisis and the increasing financial difficulties faced by households, especially the most vulnerable ones, in maintaining their living standards when inflation started to accelerate.[41]

Mixed trends in shares of people below the poverty threshold during the pandemic

Changes in the shares of people below the poverty threshold are mixed across countries between 2019 and 2021 (see Figure 47, which ranks countries by the change in shares between 2020 and 2021, from lower to higher): they increased in 14 countries, significantly in a few cases (by more than 1 percentage point in Slovakia, Ireland, Latvia and the Netherlands); and they declined in 13 countries, significantly in a few cases (by more than 1 percentage point in Hungary, Romania, Germany, Estonia and Belgium).

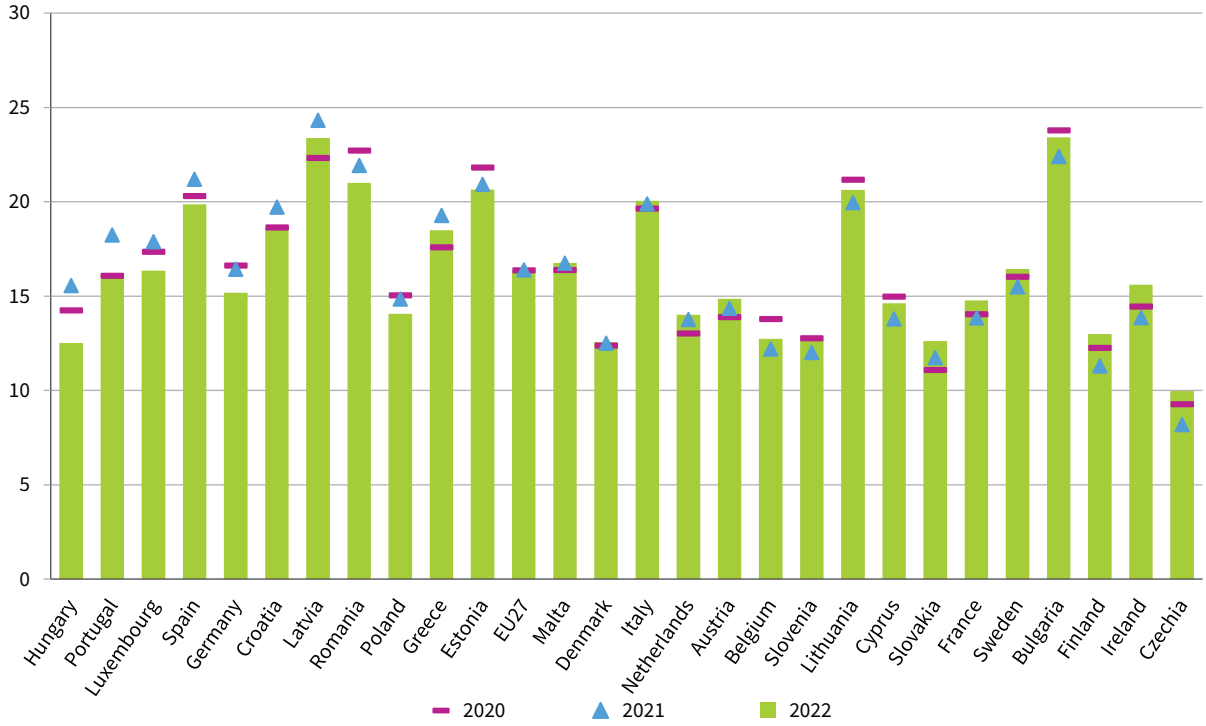
These changes were more mixed during the first year of the pandemic (2020) than in the second year (2021). In 2020, the share of people below the poverty threshold increased in half of the Member States (significantly only in some Mediterranean and CEE countries: Portugal, Latvia, Greece, Hungary, Croatia and Spain). In 2021, there were more cases of increases in the share of people below the poverty threshold, although the cases of decline (to the left of the figure) were in general of a higher magnitude and affected precisely those countries where those shares had increased significantly during the previous year.

39 The coefficient of correlation across countries between the share of people below the poverty threshold and the size of the middle-income class (see Chapter 6) in 2021 is 0.84.

40 This failure to reduce poverty rates across most countries is not due to the pandemic, because the same picture would emerge if a comparison were made between 2006 and 2019.

41 The interviews for the EU-SILC 2022 edition generally took place during the first quarter of 2022, which means price levels were increasing but not to the extent they did during the second part of 2022 and during 2023. This means the data presented in this chapter on the incidence of the reported financial difficulties faced by households do not capture the full extent of the deterioration in the financial situation faced by many households in Europe.

Figure 47: Mixed cross-country patterns in the shares of people below the poverty threshold before and during the COVID-19 pandemic, EU Member States, 2020–2022 (%)



Notes: *Data refer to the share of people (aged 16 or over) having an equivalised income level below the poverty threshold (set at 60% of the equivalised national median income). Data show change in the year before the pandemic (2019, EU-SILC 2020), the first year of the pandemic (2020, EU-SILC 2021) and the second year of the pandemic (2021, EU-SILC 2022), when compared with the previous year. Countries are ranked by the change in the shares (in percentage points) between 2020 and 2021 (EU-SILC 2021 and 2022), from biggest decline to biggest increase.*
Source: *EU-SILC 2020, 2021 and 2022 editions (income referring to 2019, 2020 and 2021)*

Increasing inability to make ends meet

Trends in the share of people below the poverty threshold are influenced by the definition of the poverty threshold in relation to the median income, which means downward pressure on the latter lowers the threshold and therefore fails to fully reflect the difficulties faced by people at the bottom of the income distribution in an economic downturn. However, there are other, non-income, indicators, based on information reported by households, which capture the increasing financial difficulties faced by households as a result of rising prices in the early stages of the cost-of-living crisis. This is so because, unlike the data on income, data on these indicators refer to the actual year of the EU-SILC survey, providing data up to 2022.

One such indicator is the difficulty households report in making ends meet, presented in Figure 48 for individual countries (upper panel) and over the income distribution (lower panel). The share of people reporting difficulty making ends meet in 2022 ranged from almost 70% in Greece and over 40% in Bulgaria (and over 20% in several CEE and Mediterranean countries) to less than 10% in several Nordic and Continental countries (Luxembourg, Germany, Finland, Sweden, the Netherlands and Denmark). Despite the subjective nature of this indicator, being directly reported by households, an association with average income levels is evident, since the incidence of difficulty tends to be lower among higher-income countries and vice versa.

The share of people reporting such difficulty declined between 2019 and 2021 (except in Italy and Malta), before increasing in more than two-thirds of the countries in 2022, when price levels started to grow significantly. The most significant increase (above 2 percentage points) in the indicator occurred in several CEE and Mediterranean countries (Malta, Latvia, Cyprus, Bulgaria, Slovenia and Portugal), plus France, Ireland and Austria (right of the upper panel of Figure 48, since countries have been ranked by the change in 2022, from better to worse).

Households at the bottom of the income distribution are affected much more by difficulty in making ends meet (lower panel). On average across countries, 44% of people in the bottom income decile faced such difficulty, compared with 3% at the top income decile. This much higher incidence at the bottom of the income distribution occurs across all countries (see Figure A10 in Annex 2).

Figure 48: Households had more difficulty making ends meet in 2022 than in 2021 (shares of people in households reporting difficulty making ends meet, by Member State and income decile, %)

Notes: *Data refer to the share of people who reported living in a household with difficulty making ends meet (answer categories 'difficulty' or 'great difficulty'), by country (upper panel) and by income decile (lower panel, depicting average data across countries). In the upper panel, countries are ranked by the change in shares (in percentage points) between 2021 and 2022, from biggest decline to biggest increase. EU27 average refers to the average cross-country data.*
Source: *EU-SILC 2019–2022 editions (income referring to 2018–2021 only for the construction of the income deciles)*

A similar picture is produced when an indicator of material deprivation is analysed (see Figures A11 and A12 in Annex 2). While the incidence of material deprivation is generally less extensive than the incidence of inability to make ends meet across countries (since it is perhaps a somewhat less subjective indicator, based on information on different items reported by households), the main messages are the same: material deprivation levels started to grow only in 2022, after declining between 2019 and 2021; the regional picture of the countries most affected by growing material deprivation largely coincides (several Mediterranean and CEE countries plus Ireland, although also France, Austria, Slovakia, Germany and Sweden); the levels of material deprivation vary more over the income distribution within each country than between countries; and the most vulnerable households are affected by a much higher incidence of material deprivation, which moreover increased relatively more in 2022.

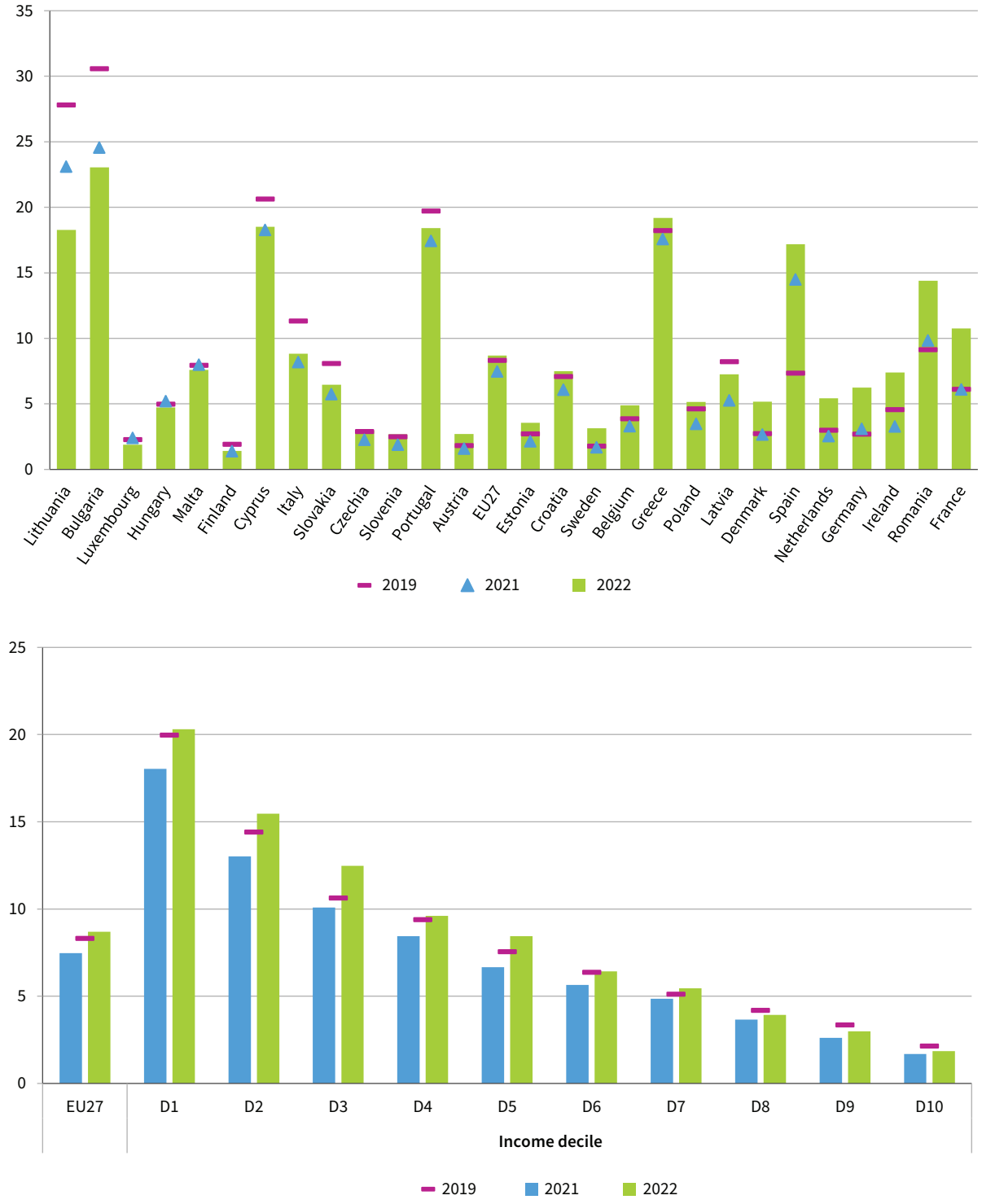
Soaring energy prices had bigger impact on the most vulnerable

Growing inability to make ends meet and growing material deprivation across most countries reflect the greater financial constraints encountered by many households due to rising prices, which accelerated in the course of 2022. A better idea of those challenges is provided by data on the share of people living in households reporting inability to keep the home adequately warm, since energy prices soared well above the general price levels in 2022 (Figure 49).

The data presented in Figure 49 provide a similar picture to the data on difficulty making ends meet and material deprivation, but the changes are more marked in this case. The share of people reporting they were unable to keep their home adequately warm was on the decline in virtually all Member States between 2020 and 2021 (except Spain, where it doubled from 7% to 14%), before it increased in almost all countries in 2022. The cross-country average grew from around 7% in 2021 to almost 9% in 2022, with the shares increasing both in countries where they were relatively large already (such as Mediterranean countries) and in those where the shares were relatively low (such as Continental and Nordic countries, with shares almost doubling in Denmark, Sweden and France and more than doubling in Germany and the Netherlands), plus Ireland.

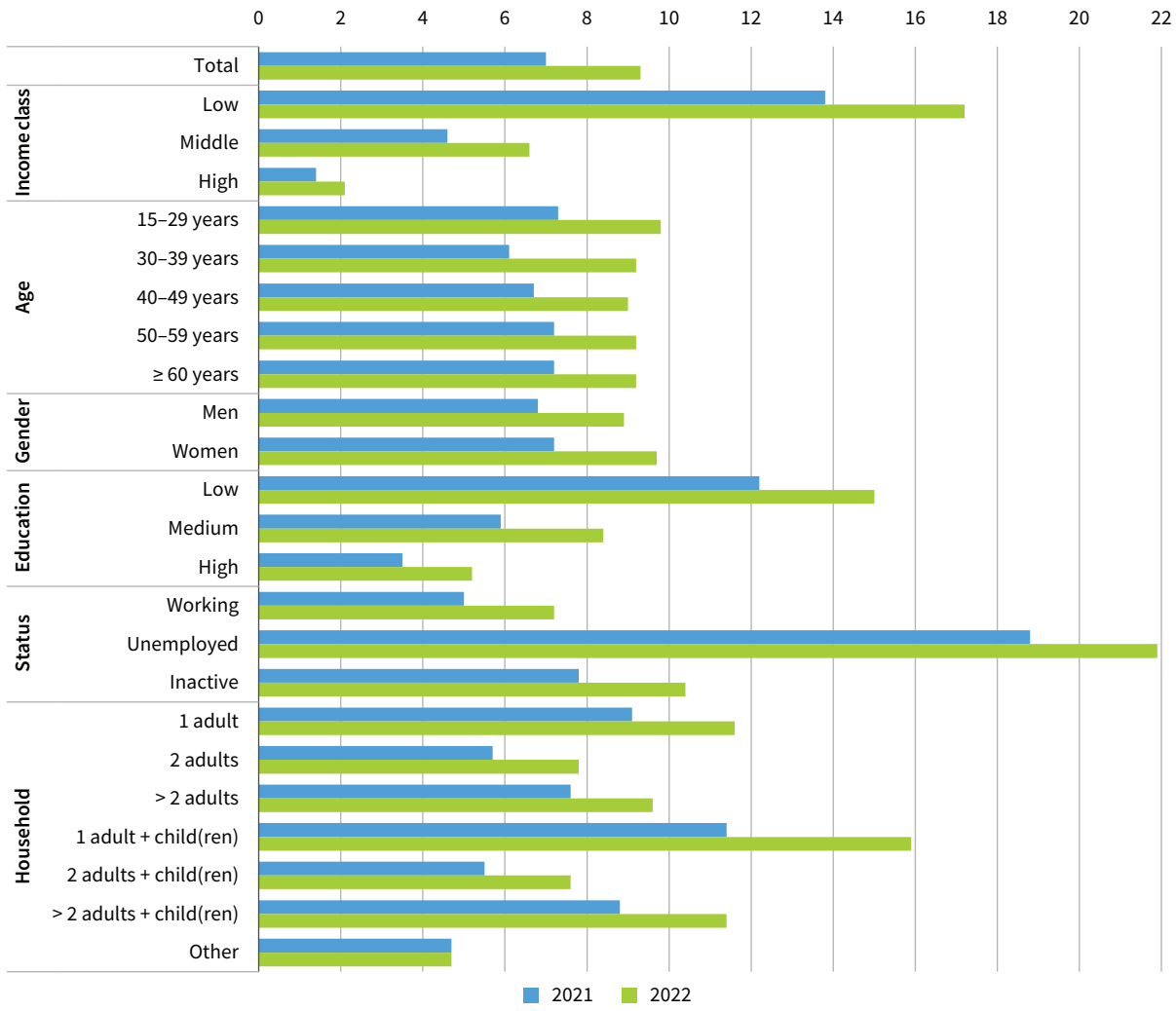
Inability to keep the home warm is much commoner among the lowest-earning households (as shown in Figure 49 for the cross-country average and in Figure A13 in Annex 2 for country-level data). Moreover, the impact of soaring energy prices on the most vulnerable households is stronger in the case of this indicator than in the case of inability to make ends meet and material deprivation: the share of people affected increased from 18% to more than 20% in 2022 among the lowest income decile, while it rose negligibly in the top income decile.

Figure 49: Difficulty keeping homes warm grew in 2022 (shares of people in households unable to keep the home adequately warm, by Member State and income decile, %)



Notes: *Data refer to the share of people who reported inability to keep the home adequately warm, by country (upper panel) and by income decile (lower panel, depicting average data across countries). In the upper panel, countries are ranked by the change in shares (in percentage points) between 2021 and 2022, from biggest decline to biggest increase. The EU27 average refers to the average cross-country data.*
Source: *EU-SILC 2019–2022 editions (income referring to 2018–2021 only for the construction of the income deciles)*

Figure 50: Higher energy prices hit the most vulnerable groups hardest (shares of people in households unable to heat their home properly, EU27, 2021 and 2022, %)



Note: *Data refer to the EU aggregate (weighted average across EU Member States).*
Source: *EU-SILC 2021–2022 (income referring to 2020 and 2021 only for the definition of the income classes)*

Profile of people most affected by growing prices

It has been shown that poorer households are affected relatively more by financial constraints that may result in difficulty making ends meet, material deprivation or inability to keep the home adequately warm. These households were especially affected by soaring energy prices in 2022. A profile of the people living in such households is provided in Figure 50, which clearly shows that the largest increases in the share of people reporting inability to keep the home warm in 2022 occurred in those groups that were already more often in such a precarious situation.

- Inability to keep the home adequately warm affected more than 17% of the low-income class, less than 7% of the middle-income class and around 2% among the high-income class in 2022. The largest increase in this indicator took place in the low-income class, from less than 14% in 2021 to more than 17% in 2022. A smaller rise occurred among the middle-income class.
- Among the personal demographic characteristics, education is the most relevant, since those with the lowest educational attainment were affected more and their situation worsened the most in 2022. The incidence among the lowest educated is three times that among highly educated people (15% and 5%, respectively). The situation also deteriorated more for women than men and younger people than older age groups, although the differences were less than in the case of people with low educational attainment.

- Unemployed (and, to a lesser extent, economically inactive) people are affected much more than employed people, and their precarious situation got much worse in 2022: almost 22% of unemployed people were unable to keep their home warm. This statistic reflects the precarity of those households where nobody or only few people work.
- By type of household, those with a single adult and a child were the most negatively affected, since 16% of the people living in them reported not being able to keep the home warm, up from 11% in 2021. Adults living by themselves were also affected more than households with more members.

Summary

The percentage of people aged 16 or above who are below the poverty threshold (60% of median income) increased in two-thirds of Member States between 2006 and 2021, both in some Nordic and Continental countries where the percentages were initially low and among several CEE and Mediterranean countries where the percentages were already relatively large. This result is consistent with the reduction in the size of the middle-income class identified in almost the same number of countries (see Chapter 6), which reflects a movement from the middle class to the low-income class across many Member States.

The situation of the lowest earners has been aggravated by recent developments. On the one hand, the proportion of people below the poverty threshold increased in more than half of the Member States in 2021, the latest year for which income data are available. On the other hand, non-income data reflect the growing financial difficulties faced by households when price levels started to increase in the early stages of the cost-of-living crisis in 2022: the percentages of people reporting material deprivation, difficulty making ends meet and inability to keep the home adequately warm increased across most countries (in several Mediterranean and CEE countries particularly), especially in the most vulnerable households at the bottom of the income distribution.

Inability to heat one's home is the best gauge of the early impact of the cost-of-living crisis, since energy prices were growing well above average inflation levels in 2022. It had a much larger negative impact among the most precarious households, with a relatively greater effect on people with low educational attainment, younger people, women, those living in one-adult households (especially with children) and those not in employment.

Conclusion

Responding to the generally held perception that inequalities are on the rise and the middle class is shrinking across Europe, this report provides a comprehensive evidence-based picture of income disparities in the EU27 between 2006 and 2021 (using the most updated EU-SILC data for the 2007–2022 editions). Although the extent of the wealth inequality across European households is not captured by this study, the results on disparities in household disposable income provide a more nuanced picture than that public perception would suggest, while also backing up the perception in some respects.

For the EU as a whole, income inequality declined between 2006 and 2021. Nevertheless, this was entirely due to strong upward income convergence between EU Member States, characterised by strong income growth in the Member States that joined from 2004 (the EU13) and rather sluggish progress in most of the higher-income pre-2004 Member States (the EU14), while income levels in Mediterranean Member States generally failed to converge with higher-income Member States.

Within-country income inequality has not contributed to reducing EU-wide income inequality over the period, because it was broadly similar in 2006 and 2021. Nevertheless, the relative stability of average income inequality across EU Member States conceals the diversity in performance across them. On the one hand, income disparities have indeed increased in around half of the EU27, significantly in several EU14 countries (Sweden, Denmark and France, and to a lesser extent Austria, Luxembourg, Finland, Italy and Germany) and some EU13 Member States (Malta, Bulgaria, Lithuania and Hungary). On the other hand, income inequality has declined in the other EU27 countries, mainly in several CEE and Mediterranean countries (Poland, Romania, Portugal, Slovakia, Croatia, Greece, Cyprus and Estonia) and Ireland (and Belgium and the Netherlands to a lesser extent).

This diverging cross-country performance has led to a significant shake-up in the relative positions occupied by Member States on the inequality scale, with some of the more egalitarian countries at the beginning of the period becoming more unequal (mainly Sweden and Denmark, among other EU14 countries), and some of the initially more unequal countries managing to moderate the extent of income disparities (mainly Romania, Portugal, Greece, Poland and Croatia, among other CEE and Mediterranean countries). Among the factors driving income inequality, widening wage disparities were evident in half of the Member States, while the generalised weakening family redistribution (due to falling household size) also played a role. Improving employment (and activity) rates reduced inequality in most Member States, as did the stronger intervention of the welfare state in more than half of them, whereas a weakening welfare state in some countries has been a factor in growing income inequality.

While the average size of the middle class in Member States has been relatively stable over the period of analysis, it declined in most of them. Although the middle class represents more than half of the population across all (ranging from 75% in Slovakia to 51% in Bulgaria), its size has shrunk in almost two-thirds of Member States (significantly so in several EU14 countries including Sweden, Luxembourg, the Netherlands, Germany, Austria and Denmark, and also in EU13 Member States including Bulgaria, Malta, Lithuania, Czechia, Hungary and Estonia). Moreover, this reduction in the size of the middle class is a result mainly of people moving into the low-income class. The results show that it has become increasingly difficult to enter the middle class for those with low educational attainment, younger people and those who are out of work, while women and people in single-adult households are also underrepresented in the middle-income class (and overrepresented in the low-income class).

The results on income disparities are robust across the Member States, since they are consistent with those obtained using an income polarisation indicator. This indicator shows that, in the countries where income polarisation increased, it was typically due to increasing separation of the low-income and high-income classes. Moreover, a detailed focus on income polarisation within the middle class, which divided this income group into middle-low and middle-high groups, found that this class became more dissimilar in fewer than half of the countries, especially in some cases where the two halves moved apart (Sweden, Denmark, Germany, Estonia, Cyprus and Malta).

While a generalised increase in inequality and a reduction in the size of the middle class does not emerge across the Member States, the regional picture shows a lot of variation. On the one hand, generally strong income growth among the EU13 has often translated into declining income inequality (due to stronger growth among lower-income earners) and a growing middle class, as was the case in many CEE countries (but not in the Baltic states and EU13 Member States from the Mediterranean region, owing to the strong impact of the Great Recession).

On the other hand, more modest income growth among the EU14 Member States has often translated into growing income inequality (due to lower growth among lower-income earners) and a shrinking middle class in Nordic and most Continental countries. While income inequality tended to decline and the middle class to expand among the Mediterranean countries within the EU14, this took place against a background of poor income growth due to the protracted effects of the Great Recession, which explains their failure to significantly converge towards higher income levels as the EU13 Member States did.

The welfare state plays a very important role in cushioning market income inequality, which is reduced by an average of around 42% across Member States after the intervention of tax and benefit systems. Strong welfare states are especially important in times of economic hardship, as during the COVID-19 pandemic, when the strengthened action of welfare states by means of job retention schemes and social benefits prevented a more negative impact on European labour markets, as occurred in the Great Recession. Nevertheless, the analysis identifies a relative weakening in the capacity of the welfare state to moderate market income inequality in several countries, in most of which income inequality increased over the period. Moreover, benefit systems could be designed in a more progressive way in many countries, while the lowest-income earners at the very bottom of the income distribution fail to obtain good access to benefits in most countries.

Although a strong impact of the COVID-19 pandemic on European labour markets has been avoided, the situation of the lowest-income earners in the most recent years is concerning. On the one hand, the share of people below the poverty income threshold (60% of median income) increased in two-thirds of EU27 countries between 2006 and 2021, and in more than half of EU27 countries in 2021, the latest year for which income data are available. On the other hand, the cost-of-living crisis that hit after the pandemic is having a negative impact especially on the most vulnerable members of society. The financial difficulties faced by households increased significantly in 2022, reflected by higher shares of households reporting difficulty making ends meet and material deprivation. This was especially the case among the lowest-income households, which were hardest hit by soaring energy prices as reflected by the difficulty these households faced in keeping their homes adequately warm. The impact was felt most by people with low educational attainment, younger people, women and those living in single-adult households, especially with children.

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Annexes

Annex 1: Methodological approach

This report aims to provide a picture of income disparities across the EU that spans more than 15 years, between 2006 and 2021. The empirical analysis mainly focuses on household disposable income but makes reference to other sources of income as well, using a wide range of indicators that capture income disparities within the Member States and for the EU as a whole.

Data source and sample

For the purposes of this study, the only available source of comparable cross-country microdata across the Member States is EU-SILC, which is conducted yearly and covers different types of income. The other possible sources of data were disregarded: the Structure of Earnings Survey is conducted every four years and provides information on wages only, not income; the Luxembourg Income Study provides income data across Member States, but the data are not so up to date as those of EU-SILC.

This report uses the EU-SILC editions between 2007 and 2022 because information on Bulgaria, Malta and Romania is not available in the 2005 and 2006 editions. Since there is a one-year lag in the income data reported in the survey, the income data used in this report refer to 2006–2021. When providing national-level data, the sample includes all 27 EU Member States. When providing data for the EU aggregate over time, Croatia (available from the 2010 edition) is excluded, so that the same 26 Member States are considered over the period of analysis.

EU-SILC offers a dataset on income, poverty, social exclusion and living conditions in the EU, coordinated by Eurostat, with data drawn from various sources at national level. The survey is conducted every year among private households and their current members residing in the territory of the countries at the time of data collection (household members aged 16 or older are interviewed). It has the advantage of being yearly, containing up-to-date income data and covering all EU countries.

It is important to be aware of the survey's limitations, however. Apart from the fact that the data do not allow long-term trends in income inequality across Member States to be inferred, EU-SILC has other drawbacks that are especially relevant for the purposes of this report. This means the findings presented in this report must be interpreted with care. These are the main caveats.

One-year gap between the survey and the income variables. The survey collects information about the respondents at the time of the data collection (whether they are working, for how many hours, the job characteristics and so on), but the income variables refer to the previous calendar year. This introduces a one-year delay in the income information and makes it difficult to link the income generated with the job currently held by the respondent.

Labour income, not wages. EU-SILC provides information on annual labour income measured in gross terms (some countries provide net data), not precise measures of wages. For the purposes of this report, this is not a very important issue, since most analysis focuses on household disposable income levels. Nevertheless, since some data on wages are shown, it is important to understand the necessary transformations needed in order to generate a wage variable from the labour income data provided in EU-SILC (for full details, see Eurofound, 2017).

Imputation of responses. A significant proportion of the responses are imputed because of item non-response or the information being collected indirectly. Moreover, the variable flagging imputed values is not consistently coded, making it difficult to evaluate its implications (Brandolini et al, 2010).

Issues with quality information. Some of the income variables suffer from lower quality in certain Member States, especially in the initial years of the period. This is another reason why it was decided to start the period of analysis in 2007 instead of in 2005. Some variables that suffer quality issues are those on the tax and benefit systems (where missing observations and important year-on-year changes occur), so special care is required when interpreting the results in Chapter 5 on the role of welfare states.

Underestimation of the real extent of inequalities existing in Member States. On the one hand, EU-SILC considers only income flows and leaves out the wealth, property and capital stock accumulated by families and individuals, which is more unevenly distributed among the population than income flows. On the other hand, EU-SILC covers only imperfectly the income flow generated from capital through rents and dividends. Failing to capture capital income is very relevant when assessing the income levels at the top of the income distribution, but surveys also fail to provide information on the poorest members of society (such as homeless people and those in very vulnerable households),

which is very relevant to the bottom of the income distribution. Therefore, the picture obtained here is only partial and does not capture inequalities to their full extent. Empirical studies on wealth inequality can go further in this regard, although they are hard to conduct for lack of good data availability.

As a result of these caveats, the findings presented in this report must be interpreted with care.

Graphical representation of income data

Given the one-year gap between the year of the EU-SILC edition and the income data, which refer to the previous calendar year, the figures and tables in this report are labelled with the year of the EU-SILC survey, while the text refers to the actual year the income relates to. This means the income information shown in the figures in fact refers to one year earlier, while other variables (such as employment, unemployment and GDP) refer to the actual year. The main reason for this decision is that EU-SILC's information on the labour market status in the actual year has implications for compositional effects (affecting, for instance, wage inequality levels), so it is better that these are taken into account in the year they occur, as well as all the other information from EU-SILC on non-income variables. Therefore, the reader must bear in mind that the year indicated in the figures and tables always refers to the year of the EU-SILC edition, but income data refer to one year earlier, as is noted in the text and in the sources of each figure.

Different sources of income

This report focuses mainly on disparities in household disposable income. Nevertheless, it does not use the variable directly provided by EU-SILC.[42] Instead, different income variables have been constructed step by step, adding different sources of income at every step (see Box A1 for details). This allows household disposable income to be decomposed into its different components, so that particular comparisons can be made, for instance between income and wages, or analysing the role of the welfare state in cushioning market income inequality.

Box A1: Components of household disposable income: A stepwise approach

To construct the variable of household disposable income used in this report, different sources of income have been added in a stepwise process, leading to different variables at every step. This is the sequential process followed (for more details, see Eurofound, 2017).

1. Monthly labour income of workers. This variable refers to annual labour income: gross employee cash or near-cash income (not including social security contributions) for employees, and cash benefits or losses from self-employment. Three different versions of this measure are constructed: monthly full-time equivalent labour income among employees, which considers only wages among employees adjusted for part-time working, so that inequality can be the result of differentials only in hourly pay and not in working hours; monthly full-time equivalent labour income of workers, which is still adjusted for part-time working but adds self-employed people and their labour income to the picture; monthly labour income of workers, which refers to the monthly labour earnings of workers (employees and self-employed), without adjusting for hours worked.

2. Annual labour income of individuals. This is an unadjusted measure of yearly labour income, including income from both employment and self-employment. However, in this case, labour income is considered over the 12 months of the year, whether the individual has worked only a few months or not at all (in the latter case it has a value of 0). Two versions of the variable are constructed: annual labour income of economically active individuals, which includes both employed and unemployed individuals (if they were so for at least one month during the previous calendar year) and therefore includes individuals with no labour income, increasing inequality notably depending on the length of unemployment; and annual labour income of all working-age individuals, which also includes those currently economically inactive, increasing inequality as more people with no labour income are considered, depending on inactivity rates.

3. Annual labour income of households. This measure adds the annual labour income earned by all the working-age members of the household and then redistributes it among all members using the OECD equivalence scale (which takes into account all the members of the household and converts them to a number based on the composition of the household). This pooling of resources at household level, which assigns an identical amount of labour income to each of the household members, significantly reduces inequality levels from the previous step, since those individuals who earn no labour income get some from their household members who do.

42 This explains why the inequality estimates in this report may deviate slightly from those of Eurostat, although the differences are generally not substantial, and the ranking of countries and the changes in income inequality in each of them are broadly the same. Another factor that explains a possible slight deviation from Eurostat estimates is the treatment of negative income values in this report, which are converted to a value of 0 (explained below).

4. Household market income. To the result of the previous step, this measure adds capital income and private transfers between households: income from rents; income from interest, dividends and similar; private transfers received by young people under 16 years of age living in the household; private inter-household cash transfers received; minus private inter-household cash transfers paid. As a result, inequality will be higher, since capital is more unevenly distributed than labour income. Nevertheless, one of the caveats of EU-SILC data is that they underestimate the capital income earned by households and individuals, as mentioned earlier.

5. Household disposable income. This is the final variable, which is the main focus of this report. It reflects the role played by the welfare state, which subtracts income from households (through taxes) and adds it (through benefits). EU-SILC includes these taxes and benefits: taxes on income and social contributions; taxes on wealth; unemployment benefits; old age benefits; survivor's benefits; sickness benefits; disability benefits; education-related allowances; family- and child-related allowances; housing allowances; and benefits related to social exclusion not elsewhere classified. This income redistribution between individuals and families through the tax and benefit system reduces market income inequality.

Other important adjustments and methodological decisions are needed in order to study income disparities as done in this report.

- **Unit of analysis.** The sample analysed includes individuals aged 16 and above. For the labour income variables calculated at individual level (measures 1 and 2 in Box A1), the sample is restricted to individuals of working age (16–65 years). The sample for measures 3 to 5 includes all individuals aged 16 and above, but a transformation is needed to convert these variables, originally calculated at household level, into individual ones: the income at household level is distributed equally among the members of the household (using the OECD equivalence scale).
- **Treatment of negative values.** There are some negative values in income variables (mainly in income from self-employment, private transfers paid to other households and taxes paid), which may result in negative values of household disposable income if there are no other sources of income reported (probably because of underreporting in most cases). There are three possible ways to treat these cases: leave them, convert them into zeros or drop them from the analysis. Given the relatively small number of cases, the household disposable income inequality level resulting from each of these three approaches does not change much: it is highest when including them as negative income in the analysis and lowest when dropping them. For this reason, this report follows the intermediate approach of converting them to zero values, so all observations are retained. In any case, the results of this report are not significantly affected by this decision.

Main indicators capturing income disparities

This report uses a wide range of indicators to analyse income disparities across the Member States. The indicators can be broadly classified into two types.

Indicators of income inequality

Some of the most commonly used are the Gini coefficient, decile ratios, the Palma ratio and the Theil index (Trapeznikova, 2019). All the measures of inequality aim to capture the dispersion of the income distribution, but each of them gives different levels of importance to the bottom, middle and top of the income distribution. All of them are used in this report and have advantages and limitations.

The most widely used measure of inequality is the Gini index, which offers a single value summarising the income inequality level over the whole income distribution. It ranges from 0 (minimum inequality, a situation where everybody has the same income) to 1 (maximum inequality, a situation where a single individual has all income). It is an abstract measure that serves comparative purposes but has no simple intuitive interpretation, which may obscure the discussion about the implications of recent distributional changes (Piketty, 2014). Moreover, it is very sensitive to changes in the middle of the distribution but less so to those at the top and bottom (Atkinson, 1970), when it could be argued the latter may be more important from a social perspective.

Against the background of this criticism, an alternative measure that has gained importance is the Palma ratio (Palma, 2011, 2014), developed in response to the realisation that, when comparing income distributions around the globe, there was a striking regularity in the amount of total income going to the middle class. Palma called this the 50/50 rule, meaning 'half of the population in each country located within deciles 5 to 9 (50% of the population) tends to appropriate about 50 per cent of the national income' (2014, p. 1416), but most of the variation between countries depends on how the remaining 50% of the national income is distributed between the richest 10% and the poorest 40% of the population. This means the Palma ratio pays special attention to those parts of the income distribution

(the top and bottom) to which the Gini index is more insensitive, making a perfect complement to it. The Palma ratio calculates the total income going to the top 10% and the total income going to the bottom 40% as an alternative measure of inequality, meaning it is more sensitive than the Gini index to changes at the extremes of the distribution, since it directly reflects the ratio between the income going to the rich and to the poor in society. The Palma index has the opposite problem: it is insensitive to the middle of the distribution, and it does not meet some of the properties typically required of inequality indices.

Another indicator comparing the extremes of the income distribution is typically used in EU policy discussion and is used here too. It is the S80/S20 ratio, which compares the shares of total income going to the top income quintile and the bottom income quintile. Decile and percentile ratios are other complementary measures that compare income levels at different points of the income distribution (for instance, comparing the income level of the top decile with that of the bottom decile, or the 90th percentile with the 10th percentile of the income distribution).

Finally, there is the Theil index, very useful for the purposes of this report thanks to its decomposable nature. Its measurement of inequality is lower than the Gini index, and it is somewhat more sensitive to changes over time. Its main added value is that it makes it possible to approach the income distribution in the EU as a whole and decompose the resulting inequality levels into two elements: income disparities within the Member States and disparities in average income levels between the Member States.

Indicators of income polarisation

Empirical studies on income polarisation have typically focused on two main areas. One is measuring the size of the middle class and whether it is shrinking, by analysing how the income distribution spreads out from its centre (Wolfson, 1994, 1997; Foster and Wolfson, 2010). The other is monitoring the rise of separate income groups, which means polarisation increases when each of the population groups grows more homogeneous within itself while more separate from the others (Esteban and Ray, 1994). Nevertheless, dispersion inside the middle class also leads to polarisation.

A strong middle class is pivotal in European societies as a buffer against political and social instability. For this reason, this report uses measures capturing the size of the middle class or its share of total income. Although defining and measuring the middle class is problematic and is a long and hotly debated topic in the social sciences (see the literature review in Chapter 1), this report follows previous Eurofound work (Eurofound, 2017, 2019) and defines the middle class as including the people whose equivalised household disposable income is between 75% and 200% of the national median disposable income. The lower bound of the middle class is set at 75% because the poverty line is defined at 60%, so it makes sense to have some gap between poverty and the lower limit of the middle class (Vaughan-Whitehead, 2016; Nolan, 2018; Horrigan and Haugen, 1988; Ravallion, 2010).

Comparability of income levels

Besides the two types of indicators just discussed, this report presents data on household disposable income across the Member States, which is typically presented in national currencies and real terms, by adjusting for inflation. This provides a better picture of trends in living standards and the purchasing power of individuals, and how they are affected by economic upturns and downturns. For the income inequality analysis covering the EU as a whole, income levels in countries are expressed in euro adjusted by Eurostat's PPP, which makes them comparable with other countries by taking into account differences in the costs of living, and provides the best measure to assess convergence between Member States.

Annex 2: Additional tables and figures

Table A1: Summary of empirical studies estimating inequality in EU Member States during the COVID-19 pandemic

Reference	Coverage	Data source	Target variable	Main findings	Numerical results
Clark et al (2021)	France, Germany, Italy, Spain	COME-HERE survey	Household disposable income	Income inequality initially rose, but decreased throughout the pandemic, especially thanks to effective government compensation schemes	Gini: FR 0.287; DE 0.291; IT 0.321; ES 0.323 Theil: FR 0.140; DE 0.145; IT 0.172; ES 0.174
Dauderstädt (2021, 2022)	25 EU Member States, excluding Italy and Ireland	EU-SILC	Household disposable income	No significant change in EU-wide income inequality occurred in 2020	EU average S80/S20 ratio: 4.77 in 2020; 4.80 in 2019
European Commission (2023)	EU27	EU-SILC	Household disposable income	EU average income inequality remained constant in years measured, partly because of large-scale income stabilisation during the COVID-19 pandemic	S80/S20 ratio: 4.74 in 2022; 4.99 in 2021; 4.89 in 2020 S80/S50 ratio: 2.14 in 2022; 2.17 in 2021*
Simulation studies					
Almeida et al (2021)	EU27	Euromod based on EU-SILC	Household disposable income	Household disposable income reduces significantly in scenario with no policy intervention; lowest deciles of income distribution are affected most; policy intervention is able to largely offset effects on inequality	No policy intervention: 9.3% drop in household disposable income, Gini increase of 0.004 Policy intervention scenario: 4.3% drop in household disposable income, Gini increase of 0.003
Palomino et al (2020)	EU27 + Norway and the UK	EU-LFS, EU-SILC	Wages	Poverty and wage inequality in the EU rise because of the pandemic	Increase in Gini coefficient between 3.5% and 7.3%, depending on scenario
Lam and Solovyeva (2023)	26 EU countries; Germany excluded for lack of data	Euromod based on EU-SILC	Household disposable income	Fiscal support measures, especially job retention schemes, were highly effective in stabilising household disposable income, absorbing market shocks and mitigating the rise in the unemployment rate	EU average decline in market income 5.3%; EU average decline in disposable income 1.6%
Eichhorst et al (2023)	EU27 + the UK	Euromod based on EU-SILC	Household disposable income	Minimum income support systems are contributors to stabilising household disposable income in crises. Owing to their low benefit adequacy, they typically have little effect in reducing the rise of inequality. Welfare states in the Nordic and western European regions offer greater social resilience than post-socialist, southern European and, to a lesser extent, liberal welfare states	EU mean Gini index increases from 0.2793 to 0.2815–0.2864, depending on scenario

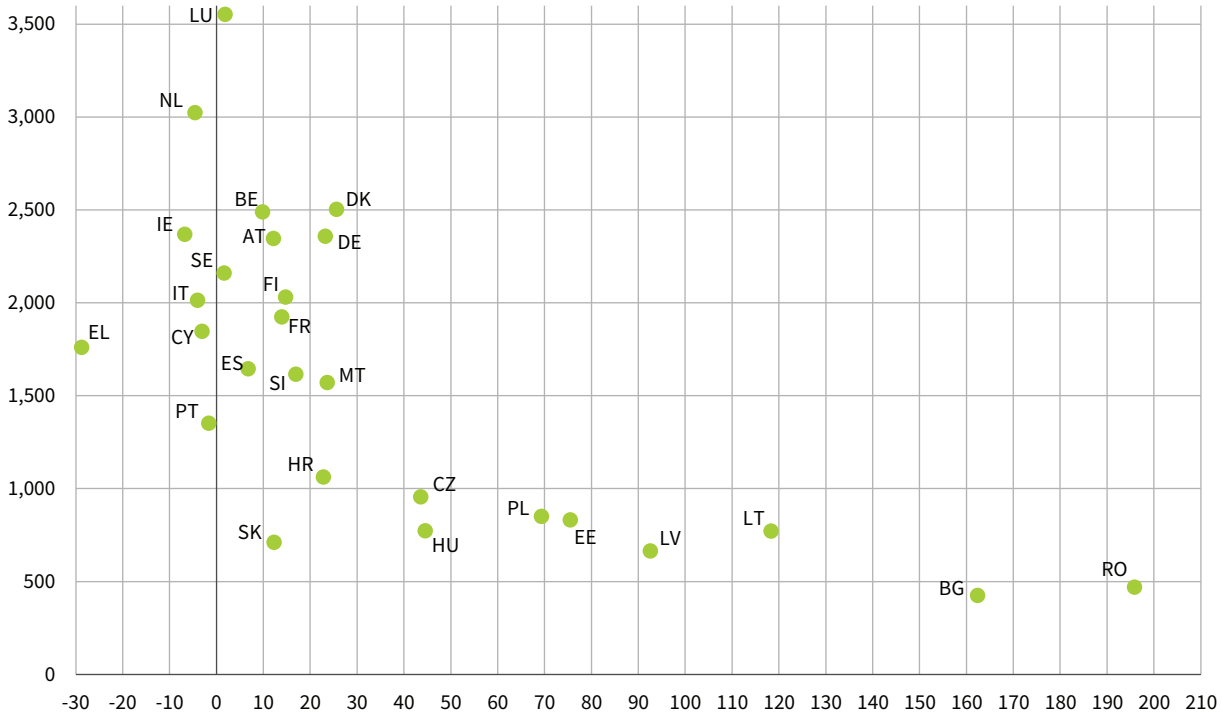
** All numbers calculated with the incomes of the previous year.*
Notes: *COME-HERE is the COVID-19, Mental Health, Resilience and Self-regulation panel survey; EU-LFS is the European Union Labour Force Survey.*

Table A2: Multiple indicators point to declining EU-wide income disparities between 2006 and 2021 (excluding Germany)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Gini indices																
Gini	0.372	0.371	0.363	0.364	0.366	0.367	0.368	0.364	0.361	0.360	0.353	0.345	0.340	0.330	0.331	0.324
Gini (u.a.)	0.293	0.294	0.293	0.292	0.291	0.293	0.297	0.301	0.301	0.300	0.298	0.295	0.296	0.293	0.292	0.293
Theil index and its components																
Theil total	0.241	0.243	0.234	0.233	0.240	0.240	0.243	0.232	0.230	0.229	0.221	0.210	0.219	0.195	0.195	0.188
Theil between countries	0.084	0.079	0.068	0.068	0.067	0.068	0.067	0.063	0.059	0.057	0.051	0.045	0.039	0.032	0.032	0.029
Theil within countries	0.157	0.164	0.165	0.165	0.173	0.172	0.176	0.169	0.170	0.172	0.169	0.165	0.180	0.163	0.163	0.159
Palma index and its components (income received by top 10% and bottom 40%)																
Palma index	1.59	1.60	1.54	1.51	1.53	1.53	1.52	1.50	1.48	1.47	1.42	1.37	1.34	1.26	1.26	1.23
Top 10% (%)	25.9	26.5	26.3	26.0	26.3	26.3	26.3	26.1	25.9	25.9	25.6	25.3	25.3	24.6	24.6	24.4
Bottom 40% (%)	16.3	16.6	17.1	17.2	17.2	17.2	17.2	17.3	17.6	17.6	18.0	18.5	18.9	19.5	19.5	19.8
Income quintile share (S80/S20) ratio (income received by top 20% and bottom 20%)																
S80/S20 ratio	8.3	8.0	7.5	7.5	7.5	7.5	7.5	7.4	7.3	7.2	6.8	6.4	6.2	5.8	5.8	5.6
Top 20% (%)	42.1	42.4	42.1	41.8	42.1	42.1	42.1	41.9	41.7	41.6	41.2	40.8	40.6	39.8	39.8	39.6
Bottom 20% (%)	5.1	5.3	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.8	6.0	6.3	6.5	6.8	6.8	7.1

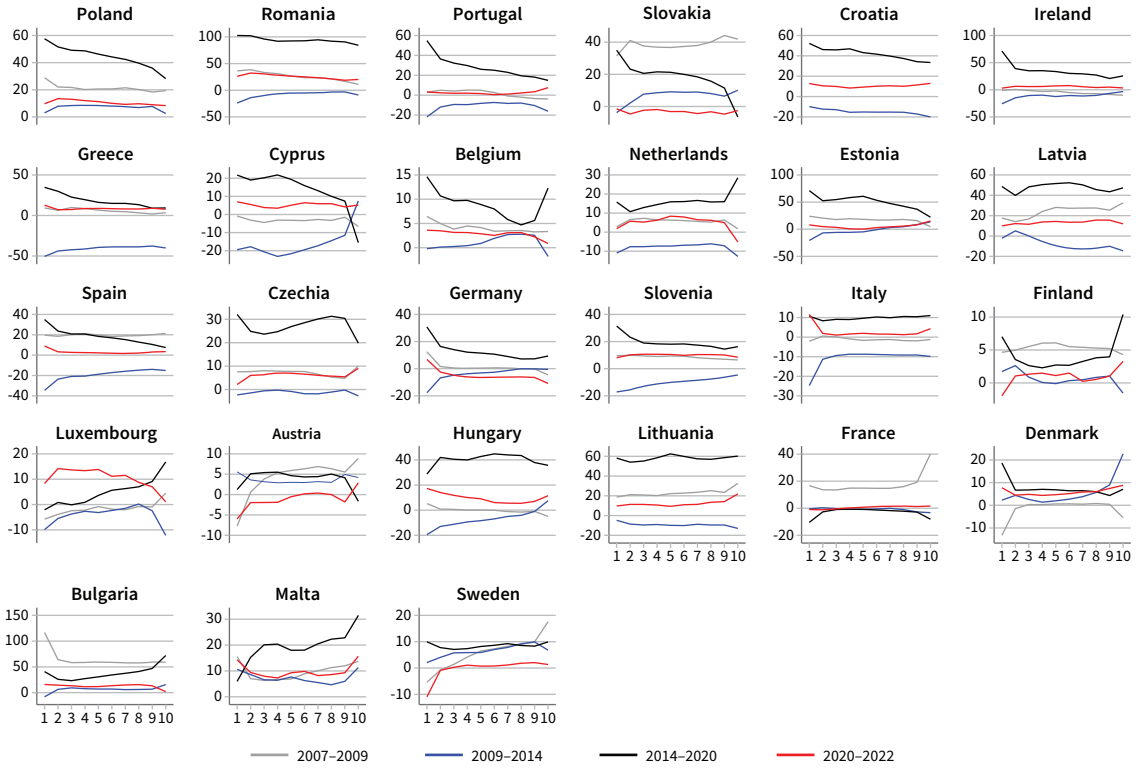
Notes: *The EU aggregate includes all Member States except Croatia and Germany. Gini (u.a.), unweighted average of the Gini indices across EU Member States.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A1: Upward wage convergence between EU Member States (real wages in PPP-adjusted euro in 2007 and change over 2007–2022)



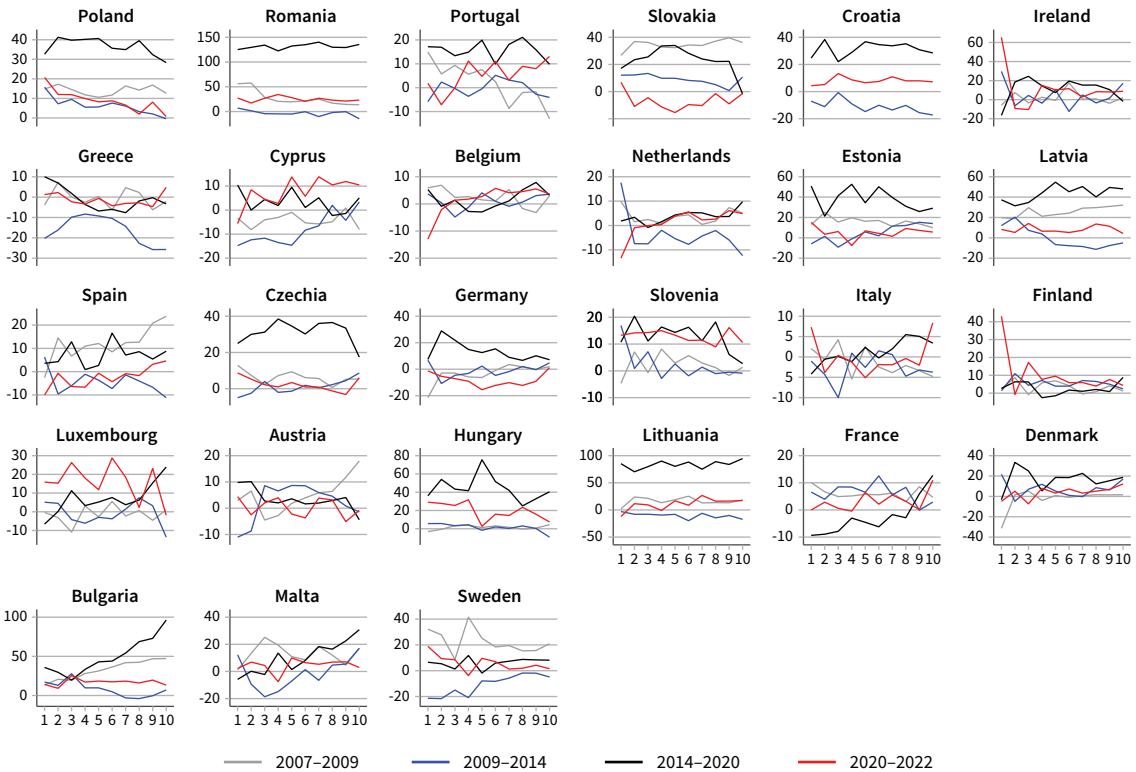
Notes: *Data refer to full-time equivalent monthly wages of employees, provided in real terms (adjusted by inflation). The correlation coefficient between the initial income levels and change in income levels over the period is 0.46. For Croatia, EU-SILC 2010 data are used instead of 2007 data.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A2: Changes in real income levels by income decile, by subperiod and EU Member State, 2007–2022 (%)



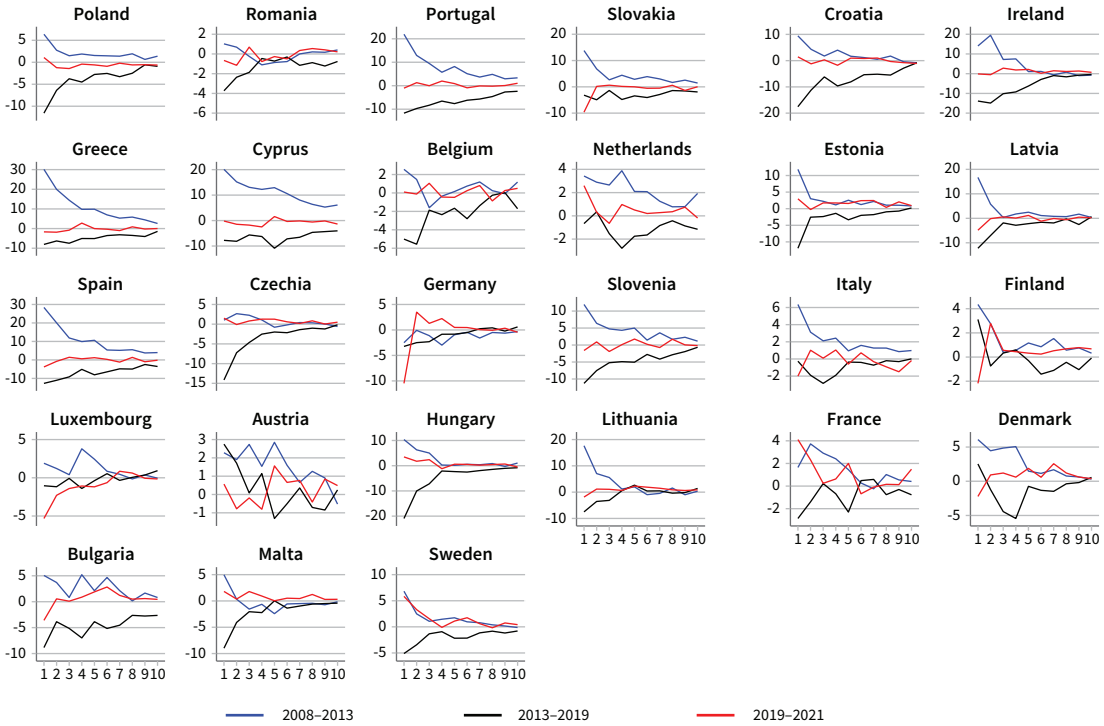
Notes: *Owing to the one-year lag in EU-SILC's income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021. For Croatia, EU-SILC 2010 data are used instead of 2009 data for the second subperiod. Countries are ranked by the change in income inequality over the whole period, from biggest decline to biggest increase.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A3: Changes in real wage levels by income decile, by subperiod and EU Member State, 2007–2022 (%)



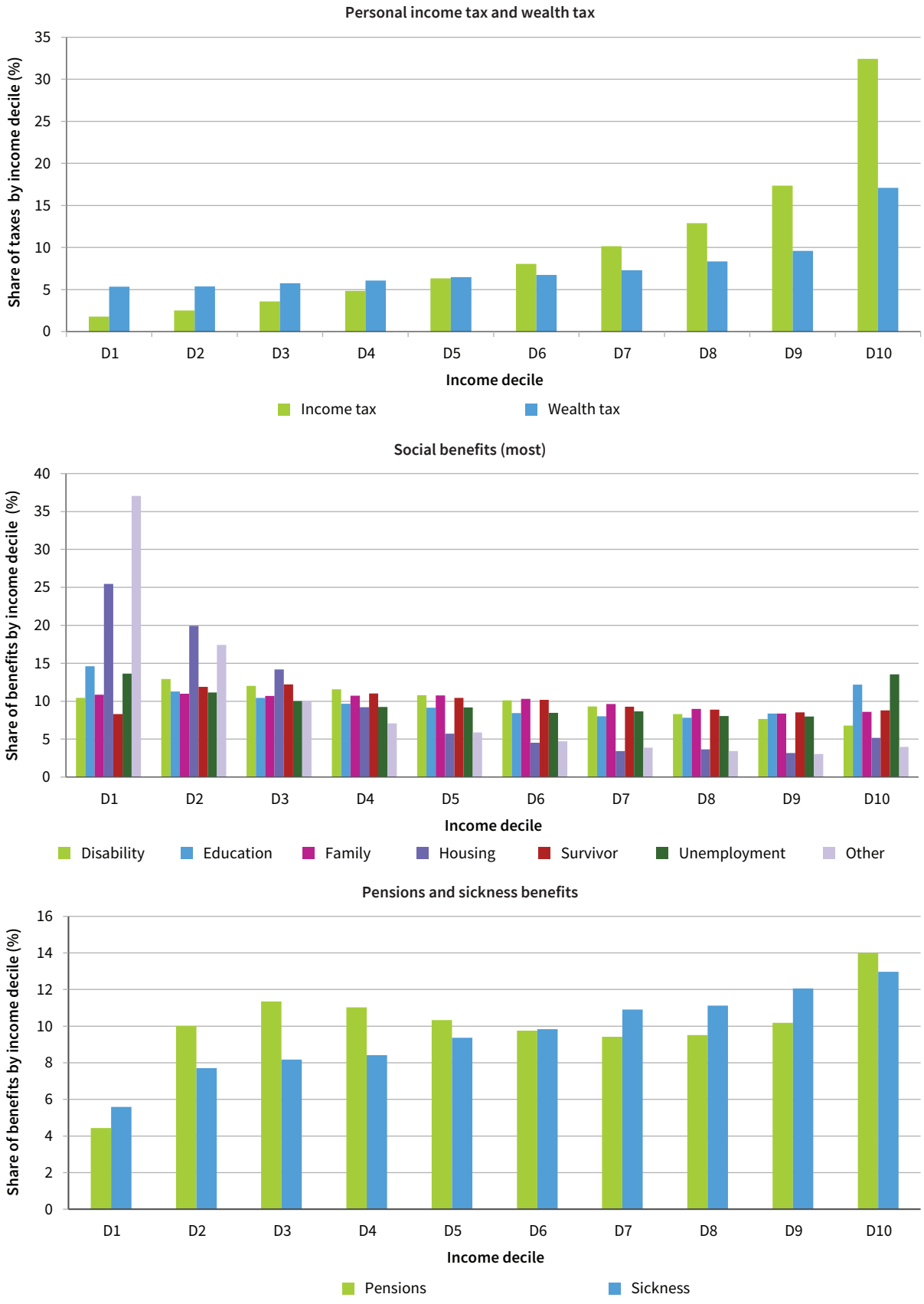
Notes: *Owing to the one-year lag in EU-SILC's income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021. For Croatia, EU-SILC 2010 data are used instead of 2009 data for the second subperiod. Countries are ranked by the change in income inequality over the whole period, from biggest decline to biggest increase.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A4: Changes in the shares of unemployed people, by income decile, subperiod and EU Member State, 2008–2021 (percentage points)



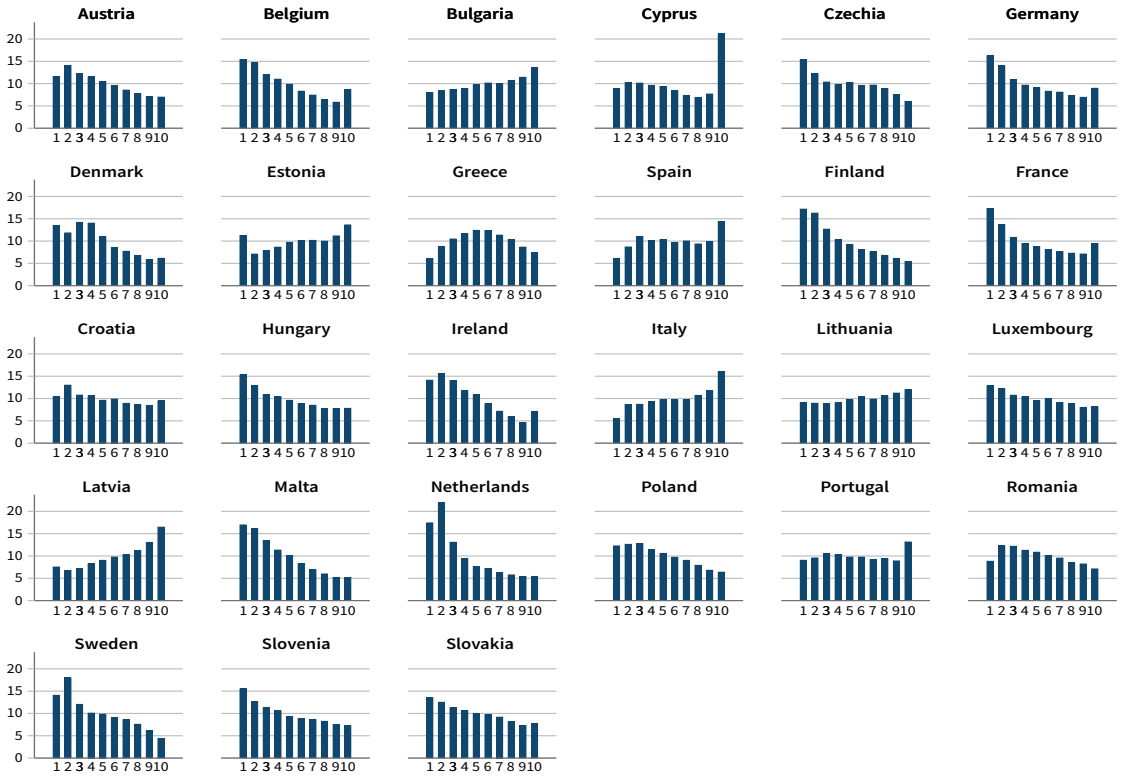
Notes: *The subperiods cover the same years as those of Figure A3 (owing to the one-year lag in income data in EU-SILC). For Croatia, EU-SILC 2010 data are used instead of 2008 data for the first subperiod. Countries are ranked by the change in income inequality over the whole period, from biggest decline to biggest increase.*
Source: *EU-SILC 2008–2021 editions (income referring to 2007–2020 only for the construction of deciles)*

Figure A5: Taxes (upper panel) and most social benefits (middle panel) are progressive, except pensions and sickness benefits (bottom panel) (share of benefits and taxes by income decile, EU Member States' yearly average over 2007–2022, %)



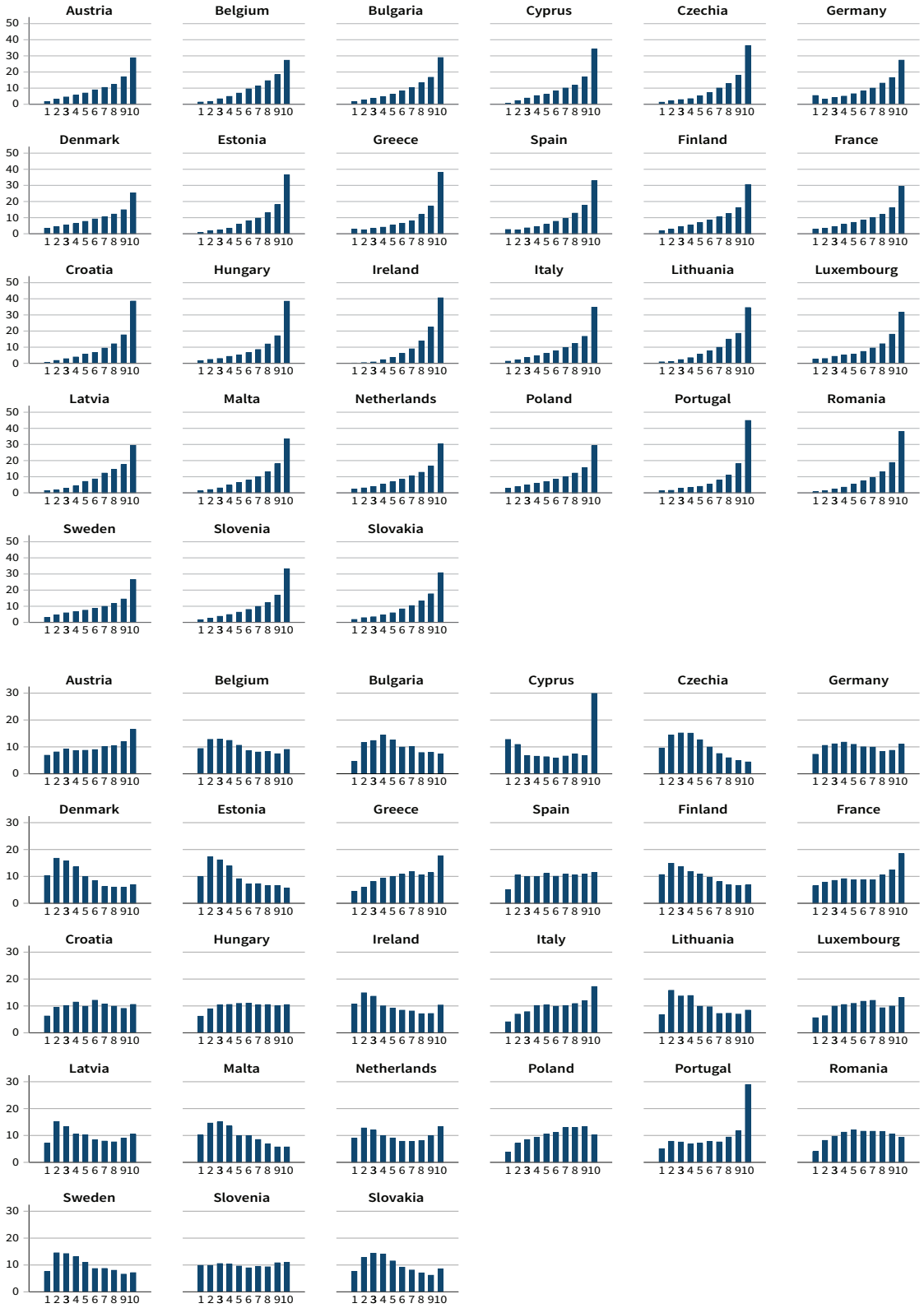
Notes: *Charts show the share of the taxes paid and benefits received by each income decile over the total mass of taxes and benefits in each country. Values are provided for the yearly average across the Member States over 2006–2021 (EU-SILC 2007-2022).*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A6: Benefit systems are progressive across most Member States when pensions are excluded (shares of benefits (excluding pensions) by income decile, yearly average over 2007–2022, %)



Note: *Data calculate the share of the taxes paid and benefits received by each income decile as a percentage of the total mass of taxes and benefits.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A7: Tax and benefit systems were more progressive in 2007 (shares of taxes (upper panel) and benefits (lower panel), by income decile, EU Member States, 2007, %)



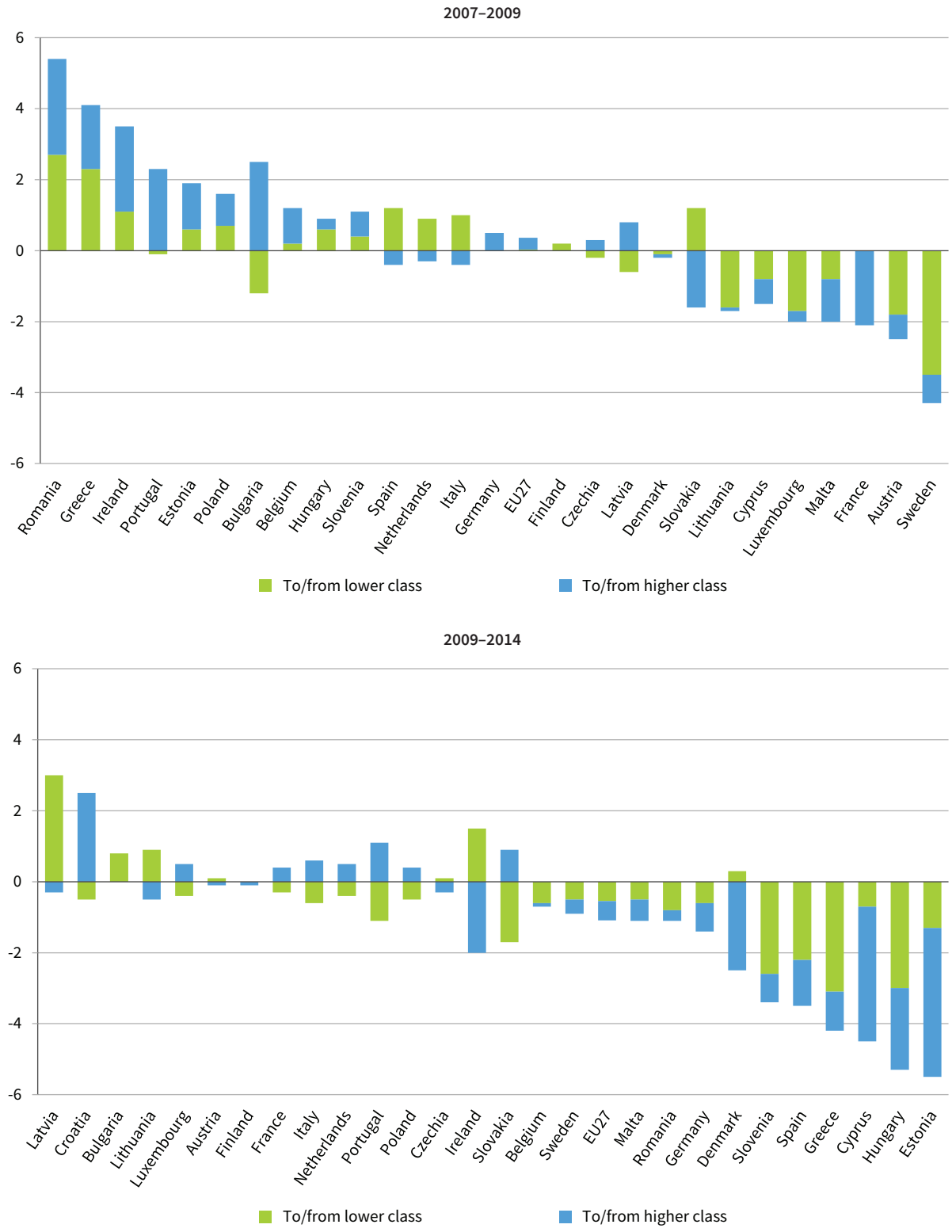
Notes: *Data calculate the share of the taxes paid and benefits received by each income decile as a percentage of the total mass of taxes and benefits. For Croatia, data for EU-SILC 2010 edition are shown.*
Source: *EU-SILC 2007 (income referring to 2006)*

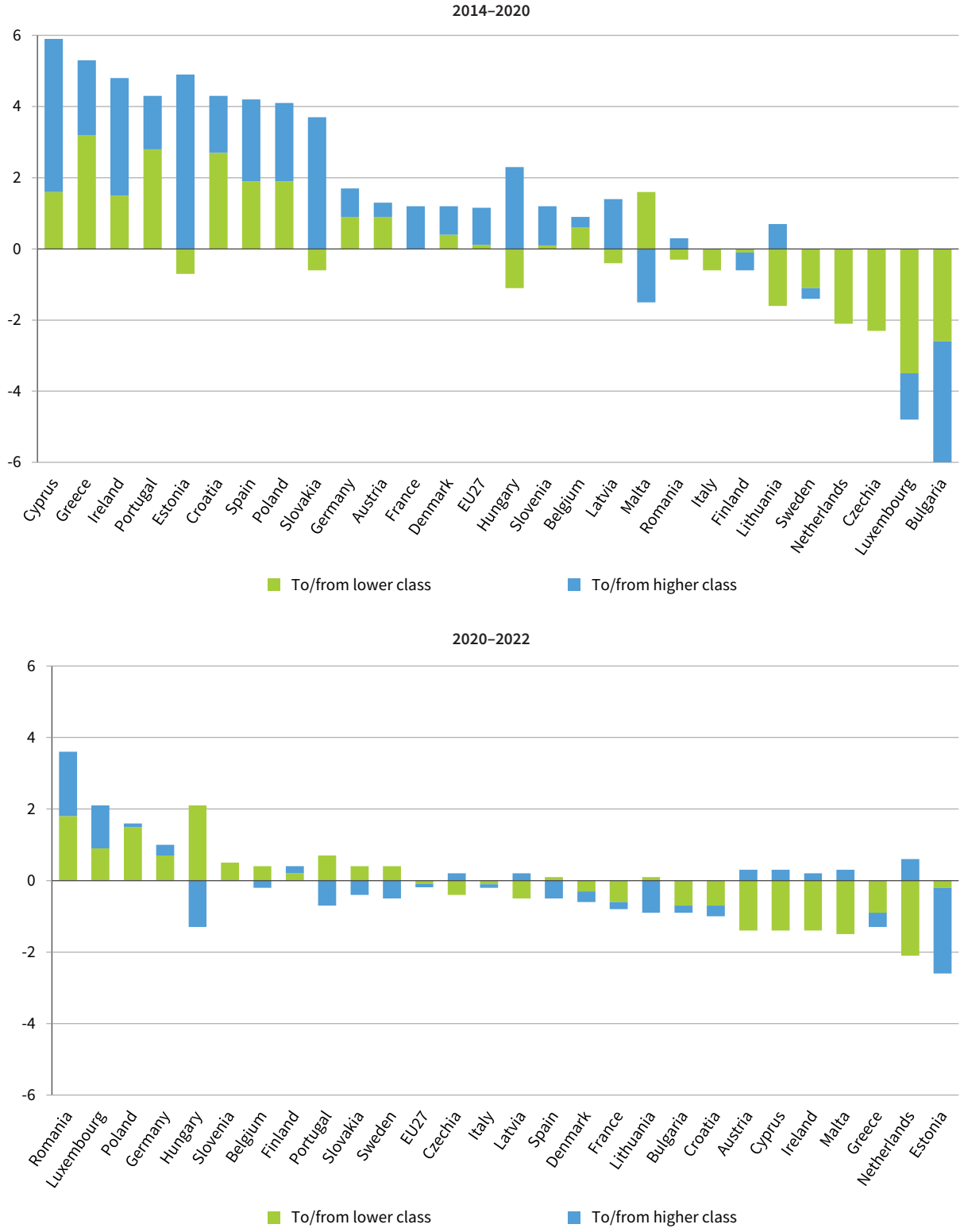
Table A3: Changes in inequality when moving from market income to household disposable income, EU Member States, yearly average data over 2007–2022 (%)

Country	Average	Taxes		Social benefits								
		Income tax	Wealth tax	Unemployment benefits	Pensions	Survivor	Sickness	Disability	Education	Family	Housing	Other
Finland	-50.4	-15.5	0.1	-4.9	-26.6	-1.7	-0.5	-4.4	-0.8	-1.7	-2.3	-1.0
Belgium	-49.9	-17.5	0.1	-5.4	-26.2	-1.0	-0.8	-3.9	-0.2	-2.1	0.0	-1.0
Slovenia	-49.9	-18.8	0.2	-1.0	-25.7	-3.1	-0.7	-5.5	-0.7	-2.0	-0.1	-1.9
Denmark	-48.1	-12.9	0.0	-6.8	-23.9	-0.1	-1.0	-5.1	-2.8	-0.9	-1.7	-0.1
Czechia	-48.0	-13.9	0.1	-0.6	-30.8	-2.0	-0.6	-4.9	0.0	-1.8	-0.5	-0.5
Netherlands	-47.7	-16.6	0.0	-1.5	-26.5	-0.3	-0.5	-3.5	-0.9	-0.9	-1.5	-3.4
Austria	-47.3	-15.0	0.0	-2.9	-27.4	-2.7	-0.6	-2.7	-0.2	-2.6	-0.3	-0.8
Hungary	-46.9	-12.1	0.1	-1.4	-30.5	-0.7	-0.2	-3.9	-0.2	-3.8	-0.2	-0.4
Sweden	-46.7	-11.7	0.1	-2.0	-27.4	-0.1	-1.5	-3.6	-2.2	-1.8	-1.7	-1.3
Ireland	-46.2	-18.3	0.0	-6.6	-15.7	-0.5	-0.1	-5.1	-0.6	-6.3	-2.1	-0.1
Germany	-45.9	-13.6	0.1	-2.5	-27.5	-2.6	-0.3	-1.7	-0.4	-2.0	-1.3	-0.7
Slovakia	-45.1	-9.1	0.1	-0.5	-30.7	-3.2	-0.3	-4.2	-0.1	-2.3	0.0	-1.1
France	-43.6	-9.5	-0.2	-2.9	-28.4	-0.8	-0.3	-1.5	-0.2	-1.9	-2.3	-1.5
Luxembourg	-42.3	-9.8	0.0	-2.4	-26.0	-1.2	-0.4	-2.7	-0.4	-2.8	-0.2	-1.4
EU27	-41.9	-11.6	0.1	-2.0	-24.7	-1.9	-0.4	-3.3	-0.4	-1.9	-0.6	-0.9
Croatia	-41.0	-12.7	0.0	-0.4	-20.8	-4.3	-0.2	-5.7	-0.1	-1.5	-0.1	-0.5
Greece	-40.7	-8.1	0.5	-0.8	-28.8	-4.4	0.0	-1.7	0.0	-0.9	0.0	-1.1
Poland	-39.5	-4.9	0.2	-0.7	-28.1	-2.3	-0.1	-3.8	-0.1	-2.5	-0.1	-0.3
Italy	-39.2	-11.4	0.0	-1.7	-24.5	-4.7	0.0	-1.8	-0.1	-0.8	-0.1	-0.5
Portugal	-38.9	-14.2	0.2	-2.0	-21.6	-3.4	-0.5	-2.0	-0.2	-0.8	0.0	-0.6
Malta	-38.7	-11.7	0.0	-0.8	-22.7	-0.7	-1.1	-1.7	-0.4	-1.7	-0.3	-2.8
Romania	-38.3	-10.1	0.5	-0.1	-26.0	-1.7	0.0	-2.5	-0.1	-1.8	0.0	-0.6
Spain	-37.3	-9.9	0.0	-4.2	-19.4	-4.4	-0.5	-3.0	-0.3	-0.2	-0.1	-0.7
Estonia	-35.4	-8.7	0.1	-0.7	-23.2	-0.1	-0.3	-4.0	-0.2	-1.9	-0.2	-0.1
Lithuania	-33.4	-7.3	0.0	-0.9	-21.1	-1.1	-0.4	-3.7	-0.1	-1.4	-0.1	-1.1
Cyprus	-31.6	-8.3	0.0	0.1	-17.0	-3.1	-0.2	-2.8	-0.7	-2.2	-0.3	-1.0
Latvia	-30.4	-8.1	0.3	-0.7	-19.9	-0.4	-0.5	-2.1	-0.1	-1.5	-0.3	-0.3
Bulgaria	-28.9	-3.6	0.3	-0.6	-21.4	-0.7	-0.3	-2.5	0.0	-1.9	0.0	-0.6

Notes: *Data refer to the reduction in the Gini index (rate of change) when moving from market income to disposable income. Average refers to the average yearly value over the whole period between 2007 and 2022. EU27 refers to the average values across Member States. Countries are ranked by the magnitude of the total reduction. However, the sum of the individual effects of each policy does not equal the total effect of the welfare state: on the one hand, because the total effect takes into account the interplay across all welfare policies and, on the other hand, because the individual effects of taxes and benefits are calculated differently. The effect of benefits is calculated by comparing market income inequality with market income inequality incorporating each specific public transfer. The effect of taxes uses as a reference not the market income but the total household income (including income from public transfers). Data need to be interpreted with caution, since some of these items have a significant number of missing values.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A8: Middle-class squeezes are more common in economic downturns (changes in size of middle class over subperiods, EU Member States, 2007–2022, percentage points)



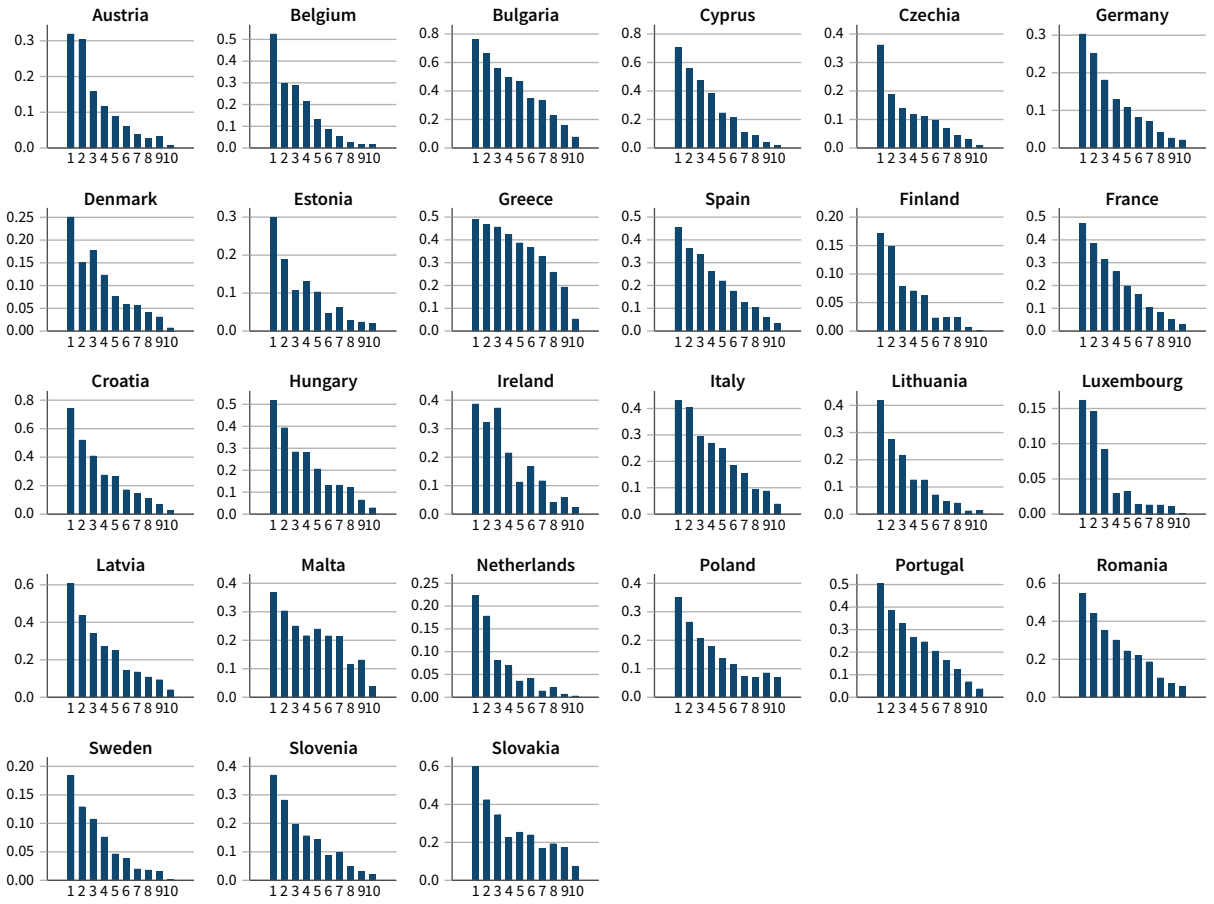


Notes: *Data depict the changes in the size of the middle class, differentiating between people coming from the low- and high-income classes in cases of increases in the middle class or going into the low- and high-income classes in case of declines in the middle class. For this reason, the sign of the changes in the size of the low- and high-income classes has been inverted. Countries are ranked by the magnitude of the increase in the size of the middle class in each subperiod, from biggest increase to biggest decline. Owing to the one-year lag in EU-SILC income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021. For Croatia, EU-SILC 2010 data are used instead of 2009 data for the second subperiod. EU27 refers to the unweighted average across Member States.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A9: Changes in real income levels by income class over subperiods, EU Member States, 2007–2022 (%)

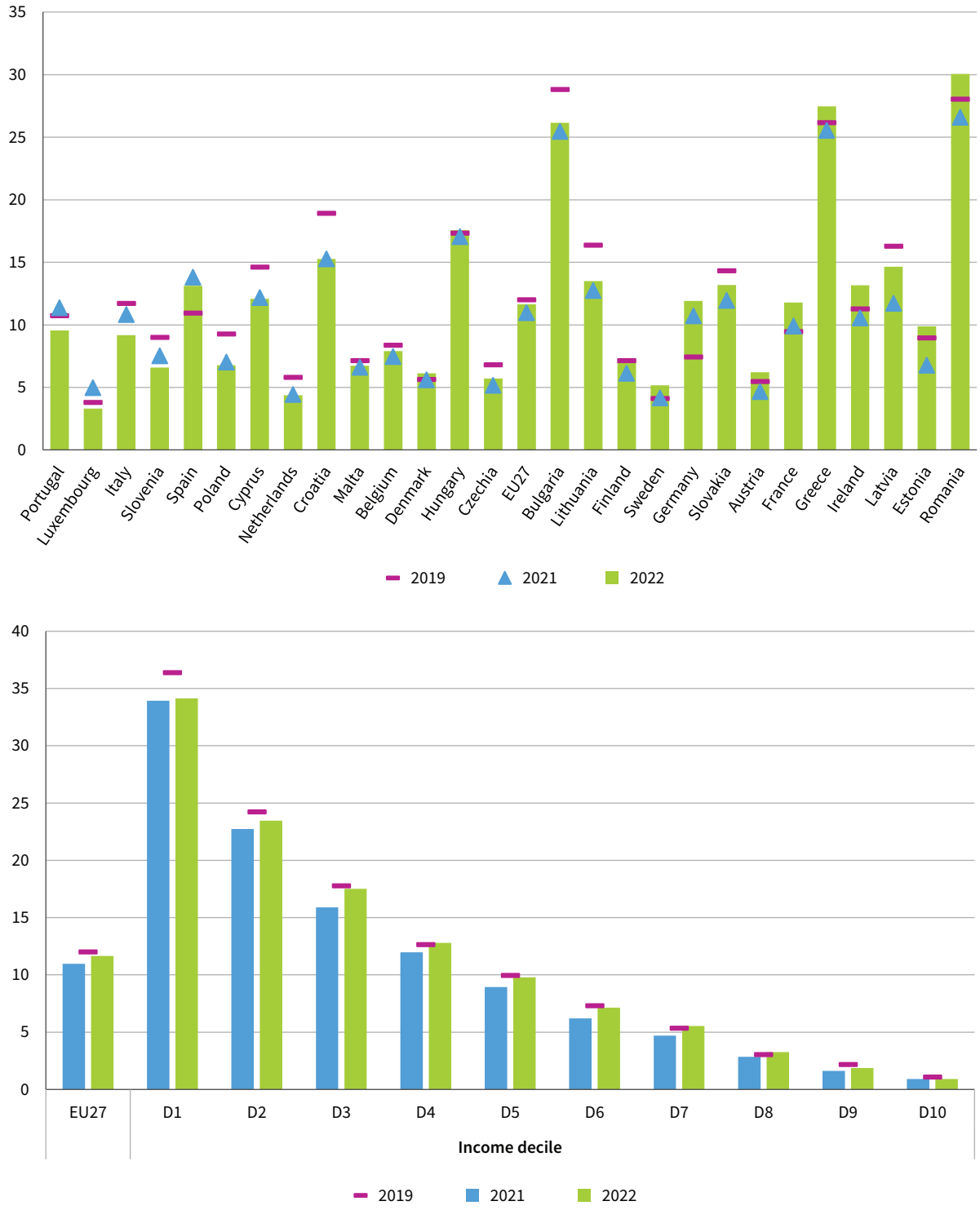
Notes: *Countries are ranked by the magnitude of the change in average real income levels among the middle class in each subperiod, from biggest increase to biggest decline. Owing to the one-year lag in EU-SILC income data, subperiods actually refer to 2006–2008, 2008–2013, 2013–2019 and 2019–2021. For Croatia, EU-SILC 2010 data are used instead of 2009 data for the second subperiod. EU27 refers to the unweighted average across the Member States.*
Source: *EU-SILC 2007–2022 editions (income referring to 2006–2021)*

Figure A10: It is much more difficult for households at the bottom of the income distribution to make ends meet (shares of people in households with difficulty making ends meet, by income decile, EU Member States, 2022)



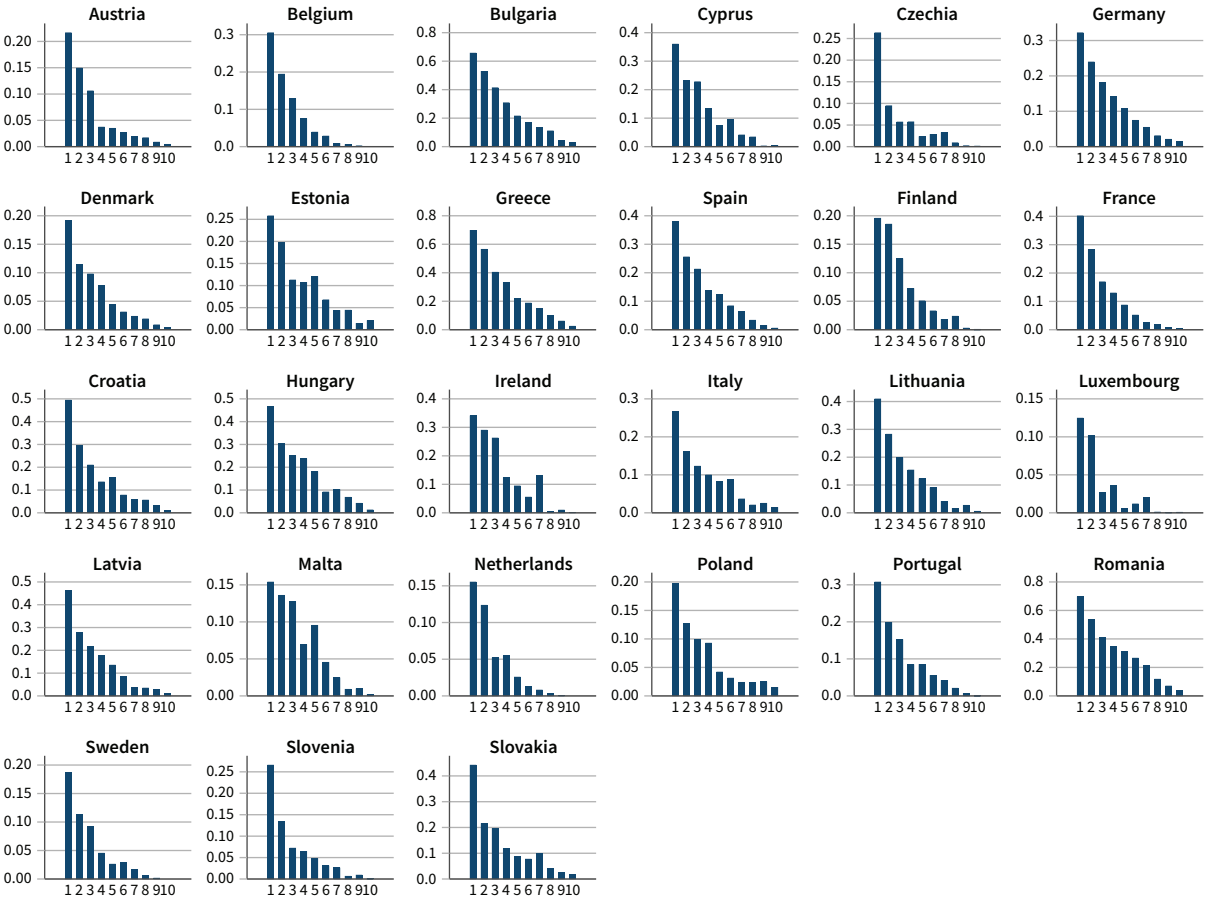
Notes: *Data refer to the share of people who reported living in a household with difficulty making ends meet (answer categories 'difficulty' or 'great difficulty'), by country and by income decile. The y-axis has been rescaled for each country, so the higher incidence in the lowest-earning deciles can be observed better.*
Source: *EU-SILC 2022 edition (income referring to 2021 only for the construction of the income deciles)*

Figure A11: Material deprivation advances in 2022 (shares of people experiencing material deprivation, by Member State (upper panel) and income decile (lower panel), %)



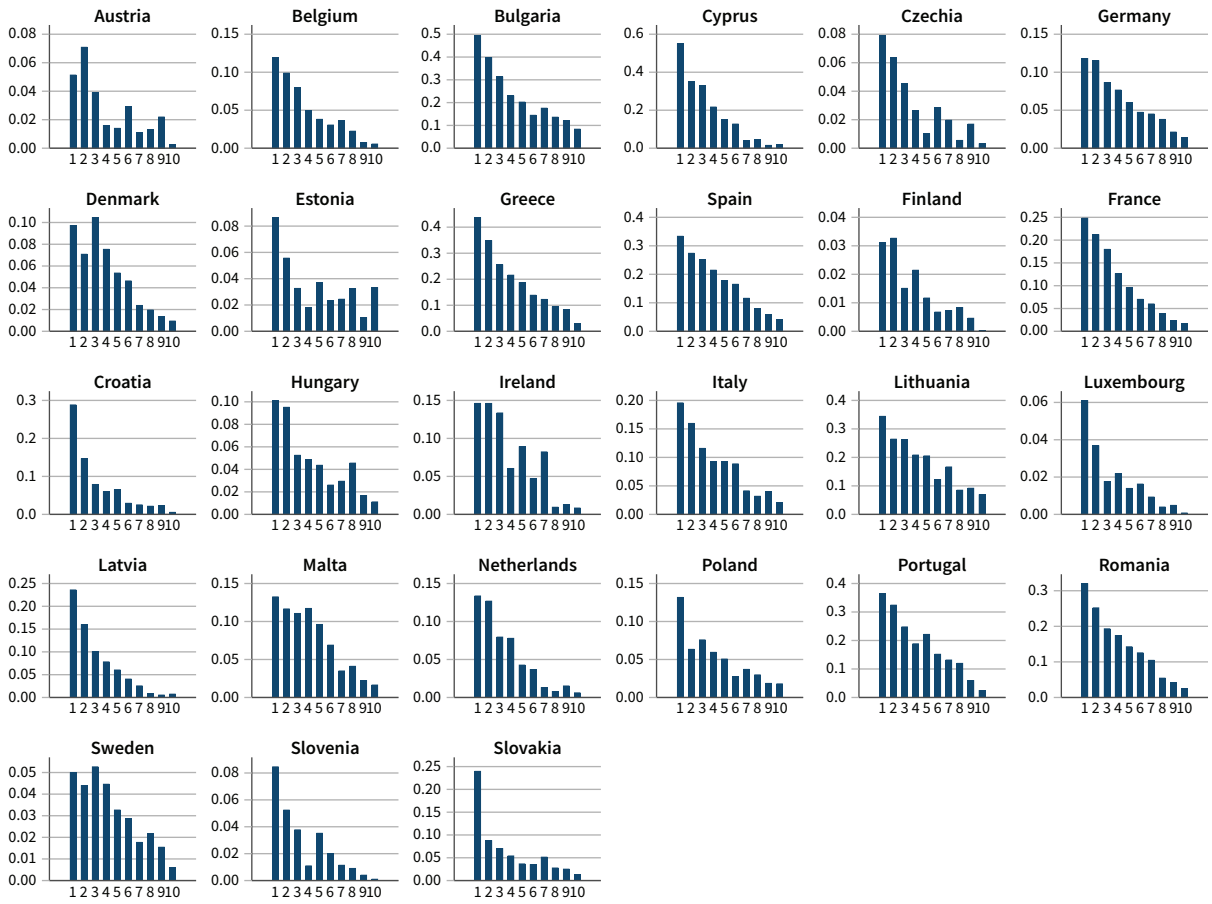
Notes: *In the upper panel, countries are ranked by the change in shares between 2021 and 2022, from biggest decline to biggest increase (in percentage points). The concept of material deprivation assesses the capacity of households to cover their most basic material needs. Although such needs are complex and difficult to estimate properly, Eurostat commonly uses a material deprivation index. Here, a household is considered materially deprived when it cannot afford at least three of the following items: to pay its rent, mortgage, utility bills and hire purchase instalments or other loan payments without arrears; one week's annual holiday away from home; a meal with meat, chicken or fish (or vegetarian equivalent) every second day; to face unexpected financial expenses; a car, a computer, a television set, a telephone and a washing machine. The EU27 average refers to cross-country data.*
Source: *EU-SILC 2019–2022 editions (income referring to 2018–2021 but only for the construction of the income deciles)*

Figure A12: Shares of people living in materially deprived households, by EU Member State and income decile, 2022 (%)



Note: *The y-axis has been rescaled for each country, so the higher incidence of material deprivation in the lowest-earning deciles can be better observed.*
Source: *EU-SILC 2022 edition (income referring to 2021 but only for the construction of the income deciles)*

Figure A13: People in the lowest-earning households are disproportionately affected by soaring energy prices (shares of people in households not able to keep their home adequately warm, by EU Member State and income decile, 2022, %)



Note: *The y-axis has been rescaled for each country, so the higher incidence in the lowest-earning deciles can be better observed.*
Source: *EU-SILC 2022 edition (income referring to 2021 but only for the construction of the income deciles)*

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This report provides a comprehensive examination of trends in income inequality within and between the EU Member States from 2006 to 2021. The study also aims to answer the related question of whether the middle class is becoming smaller because of developments in respect of disparities in household disposable income. A robust analysis is conducted using a wide range of interrelated indicators, including income inequality; income levels across Member States and along the income distribution; the size of the middle class; the share of national income received by different income groups; and poverty rates and other indicators of economic hardship experienced by European households. The role of public policies in explaining some of these trends is also examined. The results indicate that although income inequality has been relatively stable on average across the Member States, trends are much more mixed at Member State level, while the size of the middle class has shrunk in most of them.

The European Foundation for the Improvement of Living and Working Conditions (Eurofound) is a tripartite European Union Agency established in 1975. Its role is to provide knowledge in the area of social, employment and work-related policies according to Regulation (EU) 2019/127.

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