



European
Commission

BEYOND AVERAGES

FAIRNESS IN AN ECONOMY THAT WORKS FOR PEOPLE



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EXECUTIVE SUMMARY

Europeans are, on average, better educated and live healthier, longer and more prosperous lives today than at any point in the past. However, this view on average achievements obscures large disparities, both within and between European countries. The income of the richest 20% of households in Europe is on average 5 times higher than that of the poorest 20%, and up to 8 times higher in some Member States. Most indicators of well-being display a social gradient according to education level, occupation, income and social status. The Great Recession has reinforced existing socio-economic divides. Vulnerable groups – those with low education levels, the unemployed and individuals with a migrant experience – have largely borne the brunt of the resulting economic downturn and austerity programmes. Southern European countries were hit particularly hard.

Growing disparities on multiple socio-economic dimensions have contributed to a sense of unfairness and discontent in Europe. Recent data show that 38% of Europeans do not believe that they are treated fairly and 41% do not agree that they have enjoyed equal opportunities in life. Fairness is a subjective phenomenon, but the far-reaching consequences of perceptions of unfairness warrant a closer look at its drivers and underlying dynamics. The present report analyses some of the most pertinent dimensions of fairness in relation to the agenda for a fair, inclusive and social European Union (EU).

Chapter 2 describes Europeans' perceptions of fairness and how they vary across countries and socio-economic groups. The chapter also

discusses how perceptions of fairness relate to the functioning of society and to individual well-being. *Chapter 3* presents some stylised facts on income inequality for the whole EU before, during and after the Great Recession. The dynamics of income inequality are shown for the entire income distribution as well as for different income sources in the EU as a whole, but also for three macro-regions. *Chapter 4* discusses inequality of opportunity – a key structural inequality in society – through the study of persistence of educational attainment levels across generations. The analysis goes beyond most existing evidence by considering persistence across three generations rather than only two. The second part of the chapter explores individual perceptions of social mobility and beliefs about equality of opportunity. After the examination of inequality of outcomes and opportunities in Europe, *Chapter 5* provides some perspectives and evidence on welfare state arrangements and tax-benefit systems: the distributional impacts of tax reforms, individual tax evasion behaviour, corporate tax avoidance behaviour and aspects of social protection in changing labour markets. *Chapter 6* concludes this report.

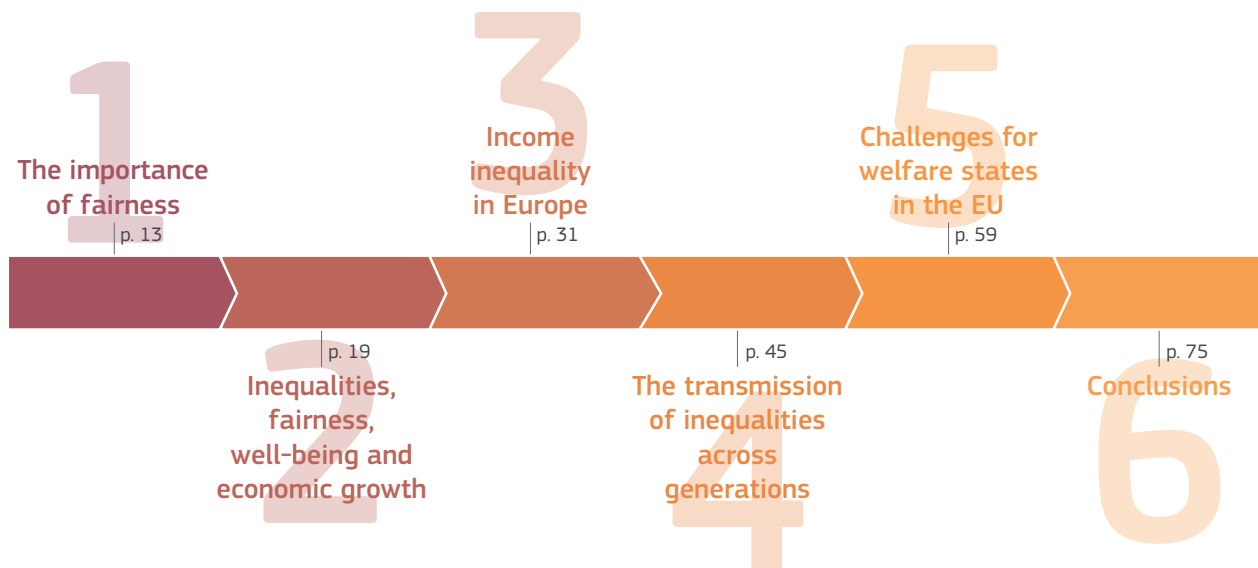
Perceptions of fairness vary widely across EU countries and socio-economic groups

While about half of all European adults think that life is generally fair, perceptions of fairness are rather low in many countries of Southern and Eastern Europe: only 39% in Bulgaria and Cyprus, 36% in Croatia and 26% in Greece think that life is generally fair. By contrast, corresponding figures are much higher in the Benelux, Western European and (especially) Nordic EU Member States.

Perceptions of fairness do not only vary across countries and macro-regions but also by socio-economic characteristics. Individuals with higher education and income levels are more likely to perceive life to be fair, compared to the unemployed and elderly (see *Figure 2.1 on p. 21*).

At the country level, perceptions of fairness correlate more strongly with people's beliefs about income inequality than with actual levels. This is because individual assessments of fairness are filtered through a dense net of perceptions, preferences, values and beliefs. People tend to misperceive inequalities, and differ in terms of the level of inequality they consider acceptable.

EU-wide labour income inequality across the EU was quite stable after 2007, while inequality of household incomes even declined. In North-Western Europe, household income levels decreased proportionally among all income groups. Income inequality in this macro-region was stable and relatively low. By contrast, inequality in Southern Europe increased significantly from 2007 onwards, peaking in 2014. People at all income levels experienced income losses; for the poorest 10% in Southern Europe, incomes decreased by at least 30% between 2007 and 2014. The rise of income inequality across Southern Europe is mainly due to a growing income gap between median earners and the poor. State and intra-household redistribution prove to be important insurance mechanisms against income shocks (see *Figure 3.5 on p. 36*).



Perceptions of unfairness need to be heard and acted upon, since fairness is linked to general well-being. *Chapter 2* argues that the advantages of a fair and inclusive society need not come at the cost of less efficient economies and weaker growth. On the contrary, fairness and inclusivity can foster competitiveness and growth.

Income inequality at EU level has been stable since the Great Recession, but increased in Southern Europe

Incomes converged across EU macro-regions

Between 2007 and 2016, income levels in the EU converged. In Central and Eastern Europe, the countries with the lowest income levels in 2007, incomes increased in almost all percentiles of the distribution, while Southern Europe experienced a large income reduction and a rise in income inequality. Varying patterns of income change and income inequality were likely caused by different exposure and subsequent reactions to the financial crisis.

Educational inequalities are passed on across generations

In Europe, individual fortunes often depend on family socio-economic background. A child born to a parent with a tertiary degree is on average 43 percentage points more likely to obtain a tertiary degree him- or herself compared to someone born to less highly educated parents. The persistence of social status of this kind has a dynastic component: If grandparents are included in the analysis, the advantage increases by 9 percentage points on average in the EU (see Figures 4.1 and 4.2 on pp. 47 and 49).

Social mobility differs between European regions. In Eastern, Western and Southern Europe, the persistence of educational attainment across generations is stronger than in Northern Europe and the Baltics. In Northern Europe, the offspring of more highly educated parents and grandparents have on average a 24 percentage points higher probability of completing higher education relative to those with less highly educated parents and grandparents. This figure increases to 57 percentage points in Southern Europe, indicating low levels of social mobility. Educational persistence has not changed substantially across birth cohorts, suggesting that limited progress has been made in ensuring equal opportunities in Europe.

The experience of upward mobility strengthens belief in meritocracy

Since individual decisions are largely based on attitudes, beliefs and perceptions, subjective information can complement objective indicators of social mobility, such as changes in educational attainment. In the EU, 33% of individuals consider that they have moved up the social ladder compared to their parents, while about 23% consider that they have moved down. The share of respondents reporting upward mobility varies between 41% in Northern Europe and 31% in Southern Europe. About half of the respondents identify themselves as being on the same level of the social hierarchy as their parents.

Data also show that individuals with a perception of upward social mobility are less inclined to believe that success in life is a consequence of family circumstances and are more likely to attribute it to individual effort (see Figure 4.5 on p. 54).

Welfare states in the EU are under pressure

The social model of European welfare states is unique in providing collective insurance against risks which are only insufficiently insurable in the market. Most welfare states in Europe spend more than 50% of their budgets on social protection, health and education.

Structural changes driven by technological developments, globalisation and demographic change create new demands and challenges for existing welfare states. Across the EU, the traditional full-time, open-ended employment relationship is becoming less common, while atypical work forms, such as temporary jobs, part-time work, casual work and solo self-employment, are becoming increasingly important. Between 2002 and 2017 the share of atypical workers in the EU rose by 4 percentage points, from 38% to about 42%. This workforce often does not contribute to or benefit from basic social protection (see Figure 5.4 on p. 64).

Tax policy can be a lever for greater equity and efficiency

Central and Eastern European economies with flat personal income tax schedules could achieve greater equity and efficiency by moving towards more progressive personal income tax schedules.

Wealth is more unequally distributed than market incomes, but is left largely untaxed in most EU economies. The redistributive effect of wealth taxes, as currently designed, appears to be negligible.

Tax evasion and tax avoidance are major concerns for EU Member States' fiscal policy: for example, in the web-based economy there is a mismatch between the place where economic activity occurs

and the place where profits are reported. Tax avoidance is facilitated by a corporate taxation system which is not adapted to today's fluid and intangible economies.

Similarly, tax evasion violates basic principles of tax justice. All this limits the capacity of welfare states to uphold their part of the social contract. Policy interventions targeting tax evasion and tax avoidance have the potential to foster fairer societies and raise additional revenue for the provision of welfare services and public goods.

The JRC agenda for social fairness in Europe

Moral considerations of fairness and justice are relevant to many facets of life. From within-family relative bargaining power and resource sharing to community interactions, from the local provision of public goods to the mitigation of and adaptation to climate change, questions of responsibility, distribution and redistribution are omnipresent. With the intention of contributing to a broad, European-wide debate on fairness, this report presents and synthesises recent research findings on perceptions of fairness, European-wide income inequality, persistence of educational attainment, social policy and taxation.

Other central issues such as gender and environmental inequalities are being tackled in current and future JRC research.

PREFACE

Three years ago, the Joint Research Centre (JRC) initiated a multi-annual research project on fairness. The first two years were marked by the publication of the first Fairness Report, the launch of a Community of Practice on Fairness, and the commissioning of a special Eurobarometer survey on 'Fairness, inequality and intergenerational mobility'.

The first JRC report on fairness, 'What makes a fair society? Insights and Evidence', was published at the end of 2017 with the aim of addressing the multiple dimensions of fairness and identifying data and knowledge gaps. By focusing not only on short- and long-term trends in income inequality but also on inequality of opportunities and spatial disparities across a range of areas, including health and education, the report contributed to building a multidisciplinary knowledge base to support the European Commission's agenda on fairness. The report acknowledged the need to monitor perceptions of fairness.

The Community of Practice on Fairness organised four workshops in 2017/2018, engaging policymakers and academics in a dialogue on fairness-related topics. This dialogue continued with three events in 2019 (*see Annex 1*).¹

The JRC commissioned a special Eurobarometer survey to better understand citizens' views on fairness, inequality and intergenerational social mobility. The survey covers, among others, respondents' views on fairness in life, equality in the justice system and in the application of political decisions, opportunities to get ahead in life and respondents' family backgrounds. The main results of the survey were published in April 2018.² This recently collected data on fairness provides the opportunity to study several facets of fairness, some of which are discussed in this report.

Since the publication of its first report on fairness, the JRC has worked, *inter alia*, on the distribution of income across and within EU Member States, fairness-related impacts of tax and benefit systems, the dynamics of income inequality, social mobility across and within generations, the drivers of income inequalities and fairness perceptions. JRC research findings were disseminated through a series of Science for Policy Briefs on Fairness, launched in autumn 2018. These policy briefs are available on the Fairness Science Hub (<https://ec.europa.eu/jrc/en/research/crosscutting-activities/fairness>) and listed at the end of this report (*see Annex 2*).



SUMMARY

Growing disparities in multiple dimensions have contributed to a sense of unfairness, arousing anger and discontent. Although fairness is in the eye of the beholder, the far-reaching consequences of perceptions of unfairness call for a closer look and careful considerations of some of the drivers and underlying dynamics of inequalities and fairness perceptions alike. This report contributes to the public discourse on fairness and provides evidence to support the European political agenda on social fairness.

THE IMPORTANCE OF FAIRNESS

On average, Europeans are better educated, healthier, live longer, and have more prosperous lives today than at any time previously. However, this average perspective hides the fact that not everyone is equally well-off. Life expectancy ranges from 75 to 83 years across EU Member States. Individuals with a tertiary education live on average five years longer than those with at most a lower secondary education.³ Education depends, to some extent, on family background: individuals whose parents went to university are three times more likely to obtain a university degree themselves compared to other individuals. The income achieved by the richest 20% of all households is five times higher than that received by 20% of the poorest households. This number varies between three and eight times depending on the specific Member State. Emotional poverty in the form of social isolation and loneliness is unevenly distributed across Europe and comes with poor health and unfavourable economic circumstances. Most indicators of well-being display a social gradient along education, occupation, income and social status. The Great Recession reinforced this socio-economic divide. Southern European countries were hit harder than the rest of Europe and vulnerable groups – low educated, unemployed or individuals with a migrant experience – largely bore the brunt of the economic downturn and austerity programmes. Economic hardship and rising inequalities in many dimensions have contributed to fuelling anti-elite sentiment and discontent. For example, the yellow-vest protests in France were triggered by a regressive tax on petrol, which was perceived as unfair. Recent tax-avoidance scandals have revealed that large companies do not bear their

Perceptions of unfairness have fuelled discontent.

‘fair’ share of the burden, reinforcing anger and sentiments of unfairness. Data shows that 38% of Europeans do not believe that they are treated fairly and 41% do not agree that they have equal opportunities in life.

“ 38% of Europeans do not believe that they are treated fairly and 41% do not agree that they have equal opportunities in life. ”

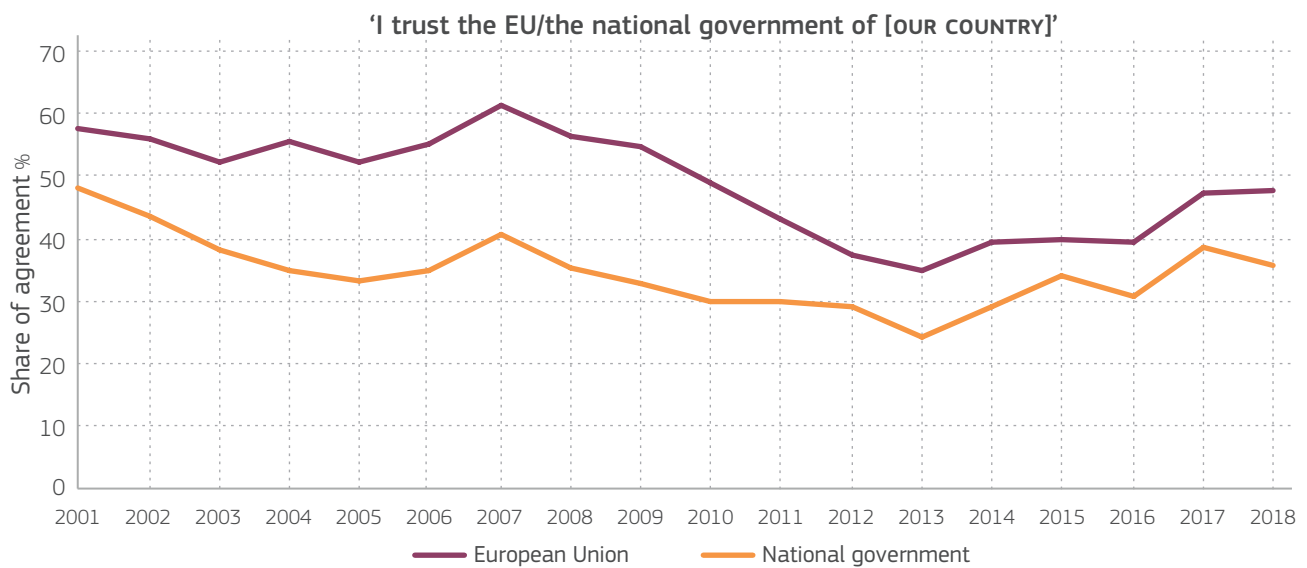


Figure 1.1: Share of individuals expressing trust in the EU and respective national governments

Notes: Data refer to the share of respondents reporting that they trust the EU/national government in their country. The EU average is calculated for each year including only those EU Member States at the time and using target and population weights.

Source: JRC calculations based on standard Eurobarometer waves from 2001 to 2018.

The sentiment of unfairness among EU citizens creates political, social and economic challenges which together have the potential to undermine European values and possibly even liberal democracy.⁴ To foster a pan-European fairness narrative, it is important to replace averages with distributions when monitoring and evaluating European policies. The second JRC Fairness Report does not propose a remedy for unfairness. It aims to contribute to a diagnosis of the phenomenon to support the Commission's political agenda on social fairness.

There are also positive signs that offer reasons for hope. Trust in the EU and in national governments fell from 2007 until 2013, but these trends are being reversed and individuals' trust in these institutions is rebounding (*see Figure 1.1*). As of 2018, the number of young people with a positive image of the EU was at its highest level since 2002. European citizens also voted in much larger numbers in the last European elections in May 2019, ending the relentless decline in voter turnout since the first popular election of the European Parliament. Labour market indicators also paint a positive picture.

Employment is approaching the Europe 2020 target of 75% and the unemployment rate in the EU dropped to 6.3% in autumn 2019, reaching its lowest level since 2000.

Social fairness is high on the EU agenda. In the political guidelines, President von der Leyen of the European Commission committed to put forward an action plan to fully implement the European Pillar of Social Rights.⁵ By supporting a set of 20 rights and principles to ensure equal opportunities, access to labour markets, fair working conditions, universal social protection and inclusion, the European Pillar of Social Rights is a significant step towards anchoring a broad social dimension in the European political agenda.⁶ Since its adoption in 2017, the Commission has launched a number of initiatives to foster fairness.⁷ More recently, the Commission published a roadmap to fully implement the European Pillar of Social Rights. In the related Communication, the Commission re-emphasises the importance of striving for more social fairness and equality and presents a number of possible initiatives, such as the establishment of a European Child Guarantee

or a European unemployment benefit reinsurance scheme.⁸ The European Green Deal proposes a new growth strategy which also stresses the importance of a just and inclusive transition.⁹

This report provides quantitative evidence to support the European Agenda for a fair, inclusive and social European Union. The material is presented in four main chapters. *Chapter 2* discusses perceptions of fairness in the EU and evaluates to what extent the inequality of both outcomes and opportunities matter when considering fairness. Data show that in Southern and Eastern Europe the perception that life is fair is in general rather low compared to the rest of Europe. The chapter argues that a fairer and more equal society enhances well-being and the functioning of society. These advantages need not come at the cost of less-efficient economies and weaker growth. On the contrary, fairness and inclusivity have the potential to promote competitiveness and growth. *Chapter 3* describes the patterns and dynamics of income inequalities in Europe before, during and after the Great Recession of 2008. The EU-wide measure of income inequality employed in this chapter highlights changes across the entire income distribution and for different income sources in the EU as a whole as well as for three EU macro-regions. The results show that the crisis was particularly dire for the already less well-off in Southern Europe. Inequality in this macro-region increased significantly from 2006 onwards, mainly due to the rising income gap between the median earners and the poor. The Southern European poor were left behind and could not catch up after the financial crisis. In contrast, income inequality did not vary substantially in North-Western Europe and Central and Eastern Europe. *Chapter 4* discusses a key dimension of inequality of opportunities, namely the transmission of educational inequalities across generations in Europe. Most of the evidence on social mobility has been rooted in a parent-to-offspring paradigm. This chapter goes one step

further and analyses the persistence of socio-economic status across three generations. The persistence of educational attainment and social status is highest in Southern Europe and lowest in Northern Europe. Social status persistence has a dynastic component: an individual's lifetime prospect is linked not only to the socio-economic status of the parents but also to that of the grandparents. Given the relation between social status persistence across generations and the long-term dynamics of income inequality, fostering social mobility is all the more important for a well-functioning EU.

After discussing inequalities of outcomes and opportunities, *Chapter 5* provides some perspectives and evidence on welfare state arrangements and tax and benefit systems. Prevailing tax structures and the transfer system shape disposable incomes and wealth distributions in EU countries. In this context, 'tax justice' – i.e. corporations and citizens bearing their 'fair' share of taxation, without avoidance or evasion – is a key element in ongoing public policy debates.

“Economic hardship and rising inequalities in many dimensions have contributed to fuelling anti-elite sentiment and discontent.”

The chapter analyses several aspects of fairness in relation to EU tax systems: the distributional impacts of tax reforms, individuals' tax evasion behaviour, corporations' tax avoidance behaviour and aspects of social protection in new labour markets. Structural changes challenge existing national welfare state arrangements. There is room to revive the social contract through policy interventions on tax evasion, taxation of the digital sector, and adjustment of social protection systems to the new world of work.

Chapter 6 summarises and concludes this second JRC Fairness Report.

Disclaimer

The quantitative results provided in this report should generally (unless stated otherwise) be interpreted as correlations. Correlations describe the direction and magnitude of a relationship between two variables. Albeit informative and capable of providing useful insights, correlations should not be confused with cause-and-effect relationships. The data and analysis in this report predate the UK leaving the EU. The analysis are thus including the UK.

BOX 1.1 Defining fairness

When discussing fairness, the first conceptual challenge arises because of the difficulty of translating it from English to other European languages. Indeed, many languages do not have a direct word for 'fairness' but rather translate it as 'justice', 'justness', 'appropriateness', 'equity' or 'equitableness'. In some European languages, 'fair' or 'fairness' has become a loanword, incorporated into the language without translation (Gulyas 2018).

Fairness and equality are related but are not at all synonymous. Fairness relies upon certain normative criteria, whereas equality refers to the quality of being identical in status, value or quantity, which does not strictly require any normative criteria. Concerns about fairness seem wired into human nature, from a child complaining that 'it is unfair' to adults' discontent towards excessive inequality (Piachaud 2008, Starmans et al. 2017). The difficulty in defining what is fair arises because fairness concerns are inherently subjective, i.e. what is viewed as fair and the importance attached to fairness varies from one person to another. On an abstract level, the concept of fairness suggests an ethical judgment about the

appropriateness of an object (behaviour, treatment, process or outcome) with respect to a subject (individual or group). Given the multiplicity of ethical arguments for appropriateness, as well as objects and subjects of fairness conceptualisations, fairness can mean a great many different things for the general public and for policymakers alike.

In the academic world, an often-encountered distinction is made between outcome based and procedural conceptions of fairness. The concept of procedural fairness is rooted in the seminal work of John Rawls' 'A Theory of Justice' (1971) and refers to the process leading to the distribution of resources. Outcome-based fairness conceptions, on the other hand, relate to the actual distribution of these goods which include material goods and services but also benefits, taxes, or more general well-being-related outcomes. Inequalities in the distribution of any of these can be perceived either as justified (fair) or as unjustified (unfair). In Rawls' and subsequent seminal works (Dworkin 1981a; Dworkin 1981b), equality of opportunity is an important criterion for fairness judgments.



“The European Commission has put forward *several initiatives aimed at fostering fairness.*”

In line with this, inequalities are fair as long as they are the consequences of factors for which individuals can be held responsible. Inequalities, however, which are rooted in circumstances beyond an individual's control (such as gender, place of birth, family background) are unfair. Individuals must 'play on a level field', i.e. inequalities of opportunities should be eliminated or compensated for through public intervention. Several empirical studies (e.g. Konow 2003; Cappelen et al. 2007) confirm that indeed the distinction of factors within and beyond individuals' control matters for fairness judgements. Nevertheless, a pluralism of fairness values prevails among individuals, with fairness ideals ranging from strict egalitarianism (all inequalities should be equalised) to liberalism (each person to get what she or he produces) with the equality of opportunity perspective in-between.¹⁰

In a recent JRC study on concepts of fairness, Dewandre (2019) distinguishes between mutual fairness and social fairness. These two forms of fairness share the characteristic of being inherently relational. Mutual fairness is fairness-

as-equal treatment and relates to the outcome- and procedure-based notions of fairness. Mutual fairness is also literally about fair play, i.e. playing by the rules, avoiding cheating and fooling, being treated equally to others. This form of fairness echoes with the empirical findings by Lupfer et al. (2000). The authors show the importance of interpersonal fairness, i.e. how people are treated in interpersonal relations, for evaluating the fairness of an outcome. The second form of fairness – social fairness – is intended instead as fairness-as-solidarity. This is related to the fact that the meritocratic principle and associated fair inequality are only valid in a given range. If it is fair that one deserves what s/he has in function of his or her merits and efforts, the reverse is not necessarily true. Extreme poverty should not be seen as a fair outcome in any way; hence, providing access to basic resources for those in need is a fundamental form of fairness towards each other, despite and beyond the validity of the meritocratic principle. In line with Hufe et al. (2018), Dewandre (2019) thus argues that equality of opportunity alone is not enough to define fairness.



SUMMARY

Fairness is a value judgement that depends on individual characteristics and perceptions. This chapter provides insights into Europeans' perceptions of fairness and how these perceptions vary across countries and socio-economic groups. About half of European adults think that their lives are fair. Yet, only 11 % strongly believe so and more than 20 % either disagree or strongly disagree with the statement that their life is fair. Although equality of outcomes (e.g. income inequality) have some influence on Europeans' fairness perceptions, it is important to distinguish unfairness from inequality of outcomes. Perceptions of fairness are also shaped by the (perceived) degree of equality of opportunity. The chapter argues that fair societies exhibit higher levels of well-being and social cohesion which can result in more economic efficiency and stronger economic growth.

INEQUALITIES, FAIRNESS, WELL-BEING AND ECONOMIC GROWTH

Fairness is a complex concept which is defined and interpreted in different ways by scholars, pundits and institutions. Some individuals might emphasise the importance of equality of outcomes (such as income or wealth) between members of society; others, instead, might accept greater inequalities of outcomes if they are driven by merit and not by circumstances. Fairness-related perceptions and attitudes are formed through individual experiences (Cropanzano et al. 2001). People with similar socio-economic characteristics, living in the same environment, might have different, possibly antipodal fairness judgments and perceptions. Ultimately, fairness is in the eye of the beholder: a subjective experience that depends on the individuals involved and their perceptions (Greenberg et al. 1991).

Despite difficulties that arise when defining fairness, understanding to what extent Europeans perceive their societies and lives as fair and what contributes to initiating these feelings is relevant. Perceptions of fairness shape individuals' behaviours and decisions and hence have far-reaching consequences in a variety of social contexts (De Cremer and Blader 2006). Taking advantage of the JRC-designed 'Eurobarometer on Fairness, inequality and intergenerational mobility' (EC 2018e),¹¹

About half of all European adults think that life is fair. For many Europeans, a fair society must have living standards which are more or less equal.

this chapter first provides insights into Europeans' perceptions of fairness, showing how they differ across EU Member States and individual characteristics (*Section 2.1*). The link between inequality of outcomes (e.g. income inequality) and fairness is investigated and the extent and circumstances under which these inequalities are considered unfair are discussed (*Section 2.2*). This chapter further explains that perceptions of fairness are closely tied to individuals' well-being and well-functioning societies. Individuals living in more equal and fairer societies tend to be happier and healthier than their counterparts (*Section 2.3*).

“ Fairness perceptions shape individuals’ behaviours and decisions and hence have far-reaching consequences in a variety of social contexts. ”

Finally, *Section 2.4* argues that there is not necessarily a trade-off between having a fair society and economic efficiency. On the contrary, societal fairness could contribute to the (economic) success of the EU.

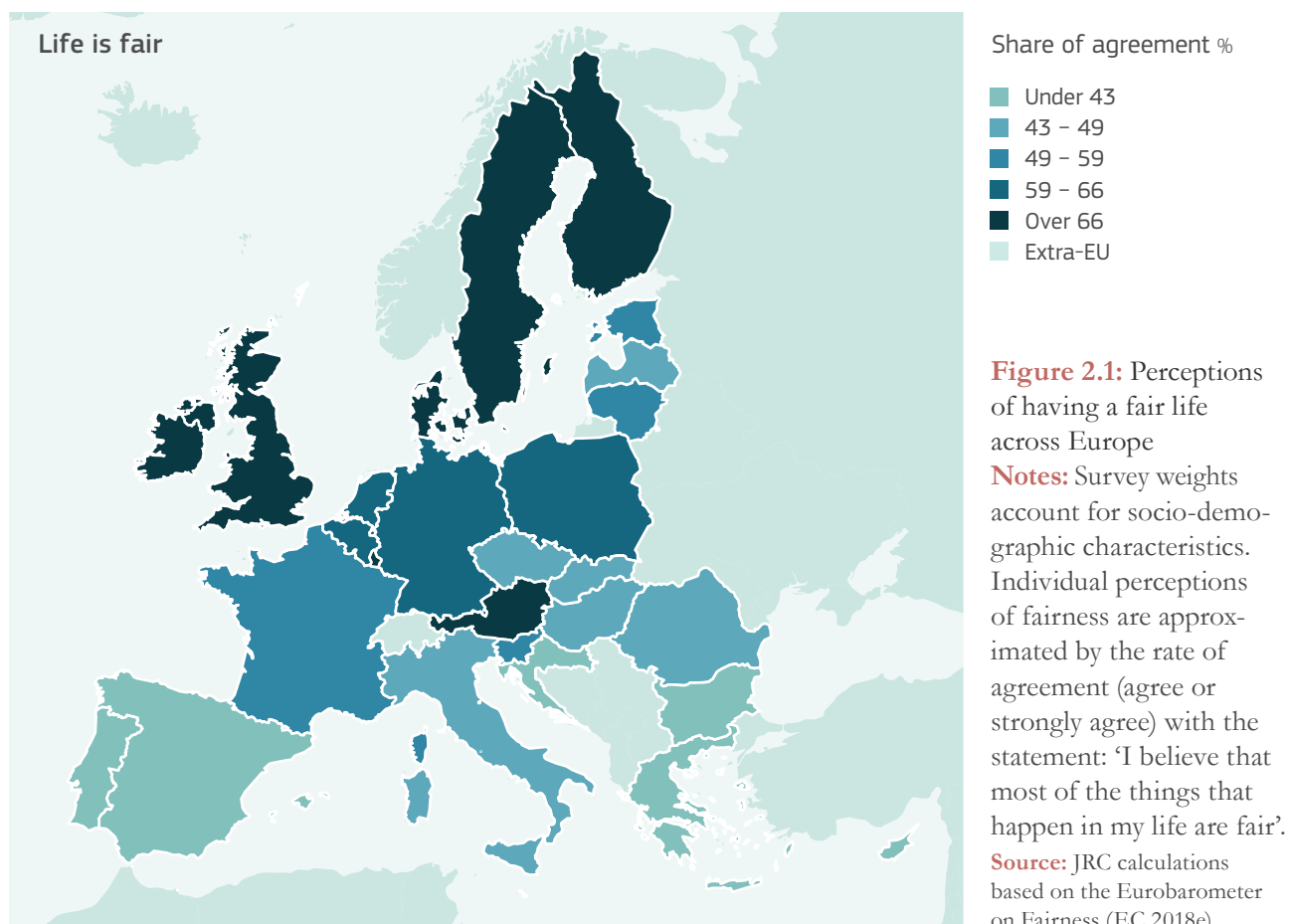
■ 2.1. What do we know about fairness in Europe?

The subjective nature of fairness makes it difficult to define and assess it. Nonetheless, monitoring the degree to which individuals perceive their life and country as fair is valuable in order to better understand people’s behaviour and attitudes towards certain policies. In this context, it is helpful to rely on questions directly relating to the beholders’ own definition of fairness, as was done in the JRC-designed Special Eurobarometer on ‘Fairness, inequality and intergenerational mobility’ (EC 2018e). Respondents were asked to evaluate whether they consider their life as fair by expressing their agreement (or disagreement) with the statement: ‘I believe that most of the things that happen in my life are fair’.

On average, about half of European adults either strongly agree (11 %) or agree (43 %) with the statement that their lives are fair. Nevertheless, a sizable share of the respondents (about 22 %) either disagree or strongly disagree. As shown on the map in *Figure 2.1*, average perceptions of fairness differ widely across EU Member States with some macro-regional patterns emerging. In Southern European, Eastern European and Baltic countries, a rather low share of inhabitants report that most of the things happening in their life are fair. While there are a few positive exceptions (such as Poland and to a lesser extent Estonia and Lithuania) in these macro-regions negative opinions prevail: only 26 % of Greeks, 36 % of Croatians and 39 % of Bulgarians and Cypriots believe that their life is fair. Conversely, in the Benelux, Western Europe and (especially) in the Nordic countries, the corresponding figures are much higher.¹² Particularly positive perceptions are found in Ireland (79%), Denmark (78%) and Finland (76%), while in France, perceptions of fairness are lower than in other Western European countries.

Perceptions of fairness do not only vary across countries and macro-regions but also by socio-economic characteristics (*see Figure 2.2*). Individuals with higher education and income levels perceive life to be fairer, while perceptions of fairness are lower among the unemployed and older populations.¹³





Overall, 54% of Europeans perceive life as fair. Going beyond the average, a more nuanced picture emerges: for low-income earners, individuals with comparatively low levels of education and older people, the EU does not resemble a land of fairness.

2.2 The link between fairness and inequality

Definitions of fairness often include notions of inequality of outcomes, such as inequality of incomes. According to the European Social Survey, in most of the 17 EU countries surveyed, the majority of individuals agree or strongly agree that ‘for a fair society differences in people’s standard of living should be small’ (*Figure 2.3*). This finding, which in most countries has remained quite stable over time, suggests that large inequalities in living standards are indeed considered unfair by many.

The agreement rate is not homogeneous across EU Member States. In Denmark, a comparatively egalitarian country, only 32% of respondents agree with the aforementioned statement. In contrast, in Greece, Cyprus and Portugal, the idea that fairness requires some equality is particularly widespread: more than 80% of respondents

“ On average, about half of European adults (54%) think that their lives are fair. ”

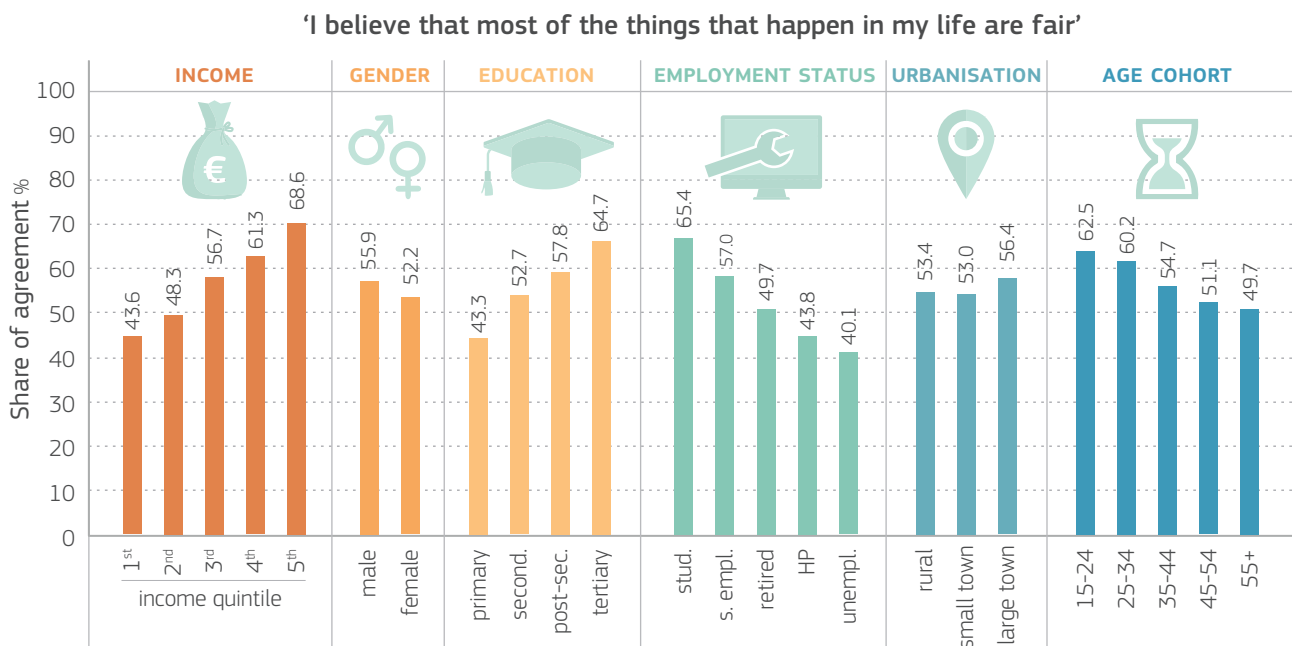


Figure 2.2: Fairness perceptions by socio-demographic groups

Notes: Survey weights account for population size and socio-demographic characteristics. Individual perceptions of fairness are approximated by the rate of agreement (agree or strongly agree) to the following statement: ‘I believe that most of the things that happen in my life are fair?’. *Income* details the self-reported income of the respondents in quintiles; *Gender* is a respondent's gender; *Education* is the highest educational attainment achieved by respondents; *Employment status* is the current employment status, with *stud.* being students; *s.empl.* self-employed individuals; *retired* those retired or unable to work; *HP* house person; and *unempl.* the unemployed; *Urbanisation* is the subjective degree of urbanisation; and *Age* divides the respondents into five age cohorts.

Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e).

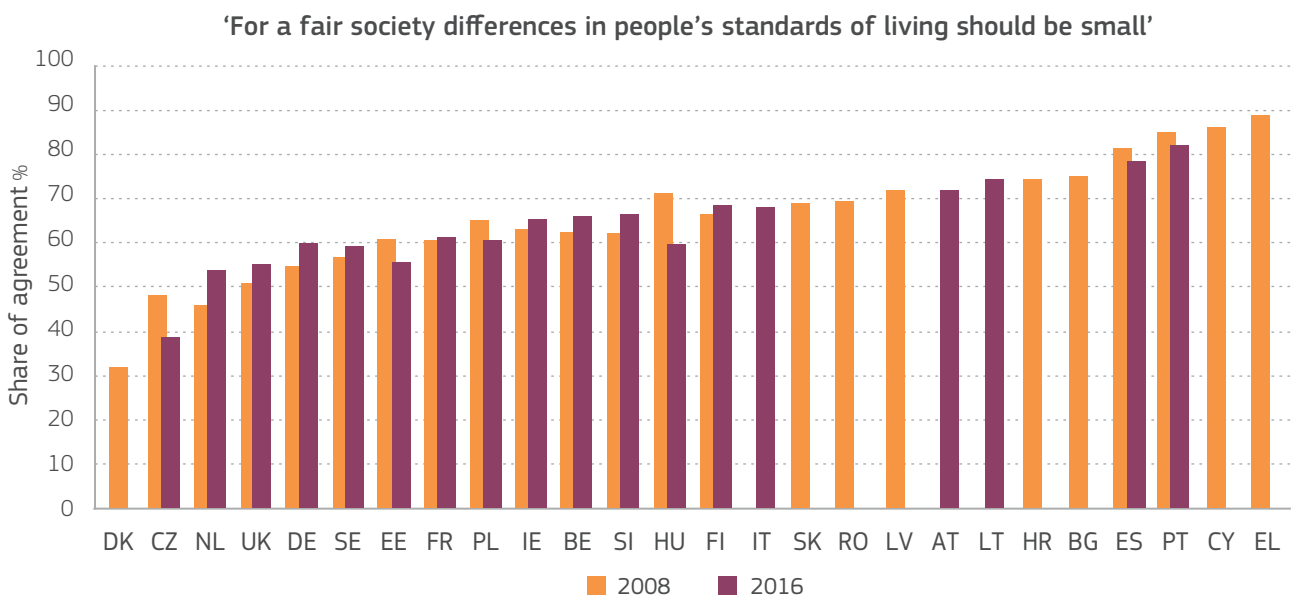


Figure 2.3: Fair societies: differences in people's standard of living should be small

Notes: Survey weights account for socio-demographic characteristics. Share of respondents agreeing or strongly agreeing with the statement ‘For a fair society, differences in people's standard of living should be small’ by country. Calculations are based on the latest ESS data for each country. Depending on availability, data is shown for 2008, 2016 or both.

Source: JRC calculations based on the European Social Survey (ESS).

believe that fair societies should display only small differences in people's living standards.

Importantly, perceptions of fairness are linked to equality of outcomes (e.g. income inequality), as illustrated in *Figure 2.4*. The share of respondents per country agreeing that most of the things happening in their life are fair is plotted against: (a) a measure of income inequality (the ratio between the incomes at the 90th and 10th percentile of the income distribution); and (b) individuals' perceptions that 'differences in people's income are too great'. Perceptions of fairness are on average higher in countries with lower levels of income inequality (*Figure 2.4, panel a*). In a similar vein, fairness perceptions are on average more positive in countries where the perception that income differences are excessive is lower (*Figure 2.4, panel b*).

At the individual level, fairness perceptions correlate more strongly with people's beliefs about income inequality than with its factual extent. This is because individual judgements about fairness are filtered through the dense fabric of individual perceptions, preferences, values and beliefs. People tend to misperceive inequalities (*see Box 2.1*), and differ significantly in terms of the level of inequality they consider tolerable. Individuals also care about the process leading to inequalities of outcomes and hold different values regarding their justifications. Hence, inequalities of outcomes are not considered unfair to the same degree by everyone.

Inequality of outcomes can result from individual choices, such as variations in effort, from circumstances, such as gender, family socio-economic background or ethnicity, or simply from luck.

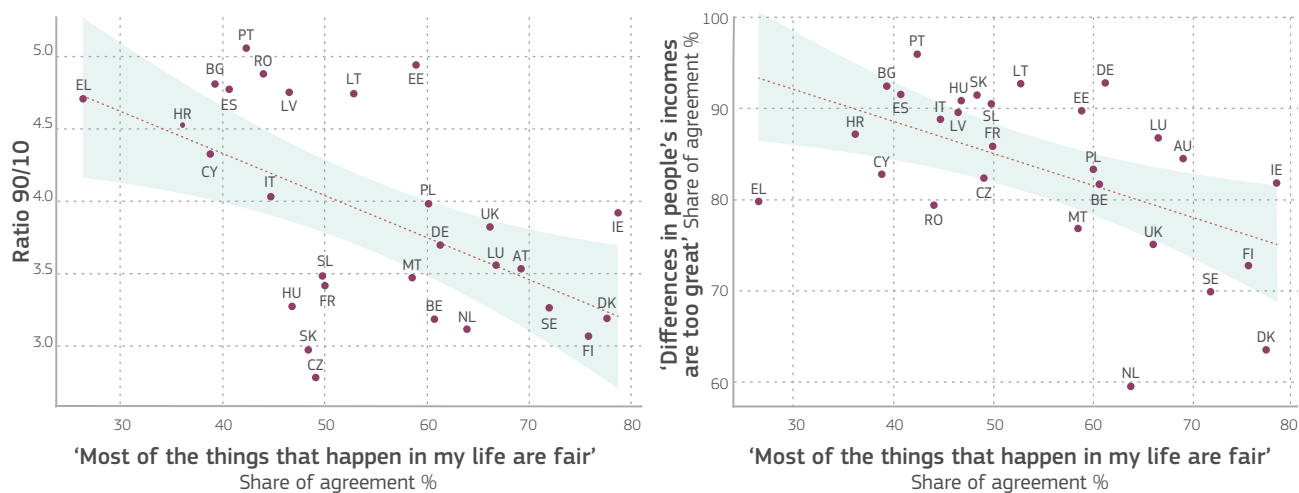


Figure 2.4: Fairness perceptions and actual income inequality

a. Fairness perceptions and actual income differences

Notes: x-axis: 'I believe that most of the things that happen in my life are fair' % agreement (agree and strongly agree)*; y-axis, 'Ratio 90-10' is the ratio between incomes at the 90th and 10th percentile, comparing the highest to the lowest incomes. The higher this ratio is, the higher the level of income inequality.

Source: x-axis: as in *Figure 2.4b*. y-axis: EU Statistics on Income and Living Conditions (EU-SILC, 2014), the British Household Panel Survey (BHPS 2014), and the German Socio-Economic Panel (SOEP 2014).

b. Perceptions of fairness and acceptance of income differences

Notes: x-axis: 'I believe that most of the things that happen in my life are fair' % agreement (agree and strongly agree)*; y-axis, 'Nowadays, differences in people's incomes are too great' % agreement (agree and strongly agree)*.

Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e).

*Survey weights account for socio-demographic characteristics.

BOX 2.1 (Mis)perceptions of inequality

Empirical evidence suggests that people on average misperceive the actual level of income inequality in their countries as well as its variation over time (Gimpelson and Treisman 2018; Hauser and Norton 2017). However, there are sizeable cross-country differences regarding the direction and magnitude of such misperceptions.

In the United States and the United Kingdom, underestimation of income and wealth inequality is relatively common (Hauser and Norton 2017; Norton and Ariely 2011), although its degree is disputed (Eriksson and Simpson 2012). Norton and Ariely (2011) find that US citizens underestimate the share of wealth held by the wealthiest quintile (84%) by more than 25 percentage points (pp). Similarly, Osberg and Smeeding (2006) show how

Americans believe earning disparities between different occupations to be much lower than they actually are.

Conversely, overestimation of income inequality occurs in most continental European countries (Hauser and Norton 2017). Even in countries with very similar income distributions, opinions about the shape of the income distribution differ widely. Around 50% of Germans believe that the majority of the German population lives at the bottom of society. In France, 70% of the respondents think the same about the French population. A similar figure is observed in Eastern European countries where overestimation of inequality is quite common and strong, even in relatively equal societies (Niehues 2014).

Several studies show that individuals accept, at least to a certain extent, unequal outcomes when they arise from different levels of individual effort and merit (e.g. Savani and Rattan 2012; Almås et al. 2010; Cappelen et al. 2016).¹⁴ Conversely, people resist inequalities when they believe that individuals do not share equal opportunities which ‘level the playing field’ so that all have the potential to achieve the same outcomes (Roemer 2008).

While the distribution of outcomes (such as income) is a central piece of the puzzle in understanding Europeans’ perceptions of fairness, it is important to distinguish inequality from unfairness (Starmans et al. 2017). Inequalities of outcomes driven by merit rather than circumstances which are beyond an individual’s control are not necessarily considered unfair (*see Box 2.2*).

2.3 Fairness and well-being

Inequality of outcomes is tied to subjective well-being – ‘a person’s cognitive and affective evaluations of his or her life’ (Diener et al. 2003, p. 63).¹⁵ Research shows that among EU Member States higher levels of income and wealth inequality correspond to lower individual levels of life satisfaction and happiness (Clark et al. 2006; Ferrer-i-Carbonell and Ramos 2014; Ngamaba et al. 2018; Schwarze and Härpfer 2007; Senik 2008) and that this effect is stronger for low-income earners (Alesina et al. 2004). Income inequality is not only inversely linked to subjective well-being but also to physical and mental health. In more unequal countries, mental health problems and other health issues (e.g. obesity) among adults and children are more prevalent (Wilkinson and Pickett 2009b; 2019).

There are several possible mechanisms that can explain why members of unequal societies might suffer. First, individuals prefer equality and fair processes (*see Box 2.2*) and unmet preferences generate tension and discontent. Second, inequality can convey information about future labour market options, creating insecure economic prospects. Third, striving for social status is an often observed human behaviour. Social status comparisons and competition are thus potentially more important in more unequal societies. Such comparisons can cause stress, anxiety and adversely affect well-being (Wilkinson and Pickett 2019).

“ Inequality of outcomes is tied to subjective well-being.”

BOX 2.2 Experimental research into inequity aversion

Much of the current knowledge on how people relate to unequal distributions comes from experimental studies. In the social sciences, inequity aversion has been studied mainly through behavioural games. Findings suggest that ‘[...] people resist inequitable outcomes; i.e. they are willing to give up some material payoff to move in the direction of more equitable outcomes’ (Fehr and Schmidt 1999, p. 819). Neuroscience studies use functional magnetic resonance imaging (MRI) to test for the existence of inequity aversion reactions in the brain. Tricomi et al. (2010) find that the human brain shows similar physiological reactions both to being a beneficiary and to being a victim of an unequal split.

Aversion towards the unequal distribution of outcomes tells only one part of the story. Studies also draw attention to the importance of the process through which inequalities of outcomes are generated. When there is evidence of an unequal contribution to a surplus, most people choose to divide the surplus so as to reflect individual effort and merit. Indeed, people are willing to restrain their own selfish interest to make sure that effort is rewarded – although to different degrees, suggesting that there are heterogeneous preferences guiding these choices (Ruffle 1998; Cappelen et al. 2007).

Research further shows that the readiness to accept merit-based distributions is a cultural, learned behaviour that develops gradually with age. Around eight years old, most children show strong preferences for egalitarianism and avoid both advantageous and disadvantageous allocations, no matter what the individual contributions are (Fehr et al. 2008; Fehr et al. 2013). As children grow older, they gradually learn to accept inequalities, and by adolescence, only a minority would opt for a fully equal distribution of rewards when achievements vary (Almås et al. 2010) – a pattern similar to adults’ perceptions of fairness.

Other individual characteristics besides age also influence the fairness perceptions of individuals. At the age of 15, students of low socio-economic status still prefer more equal distributions even when original contributions are unequal. In contrast, in such cases, high socio-economic status students are more likely to take merit into account and redistribute money in a way that reflects this difference. Furthermore, compared to boys, girls tend to be more likely to follow egalitarian views of fairness (for a review see Sutter et al. 2019).

In addition, economic inequalities are associated with a range of social dysfunctions (e.g. violent crime, homicide and school dropout), hampering the correct functioning of society (Wilkinson and Pickett 2009a). Income inequality is a significant determinant of mistrust, which in turn (negatively) affects civic engagement (Uslaner and Brown 2005; d’Hombres et al. 2013) as well as local and national social cohesion (Elgar 2010; Rothstein and Uslaner 2005). Laboratory studies show that individuals display less overall cooperation and interconnectedness when inequalities are made salient (Nishi et al. 2015). While these issues appear to be worse for individuals on lower levels of the social hierarchy, their impacts are not limited to low-income earners but tend to affect the whole of society (Wilkinson and Pickett 2019).

Following the argument in *Section 2.2* on fairness and inequality, it is important to acknowledge that there is more to fairness than inequality of outcomes. Indeed, it is not only inequality per se, but also its perception and underlying drivers that matter. Even large income inequalities might at times be acceptable and do not negatively affect happiness when individuals think they are generated through a fair and legitimate

process. Conversely, very small inequalities can lead to discontent and unhappiness if they seem unjustified (Oishi et al. 2011; Schneider 2012). Americans, for instance, are less opposed to inequalities than Europeans, mainly because more commonly they share the (mis)belief of living in a mobile society, whereby moving up the social ladder is a matter of individual effort. In fact, social mobility is lower in the USA than in most of the EU Member States (Alesina et al. 2004; Ferrer-i-Carbonell and Ramos 2014; Ngamaba et al. 2018; D’Ambrosio and Clark 2018).¹⁶

Figure 2.5 links self-reported happiness directly with individual perceptions of fairness. It shows that the more people in a country agree with the statement ‘most of the things that happen in my life are fair’, the higher the share of people who consider themselves happy. Northern and Western EU Member States show higher levels of fairness perceptions and happiness while levels in Southern and Eastern European countries are lower. The relationship between perceptions of fairness and happiness in Europe is also the subject of a JRC study (Dessart and Marandola 2019). The authors make a distinction between the individual perception of fairness in the respondent’s life and

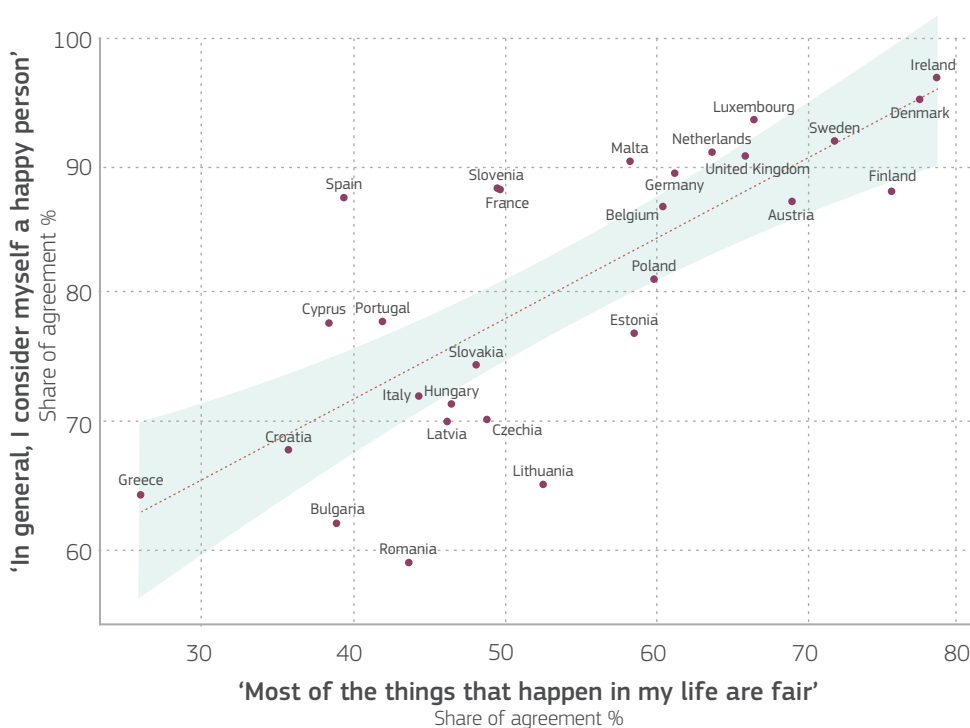


Figure 2.5: Fairness perceptions and happiness
Notes: x-axis: ‘I believe that most of the things that happen in my life are fair’, % agreement (agree and strongly agree); y-axis: ‘In general, I consider myself a happy person’ % agreement (agree and strongly agree). Survey weights account for socio-demographic characteristics.
Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e).

in the country at large. Happiness is positively linked to both fairness perception measures, although the correlation is stronger with the former than with the latter measure.¹⁷ These conclusions hold after taking into account individual socio-economic characteristics and country specificities and confirm that although happiness is related to many aspects of life, perceptions of fairness are certainly among them.

■ 2.4 Fairness, efficiency and competitiveness

There is a long-standing debate in economics on the potential trade-off between equality and efficiency. For many years, the prevailing consensus was that inequality-reducing interventions have large efficiency costs: unconstrained economies would improve everybody's position whereas government redistribution financed through taxation would distort incentives and reduce labour supply and investment (e.g. Okun 1975).¹⁸ This argument is increasingly being challenged and there is now substantial evidence

which indicates that in several economic domains, equality (i.e. less inequality) and efficiency are complementary rather than conflictual (*see Box 2.3*).¹⁹ An increasing number of scholars are converging towards the view that income inequality hampers economic growth (e.g. Cingano 2014; Dabla-Norris

“ In several economic domains equality and efficiency are complementary rather than conflicting. ”

BOX 2.3 Government interventions, equality and efficiency

There are different channels through which government intervention can help reduce inequality while fostering efficiency. For example, when individuals do not only care about their own income but compare themselves to their peer groups, income taxation and redistribution can increase efficiency while simultaneously reducing inequality (Corneo 2002). Similarly, if low-wage and high-wage workers differ in their motivation, a progressive tax schedule reduces the distortion of taxation (Røed and Strøm 2002).

Progressive income taxation can also function as an insurance mechanism for entrepreneurs, allowing for more risk-taking, thereby inducing entrepreneurial activity and associated economic

expansion (Cullen and Gordon 2007).

A similar argument about risk sharing between the individual and society (or the government) can be extended to the welfare state's tax-benefit system. While insurance mechanisms against unemployment risk in the form of unemployment benefits might create negative incentives, they also allow individuals to take the risky decision of developing their talents as opposed to choosing more secure employment opportunities such as those provided by parental occupations. In fact, in countries with less-developed welfare states, sons more often choose the occupation of their father than is the case in countries with higher levels of unemployment benefits (Corneo 2013).

“ More equal societies offer more equal education opportunities and achieve better education outcomes. ”

et al. 2015; Brueckner and Ledermann 2015; Kennedy et al. 2017; Berg et al. 2018; Gründler and Scheuermeyer 2018). This has not always been the case (Li and Zou 1998; Forbes 2000; Barro 2000) and the shift in the findings seems to be mainly driven by the growing importance of human capital (i.e. education) in supporting economic growth (Milanovic 2011; Galor and Moav 2004).

Historically, physical capital (i.e. investments) was the biggest constraint to economic development. Given that rich people have a higher rate of saving, a more unequal income distribution resulted in higher savings and more investments. Today, human capital holds the key to economic growth (Milanovic 2011). More equal societies offer more equal education opportunities and achieve better education outcomes and other things equal, tend to grow more as well (see the meta-analyses by De Dominicis et al. 2008; Neves et al. 2016). According to Aiyar and Ebeke (2019), the adverse effect of income inequality on economic growth is particularly strong when intergenerational rigidities (i.e. when social status is passed on across generations) are present.²⁰

The negative association between inequality and growth for the EU also seems to be confirmed at the sub-national level (Ezcurra 2007; Ezcurra 2009; Royuela et al. 2019).²¹ The idea that social justice, fairness and relative equality can be important drivers of competitiveness, especially at the regional and city level, is further emphasised in the literature on cohesion (e.g. Ache et al. 2008; Pastor 2006).

More equal and fairer societies exhibit higher levels of life-satisfaction, happiness and, more broadly, improved social outcomes. This can be achieved without necessarily incurring efficiency costs.

■ 2.5 Concluding remarks

Fair societies are likely to be more efficient and display higher economic growth rates than unfair ones. Fairness is linked to higher levels of well-being and greater social cohesion. However, data suggest that on average Europeans are not fully satisfied with the extent of fairness in their lives. While about half of Europeans believe that their life is fair, going beyond this average shows surprisingly great disparities. Perceptions differ markedly across countries and socio-demographic groups, with comparatively low levels of fairness perception in some groups.

What then constitutes a fair society and what can be done to improve the situation? To answer these questions, it is important to understand where the perceptions of fairness originate. Individual perceptions of fairness are associated with equality. However, equality of outcomes and equality of opportunities have to be distinguished. Some degree of inequality of outcomes might be considered fair as long as it is justified by effort and merit.

Of course, fairness judgments are not mere derivatives of the levels of inequality of outcomes and opportunities. Instead, they are complex reflections of the reality as filtered through individual experiences, environmental conditions,

values and preferences. People have different ideas on the degree to which inequalities are acceptable and if certain difficulties can or cannot be overcome by effort. However, measures taken to mitigate inequality of outcomes and to minimise inequality of opportunities will not only make Europe a fairer society but will also improve people's well-being, promote the healthy functioning of society and boost economic growth.

In the following chapters, this report provides evidence to help better understand where the EU stands with regard to two crucial dimensions of many fairness conceptions: equality of outcomes and equality of opportunities. *Chapter 3* addresses income inequalities – as one form of inequality of outcomes. *Chapter 4* then provides evidence on inequality of opportunities as approximated by intergenerational mobility.

“ Individual perceptions of fairness involve notions of equality. ”





SUMMARY

This chapter examines EU-wide income inequality between 2006 and 2016. It highlights income inequality dynamics over the entire EU-wide income distribution and for different income components. Special attention is given to heterogeneities across macro-regions. Since 2006, the EU-wide labour income inequality has been high but quite stable whilst inequality in household income has declined. Inequality in Southern Europe has increased significantly since 2006, particularly in the bottom half of the income distribution. Income inequality in this region was lower in 2006 than EU-wide inequality, but by 2013 it had reached the EU-wide level. In Central and Eastern Europe, average incomes increased between 2007 and 2016 while income inequality followed a declining trend. In contrast, income inequality in North-Western Europe remained relatively low and stable with the burden of the economic downturn being distributed more proportionally among all income groups. These dynamics resulted in a convergence of income levels and a reduction in EU-wide income inequality.

INCOME INEQUALITY IN EUROPE

The EU witnessed many significant events during the 2000s: among others, the euro was introduced, the number of Member States almost doubled, a deep economic and financial crisis struck and, more recently, the EU experienced a wave of migration. At the same time, globalisation continued apace, while digitalisation and technological innovations have fundamentally altered the structure of European economies.

The economic and financial crisis – also known as the Great Recession – began in 2008 and resulted in an unprecedented loss of income in EU Member States and many other countries. This loss of income was not only substantial in size, but also highly unevenly distributed. This had direct implications for people's daily lives, their perception of society as a whole and their expectations about the future. Beyond a certain level, inequality is considered socially corrosive and harmful for the economy. In addition, inequality in economic resources creates a situation of inequality of opportunity for the younger generation.

This chapter aims to enhance the understanding of income inequality in the EU. To this end, EU-wide income inequality over the period 2006–2016 is examined and stylised facts provided on inequality changes across the entire income distribution and for different income sources in the EU as a whole as well as for three EU macro-regions. Analysis of the dynamics of the entire income distribution

The increase in income inequality across Southern Europe has been driven by declining incomes among the poor.

highlights where inequality originates, where incomes increased or decreased, and whether such changes were inclusive or unbalanced. This detailed picture helps to understand the role of families and welfare systems as insurance mechanisms against income shocks. Globalisation, and in particular the rise of trade pressure from China, and technological innovation are often presented as drivers of income inequality. Available evidence on those drivers will be briefly discussed.

The remainder of the chapter is organised as follows: *Section 3.1* describes income inequality dynamics in a global context. *Section 3.2* provides a detailed analysis of the EU-wide income distribution. *Section 3.3* discusses some of the drivers of income inequality with a particular focus on technological change, institutional change and globalisation.

The evidence is largely drawn from several recent JRC studies (Benczúr et al. 2017; Cseres-Gergely and Kvedaras 2019, 2020; De Palo et al. 2018a, 2018b). *Section 3.4* concludes this chapter.

3.1 Long-term global trends in income inequality

In order to relate and contextualise the income distribution in Europe, it is useful to consider the development of income inequality over the long term and for different entities (i.e. global and world regions). Observing the share of income accrued to the richest 10% of the population from 1980, there is a growing trend in income concentration in Asia, North America and the EU (*Figure 3.1*). In sub-Saharan Africa, the region with the highest level of income concentration in 1980, a slightly declining trend can be observed. Global income inequality was at its highest level between 2000 and 2005 and fell thereafter. The EU experienced some increase in income inequality until 2008 but has seen little change since then. Overall, income concentration in the EU is considerably lower than in any other world regions. Declining income inequality on a global scale is mainly driven by rising incomes for large shares of the Chinese and Indian populations (Milanovic 2016).²²

“The EU experienced some increase in income inequality until 2008 and has seen little change since.”

3.2 EU-wide income distribution at different levels of aggregation

The official measure of overall EU income inequality aggregates Member-State-level indicators. In this section, an alternative approach is taken. EU-wide income inequality is calculated

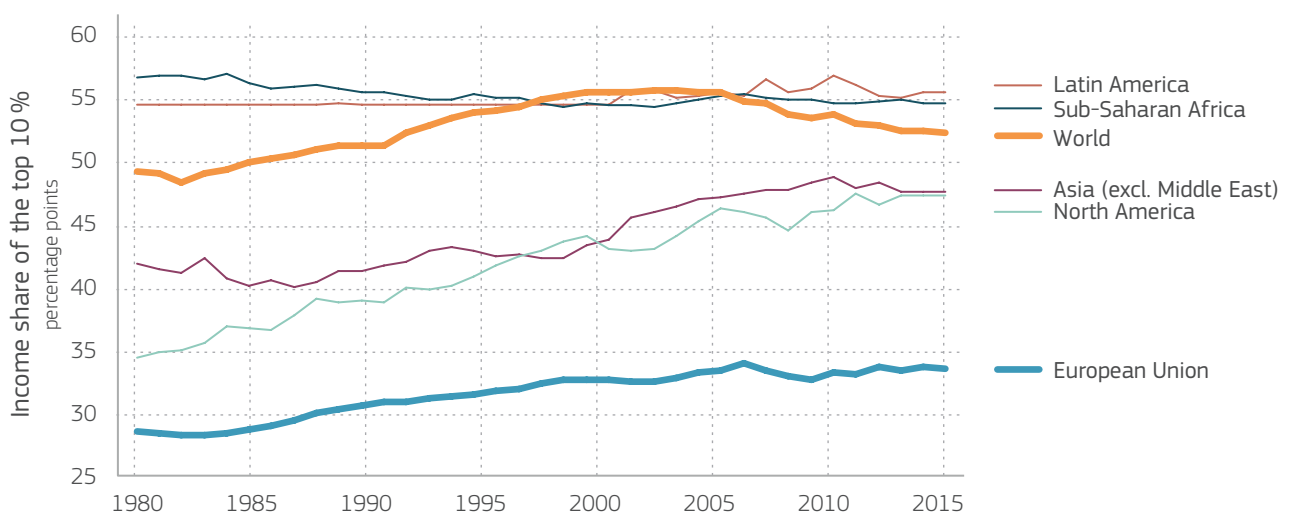


Figure 3.1: Income inequality globally and in world regions between 1980 and 2016

Notes: Income inequality is measured by the share of income accruing to the richest 10 %.

Source: WID: <https://wid.world/world>

directly from the incomes of all EU citizens (see *Box 3.1* for methodological details). Such an EU-wide approach has some advantages: the growing importance of the social dimension of the EU requires an understanding of the pan-European social situation, including on income inequality. Also, the integration of the EU into world trade and the increasingly integrated internal markets both require thinking about Europe as a common market for goods, labour, and income, too. More generally, analysing EU-wide income inequality provides some insights which complement the official EU income inequality measures (Brandolini 2007; Benczúr et al. 2017; Vacas-Soriano et al. 2017; Filauro 2017).²³

Figure 3.2 visualises EU income inequality, measured by the Gini coefficient, over the period 2006–2016. The continuous purple line, which

depicts EU-27-wide inequality²⁴, is well above the purple dashed line, the official population-weighted country average from Eurostat. The latter almost coincides with the EU-15-wide indicator (blue line), calculated for all individuals in the EU-15. While the EU-27-wide income distribution has become slightly more equal over time, an increase in concentration can be observed for the EU-15-wide income distribution.

Given the differences in living standards across EU Member States, comparing the incomes of all Europeans results unsurprisingly in higher levels of income inequality when compared to the official approach whereby only individuals within each EU Member State are compared and national concentration measures are then averaged across Member States.

BOX 3.1 Data and indicators for EU-wide income distribution

EU-wide income inequality is based on data from the EU-SILC survey. Microdata from EU Member States were appended, corrected, harmonised and weighted to yield an EU-wide database of individuals that can be aggregated in various ways. A modified Organisation for Economic Co-operation and Development (OECD) scale is used to calculate per-capita equivalised income levels, and Eurostat's purchasing parity index is used to express them in a common purchasing parity standard (PPS). All calculations are based on a sub-sample of the working 25 to 64-year-olds for the years 2006–2016. This data is used to calculate inequality measures for the whole EU and three macro-areas: North-Western Europe (NW): Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, the Netherlands, Sweden and the UK; Southern Europe (SE): Cyprus, Greece, Italy, Malta, Portugal and Spain; and Central and Eastern Europe (CEE): Bulgaria, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

Several measures are used in this chapter to characterise income distribution. The Gini coefficient ranges from zero to one. A Gini coefficient of one indicates maximum income inequality, when all incomes accrue to a single individual; the value zero implies the minimum level of inequality, when the incomes of all individuals are identical. Percentile ratios show the ratio of income levels at two chosen points of income distribution. For example, the ratio between incomes at the top of the distribution (the 90th percentile) and at the middle (the 50th percentile) – abbreviated as the p90-p50 ratio – are discussed. The p90-p10 ratio, which is the ratio of incomes at the top of the distribution (the 90th percentile) and at the bottom (the 10th percentile) is an alternative percentile ratio. Lastly, income concentration can be captured by the share of income accrued to a specific group, e.g. the richest 10%.

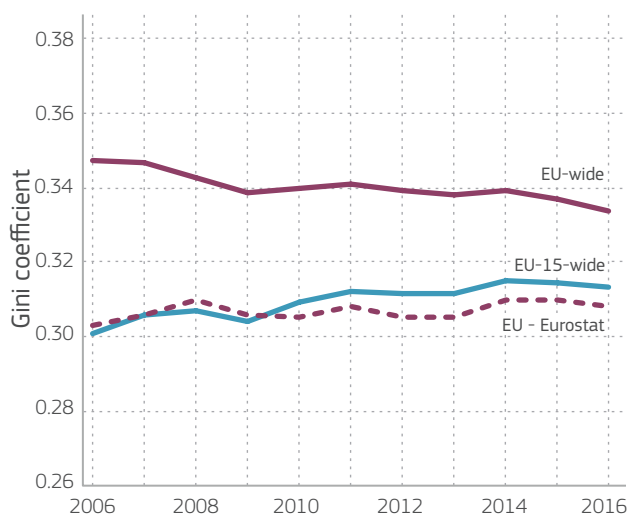


Figure 3.2: Inequality of household net equivalised per capita income in the EU, 2006-2016

Notes: Unit of observation is the household with at least one person aged 25-60 years old; equivalised household incomes (OECD scale) in PPS at 2015 prices.

Source: JRC calculations based on EU-SILC data for the EU-15-wide and EU-wide. The series EU - Eurostat is an extract from <https://ec.europa.eu/eurostat>. Inequality of household net equivalised per capita income is measured with the Gini coefficient. No data is available for Croatia.

3.2.1 Income inequality in three geographical areas of the EU

As the difference between the official statistics and the EU-wide measure is driven by the difference in average incomes across EU Member States, it is interesting to take a closer look at the income differences across three macro-regions (North-Western, Southern, and Central and Eastern Europe) within which Member States have relatively similar average incomes (*see Box 3.1*).

Figure 3.3 highlights the geographical differences: in 2016, the average annual net household income in North-Western Europe was at least EUR 5 000 higher than in Southern Europe. In Southern Europe, incomes were at least EUR 5 000 higher than in the Central and Eastern countries of the EU.

The geographical differences relate not only to income levels but also to income inequality. *Figure 3.4* depicts the level of income inequality in the EU and its macro-regions.

A comparison of *Figures 3.3 and 3.4* shows that on the level of macro-regions income inequality and income levels have an inverse relationship: income inequality is highest in the poorest geographical area, Central and Eastern Europe, and is lowest in the richest geographical area, the North-West. Furthermore, the declining income level in Southern Europe between 2007 and 2013 (*Figure 3.3*) was associated with an increase in income inequality, and vice versa (*Figure 3.4*). In contrast, a positive trend in income growth in Central and Eastern Europe was accompanied by a negative trend in income inequality. No clear trend is observed for the North-West. EU-wide income inequality fell, obviously hiding substantial heterogeneities across EU macro-regions.

Box 3.2 goes beyond the analysis of income and discusses the distribution of consumption, lifetime income and wealth.

BOX 3.2 The inequality of wealth, income and consumption

The inequality of income is not the only relevant measure when considering inequalities. It is also instructive to look one step 'before' and 'after' the generation of income and analyse the distribution of wealth (which is related to accumulated income) and consumption (which captures current standards of living more directly). A systematic analysis of consumption and wealth is made possible by the recent Eurosystem's Household Finance and Consumption Survey initiative which focuses mainly on the euro area.

As shown in the *Figure* in this box, the concentration of wealth is much higher than that of income or consumption. This is not surprising since wealth accumulation is the outcome of a long process of lifetime savings and inheritance. Furthermore, wealth itself creates income.

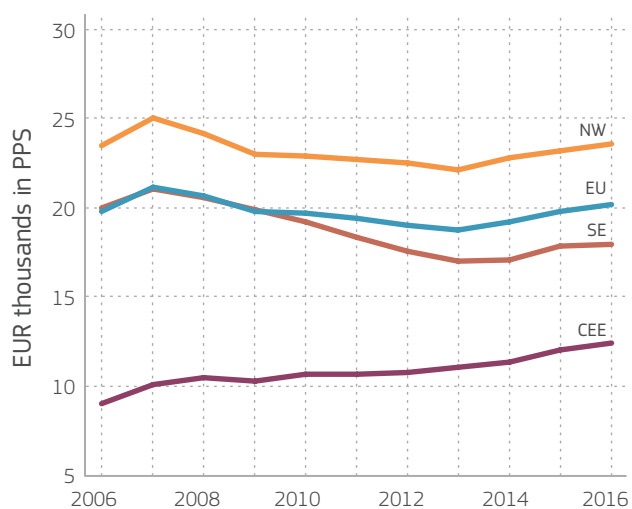


Figure 3.3: Net household income levels in the EU and by macro-region, 2006-2016

Notes: *North-Western EU (NW):* AT, BE, DK, FI, FR, DE, IE, LU, NL, SE, UK; *Southern EU (SE):* CY, EL, IT, MT, PT, ES; *Central and Eastern EU (CEE):* BG, CZ, EE, HU, LV, LT, PL, RO, SK, SL. Unit of observation is the household with at least one person aged 25-60 years old; equivalised household incomes (OECD scale), in PPS at 2015 prices.

Source: JRC calculations based on EU-SILC data.

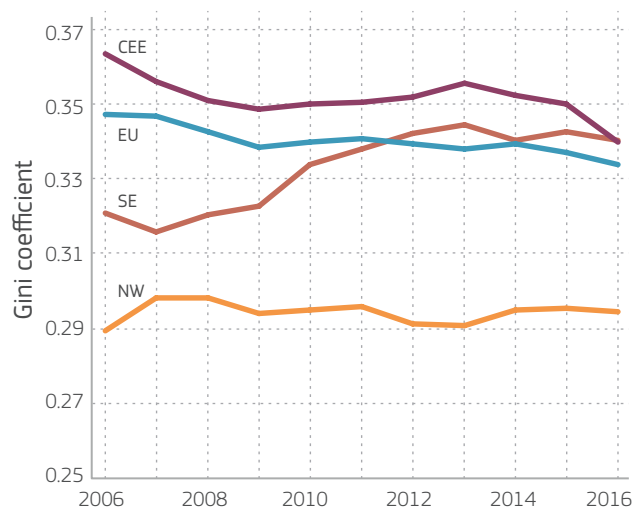


Figure 3.4: Inequality in net household income in the EU and by macro-region, 2006-2016

At the same time, income inequality over individuals' entire life cycle is smaller than the inequality of annual income. The difference is mainly caused by transitory income effects. These are related to life-cycle events or random shocks, e.g. low earnings during education, bonus payments, or transitory employment shocks. These fluctuations tend to be smoothed out over the years. Since households can save and borrow to dampen the impact of transitory income fluctuations, inequality in living standards depends primarily on the distribution of lifetime income rather than annual income.

Due to data limitations, little is known about the patterns of lifetime inequality. Exploiting administrative (social security) data, Bönke et al. (2015) find that German lifetime earnings inequality is about two-thirds of annual earnings inequality. Haan et al. (2018) further confirm

that annual inequality measures provide an incomplete picture of people's living standards.

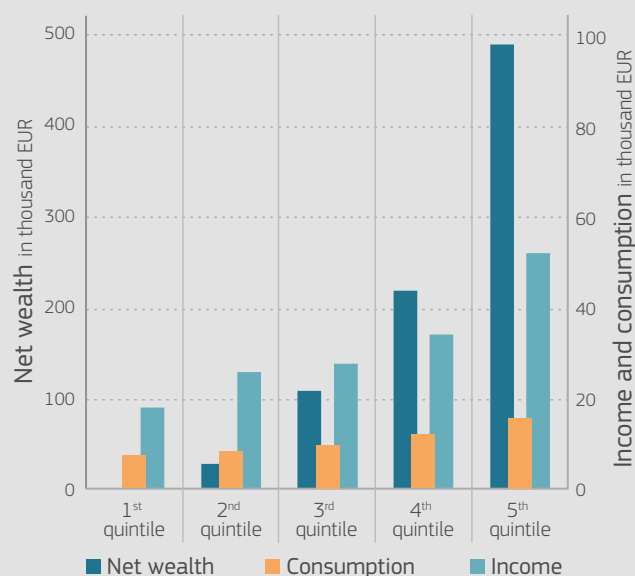


Figure: Median levels of consumption, income and wealth by wealth quintile in the euro area

Source: Household Finance and Consumption Network (2016).

3.2.2 Income inequality at the bottom and top of the distribution

The Gini coefficient is one of the most commonly used measures of income inequality. However, this single indicator does not capture all the important characteristics of income distribution. In particular, the Gini coefficient might obscure different developments happening at the bottom, middle or top of the income distribution (Benczúr et al. 2017). For this reason, the analysis is complemented with a separate analysis of the p50-p10 and p90-p50 percentile ratios (see Box 3.1), two alternative indicators which are sensitive to changes in the incomes of the poor and the rich relative to the income of the median earner. Figures 3.5 and 3.6 display the evolution of income inequality in the lower half (p50-p10 ratio) and upper half (p90-p50 ratio) of the income distribution, respectively. This more detailed look reveals that the variation in overall inequality in Southern Europe, as indicated by the Gini coefficient in Figure 3.4, is mainly due to an increase in

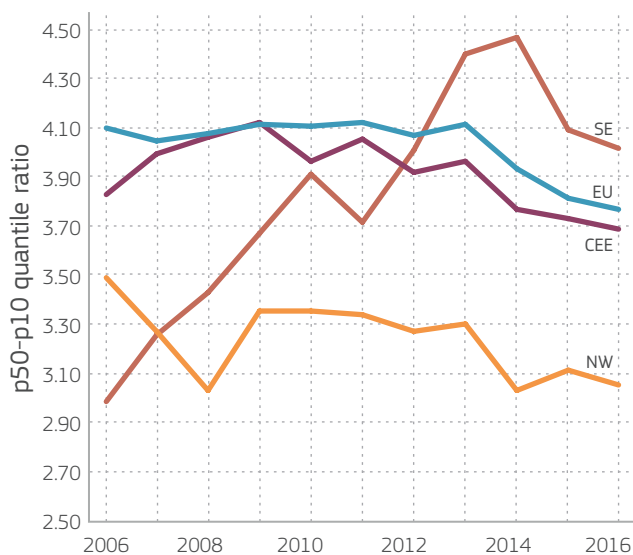


Figure 3.5: Income inequality in the bottom half of the annual gross labour income distribution (p50-p10 ratio), EU and macro-regions, 2006-2016

Notes: *North-Western EU (NW)*: AT, BE, DK, FI, FR, DE, IE, LU, NL, SE, UK; *Southern EU (SE)*: CY, EL, IT, MT, PT, ES; *Central and Eastern EU (CEE)*: BG, CZ, EE, HU, LV, LT, PL, RO, SK, SL. Unit of observation is the individual; sample of all 25-60-year-olds with non-zero work-related income, in PPS at 2015 prices.

Source: JRC calculations based on EU-SILC data.

the income gap between the median earner and the poor and can be only marginally attributed to changes in the upper half of the income distribution. It is further noteworthy that income inequality is more pronounced in the lower half of the income distribution than in the upper half.²⁵

3.2.3 The role of different income concepts in shaping inequality

Household income is compiled from multiple income sources from different household members. The diversification of income sources allows for some kind of insurance mechanism for individuals against excessive income loss at the household level. If income sources are not positively correlated, each one can serve as potential insurance against the variability of the others (Blundell 2011). This section discerns how the bundling of income sources and earners, resulting in different income concepts, has shaped income inequality during and after the financial and economic crisis.

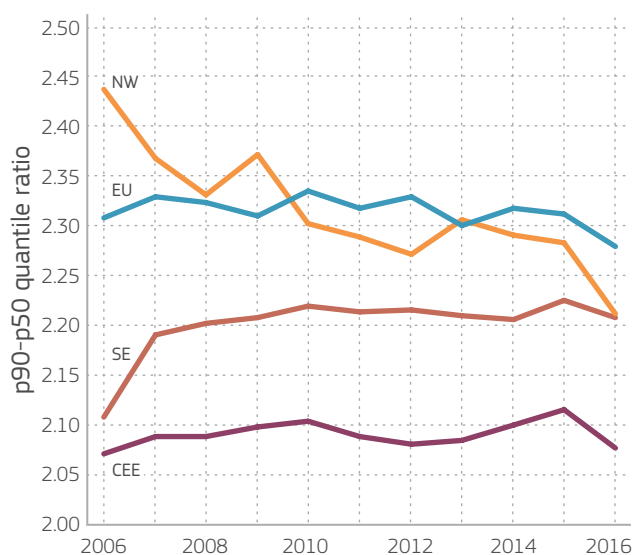


Figure 3.6: Income inequality in the top half of the annual gross labour income distribution (p90-p50 ratio), EU and macro-regions, 2006-2016

Figure 3.7 presents the p50-p10 percentile ratios for Southern Europe and the EU as a whole for various income categories, concepts, such as labour income, personal income (also including returns on capital), income of couples, and gross and net household income. Household income is especially important as it provides the best indication of the resources actually available to the household for the family.

Figure 3.7 indicates that in the lower half of the income distribution there are differences in both the level and the dynamics of different income concepts: income inequality is lower and less volatile as government benefits and other sources of income are added to labour income. Within society, not only government redistribution but also household composition influence the concentration of household incomes. Thus, future changes in household composition, e.g. an increase in single-headed households, might limit intra-family insurance mechanisms against income shocks.

Note the dynamics and extent of income inequality for different income categories in Southern Europe. Before the Great Recession, the inequality of labour incomes for the poorer half of the population was lower in Southern Europe than in the EU as a whole. By 2013, labour incomes in Southern Europe were more unequally distributed than in the EU as a whole, with inequality peaking in 2014 and then declining (purple dashed lines in *Figure 3.7*). The inequality of net household incomes in Southern Europe has a slightly increasing trend until 2013. Data for the two geographical areas (North-West and Central and Eastern Europe) do not show similar dynamics (Benczúr et al. 2017).

3.2.4 Gains, losses and convergence of income distributions in the EU-wide distribution

This section analyses income gains and losses by income group for the two time points 2007 and 2014 (Cseres-Gergely and Kvedaras 2019).

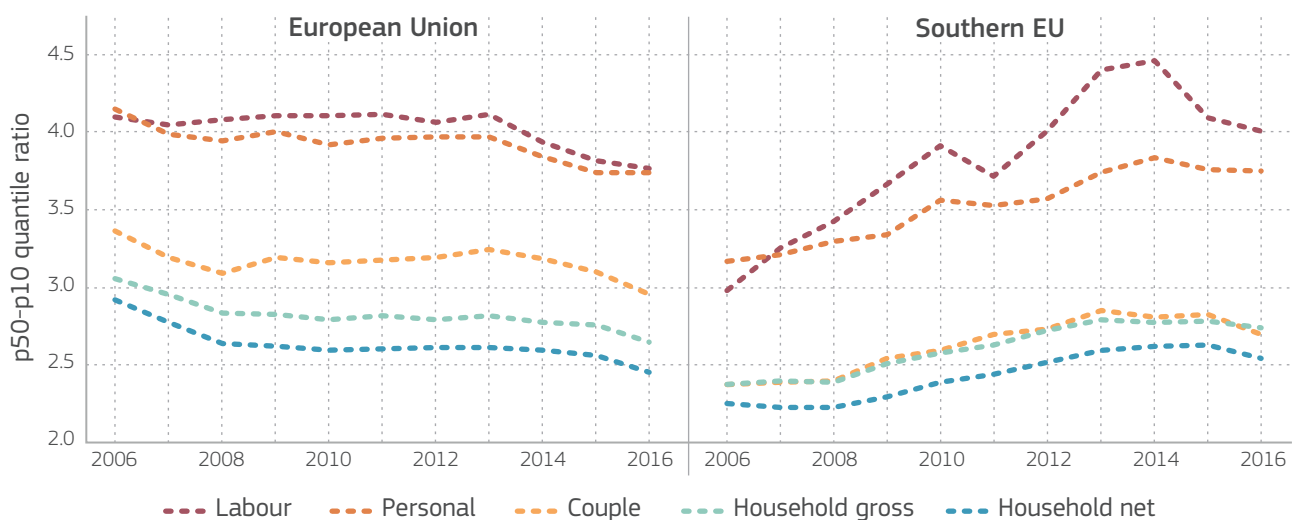


Figure 3.7: Income inequality in the bottom half (p50-p10 percentile ratio) of the distribution of different income concepts: EU (left panel) and Southern EU (right panel)

Notes: *Southern EU:* CY, EL, IT, MT, PT, ES. Sample: 25-60-year-olds with non-zero income of the specific type in PPS at 2015 prices. Income categories are: *Labour* - labour income; *Personal* - labour income plus person-specific government benefits; *Couple* - shared couple's income (including personal and benefits); *Household gross* - equivalised household income (including all household-level incomes, such as asset income and household-related transfers); *Household net* - equivalised per capita overall household income net (i.e. after tax).

Source: Benczúr et al. 2017, based on EU-SILC data.

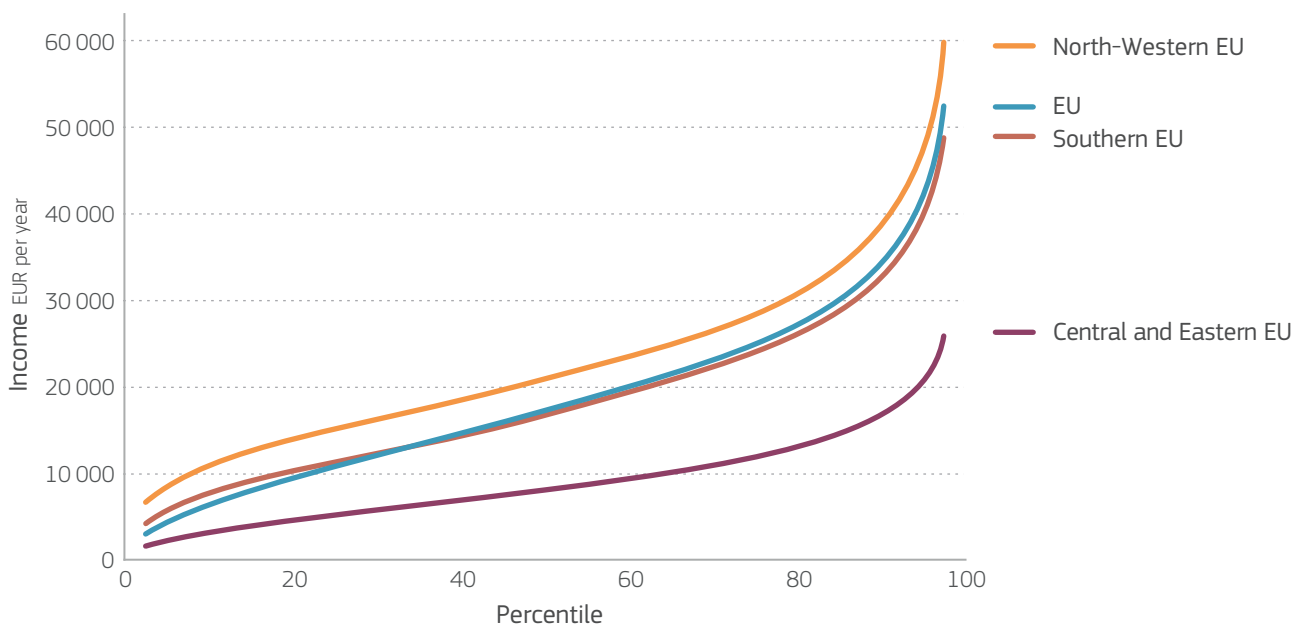


Figure 3.8: Income by population percentile in the EU and by macro-regions, 2007

Notes: *North-Western EU:* AT, BE, DK, FI, FR, DE, IE, LU, NL, SE, UK; *Southern EU:* CY, EL, IT, MT, PT, ES; *Central and Eastern EU:* BG, CZ, EE, HU, LV, LT, PL, RO, SK, SL. Unit of observation is the individual; sample of all 25–60-year-olds, incomes in PPS at 2015 prices.

Source: JRC calculations based on EU-SILC data.

Figure 3.8 depicts the income centiles at the EU level and by macro-region. The centiles are income levels separating a given share of the population from the rest. For example, the centile for the 40th percentile of the EU-wide distribution (blue line) totals about EUR 15 000 in 2007. This means 40% of the EU population had an annual income of less than EUR 15 000.

A comparison of incomes for the different macro-regions allows the relative income positions of individuals to be compared. An individual situated in the 80th percentile of the EU distribution, i.e. among the richest 20% of all Europeans, is among the 1% of richest individuals (the 100 percentile) in Central and Eastern Europe. Similarly, for an individual from North-Western Europe to belong to the 20% of richest individuals in the whole of Europe, it suffices that he/she must be among the 40% of richest individuals in his/her region. Given the information in *Figure 3.8*, in general it seems true that individuals from North-Western Europe always have a relatively better position when compared to the whole of Europe while

individuals from Central and Eastern Europe always have a relatively worse position.

This sensitivity about an individual's position relative to the reference group provides interesting insights into individual mobility decisions across the EU. Central and Eastern European citizens moving to the North-West of the EU are compensated by higher earnings. This increase in income has to compensate for the economic and non-economic costs of migration, including the potentially lower prestige of their new positions. In Southern Europe, in 2007, relative positions were more or less the same as in the EU-wide income distribution (see the almost coinciding red and blue lines in *Figure 3.8*).

Further insights and understanding about income dynamics across the EU can be obtained when analysing the changes in income levels. *Figure 3.9* depicts the percentage growth rate of incomes for each income decile for the EU-wide distribution and the three macro-regions. As indicated by the solid blue line, income levels between 2007 and 2014 slightly improved for the poorest 18% of

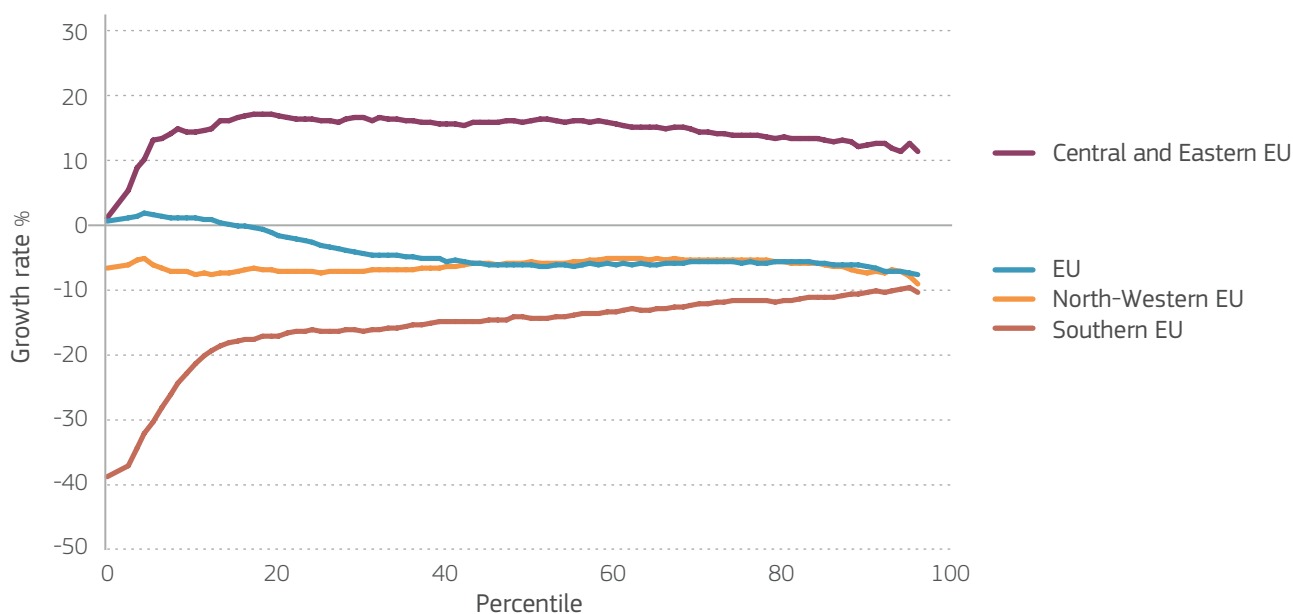


Figure 3.9: Income variation between 2014 and 2007 in the EU and by macro-region

Notes: *North-Western EU:* AT, BE, DK, FI, FR, DE, IE, LU, NL, SE, UK; *Southern EU:* CY, EL, IT, MT, PT, ES; *Central and Eastern EU:* BG, CZ, EE, HU, LV, LT, PL, RO, SK, SL. Unit of observation is the individual; sample of all 25–60-year-olds, incomes in PPS at 2015 prices.

Source: JRC calculations based on EU-SILC data.

individuals in the EU, but worsened for all other individuals. This suggests a convergence of income levels within the EU as a whole and a decline in overall income inequality. At first sight, this finding contradicts the general view that poor people were hit disproportionately by the shocks experienced by the EU over the past decade.

However, this EU-wide convergence does not necessarily imply that the same change took place in all geographic regions. The orange line in *Figure 3.9* indicates that, in North-Western Europe, the reduction in incomes due to the Great Recession were shared quite equally by individuals from all income levels. On the contrary, in Southern Europe, the poor were hit much harder than better-off individuals. In Central and Eastern Europe, incomes increased for almost everyone between 2007 and 2014. Developments in Central and Eastern Europe also explain the improving income levels of the poorest 18% across the EU. The vast majority of individuals among the poorest 18% of the EU population live in Central and Eastern Europe, where even poor people enjoyed some increases in their income.

BOX 3.3 Income inequality and support for redistribution across Europe

There is a growing consensus that too high levels of income inequality are likely to create economic and social costs to society (e.g. Wilkinson and Pickett 2009). Data from the Special Eurobarometer on Fairness (EC 2018e) reveal that the majority of Europeans favour a more equitable distribution of incomes. A JRC study (Colagrossi et al. 2019b) investigates the link between income inequality and support for redistribution. The results of the study show that 82% of the respondents agree that their governments should take measures to reduce income inequality. Public demand for government action is proportionate to the actual level of income equality in a country. Specifically, the greater the p90–p10 ratio, the higher the support for redistributive policies.

3.3 Drivers of income inequality

There are many factors influencing income inequality. The most fundamental, also raising particular interest among academics and policymakers, are technological change (e.g. Acemoglu 2002), changes in product and labour market regulations (e.g. Checchi and Garcia-Penalosa 2005), and globalisation (e.g. Milanovic 2016).

3.3.1 Technological change

Technological change and the availability of novel technologies, in particular in the information and communication technology sector (ICT), have led to important productivity gains which, in principle, could be shared by the entire population and make societies more equitable. However, on the employment side, technological change has had adverse effects on income distribution by increasing the demand for highly qualified workers, which favoured both a skill premium and a lowering of the wages for middle-skilled workers (Michaels et al. 2014).²⁶ Similarly, studies based on US data (Autor et al. 1998, 2008; Autor and Katz 1999) report that the effect of skill-biased technological change on relative skill demands led to greater wage inequality in the 1980s and

1990s, accompanied by large increases in wage differentials by skill group. In most EU countries, the proportion of middle-skilled jobs also declined (Goos et al. 2009, 2014; Peugny 2019; Fernandez-Macias 2012). More specifically, the expansion of the ICT sector over time (1993-2007) led to a lower share of employment in middle-wage occupations while, on the contrary, the share of employment in high-wage occupations in industries depending on ICT increased (Jerbashian 2019).

According to a recent JRC study (De Palo et al. 2018a, 2018b), the effect of innovation on income inequality in Europe is in fact two-sided. To demonstrate this, the authors employ data at sub-national level from 2004 to 2014 and proxy innovation activities by the number of patents (per million inhabitants) while income inequality is captured via two indicators, namely the Gini coefficient and the share of income accruing to the richest 10%.²⁷

The association between innovation and inequality is depicted in *Figure 3.10*. The left panel indicates that areas with more patents display lower levels of income inequality, as captured by the Gini coefficient. However, the right panel also suggests that more patents are associated with a higher

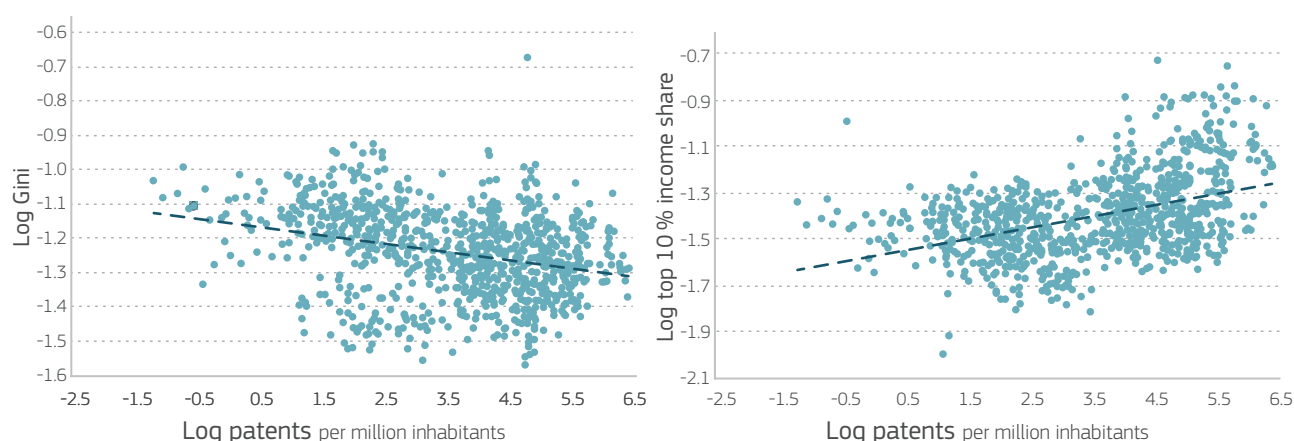


Figure 3.10: Dual effects of patenting on inequality in the EU (2004-2014): patents and Gini coefficient (left panel) and patents and the top 10 % income share (right panel)

Notes: Each point refers to a spatial entity in a given year during the period 2004-2014. Similar findings are obtained by using the generalised method of moments (Arellano and Bover 1995; Blundell and Bond 1998) and fixed-effect estimation techniques. Controls include government size and education.

Source: JRC calculations based on EU-SILC, BHPS and SOEP data.

share of income accruing to the richest 10% of income earners. These two different relationships are not contradictory. First, innovation may raise overall productivity and, in turn, benefit workers in the form of higher wages. Subsequently, when new knowledge enters the wider circulation this raises the productivity of other enterprises through so-called spillover effects. In other words, the overall income distribution becomes more equal. Second, in line with the skill-based technological-change assumption, innovation increases the productivity of highly skilled labour. Furthermore, areas of innovation may simply attract highly skilled and highly paid workers. The latter two mechanisms are likely to increase top incomes.

3.3.2 Institutional framework

Empirical research supports the idea that the institutional framework and its change over time is another important determinant for structural variations in employment and income inequality. The type of welfare state regime seems critical in that sense: during the 1990-2007 period, Northern countries in the EU-15 limited the expansion of the lowest-skilled jobs and avoided a decline in their working conditions, while in the Southern countries, the proportion of the lowest-skilled jobs increased and has continued hand in hand with the fragmentation of labour and ever-more precarious working conditions (Peugny 2019). Labour market institutions also matter: flexible institutions can facilitate the restructuring of productive forces in an economy but also challenge low-skilled workers, potentially compromising their income share (Alvaredo et al. 2013). In the EU, for instance, the share of non-standard workers has risen over the past decade, with the incidence of involuntary non-standard employment being highest in Spain, Portugal and Poland. These workers are less well protected than traditional employees in the event of unemployment, face poorer working conditions (Green and Livanos 2017) and a higher risk of income poverty than standard workers.²⁸

The rise in non-standard work, as witnessed in the EU, has certainly contributed to an increase in wage disparities.

3.3.3 Globalisation

In a global perspective, empirical and theoretical research provide mixed evidence on whether financial market and trade liberalisation reduce or increase income inequality. Ostry et al. (2014) emphasise that it is mainly the design of the liberalisation policies, the sequencing of the opening up of markets and the type of capital flows that determine the impact of globalisation on growth, the stability of growth and how equally the benefits from globalisation are distributed. For this reason, it is important to analyse every single episode of liberalisation separately in order to assess its impact on income inequality.

This is the approach followed by recent JRC research (Cseres-Gergely and Kvedaras 2020) to study the effect of increasing trade pressure from China on income inequality in the EU-15, following China's accession to the World Trade Organization in 2001. In 2014, EU exports to China were 6.6 times higher in value added terms compared to 2000, while Chinese exports to the EU were 6.1 times higher. Chinese value added embodied in high-tech manufacturing sector exports to the EU, in particular, saw a remarkable increase: from 38.7% in 2000 to 50.6% in 2014. Over the same period, the value added accrued in EU high-tech manufacturing to China fell from 57.4% in 2000 to 54.8% in 2014 (Preziosi et al. 2019). Although trade pressure from China was already increasing before its accession to the WTO, it accelerated considerably from 2001 onwards (*Figure 3.11*). Cseres-Gergely and Kvedaras (2020) carried out an econometric analysis of 65 EU-15 regions over the period 1994-2014 and found that the rise in Chinese trade pressure contributed significantly to increasing income inequality within the EU-15 regions.²⁹ Trade pressure worked mainly through the manufacturing sector, where – as the cross-sector comparison shows – inequality

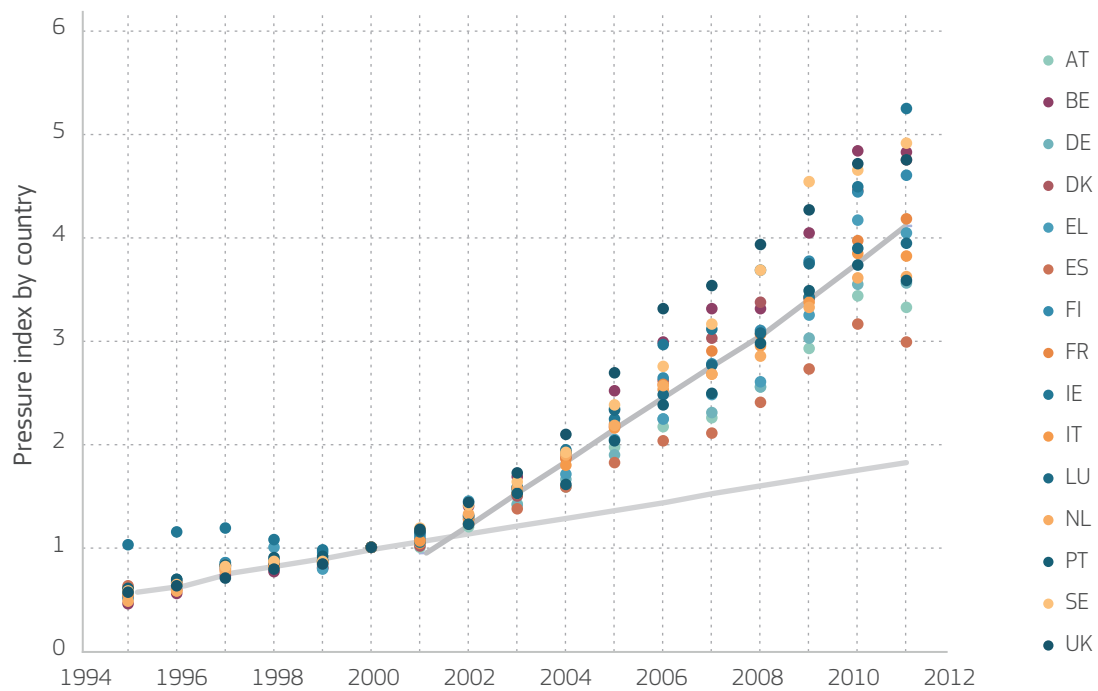


Figure 3.11: Evolution of Chinese trade pressure on EU-15 countries (1995-2010, pressure index is set equal to 1 in 2000)

Notes: Each dot represents a country in a given year. Trade pressure index is calculated using harmonised country-level trade data from the OECD-WTO Trade in Value Added (TiVA) database. First, a country-level index is defined as an average of trade ratios, weighted by their importance in the country's total exports to a given market in 1999. The trade ratios equal to the value of China's exports to the given market are divided by those of a given EU-15 country to the same market in a certain year. This country-level index is projected on to regions using their share of manufacturing labour in a given country.

Source: JRC calculations based on OECD TiVA data.

was relatively low during the period considered. The decline of the manufacturing sector in the EU economy resulted in a shift towards more skill-intensive production and thus in a polarisation of wages within industrial sectors.

3.4 Concluding remarks

This chapter presents stylised facts on income inequality for the whole EU, for the period before, during and after the Great Recession. It offers a comprehensive picture of income inequality in the EU and highlights the contribution of different income components. Several income inequality indicators are used to describe the evolution of income inequality in different parts of the income distribution.

The evidence shows that EU-wide labour income inequality was quite stable after 2006 and that

inequality in household income even declined. In North-Western Europe, income levels decreased proportionally among all income groups. Income inequality in this macro-region was stable and relatively low. In contrast, inequality in Southern Europe increased significantly from 2006 onwards, peaking in 2014. Income levels for the poorest 10% fell by at least 30% between 2007 and 2014. Although individuals on all income levels experienced income losses, the rise of income inequality in Southern Europe is mainly due to widening differences at the bottom half of income distribution. State and intra-household redistribution are important insurance mechanisms against income shocks, with the latter playing an especially important role in Southern Europe.

During 2007-2014, convergence in terms of income levels and inequality in the EU took place not only

because countries with the lowest income levels were catching up, but also because of a large reduction in income in Southern Europe together with growing inequality in the region. In Central and Eastern Europe, incomes increased between 2007 and 2014 in almost all income distribution percentiles. The opposite happened in Southern Europe. Varying patterns of income change and income inequality were probably caused by different reactions and adjustments to the financial crisis shock. A lasting divergence between North-Western and Southern Europe might result.

The chapter finally discusses some drivers of income inequality. Increased trade pressure from China seems to have contributed to rising income inequality in the EU overall, especially in regions with a strong manufacturing sector. Changing labour-market environments caused by automatisisation and more flexible, non-standard employment relations exacerbated some of the existing disparities across socio-economic groups.

The findings in this chapter can provide the basis for a discussion on the design of institutions guaranteeing the fair compensation and/or resilience of those who suffer from the unintended consequences of various policies and circumstances.

“ The rise of income inequality in Southern Europe is mostly due to *widening differences at the bottom half of the income distribution.* ”



SUMMARY

When intergenerational social mobility is limited, talented individuals from low socio-economic backgrounds face obstacles to moving up the social ladder. This is problematic in terms of equality of opportunity and from an economic perspective. This chapter presents evidence on social mobility in Europe, based on an analysis of the persistence of education attainment across three generations. Individual perceptions of social status mobility and beliefs about the importance of equality of opportunity and effort for success in life are also discussed. To a large extent, inequalities in education are still transmitted from one generation to the next. About 74% of individuals with highly educated parents go on to complete higher education themselves, compared to only 28% of those with less highly educated parents. Persistence in educational attainment increases by around 10 pp when also considering the influence of grandparents. In Eastern, Western and Southern Europe, the persistence of educational attainment across generations is a lot larger than in Northern Europe and the Baltics. Data also show that individuals who feel they moved up the social ladder as compared to their parents are less inclined to believe that success in life is a consequence of family circumstances and more likely to attribute it to individual effort.

THE TRANSMISSION OF INEQUALITIES ACROSS GENERATIONS

Considerations on fairness should reflect individuals' chances to determine their own future, work and lifetime perspectives. To understand how much people can shape their own fate, it is important to investigate the degree to which socio-economic status is transmitted across generations. In the absence of intergenerational mobility, individuals born in disadvantageous circumstances 'are where they are' just because 'they made the mistake of being born to the wrong parents' (Harrington 1962, p. 21).

There is a moral concern behind the need to address socio-economic disadvantages and to ensure that people's socio-economic outcomes are independent of their social origins. Intergenerational mobility is closely linked with equality of opportunities, a key element behind individuals' perceptions of fairness (*see Chapter 2*). A society where an individual's social status depends on family background (i.e. a situation with low levels of intergenerational social mobility) offers unequal opportunity sets to individuals of a given generation.

Alongside fairness-related considerations, intergenerational mobility also matters from an economic perspective. Under-education traps prevent gifted children from disadvantageous circumstances to develop their potential.

In Europe, educational achievement still depends on family socio-economic background, which indicates limited equality of opportunity.

This creates inefficiencies. Intergenerational mobility is also closely related to income inequality. High levels of income inequality result in more unequal parental investments in education, thereby restricting the future occupational and income opportunities of their offspring. Unequal opportunities, in turn, lead to lower intergenerational mobility and higher inequalities in the next generation. Evidence confirms that countries in which economic advantages are passed from parents to offspring to a larger extent are

also associated with greater income inequality (e.g. Corak 2006; 2013).

To date, research on social status mobility across generations has been mainly limited by data constraints along two dimensions. First, most of the data available includes socio-economic status information only for parents and children without accounting for the role potentially played by previous generations. Second, cross-country data often does not cover all EU countries. The data used in this chapter offers a unique opportunity to investigate social-status persistence across three generations in the EU Member States and to understand if, and by how much, mobility varies across macro-regions and has changed across birth cohorts.

This chapter is organised as follows: *Section 4.1* investigates the transmission of educational attainment across three generations using evidence largely drawn from a recent JRC study (Colagrossi et al. 2019a). *Section 4.2* discusses individual perceptions of social-status mobility and beliefs about the importance of equality of opportunity and effort for success in life. *Section 4.3* concludes the chapter.

4.1 The persistence of educational attainment across generations

Education, income and occupation are the most common proxies for measuring socio-economic status and its transmission across generations. Each measure of social status has strengths and weaknesses. Individual incomes change over the life cycle. Income-based estimates of mobility thus tend to suffer from life-cycle bias as it is rarely possible to observe lifetime income. In contrast, occupation and education vary less over the life cycle, so that a one-point-in-time observation can provide accurate information, although both measures lack an inherent continuous scale, making comparisons sometimes difficult.

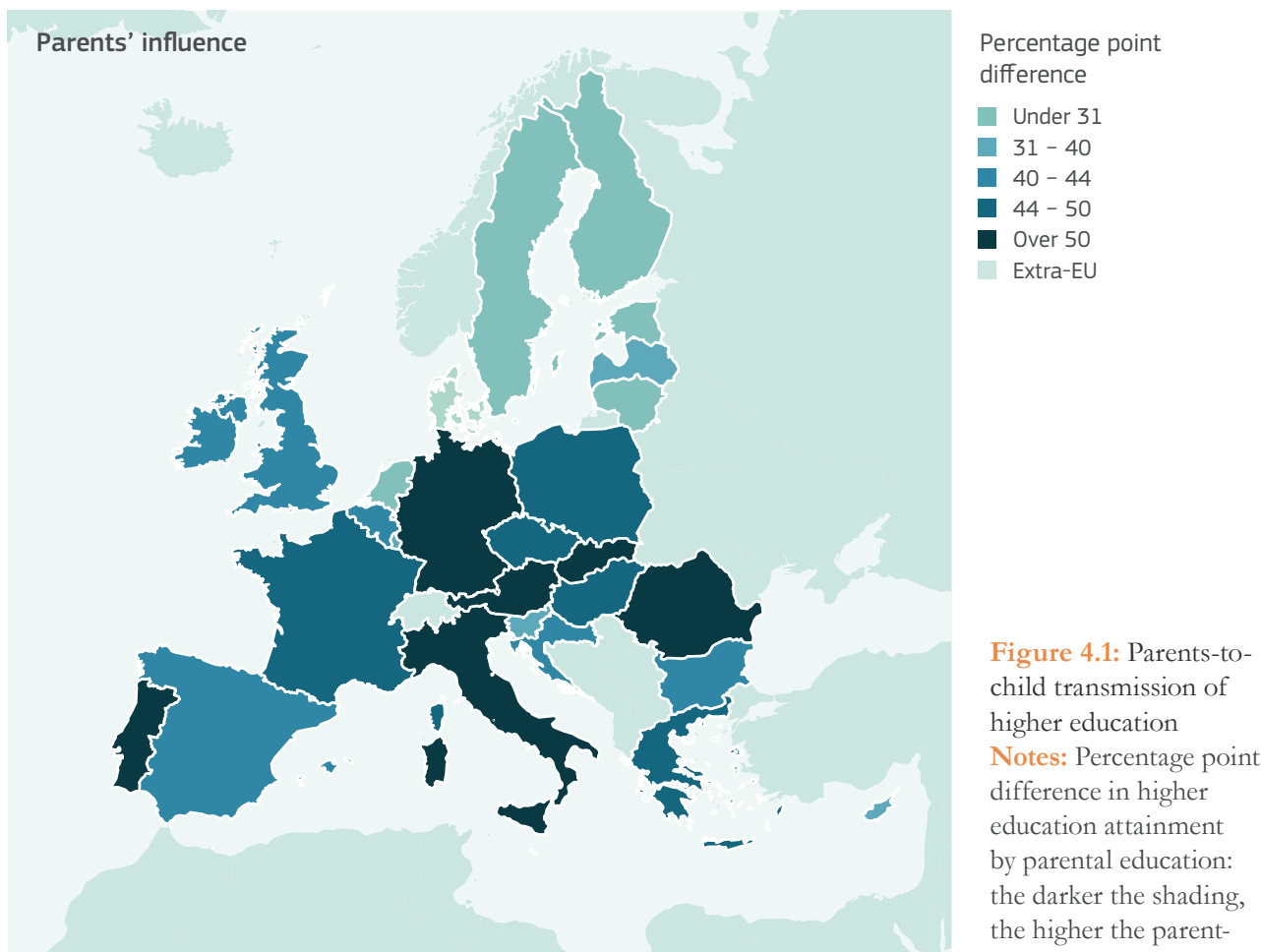
This section focuses on the persistence of educational attainment across generations because of the central importance of education for obtaining and achieving opportunities in life.

Educational persistence is measured by an offspring's probability of completing higher education, given the educational level of their kin. The greater the association between the education of kin and children, the higher the persistence of educational attainment across generations and, hence, the lower the degree of social mobility. Intergenerational persistence describes the association of socio-economic status (i.e. educational attainment) between parent and child. Instead, multi-generational persistence refers to the association of socio-economic status across three (or more) generations (Solon 2018).

4.1.1 From parent to child

Figure 4.1 maps the percentage point (pp) difference in higher education attainment between those with at least one parent who has completed higher education and those with less highly educated parents. The larger the difference, the higher the intergenerational persistence of educational attainment.

There is a strong parent-to-child transmission of higher education in the EU. A child born in a family with at least one parent having achieved higher education is, on average, about 43 pp more likely to reach higher education than a person with less highly educated parents. Family background influences the likelihood of obtaining higher education in each single EU country, although the importance of family characteristics differs across countries. Germany, Italy and Portugal exhibit the highest degree of educational persistence (above 57 pp) followed by Austria, Romania and Slovakia (above 50 pp). In Denmark, Estonia and Sweden, educational persistence is comparatively low. In these countries, growing up in a family with at least one highly educated parent increases the probability of reaching a



of educational attainment. Percentage point categories refer to distribution quantiles. Results are based on the estimation of linear probability regression models. All estimates include gender and 10-year age cohort indicators. Higher education is defined as ISCED levels 4 (post-secondary non-tertiary education) to 8 (doctoral level). Survey weights account for population size and socio-demographic characteristics.

Source: Colagrossi et al. (2019a).

similar educational level by about 20 pp (or less). Differences between educational systems, such as streaming students in secondary education, barriers to entering higher education, the progressivity of higher education fees, and the availability of free preschool education, are likely to influence cross-country differences in educational mobility (see Section 2.4). Many other factors not related to educational policies could also play a role in explaining the observed heterogeneity of social mobility across countries (see Box 4.1). Note also that differentiation by family background also can happen while in tertiary education, e.g. through participation in mobility programmes (see Box 4.3).

4.1.2 From grandparent to child

Most of the existing research on social mobility across generations takes a parent-to-offspring perspective. The underlying assumption is that transmission of the socio-economic status across generations happens from parent to child. However, recent studies show that this approach often leads to an underestimation of the persistence of socio-economic status across multiple generations (Clark 2014; Lindahl et al. 2015; Adermon et al. 2018; Braun and Stuhler 2018). The prevailing explanation is that earlier ancestors, such as grandparents, also have a direct role in shaping the socio-economic outcome of their grandchildren (Anderson et al. 2018; see Box 4.2 for a methodological discussion).

BOX 4.1 Assortative mating

Assortative mating describes how individuals select their partners following certain characteristics, e.g. more educated individuals marrying more educated individuals or richer individuals marrying richer individuals (Schwartz and Mare 2005). How much husbands and wives or cohabiting partners resemble each other in terms of socio-economic status is informative about the openness or closeness of the social hierarchy within a society. Assortative mating is part of the dynamic process of intergenerational social mobility as the education levels of husbands and wives influence fertility choices and the educational attainments of their offspring (Mare 2000).

In a recent study, Eika et al. (2018) examine the influence of assortative mating on income inequality in the Western world over the past decades and find that changes in assortative mating alone hardly impacted the time trend in

household income inequality in the USA and some European countries between the 1960s and the 2010s. Instead, an increase in economic returns to education over time and the changing educational composition of society account for a massive change in household income inequality.

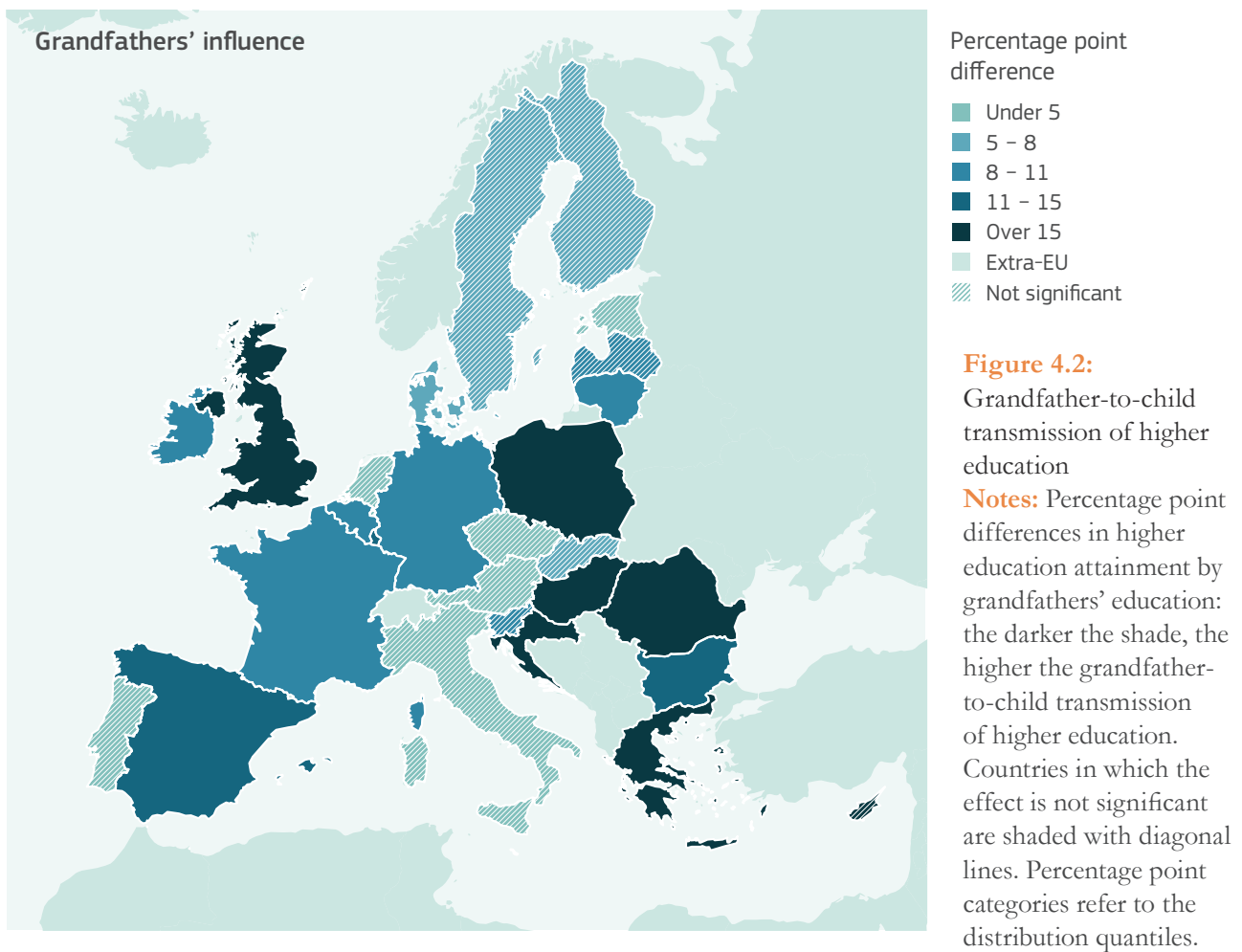
Naszodi and Mendonca (2019a, 2019b) show that changing marital preferences over a partner's educational traits made individuals increasingly more inclined to marry others with similar educational traits after the turn of the millennium in all countries investigated (France, Hungary, Portugal, Romania and the USA). The authors also point out that the changing preferences are strongly related to the labour market return associated with educational attainment. These findings suggest that labour market and tax reforms not only have direct consequences on employment and income inequality but also impact family formation.

Figure 4.2 illustrates multi-generational persistence across the EU. It maps the degree of association between grandfathers' and grandchildren's higher educational attainment, after considering the direct transmission of educational attainment between parents and offspring.³⁰ Countries shaded with diagonal lines are those for which grandfathers' influence is not statistically different from zero. When the influence of grandfathers is accounted for, the average persistence of educational attainment in the EU increases by 10 pp. This suggests that the education of the grandfather matters beyond parental education, although the influence of grandfathers is substantially lower than that of parents.

The role of grandfathers is heterogeneous across countries. Grandfathers' influence on

educational attainments is negligible in 11 of the EU countries. In the remaining 17 Member States, grandfathers influence their offspring's fortune to different degrees. In Romania, a highly educated grandfather increases the likelihood of achieving higher education by 25 pp, even after taking into account the parents' educational level. In Croatia, Greece and Hungary, grandfathers' influence amounts to around 15 pp. In Denmark, Germany and Belgium, the grandfather effect is lower than 10 pp.

Whether or not grandfathers play a role in the transmission of socio-economic outcomes does not depend on the degree of parent-to-child persistence. Among those countries exhibiting the highest levels of parent-to-child educational persistence, some do not display any direct



Results are based on the estimation of linear probability regression models. Besides the two indicators on the higher education attainment of parents and grandfathers, all estimates include gender and 10-year age cohort indicators. Higher education is defined as ISCED levels 4 (post-secondary non-tertiary education) to 8 (doctoral level). Survey weights account for population size and socio-demographic characteristics.

Source: Colagrossi et al. (2019a).

BOX 4.2 Estimating intergenerational social mobility – methodological challenges

The analysis of social mobility is based on data from the special Eurobarometer survey on 'Fairness, inequality and intergenerational mobility' (EC 2018e). This is the first EU-wide survey containing retrospective information on educational attainment, occupation and (subjective) social status of the respondents' parents and grandparents. Such retrospective data poses some challenges. First, when respondents are asked to provide information on past events, they might not recall them or may provide

unreliable answers. Second, whereas such surveys are representative of the offspring's generation (the respondents), they are not representative at the level of parents' and grandparents' generations. Third, findings of a positive association between grandparents' and grandchildren's socio-economic status do not necessarily imply a causal relationship. As discussed in Braun and Stuhler (2018), Clark (2014) and Solon (2014), measurement errors and/or omitted variables bias might plague such estimations.

grandparental effect (e.g. Austria, Italy and Portugal), while others (e.g. Germany, Greece and Romania) do. Similarly, a weak parent-to-child persistence does not imply that the grandfathers' influence is null, as shown by the figures for Denmark and Lithuania. Overall, the persistence of educational attainments across generations is stronger than suggested by the simple parent-to-child framework. Thus, mobility appears to be lower when three generations are observed compared to only two.

The transmission channels through which grandparents might directly influence their grandchildren's educational attainment are not yet fully understood. Plausible explanations include the role of grandparents as caregivers and providers of emotional and financial support. The strength of the effect, running from grandparent to grandchild, might depend on the intensity of social interactions. Accordingly, cultural norms about the appropriate role of grandparents and national institutional characteristics (e.g. regarding the universal access to high-quality, inexpensive childcare) might mediate the grandparent effect.

Macro-regional patterns

The persistence of socio-economic status over three generations is heterogeneous across European countries. *Figure 4.3* summarises macro-regional patterns. Each bar shows overall educational attainment persistence while accounting for the role of parents and grandfathers, respectively. The different colours document how much of this persistence is due to parents (dark blue) and grandfathers (light blue).

In Eastern, Western and Southern Europe, the persistence of educational attainment across generations is (almost) twice as large as in Northern Europe and the Baltics. Southern European countries display the highest parent-to-child persistence. The Benelux region takes a middle position when it comes to the influence of parents' education but stands out because grandfathers' education does not affect children's educational outcomes.

“When the influence of grandfathers is accounted for, the persistence of educational attainment in the EU increases by 10 percentage points.”

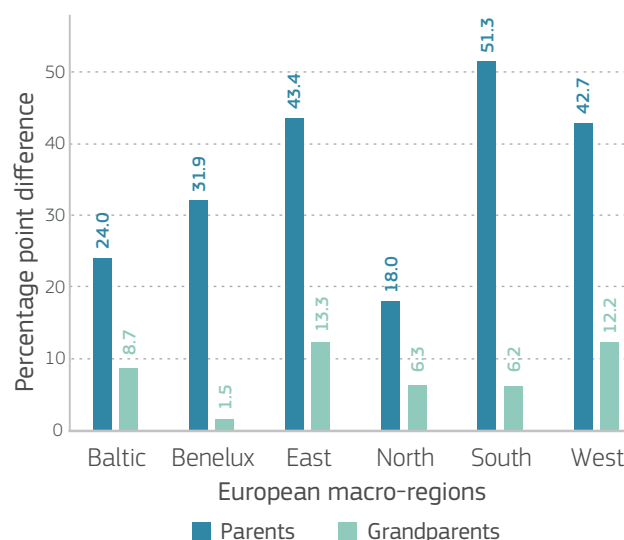


Figure 4.3: Transmission of higher education across generations: EU macro-regional patterns

Notes: Bars show the percentage point difference in higher education attainment by parents' and grandfather's educational attainment. Results are based on the estimation of linear probability regression models. Besides the two indicators on the higher education attainment of parents and grandfathers, all estimates include gender, 10-year age cohort, and country indicators. Higher education is defined as ISCED levels 4 (post-secondary non-tertiary education) to 8 (doctoral level). The estimates are weighted for population size and demographics. Macro-regions: *Baltic:* EE, LV, LT. *Benelux:* BE, LU, NL. *East:* BG, HR, CZ, HU, PL, RO, SK, SL. *North:* DK, FI, SE. *South:* CY, EL, IT, MT, PT, ES. *West:* AT, FR, DE, IE, UK.

Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e). Survey weights account for socio-demographic characteristics.

BOX 4.3 Drivers of unequal access to international higher education mobility

Research generally shows that international student mobility (a temporary study abroad, embedded in a study programme at a home university) produces positive labour market returns (Schnepf and d’Hombres 2019). However, there is a growing concern that these benefits are not equally distributed as students from a lower socio-economic background are less likely to take part in these schemes. In the UK, Italy and Hungary, students with highly educated parents are twice as likely to take up student mobility programmes as their peers with less highly educated parents (*left-hand figure*). This general pattern can also be found in other countries (Hauschildt et al. 2015).

Unequal uptake of student mobility is generally described as the result of choices made by students from different socio-economic backgrounds. Their choices are often explained by inequality of opportunity (e.g. the less advantaged have more financial constraints), inequality of information (i.e. the less advantaged have less knowledge about grant

opportunities) and differing evaluations of mobility benefits. Recent studies by the JRC stress that not only student choices but also university characteristics matter when explaining the unequal uptake of student mobility (Schnepf and Colagrossi 2020).

The *right-hand figure* shows that UK universities with a high share of students with parents of low education send fewer students abroad. The concentration of students with a high socio-economic status in specific universities is an important explanation for student mobility uptake, even after taking individual characteristics into account. The same results are found for Germany, Hungary and Italy. Thus, students with less highly educated parents face a double penalty: they are less likely to attend a university where mobility is high and have a lower likelihood of participating in mobility schemes, given their socio-economic background. It follows that student mobility could become more inclusive if grant funding and incentives targeted universities with a high proportion of less-advantaged students.

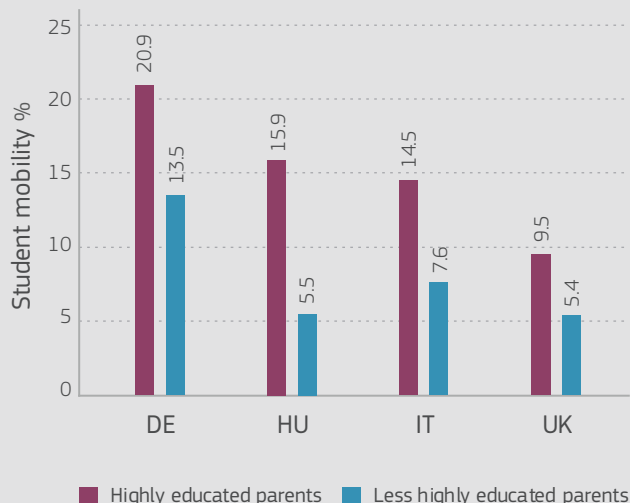


Figure: Percent of mobile students by parental background and country; graduation years between 2005 and 2015

Notes: Bars show the percentage of tertiary graduates taking part in student mobility by parental education.

Source: Schnepf et al. (2020).

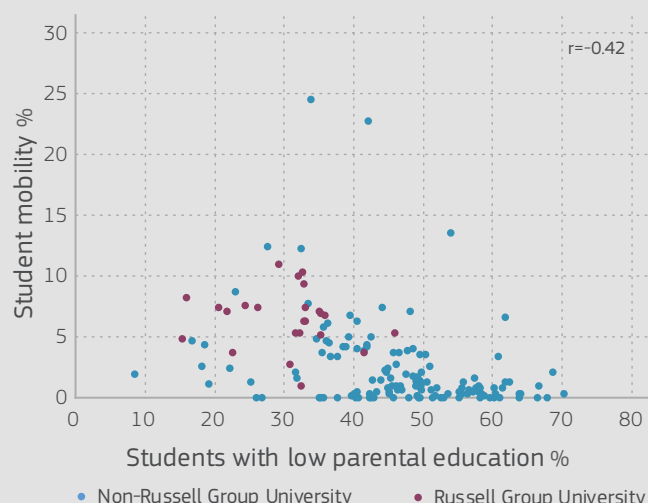


Figure: Percent of students with less highly educated parents and overall mobility uptake in universities in the UK

Source: Schnepf and Colagrossi (2020).

Grandfathers are especially important in Western and Eastern Europe. Accounting for the influence of grandfathers on grandchildren's attainment, educational persistence in Northern Europe proves to be slightly higher than is usually portrayed.

Changes in educational persistence over time

Educational persistence across generations might not only differ across countries (and macro-regions), but also across birth cohorts. *Figure 4.4* shows the persistence associated with parents (dark-blue bars) and grandfathers (light-blue bars) for four birth cohorts of offspring, namely: (i) those born Before 1946; (ii) the Baby Boomer (1946-1964); (iii) Generation X (1965-1980); and (iv) the Millennials (1981-2002).

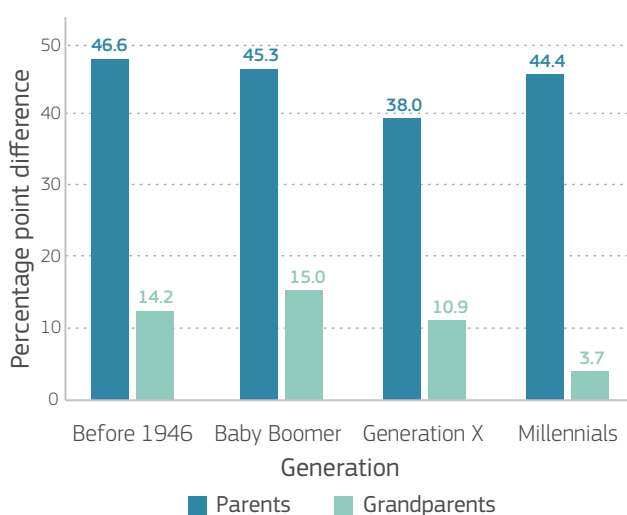


Figure 4.4: Transmission of higher education across generations: changes over time

Notes: Bars show the percentage point difference in higher education attainment by parent and grandfather educational attainment. Results are based on the estimation of linear probability regression models. Besides the two indicators on the higher education attainment of parents and grandfathers, all estimates include gender and country indicators. Higher education is defined as ISCED levels 4 (post-secondary non-tertiary education) to 8 (doctoral level). The Baby Boomers are those born between 1946 and 1964; Generation X between 1965 and 1980; and the Millennials, between 1981 and 2002.

Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e). Survey weights account for socio-demographic characteristics.

“The persistence of socio-economic status over three generations is heterogeneous across European countries.”

On average, across all European countries, multi-generational educational persistence remains very similar for those generations born before 1946 and the Baby Boomers. There seems to be a substantial improvement in intergenerational social mobility in the subsequent period with a reduction in educational persistence by about 11 pp between the Baby Boomers and Generation X. This improvement is not visible among the Millennials. Instead, a shift occurred in the (relative) importance of grandfathers and parents. While the influence of grandfathers appears much smaller than in the previous generation, the parent-to-offspring link is stronger than for Generation X. Increases in affordable childcare services and early childhood education might partly explain the reduction in the influence of grandfathers.

4.1.3 The role of educational policies

Policies recently implemented in Europe with the aim of tackling intergenerational educational persistence can be described according to three dimensions:

‘tracking versus comprehensive schooling’, ‘school autonomy versus centralisation’, and ‘curriculum and instruction’ (Volante et al. 2019).

Tracking refers to children being taught in different school types or programmes that provide varying learning targets and prestige. There is compelling evidence that tracking hampers educational social mobility (Strietholt et al. 2019) and increases social segregation across schools (Chzhen et al. 2018). Reforms postponing the age at which pupils are tracked usually result in greater intergenerational mobility, without significant effects on average educational achievements (Lange and von Werder 2017; Pekkarinen 2018).

School autonomy refers to providing management autonomy for schools. Advocates of school autonomy argue that it increases the efficiency of public spending and administration, while critics believe that lower levels of centralisation result in school systems predominantly serving privileged children (Strietholt et al. 2019). Empirical studies show that under conditions of greater school autonomy students from lower socio-economic backgrounds fare worse than students with a high socio-economic status (Horn, 2009). Countries like Sweden and Finland, which introduced school autonomy during recent decades, did indeed experience a relative increase in educational inequalities (Volante et al. 2019). However, research generally fails to establish a link between centralisation and educational equality (Horn 2009; Strietholt et al. 2019). What matters seems to be the correct overall balance between school autonomy and centralisation. Germany, and to some extent Italy, introduced school autonomy paired with components of centralisation (such as the greater accountability of schools, national exams, and school inspections and accreditation) which resulted in reducing the socio-economic achievement gap (Volante et al. 2019).

Policies on curriculum and instruction focus on educational content and teaching in order to achieve a more inclusive learning environment.

Extending the availability of high-quality, publicly funded preschool childcare tends to reduce social inequalities (Blossfeld et al. 2017). Similarly, raising the compulsory school age is associated with lowering the dropout rates and hence lowering the inequality of educational attainment. Recently, some EU countries (e.g. the United Kingdom, Sweden and Italy) have changed their curriculum, reducing it to more basic and factual content. While there is a lack of research examining the effect of curriculum-content change, country results seem to indicate that they are associated with improving social mobility in education outcomes (Volante et al. 2019).

4.2 Intergenerational mobility and perceptions of equality of opportunity

Both objective indicators and subjective measures can be used to better understand social mobility across generations. Applying the latter is important since individual decisions are not only based on preferences and objective information but also on beliefs and perceptions.³¹ Indeed, researchers have long argued that differences between American and European citizens in their attitudes towards the welfare system are driven by different beliefs about mobility in their society rather than by their true underlying value (Lipset and Bendix 1959; Alesina et al. 2017). In addition, objective indicators of social status are somehow partial measures of the ‘family’s real social competence’ (Clark 2014, p. 108). In other words, some of the advantages that are passed across generations are unmeasurable. Therefore, self-perceived measures might provide insights otherwise missed by objective indicators.

4.2.1 Self-perceived intergenerational mobility in Europe

The special Eurobarometer on Fairness (EC 2018e) provides the opportunity to monitor self-perceived intergenerational mobility as respondents were asked to place themselves and their parents on a hypothetical social ladder. A respondent assigning to him- or herself a higher social ladder than to

his or her parents is assumed to have a perception of upward intergenerational social mobility. If, on the other hand, the respondent positions him- or herself on a lower rank than his or her parents, the individual has a perception of downward intergenerational mobility.³²

Figure 4.5 shows that in the EU, 33% of individuals believe they have moved up the social ladder and about 23% consider that their social status is lower than that of their parents. The share of respondents reporting upward mobility varies between 41% in Northern Europe and 31% in Southern Europe. About half of the respondents identify themselves on the same level of the social hierarchy as their parents. In all regions, the share of respondents who experienced upward mobility is higher than the share of those who feel they are on a lower social level than their parents.

Figure 4.6 displays the share of respondents reporting upward, downward and no intergenerational social mobility by birth cohort. Results should be interpreted with care since individuals at different phases of their life (life-cycle bias) are being compared.³³

Nevertheless, interesting patterns emerge. In Eastern Europe, the percentage of respondents

having experienced downward mobility is about the same for Baby Boomers, Generation X and Millennials. The gap between Millennials and Generation X is widest in Northern Europe and Western Europe. The high share of respondents with perceptions of downward mobility in these two macro-regions (shown in Figure 4.5) is thus largely driven by the Millennials. Note that in Southern and Western Europe, fewer Millennials have experienced upward mobility than in the Baltics and Eastern Europe.

4.2.2 Getting ahead in life: equality of opportunities and meritocratic perceptions

Social mobility and its perception are closely linked to equality of opportunity: societies with more equal opportunities tend to display higher social mobility. Equality of opportunity is indeed a prerequisite for effort and merit to be rewarded, resulting in individuals experiencing social mobility accordingly.

About 41% of European adults do not believe that they have equal opportunities to succeed and more than 35% of the adult population think that to get ahead in life it is important to come from a wealthy family (see Figure 4.7).

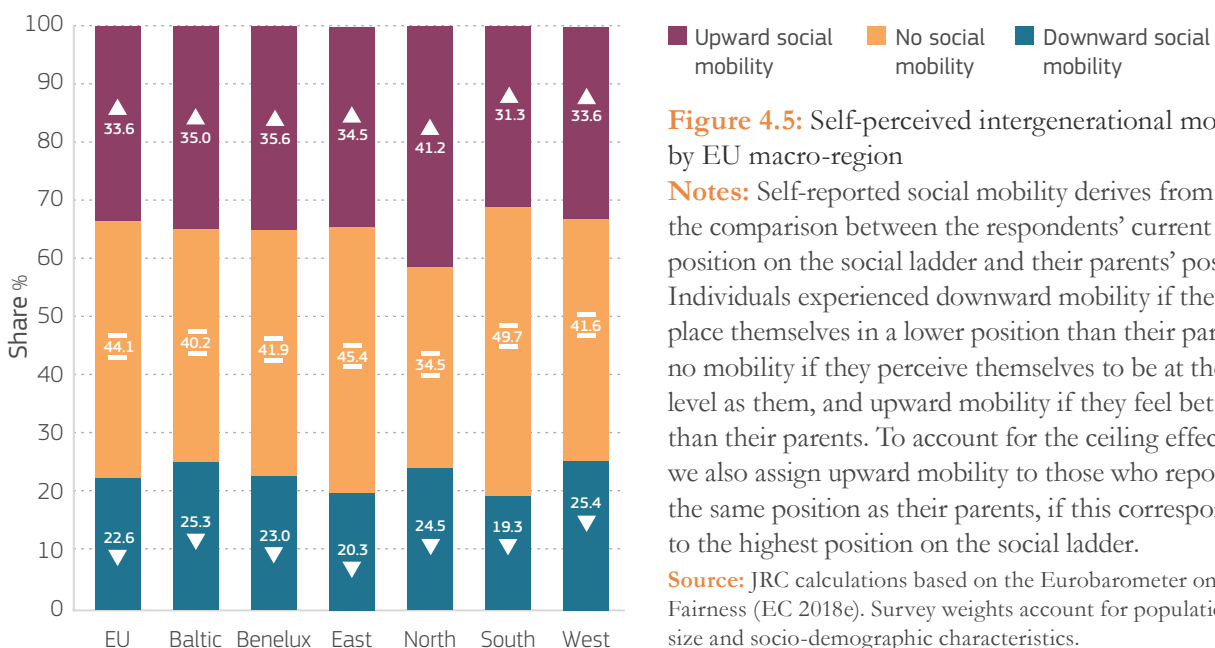
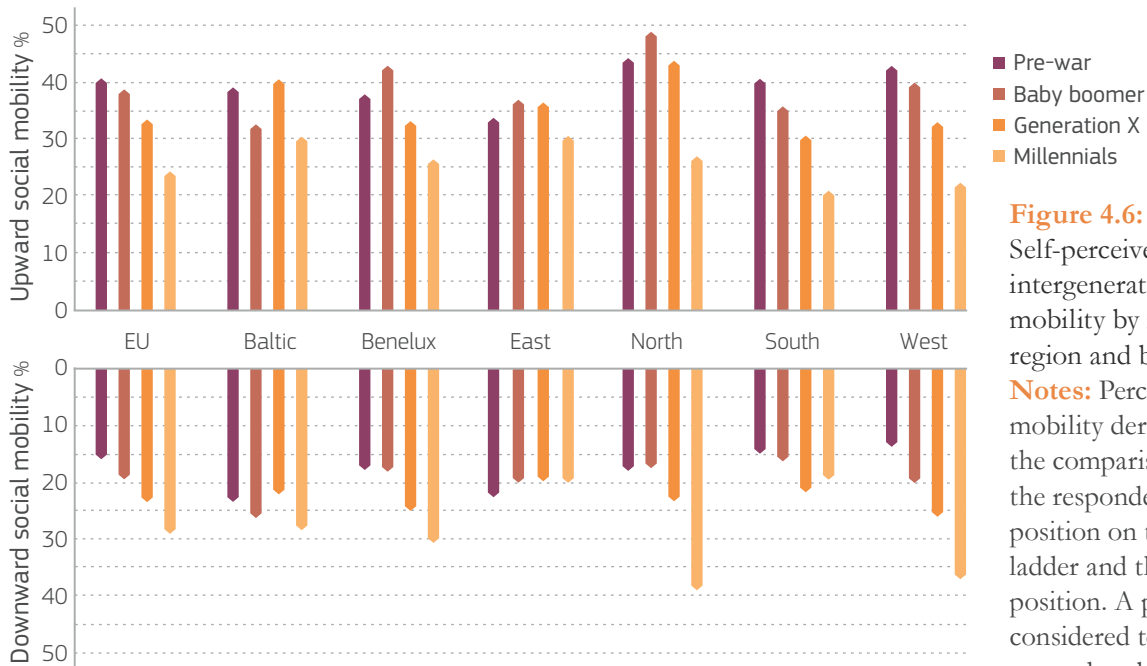


Figure 4.5: Self-perceived intergenerational mobility by EU macro-region

Notes: Self-reported social mobility derives from the comparison between the respondents' current position on the social ladder and their parents' position. Individuals experienced downward mobility if they place themselves in a lower position than their parents, no mobility if they perceive themselves to be at the same level as them, and upward mobility if they feel better off than their parents. To account for the ceiling effect, we also assign upward mobility to those who report the same position as their parents, if this corresponds to the highest position on the social ladder.

Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e). Survey weights account for population size and socio-demographic characteristics.



her position on the social ladder is higher than that of their parents. This hypothetical social ladder ranges from 1 to 10. To account for the ceiling effect, a person is also considered as mobile if both they and their parents are on position 10. *Baby Boomers* are those born between 1946 and 1964; *Generation X* between 1965 and 1980; and the *Millennials* between 1981 and 2002. Macro-regions: *Baltic*: EE, LV, LT. *Benelux*: BE, LU, NL *East*: BG, HR, CZ, HU, PL, RO, SK, SL. *North*: DK, FI, SE. *South*: CY, EL, IT, MT, PT, ES. *West*: AT, FR, DE, IE, UK.

Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e). Survey weights account for population size and socio-demographic characteristics.

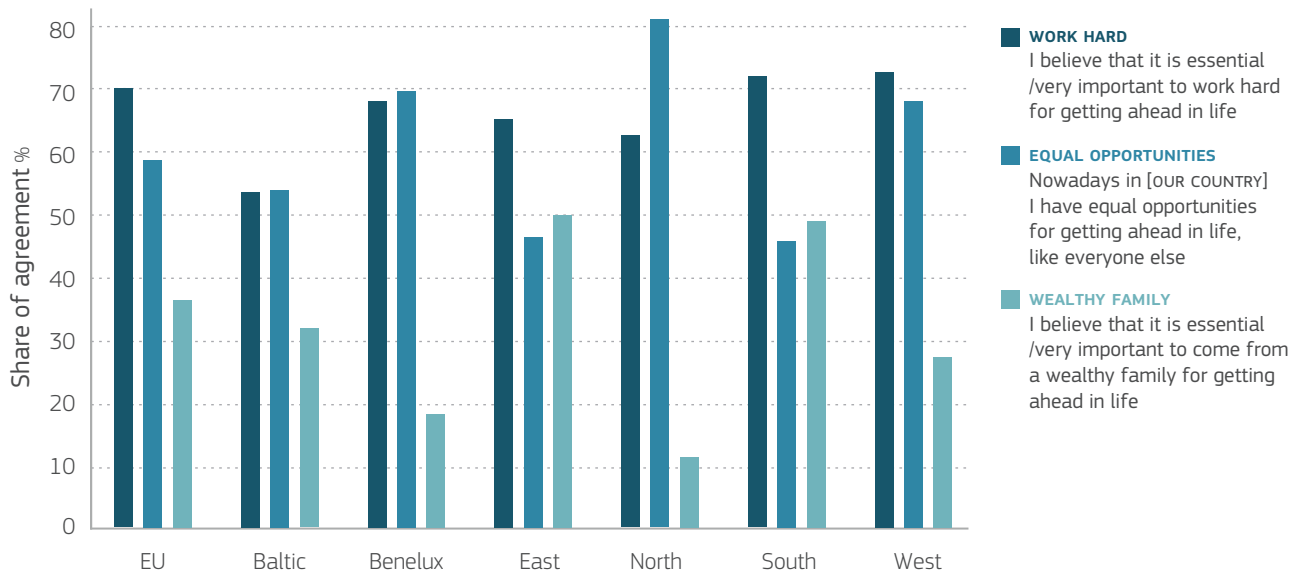


Figure 4.7: Beliefs about equality of opportunity and the role of merit

Notes: Equal opportunities plot the share of individuals agreeing or strongly agreeing with the statement 'Nowadays in [OUR COUNTRY] I have equal opportunities for getting ahead in life, like everyone else'.

Work hard and Wealthy family plot the share of subjects who think it is 'essential' or 'very important' to work hard or to come from a wealthy family to get ahead in life. Macro-regions: *Baltic*: EE, LV, LT. *Benelux*: BE, LU, NL *East*: BG, HR, CZ, HU, PL, RO, SK, SL. *North*: DK, FI, SE. *South*: CY, EL, IT, MT, PT, ES.

West: AT, FR, DE, IE, UK.

Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e). Survey weights account for population size and socio-demographic characteristics.

The belief that working hard is an important element for getting ahead in life appears to be shared somewhat uniformly across Europe. There are some clear macro-regional differences concerning the perception of equality of opportunity and the importance attributed to social background for being successful in life. Individuals in Nordic, Benelux and Western Member States have very positive perceptions concerning the equality of opportunity in their countries. In Northern countries, 81% of respondents believe equal opportunities prevail in their country and 12% report that coming from a wealthy family plays an important role as regards moving on in life. In contrast, about half of Eastern and Southern European citizens attribute great importance to coming from a wealthy family to get ahead in life while less than half of the population has the perception of living in a society which offers equal opportunities.

These findings are a source of concern. Believing that society does not offer equal opportunities negatively affects individuals' perceptions of fairness and has the potential to undermine trust in traditional institutions and to create discontent.

How do these beliefs relate to intergenerational mobility? The panels in *Figure 4.8* depict the relation between (self-perceived) intergenerational mobility and: (i) beliefs about the importance of working hard to get ahead in life; (ii) perceptions about the equality of opportunity; and (iii) beliefs about the importance of coming from a wealthy family to get ahead in life. In the EU, individuals' beliefs about the importance of hard work and equality of opportunity are clearly associated with intergenerational mobility. Individuals who have experienced upward mobility are less likely to believe that success in life is the consequence of family circumstances and are more inclined to attribute it to individual efforts. For example, two individuals being in the 5th and 95th percentile respectively of the self-perceived mobility distribution have, other things being equal, a difference of 14 pp in the predicted probability of perceiving to have equal opportunities to

get ahead in life. These findings support the hypothesis that intergenerational mobility is closely linked to beliefs about the equality of opportunity and the value of merit in the economic system. Such beliefs might, in turn, directly shape policy preferences and hence could influence inequality dynamics.

■ 4.3 Concluding remarks

To a large extent, inequalities in education in Europe are still transmitted from one generation to the next. About 74% of individuals with highly educated parents go on to complete higher education themselves, compared to only 28% of those with less highly educated parents. Individuals' education opportunities are also associated with the socio-economic background of their grandparents. Persistence of educational attainment increases by around 10 pp when considering the influence of grandparents. In Eastern, Western and Southern Europe, the persistence of educational attainment across generations is a lot stronger than in Northern Europe and the Baltics.

A more comprehensive view of multi-generational persistence requires expanding this analysis in at least two directions. First, the intergenerational transmission of a variety of other outcomes should be analysed, among them economic (income, occupation, wealth) but also health and social dimensions. Second, other circumstances (beyond parental background) potentially affect the lifetime perspective. These include, for example, the place of birth and childhood neighbourhood.³⁴ Ongoing JRC research is trying to provide a broader overview of inequality of opportunity by comparing the level of inequality of opportunity in education, income and wealth whilst considering a set of additional circumstances (area of birth, language spoken at home, etc.).³⁵

Besides objective measures of social mobility, individuals' mobility perceptions also matter. Individuals with a perception of intergenerational

social upward mobility are less inclined to believe that success in life is a consequence of family circumstances and more likely to attribute it to individual effort. Future research should therefore further explore individual perceptions and beliefs about intergenerational and horizontal mobility and investigate how they are linked to policy-related preferences and political attitudes.

To summarise, the EU is not yet a continent of equal opportunity. Given the self-reinforcing relationship between the persistence of socio-economic status across generations and the dynamics of income inequality, together with the link between self-perceived social mobility and beliefs about fairness-related perceptions, ensuring social mobility across generations is all the more important for a well-functioning Europe.

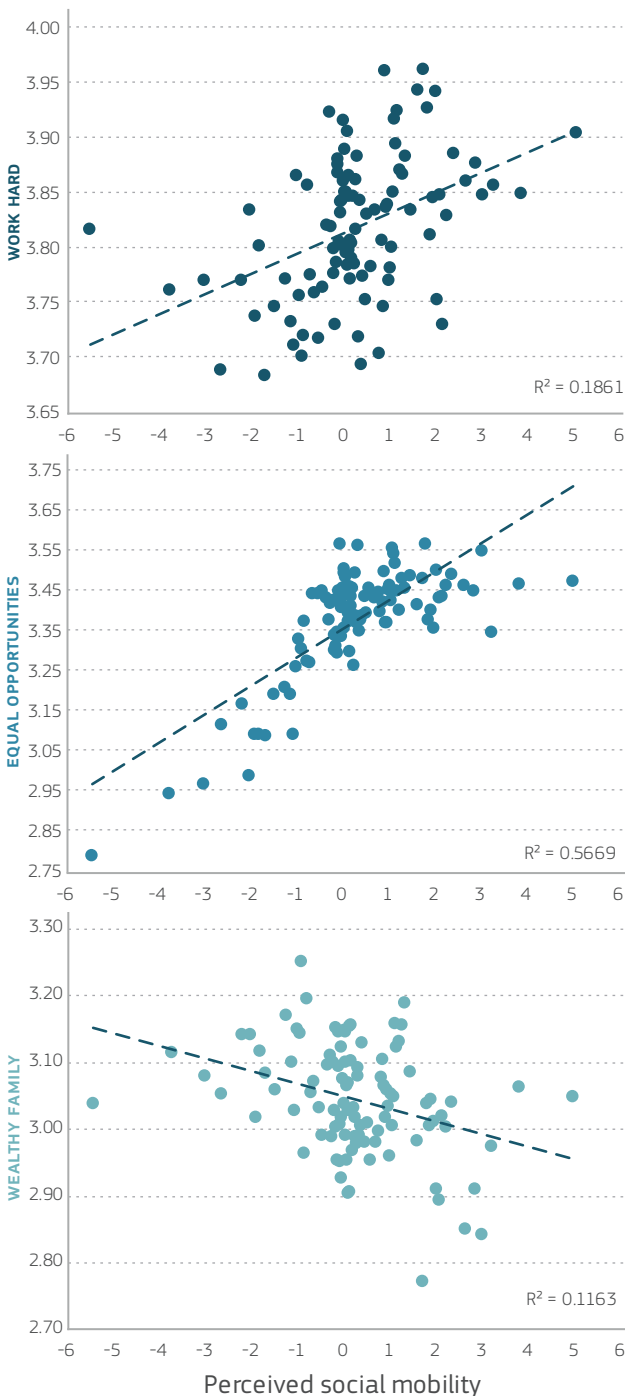


Figure 4.8: Relation between self-perceived intergenerational mobility and individuals' perceptions

Notes: The y axes report beliefs about the importance of: (i) working hard, (ii) equal opportunities, and (iii) coming from a wealthy family to get ahead in life, whilst the x-axis displays the magnitude of the perceived intergenerational mobility. Perceived social mobility on the x-axis derives from the comparison between the respondents' current position on the social ladder and their parents' position. This hypothetical social ladder ranges from 1 to 10 and hence the individual value of perceived mobility ranges between -9 to 9. On the three plots, individual measures of perceived mobility are grouped into 100 equal-sized bins (centiles), and the means of the x-axis and y-axis variables are computed within each bin and plotted on the graph. Therefore, each dot represents the predicted probability y of agreeing with the aforementioned questions for a given level of perceived social mobility keeping the controls constant (country, generation and gender-specific effects). Dashed lines indicate the fitted linear trend.

Source: JRC calculations based on the Eurobarometer on Fairness (EC 2018e).



SUMMARY

The social model of European welfare states is unique in providing collective insurance against risks which are either not or are only insufficiently insurable in the market. Most welfare states in Europe spend more than 50% of their budgets on social protection, health and education. Redistribution achieved through taxes and transfers reduces income inequality by 30%. However, a rising share of individuals in atypical employment conditions, which are associated with high levels of job insecurity, lack social insurance coverage. On the financing side, tax evasion and tax avoidance are major concerns for EU Member States' fiscal policy. There is an extensive mismatch between the place where the economic activity occurs and the place where profits are reported, especially for web companies. Tax avoidance is facilitated by a corporate taxation system which is no longer in line with fluid and intangible economies. Similarly, tax evasion violates basic principles of tax justice. All this limits the capacity of welfare states to uphold their social contract. Chapter 5 highlights the potential for policy interventions on tax evasion, tax avoidance and the extension of social protection to atypical workers, resulting in fairer societies with additional revenues for redistribution.

CHALLENGES FOR WELFARE STATES IN THE EU

The European social model opened up broad access to education, healthcare and pensions and provides collective insurance against risks which are either not or are only insufficiently insurable in the market. While specific welfare arrangements differ across countries, most governments in the EU spend more than 50% of their budgets on social protection, health and education. In 2017, this amounted to 41.1% of total government expenditure on social protection, 15.3% on health and 10.2% on education.

On average, these expenditures correspond to 30.4% of gross domestic product (GDP), with 18.8% being attributed to social protection while health and education expenditures amount to 7% and 4.6% of GDP, respectively (see Figure 5.1).³⁶

The success of welfare states cannot reasonably be evaluated on the basis of their expenditure alone, but by their ability to ensure the welfare of their inhabitants and to create inclusive and cohesive societies. International comparisons suggest that many EU Member States are comparatively successful in providing public services for a high standard of living with relative low levels of corruption, wide access to health services (Fullman et al. 2018) and a clean environment.³⁷ Substantial redistribution, which is often seen as an important element of a fair society, is achieved through taxes and transfers: across all EU countries, the tax-transfer system

Structural changes, tax evasion and tax avoidance challenge welfare states. Yet, there is room to revive the social contract.

“ Governments in the EU spend more than 50% of their budgets on social protection, health and education. ”

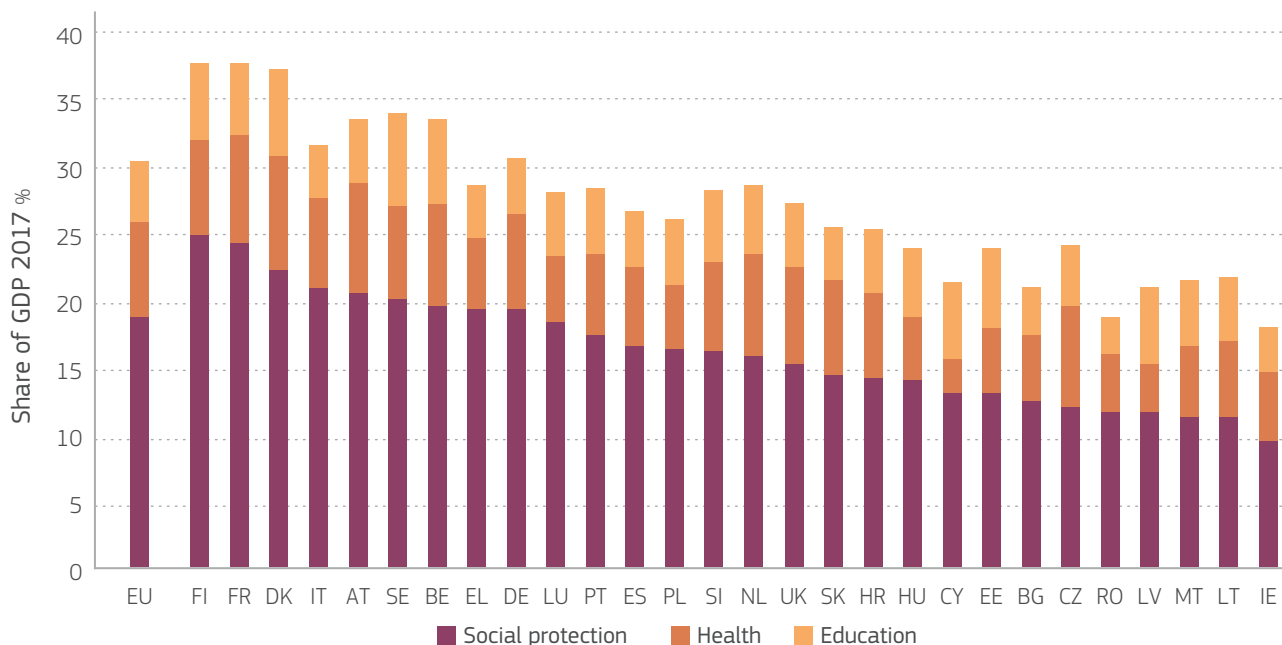


Figure 5.1: Expenditure on social protection, health and education as per cent of GDP 2017

Notes: EU social protection expenditure includes social benefits or transfers, in cash or in kind, to households and individuals associated with sickness/healthcare and invalidism, disability, old age, parental responsibilities, the loss of a spouse or parent, unemployment, housing or social exclusion. It also includes administrative expenses. Health expenditure includes medical products, appliances and equipment, outpatient services, hospital services, public health services, and research and development (R&D) related to health. Education expenditure includes pre-primary, primary, secondary and tertiary education, post-secondary non-tertiary education, education not definable by level, subsidiary services to education and R&D.

Source: JRC elaboration of Eurostat data.

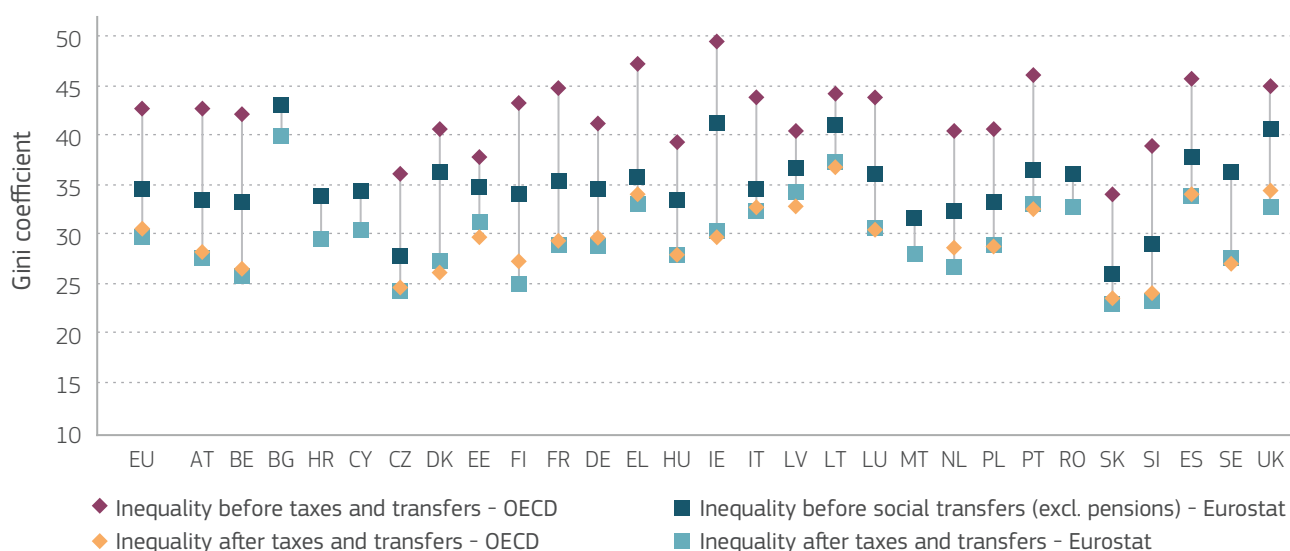


Figure 5.2: The equalising effect of taxes and transfers varies widely across EU Member States, 2016

Notes: Eurostat data are available for all EU Member States and refer to 2017. OECD data are available for 23 EU Member States: no data is available for Bulgaria, Croatia, Cyprus, Malta and Romania. EU* refers to the EU for Eurostat data and to the 23 Member States mentioned for OECD data. This figure shows the level of Gini coefficients before and after taxes and social transfers using data from two different sources, OECD and Eurostat.

Source: Eurostat and OECD Income Distribution and Poverty (database).

reduced the Gini coefficient by 13 pp in 2016 (from 43 % for market incomes to about 30 % for net incomes; see *Figure 5.2*).

Notwithstanding the positive message conveyed by this aggregate measure, political discontent creating upheaval in the EU political landscape indicates some dissatisfaction with the current status quo. For a long time, the EU's welfare states have served their citizens, but the global economic crisis from 2008 onwards and various subsequent socio-economic shocks have tested the current social arrangements. In addition, EU welfare states face structural challenges. Digital technologies, the automation of routine and low-skilled jobs as well as the growing importance of non-standard work have coincided with a decline in the labour share and the cost of capital investment, facilitating capital-labour substitution.³⁸ In addition, factor mobility, internationalisation and digitalisation have created multiple opportunities for tax competition among countries and for tax avoidance and/or evasion by multinational corporations and wealthy individuals alike. This has reduced the available resources to ensure the sustainability of welfare systems. In light of these changes, the financing and redistributive properties of welfare systems must be reviewed.

The remainder of this chapter is organised as follows: *Section 5.1* reviews some of the challenges for EU welfare systems whilst *Section 5.2* discusses specific features of taxation systems which are relevant in the pursuit of an inclusive and fair Europe. *Section 5.3* concludes this chapter.

■ 5.1 European welfare states under pressure

Welfare state arrangements in the EU are facing three main challenges: demographic change, technological change and globalisation.³⁹ The impact of such changes has been felt differently by different people, creating horizontal inequalities, i.e. different outcomes across age, gender and skill groups.⁴⁰

Demographic changes caused by lower fertility rates and longer life expectancy result in ageing populations.⁴¹ While longer and healthier lives are highly desirable, an ageing population challenges pay-as-you-go welfare schemes as dependency ratios increase. Changing population structures and shifting economic realities result in higher uncertainties. Younger people in particular are employed in atypical work arrangements that entail higher levels of personal job insecurity (EC 2016a, Eurofound 2018).

Globalisation entails the expansion of trade and integration of national economies in the world market.⁴² For the EU, this implies an increase in imports of labour-intensive goods which goes hand in hand with growing competition in national labour markets (Gebel and Giesecke 2016). Changing labour-market requirements and pressure on wages, especially for the low-skilled, result in an uneven distribution of the benefits of globalisation. Unskilled workers are more vulnerable to change and carry a greater burden in terms of income and unemployment insecurity. These vulnerabilities increased further with the Great Recession.

Technological change influences the organisation of society in general and the organisation of production in particular. Recent decades have been characterised by skill-biased technological change, i.e. technological change which favours skilled labour over unskilled labour by increasing its relative productivity. In addition, jobs with strong routine elements on all skill levels are increasingly automated (EC 2018a, EC 2018b). Both developments have changed the demand for labour and influenced the composition of skill requirements in European labour markets. In 2018, the unemployment rate of those with low education in the EU was 13.3%, compared to 6.2% for individuals with upper and post-secondary education and 4.1% for those with tertiary education. Technological change shifted the demand for specific occupations and changed the organisation of labour. Platform work, whereby

BOX 5.1 Sectorial and regional dynamics in employment in several EU Member States between 2000 and 2014

Before the crisis, several EU Member States experienced a reallocation of employment from the primary and manufacturing sectors to construction and services. The economic crisis weakened demand and resulted in job losses. The construction sector followed a 'boom-bust' pattern, i.e. it made a strong, positive contribution to job creation before the crisis, followed by large losses in employment both during and after the crisis. The dynamics in the construction sector were driven by developments in real-estate markets and the financial sector which changed abruptly in the crisis. The service sector was the only sector to increase employment after the crisis, although at a much lower rate than before. This was probably due to growth in demand and competitiveness gains in well-paid jobs like

computer programming, information services, and professional and technical activities. There are important macro-regional patterns in employment change by sector. Whilst most macro-regions managed to maintain employment growth even after the financial crisis, thanks to a resilient service sector, Southern Europe experienced a significant change in employment dynamics: from 2000 until the crisis, employment increased by 7.5 million, while after the crisis, 6 million jobs were lost. This huge drop in employment was largely caused by losses in consumption and investment and by lower labour demand from the manufacturing sector. In contrast to more successful macro-regions, in Southern Europe job reallocation to the service sector was restrained (Martínez-Turégano 2019).

short-term employment opportunities are offered or brokered by online platforms, is an example of recent types of non-standard work relations. In 2018, around 10% of Europeans provided some work services through online platforms (EC 2018a, EC 2018b).

More generally in the EU, the last decades have seen a shift away from traditional, full-time, open-ended employment towards atypical forms of work, which include temporary jobs, part-time work, casual work and solo self-employment.⁴³ Between 2002 and 2017, the share of atypical workers in the EU rose by 4 pp, from 38% to around 42%. Changes in atypical employment relations are depicted in *Figure 5.3*. While atypical types of work can provide flexibility and enable people to find their individually appropriate work-life balance, they are also associated with higher income volatility and lower job security (EC 2018b; Eurofound 2018).

Whilst often serving as a stepping stone into stable employment, the expansion of non-standard work has led to greater job insecurity and precariousness, with negative consequences for knowledge and skill accumulation, health and well-being. The growing importance of non-standard forms of work challenges social protection systems which are generally tailored to standard full-time employment and remain ill-suited to the needs of atypical workers. Although atypical employees are normally subject to the same eligibility rules for benefits, it is often difficult for them to meet the required conditions, which means they are *de facto* excluded. The self-employed are sometimes completely excluded or can only opt in voluntarily.⁴⁴

Differences in unemployment insurance coverage for standard and non-standard employees and the self-employed are depicted in *Figure 5.4*.

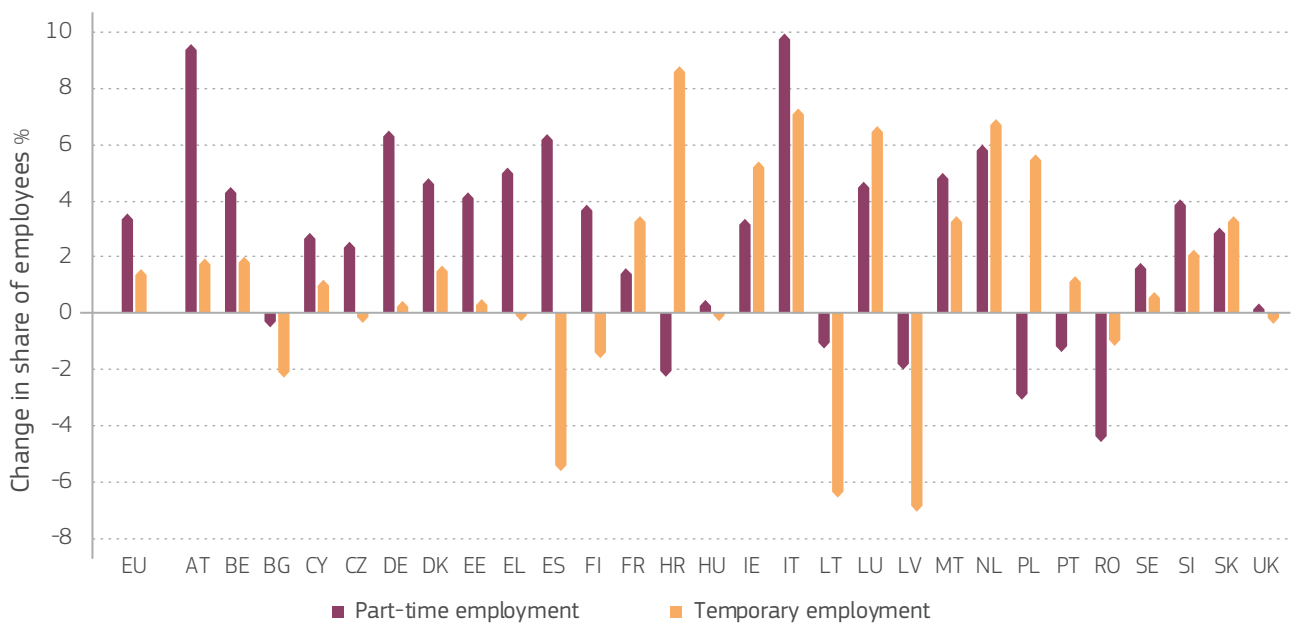


Figure 5.3: Changes in non-standard employment over the last 15 years (2003-2018)

Notes: The percentage change between 2003 and 2018 of employees working in non-standard employment by type of contract, i.e. part-time or temporary contract. The EU average is provided by Eurostat.

Source: Calculations based on Eurostat.

Many social-security systems offer less protection to atypical workers than they do to traditional full-time employees. This holds true for most EU countries, although substantial differences exist. The gaps in coverage are even more evident for the self-employed as in most countries this category of worker is not eligible for unemployment insurance. Reducing the divide between traditional employees and atypical workers will require better protection for the latter.

In this context, a recent JRC study (Jara and Tumino 2018) assesses the effects of a hypothetical reform in which eligibility for unemployment insurance benefits would be extended to self-employed workers with the same conditions as for standard employees. This affects all Member States except Denmark, Hungary, Croatia, Poland, Slovenia, Czechia, Finland, Luxembourg and Sweden, where the self-employed are compulsorily covered (see Jara and Tumino 2018 and [Box 5.2](#) for more information).

“ The growing importance of non-standard forms of work challenges social protection systems. ”

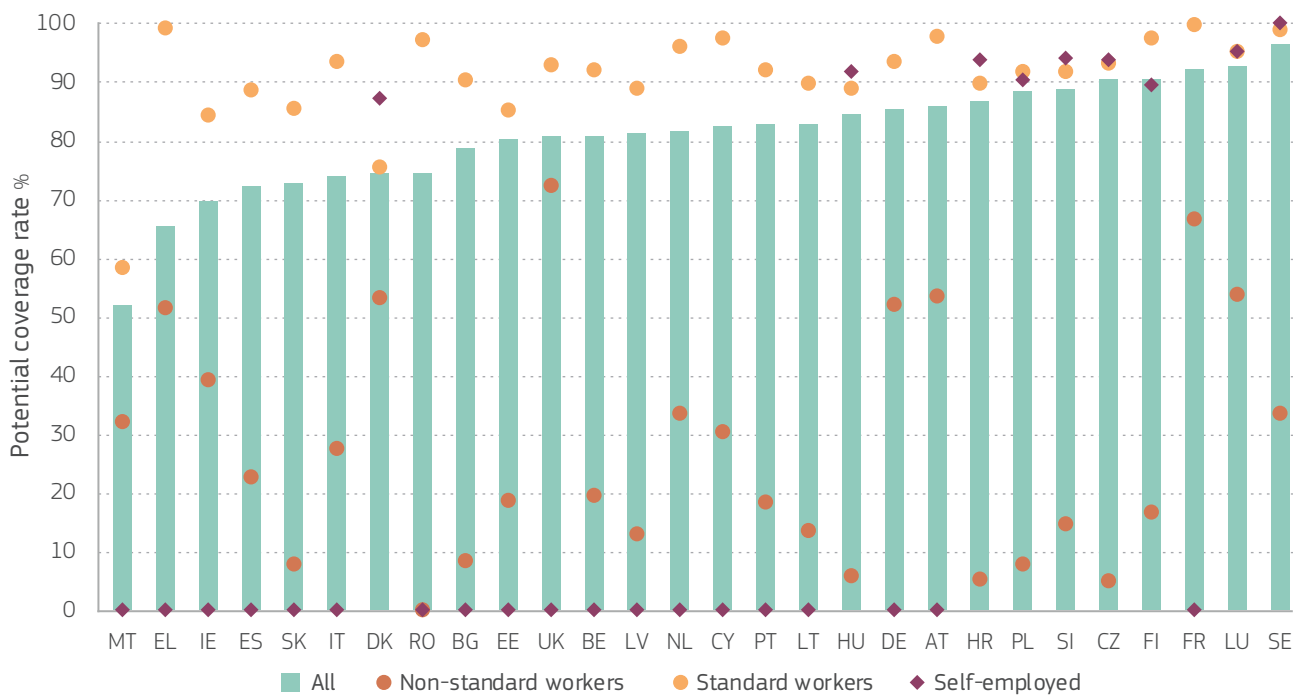


Figure 5.4: Potential coverage of unemployment insurance schemes in the EU (% share by type of worker)

Notes: The figure shows each EU Member State's potential coverage rate from their existing unemployment insurance for the entire working population (all), non-standard (atypical) workers, standard (typical) workers and the self-employed. Potential coverage measures the proportion of workers who would be covered by unemployment insurance schemes in the event of unemployment, based on their previous work history (months of work during the previous year). Non-standard workers refer to individuals with low work intensity, i.e. with weekly working hours less than one-third of the country median or with working hours equal to the weekly median but less than four months. Standard workers refer to individuals with weekly working hours more than one-third of the country median, and self-employed individuals are those who have self-employment income.

Source: Jara and Tumino (2018).

Figure 5.5 shows the net replacement rates, i.e. households' disposable income in the event of unemployment as a share of the pre-unemployment net income, with and without the reform. Extending the eligible rules for unemployment insurance for regular workers to self-employed workers would significantly increase their level of income protection and, hence, reduce poverty risks for this category of workers. More specifically, the risk of poverty among the self-employed in the event of unemployment would, on average, drop from 25% to 15% (see Jara and Tumino 2018 for more information). The largest reductions in the share of self-employed at risk of poverty would be observed in Belgium and Germany. In addition, this reform would narrow the poverty gap, meaning that the reforms would not only reduce the risk of poverty in the event of unemployment, but would also reduce its severity.

Needless to say, such a reform would come at a price. According to Jara and Tumino (2018), the average extra cost per self-employed person entering unemployment would range from 4% of the country's median household disposable income in Ireland to 80% in Bulgaria. Additional costs are above 50% of the median household disposable income in 4 out of 28 countries. Nevertheless, in the face of increasing disparities across categories of workers, welfare states need to adapt their policies and instruments to protect those most vulnerable.

5.2 Fiscal policies for social justice and inclusive growth

For EU Member States, taxes are the main source of government revenue. They provide the resources to finance education, health and public goods which are elementary for a fair

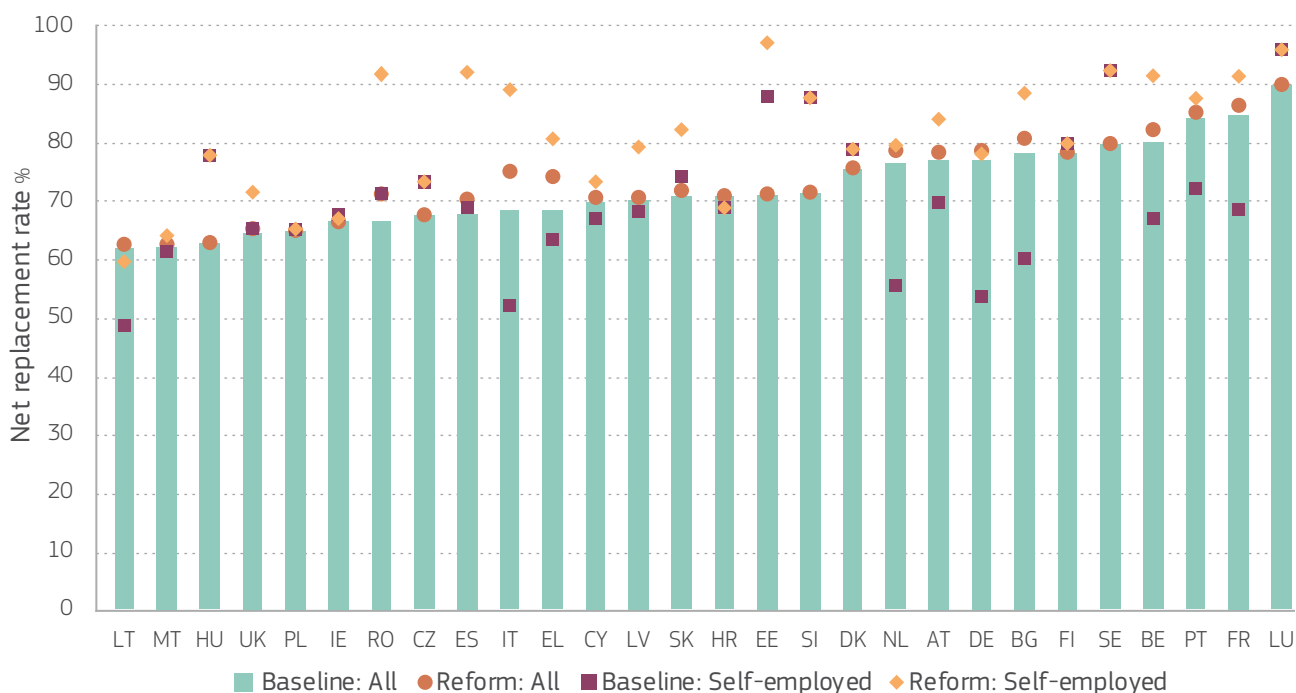


Figure 5.5: Mean net replacement rates: baseline and hypothetical reform scenario (%)

Notes: Calculations are based on EUROMOD simulations that compare the results of a baseline scenario (Baseline) where the self-employed are not covered by the existing unemployment insurance scheme with those of a counterfactual (Reform) scenario in which the self-employed would be eligible for unemployment insurance under the same conditions as employees. The figure shows the effect of the reform scenario on mean net replacement rates which measure the proportion of household disposable income that would be maintained if a member of the household fell into unemployment. The analysis assumes that the self-employed would be insured against unemployment risk at no extra cost to themselves. In addition, labour-supply disincentives, which might be associated with an extension of unemployment insurance coverage to the self-employed, are not accounted for.

Source: Jara and Tumino (2018).

and inclusive society and, in general, can only be insufficiently provided by markets. For a fair and inclusive society, the inequality of living standards and incomes must not get too large (Boarini et al. 2018; see also *Chapter 2*). Redistribution through taxes and transfers reduces the inequality of market incomes (see *Figure 5.2*).

Progressive taxation is a central instrument for redistribution and the reduction of income inequality (Stiglitz 2018; Bussolo et al. 2019). However, over the last two decades, many countries reduced personal top income tax rates and flattened their tax schedules. For example, in 1980, the personal top income tax rate stood at 60% in France, 56% in Germany and 72% in Italy, whilst in 2018, those rates were equal to 51.5%, 47.5% and 47.2%, respectively (Brys et al. 2016, EC 2018c). Across EU Member States,

the top personal income tax rate dropped between 1995 and 2018 on average by 8 pp to 39%. (Stiglitz 2018, p. 95, EC 2018c). The downward trend in top personal income tax rates has stopped since 2009, with some countries adopting steep increases in the context of fiscal consolidation efforts, in particular Greece (+15 pp), Portugal (+11 pp), Slovenia (+9 pp) and Latvia (+6.4 pp). Other countries with already high top personal income tax rates also raised them further, which is the case for Luxembourg (+6.8 pp) and France (+6.1 pp). In addition, some countries which had initially adopted flat-tax systems, such as Czechia, Slovakia, Lithuania and Latvia, have since introduced progressivity in their tax systems. *Figure 5.6* depicts some of these changes for certain exemplary countries and the EU.

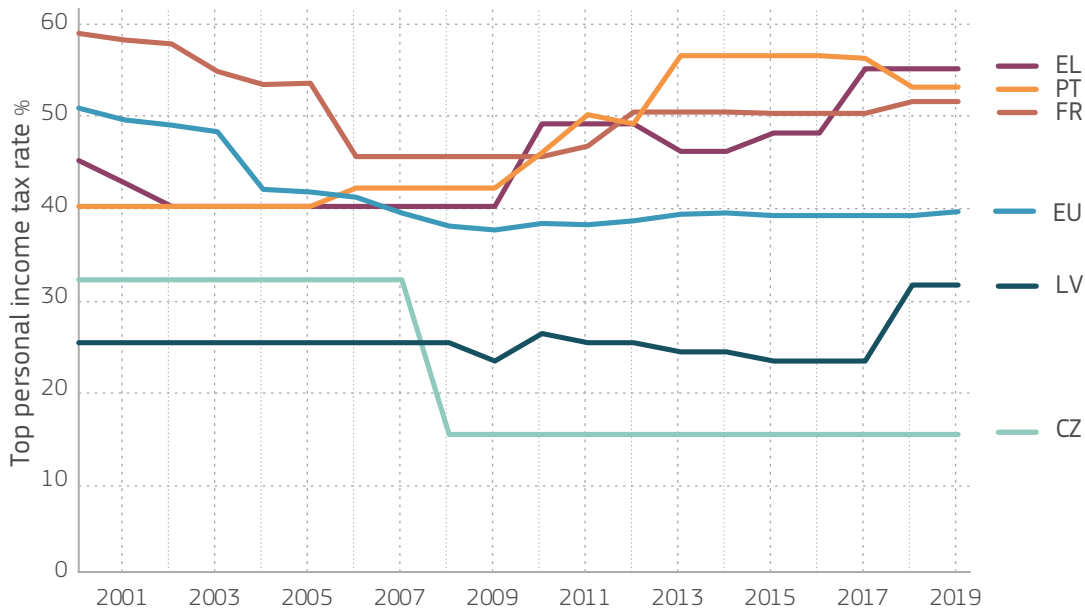


Figure 5.6: Top personal income tax rates, 2000-2019

Notes: Top statutory personal income tax rates, including general surcharges, are reported. The EU average is calculated for each year including only EU Member States at the time and using target and population weights. CZ: including a solidarity surcharge of 7% (since 2013), EL: including a solidarity contribution (for years 2011-2016), FR: including a social welfare contribution and welfare debt repayment, LV: flat tax was replaced by three progressive tax rates in 2018, PT: including a solidarity surcharge (since 2013).

Source: EC 2019, Taxes in Europe (database).

Wealth is more unequally distributed than income, reinforcing public demand for policy action in this area (European Parliament 2018). For instance, many countries have only very limited or no taxation on net wealth.⁴⁵ The main source of wealth-related taxes in the EU is housing taxation which can even be regressive (Barrios et al. 2016). Meanwhile, the downward trend in corporate income tax rates observed since the mid-1990 tends to reinforce the view that tax systems are more lenient within the corporate sector. The average top statutory corporate income tax rate for the EU was 34.2% in 1998, 23.7% by 2008 and 21.9% by 2018. Recently, this trend has slowed down and tax rates have stabilised in many EU countries (EC 2018c). However, there is considerable heterogeneity in changes in tax rates across countries. Between 2008 and 2018, there were considerable reductions in Hungary (-10.1 pp), the UK (-9.0 pp), Finland, Sweden and Greece (-6.0 pp) as well as increases in the top statutory corporate income tax rate for Latvia (+5 pp) and Portugal (+5 pp), for example.

Corporate tax avoidance is a matter of great policy concern at both international and EU levels. Leaked secret documents, such as the *Panama Papers* or the *Paradise Papers*, provide evidence for the widespread use of tax avoidance and evasion schemes through offshore entities, to the benefit of wealthy individuals and large corporations.⁴⁶ The European Commission has started several initiatives aimed at curbing aggressive tax planning and eliminating tax loopholes within the EU, including the proposal of a common corporate tax base (EC 2016b). The digital sector has also been under the spotlight, with major large internet companies being blamed for eluding taxes (Stiglitz 2018; EC 2017b; d'Andria 2019), leading the Commission to take policy initiatives in this area, too (EC 2018d). Recent JRC work has analysed specific features of taxation systems which are important in the pursuit of fairness. They include the progressivity of personal income taxes, the taxation of wealth, the fiscal and social costs of tax evasion, and the issue of taxing companies in the digital era. The findings are discussed below.

5.2.1 Increasing progressivity in flat-tax countries: the potential for positive equity and efficiency impacts⁴⁷

In their transition towards market economies from the 1990s onwards, several countries in Central and Eastern Europe introduced flat personal income-tax schedules, typically featuring a single tax rate coupled with a basic tax allowance. In 2017, six countries in the EU still had flat-tax systems, namely Bulgaria, Estonia, Hungary, Latvia, Lithuania and Romania, with flat personal income tax rates ranging from 10% in Bulgaria to 23% in Latvia.⁴⁸ Flat-tax systems are considered to be easier to administer and are also said to foster economic growth by reducing work and

investment disincentives. However, this latter narrative is highly contested in academic research. According to Stiglitz (2018, p.96), there 'is no evidence that these lower rates at the top (or lower inheritance and net-wealth taxes) have led to more growth. Indeed, empirical studies suggest that there is no relationship between lowering tax rates at the top and economic growth.'

Progressive tax structures (which tax higher incomes at increasing rates) are more common in the rest of the EU. Progressive taxation has two main advantages over flat taxes (Paulus and Tasseva 2018). They have more redistributive power and facilitate the absorption of economic shocks through so-called automatic stabilisers.

BOX 5.2 EU tax-benefit microsimulation model

The analyses of the tax-benefit systems presented in this chapter use EUROMOD, the EU's tax-benefit microsimulation model (<http://euromod.ac.uk>).

This model combines country-specific policy rules with representative household microdata (typically from the EU-SILC database). It simulates direct personal tax and social insurance contribution liabilities and cash benefit entitlements (including unemployment insurance). The model generates disposable individual and household income data and is therefore particularly suitable for distributional analysis. The simulations also incorporate fiscal effects and work-incentive data for groups according to socio-economic characteristics. When analysing a policy reform, the model is static and delivers the first-round effects ('the overnight effect').

The study implementing more progressive personal income tax schedules on flat-tax countries uses as a baseline the policy systems of the countries under analysis relating to June 2017. To model the second-round effects of the tax reforms, EUROMOD is combined with the macroeconomic model QUEST. Second-round effects allow for individual behavioural effects to be considered (via

a labour supply model) and general equilibrium macroeconomic feedback effects.

The study on wealth-related taxes uses the wealth extension of EUROMOD, EWIGE, and microdata from the Household Finance and Consumption Survey (HFCS). It uses the national tax and benefit codes applying in June 2017 in the countries considered. The HFCS data used refer to 2013 or 2014, depending on the country. Monetary values were updated to 2017 using relevant price indices.

The study on income under-reporting by the self-employed makes use of a recent application of EUROMOD that makes it possible to depart from the usual assumption of full tax compliance. The simulations are run on the tax-benefit rules in force in June 2018, using input data from the 2016 EU-SILC. Incomes reported in the 2016 EU-SILC refer to 2015.

In the study on social protection of atypical workers, the simulated tax-benefit rules refer to the 2017 policy systems. Microdata are derived from the 2015 EU-SILC and, for the UK, the 2014/15 Family Resource Survey.

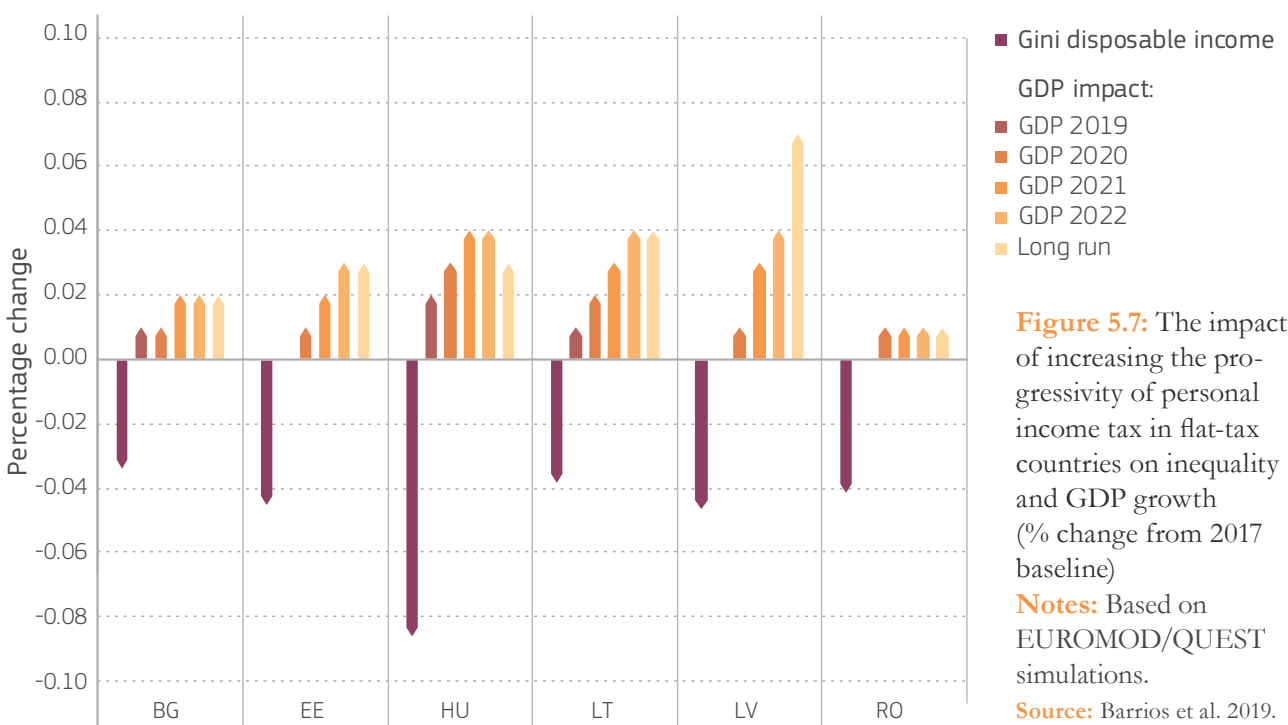
Automatic stabilisation results from the anticyclical working of the tax-benefit system, collecting higher taxes in boom times whilst allowing for an increase in household disposable income through lower taxes and higher social benefits in times of economic downturn.

In this context, a recent JRC study (Barrios et al. 2019) estimates the likely consequences of moving from a flat to a more progressive personal income tax schedule in the six EU countries featuring a flat-tax system in 2017 (see *Box 5.2* for more information). The simulated reform assumes a progressive personal income tax schedule with three income tax brackets, coupled with a refundable in-work tax credit that would render the reforms budget-neutral in each country. The estimated effects of such a reform on income inequality and GDP growth are shown in *Figure 5.7*. Making tax systems more progressive would reduce income inequality in all countries. Importantly, on top of addressing equity issues, in the medium term, this kind of reform would also have a modest but positive impact on aggregate employment and GDP. These estimates result from a strong positive effect exerted by the progressive tax reform on low-skilled/low-income workers, which compensates for any negative impact on the highly skilled.

5.2.2 The budgetary and redistributive effects of wealth-related taxes⁴⁹

EU countries' difficult fiscal situation in the aftermath of the financial crisis and mounting evidence suggesting that wealth accumulation by the so-called 'top 1%' has accelerated during recent decades justifies revisiting wealth-related taxes.⁵⁰ Several EU countries have recently shown renewed interest in the use of wealth-related taxes as a way to reduce the high tax burden on labour, improve public finances and foster fairer tax systems. In 2016, wealth-related tax revenues in the EU only amounted to 1.7% of GDP, with the property tax being the most revenue-bearing wealth-related tax.⁵¹

From a normative perspective, wealth is generally considered to be a major source of non-earned income, with long-lasting, exacerbating effects on inequality and adverse effects on equality of opportunity. Wealth-related taxes might therefore have a significant role in reducing inequalities, including those between generations (since wealth can be inherited). Besides these equity concerns, certain taxes levied on wealth, especially on immovable property, are often considered an option



for reducing the tax burden on labour and improving public finances. Another efficiency argument, however, points to the distortionary effects that some wealth-related taxes (e.g. taxes on financial and capital transactions and on net wealth) could have on savings and investment decisions.

A recent JRC study analyses wealth-related taxation in Belgium, France, Finland, Germany, Italy and Spain (see *Box 5.2* and Thiemann and Agúndez García 2019 for more information).

Figure 5.8 compares the Gini coefficient for market incomes (light-blue bars) with the wealth-based Gini coefficient (dark-blue bars). Wealth is distributed more unequally than market income. In the sample of countries considered, the inequality of net wealth is up to 30 pp higher than the inequality of market income (see also OECD 2018). The purple and yellow triangles in *Figure 5.8* show the redistributive effects of wealth-related taxation and the overall tax-benefit system without wealth-related taxation, respectively.⁵² While taxes and benefits, excluding

“Wealth is more unequally distributed than market income.”

wealth-related taxes, redistribute income in all countries (positive redistribution index), the redistributive effect of wealth-related taxes

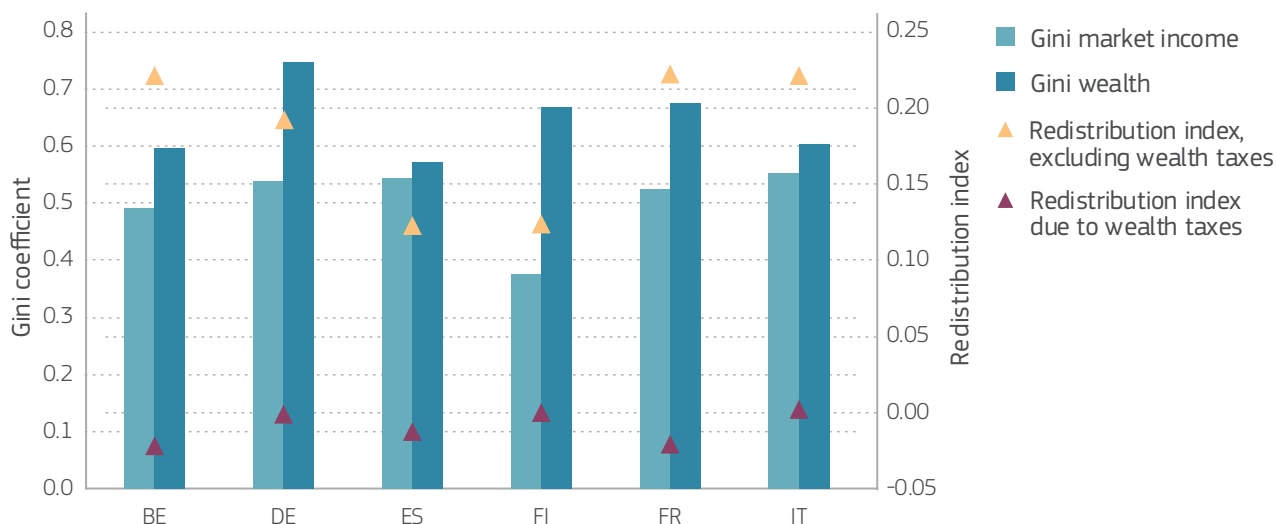


Figure 5.8: Income and wealth inequalities (Gini coefficients) and the redistributive effects of tax-benefit systems and wealth-related taxes

Notes: The values of the Gini coefficient for measuring inequality are indicated on the left y-axis. The values of the redistribution index are indicated on the right y-axis. The redistribution index, excluding wealth-related taxes, is calculated as: GINI (market income) minus GINI (disposable income, after applying the tax-benefit system, with the exception of wealth-related taxes). The redistribution index due to wealth-related taxes is calculated as: GINI (disposable income, after applying the tax-benefit system, with the exception of wealth-related taxes) minus GINI (disposable income, after applying the tax-benefit system, including wealth-related taxes).

Source: Thiemann and Agúndez García (2019).

as currently designed is small or even slightly negative, implying in some cases an increase in income inequality. In the six European countries under scrutiny, the redistributive power of wealth-related taxes is quite modest.

While this result should be treated with caution, as not all wealth-related taxes have been modelled in all countries because of data limitations, it highlights an issue in the current design of wealth-related taxes. More progressivity in wealth taxation and the reduction of options for tax deductions, which mainly benefit wealthy taxpayers, would improve the redistributive effect of wealth-related taxes. Such reforms should also be considered in light of country specificities and social preferences for redistribution.⁵³

5.2.3 The fiscal and social cost of tax evasion by the self-employed⁵⁴

Tax evasion is a major concern for fiscal policy in the EU.⁵⁵ Not only does it limit countries' capacity to finance their economic and social policies but it also violates the basic principles of tax justice. On the horizontal level, taxpayers with similar

incomes end up paying different amounts of taxes, while on the vertical level, the redistributive effect of the tax-benefit system is reduced and, in some cases, individuals with higher incomes might well pay lower taxes than poorer individuals.

Income under-reporting by individuals is believed to make up a large part of tax evasion as a whole. Arguably, the self-employed have more opportunities to under-report their income for tax purposes, since their income is typically not subject to third-party reporting.

Tax evasion is illegal and reliable figures on its magnitude in the EU are difficult to acquire. To improve understanding of this issue, a recent study (Kukk et al. 2018) estimates tax evasion among the self-employed in 14 EU countries by comparing differences in the consumption-income relationship of the self-employed and wage earners.⁵⁶ Estimates of tax evasion by the self-employed are reported in *Figure 5.9*. In Bulgaria and Cyprus, the self-employed under-report about 10% of the income reported by employees. In Latvia, the country with the highest share of under-reported income, this figure rises to more than 40%.

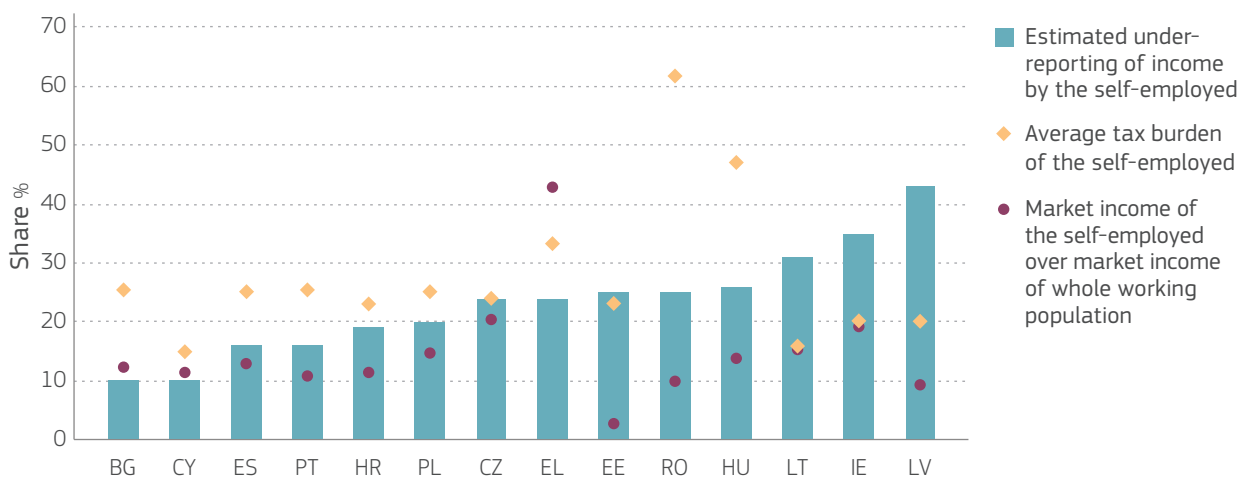


Figure 5.9: Estimated income under-reporting, average tax burden and share of total income of the self-employed

Notes: The under-reporting of income is the estimated percentage of income under-reported by the self-employed in relation to income reported by employees (using the Pissarides-Weber methodology). The average tax burden is the sum of direct taxes and social contributions in relation to market income, i.e. income before taxes and transfers, for the self-employed. The share of market income shows the ratio between the market income earned by the self-employed and that of the whole working population.

Source: Kukk et al. (2018) [estimated under-reporting], JRC calculations [average tax burden] and EU-SILC 2016 [market income share].

Recent JRC research (Agúndez García and Picos, 2019, see [Box 5.2](#) for further information) uses these estimates of tax evasion by the self-employed to quantify the implications for budgetary losses and income inequality (both shown in [Figure 5.10](#)). There is considerable variability in the estimated overall budgetary effects. In most countries, the estimated impact is below 0.6% of GDP. However, in Ireland, it may go up to 0.9% of GDP while in Greece, up to 1.6% of GDP may be lost due to income under-reporting by the self-employed, given the study's assumptions. Most of the budgetary impacts are due to the loss of tax revenue and social insurance contributions. This form of tax evasion also increases income inequality for all countries in the sample, with the exception of Bulgaria, Cyprus and Romania. In Ireland and Greece, income inequality is estimated to be more than 4% higher due to income under-reporting by the self-employed (see [Figure 5.10](#)). Among other reasons, this is because those self-employed practising tax evasion are mainly in the top 20% of the income distribution.

Given that tax evasion is illegal, the solution for this problem does not lie in the tax rules themselves. Instead, the creation of a civic spirit and improved monitoring and enforcement policies could be appropriate for reducing tax evasion. In contrast, tax avoidance is legal behaviour for which a remedy could be reformulation of the tax code.

5.2.4 Corporate tax avoidance in the New Economy

International agreements on the taxation of multinational corporations' profits are outdated and allow companies to engage in elaborate tax-avoidance schemes, saving them substantial tax payments. Globalisation is characterised by international and interlinked supply chains and a larger share of production managed by multinational companies. Together with the digitalisation of the economy, this has created the opportunity for certain companies to disconnect the location of economic activity from the place of taxation.

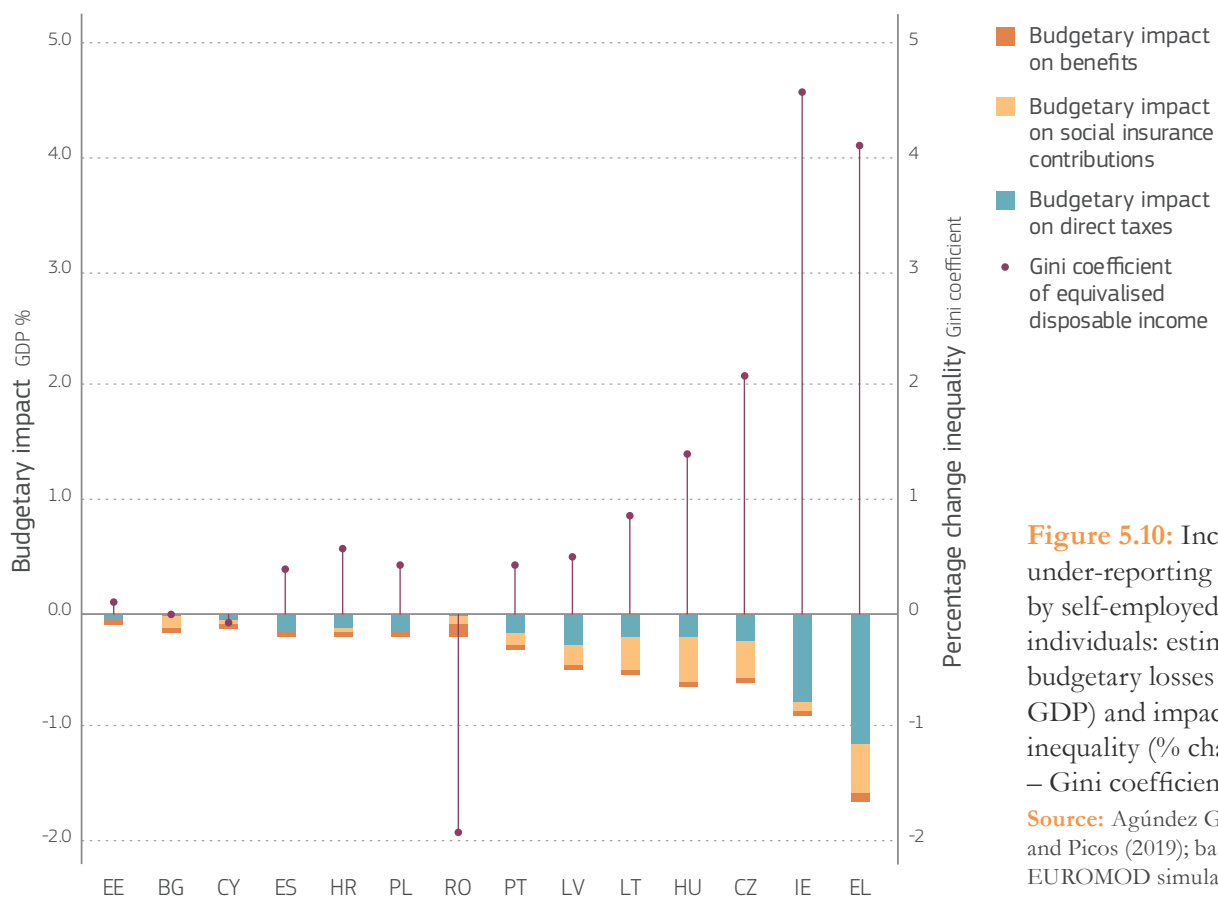


Figure 5.10: Income under-reporting by self-employed individuals: estimated budgetary losses (% GDP) and impact on inequality (% change - Gini coefficient)

Source: Agúndez García and Picos (2019); based on EUROMOD simulations.

More opportunities for profit shifting and tax-base erosion arise. In the EU, an estimated 35% of the profits of multinational corporations are shifted to tax havens (Tørsløv et al. 2018). Profit shifting is easier for New Economy companies whose business models rely heavily on intangible assets like patents, trademarks, copyrights and data.

Research by the JRC (d'Andria 2019) analyses the mismatch between the location of economic activity and the place of taxation for five large web companies in the two-year period 2015-2016.

Figure 5.11 depicts the share of web views of these companies originating from each country, expressed as the share of overall web views in all EU countries. Large countries (France, Germany, Italy and Spain) register high shares of web users and traffic. *Figure 5.12* shows the total turnover of the same five companies in each EU country, expressed as a percentage of their total turnover in the EU. The concentration of turnover in a small number of countries and the mismatch with the geographical distribution of web views is immediately evident. Over 32% of EU-wide turnover is concentrated in Ireland and around 28% is located in Luxembourg. In turn, countries where the bulk of users and traffic are concentrated, report much smaller shares of turnover (below 4%).

This indicates a mismatch between the place where economic activity occurs and the place where profits are reported and thus taxed. The most likely explanation is that web-based companies shift their profits to avoid taxes. This result indicates structural weaknesses in the existing international corporate tax system. This is not just limited to Europe. It is estimated that globally 40% of multinationals' profits (about EUR 530 billion) are shifted to tax havens (Wright and Zucman 2018; Tørsløv et al. 2018).

Such tax-avoidance behaviour by multinational corporations results in considerable loss of government tax revenue and distorts competition since those companies which avoid taxes can offer

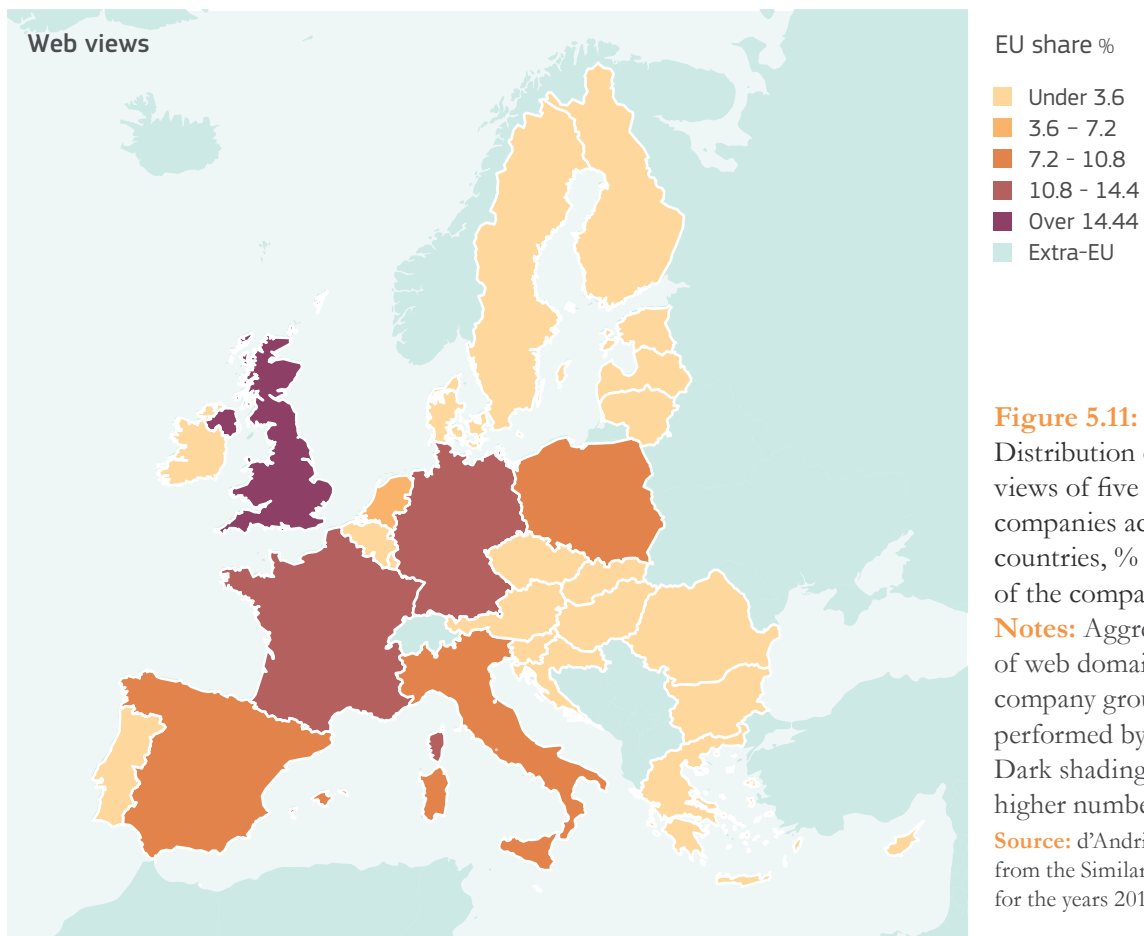
“Tax avoidance behaviour of multinational corporations results in considerable loss of government tax revenue and distorts competition.”

lower prices. The prevalence of this behaviour in the New Economy is also evident from effective tax rates: companies with a digital business model in Europe have an effective tax rate between 8.5% and 10.1%. This compares to an effective tax rate for traditional companies with fewer profit-shifting opportunities of about 20.9% to 23.3% (EC 2017b).

It is important to note that digital companies do not behave illegally. Tax-avoidance behaviour is made possible by loopholes in the existing tax laws and in some cases is enabled by conscious policy decisions by national governments (Stiglitz 2018). These findings indicate the need for coordinated action at the EU level.

5.3 Concluding remarks

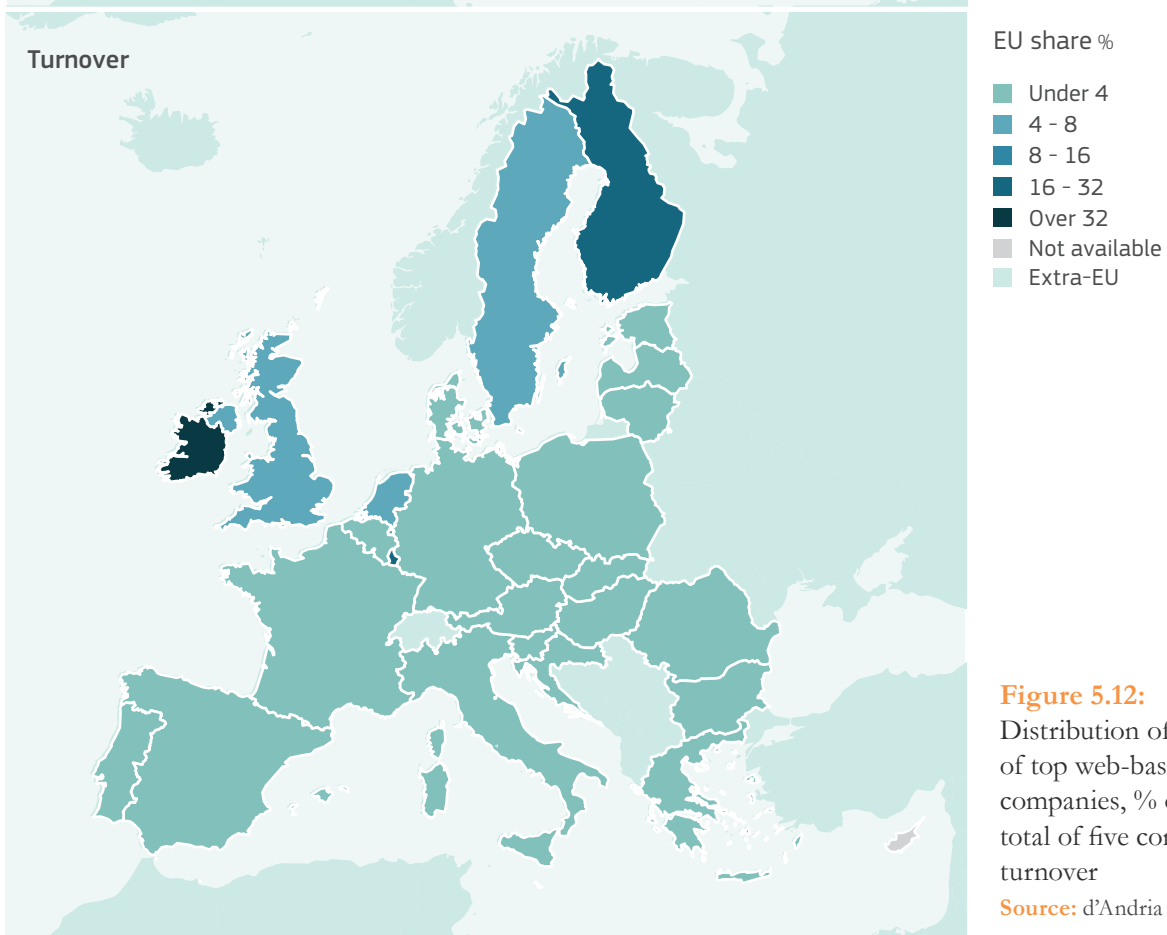
The evidence provided in this chapter suggests that EU Member States' tax and social-benefit systems offer a significant buffer against adverse income developments, although in some cases the efforts required to sustain these systems have been unequally shared among the population.

**Figure 5.11:**

Distribution of web views of five large web companies across EU countries, % of EU total of the companies' views

Notes: Aggregation of web domains by company group was performed by the JRC. Dark shading implies higher number of views.

Source: d'Andria (2019); data from the SimilarWeb database for the years 2016-2017.

**Figure 5.12:**

Distribution of turnover of top web-based companies, % of EU total of five companies' turnover

Source: d'Andria (2019).

The Great Recession has seriously challenged their efficacy and long-term financial viability. The now dominant view is that these systems need significant reforms. For example, tax contributions are often perceived as being unfairly distributed among taxpayers. This view is partly confirmed by recent JRC research summarised in this chapter, suggesting that in some instances wealthy people and multinational companies succeed in ‘escaping’ the tax system via tax avoidance or tax evasion. The greatest challenges for reforming welfare and tax systems lay ahead. Major structural changes are likely to have significant implications both for economic activity and for the financing of (and degree of protection provided by) welfare systems. For instance, digitalisation is a pervasive phenomenon blurring

the traditional nexus between the generation of economic value and social welfare. Atypical forms of work (e.g. teleworking, homeworkers, part-time workers and the self-employed) are also becoming increasing ‘typical’. This means that a growing share of the workforce neither contributes to nor benefits from basic social-protection safety nets which are still grounded on the one-job/one-workplace/regular salary model. This chapter highlights some specific areas of policy intervention such as the progressivity of the tax system, wealth taxation, tax evasion, taxation of the digital sector, and extending social protection to atypical workers. Evidence on the potential fiscal and redistributive impacts of hypothetical policy-reform scenarios is an important step towards motivating actual policy action.



CONCLUSIONS

Fairness matters

Many Europeans enjoy high living standards, paired with – when compared internationally – low income inequality and high levels of government redistribution. Nevertheless, many Europeans perceive their lives as being unfair. This perception is likely to undermine trust in traditional institutions and gives rise to social discontent.

Fairness is high on the EU political agenda, but what is known about the perception of fairness in European societies? There are several notions of fairness, many of which include elements of equality of outcomes (such as income) and equality of opportunity. The latter implies that unequal outcomes are tolerable to the extent that they are driven by differences in merit and effort and not by the consequences of circumstances which are out of individuals' control. This report does not embrace one specific fairness definition but presents snapshots of different but related fairness perspectives to inform policy.

Fairness is a subjective feeling in the eyes of the beholder. With this in mind, the JRC commissioned a special Eurobarometer on 'Fairness, inequality and intergenerational mobility' (EC 2018e) to assess individual perspectives of fairness. Based on this survey, [Chapter 2](#) of the report presents some descriptive statistics on fairness perceptions across Europe, highlighting differences across macro-regions and socio-economic groups. The chapter also discusses how fairness perceptions are related to well-functioning societies and individuals' well-being.

Given the importance of equality of outcomes for fairness perceptions, [Chapter 3](#) presents some stylised facts on income inequality for the whole of the EU before, during and after the Great Recession. 'Inequality of outcome among today's generation

A society-wide, inclusive and ongoing dialogue is needed to understand shifting realities of individual fairness perceptions

is the source of the unfair advantage received by the next generation' (Atkinson 2015). In unequal societies, unequal opportunities are offered to children so that an individual's social status strongly depends on family background. If this is the case, 'the best advice we can give to a poor child, keen to get ahead through education, is to choose richer parents' (Connell, 1995). [Chapter 4](#) therefore focuses on whether and by how much intergenerational mobility in education varies across Europe and how much it has changed across birth cohorts.

“Many Europeans perceive their lives as unfair. This perception is likely to undermine trust in traditional institutions and gives rise to political discontent.”

Welfare state arrangements with their respective tax and benefit systems provide an important buffer against adverse shocks. However, the structural changes the EU is facing put the existing welfare systems increasingly under pressure. *Chapter 5* addresses a number of related topics and discusses options for fiscal and social-protection interventions which are important in the pursuit of an inclusive and fair EU. This closing chapter focuses on some key conclusions drawn from the analysis and discussions in previous chapters.

Fairness, inequality and redistribution

Around 22% of Europeans perceive their lives as unfair, while more than half of all Europeans perceive their life as fair. However, these average figures conceal substantial differences across socio-economic groups and European macro-regions. People who are unemployed or have low income seldom agree that their life is fair. In Southern and Eastern Europe, the perception that life is fair is rather low. These perceptions of limited fairness need to be heard and acted upon since fairness is linked to general well-being. The advantages of a fair society need not come at the cost of less-efficient economies and weaker growth.



On the contrary, fairness and inclusiveness have the potential to promote competitiveness and growth.

Inequality is at the forefront of public debate. An analysis of EU-wide income inequality between 2006 and 2016 across the entire income distribution and for different income components reveals some clear macro-regional dynamics. In North-Western Europe, income levels declined proportionally among all income groups, while income inequality in this macro-region was stable and relatively low. In Central and Eastern Europe, incomes rose for almost all individuals and inequality did not change substantially. In contrast, inequality in Southern Europe increased significantly from 2006 until 2014. In this region, the increase in income inequality was mainly due to a growing income gap between median earners and the poor. The Southern European poor could not catch up after the financial crisis.

In Europe, individuals' fortunes are closely tied to family background. About 74% of Europeans with highly educated parents go on to complete higher education themselves, compared to only 28% of those with less highly educated parents. Social

“Fairness and inclusiveness have the potential to promote competitiveness and growth.”

status persistence has a dynastic component: the gap in educational attainment rises by 10 pp when also taking into account the influence of grandparents on lifetime prospects. Social mobility differs between European regions. In Eastern, Western and Southern Europe, the persistence of educational attainment across generations is much stronger than in Northern Europe and the Baltics. In Northern Europe, offspring with more highly educated parents and grandparents have, on average, ‘just’ a 37 pp higher probability themselves of completing higher education compared to their counterparts with less-favourably educated parents and grandparents. The persistence increases up to 57 pp for Southern Europe, indicating that this region has the lowest level of social mobility and the highest inequality of opportunity. This suggests that there is only limited intergenerational mobility in the EU.

The social model of European welfare states is unique in providing collective insurance against risks which are not or are only insufficiently insurable in the market. Technological change, globalisation and demographic change create new demands and challenges for existing welfare state arrangements. Atypical employment is on the rise, resulting in increasing shares of workers not properly covered by current social-insurance mechanisms. On the financing side, tax evasion and tax avoidance are major concerns for EU Member States’ fiscal policy. Tax avoidance is the result of a corporate taxation system which is no longer in line with fluid and intangible economies. Tax evasion violates the basic principles of tax justice. These challenges limit the financing capacity of EU Member States to uphold their social contract. There is room to revive the social contract through policy interventions on tax evasion, taxation of the digital sector and by adjusting social-protection systems to the new world of work.

Future outlook

Moral considerations of fairness and justice touch upon all aspects of life: from within-family relative bargaining power and resource sharing to

“Technological change, globalisation and demographic change create new demands and challenges for existing welfare state arrangements.”

community interactions, from the local provision of public goods to the mitigation of and adaptation to climate change. Questions of redistribution, process and responsibility are omnipresent. This JRC Fairness Report is based on cross-national and interdisciplinary research from across the JRC. With the intention of supporting a broad European-wide discourse on fairness in the EU, the report presents and synthesises recent findings on aspects of the perception of fairness, European-wide income inequality, educational persistence, social policy and taxation.

Given the multidimensionality of fairness, this report necessarily overlooks several important and timely topics relevant to the issue. Next to inequalities of income, inequality of wealth, health or subjective well-being are other important examples of outcomes distributed unevenly across Europe’s societies. Furthermore, several horizontal inequalities, such as gender and environmental inequalities, have not been addressed. These issues will be tackled in future JRC research to continue support for an EU discourse towards a fairer Union.

LIST OF ACRONYMS

■	BHPS	British Household Panel Survey
■	ESS	European Social Survey
■	EU	European Union
■	EU-SILC	European Union Statistics on Income and Living Conditions
■	GDP	Gross Domestic Product
■	SOEP	Socio-Economic Panel
■	OECD	Organisation for Economic Co-operation and Development
■	pp	Percentage points
■	PPS	Purchasing power standards
■	R&D	Research and development

ENDNOTES

- 1 See <https://ec.europa.eu/jrc/en/research/crosscutting-activities/fairness/community>
- 2 See <https://ec.europa.eu/jrc/en/research/crosscutting-activities/fairness/survey>
- 3 These numbers are based on 2016 data for 16 European countries. Life expectancy broken down by educational level is not available for all EU countries.
- 4 The European Commission's Reflection Paper on the Social Dimension of Europe (EC 2017a) discusses similar challenges and consequences. The present report takes a slightly different perspective by focusing on fairness and is based on recent evidence. The conclusions drawn are often in line with those of the Reflection Paper.
- 5 Political Guidelines for the next European Commission 2019-2024, https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf
- 6 The European Pillar of Social Rights is accompanied by a social scoreboard which monitors the implementation of the Pillar across EU countries. See <https://composite-indicators.jrc.ec.europa.eu/social-scoreboard/> for additional information on the set of indicators., Proposal for a Council Recommendation on access to social protection for workers and the self-employed, COM(2018) 132 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2018:0132:FIN>
- 7 Proposal for a Council Recommendation on High Quality Early Childhood Education and Care Systems, SWD(2018) 173 final, Brussels, 22.5.2018 COM(2018) 271 final, https://eur-lex.europa.eu/resource.html?uri=cellar:05aa1e50-5dc7-11e8-ab9c-01aa75ed71a1.0003.02/DOC_1&format=PDF
- 8 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A strong Social Europe for Just Transition, COM(2020) 14 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1580393189643&uri=CELEX:52020DC0014>
- 9 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. The European Green Deal, COM(2019) 640 final https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf
- 10 Fairness norms and fairness perceptions exhibit cross-national variation and change over the life cycle (Lesorogol 2017; Marien and Werner 2019). The context also seems to be important: unfavourable decisions taken by a group tend to be perceived as more unfair than if an individual had made the very same decision (Kouchaki et al. 2015).
- 11 For convenience The Eurobarometer on Fairness, inequality and intergenerational mobility will be referred to as Eurobarometer on Fairness.
- 12 Country groupings are detailed in *Annex 3*.
- 13 These general geographic and socio-demographic patterns are in line with the findings presented in the JRC Policy Brief 'Europeans' perceptions of fairness' (Dessart and Marandola 2019).
- 14 Different normative theories, with different implications for what people can be held responsible for, are available in the literature; see Cappelen et al. (2010).
- 15 The measurement and definition of well-being has been subject to extensive coverage in the literature over recent decades. This section will be limited to presenting some findings related to the most common measures and definitions of well-being, albeit it acknowledges the complexity of the topic. For more detailed reviews, see Diener (1984), Diener et al. (1999) and Diener (2012).
- 16 This might explain why early research on the link between inequality and happiness (Alesina et al. 2004) found a weaker correlation between them in the USA than in the EU.
- 17 Dessart and Mirandola (2019) measure country-level perception of fairness through agreement with the statements that 'I am confident that justice always prevails over injustice in our country', 'I believe that, by

and large, people get what they deserve in our country' and 'In our country, the political decisions are applied consistently to all citizens'. To assess the perception of life fairness, instead they adopt the agreement rates to the statements 'I believe that most of the things that happen in my life are fair' and 'I think that important decisions that are made concerning me are usually taken in a fair way'.

18

As Julian Le Grand (1990) points out, the nature of such a potential trade-off depends on the definition of efficiency with rather different implications if efficiency is defined on the base of Pareto optimality on economic growth.

19

Chapter 5 takes a closer look at the foundations, achievements and challenges of the welfare state.

20

Intergenerational social mobility, with a focus on education, will be discussed in greater detail in *Chapter 4*.

21

In contrast, Perugini and Martino (2008) find results which suggest a positive relationship between inequality and growth in European regions.

22

Developments in China are summarised in greater detail in the recent JRC Report 'China – Challenges and Prospects from an Industrial and Innovation Powerhouse' (Preziosi et al. 2019).

23

Calculating EU-wide income distribution has stringent data availability and comparability requirements. See Benczúr et al. (2017) for more details.

24

No data is available for Croatia.

25

Note the different scales in *Figure 3.5* and *Figure 3.6*.

26

Low-skilled workers in more developed countries have recently suffered less from automatisisation and digitalisation since a large number of these jobs had already been cut in the past (EC 2018a, p.62).

27

Patents have long been used as a proxy for technological innovations (Dosi et al. 1990; Eaton and Kortum 1999; Kortum 1997; Hagedoorn and Cloudt 2003).

28

Structural changes in employment relations are discussed in more detail in *Chapter 5*.

29

To tackle possible endogeneity issues, the generalised method of moments and instrumental variable identification strategies are employed.

30

Information on the socio-economic status of grandmothers is not available.

31

Motivated beliefs entail affective or instrumental reasons for an individual to deviate from objective cognition (e.g. rational ignorance). Bénabou and Tirole (2016) provide a comprehensive discussion on motivated beliefs and their production. Heuristics and biases (e.g. confirmation bias) are also important explanations of cognitive mistakes.

32

When positioning their parents and themselves on the imaginary 10-point social ladder, respondents have not been explicitly asked to compare themselves with their parents.

33

It is reasonable to assume that individuals report their parents' highest social status. However, for many of the younger individuals (e.g. Generation X), the social status might still improve which implies that self-perceived social mobility might be underestimated.

34

It is difficult to disentangle parental characteristics and exposure to different neighbourhood environments given that the choice of the latter is not random with respect to the family background. Recent research relying on administrative data tried to address the issue and quantify the effect of long-term exposure to a poor neighbourhood on individual outcomes. See, for instance, Chetty et al. (2014) and Hedman et al. (2017).

35

See Peragine and Biagi (2019, forthcoming).

36

More details on social expenditure in the EU are provided by Eurostat at: <https://ec.europa.eu/eurostat/documents/2995521/9665811/2-15032019-BP-EN.pdf/2340c61d-9dc5-4b5f-9b13-db36ff01c082>

37

In international global rankings on income inequality, corruption perception, the quality of health services and environmental performance, EU Member States are generally among the top performers. In all rankings, about half of the best-performing 30 countries are EU Member States. See *Table 4.1* in *Annex 4*.

38

Schwellnus et al. (2018) in particular find that the labour share has declined by around 3.5 pp in a sample of 17 OECD countries over the period 1995-2011.

39

A more detailed description of developments which can be expected to profoundly shape the world we live in are captured by the concept of megatrends: see https://ec.europa.eu/knowledge4policy/foresight_en

- 40 Detailed treatment of horizontal inequality can be found in, for example, Bussolo et al. (2019, p.39).
- 41 For details on demographic developments in the EU, see the JRC Report on Demographic Profiles.
- 42 Due to innovations in ICT and global access to the internet, the phenomenon of globalisation extends far beyond the integration of national economies into a global market to domains touching on social norms, state sovereignty, etc.
- 43 This section is based on the recent Fairness Policy Brief ‘Old welfare in new labour markets? The social protection of atypical workers’ (Jara and Tumino 2019).
- 44 Principle 12 of the European Pillar of Social Rights on social protection states: ‘Regardless of the type and duration of their employment relationship, workers, and, under comparable conditions, the self-employed, have the right to adequate social protection’.
- 45 The taxation of net wealth has been abandoned in many EU countries. For an overview and discussion of wealth taxation, see Drometer et al. (2018).
- 46 See in particular: <https://www.oecd.org/tax/beps/>
- 47 This section is based on the Fairness Policy Brief entitled ‘Increasing progressivity in flat-tax countries: potential positive equity and efficiency impacts’, (Barrios et al. 2019).
- 48 Note that Latvia adopted a progressive tax system on 1 January 2018.
- 49 This section is based on the Fairness Policy Brief ‘The budgetary and redistributive effects of wealth-related taxes’ (Thiemann and Agúndez García 2019).
- 50 See in particular Piketty (2013) and Alvaredo et al. (2013).
- 51 For most EU countries, wealth-related taxation is essentially represented by recurrent property taxes on immovable property. Currently, only Spain applies a tax on net wealth. France recently reformed its wealth tax, keeping only immovable property within the definition of wealth. Interestingly, in the 1970s, many EU countries featured wealth taxes which were progressively removed; see Krenek and Schratzenstaller (2018) and Drometer et al. (2018).
- 52 Wealth-related taxes are assumed to be paid from income.
- 53 Preferences for redistribution are discussed in *Chapter 3, Box 3.3*.
- 54 This section is based on the Fairness Policy Brief ‘The fiscal and social cost of tax evasion: the impact of under-reporting of income by the self-employed’, Agúndez Garcia and Picos (2019).
- 55 For EU activities against tax avoidance and tax evasion see, for example: https://ec.europa.eu/taxation_customs/fight-against-tax-fraud-tax-evasion
- 56 Self-reported consumption is assumed to be reported correctly while self-reported income can be under-reported. It is further assumed that wage earners report their income correctly, a rather unproblematic assumption since taxes on wages are often directly deducted by the employer.

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ANNEX 1

WORKSHOPS BY THE COMMUNITY OF PRACTICE ON FAIRNESS IN 2019

WORKSHOP

Towards an Absolute Measure of Poverty in the EU

organised by the JRC Finance and Economy Unit

30 September 2019

This workshop explored the latest developments in the measurement and monitoring of absolute poverty in the EU. Drawing on expertise from policymakers, academics and stakeholders, it discussed the methodological challenges and possible solutions for estimating poverty. It also explored the substantial differences emerging when using an absolute as opposed to a relative measure of poverty.

BOOK LAUNCH

Socio-economic Inequality and Student Outcomes: Cross-National Trends, Policies and Practices

organised by the JRC Monitoring, Indicators and Impact Evaluation Unit

14 October 2019

How much is pupils' achievement at school shaped by their family background? How have national trends evolved and what policies can offset socio-economic disadvantages? This event launched the eponymous Springer book which addresses these questions by connecting country-specific policy choices with student outcomes.

WORKSHOP

The Behavioural Aspects of Fairness

organised by the JRC Foresight, Modelling, Behavioural Insights and Design for Policy Unit

10 December 2019

This workshop investigated how insights from psychology and behavioural economics might improve our understanding of the determinants of individuals' perceptions of fairness. It also discussed how such perceptions influence the formation of individual policy-related preferences.

ANNEX 2

LIST OF PUBLISHED AND FORTHCOMING POLICY BRIEFS

Published JRC policy briefs

available at: <https://ec.europa.eu/jrc/en/page/fairness-policy-briefs-series-182382>

- **Like (grand)parent, like child? Multigenerational persistence of socio-economic status in the European Union**
Marco Colagrossi, Béatrice d'Hombres and Sylke V. Schnepf
- **Income inequality and support for redistribution across Europe**
Marco Colagrossi, Stylianos Karagiannis and Roman Raab
- **Sensing global patterns of inequality from space**
Thomas Kemper
- **Studying abroad – benefits and unequal uptake**
Sylke V. Schnepf, Elena Bastianelli, Zsuzsa Blaskó and Béatrice d'Hombres
- **EU employment from 2000 to 2014: factors behind (uneven) sectorial and regional dynamics**
David Martínez-Turégano
- **Europeans' perception of fairness**
François J. Dessart and Ginevra Marandola
- **Like marries like**
Anna Naszodi and Francisco Mendonça
- **Increasing progressivity in flat-tax countries: potential positive equity and efficiency impacts**
Anamaria Maftai
- **The fiscal and social cost of tax evasion: the impact of under-reporting of income by the self-employed**
Ana Agúndez García and Fidel Picos
- **Old welfare in new labour markets? The social protection of atypical workers**
Jara H. Xavier and Alberto Tumino
- **The budgetary and redistributive effects of wealth-related taxes**
Andreas Thiemann and Ana Agúndez Garcia
- **The Mediterranean poor: a key component of EU-wide income inequality**
Péter Benczúr, Zsombor Cseres-Gergely and Péter Harasztosi
- **Loneliness – an unequally shared burden in Europe**
Béatrice d'Hombres, Sylke V. Schnepf, Martina Barjaková and Francisco Mendonça
- **Brains and gains: innovation and income distribution in Europe**
Claudia De Palo, Stylianos Karagiannis and Roman Raab
- **Income distributions in the EU: gains, losses and convergence**
Zsombor Cseres-Gergely and Virmantas Kvedaras

Forthcoming policy briefs

- **Socio-economic background and educational inequalities**
Louis Volante, Sylke V. Schnepf, John Jerrim and Don A. Klinger
- **The unbearable intangibility of the internet: taxing companies in the digital era**
Diego d'Andria
- **Anti-establishment vote in European regions**
Nicola Pontarollo and Chiara Ferrante
- **Equality of opportunity: theory, measurement and policy implications**
Federico Biagi
- **Key facets of the fairness of tax and social benefit systems in the EU**
Ana Agúndez Garcia and Salvador Barrios

ANNEX 3

DEFINITION OF EU COUNTRY GROUPS AND ABBREVIATIONS

EU countries and abbreviations

■	AT Austria	■	IE Ireland
■	BE Belgium	■	IT Italy
■	BG Bulgaria	■	LT Lithuania
■	CY Cyprus	■	LV Latvia
■	CZ Czechia	■	LU Luxembourg
■	DE Germany	■	MT Malta
■	DK Denmark	■	NL Netherlands
■	EE Estonia	■	PL Poland
■	EL Greece	■	PT Portugal
■	ES Spain	■	RO Romania
■	FI Finland	■	SE Sweden
■	FR France	■	SI Slovenia
■	HR Croatia	■	SK Slovakia
■	HU Hungary	■	UK United Kingdom

Country groups 1

Country classification used in the report

North-Western EU (NW): AT, BE, DE, DK, FI, FR, IR, LU, NL, SE, UK

Southern EU (SE): CY, EL, IT, ES, MT, PT

Central and Eastern EU (CEE): BG, CZ, EE, HR, HU, LT, LV, PL, RO, SK, SI

Country groups 2

Baltic: EE, LT, LV

Benelux: BE, LU, NL

East: BG, CZ, HR, HU, PL, RO, SI, SK

North: DK, FI, SE

South: CY, EL, IT, MT, PT, ES

West: AT, DE, IE, FR, UK

ANNEX 4

PERFORMANCE OF EU COUNTRIES IN SEVERAL INTERNATIONAL RANKINGS

	GI	GGGI	CPI	WPFI	EPI	HDI	DI
Austria	21	53	16	11	8	20	16
Belgium	11	32	16	7	15	18	31
Bulgaria	57	18	71	111	30	51	46
Croatia	23	59	57	69	41	46	60
Cyprus	40	92	42	25	24	32	35
Czechia	4	81	42	34	33	27	34
Denmark	13	13	2	9	3	11	5
Estonia	32	33	21	12	48	30	23
Finland	7	4	3	4	10	15	8
France	32	12	23	33	2	24	29
Germany	24	14	12	15	13	5	13
Greece	53	78	59	74	22	31	39
Hungary	20	102	66	73	43	45	57
Ireland	25	9	19	16	9	4	6
Italy	47	68	54	46	16	28	33
Latvia	42	17	40	24	37	41	38
Lithuania	57	22	38	36	29	35	36
Luxembourg	39	59	8	17	7	21	12
Malta	19	90	46	65	4	29	18
Netherlands	13	27	8	3	18	10	11
Poland	22	42	36	58	50	33	54
Portugal	48	37	29	14	26	42	27
Romania	51	63	59	44	45	52	66
Slovakia	6	81	54	27	28	38	44
Slovenia	2	11	34	32	34	25	36
Spain	54	29	42	31	12	26	19
Sweden	18	3	6	2	5	7	3
United Kingdom	35	15	8	40	6	14	14
First 10	4	3	6	5	9	4	4
First 20	10	10	10	11	14	9	11
First 30	15	13	13	14	20	17	14
Total countries	107	149	180	180	180	189	167

Table: Performance of EU countries in several international rankings

Notes: All rankings reported are based on the 2018 indexes, except for the CPI (2017) and the Gini Index (most recent index between 2014 and 2017).

Source: Rankings computed by the authors based on indexes from World Bank (GI - Gini Index), World Economic Forum (GGGI – Global Gender Gap Index), Transparency International (CPI – Corruption Perception Index), Reporters Without Borders (WPFI – World Press Freedom Index), Yale University (EPI – Environmental Performance Index), United Nations (HDI – Human Development Index), Economist Intelligence Unit (DI – Democracy Index).

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