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Delegations will find attached the full report (Volume I) on the subject under reference, established by the Social Protection Committee (SPC) together with the Commission. Volume II (country profiles) is contained in doc. 9145/21 ADD 2.

The key conclusions which are drawn from this report are contained in doc. 9145/21 and are submitted to the Council (EPSCO) with a view to their endorsement on 14 June 2019.

# The 2021 Pension Adequacy Report: current and future income adequacy in old age in the EU

***Volume I***

*Joint Report prepared by the Social Protection Committee (SPC) and the European Commission (DG EMPL)*

2021

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# INTRODUCTION

The 2021 Pension Adequacy Report (PAR) is the fourth edition of the report, prepared every 3 years by the Social Protection Committee (SPC) and the European Commission. The report aims to present a comparative analysis of the degree to which pension systems in the EU Member States enable older people to retire with an adequate income today and in the future, reflecting pension reforms, as well as underlying changes and current or future challenges in our societies. Since 2012, the Pension Adequacy Reports[1] have contributed to the policy debate on the purpose and direction of pension reforms in the EU Member States, aiming to present a balanced reflection on the social adequacy and financial sustainability of pensions as two sides of the same pension policy coin.

The report consists of two volumes. Volume I is devoted to a comparative analysis of pension adequacy in the EU, whereas Volume II (country profiles) provides a detailed discussion of developments in each of the 27 Member States.

## Policy context

The PAR analysis serves to underpin the policy efforts at national and EU level to ensure adequate old-age income and pensions, a policy goal recently proclaimed in the **European Pillar of Social Rights (EPSR)**.[2]

Income inequality has been gradually increasing in many Member States over recent decades. The increasing disparities, the spread of non-standard, precarious forms of employment and the persistent gender gaps in pay, career and pensions are fuelling debates around the need to strengthen Europe's social dimension, focusing on the core question of how to support the creation of more and better jobs and provide adequate social protection for all.

In many countries, reforms have been made to ensure the financial sustainability of pensions. These reforms are starting to give visible results that affect the living conditions of older people, and in many cases are leading to a decline in pension adequacy over the long run.

Since the 2018 PAR, important steps have been taken to put the EPSR principles into practice. The work-life balance directive,[3] adopted by the Parliament and the Council in June 2019, supports equal sharing of caring responsibilities between men and women and, thereby, female labour market participation. This is a key precondition for equal opportunities to earn pension rights, and thus for reducing the old-age poverty risk for women. The Council recommendation on access to social protection[4] of November 2019 aims to ensure that all workers, regardless of the type of employment relationship, and the self-employed should

[1] The Pension Adequacy Report (PAR) has been published every three years since 2012. The previous, 2018, edition can be found at https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8084&furtherPubs=yes

[2] https://ec.europa.eu/social/main.jsp?catId=1226&langId=en

[3] Directive (EU) 2019/1158 of the European Parliament and of the Council of 20 June 2019 on work-life balance for parents and carers.

[4] Council Recommendation (EU) 2019/C 387/01 of 8 November 2019 on access to social protection for workers and the self-employed.

have access to and be effectively covered by social protection schemes, including old-age pensions.

In a broader context, the PAR and the Ageing Report[5], published by the Economic Policy Committee (EPC) and the Commission,[6] aim to assess the adequacy of pensions and the financial sustainability of pension systems, respectively, thus complementing one another. Following up on the key conclusions of the 2018 editions of both reports, the SPC and the EPC adopted a **joint paper on pensions** in November 2019.[7] This paper brings together the key observations from both strands of work and puts forward a comprehensive overview of recent reforms, long-term perspectives and policy implications for achieving adequate and sustainable pensions. It also identifies issues that require further attention in the current edition of the PAR, such as questions related to the need for solidarity between and within generations and the need to explore new sources of financing.

The 2018 PAR also called for further exploration of the potential contribution of supplementary pensions to pension adequacy. The **high-level group of experts on supplementary pensions,** set up by the Commission, adopted its final report in December 2019.[8] The report identifies the main challenges, policy responses and recommendations for action at both national and European level. The group's findings stress that, depending on the national pension system, supplementary pensions can play a key role in old-age income maintenance; however, policies have to mitigate associated risks, such as unequal access, that can exacerbate income inequality in old age.

Finally, there are some additional developments that influence the current 2021 PAR. First of all, the SPC and its Indicators Sub-group (ISG) have been working to identify suitable indicators for **a pension adequacy benchmarking** framework. The framework has not yet been adopted by the SPC, but the ISG reached a preliminary agreement regarding a number of outcome and performance indicators. Some of those have already been used in the PAR, such as old-age poverty indicators and selected cases of theoretical replacement rates. The current PAR also explores additional items, such as policy levers that could eventually become part of the benchmarking framework.

In parallel with the PAR, the SPC and the Commission have decided to prepare a joint **report on long-term care (LTC)** to analyse key common challenges in the area of access and affordability, quality, workforce, financing and sustainability of LTC, complemented by information on recent reforms in Member States and country fiches. The report will thus provide a state of play of 'LTC preparedness' across the EU and will serve as a basis for policy dialogue with Member States. Analysis of the PAR and LTC report is intended to be

[5] https://ec.europa.eu/info/publications/2021-ageing-report-economic-and-budgetary-projections-eu-member-states-2019-2070_en

[6] Published every three years since 2006. The 2018 edition is available at https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-economic-and-budgetary-projections-eu-member-states-2016-2070_en

[7] Economic Policy Committee and Social Protection Committee (EPC/SPC), Joint paper on pensions 2019, cfin.cef.cpe(2020)469700, https://europa.eu/epc/system/files/2020-01/Joint-Paper-on-Pensions-2019.pdf

[8] European Commission, Final report of the High-level Group of Experts on Pensions, 2019, https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=38547

complementary, given that the ability of social protection systems to support living standards in old age depends on pension benefits, as well as on the availability of public or subsidised LTC services, and the interaction between them.

The PAR also touches upon the specific problem of gender gaps in pensions and pension entitlements. The **gender equality strategy 2020-2025** notes that accumulated lifetime gender employment and pay gaps, including part-time work and career gaps linked to women's caring responsibilities, result in a wide pension gap and contribute to a higher poverty risk for older women.[9]

On 27 January 2021, the Commission published a **green paper on ageing,**[10] launching a broad policy debate on the challenges and opportunities of Europe's ageing society. The green paper sets out the speed and scale of demographic change in society, as well as its impact on policies, and considers the required policy response, including as regards adequate, safe and sustainable pensions.

On 4 March 2021, the Commission adopted the **European Pillar of Social Rights Action Plan.**[11] The plan outlines concrete actions to further implement the principles of the European Pillar of Social Rights as a joint effort by the Member States and the EU, with the active involvement of social partners and civil society, and proposes employment, skills and social protection headline targets for the EU, to be achieved by 2030. Among other things, the plan calls for further reflection on the financing of social protection, and notably the financing models to enable continued solidarity between and within generations.

### *Box 1: The impact of the COVID-19 crisis on pension adequacy*

*The empirical data used in the current edition of the PAR cover the period until 2019, while the legislative reforms are taken into account until 1 July 2020. Thus, the evidence available at the time this report was produced largely pre-dates the impact of the COVID-19 crisis. Only very tentative observations about the estimated impact of the COVID-19 crisis on pension adequacy can be made at this stage; the 2024 edition of the PAR will analyse in depth the impact of the pandemic on pension adequacy.*

*The experience of previous economic downturns, including that brought about by the 2008-2009 financial crisis and analysed in previous editions of the PAR, shows that in the short term, pension incomes are more resilient to economic fluctuations than are work incomes, and they help secure a stable income during an economic downturn. The pension rights of those retiring during a downturn can, however, be adversely affected in some cases; in particular, in funded defined contribution schemes [12] or in public pension schemes, where the value of pension rights is adjusted to*

[9] A Union of Equality: Gender Equality Strategy 2020-2025, COM(2020) 152 final of 5 March 2020.
[10] Green Paper on Ageing: Fostering solidarity and responsibility between generations, COM(2021) 50 final of 27 January 2021.
[11] The European Pillar of Social Rights Action Plan, COM(2021) 102 final of 4 March 2021.
[12] European Commission, Final report of the High-level Group of Experts on Pensions, 2019, https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=38547

*macroeconomic variables. To address this, some Member States have revised their pension rules to protect those retiring during an economic downturn;*[13] *hence, the impact of the COVID-19 crisis on newly granted pensions could be more contained where such measures are in place.*

*The long-term impact of the COVID-19 crisis on pension systems is likely to be significant, though, through its impact on labour markets, financial markets and fiscal sustainability. According to the OECD, the expanded coverage of job-retention schemes and unemployment benefits during the COVID-19 crisis has provided relatively good protection for the pension rights of employees, including those with fragmented careers or non-standard work contracts (OECD, 2020). The situation of the self-employed has been more varied: while several Member States have subsidised or credited social security contributions for the self-employed as part of the support measures, this has not been the case everywhere.*[14] *Beyond these time-limited measures, the crisis is likely to have long-lasting and structural effects on the labour market, which could then be transmitted to future pension benefits. At the same time, the deterioration in public finances resulting from efforts to dampen the economic and social effects of the crisis could exacerbate the pressure on the fiscal sustainability of public pension schemes.*

## Scope of the report

The report's main focus is on **old-age pension systems** in the 27 Member States of the EU (EU-27). An old-age pension is a benefit payable to persons who have reached the eligibility age, for which entitlement is primarily based on some form of prior record, such as (paid or credited) contributions, employment or residency. The report's analysis primarily focuses on statutory pensions, incorporating the adequacy contribution of supplementary pensions where relevant.

The report also analyses the role of **survivor pensions,** where the entitlement is based on derived rights, in providing adequate old-age income. Furthermore, as many people reach old age without having accrued sufficient pension entitlements, the report also looks at **minimum income provisions** for older people. Some elements of minimum pension benefits may depend on current need and be income or means tested.

Beside pensions, the living standards of older people also depend on other social protection benefits, as well as on a broad range of public policy areas, including housing, social services, taxation, etc. This Pension Adequacy Report will tentatively explore, in particular, the interaction between pensions and **long-term care** in shaping older people's living standards, for this purpose drawing on the parallel SPC/Commission report on long-term care, and how pension-related **taxation** affects income distribution, including in old age.

When analysing the developments in pension systems and their impact on adequacy, the report zooms in on the reforms adopted in Member States since the situation described in the previous PAR (i.e. between 1 July 2017 and 1 July 2020), while also reflecting on longer-term trends and ongoing policy debates.

[13] See 2018 PAR.

[14] OECD, *OECD Pensions Outlook 2020*, OECD Publishing, Paris, 2020, https://doi.org/10.1787/67ede41b-en

For the sake of comparison, the report refers to the population aged 65 years and above (65+) as a general proxy for older people, and to the population aged 55-64 as a proxy for potential older workers. The effective ages when people withdraw from the labour market and cease to rely on work income vary between Member States, population groups, and between the current situation and future projections; the report acknowledges and analyses such differences. Nevertheless, the 65+ proxy allows for continuity and consistency of analysis and is close to the current average effective labour market exit age in the EU. The report also analyses the situation of other age groups, such as 75+, where relevant.

### The concept of pension adequacy

The 2021 PAR follows the same concept of adequacy as the previous (2018) edition, distinguishing three main dimensions of adequacy: **(i) poverty protection, (ii) income maintenance and (iii) pension/retirement duration.**

**First, the adequacy of pensions is measured by their ability to prevent and mitigate the risk of poverty in old age,** considering income poverty risks, as well as material and social deprivation among women and men aged 65 and over. It should be noted that, while pensions account for four fifths of older households' income, living standards in old age are also affected by households' other income sources, assets and available services, and how income matches their real needs; these considerations are briefly reflected in the report.

**Secondly, the adequacy of pensions is measured by their capacity to replace income earned before retirement** and hence limit the financial impact of transiting from work into retirement, thereby assessing the extent to which standards of living before retirement can be maintained. This can be measured either by comparing the income of the same individuals before and after retirement, or, as a proxy, by comparing the income of the older/retired population to that of the younger/working population. The current income replacement capacity of pension systems can be measured using empirical data, while the theoretical replacement rate methodology, based on standardised career profiles, allows us to project future developments and the impact of various career scenarios on pension income.

**Thirdly, it is important to consider the duration dimension.** Here, the PAR considers two aspects. To start with, the duration of retirement as such is a measure of adequacy (i.e. whether people can spend **a reasonable share of their lives in retirement**). Different cohorts, or socioeconomic groups within the same cohort, can have different life expectancy and thus pension duration, unless pension systems adjust for such differences. Furthermore, **adequacy changes over the time people spend in retirement,** reflecting changes in income levels, household composition, health status and need for care. Policies seek to support the living standards of older people through pension indexation and the provision of health care and LTC services.

Under sustainability constraints, there is in practice a trade-off between different dimensions of adequacy. Thus, some countries prioritise the protection of the overall retired population against poverty, while others seek to maintain a close link between retirement income and former earnings. Likewise, duration is balanced against the other aspects: while a very high

retirement age could allow high pension benefits to be paid, the average time period when people could enjoy those benefits would be slashed.

The current income adequacy of older people in the EU, along the conceptual lines described above and primarily based on 2019 data,[15] is discussed in Chapter 1 of the report.

### Reforms and future adequacy

European pension systems and their performance are constantly evolving, reflecting changes in the demographic structure, in the economy and the world of work, as well as in the policy dynamics in Member States. Therefore, it is necessary to regularly take stock of the latest reforms in national pension systems, as well as to update the projections for future developments in pension adequacy. Chapter 2 of the PAR therefore provides an overview of recent reforms in Member States' pension systems, aiming to identify the main reform trends and their focus in terms of pension adequacy.

Pension reforms affect retirement incomes with some delay. This is due partly to the necessary transitional measures, but also to the fact that some aspects play out over time, such as the gradual adjustment of pensionable age or benefit level to life expectancy. Thus, assessing reforms requires certain assumptions to be made about future developments and different scenarios to be considered. These need to cover employment, financial and economic developments in a long-term perspective, as well as how today's young workers will adapt to reformed pension systems.

In Chapter 3, the theoretical replacement rate (TRR) methodology, based on stylised cases assuming standardised career profiles, allows us to project how the income replacement capacity of pensions could develop in the future, by comparing income replacement rates between people who retire in 2019 and people who start working in 2020, at the end of similar careers. Further, it allows us to gauge how differences in earnings levels, career duration, age of retirement and various life events (such as career breaks related to caring activities) affect pension adequacy.

### Sharing risks and resources in pension systems

Pension systems – and tax-benefit systems more broadly – contribute to the sharing of resources across population groups and income levels. The EPC/SPC joint paper on pensions[16] highlights projected sustainability issues, especially in the coming two decades, when ageing will have its greatest impact on countries where pension expenditure is high, while the working-age population will start to fall substantially. Demographic and labour market developments bring into focus the rules that determine how risks and resources are shared between different groups in society.

The PAR analyses how the sharing of risks and resources in pension systems is evolving, focusing on income inequalities and income replacement for people with different income

[15] Most of the data comes from the EU-SILC survey, for which the most recently available year is 2019. The most recent year of other data used in the report varies.

[16] Economic Policy Committee and Social Protection Committee (EPC/SPC), *Joint paper on pensions 2019*, cfin.cef.cpe(2020)469700, https://europa.eu/epc/system/files/2020-01/Joint-Paper-on-Pensions-2019.pdf

levels. The report also covers gender differences in pension incomes. Furthermore, the PAR analyses the distributional impact of the taxation of pension contributions and benefits, and the role of solidarity mechanisms (such as minimum benefits or pension credits) and links these analytical angles to the current policy debate on social fairness.

Among the potential impacts of the changes in the economy and world of work is a decreasing share of labour income, while wage developments do not necessarily follow productivity developments. This would put pressure on the financing of pension systems, as they are largely based on earmarked contributions on labour. Hence, Member States may need to reconsider how their social protection systems, and pension systems in particular, are financed. The PAR contributes to this debate by analysing the financing and expenditure of pension systems and reflecting on the possible sources of financing in relation to ensuring solidarity and adequacy against the background of a changing world of work and of the digitalisation process.

The discussion on sharing risks and resources in pension systems and the sources of financing pensions is presented in Chapter 4 of the PAR.

# 1 CURRENT LIVING STANDARDS OF OLDER PEOPLE

**This chapter examines the current situation of people aged 65 and over (henceforth 'older persons') with a focus on the poverty risks, deprivation, relative incomes and the duration of retirement.** Pensions protect older persons from poverty and ensure that their incomes do not fall excessively upon exiting employment. Against this background, Section 1 reports on trends in poverty risks and deprivation trends across age groups, between men and women, and over time. This helps identify the main characteristics of people exposed to the highest risk of poverty or social exclusion. Inequality in old age is key to understanding the relationship between income maintenance and poverty, and this is the cornerstone of Section 2. Section 3 analyses the duration of retirement as a key dimension of pension adequacy, and complements the pensions-based analysis in this chapter by addressing how services support older persons' living standards throughout retirement.

**Older persons are a significant part of the European Union (EU-27) population.** In 2018, they totalled about 89 million, or 20.0 % of the total population, made up of 51 million (57 % women) and 38 million (42 % men). Of these 89 million, about 27 million lived as singles,[17] and 43 million were part of a couple, with or without children.[18] Women make up a strong majority among the single older persons: almost 20 million women versus 7 million men. There are 117 million old-age and survivor pensioners, including people younger than 65 and some who do not live in the EU, but qualify for a pension from an EU country. In 2060, the number of older persons will have risen to 131 million, made up of 72 million women and 59 million men.[19]

## 1.1 Protection against poverty or social exclusion

**Protecting older persons against poverty is a key function of pension systems and one of the three dimensions of pension adequacy, as defined and used in this report.** The ability of pension systems to provide older persons with adequate incomes contributed to the efforts to lift at least 20 million Europeans out of poverty or social exclusion by 2020, compared to the year 2008 – a target that was set in the Europe 2020 strategy.

### *1.1.1 Poverty and social exclusion*

**Old-age poverty rates have decreased since 2008, but due to the increasing number of older persons, the number of older people actually at risk of poverty or social exclusion has remained stable.** In 2008, there were 16.7 million people aged 65 and above and at risk of poverty or social exclusion.[20] These decreased to 14.9 million in 2010 and increased again to 16.1 million in 2019. This rise is largely due to an increase in the older population, from 75.7 million in 2008 to 90.5 million in 2019. In future, even if pensions and services can

[17] People not living in a couple relationship; this includes widowed and separated people.
[18] Some older people live in other types of households.
[19] Eurostat, population projections, code proj_19np.
[20] EU-SILC data from 2008 is not available for Croatia. This estimate applies the observed 2010 AROPE rates in Croatia to 2008 as an approximation.

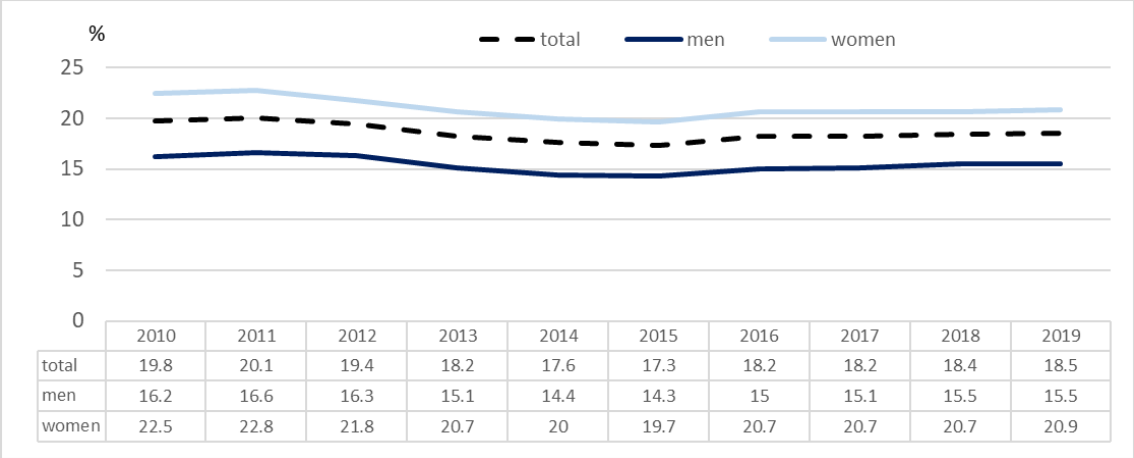
continue to reduce poverty rates, the projected increase in the older population is likely to raise the number of older people at risk of poverty.

**Almost 18.5 % (16.1 million) of older persons were still at risk of poverty or social exclusion (AROPE)[21] in the EU-27 in 2019, although this share had fallen from 23.3 % in 2008.** The 2019 rate stood at 20.7 % among women and 15.5 % among men in 2019 (Figure 1). The AROPE indicator for those aged 65+, as used in the Europe 2020 strategy, is a composite of the monetary poverty indicator in Figure 5 and the severe material deprivation indicator in Figure 7 below. As values for both indicators have decreased over time in the EU-27, as will be shown below, so has the old-age AROPE, from 19.8 % in 2010 to 18.2 % in 2016, and 18.5 % in 2019. Compared to the high counts in 2010, by 2019 the number of people at risk of poverty or social exclusion had fallen by 9.2 million (to 57.4 million) among the working-age population (aged 18-64) and had increased by 1.2 million (to 16.1 million) among older persons (aged 65+). This difference is mainly due to population changes. Trends in the two AROPE components are shown below.

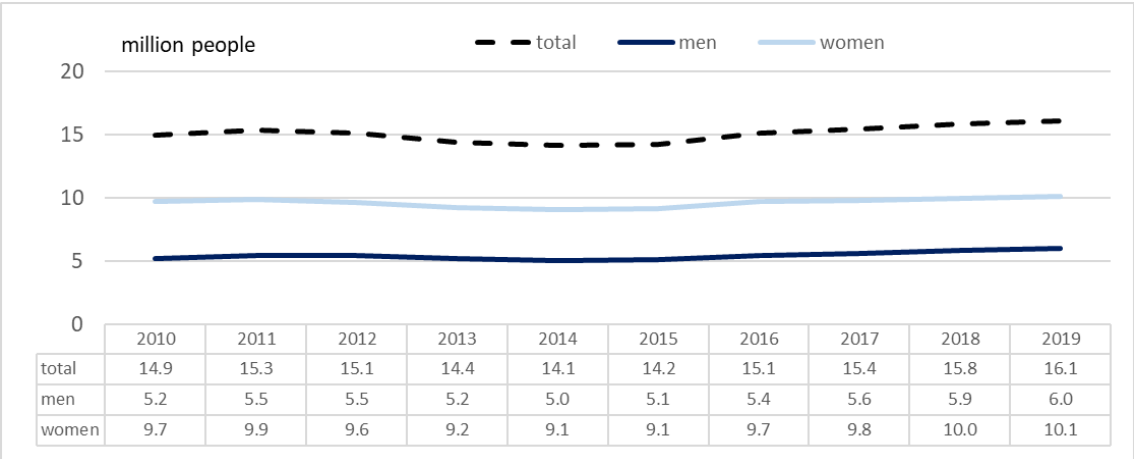
[21] The rate of those at risk of poverty or social exclusion combines measures of (i) relative income, (ii) severe material deprivation and (iii) work intensity in the household. However, the third indicator applies only to the working-age population and is not calculated for older persons. As a result, AROPE rates for the older population and the working-age population are not directly comparable. There is no double-counting of people on low income and with high deprivation. The index counts all those older persons who are income poor, plus those who are materially deprived but not income poor.

**Figure 1: Those at risk of poverty and social exclusion (AROPE), older persons (65+), EU-27, 2010-2019, by sex, % and million people**

*Poverty and social exclusion decreasing in the post-crisis years, but slightly up again since 2015*




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| total | 19.8 | 20.1 | 19.4 | 18.2 | 17.6 | 17.3 | 18.2 | 18.2 | 18.4 | 18.5 |
| men | 16.2 | 16.6 | 16.3 | 15.1 | 14.4 | 14.3 | 15 | 15.1 | 15.5 | 15.5 |
| women | 22.5 | 22.8 | 21.8 | 20.7 | 20 | 19.7 | 20.7 | 20.7 | 20.7 | 20.9 |




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| total | 14.9 | 15.3 | 15.1 | 14.4 | 14.1 | 14.2 | 15.1 | 15.4 | 15.8 | 16.1 |
| men | 5.2 | 5.5 | 5.5 | 5.2 | 5.0 | 5.1 | 5.4 | 5.6 | 5.9 | 6.0 |
| women | 9.7 | 9.9 | 9.6 | 9.2 | 9.1 | 9.1 | 9.7 | 9.8 | 10.0 | 10.1 |

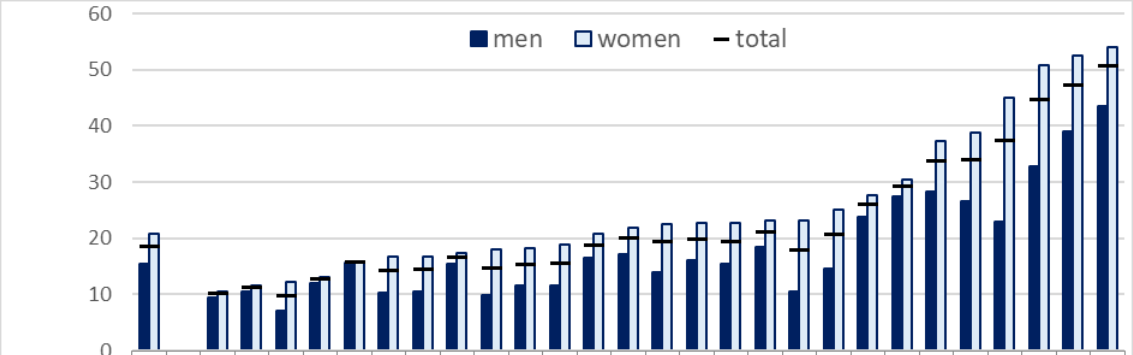
*Note: Breaks in series affect underlying time series in Belgium, Ireland and Luxembourg.*
*Source: Eurostat (ilc_peps01).*

**Large differences across countries persist.** In 2019, the AROPE rate among older persons in the Member States ranged from 10 % in Denmark and France to almost 50 % in Latvia (Figure 2). The risk of poverty or social exclusion was higher among older women than among older men (with the exception of Spain, where the risk was the same). Also, these gender differences were particularly high in absolute terms in countries where the AROPE rate was high,[22] although relative differences are also high in low-AROPE countries, such as the Czech Republic, Finland, Sweden and Austria.

[22] Chapter 4 discusses gender differences in more detail.

**Figure 2: Those at risk of poverty or social exclusion (AROPE) in old age (65+), 2019, by sex, %**

*Large diversity in the risk of poverty among older persons across Member States*




| | EU | DK | FR | LU | NL | ES | SK | HU | BE | AT | FI | SE | DE | PT | PL | IT | IE | EL | CZ | SI | CY | MT | HR | RO | LT | EE | BG | LV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| men | 16 | 9 | 11 | 7 | 12 | 16 | 10 | 11 | 15 | 10 | 12 | 12 | 17 | 17 | 14 | 16 | 16 | 18 | 11 | 15 | 24 | 27 | 28 | 27 | 23 | 33 | 39 | 44 |
| women | 21 | 11 | 12 | 12 | 13 | 16 | 17 | 17 | 17 | 18 | 18 | 19 | 21 | 22 | 23 | 23 | 23 | 23 | 23 | 25 | 28 | 31 | 37 | 39 | 45 | 51 | 53 | 54 |
| total | 19 | 10 | 11 | 10 | 13 | 16 | 14 | 14 | 17 | 15 | 15 | 15 | 19 | 20 | 19 | 20 | 19 | 21 | 18 | 21 | 26 | 29 | 34 | 34 | 37 | 45 | 47 | 51 |

*Source: Eurostat (ilc_peps01).*

### *1.1.2 Income poverty risk among older persons*

To have a more accurate picture of the poverty situation among older persons, it is useful to look separately at the components of AROPE. Indeed, as explained in footnote 24, these are relative income poverty and severe material deprivation among older persons. First, the report focuses on the risk of exposure to monetary poverty, i.e. having an equivalent income below the threshold of 60 % of the median equivalent income of the whole population.[23] Afterwards, the focus will shift to material deprivation.

Overall, **the risk of income poverty among older persons, which was decreasing until 2016, has started to rise again** (Figure 3). This can be seen for both men and women. Following a decline in the income poverty rate of older men and women in the middle of the past decade, by 2019 the level was back above the 2010 level. For older persons as a whole, the income poverty rate had risen to 16.1 %, just above the rate for those of working age (18-64), at 16.0 %. Part of this age-related difference is due to the different cyclical sensitivities of working-age income and incomes in old age. The crisis of 2008/2009 resulted in a temporary interruption to the long-term growth in incomes among working-age people (European Commission, 2017). This reduced the growth rate of median income and, therefore, of the poverty threshold, in turn reducing the poverty risks facing older persons, whose incomes were less affected by the crisis. As the growth in working-age incomes accelerated again from the mid-2010s, the poverty risk of older persons again increased somewhat (thus, since 2016, only material deprivation has continued to decline among older persons; this is illustrated below). Between women and men, Figure 3 shows that the differences are very large among

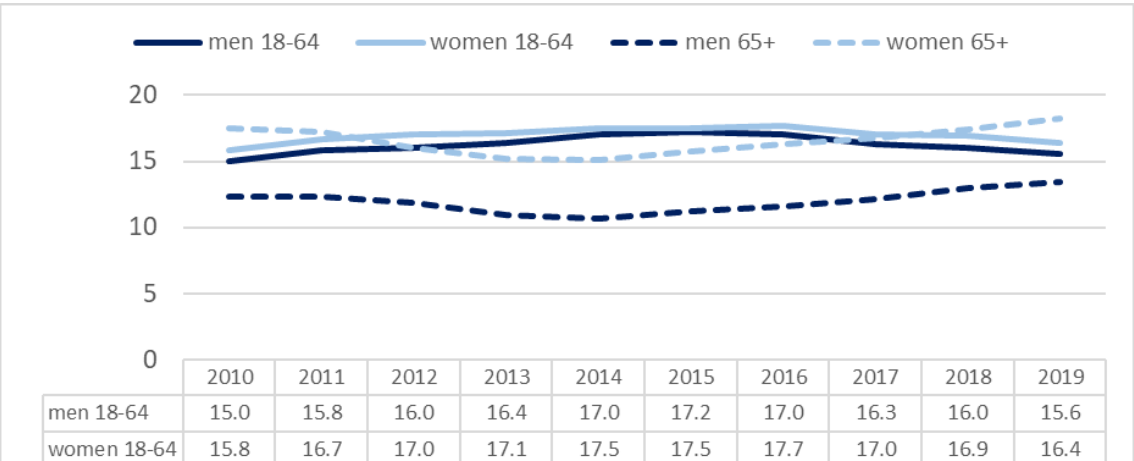
[23] The equivalised disposable income equals the total income of a household, corrected for the number and age category of its members; see https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Equivalised_disposable_income

older people, and while older men have lower at-risk-of-poverty (AROP) rates than women and men of working age, older women have higher rates.

**Figure 3: People at risk of poverty, by age group and sex in the EU-27, 2010-2019, %**

*Old-age monetary poverty starts rising again, largely due to rising workers' incomes*


| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| women/men 18-64 | 15.4 | 16.2 | 16.5 | 16.7 | 17.3 | 17.4 | 17.4 | 16.7 | 16.5 | 16 |
| women/men 65+ | 15.3 | 15.1 | 14.2 | 13.3 | 13.2 | 13.7 | 14.3 | 14.7 | 15.5 | 16.1 |



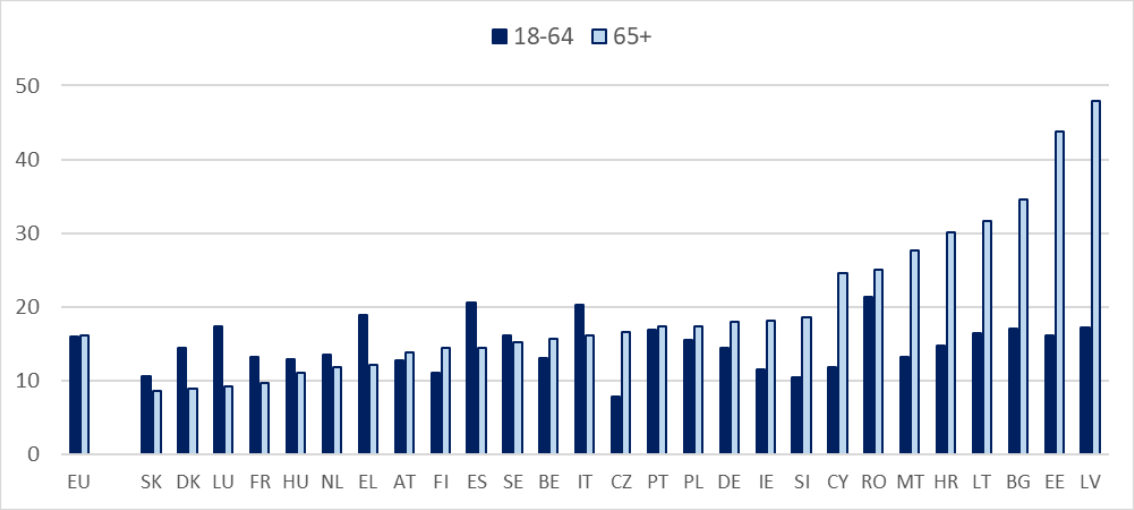

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| men 18-64 | 15.0 | 15.8 | 16.0 | 16.4 | 17.0 | 17.2 | 17.0 | 16.3 | 16.0 | 15.6 |
| women 18-64 | 15.8 | 16.7 | 17.0 | 17.1 | 17.5 | 17.5 | 17.7 | 17.0 | 16.9 | 16.4 |
| men 65+ | 12.3 | 12.3 | 11.9 | 10.9 | 10.7 | 11.2 | 11.6 | 12.1 | 13.0 | 13.4 |
| women 65+ | 17.5 | 17.2 | 16.0 | 15.2 | 15.1 | 15.7 | 16.3 | 16.8 | 17.4 | 18.2 |

*Notes: Cut-off point: 60 % of median equivalised income after social transfers; data extraction date: December 2020; breaks in series affect time lines in Belgium, Ireland and Luxembourg.*
*Source: Eurostat (ilc_li02).*

**Age-related patterns of relative monetary poverty (AROP) differ very significantly between countries.** In those countries where old-age poverty rates are higher than the EU-27 average, they are also higher than the national working-age poverty – in some cases, much higher. Indeed, while there is only a slight difference on average in the EU-27, AROP rates in old age can be around two or three times as high as those for the working-age population in some mainly central and eastern European Member States (Figure 4).

**Figure 4: People at risk of poverty in old age (65+) and working age (18-64), 2019, %**

*Relative poverty among older persons is slightly higher than working-age poverty, but with significant differences across countries*




*Source: Eurostat (ilc_li02).*

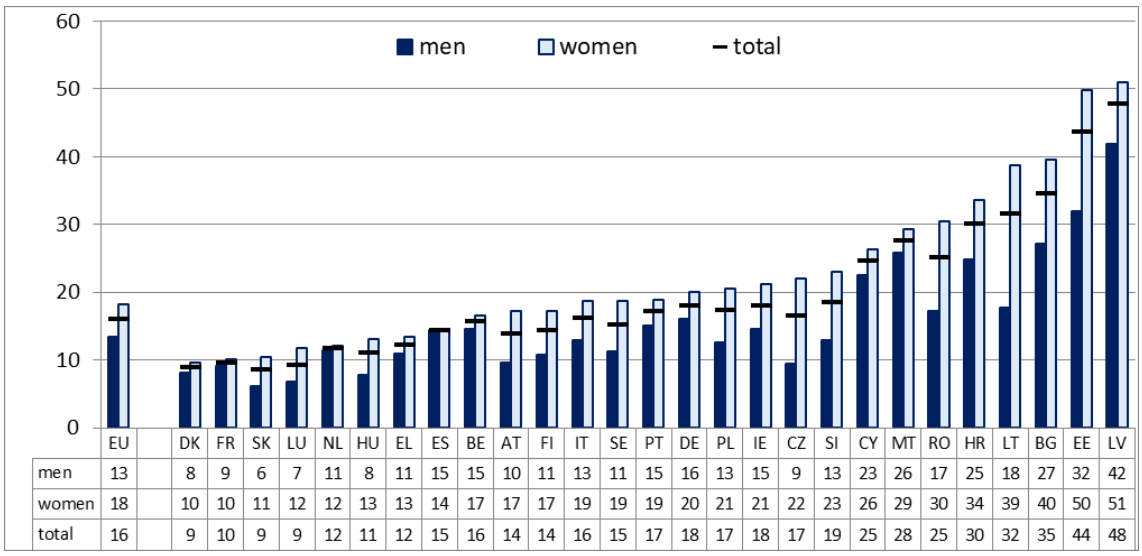
**The comparatively low prevalence of being at risk of poverty in old age owes much to pension levels and the capacity of pension systems for redistribution.**[24] The 2018 PAR analysed factors affecting old-age poverty and especially the relationship between income levels and their distribution.[25] In some countries, high old-age income levels played a key role; in others, equal incomes were the crucial factor. But obviously, the lowest poverty rates were found in Member States that combined the two features, providing sufficient and well-distributed incomes to older persons. As examples, France and Slovakia are among the Member States with a low poverty rate. However, Slovakia keeps poverty rates low mainly via redistribution, whereas France relies more on high expenditure levels. The low poverty rates in Denmark and the Netherlands owe much to those countries' relatively high income levels, coupled with equal income distributions.

**Almost everywhere, women in old age face a higher poverty risk than men** (Figure 5). Except for in Croatia, those countries where the overall rate is highest see a big difference between the AROP rates of older women and older men (BG, EE, LV, LT and RO); the difference is also large in the Czech Republic, Austria, Slovenia and Sweden.

[24] Redistribution is the subject of Section 4.1.
[25] See European Commission and SPC, 2018.

**Figure 5: People at risk of poverty in old age (65+), 2019, by sex, %**

*Old-age monetary poverty, a tale of two sexes*




| | EU | DK | FR | SK | LU | NL | HU | EL | ES | BE | AT | FI | IT | SE | PT | DE | PL | IE | CZ | SI | CY | MT | RO | HR | LT | BG | EE | LV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| men | 13 | 8 | 9 | 6 | 7 | 11 | 8 | 11 | 15 | 15 | 10 | 11 | 13 | 11 | 15 | 16 | 13 | 15 | 9 | 13 | 23 | 26 | 17 | 25 | 18 | 27 | 32 | 42 |
| women | 18 | 10 | 10 | 11 | 12 | 12 | 13 | 13 | 14 | 17 | 17 | 17 | 19 | 19 | 19 | 20 | 21 | 21 | 22 | 23 | 26 | 29 | 30 | 34 | 39 | 40 | 50 | 51 |
| total | 16 | 9 | 10 | 9 | 9 | 12 | 11 | 12 | 15 | 16 | 14 | 14 | 16 | 15 | 17 | 18 | 17 | 18 | 17 | 19 | 25 | 28 | 25 | 30 | 32 | 35 | 44 | 48 |

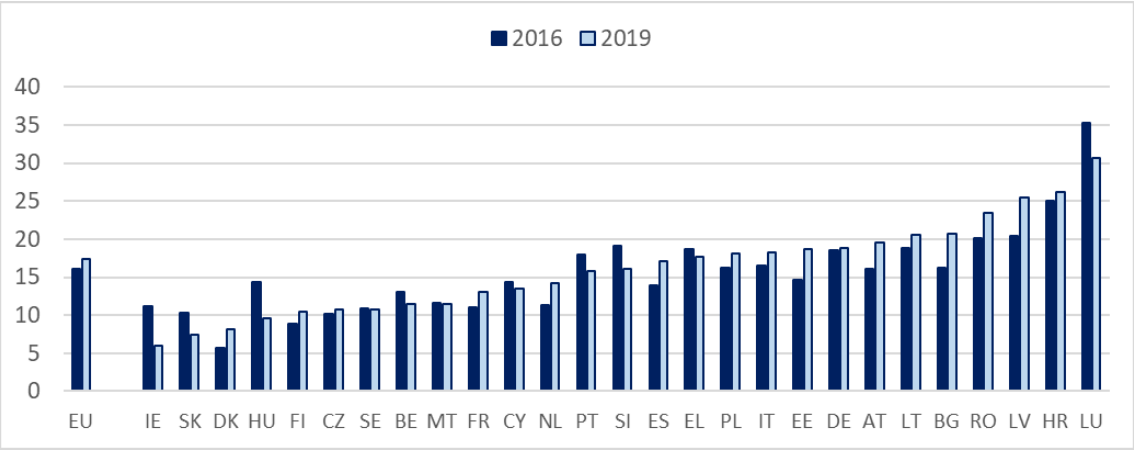
*Source: Eurostat (ilc_li02).*

**The depth of poverty,[26] or the poverty gap, in old age has slightly increased over the last 3 years** (Figure 6**), meaning that those who are in the group at risk of poverty have a median income further below the poverty line than before.** The gap among older persons was 17.4 % in the EU-27 in 2018, indicating that the median income among those at risk of poverty was 17.4 % lower than the poverty threshold. This contrasts with a gap of 27.4 % among those aged 18-64; the latter had been increasing since 2008, but shows a small decrease since 2018. Large poverty gaps indicate more dispersed income at the bottom end of the income distribution: when people are at risk of poverty, their incomes tend to be far below the threshold, so that a larger effort would be necessary to raise their incomes above the poverty threshold. The relatively high gap remains a cause for concern. Figure 6 presents the poverty gaps for older persons in EU Member States; these have slightly increased in 16 of the 27 countries since the previous edition of the PAR, and especially in some countries where the gap was already comparatively large.

[26] The relative median at-risk-of-poverty rate gap is calculated as the difference between the median equivalised disposable income of people below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold, expressed as a percentage of the at-risk-of-poverty threshold (cut-off point: 60 % of median equivalised income).

**Figure 6: At-risk-of-poverty gap in old age (65+), 2016 and 2019, %**

*Old-age poverty becomes deeper in about half of the Member States*




*Source: Eurostat (ilc_li11).*

**There is no clear relation between poverty rate and the poverty gap.** Some countries with low income inequality also show small poverty gaps; but there are others where low poverty rates are accompanied by a big gap.[27]

### *1.1.3 Deprivation among older persons*

Besides looking at income poverty, the living standards of older persons can also be analysed by looking at their ability to afford certain necessities. There are two alternative ways of measuring deprivation in use at the European level. The Europe 2020 strategy defined **severe material deprivation**[28] as one of the two components of the AROPE indicator for older persons. A similar, but more comprehensive composite indicator is **material and social deprivation:** it addresses the affordability of a wider range of items (13 instead of 8). Both are to be discussed next.

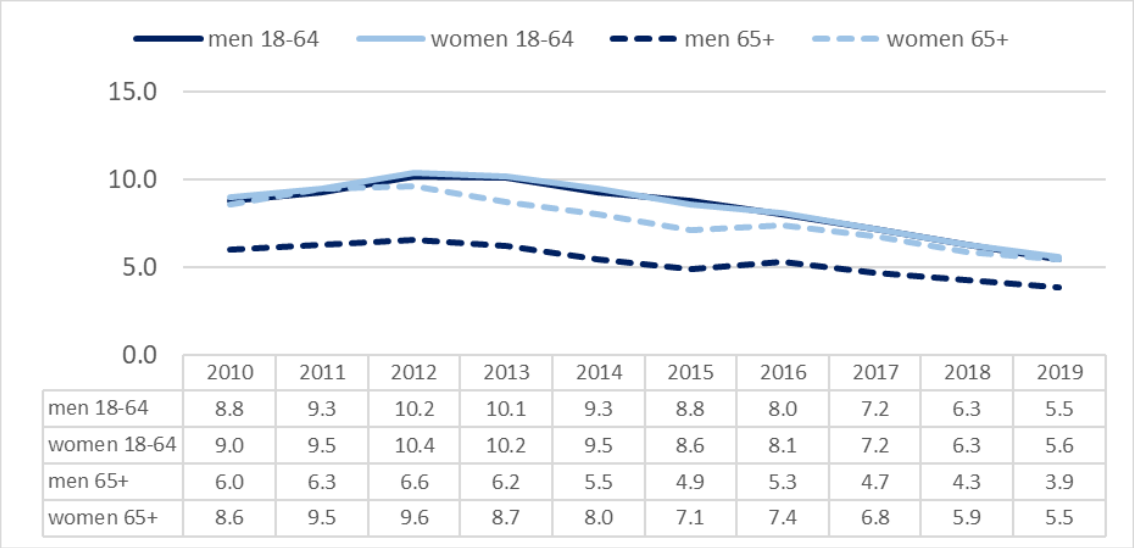
**Like AROP, severe material deprivation (SMD) among older persons has been declining over the last decade** (Figure 7). Unlike AROP, it has continued declining over the last 3 years. Deprivation has always been lower among older people than among people of working age; this is especially true of men. Also, older women suffer from deprivation more often than do older men, whereas among people of working age, gender differences are small. The gender difference in old age is partly explained by the high share of older women living alone and their age difference.

[27] The interplay of old-age income levels and distribution and their impact on poverty were studied in the 2018 PAR, pp. 39-40 (European Commission and SPC, 2018).

[28] Severely materially deprived persons have living conditions constrained by a lack of resources, defined as experiencing deprivation in relation to at least four of the following nine items: (1) cannot afford to pay rent/mortgage or utility bills on time, (2) cannot afford to keep home adequately warm, (3) cannot face unexpected expenses, (4) cannot afford to eat meat, fish or a protein equivalent every second day, (5) cannot afford a one-week holiday away from home, (6) cannot afford a car, (7) cannot afford a washing machine, (8) cannot afford a colour TV, and (9) cannot afford a telephone (including mobile phone).

**Figure 7: People in severe material deprivation, by age group and sex in the EU-27, 2008-2019, %**

*Severe material deprivation in old age continues on its downward path*




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|
| men 18-64 | 8.8 | 9.3 | 10.2 | 10.1 | 9.3 | 8.8 | 8.0 | 7.2 | 6.3 | 5.5 |
| women 18-64 | 9.0 | 9.5 | 10.4 | 10.2 | 9.5 | 8.6 | 8.1 | 7.2 | 6.3 | 5.6 |
| men 65+ | 6.0 | 6.3 | 6.6 | 6.2 | 5.5 | 4.9 | 5.3 | 4.7 | 4.3 | 3.9 |
| women 65+ | 8.6 | 9.5 | 9.6 | 8.7 | 8.0 | 7.1 | 7.4 | 6.8 | 5.9 | 5.5 |

*Note: Cut-off point: 60 % of median equivalised income after social transfers.*
*Source: Eurostat (ilc_mddd11).*

**Severe material deprivation in old age varies significantly between Member States** (Figure 8). While in most Member States it is comparatively low, affecting 4.8 % of people aged 65 and above in the EU-27 (compared to 5.6 % for those aged 18-64), the rates are above 10 % in six Member States. In extreme cases, rates can reach just over a quarter among older men and a third among older women.

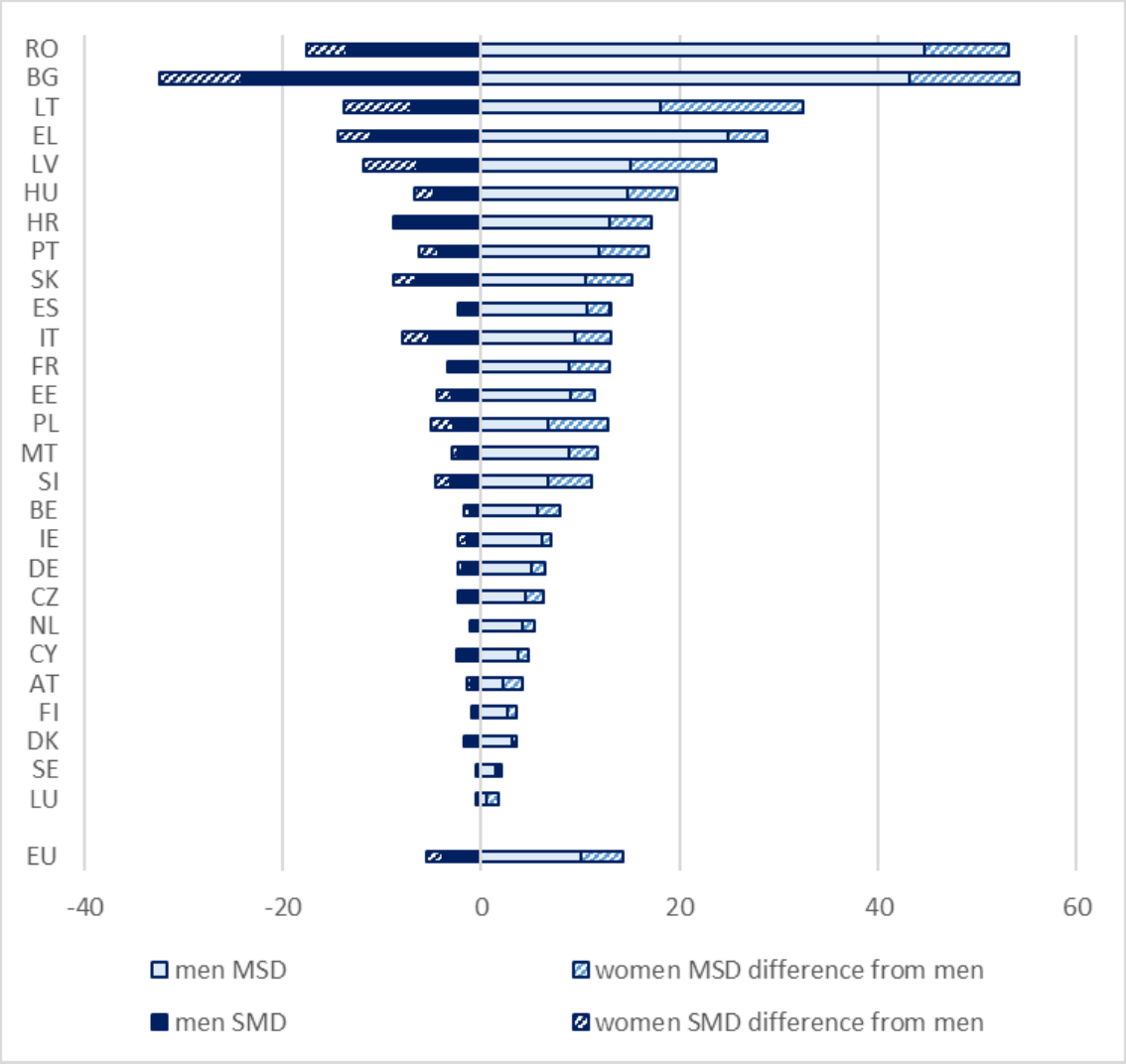
The new indicator of **material and social deprivation (MSD), based on a broader range of needs, including the ability to afford some social activities,**[29] **results in a higher deprivation rate** than does the SMD indicator recorded in Figure 7, although the country ranking is similar. High values are found in Mediterranean and central European countries, while deprivation is very low in the Nordic countries and Luxembourg. At the EU level, the rate has decreased by 4 percentage points (p.p.) since 2014.[30] Deprivation among older women is again found to be higher than among older men in all Member States, except Denmark.

[29] Material and social deprivation (MSD) is intended to replace severe material deprivation (SMD), the measure component used in the Europe 2020 strategy, as discussed above. It is a similar indicator to SMD, identifying people who lack 5 of 13 items of well-being (https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20171212-1). Compared to SMD, MSD is more sensitive to changes in the situation of poorer people; see https://ec.europa.eu/eurostat/documents/3888793/5853037/KS-RA-12-018-EN.PDF

[30] The first year for which it was calculated.

**Figure 8: Severe material deprivation and material and social deprivation in old age (65+), by sex, 2019, %**

*Material deprivation is generally low, with very few significant outliers*

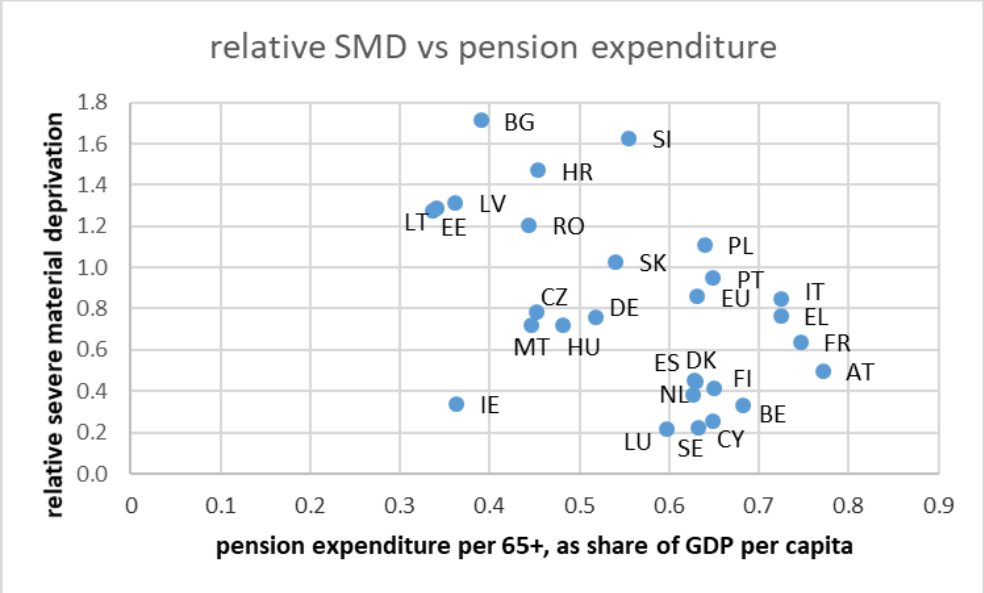



*Notes: The SMD rates are on the left axis, even though they are positive. Ordered by MSD. Since women's rates are (almost) always higher than men's, women's rates are shown in terms of their difference from men's corresponding rates. In Denmark, the MSD rate for women is lower than for men, masking the low rate for women.*
*Source: Eurostat (ilc_mddd11 and ilc_mdsd07).*

There is a small co-relation between higher pension expenditure (as a share of GDP) and lower deprivation in old age, measured through the relative SMD, i.e. the ratio between 65+ SMD and 18-64 SMD (as Figure 9 below shows). This relationship is indirect and is mediated by the redistributive provisions in the pensions, as well as the broader social protection system. Whereas differences in pension expenditure reflect the different deprivation levels between western (low) and central (high) Europe, some countries, such as Ireland and the Czech Republic, have comparatively low deprivation rates, even though they spend less on pensions as a share of GDP per capita.

**Figure 9: Severe material deprivation in old age (65+) over 18-64, 2019, and per capita pension expenditure (2018) as % of GDP**

*Material deprivation depends on pension expenditure only weakly and indirectly*




*Notes: Pension expenditure is expressed as total yearly expenditure on old-age and survivor pensions, divided by the number of people aged 65+; this is then divided by GDP per capita. Severe material deprivation is the ratio between 65+ and 18-64. Source: Eurostat (ilc_mddd11 and spr_exp_sum).*

### *1.1.4 Pension expenditure*

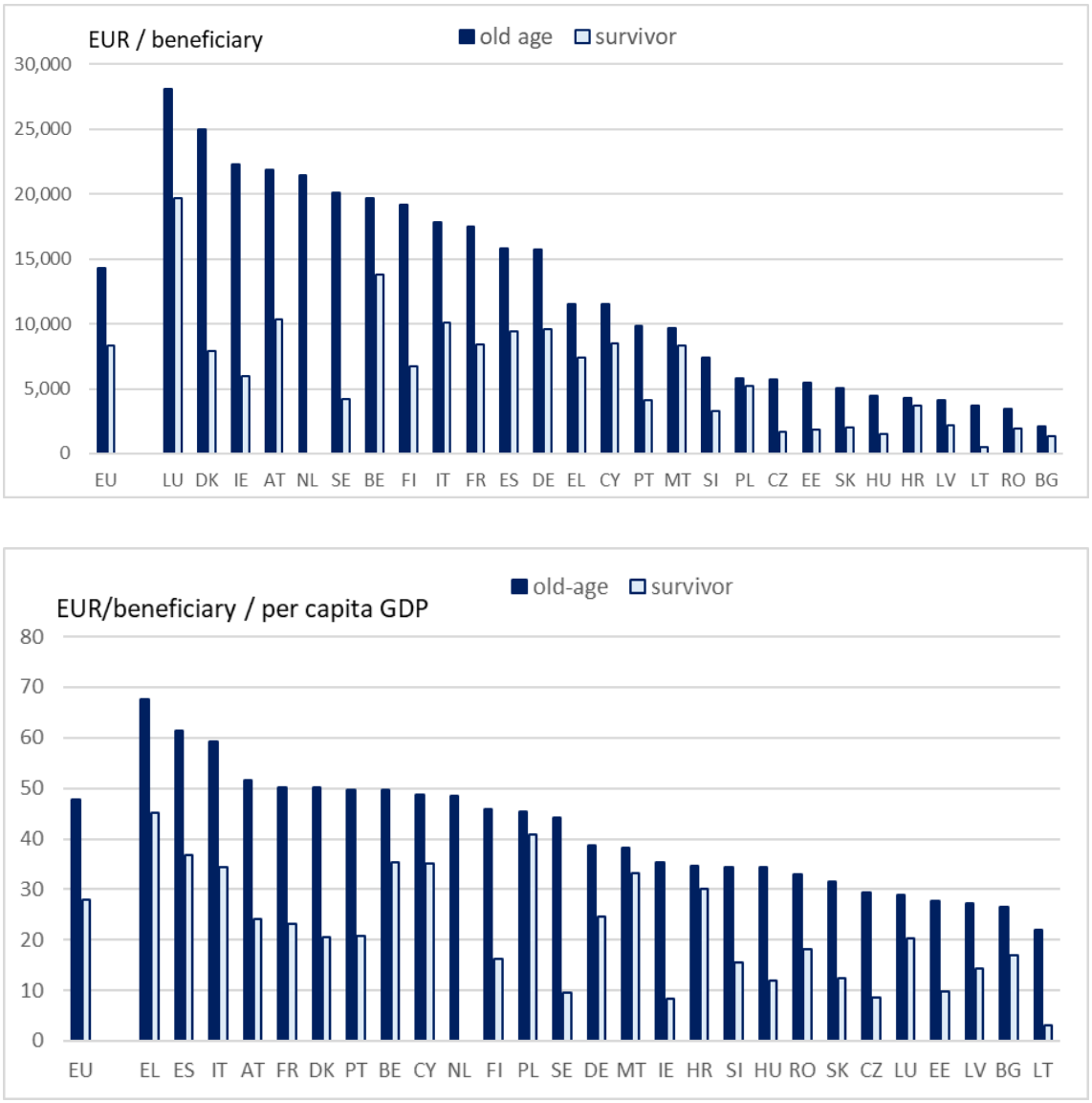
**Pension expenditure as a share of GDP decreased very slightly in the EU-27** from 2015 (when 9.7 % of GDP went on old-age pensions and 1.7 % of GDP on survivor pensions) to 2018 (expenditure of 9.6 % and 1.6 % of GDP on old-age and survivor pensions, respectively). There were about 90 million old-age pension and 26 million survivor pension beneficiaries in the EU-27 in 2018.

**Pension expenditure per beneficiary varies a lot between Member States** (Figure 10), reflecting the underlying differences in overall spending. Even after accounting for GDP, pension expenditure varies by a factor of three between Lithuania and Greece. Survivor benefits are generally low, but they tend to be higher in countries with a low level of work-related contributions where they often supplement an individual's own pension or benefits.[31]

[31] As classified under the European System of Integrated Social Protection Statistics (ESSPROS) data collection. It must be underlined that this does not always correspond to old-age and survivor benefit as defined in the countries. Moreover, in some cases, other benefits, such as disability and even war pensions, might be included, due to the nature of the data collection.

**Figure 10: Pension expenditure, by country, EUR per beneficiary (2018) and as % of per capita GDP**

*The highest-spending countries spend 10 times more per capita than the lowest spending*




*Note: Survivor benefits for the Netherlands are omitted.*
*Source: Eurostat (spr_exp_sum and spr_pns_ben ).*

## 1.2 Income maintenance in old age

The previous section discussed the poverty and deprivation dimension of pension adequacy. This section discusses the second dimension – income maintenance in old age.

**Income maintenance can be measured by looking at relative income – i.e. the ratio of the income of older persons, compared to the income of people at younger ages.** The *relative income ratio* considers the incomes from all sources of all people aged 65+, contrasting them with the incomes either of all people aged below 65 or of those of working age (18-64). Its

reference age groups are thus rather large and their ratios vary little from year to year. Compared to the relative income ratio, the *aggregate replacement ratio*[32] is based on both narrower age groups and income sources: it compares the gross pension benefits of people aged 65-74 against the earnings of 'older active' or late-career persons (aged 50-59). This aggregate replacement ratio tends to be lower than the relative income ratio for three reasons. First, when looking at the older age group, it only considers pension income (old-age and survivor[33] benefits), whereas the income ratio includes all income sources. Second, it compares incomes in old age to those of people close to retirement, who in a system based on seniority pay tend to have high pay and will have high pension entitlements, whereas the reference group for the relative income ratio also includes those with early-career incomes, which are usually lower. Finally, it is based on gross income, and the tax burden on pensions tends to be lower than that on work-income[34] (for further analysis of the impact of taxation, please refer to Section 4.1).

### *1.2.1 Relative incomes of older people (65+ / 18-64)[35]*

**On average across the EU-27, in 2019 the median disposable income of those aged 65 and above was 89.2 % (85.8 % for women and 93.7 % for men) of the income of those aged 18-64** (Figure 11). The ratio varies substantially between its lowest value in Latvia, 55.2 %, to the only value above 100 % – in Luxembourg, 121.6 %. In all countries, the ratio is higher among men than among women, and the largest differences between women and men are observed in Bulgaria, Lithuania, Finland and Sweden.

This average EU-level relative income ratio had risen from 89 % in 2010 to 91 % in 2016, only to return to its 2010 level in 2019. This decrease from 2016, however, does not necessarily mean that the income of older people had declined. Rather, over the 3 years between 2016 and 2019, the income of working-aged people had increased faster than pensions, as the latter are in general more stable than the former.

[32] The aggregate replacement ratio is gross median individual pension income of the population aged 65-74, relative to gross median individual earnings from work of the population aged 50-59, excluding other social benefits; see https://data.europa.eu/euodp/en/data/dataset/gz7QVV8LOoeNajEvcax0A

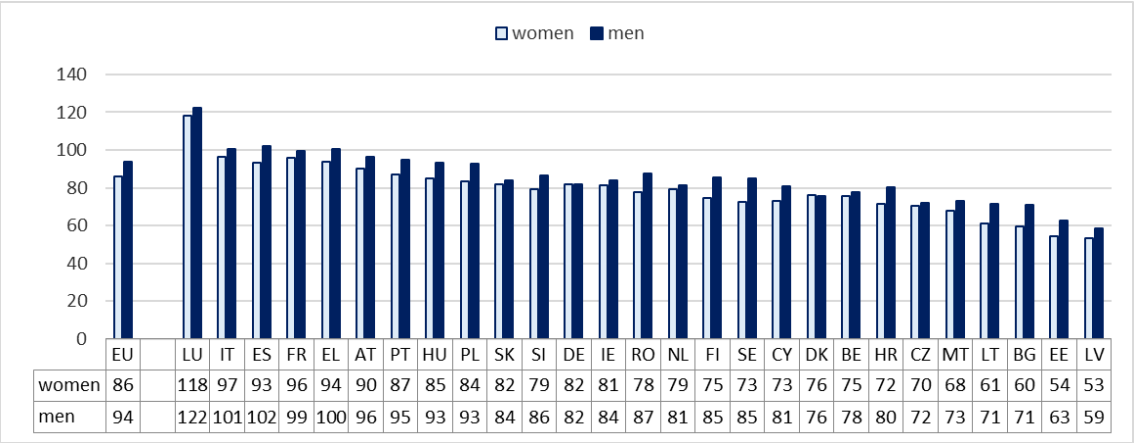
[33] https://ec.europa.eu/eurostat/web/products-eurostat-news/-/EDN-20170622-1?inheritRedirect=true (it refers to 2014 and the situation has changed in some countries).

[34] Depending on the country, this may be because tax rates are progressive (and pensions tend to be lower than salaries), or because pensions under a certain threshold are not taxed, or because part of pensions is tax exempt.

[35] In other publications, the ratio is taken between people aged 65+ and people aged 0-64 and results in higher values (of 2-3 p.p.). Here we use a different age group in the denominator – namely, people of working age – to make a direct comparison with the same ratio by education level in Figure 12. Eurostat only produces median income by education for the group 18-64.

**Figure 11: Relative income ratio for older people, by sex, 2019, %**

*The ratio of old-age income to work-age income is higher among men than women*



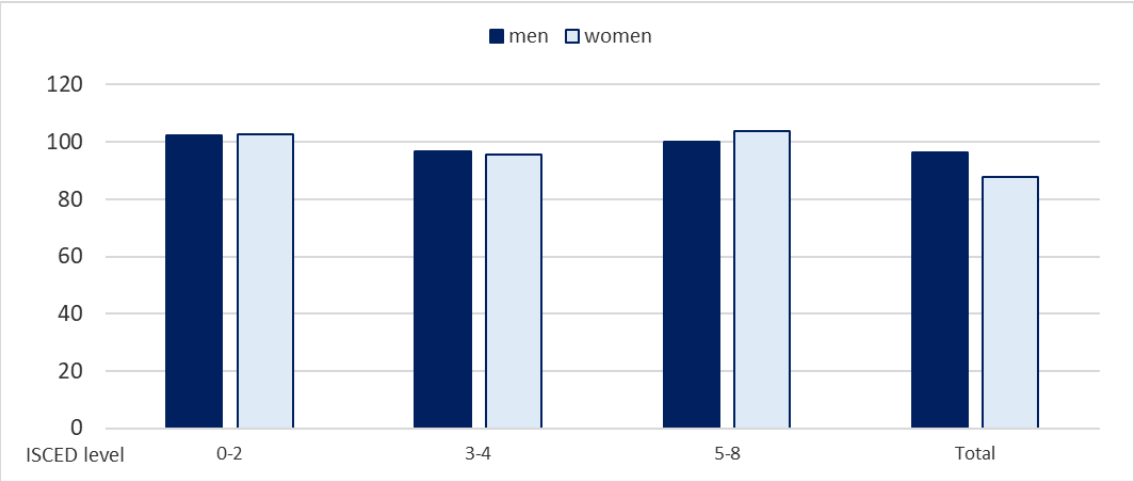

| | EU | | LU | IT | ES | FR | EL | AT | PT | HU | PL | SK | SI | DE | IE | RO | NL | FI | SE | CY | DK | BE | HR | CZ | MT | LT | BG | EE | LV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| women | 86 | | 118 | 97 | 93 | 96 | 94 | 90 | 87 | 85 | 84 | 82 | 79 | 82 | 81 | 78 | 79 | 75 | 73 | 73 | 76 | 75 | 72 | 70 | 68 | 61 | 60 | 54 | 53 |
| men | 94 | | 122 | 101 | 102 | 99 | 100 | 96 | 95 | 93 | 93 | 84 | 86 | 82 | 84 | 87 | 81 | 85 | 85 | 81 | 76 | 78 | 80 | 72 | 73 | 71 | 71 | 63 | 59 |

*Note: sorted by total.*
*Source: Eurostat (ilc_di03).*

**Different education levels are a key factor in income differences between young and old** (Figure 12). The overall relative income ratio (on the right) seems to indicate that the incomes of older men and women (i.e. 65+) are 6 % (men) and 14 % (women) lower than the incomes of men and women of working age (18-64). However, this largely reflects a composition effect, with higher educational attainment on average in the younger age groups. Indeed, when we look at the ratio within the three broad education levels (i.e. comparing older and younger people with the same education level), the differences are smaller; indeed, among people with low (ISCED 0-2) and high (ISCED 5-8) education levels, older men and women have higher incomes than men and women of working age. This is not the case in every country, of course; in some, low income ratios of older people are recorded. However, this result indicates that the overall income difference between older persons and people of working age is rooted in the fact that the current older population is less well educated on average than younger cohorts.

**Figure 12: Relative income ratio for older people, by ISCED[36] education level, 2018, %**

*Old-age income equals work-age income within broad education-level groups*




*Source: Eurostat (ilc_di08).*

To recapitulate, Figure 12 shows that the income ratio within education-level groups is higher – and closer to 100 % – than the ratio for the population as a whole, which is closer to 90 %. In addition, the difference between women and men is only marked in the overall population. When the ratio is measured within education-level groups, the gender difference is smaller and, within the highest group, women actually have higher relative income than men. This might be due to the fact that while younger generations are better educated than older ones among women and men, the education difference is larger among women.[37]

### *1.2.2 Income replacement from pensions*

**The aggregate replacement ratio (ARR) indicates that pension benefits[38] represent between a third and just over two thirds of late-career work incomes across the Member States** (Figure 13). It differs from the relative income ratio of Figure 11, in that it compares 10-year cohorts and only takes into account pension income in the older cohort and work income in the working-age cohort. The EU average was 57 % in 2019. The ARR is the gross median individual pension income of the population aged 65-74, relative to gross median individual earnings from work of the population aged 50-59, excluding social benefits other than pensions. Thus, it measures the pension income of people in early retirement years, as a ratio of work incomes in late working years; the incomes are measured in the same year, and thus they refer to two separate 10-year cohorts of people. The differences between countries are thus due largely to differences in pension levels in relation to late-career earnings.

[36] ISCED is the reference international classification for organising education programmes and related qualifications by levels and fields. https://ec.europa.eu/eurostat/statistics-explained/index.php/International_Standard_Classification_of_Education_(ISCED)

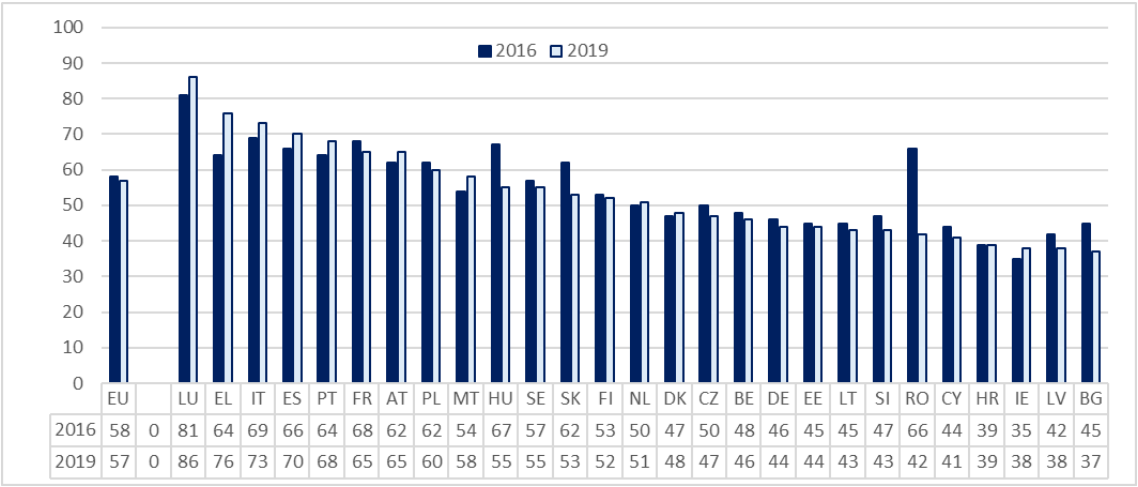
[37] As a rule-of-thumb reference fact, among EU residents born before 1960, men have higher levels of education than women; among those born after 1960, the opposite applies. This indicates that educational achievements have been more pronounced among women; thus, among women, there is a larger education difference between older and younger cohorts than among men.

[38] The pension information from the EU-SILC includes old-age benefits, survivor benefits and payments from individual private plans.

**The aggregate replacement ratio has remained stable in the past 3 years at the EU-27 level** (Figure 13). There have been substantial drops in two (RO, HU), while a larger number of countries have had minor increases. The big reduction in Romania[39] and Hungary is due to a sharp increase in work incomes among people aged 50-59.[40] An analysis of the longer-term trends in the ARR since 2007 can be found in Chapter 4.

**Figure 13: Aggregate replacement ratio, 2016 and 2019, %**

*The ratio of pensions to late incomes is stable in nearly all Member States*




| | EU | | LU | EL | IT | ES | PT | FR | AT | PL | MT | HU | SE | SK | FI | NL | DK | CZ | BE | DE | EE | LT | SI | RO | CY | HR | IE | LV | BG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2016 | 58 | 0 | 81 | 64 | 69 | 66 | 64 | 68 | 62 | 62 | 54 | 67 | 57 | 62 | 53 | 50 | 47 | 50 | 48 | 46 | 45 | 45 | 47 | 66 | 44 | 39 | 35 | 42 | 45 |
| 2019 | 57 | 0 | 86 | 76 | 73 | 70 | 68 | 65 | 65 | 60 | 58 | 55 | 55 | 53 | 52 | 51 | 48 | 47 | 46 | 44 | 44 | 43 | 43 | 42 | 41 | 39 | 38 | 38 | 37 |

*Note: Sorted by 2019 value.*
*Source: Eurostat (ilc_pnp3).*

### *1.2.3 Income inequality*

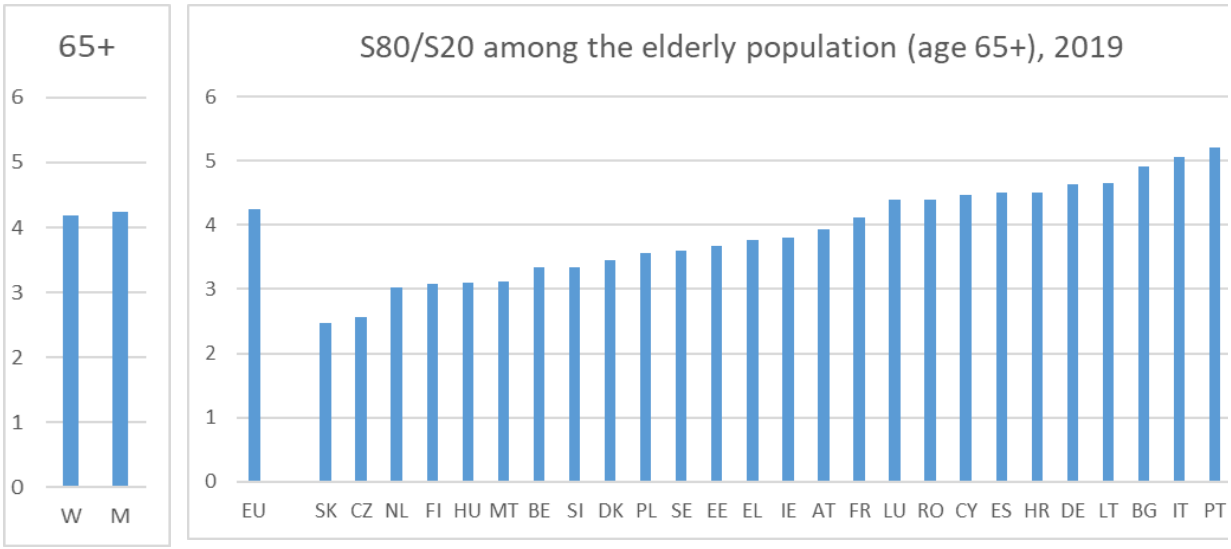
In addition to the level of pensioners' income relative to that of younger age groups, reflected by the relative income ratio for older people and the aggregate replacement ratio, the distribution of incomes among the older age group is also of interest. While the relative income poverty risks discussed in Section 1.1 focuses on the share of the population with equivalised disposable household income below a given threshold, this section analyses overall inequality among older persons. The inequality of income within the population aged 65 and over is illustrated using the income quintile ratio (S80/S20), which measures how much higher the equivalised disposable income of the 20 % richest individuals in a group is than that of the 20 % poorest.

**Among the older population in the EU-27, the disposable incomes of those in the top quintile are on average four times higher than those in the bottom quintile of the income distribution** (Figure 14). This figure moreover shows that there are important differences between Member States: the values for this measure of inequality in 2019 ranged from just above 2 in Slovakia to over 5 in Italy, Latvia and Portugal. From a gender perspective, inequality is about the same between older women and older men at the EU-27 level. See Section 4.1 for a more extended analysis of this subject and of the S80/S20.

[39] In Romania, a recent social security reform has affected the ratio.
[40] Eurostat, Table ilc_di03.

**Figure 14: Inequality of income distribution – income quintile ratio (S80/S20), 2019**

*Old people: Income of the richest 20 % is four times that of the lowest 20 %*



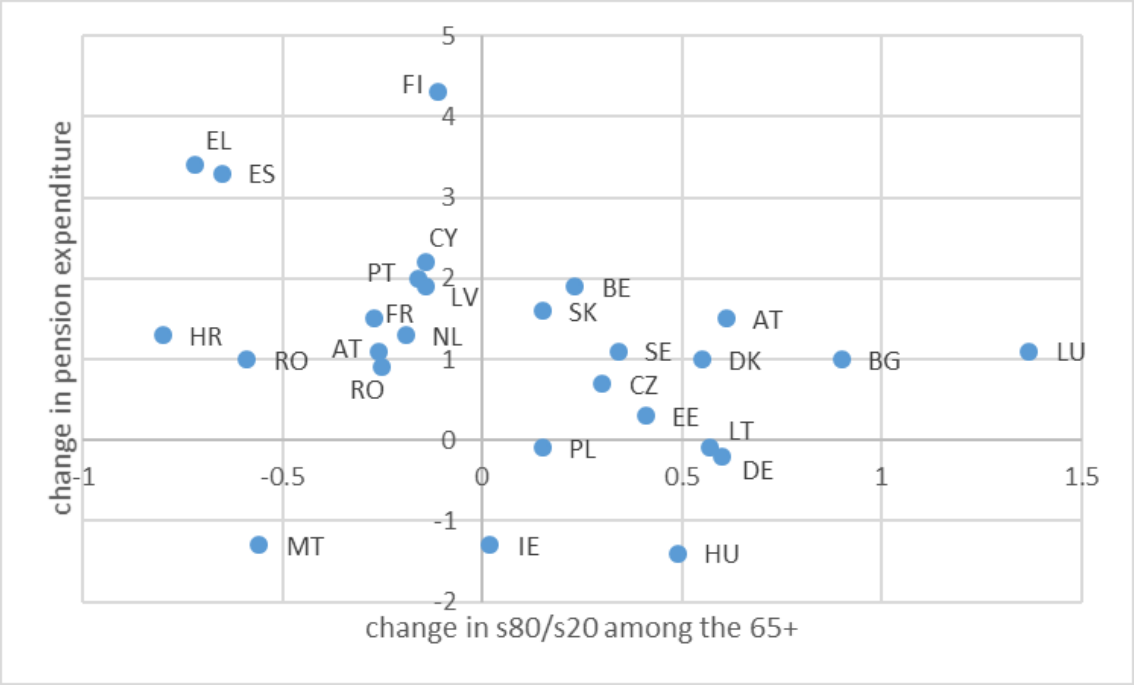

*Source: Eurostat (ilc_di11).*

**Most countries where pension expenditure (as a share of GDP) increased also reported decreasing old-age inequality** (Figure 15). As straightforward as this relation might appear at first glance, Figure 15 suggests otherwise: not only is the relationship apparently very weak, but also there are seven countries where – despite increasing spending – inequality has risen; meanwhile Malta saw its expenditure ratio decrease without any accompanying increase in inequality.[41] So clearly, additional analysis will be required to clarify the link between pension spending and inequality among older persons. Among the main factors, changes in pension expenditure come from the interplay of changes in benefit levels, the increasing number of new retirees and changes in life expectancy; these are difficult to disentangle and can have a different impact on inequality.

[41] Even though pension expenditure in relation to GDP declined in Malta, in absolute terms pension expenditure increased by one third over the same period.

**Figure 15 : Change in inequality of income distribution S80/S20, 2008-2019, ages 65+ and changes in pension expenditure, as p.p. of GDP**

*Old-age inequality decreases slightly with increased pension expenditure*




*Note: Pension expenditure includes old-age and survivor.*
*Source: Eurostat (ilc_di11 and spr_exp_sum).*

## 1.3 Pension duration

**Pension duration is the third dimension of pension adequacy. It refers to the share of their lives that people spend in retirement or receiving a pension, and how their living standards evolve during that period (see Introduction).**

Pension duration can be analysed by looking at either the **duration of retirement** (i.e. the share of life after leaving the labour market) or the **duration of pension payment** (i.e. the share of life after drawing the first old-age pension).[42]

This section starts by providing an overview of the latest trends in duration of retirement, counted from leaving the labour market and from receipt of the first pension. Furthermore, it considers how policies support older persons throughout the duration of their retirement, e.g. through the indexation of benefits and the provision of long-term care and health services.

[42] The two indicators may differ, as people might start receiving pension payments before they completely leave the labour market; the opposite also occurs.

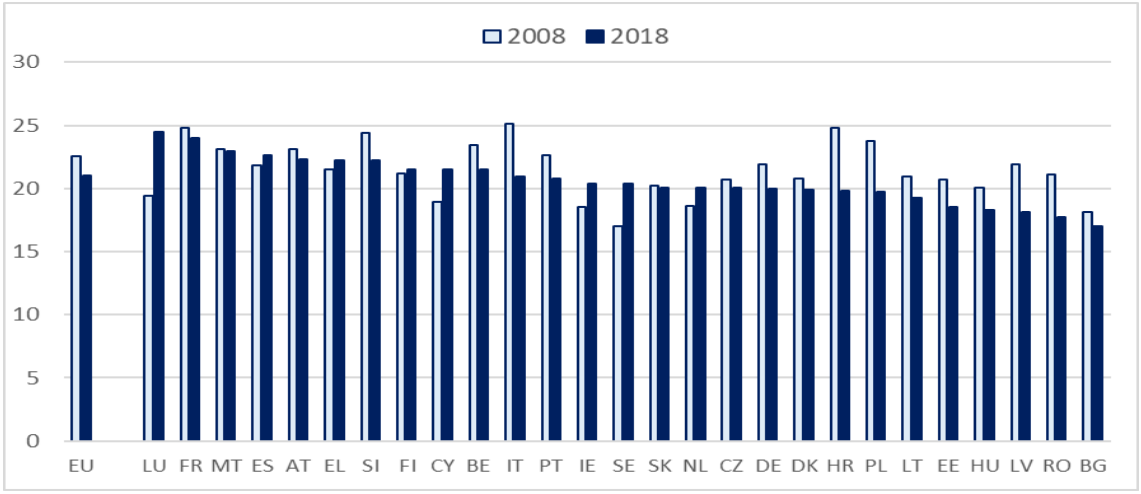
### *1.3.1 Duration of retirement*

Retirement duration increased from 1970 to 2000, when people were exiting employment at progressively younger ages, while their life expectancies increased.[43] However, since 2000, while life expectancy has continued to increase, so has the effective retirement age,[44] thereby limiting further increase in retirement duration. Since 2018, retirement duration computed from leaving the last employment has slightly decreased – from 21.0 to 20.8 years.

**Hence, at the EU level, retirement duration has shown only a very minor decrease** (Figure 16). In the 14 countries where the decrease has been more substantial, this has happened mostly because effective labour market exit ages have risen faster than life expectancy at retirement. This is most pronounced in Italy, Hungary and Poland[45], where people have been leaving employment at progressively higher ages. In some countries, however, the retirement duration has increased. This is, for instance, the case in Cyprus, Ireland and Sweden. In Sweden, as well as Luxembourg retirement ages have increased little.

**Figure 16: Average duration of retirement from end of last employment, 2008 and 2018 (in years) and by country (2018/2020)**

*Length of retirement has decreased slightly in the past 10 years*




*Note: Duration begins on leaving the last employment, for people who were employed at the age of 50.*
*Source: Eurostat (lfsa_ergan and demo_mlexpec).*

[43] See 2018 PAR, p. 85 (European Commission and SPC, 2018).
[44] Chapter 2 reports on recent reforms, including raising of retirement ages.
[45] A substantial reduction in the retirement duration was also observed in BE, BG, DE, EE, FR, LV, LT, AT, PT, RO and SI

**While many countries have been tightening the conditions governing labour market exit and early retirement, these measures are still relatively recent, and their full potential impact on retirement duration may not be clearly visible yet (see Section 2.1.1).** Furthermore, measures aimed at raising pensionable age are often subject to transitional periods that delay their full impact.[46]

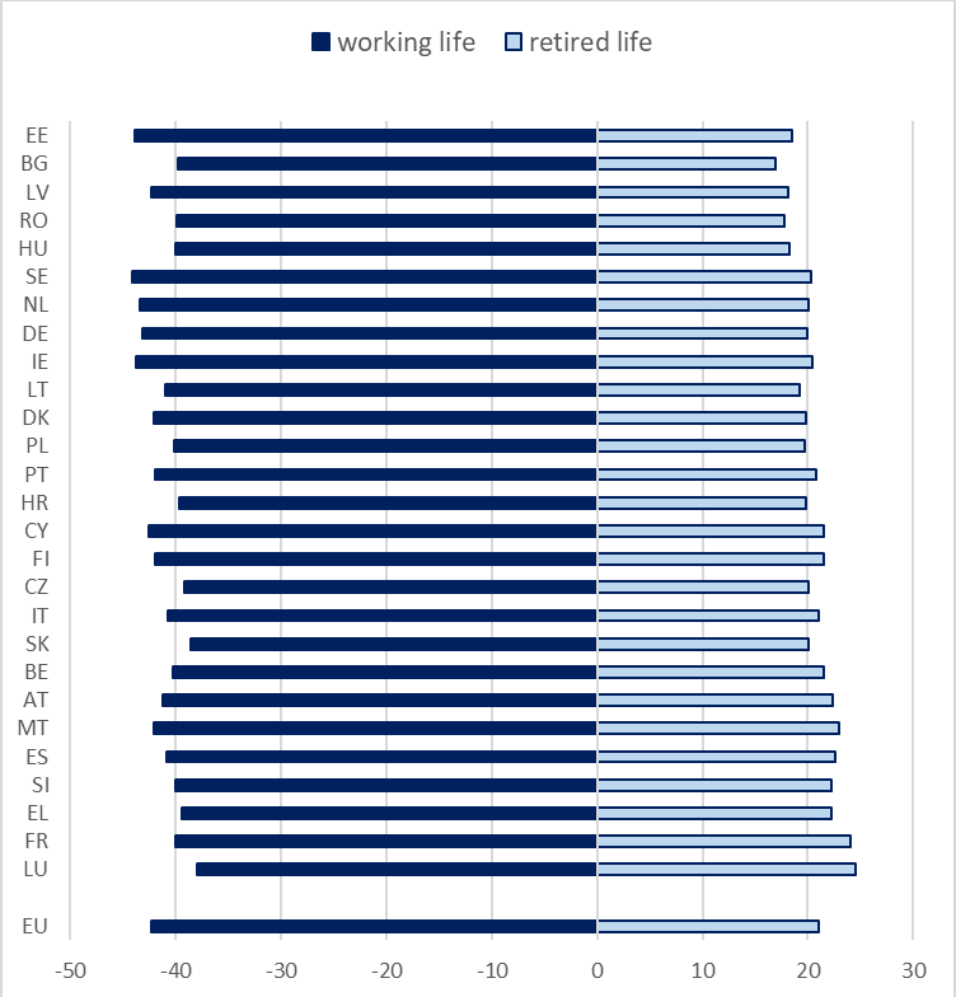
**Shorter retirement durations are often associated with longer working lives** (Figure 17). This figure shows that, at the EU-27 level, the duration of working life, gross of breaks within working life, is on average 42.4 years, while retirement life lasts for just over 20 years. Countries with comparatively long retirement durations, such as Luxembourg and France, also have short working-life durations – and vice versa (e.g. EE, DK). This indicates that, with similar entry ages into the labour market and projected converging life expectancy, what matters is the effective age of exit from the labour market,[47] which varies substantially and has an opposite impact on working-life and retirement duration.

[46] Pensionable age is defined as the earliest age at which people can retire after a 40-year career without incurring any penalties (see Box 5).

[47] Labour market exit is the moment when a person is no longer considered employed in official statistics (not having worked for at least 1 hour during a short reference period). The method means that jobseekers are excluded from the measure of working-life duration.

**Figure 17: Average duration of retirement from the end of last employment and duration of working life, 2018, years**

*Longer working lives are associated with shorter retirement durations*




*Note: Countries ranked by ratio between retired and adult life. Working life is counted from first employment and ends when last employment ends.*
*Source: Eurostat (demo_mlexpec) and Ageing Report assumptions.*

### *1.3.2 Duration of pension payment*

**Old-age benefits are paid for 15-20 years on average.** Pension duration – as measured by the length of benefit payment[48] – is computed as life expectancy at the average age at which people receive their first old-age pension.[49] Among women, the highest values are observed in Austria (25.5 years) and Slovenia (26.1 years), characterised by pensions starting at age 60.6 and 60.0, and France (26 years), with pensions starting 2 years later (62.6), but with greater life expectancy. Among men, Luxembourg (22.1 years) stands out, along with France (22.0 years), due to early effective retirement ages (60.9 and 62.0, respectively). At the low end of

[48] Pension duration by benefit payment is defined as life expectancy at the average age at which people receive their first old-age pension payment.
[49] The data collection refers to statutory public schemes. It excludes occupational pensions, whose benefits may be paid earlier.

the scale, Denmark's short duration (15.9 years among men) is due to late pensions (67.9 for men), whereas in Bulgaria (15.2 years among men) it results from comparatively low life expectancy at age 63. On the whole, and in both sexes, pensionable ages appear to dominate the differences in pension duration between countries, whereas life expectancy makes less of a difference – albeit still noticeable.

**Figure 18: Life expectancy at average first old-age pension, 2019, years**

*In most countries, women are paid old-age pensions for 20-25 years, men for 15-20*


*Note: * 2018 data.*
*Source: Eurostat (demo_mlexpec), national data on first pension receipt (collected within the Ageing Report process). Data extraction date: November 2020.*

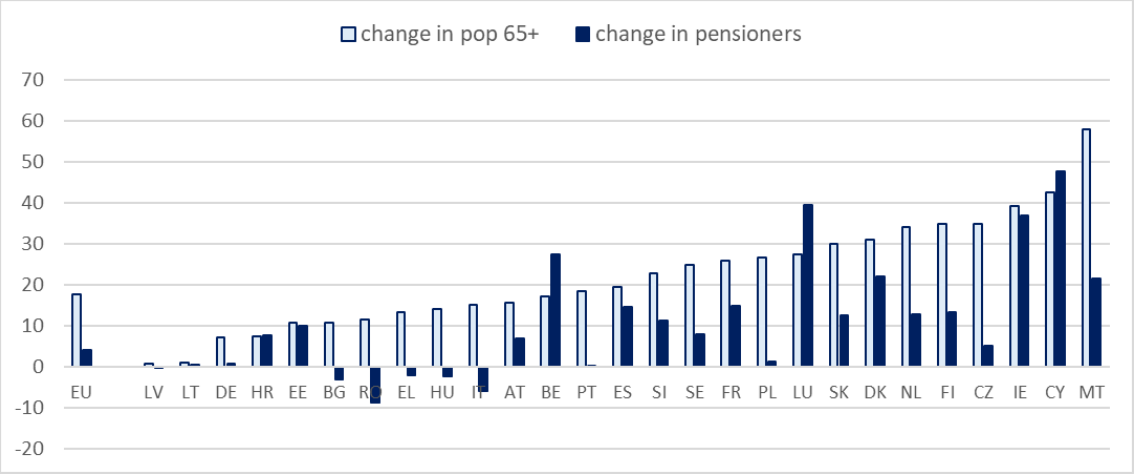
### *1.3.3 Pension beneficiaries*

Given a fixed number of older people, a decreasing – albeit slightly – pension duration would translate into a smaller number of retirees. However, the older population is growing, and so the number of retirees is the result of two opposing factors: more older people who need a pension, but who receive it for a shorter time.

**Since the end of the first decade of this century, the number of people reaching the age of 65 each year has been increasing steeply.** This has resulted in a visible increase in the total number of older persons. In the EU-27, the population aged 65 and above increased from 75.7 million in 2008 to 89.0 million in 2018; in the same period, the number of people receiving one or more pensions rose from 113.8 million to 118.4 million.

**Figure 19: Population aged 65 and above and pensioners (old-age and survivor, regardless of age), EU-27, % change, 2008-2018**

*More older persons does not always mean more pensioners*




*Note: Germany and the Netherland – no data for 2018 (2017 used instead); Hungary: pensioner data adjusted.*
*Source: Eurostat (demo_pjangroup and spr_pns_ben).*

**The increase in the number of older persons did not fully translate into an equivalent rise in the number of pension recipients, partly due to later pension take-up.**[50] Indeed, there is a difference between the age of drawing the first pension and the age of leaving the labour market – and neither need necessarily be equal to the pensionable age (see Box 5). Thus, the link between the number of people aged 65 and the number of pension recipients can be weak. Still, a conclusion from

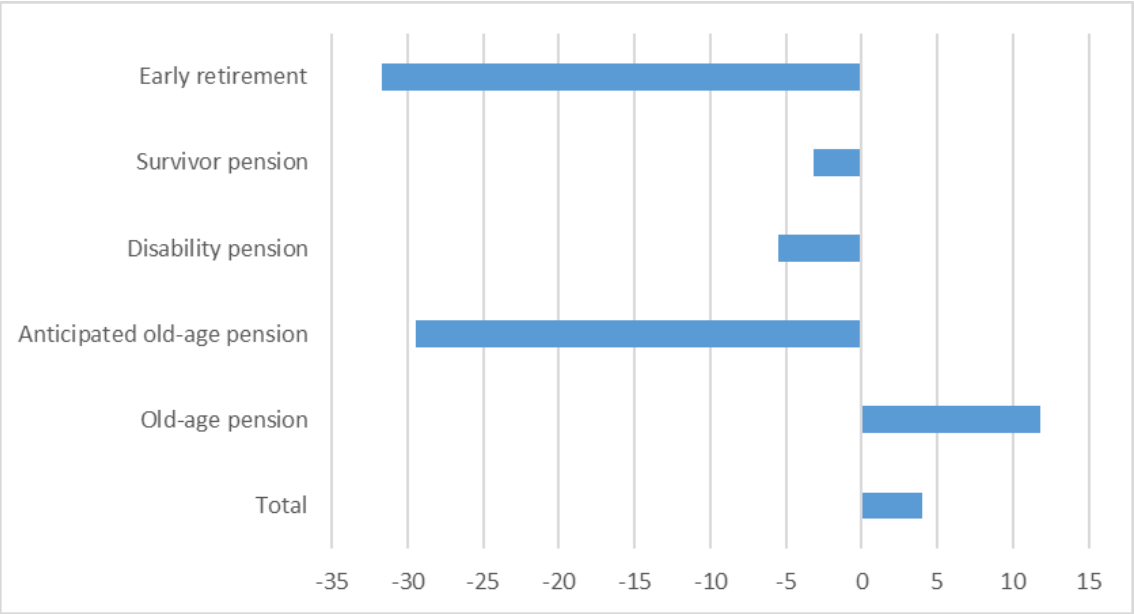
Figure 19 is that the number of beneficiaries did increase, albeit by less than the number of people aged 65+. Indeed, for the EU-27, a 4.0 % increase in pensioners was hardly a match for the 17.6 % rise in the older population observed in 2008-2018. The increase in the number of pensioners, however, was not universal: six countries (BG, EL, IT, LV, HU, RO) actually registered a reduction.

**The number of beneficiaries of old-age pensions increased from 2008 to 2018, while the number of pensioners receiving other types of pensions decreased** (Figure 20). Increases in the employment rates of those aged 55-64 between 2006 and 2016 were found to be associated primarily with a decrease in the number of retirements (before age 65), only marginally compensated for by increases in inactivity due to unemployment or disability[51]. As a result, the share of people aged 55-64 in retirement decreased, which explains the reduction (seen in Figure 20) of the number of people receiving early retirement and anticipated old-age pensions, both related to people who retired before the statutory retirement age.

[50] An increase in life expectancy, coupled with additional retirement by 'baby boomers', swelled the ranks of the 65+ age group; on the other hand, rising statutory retirement ages limited the increase in pensioners.
[51] See 2018 PAR, Figure 60 (European Commission and SPC, 2018).

**Figure 20: Pensioners, EU-27, % change, 2008-2018**

***Only the group of old-age pensioners is growing; the number of people on survivor, disability and early retirement pensions is decreasing***




*Note: Germany and the Netherlands, no data for 2018 (2017 used instead); 'anticipated old-age' are pensions taken early because of seniority or special rules, e.g. after working in arduous conditions; 'early retirement' is due to labour market conditions; the total number of pensioners excludes double-counting of people receiving several types.*
*Source: Eurostat (spr_pns_ben).*

**The number of people receiving disability pensions has also decreased,** in spite of a rise in the number of people aged 55-64 who report being out of the labour market due to illness or disability.[52] This suggests a decrease in coverage. Chapter 2 presents a fuller overview of recent changes in the rules on access to pension benefits.

**The number of recipients of survivor pensions has likewise decreased,** despite an increase in the number of single older women (from 17.4 million in 2009 to 19.4 million in 2018). The number of single women who have outlived their spouse has also increased.[53] Since, in most countries, over 90 % of the beneficiaries of a survivor pension are women, the number of beneficiaries would be expected to reflect these increases; however, the opposite has happened (see Figure 20). This can be explained by the fact that more women are entitled to their own old-age pension benefits, which are often higher and, in some countries, cannot be cumulated with survivor pensions. An additional factor may be the increasing number of divorced single older women, as a higher proportion of legal unions are ending in divorce,

[52] The number of EU-27 people aged 55-64 who are inactive because of their own illness or disability rose from 4.1 million in 2008 to 5.2 million in 2018 (Eurostat, code lfsa_igar).

[53] The number of women who died single, having been in a legal union with a partner who subsequently died (Eurostat, code demo_marstac, covering 22 Member States), has increased in most reporting countries, by values often nearing 10 % over 10 years. In practice, this indicator is related to the number of survivor beneficiaries in preceding years. However, as the two variables change slowly, changes in the former would be expected to reflect changes in the latter.

rather than the death of the spouse. In many cases, divorce can affect eligibility for a survivor pension. In some Member States, the divorced spouse may still be eligible for a survivor benefit, subject to certain conditions (e.g. entitlement to alimony); however, this right is far from universal.

### *1.3.4 Maintaining adequacy throughout retirement*

An important aspect of duration is how adequacy changes as pensioners grow older. Income maintenance will be assessed through a specific theoretical replacement rate (the '10 years after retirement' case) in Chapter 3. This section will be limited to assessing poverty.

**Old-age poverty is higher among those aged 75 and above, but only among older women** (Figure 21). The overall AROPE rate among the 75+ age group is higher than among persons aged between 65 and 74, reaching 19.5 % in 2019 (against 17.6 % for the group aged 65-74, and 18.5 % among the 65+ group as a whole). However, this difference is almost exclusively due to the situation of women. For men aged 75+, the AROPE rate is 15.2 %, which is lower than the 15.7 % rate for men aged 65-74. For women aged 75+, however, the AROPE rate is no less than 22.6 %, and therefore higher than the – still rather high – 19.3 % risk among women aged 65-74.

Looking at the risk of income poverty (AROP), we find a similar picture. In the EU-27 in 2019, 19.9 % of women aged 75 and above had incomes below the poverty threshold (AROP), which was considerably higher than the 16.6 % risk for women aged 65-74. For men aged 75+, the poverty risk is 13.4 % – even lower than the 13.5 % for men aged between 65 and 74.

Finally, a similar pattern applies to severe material deprivation; the overall SMD rate was roughly the same among those aged 65-74 and 75+ (4.8 % and 4.7 %) in 2019, but this hides differences among women (5.2 % in the group 65-74 and 5.8 % among those aged 75+), whereas men aged 75 and over have even lower SMD rates than men aged 65-74 (3.2 % and 4.4 %, respectively).

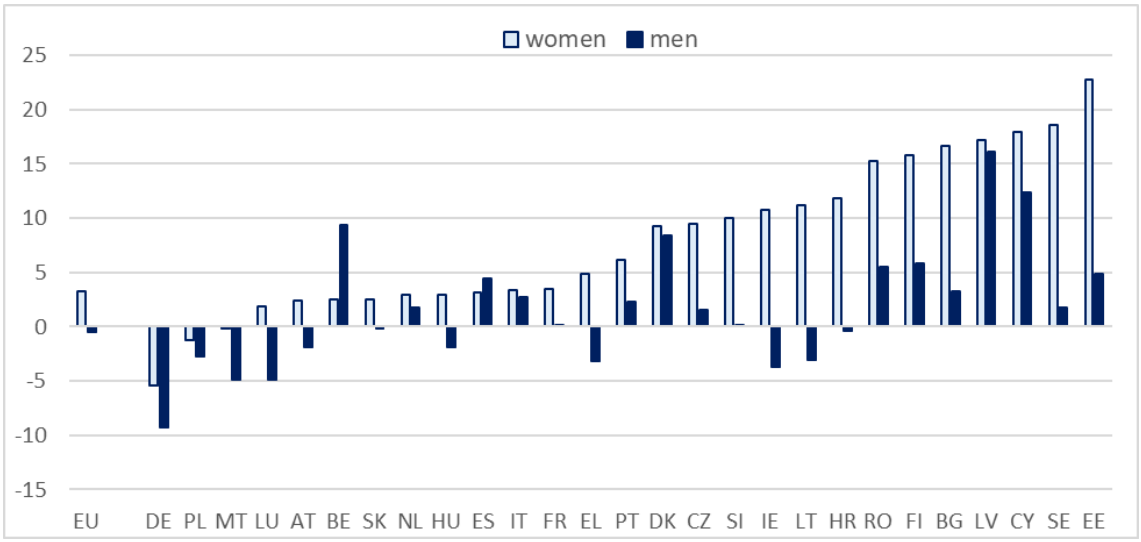
**Household composition may help explain why poverty in advanced old age affects women particularly.** People aged 65-74 live in couples more often than is the case among those aged 75+.[54] In the latter group, more pensioners, in particular women, are single and must rely on their individual pensions and income. Also, for these older women, the individual pension benefit is generally lower;[55] also many of them are surviving partners and receive survivor benefits, which are often lower than old-age benefits. In addition to these composition effects, pension adequacy in advanced old age is also linked to the capacity of social protection systems to protect living standards throughout retirement (see below).

[54] The AROPE/AROP estimate of poverty risks assumes that each member of a household shares the household income; as a consequence, within a household, people are all 'poor' or 'not poor'. It must be borne in mind that even within a household, often the person with the highest income has more say on the way it is spent. This, however, lies outside the scope of this report.

[55] The labour market history of these women is likely to have been such that their pensions are considerably lower.

**Figure 21: Rate of those at risk of poverty or social exclusion in advanced old age, by sex, 2019, difference between age 75+ and 65-74 (p.p.)**

*Higher risk of poverty or social exclusion for the very old, mostly among women*




*Source: Eurostat (ilc_peps01).*

**The risk of poverty or social exclusion among the 75+ age group is considerably higher for women than for men in the EU as a whole** (Figure 21). When making this comparison by country, however, the situation is less clear cut. Women aged 75 and over are subject to a higher risk of poverty or social exclusion than are women aged 65-74 in 23 of the 27 Member States, and this difference is rather large (10 p.p. or more) in 14 Member States. Among men, this pattern is seen in 16 Member States, and the difference is generally small (above 10 p.p. in only two Member States – Latvia and Cyprus).

**Pension indexation is an important policy lever to protect pension recipients against the erosion of their living standards in old age, and thus to maintain adequate pensions throughout retirement.** In most countries, pension benefits are indexed to prices, wages or a combination of these; wage indexation is typically more beneficial to pensioners, but costlier. Indexation may be fixed in legislation or carried out on an ad hoc basis. Box 2 provides an overview of indexation rules in the Member States.

### *Box 2: Indexation rules for pension benefits in the EU: An overview*

*All Member States index pension benefits (i.e. adjust them) to a greater or lesser extent, to reflect changes in the cost of living. In the great majority of countries, this indexation is based on legislated rules – the exceptions being Ireland, Spain, Romania and Sweden, where indexation of pension benefits is based on ad hoc decisions.*

*Overall, Member States' indexation rules for pension benefits can be broadly divided into four main groups (see below for a summary): (a) indexing to prices; (b) indexing to wages; (c) mixed indexation rules (linking to both prices and wages) for pension benefits; and (d) indexation of pension benefits based on ad hoc decisions. Even within one Member State, the indexation rules can vary, e.g. depending on the benefit level. Where pension benefits are indexed to reference values, such as prices or wages, there are different options for how to define and measure these (e.g. general purchasing power index or a specific consumption basket; average wages or the national wage bill).*

**Table 1: Overview of indexation rules applicable to pension benefits in EU Member States**

| Indexation to prices (%) and wages (%) | Countries |
|---|---|
| **Pension benefits indexed to prices** | |
| 100/0 | AT, FR, HU, IT, SK, FI (basic) |
| **Pension benefits indexed to wages** | |
| 0/100 | DK, DE, LT, LU, NL |
| **Mixed indexation rule with greater weight given to prices than wages** | |
| 80/20 | FI (earnings-related), PL |
| 70/30 | HR |
| **Mixed indexation rule with greater weight given to wages than prices** | |
| 40/60 | SI |
| 30/70 | MT |
| **Mixed indexation rule with equal weight given to prices and wages** | |
| 50/50 | BG, CZ, CY, LV |
| **Other** | |
| 50 prices/50 GDP growth (frozen until end 2022) | EL |
| 20 CPI/80 pension contribution revenues | EE |
| CPI, GDP and pension level | PT |
| 100 % prices + ad hoc indexation to general living standards | BE |
| Ad hoc | IE, RO, ES, SE |

*Notes: Belgium: may apply ad hoc corrections to the rise in the general standards of living; Czech Republic: 50/50 rule applies to average pension, indexation formula which favours lower pensions; Greece: Indexation has been frozen since 2010 and is expected to remain frozen until the end of 2022; from 2023 onwards, benefits will be indexed based on a mechanism, which will be calculated on the basis of 50 % of GDP growth and of 50 % of the change in the consumer price index (CPI) of the previous year; pension benefits will only be indexed positively, while the increase cannot exceed the annual change in the CPI; Italy: reduced indexation on higher pensions; Latvia: the ratio for old-age pensions depends on contribution years; small pensions are indexed in full, large pensions are indexed only partially; Hungary: applies corrections; Slovenia: there is also an 'extraordinary indexation' if GDP growth in the previous year is positive or if the growth in the minimum pension base is lower than the CPI for two consecutive years; Slovakia: pensions are indexed according to changes in a so-called consumption basket of pensioner households.*
*Source: MISSOC 2019, input from SPC ISG and ESPN.*

*In the first group, pensions are indexed only to prices (AT, FR, HU, IT, SK). In Hungary, for example, pension benefits are indexed to the price inflation forecast and adjusted later if prices grew faster than projected. In France, pension benefits are subject to an annual indexation exercise on*

*1 January, with indexation based on the evolution of consumer prices (tobacco excluded) in the previous year. Italian pension benefits are indexed to inflation, based on a progressive formula favouring lower pensions. As for Austria, it should be noted that the indexation rule is often not applied, as different kinds of indexation are decided via a parliamentary decision (often with higher indexation of low benefits, and lower indexation of high benefits).*

*The second group is made up of Member States in which pension benefits are indexed only to wages (DK, DE, LT, LU, NL).[56] In the Netherlands, for example, pension benefits are paid in the form of a flat-rate benefit and adjusted in line with the change in the net minimum wage twice a year. In Germany, the pension benefits indexation mechanism takes into account gross wage and salary development, as well the statutory pension insurance (SPI) contribution rate and the ratio of SPI expenditure to revenue from SPI contributions. Lithuania indexes pension benefits to the total wage bill in the economy, rather than average wages.*

*The third group is made up of Member States that use a mixed indexation rule (weighted average of wages and prices) and could be further divided into three sub-groups.*

*The first sub-group comprises Member States that use mixed indexation rules which give greater weight to prices than wages (HR, FI, PL). In Finland, the national and guarantee pension are indexed each year, with indexation following the change in the cost-of-living index, while the statutory earnings-related pension is indexed by applying a weighting of 80 % to changes in the cost-of-living index and 20 % to changes in earnings. Moreover, ad hoc decisions can also be made on basic pensions. As for Poland, the indexation rule is based on the average annual index of consumer goods and services in the preceding year, topped up by at least 20 % of the real growth of the average monthly earnings in that same year. It should be noted that in recent years, Polish pensions have also benefited from ad hoc additions to indexation. As a result, people on lower pensions have had relatively high increases.*

*The second sub-group contains Member States that use mixed indexation rules that ascribe greater weight to wages than prices (SI, MT). In Slovenia, indexation reflects the increase in wages (accounting for 60 %) and the CPI (40 %).*

*The third sub-group consists of Member States where pension indexation rules grant equal weight to prices and wages (BG, CZ, CY, LV).[57]*

*The final group is made up of countries where changes in pension benefits are based on other rules (EE, EL) or depend on ad hoc decisions (IE, RO, ES, SE)[58] or on a mix of provisions (BE). In Belgium, there is an automatic indexation of pensions to consumer prices, and additionally ad hoc 'adaptations to living standards' are applicable. In Estonia, the index is a weighted average of the CPI (20 %) and growth in social tax revenues paid into the pension insurance system (80 %). The applicable rules in the ad hoc group can vary considerably. Ireland, for example, has a policy target for the level of pension benefits relative to average earnings (34 %). As for Spain, the government suspended the application of the pension revaluation index (PRI), linked to the fiscal balance of the pension system, in 2018 and applied the CPI. However, this amendment has not yet been*

[56] On top of the general price indexation mechanism which applies to all wages, pensions and most social benefits, pension benefits in Luxembourg are adjusted annually to the real wage evolution.

[57] In Latvia, the percentage of wage indexation is higher for old-age pensions with longer contribution periods (over 30 years and for people who worked in arduous/hazardous jobs: 60 %, and even higher for over 40 years: 70 % (and for 45 years: 80 %).

[58] In Sweden, the underlying indexation of 'income pensions' is on average wages, but with a reduction of 1.6 p.p. The premium pension has followed the development of the individual pension funds. The guarantee pension is indexed to prices.

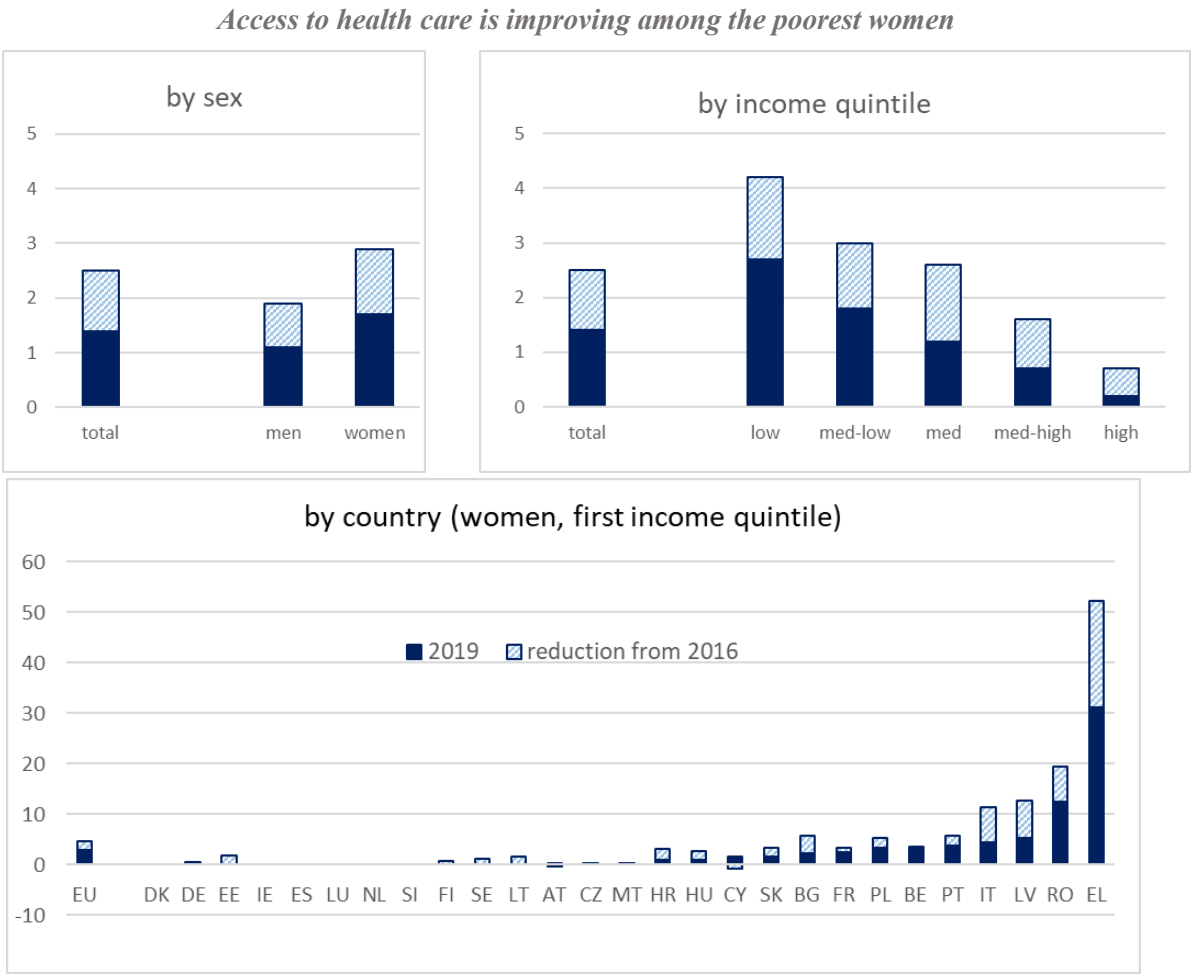
*incorporated into the pensions legislation.*

### *1.3.5 Access to long-term care and healthcare services*

Pension adequacy also needs to be seen in the wider context of older people's access to key services – adequate pensions help older people obtain the goods and services they need. But conversely, affordable and/or subsidised services for older people reduce the need for higher pension benefits, especially at older age. Overall, countries can ensure living standards in old age through a combination of sufficient pension levels and the availability of quality, affordable services for older people.

**Access to healthcare services has improved for older people, including among those on low incomes** (Figure 22). In most EU countries, the share of older people unable to afford health care is very low, and in some cases too low to be reliably measured. The prevalence of self-reported unmet need for medical examination at the EU-27 level decreased from 2.5 % in 2016 to 1.4 % in 2019. While an improvement can be observed for both sexes and all income levels, women remain more badly affected than men (1.7 % versus 1.1 %), and the highest prevalence of financial difficulties in accessing medical care is to be found among women in the lowest income quintile (2.9 %). Compared to 2016, in the few countries where such gaps are significant, fewer older, poor women have been reporting that they are unable to afford medical examination. This reduction has been observed in most countries, but was largest in Greece; however, the situation there remains serious, with almost a third of older women in the lowest earning quintile reporting unmet medical needs.

**Figure 22 People reporting unmet needs for medical examination age 65+, EU, by sex and income quintile; and by country for women in the lowest income quintile, 2019, and reduction from 2016, %**



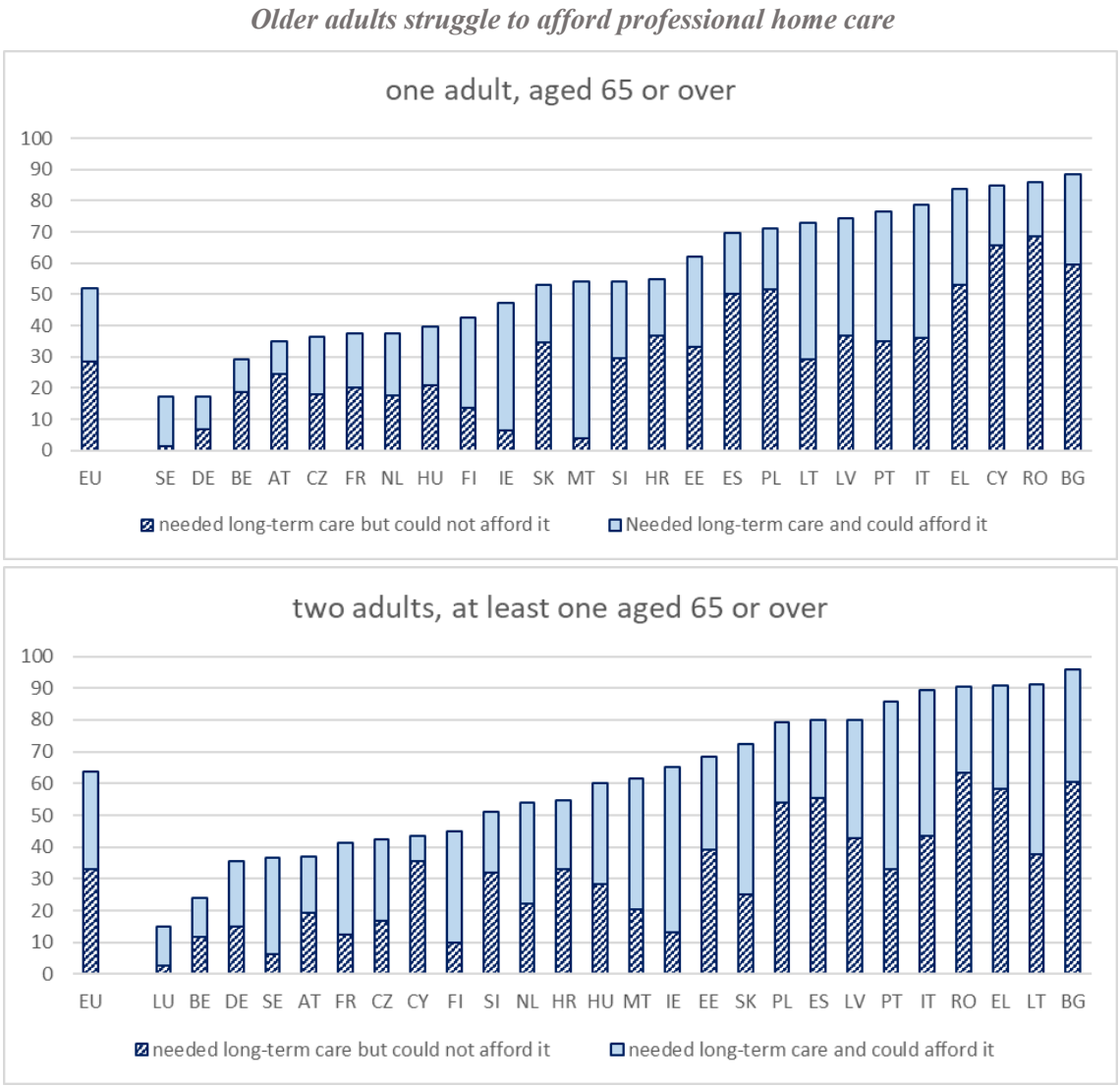

*Notes: Ireland, Austria, Cyprus and Luxembourg reported minor prevalence increases between 2016 and 2019, not shown in the figure. Breaks in series affect changes in Italy, Poland, Slovenia, Sweden and Ireland.*
*Source: Eurostat (hlth_silc_08).*

**A significant proportion of older Europeans cannot afford the necessary long-term care (**Figure 23**).** In several EU countries, the share of people in need of care, but who are unable to afford professional home care is very high, affecting about one third of older households, with about two thirds declaring that they needed some care.[59] The need is higher among single-person households, because these very often consist of single women of advanced age.[60] The share of people unable to afford care approaches 65 % in Romania among older couples (63.5 %) and is over 65 % among single older people in Cyprus and Romania.[61] By

[59] European Commission, *2021 Long-term Care Report*, Figure 4.
[60] See 2018 PAR, pp. 28-29 (European Commission and SPC, 2018).
[61] In Cyprus, long-term care is addressed through different legislation, providing subsidies, specific services such as residential LTC, and services of general economic interest. Additionally, family structures provide care for older people.

contrast, the share is very low in Sweden, Malta and Germany,[62] and among older couples in Luxembourg and Sweden.

**Figure 23: Households reporting a need for professional home care and not using it for financial reasons, 2016, %**




*Notes: Denmark: no data; Luxembourg, no data on single households. 'Needed long-term care and could afford it' means that either they could afford it or they had to forgo it for reasons other than money. Data extraction date: 4 December 2020.*
*Source: Eurostat (ilc_ats15).*[63]

[62] In Germany, reforms in 2017 improved the provisions; services covering professional home care are paid as in-kind benefits.
[63] EU-SILC ad-hoc module, 2016, https://ec.europa.eu/eurostat/web/income-and-living-conditions/data/ad-hoc-modules

# 2 RECENT PENSION REFORMS AND THEIR LIKELY IMPACT

This chapter discusses the main pension reforms enacted in the EU-27 countries between July 2017 and July 2020; as such, it covers the period after the 2018 PAR. Section 2.1 provides an overview of recent pension reforms in the Member States. Section 2.2 discusses the possible impact of some of these reforms on present and future adequacy. Detailed descriptions of the various national reforms can be found in the respective country profiles in Volume II of the report.

## 2.1 Recent pension reforms: An overview

**Pension reforms in 2017-2020 followed similar patterns to the period 2014-2017,** which was covered in the 2018 PAR. The economic upturn from 2015 onwards resulted in a continued growth in EU employment, reaching the highest level ever recorded in 2019 (European Commission, 2019a). In this context – and while ensuring that the financial sustainability of pensions remains a key issue on the reform agenda of EU Member States – efforts to safeguard adequacy have been gaining in prominence in recent years.

**While Member States have continued to pursue the objective of prolonging working lives to ensure the financial sustainability of pension systems, several reforms have aimed to reinforce the income-maintenance capacity of pension systems.** Following the reforms in the period 2015-2017, which mostly focused on mitigating the impact of the economic crisis and the related cost-containment measures on the poverty-protection dimension of adequacy (see the 2015 and 2018 PAR), the post-2017 reforms have sought to further boost both the poverty-protection and the income-maintenance capacity of pensions, while continuing efforts to adjust the duration of retirement to the demographic changes. In this context, four main trends can be identified.[64]

**The first trend is to promote longer working lives and later retirement, through incentives and other 'soft' measures.** Over the previous decade, significant increases in the pensionable age have been legislated for the two or three decades to come. During the last 3 years, Member States have continued to take steps to increase the period spent in work, but this time mainly by facilitating the combination of pensions and employment, incentivising work beyond pensionable age and extending the qualifying period (see Table 2 below for a list of countries).

**The second trend includes measures that aim to improve the income-maintenance capacity and inclusiveness of pension systems.** This includes revising the accrual rates, adapting calculation and indexation mechanisms, raising tax exemptions, promoting saving in occupational schemes, and improving access to pension saving for specific categories of workers. Increased attention has been paid to the situation of carers (persons – still mainly women – caring for children and dependent persons), improving their current or future pension accruals.

[64] The trends observed in this chapter serve to illustrate the dynamics and direction of the reform process in Member States; they should not be confused with the dimensions of pension adequacy defined in the Introduction.

**The third trend has been the introduction of new measures aimed at poverty reduction.** This objective has been addressed mostly by introducing or increasing basic/minimum pensions or survivor pensions. It should, however, be noted that in some other countries means testing and residency requirements have been tightened.

**Fourthly, some Member States are continuing to reform the way in which their pension systems are financed,** against the background of a general long-term shift towards more pension financing from the general budget (see Section 4.2).

Table 2 groups Member States under these four reform trends between 1 July 2017 and 1 July 2020, thereby illustrating the relative prevalence of the four trends. During the reference period, Estonia and Lithuania adopted overarching reforms, affecting numerous aspects of their pension systems. A similarly ambitious reform is under way in the Netherlands, while in France a reform aimed at overhauling the pension system is in the legislative pipeline.[65]

**Table 2: Pension reforms adopted in Member States by trend, 1 July 2017 to 1 July 2020**

| | Prolonging working lives | Income maintenance & access | Poverty reduction | Financing |
|---|---|---|---|---|
| **Member States** | BE, DK, DE, EE, EL, ES, HR, HU, IT, LT, MT, RO, SE, SI | AT, BE, BG, CZ, DE, DK, EE, ES, HR, EL, IE, IT, LV, LT, LU, MT, NL, PL, PT, RO, SK, SI | AT, BE, BG, CY, CZ, DE, DK, FI, EL, ES, IE, HR, IT, LV, LT, MT, PL, PT, RO, SE, SI, SK | BG, DE, FI, HU, LT, PT, RO |

### *2.1.1 Prolonging working lives: Emphasis on positive incentives*

Pension reforms aimed at prolonging working lives continued in the period under scrutiny. During the previous decade, Member States had already addressed this aspect by increasing pensionable ages (and in some cases directly linking them to life expectancy), adopting stricter eligibility conditions and reducing early retirement opportunities. **The reforms of the last 3 years have put more emphasis on positive incentives to rebalance the time spent in work and the time spent in retirement.** Pension reforms have thus mainly focused on flexible retirement pathways and incentives to defer retirement, with only a few further reforms increasing the pensionable age.

**The period 2017-2020 has mainly seen the progressive implementation of reforms previously adopted on pensionable age.**[66] Only very few countries have adopted significant new reforms to increase the pensionable age (EE, SE), while others have introduced reforms solely to change the pensionable age parameters linked to gender or specific groups (e.g. IT, RO). At the same time, some Member States have backtracked on envisaged increases in pensionable age, adapting, amending or rescinding measures previously adopted (e.g. HR, NL, SK). An overview of current pensionable ages and legislated future increases is provided in Table 3.

[65] Due to the COVID-19 pandemic, France postponed the adoption of its planned reform to an unspecified date. According to the initial timetable, the reform would have been subject to a vote in parliament by the end of the first half of 2020.
[66] See previous editions of the PAR for details of earlier reforms.

**Table 3: Current pensionable ages and legislated future changes**

| Member State | Pensionable age on 1 January 2020 | | Legislated future changes | |
|---|---|---|---|---|
| | Men | Women | Men | Women |
| **BE** | 65 | | 67 (in 2030) | |
| **BG** | 64y3m | 61y6m | 65 (in 2037) +LE | |
| **CZ** | 63y8m | 59y8m-63y8m | 65 (in 2037) | |
| **DK** | 66 | | 68 (in 2030) +LE | |
| **DE** | 63y10m-65y9m[2] | | 65-67[2] (in 2031) | |
| **EE** | 63y9m | | 65 (in 2026) +LE | |
| **IE** | 66 | | 68 (in 2028)[3] | |
| **EL** | 62-67[2] | | +LE | |
| **ES** | 65-65y10m[2] | | 65-67[2] (in 2027) | |
| **FR** | 62-66y2m[2] | | 62-67[2] (in 2022) | |
| **HR** | 60-65 | 60-62y6m | 60-65 (in 2030) | |
| **IT** | 67 | | +LE | |
| **CY** | 65 | | +LE | |
| **LV** | 63y9m | | 65 (in 2025) | |
| **LT** | 64 | 63 | 65 (in 2026) | |
| **LU** | 65 | | 65 | |
| **HU** | 64y5m | | 65 (in 2022) | |
| **MT** | 63 | | 65 (in 2027) | |
| **NL** | 66y4m | | 67 (in 2024) +LE | |
| **AT** | 65 | 60 | 65 (in 2033) | |
| **PL** | 65 | 60 | 65 | 60 |
| **PT** | 65-66y5m[2] | | +LE | |
| **RO** | 65 | 61y3m | 65 | 63 (in 2030) |
| **SI** | 60-65[2] | | 60-65[2] | |
| **SK** | 59y9m-62y6m | 61y2m-62y6m | 62y6m-64[1] (in 2030) | |
| **FI** | 63y6m-68y[4] | | 65-70[4] (in 2027) +LE | |
| **SE** | 62-68[4] | | 63-69 (in 2023)[4] | |

*Notes: 'pensionable age' denotes the age of eligibility for a full old-age pension from the main statutory pension scheme; '+LE' – adjusted to life expectancy gains; (1) depending on the number of children raised; (2) depending on the length of the contribution period; (3) the increase of pensionable age in IE was repealed in late 2020, pending a review planned for 2021; (4) flexible pensionable age linked to benefit level.*
*Sources: MISSOC, ESPN, Member States.*

**Estonia is the only country that has explicitly linked pensionable age to life expectancy during the period under examination.** The reform, adopted in 2018 and scheduled to come into effect as of 2027, limits the pace of pensionable age increase to 3 months per year. In Sweden, following a political agreement in December 2017, the lowest pensionable age (the recommended pensionable age being 65) was raised to 62 in 2020 and will increase further to 64 by 2026.

**Other countries have backtracked on the implementation of reforms of the pensionable age already legislated.** Croatia adopted a reform in 2018 to increase the pensionable age to 67 as of 2033. However, against the background of heated public debate, the planned increase was subsequently cancelled and the harmonisation of pensionable age and qualifying period between women and men, for both old-age and early retirement pensions, was postponed

from 2026 to 2029. Along similar lines, the 2013 Dutch reform, aimed at increasing the pensionable age from 65 to 67 between 2013 and 2020, was renegotiated with the social partners, leading to a new agreement in 2019. The latter shifts the end of the phasing-in period from 2020 to 2024. Similarly, in 2019 the Slovak government discontinued the ongoing increase in the pensionable age, capping it at 64 for men; it has also allowed women to retire 6 months earlier per child (with a maximum reduction of 18 months).

**Reforms to reduce early retirement opportunities continued but were less widespread than in previous years.** This dynamic largely reflects the fact that most Member States had already enacted such reforms over the previous decade (see 2015 and 2018 editions of PAR). In the countries that introduced new measures (e.g. HR, DE), the main policy instruments for reducing early retirement opportunities were to raise the eligibility age, extend the qualifying period, introduce or raise actuarial penalties, and reduce access to early retirement for some categories of workers. Estonia adopted a mixed reform, introducing the opportunity to retire up to 5 years before pensionable age, but also significantly extending the qualifying period.

**Some Member States have eased access to early retirement for specific categories of workers, through new schemes or by waiving penalties**. The measures target such groups as workers in arduous or hazardous jobs, those with long contribution periods (for example, having started work at the age of 16) or those unable to work. Italy, for example, implemented the 'quota 100' early retirement scheme for people with long contributory periods. In Portugal, the early retirement regime was revised in 2019 to protect workers who started their careers very early and those with a long working life. In Austria, as of 2020, penalties will no longer apply to several early retirement schemes and disability pensions with a 45-year contributory period, including a possible 5-year credit for raising children.

**There were fewer reforms to extend the contributory period required for an old-age pension in the last 3 years**, though new measures in this respect were adopted in some Member States (e.g. DK, LT, RO).

**The trend has continued towards promoting flexible retirement rules, aimed at facilitating longer working lives and smoothing the transition into retirement. An increasing number of Member States have allowed – or made more attractive – the option of cumulating paid work and pension benefits** (e.g. BE, HR, DK, EE, EL, DE, HU, MT, SI, SE). In Belgium, flexi-job status, a form of non-standard work contract, was extended to include pensioners in 2018.[67] As of 2020, Slovenia increased the part of the pension that can be combined with full-time, socially insured work to 40 % (previously 20 %) during the first 3 years. However, the accrual rate for each of these 3 years has been reduced from 4 % to 3 %. In the fourth year and thereafter, the part of the pension received is reduced to 20 %, and the accrual rate returns to its normal level of 1.36 %. In Malta, from 2018 onwards, pensioners who continue to work will be able to carry on accumulating social contributions,

[67] In Belgium, since 2015, the flexi-job scheme has allowed employees who already work 80 % in regular employment to also take a flexi-job in the bar and restaurant sector. For work performed under the flexi-job status, a worker builds up social protection entitlements, including a pension, without paying social contributions or income tax.

which was not the case before. In Greece, pensioners who combine work with pensions will now see their pension reduced by only 30 %, rather than the previous 70 %.

**More Member States have encouraged deferred retirement.** In Sweden, the right to remain in employment will be extended from the current 67 years to 69 by 2023. In 2018, Romania allowed women to stay in employment after pensionable age by extending their work contract, with the aim of bringing women's effective retirement age closer to that of men. Other countries have introduced or raised the bonuses for staying in employment after pensionable age (e.g. HR). Denmark has reduced pension deductions for working pensioners and introduced more flexible pay-out rules for deferred pensions. In Estonia, as of 2021 it becomes possible to defer the pay-out (partially or fully) to increase future benefits. In 2019, Belgium reformed the strict 45-calendar year limit on the contribution period taken into account for calculating the pension. Now, the corresponding number of working days can be taken into account, even if they are spread over more than 45 calendar years.

### *2.1.2 Increased focus on income maintenance*

**In the period 2017-2020, many more Member States than in the preceding years implemented reforms to improve the income-maintenance capacity and inclusiveness of pension systems.** These reforms include providing more favourable conditions for pension accrual or calculation, improving legal and effective access for certain groups of workers, introducing more favourable taxation of pensions, extending pension credits, and improving access to supplementary savings (e.g. BE, BG, HR, CZ, DE, EL, LT, LV, PT, RO, SI).

**A majority of Member States have revised pension accrual or calculation rules, most often in a way expected to favour pension adequacy** (e.g. BG, HR, CZ, EE, DE, EL, LT, LV, PT, RO, SI). Some Member States have also introduced or increased pension top-ups, such as the thirteenth monthly pension or Christmas/Easter bonuses (e.g. BG, EE, PL, SK).

In 2019, Romania adopted a new pension law, which significantly increases the value of a pension point in the country's points-based system. The new pension law also introduces a formula harmonising social contribution conditions between women and men and across cohorts of pensioners. In Greece, the latest reform has introduced mainly parametric changes, strengthening the link between contributions and pensions, and addressing those aspects of the 2016 pension reform that were (subsequently) ruled unconstitutional. As of 2019, higher accrual rates have come into force for every year between 31 and 40 years of contributions. Slovenia has adopted a gradual increase in the statutory replacement rate for men.[68] As part of its overarching pension reform of 2019, Lithuania introduced a points-based system and adjusted the contributions paid into the public and statutory funded schemes. Estonia increased accrual rates for low-income earners and reduced those for high-income earners, with effect from 2021.

[68] From 57.25 % to 63.5 % of former earnings for a 40-year career and from 26 % to 29.5 % for a 15-year career, in line with that for women. Under the previous legislation, women benefited from a higher statutory replacement rate to compensate for their generally shorter and more interrupted careers. The approach changed with the 2019 reform, which equalised the replacement rates and introduced pension credits for childcare periods (see below).

However, there are also examples of situations where pension accrual has become less generous. For instance, in Belgium, since December 2017, for most periods of unemployment exceeding 1 year, pension credits have been based on the minimum wage, instead of the previous wage.

**Taxation of pension benefits has been reformed in some countries, with the aim of increasing net pensions** (e.g. BE, EE, LV, MT). In Malta, the non-taxable pension income was increased slightly for all pensioners.[69] In Estonia, at the beginning of 2018, the special tax-free pension allowance was replaced by an increase in the tax-exempt portion of income for low- and medium-income earners. In Belgium, the solidarity contribution was reformed to reduce the level of social contributions paid by pensioners with high pension incomes. (For further discussion on taxation and its impact on pension incomes, see Section 4.1.4.)

**Several Member States have revised pension indexation to protect the value of pension benefits.** In the period under examination, some Member States permanently amended their pension indexation rules (BG, HR, CZ, LV, LT), while others opted for favourable ad hoc measures (e.g. AT, PL, ES).

In 2017, Lithuania introduced a pension indexation rule (previous pension indexations were only based on ad hoc decisions). Among those Member States that introduced permanent changes to their pension indexation rules, Croatia adopted a measure in 2019 aimed at enhancing adequacy by indexing pensions twice a year, based on a mixed formula (linked to both wages and prices). In 2018, Latvia introduced favourable indexation rules for old-age pensioners with longer contributory periods.

Among the Member States that opted for ad hoc measures, Austria, for example, indexed low pensions at above the standard rate on several occasions in the period 2017-2020. And in Spain, the government decided in 2018 to index pensions to the consumer price index (instead of a special index that led to indexation in previous years and that fell short of the headline inflation rate), in order to preserve pensioners' purchasing power.

**Improvements in statutory and effective access to pensions for the self-employed, already observed in 2014-2017, have continued in the last 3 years.** In Belgium, the minimum pension for the self-employed increased significantly in 2017, through being aligned with the minimum pension for employees. In Spain, a series of changes was made to the special regime for the self-employed in 2018 and 2019; these are expected to result in more adequate pensions in the future. In Portugal, as of 2019, a new contributory regime for self-employed workers came into force, bringing their previously higher contribution rates closer to those of contractual workers. In Luxembourg, as of 2018, a new law opens up the possibility for the self-employed to set up their own occupational pension schemes, thus illustrating the potential role of supplementary savings for self-employed and non-standard workers.

**Some countries have expanded access to special retirement regimes for workers in arduous or hazardous jobs**. In Italy, the rules regarding the categories of workers employed

[69] From EUR 13,200 in 2018 to EUR 13,434 in 2020.

in ‘demanding’ jobs, who are entitled to the ‘social version’ of the so-called APE pension (state-subsidised access to early retirement) have been amended, with the number of occupations covered rising from 11 to 15. These 15 occupations were exempted (for 2 years) from the automatic increase in the pensionable age that was implemented in January 2019, in response to demographic change. In the Netherlands, the 2019 pension agreement includes a temporary change to the tax law (in force 2021-2025) to make it easier for employers to offer up to 3 years of early retirement for workers in arduous jobs.

**A number of Member States have taken steps to improve pension entitlements for child-rearing, child care or informal long-term care,** e.g. through pension credits or supplementary benefits (e.g. AT, BG, HR, DE, IE, LT, PL, RO, SK, SI). These rules primarily affect women, who represent the vast majority of care providers, thus helping to tackle the gender pension gap.

In 2019, Poland introduced a supplementary old-age benefit (the so-called ‘mother 4+’ pension) paid out of the state budget. Equal in amount to the minimum pension, it is paid to mothers (and under certain conditions to fathers) who have raised four or more children and either are not eligible for an old-age pension, or whose pensions are below the minimum pension. In Croatia, the 2018 pension reform added 6 months to the contributory period of mothers for each child born or adopted. In 2020, Slovenia introduced pension credits for taking care of a child in its first year (for a maximum of three children). Bulgaria and Lithuania extended the conditions under which caregivers providing care to persons with a disability are entitled to pension credits, to include milder forms of disability. Similar reform options are being discussed in other countries.[70]

**Several Member States adopted reforms of occupational pension schemes to enhance their contribution to old-age incomes** (e.g. BE, DK, DE, LU, NL, PL, RO). The reforms mostly sought to facilitate access to occupational saving, boost coverage and improve the governance of pension schemes.

In Belgium, as of 2018, employees can opt to join an occupational pension scheme on their own initiative, while self-employed individuals who do not own a company can benefit from a new occupational pension scheme. Cyprus has been reforming the governance of occupational pension schemes to make these more accessible and transparent. Germany has continued to reform its occupational pension schemes. The aim of its Act on Strengthening Occupational Pensions (2018) is to enable social partners to set up defined contribution schemes. To improve coverage, Ireland plans to start auto-enrolment in occupational pensions in 2023.

Denmark took steps to increase the savings incentives and coverage of occupational pensions. First, in June 2017, an agreement raised the annual maximum contribution that can be paid

[70] In the Czech Republic, one of the key topics for discussion in the Commission for Fair Pensions is fairer pensions for carers. The objective is that fairer pensions for carers would reduce the gender gap in pensions and, in general, would target people who provide long-term care to dependent family members. One idea being discussed is the introduction of a ‘fictive assessment income’: a pension would be calculated on this basis if the carer’s qualifying income for pension entitlement is lower.

into an occupational pension scheme without leading to a reduction in the means-tested part of the statutory pension. Secondly, in February 2018 it was decided to introduce an extra tax credit for pension contributions. Thirdly, in November 2018, it was agreed to establish a subsidised savings scheme for social security claimants, to enable them to accrue a supplementary pension.

Most central and eastern European Member States still have no or very limited occupational pension provision, but some are working to change that. In Poland, new employer-based long-term savings schemes – employee capital plans (PPKs) – were introduced in 2019, based on auto-enrolment. In Romania, a law on occupational pensions came into force in 2020 to offer an alternative to the special pensions granted in the public sector and to diversify pension incomes.

### *2.1.3 Poverty reduction*

As described in the 2018 Pension Adequacy Report, the main adequacy focus of reforms adopted in the post-crisis period was to improve the protection of low-income pensioners. While the adequacy agenda in the period 2017-2020 was broader, as described above, **efforts aimed at strengthening anti-poverty safeguards in national pension systems continued, with a focus on improving minimum guarantees for low-income pensioners.** About half of all EU Member States undertook such reforms, notably by introducing a basic pension (IT) or a contributory minimum pension (SI); raising basic/minimum pension levels (e.g. BE, BG, HR, CZ, DK, FI, IE, LV, MT, PL, PT, SK, SE, RO); or implementing different types of pension top-ups (such as bonuses – e.g. AT, DE, LT, MT, PL). At the same time, a few Member States (e.g. BE, DK) introduced measures to tighten the conditions for means-tested/basic pensions, based on residence.

Italy introduced a basic pension, the 'citizenship pension', for every person aged 67 or above who has lived in the country for at least 10 years and who has annual equivalised income below a defined threshold. Slovakia implemented a measure entitling pensioners with at least 30 years of contributions to 33 % of the average monthly wage.

Among the Member States implementing different types of top-ups, Lithuania introduced a pension supplement for low pensions and increased the monthly non-contributory social assistance pension, while caregivers receiving the social assistance pension will be entitled to 1.5 times the basic rate. In 2019, Austria established a 'pension bonus' for persons with a low pension entitlement, making them eligible for the so-called 'equalisation supplement reference rate'. Germany adopted legislation that introduces a pension supplement for individuals with at least 33 years of contributions and low earnings. Several countries have also improved the rules on or have upgraded survivor benefits (e.g. CY, EL, IT, LV, MT, RO, ES).

In contrast to the previous examples, it should be noted that some Member States have reduced access to the minimum old-age benefits. In Denmark, a reform adopted in 2017 introduced stricter eligibility criteria for the residence-based public pensions and disability and supplementary benefits, making entitlement to a full state pension conditional on a longer

period of residence in the country. Likewise, since 2019 Belgium has enforced stricter controls to ensure that beneficiaries of minimum old-age income are resident in the country.

### *2.1.4 Reforms in pension financing*

**Some Member States have adopted changes in pension financing, including in relation to contribution rates.** These developments have taken place against the background of a general shift in the financing of pensions from social contributions to general government revenue over the last decade (see Section 4.2).

**Lithuania is the only country where an overarching reform of the financing of the public and statutory funded pension schemes took place in the period under scrutiny, as part of a more general overhaul of the social security system.** First, the financing of the non-contributory component of pensions was shifted from the social insurance fund to the state budget. This shift was accompanied by a reform of the social insurance system, including contributory pensions. Overall social security contributions were reduced, while the main burden was transferred from the employer to the employee (gross wages were increased proportionally). Secondly, the mandatory transfer of social security contributions to statutory funded schemes was replaced with voluntary individual contributions, complementing public pension saving. To an extent, this latter reform mirrors similar developments in other central and eastern European countries that have rolled back statutory funded pensions; however, Lithuania has kept strong incentives for individuals to save in these schemes (auto-enrolment with a short opt-out period, matching contribution from the state budget).

**Reforms of contribution rates have diverged across Member States.** Rates were increased for both employers and employees in some countries during the period under examination (e.g. BG). In others, the trend towards reducing contribution rates, mostly for employers, continued: this was the case in Finland, Hungary and Lithuania, while Portugal reduced rates for the self-employed. Germany extended the 'transition zone' income brackets, in which low-income employees pay reduced employee contributions.

## 2.2 Likely impact of recent pension reforms on present and future adequacy

As described above, Member States have continued to address different aspects of pension adequacy: while reforms aimed at prolonging working lives and protecting low-income pensioners against poverty have continued, the largest share of reforms in the period under scrutiny were aimed at strengthening the income-maintenance capacity of pension systems. The impact of recent reforms on future adequacy is very difficult to assess. The theoretical replacement rate projections presented in Chapter 3 offer some insight, but they are influenced by several contextual factors besides policy reforms. Moreover, as also illustrated in this chapter, governments sometimes backtrack on previously adopted reforms, pandering to a specific political or social context. In light of these limitations, the following examples largely present a tentative qualitative assessment of the likely impact of some of the reforms described in Section 2.1.

**The increases in pensionable age and the incentives to stay in employment longer are expected to extend average working lives, a key precondition for preserving the**

**sustainability and adequacy of pensions in a context of increased life expectancy.** However, the diversity of careers, types of work, incomes and family and health situations affects individuals' ability to work and accrue pension rights. As the EPC and SPC have pointed out, enabling more people to work – and to work for longer – requires profound changes in the labour markets, including equal opportunities for women and men, enhancing the employability of older workers, combating discrimination and adapting workplaces, as well as sustained public health system improvements (EPC/SPC, 2020).

**Changes in the financing rules of pension schemes (e.g. contributory bases, rates and periods) may be targeted to impact both adequacy and the sustainability of pensions.** For example, the significant changes in the financing of pensions in Lithuania have already reduced the accumulated debt and improved the balance of the Social Insurance Fund, enabling savings in a pension reserve fund that was established in 2018 to prepare for future economic shocks. Moreover, the new rebalanced accrual rates between the statutory and statutory funded pension schemes are expected to foster pension accrual and lead to higher pensions. See also Section 4.2 for a discussion on the links between the financing of pensions and adequacy.

**Some reforms are expected to result in an immediate increase in current benefits.** In Romania, a significant increase in the level of pension adequacy is expected with the full entry into force of the new law on pensions. The new calculation formula and the increased value of the pension point will result in an increase in all benefits.

In Germany, the measure increasing the 'transition zone', which reduces contributions for low-income earners, is not expected to have a negative impact on their pension accruals. This is because the benefit levels in this case depend on the actual salary earned, rather than on the contributions paid.

**Some Member States have taken steps to enhance saving in supplementary schemes, with varying success; other reforms are still at an early stage.** In Poland, the introduction of the occupational schemes (called PPKs) offers a new vehicle for supplementary retirement savings. However, despite auto-enrolment, the take-up has been limited, partly due to the lack of trust in funded schemes following the phasing out of the statutory funded pillar in 2011. Denmark's reforms of occupational pensions are expected to partly resolve the disincentive problem and further extend the (already broad) coverage, as well as to improve pension adequacy for some categories of workers. In the Netherlands, the 2019 pension agreement foresees the abolition of the 'average contribution rate' in occupational pensions that was perceived to benefit older employees more than younger workers. Until now, all employees have paid the same contribution rate, but older workers have typically gained greater pension entitlements, as they earn more than younger workers.

**Reforms of minimum benefits are likely to contribute to alleviating poverty among low-income pensioners.** The introduction of the means-tested pension supplement for retirees with 33 years of contributions in Germany is expected to bring some low-income pensioners out of poverty. Approximately 1.3 million people are expected to benefit from the supplement in the first year, 70 % of them women. However, retirees with shorter or interrupted careers and the former self-employed not insured under the statutory pension scheme fall outside the scope of this measure.

In Poland, the 'mother 4+' pension introduced in 2019 had been granted to around 50,000 beneficiaries by June of that year (nearly 1 % of all old-age pension beneficiaries). The law in the Czech Republic on increased pensions for those over 85 has benefited approximately 8.2 % of all old-age pensioners. In Lithuania, the supplement introduced in 2019 to top up pensions that amounted to less than 95 % (100 % as of 2020) of a threshold representing minimum consumption needs is expected to alleviate the situation of the very poorest pensioners (see the discussion on the poverty gap in Section 1.1), but not the overall AROP rate of retirees. Similarly, the small increases in means-tested pensions are set to have a small effect on pension adequacy as well.

# 3 ADEQUATE PENSIONS IN A LONG-TERM PERSPECTIVE

## 3.1 Theoretical replacement rates and pensions in the future

This chapter will examine the extent to which people entering the labour market today can expect an adequate pension when they retire, and what they can do to enhance their chances of enjoying a decent standard of living in old age. It does so on the basis of theoretical replacement rates, which indicate what percentage of their last work income as an employee in the private sector a pensioner will receive at retirement.

**The chapter thus provides an assessment of future pension adequacy, with a focus on income replacement.** Using the theoretical replacement rates (TRRs, see Box 3), which allow for analysis of income maintenance after specific careers, this chapter compares income replacement for future retirees to workers retiring today, as well as the variations observed in income replacement linked to earnings level, career path and various life events. To an extent, theoretical replacement rates also give indications on the future adequacy performance of pension systems in relation to poverty protection, assessing pension outcomes linked to low-income and discontinuous careers, and duration, or assessing pensions 10 years after retirement.

### *Box 3: Theoretical replacement rates (TRRs)*

*Theoretical replacement rates are standard simulations, also known as model person simulations, that measure how a hypothetical retiree's pension income in the first year after retirement would compare to their earnings immediately before retirement. They are defined as the level of pension income in the first year after retirement, as a percentage of individual earnings at the moment of take-up of the pension. They therefore mainly reflect the income-maintenance dimension of pension adequacy.*


*To allow an assessment of current and future pension adequacy, TRRs are calculated for a number of hypothetical cases, assuming a given career length, earnings level and age of retirement. TRRs are expressed as a percentage of pre-retirement earnings.*

*Computing TRRs involves several assumptions, ranging from the specific career path to salary, inflation and interest rates over decades.*

*Separate calculations based on even slightly different assumptions can yield very different results. TRR cases can be more representative in one country than another, and their levels are weakly comparable across countries. However, their sensitivity to various career and life events can be compared, and this comparison can yield insight into pension systems' adequacy-related performance.*

*TRRs are therefore used to assess pension adequacy by altering career paths and observing how pension levels are affected. This is done by comparing the pension outcomes associated with different career paths with a baseline, the 'base case', characterised by an uninterrupted career of 40 years*

*ending at standard pensionable age (SPA) (see Box 5 below). Insights can then be gained by comparing women with men, high earnings with low earnings, people retiring in 2019 with people starting a career in 2019 (most retiring in 2059), longer and shorter careers, continuous and interrupted careers, and so on. Comparing TRRs can also provide insight into the role of taxation, occupational pensions and the impact of indexation rules. Above all, a comparison of 2059 and 2019 values indicates the impact on adequacy of recent pension reforms, whose effects often play out over decades.*

*The reader can consult the annex on the theoretical replacement rate methodology,[71] which includes key definitions for each career case.*

*The comparisons presented below focus on the net TRR, as this reflects the contribution of pension to disposable income. Wherever net TRRs are provided, it is important to note that the observed results also reflect the effect of taxation. Gross TRRs are also presented, and comparing net with gross gives indications on the impact of taxes, which is explored more extensively in Chapter 4.*

*Table 4 illustrates the current base-case TRR that serves as a point of reference for the other cases. As noted above, it is influenced by several assumptions and should therefore in itself not be interpreted as an indication of current adequacy or a cross-country comparison.*

**Table 4: Net theoretical replacement rates, base case (40 years' uninterrupted career ending with the standard pensionable age),[72] men and women average earners, retiring in 2019**

| | BE | BG | CZ | DK | DE | EE | IE | EL | ES | HR | FR | IT | CY | LV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Men* | 75.5 | 61.9 | 62.4 | 65.3 | 57.8 | 35.0 | 57.9 | 79.5 | 98.1 | 55.5 | 76.2 | 79.4 | 66.0 | 59.7 |
| *Women* | | | | | | | 55.8 | | | | | | 63.0 | |
| | **LT** | **LU** | **HU** | **MT** | **NL** | **AT** | **PL** | **PT** | **RO** | **SI** | **SK** | **FI** | **SE** | |
| *Men* | 52.5 | 99.5 | 87.2 | 78.1 | 101.2 | 83.6 | 71.6 | 95.8 | 85.3 | 60.3 | 67.4 | 62.3 | 55.2 | |
| *Women* | 52.3 | | | | | 84.4 | 60.6 | | 81.7 | 66.3 | | | | |

*Source: OECD and Member States; in some countries (e.g., Belgium) the assumed 40-year career does not give the right to a full pension.*

*The calculations include pension schemes that are mandatory or widespread in the given country (see Annex). So while for some countries the analysis is limited to public mandatory schemes, in others it may also include e.g. occupational schemes. The underlying economic and demographic assumptions for the period 2019-2059 match the 2020 population projections from Eurostat[73] and the employment and economic projections adopted in the Ageing Report 2021[74].*

Current (2019) TRRs are computed for fewer cases than the projected 2059 TRRs; the latter apply to a wider array of career profiles. In both the current TRR and the projected TRR, the 'base-case' career, represents a worker who is employed uninterruptedly for 40 years in the private sector, until the standard pensionable age, which is reached in 2019 and 2059,

[71] Add link once the PAR website is composed.

[72] The standard pensionable age, or SPA, is the earliest age at which people can retire after a 40-year career without incurring any penalties; however, the SPA in Luxembourg was set to 65 as an exception. See box 3 below.

[73] https://ec.europa.eu/eurostat/data/database codes proj19n and extensions

[74] https://ec.europa.eu/info/publications/2021-ageing-report-economic-and-budgetary-projections-eu-member-states-2019-2070_en

respectively. These current and projected base-case TRRs are compared with each other and used as a baseline for measuring the impact of various career and life events. Also, in the base cases, TRR levels depend on a number of factors and assumptions that can have varying effects in different countries; thus, they are not directly comparable across countries.

### *Box 4: The base case*

*The 'base case' represents the pension of a worker who retires at the standard pensionable age (see Box 5 below) after an uninterrupted 40-year career on a standard employment contract. There are three career income profiles: average, low and high. The base case is the standard scenario, against which the other cases are compared. These base cases are calculated separately for the worker retiring in 2019 (the current TRR) and in 2059 (the projected TRR).*

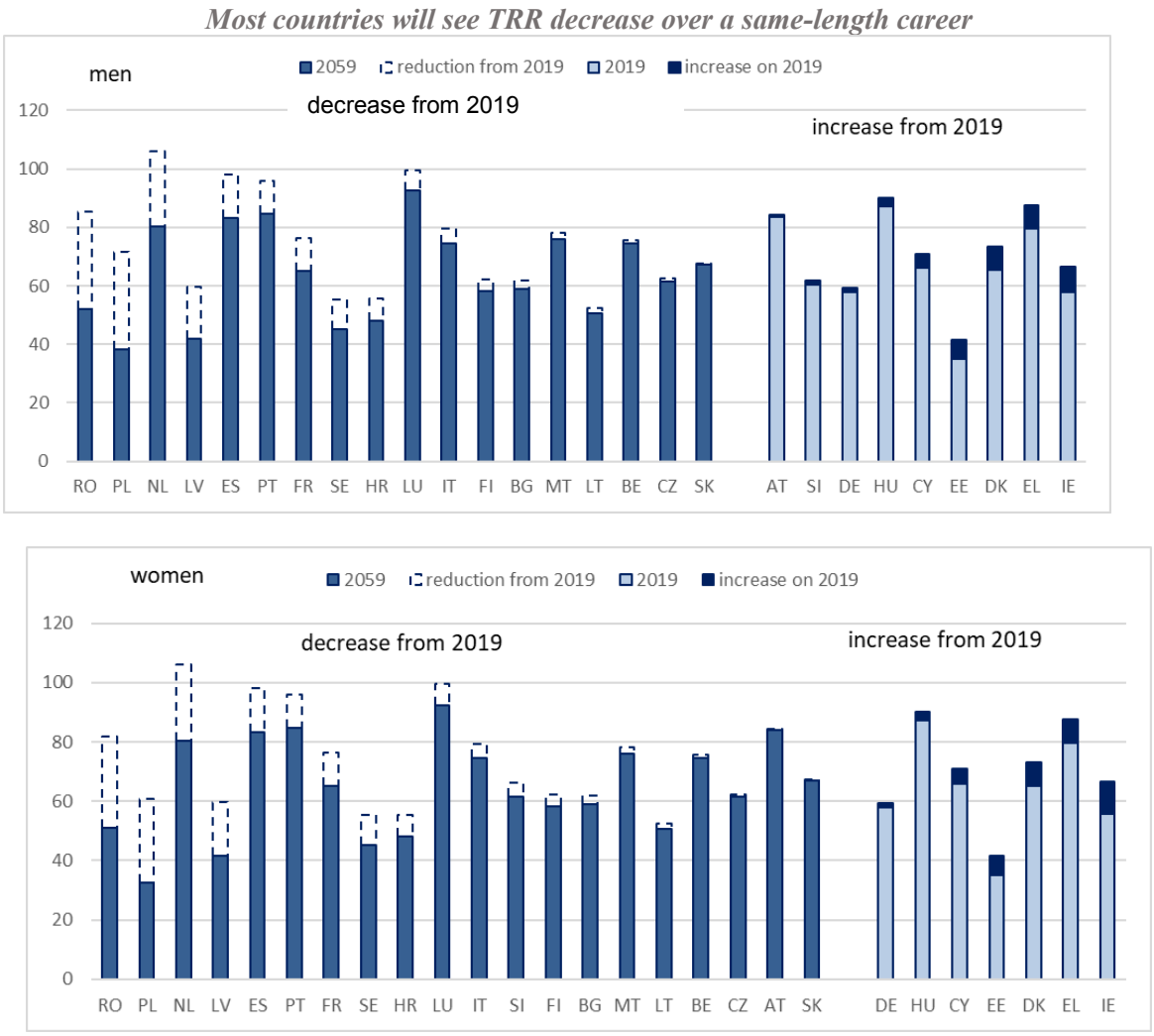
*While the base-case career TRR is computed for both women and men, differences in pension rules between the sexes lead to differences in the current and projected TRRs in only some Member States, with mostly lower TRRs for women (PL (women: -10.9 p.p. in 2019 and -5.9 p.p. in 2059); RO (-3.6 p.p. and -0.9 p.p.); CY (-3.0 p.p. in 2019); LT (-0.2 p.p. in 2019);[75] the exception is SI, which has a higher TRR for women (+6.0 p.p. in 2019)). Gender differences also emerge in some alternative career cases.*

*Furthermore, when comparing countries, one must bear in mind that in those countries where pension benefits are accrued over the course of careers longer than 40 years (e.g. BE), the results based on 40 years will correspond to incomplete careers or to pensions that are lower than theoretically possible, whereas in other Member States they will correspond to the maximum possible pensions. See for instance the discussion of Figure 24, Figure 28 and Figure 29 below.*

**In the case of standard, 40-year careers, replacement rates are set to decrease over the next decades** (Figure 24). Compared to the 2019 values (see Table 4) the 2059 values are higher in a few countries, but lower in most (Figure 24). One way of looking at this is to say that a 40-year career was more likely to lead to an adequate pension for a standard career in 2019 than it will in 2059. This implies that adequate pensions will increasingly depend on longer careers. Strong decreases are projected in Romania, Poland and, to a lesser extent, Latvia, Portugal and Spain. In all other countries, the changes are below 10 p.p. Increases, generally small ones, are projected in Greece, Estonia and Cyprus.

[75] In Lithuania, this is due to the annuity factor, which takes retirement duration into account and influences yearly benefit levels; this differs due to different retirement ages for women and men.

**Figure 24: Net TRRs, base case (40 years to SPA), average earner, 2019 and 2059, men and women, %**



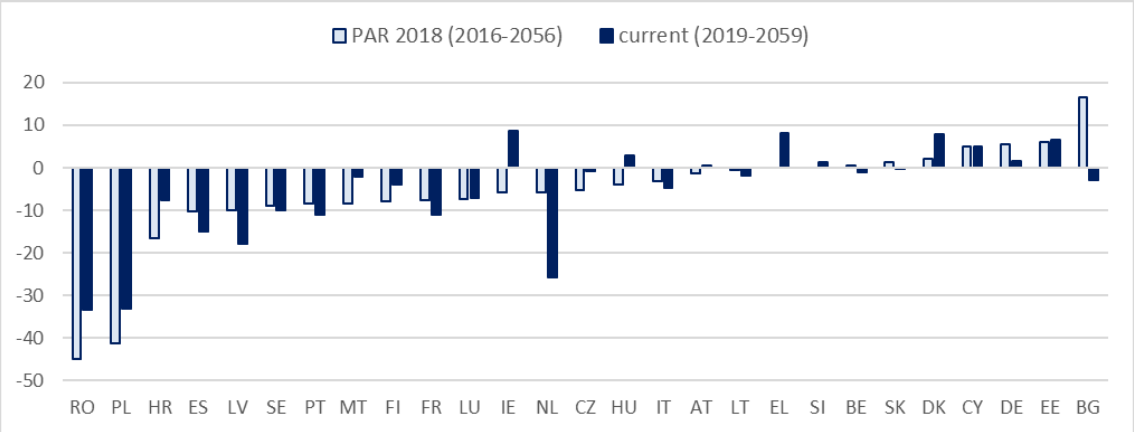

*Note: In some countries such as Belgium and France, a full pension is not granted under the base-case conditions.*
*Source: OECD and Member States.*

**The rates are decreasing in more countries among women.** In particular, the TRRs of women are projected to decrease in Austria and Slovenia. Both countries have higher rates for women in 2019, and these are the same for women and men in 2059. In Poland and Romania, where in 2019 women's rate are lower than men's, the difference persists in 2059.

**The decrease in adequacy confirms the results of earlier analysis** (Figure 25**)**. A similar comparison to Figure 24 was shown in the 2018 Pension Adequacy Report.[76] Figure 25 below compares the difference between the current and projected base TRR values in the previous 2018 PAR with the current results presented in Figure 24. The overall conclusion at the EU level has remained unchanged, although there have been quite strong changes in a few countries, particularly Bulgaria and the Netherlands.

**Figure 25: Net TRRs change, base case (40 years to SPA), 2018 PAR (2016-2056) and current exercise (2019-2059), p.p.**

*Pension reduction over 40 years is stronger than 3 years ago, with a few exceptions*




*Note: Sorted by difference calculated in 2018. No 2018 data for Greece; Finland: The smaller change in the 2021 PAR compared to the 2018 PAR is mainly explained by a change in base-case calculation assumptions. In 2018, the SPA was assumed to be higher (according to the national pension system) and earnings-related pension included an increment for late retirement. In 2021 calculations, the SPA is in accordance with the earnings-related system pension age.*
*Source: OECD and Member States.*

## 3.2 Rising retirement ages

Both **pensionable age and effective age of exiting the labour market are rising.** The former rise is predictable in a number of countries that have set either fixed increases in the future or have linked them to life expectancy (see Table 3). Effective exit ages are projected by employment models, where this report uses the projections prepared for the 2021 edition of the Ageing Report.[77]

[76] The results of the two exercises are not fully comparable. Whereas the base-case definition has not changed, the guidelines have, albeit slightly; in such a complex undertaking, even small changes in approach can make a large difference.
[77] https://ec.europa.eu/info/publications/2021-ageing-report-underlying-assumptions-and-projection-methodologies_en

### *Box 5: The standard pensionable age*

*The calculation of theoretical retirement rates requires the specification of a pensionable age. This is not straightforward in all Member States. In a number of Member States, pensionable age varies, depending on the length of career or starting age. In some countries, pensionable age varies, depending on variables that are outside the scope of this exercise; for instance, in the Czech Republic, on the number of children that a woman has had. In others, such as Sweden, people can choose to retire within a range of ages. (See Table 3 in Chapter 2 for more details.)*

*Therefore, for the purposes of TRR calculations, countries are compared according to a single pensionable age, called the standard pensionable age (SPA). This is defined as the earliest age at which people can retire after a 40-year career without incurring any penalties. It can – but in most cases does not – vary by sex; it often varies between the different reference years (2019 or 2059). In the case of Slovenia, the SPA is set at 65, although one could retire at age 60, provided one had started working at age 20. In Sweden, the SPA is assumed to be stable, at 65; in the next 40 years, the lower end of its range will increase from 62 to 63.*

To understand the next TRR case, the 'ageing working group' case (AWG case, see Box 6), we need to bear in mind the interplay between changes in the SPA and changes in the labour market exit age. These are listed in Table 5 and illustrated in the following figures.

Theoretical replacement rate calculations are based on **2019 and legislated 2059 SPAs** (see Table 5). The SPA is set to rise in 16 of the 27 Member States. Some 10 countries (e.g. DK, EL, PT) have legislated to link the SPA to life expectancy, allowing the SPA to be projected. Others (e.g. BE) have decided to set increases in the next decade or so. Finally, several (e.g. ES, SE) have not legislated for any future SPA changes. While any comparison of TRR changes across countries is subject to many caveats, pension age plans are the most important, and affect the results strongly.

**Average labour market entry and exit ages** are computed from employment rates. Employment rates are observed for the 2019/2020 estimates, and are projected via a 'cohort simulation model' that takes observed transition rates into account. The model and estimation method are explained in the Ageing Report assumptions.[78] As observed in previous editions of the PAR, entry and exit ages vary within cohorts and are linked to educational attainment and skill levels.

[78] European Commission, 2020b, pp. 129-131.

**Table 5: Average labour market entries and exits[79] and standard pensionable ages, 2019 and 2059**

| | Labour market entry and exit ages[80] from the AWG base scenario | | | | | | | | Standard pensionable age (as used in the TRR calculations) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | | | | 2059 | | | | 2019 | | 2059 | |
| | men | | women | | men | | women | | men | women | men | women |
| | Entry | Exit | Entry | Exit | Entry | Exit | Entry | Exit | | | | |
| **BE** | 22.7 | 63.3 | 23.7 | 63.5 | 22.8 | 64.3 | 24.1 | 64.3 | 65.0 | 65.0 | 67.0 | 67.0 |
| **BG** | 22.9 | 64.7 | 25.5 | 63.2 | 23.1 | 64.7 | 25.6 | 64.1 | 64.2 | 61.3 | 65.0 | 65.0 |
| **CZ** | 22.0 | 63.5 | 24.5 | 61.4 | 22.2 | 64.2 | 24.9 | 63.4 | 63.5 | 61.2 | 65.0 | 65.0 |
| **DK** | 21.6 | 65.0 | 23.3 | 64.1 | 22.1 | 68.9 | 23.9 | 68.4 | 65 | 65 | 73.0 | 73.0 |
| **DE** | 20.8 | 64.7 | 22.2 | 64.5 | 20.9 | 65.7 | 22.3 | 65.3 | 65.7 | 65.7 | 67.0 | 67.0 |
| **EE** | 20.6 | 65.2 | 21.7 | 65.0 | 21.0 | 68.7 | 22.2 | 68.6 | 63.5 | 63.5 | 70.0 | 70.0 |
| **IE** | 20.7 | 65.5 | 21.8 | 64.5 | 20.8 | 66.0 | 21.8 | 66.1 | 66 | 66 | 68.0 | 68.0 |
| **EL** | 22.8 | 63.0 | 24.2 | 62.9 | 23.1 | 67.1 | 24.3 | 67.0 | 62.0 | 62.0 | 66.0 | 66.0 |
| **ES** | 22.2 | 63.4 | 23.6 | 64.1 | 22.4 | 66.1 | 23.7 | 66.6 | 65.0 | 65.0 | 65.0 | 65.0 |
| **FR** | 21.6 | 62.3 | 22.9 | 62.2 | 21.8 | 64.7 | 23.2 | 64.3 | 66.2 | 66.2 | 67.0 | 67.0 |
| **HR** | 21.5 | 62.7 | 23.4 | 61.4 | 22.0 | 63.2 | 23.8 | 62.7 | 65.0 | 62.3 | 65.0 | 65.0 |
| **IT** | 23.8 | 65.2 | 26.0 | 65.8 | 23.9 | 67.7 | 26.2 | 68.8 | 67.0 | 67.0 | 70.2 | 70.2 |
| **CY** | 21.0 | 64.4 | 21.6 | 63.4 | 21.5 | 67.3 | 22.1 | 66.2 | 65.0 | 65.0 | 68.0 | 68.0 |
| **LV** | 20.9 | 63.2 | 21.5 | 63.8 | 21.3 | 64.3 | 22.3 | 64.6 | 63.5 | 63.5 | 65.0 | 65.0 |
| **LT** | 21.3 | 63.4 | 22.3 | 62.1 | 21.5 | 64.4 | 22.5 | 63.8 | 63.8 | 62.7 | 65.0 | 65.0 |
| **LU** | 22.1 | 60.4 | 22.3 | 60.1 | 22.3 | 60.4 | 22.9 | 60.1 | 65.0 | 65.0 | 65.0 | 65.0 |
| **HU** | 21.8 | 63.2 | 23.9 | 62.4 | 21.9 | 65.3 | 24.6 | 64.8 | 64.0 | 64.0 | 65.0 | 65.0 |
| **MT** | 19.9 | 62.8 | 20.6 | 61.9 | 20.0 | 63.9 | 20.9 | 62.7 | 63.0 | 63.0 | 65.0 | 65.0 |
| **NL** | 21.1 | 65.8 | 21.9 | 64.0 | 21.6 | 68.1 | 22.7 | 66.4 | 66.3 | 66.3 | 69.0 | 69.0 |
| **AT** | 20.2 | 63.2 | 21.9 | 61.4 | 20.5 | 63.2 | 22.1 | 63.2 | 65.0 | 60.0 | 65.0 | 65.0 |
| **PL** | 21.8 | 64.5 | 23.7 | 61.3 | 21.9 | 64.5 | 24.0 | 61.3 | 65.0 | 60.0 | 65.0 | 60.0 |
| **PT** | 22.2 | 64.6 | 22.6 | 64.1 | 22.3 | 66.1 | 22.7 | 65.7 | 66.4 | 66.4 | 68.8 | 68.8 |
| **RO** | 22.0 | 64.1 | 25.1 | 62.7 | 22.2 | 64.1 | 25.4 | 62.6 | 65 | 61 | 65.0 | 63.0 |
| **SI** | 21.5 | 62.1 | 22.5 | 62.0 | 21.7 | 63.0 | 22.8 | 62.8 | 65.0 | 65.0 | 65.0 | 65.0 |
| **SK** | 21.7 | 62.0 | 24.7 | 61.4 | 21.8 | 62.7 | 25.5 | 61.7 | 62.5 | 62.5 | 64.0 | 64.0 |
| **FI** | 21.3 | 63.9 | 22.2 | 63.5 | 21.7 | 66.6 | 22.9 | 66.0 | 63.5 | 63.5 | 67.7 | 67.7 |
| **SE** | 20.7 | 65.6 | 21.1 | 64.5 | 21.1 | 65.6 | 21.4 | 64.6 | 65 | 65 | 65.0 | 65.0 |

*Source: European Commission, OECD and Member States.*

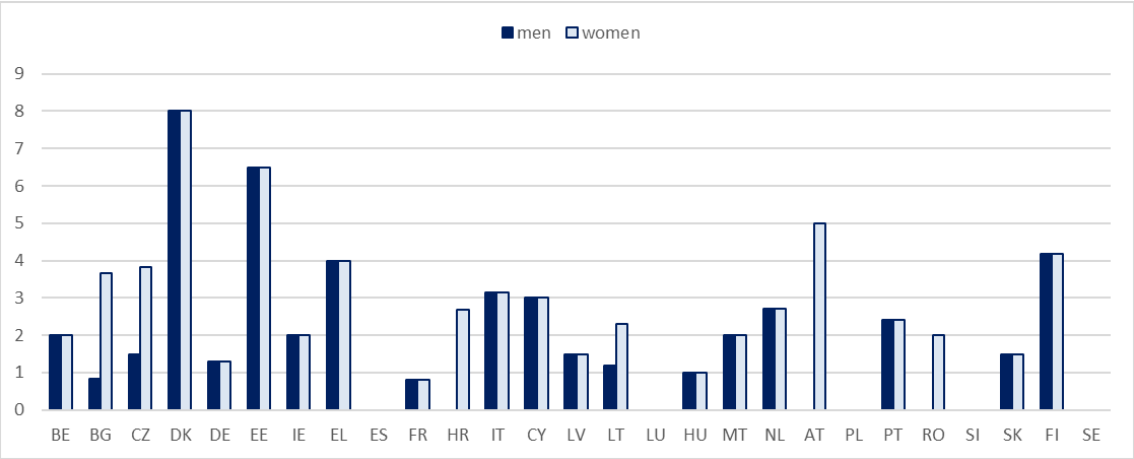
**The SPA is legislated to increase more in some countries than others** (Figure 26). Substantial increases are legislated (explicitly or by linkage to life expectancy) in Estonia, Greece, Finland and, to a lesser extent, Italy, Cyprus and Portugal. These are due to rules linking retirement age to life expectancy. For women, large increases are legislated in Austria,

[79] The average labour market entry and exit ages are taken from the projections carried out for the 2021 Ageing Report (European Commission, 2020b).

[80] These are ages at which the person stops working; they do not necessarily start receiving an old-age pension at this age.

Bulgaria, the Czech Republic and Croatia; these are due to rules bringing the retirement age for women up to the level for men.

**Figure 26: Legislated SPA increases, 2019-2059, years of age**

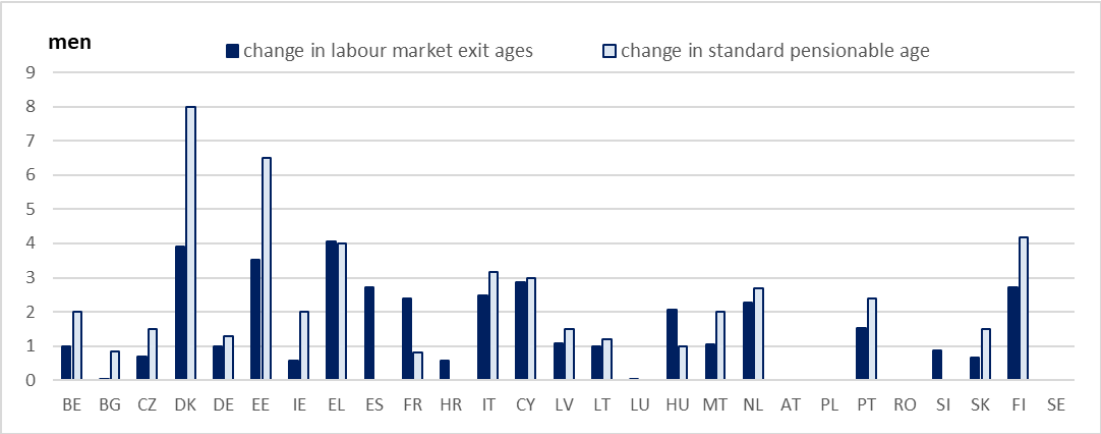


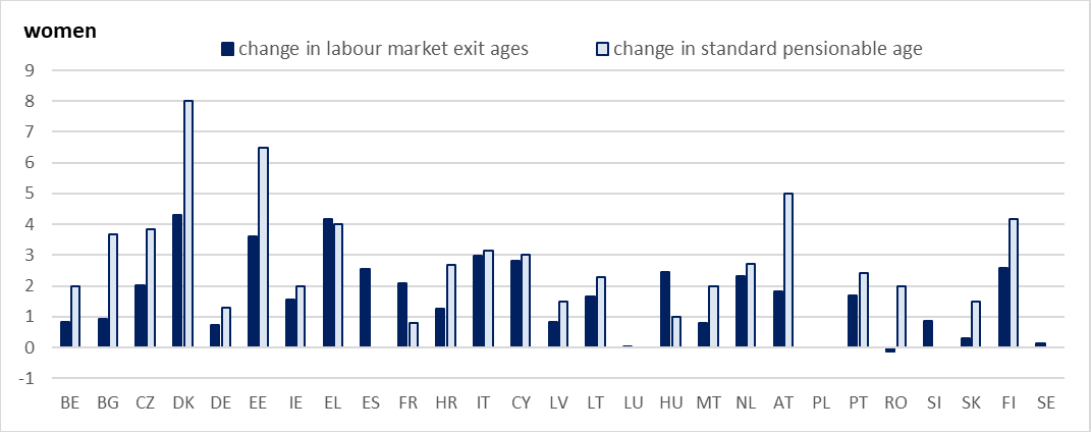

*Source: OECD and Member States. Seemingly missing values are zero increases.*

As a result, the projected labour market exit ages in Table 5, in combination with legislated SPA, mean that in some countries the fictitious individuals underlying the TRR are projected to work beyond the SPA, while in some others they are projected to retire earlier (Figure 27).

**Figure 27: Change in the difference between average labour market exit ages and SPA, 2019-2059, years of age**

*In 'linking countries' SPA will increase more than projected exit ages*






*Note: Labour market exit change is from 2020 to 2059. In some countries the standard pensionable age does not change.*
*Source: European Commission, OECD and Member States.*

### *Box 6: Theoretical replacement rates – AWG career case*

*Since 2000, careers have become longer and people are retiring from the labour market at later ages; on average, people leaving employment in 2020 are 2 years older than was the case in 2000.*[81] *An average career is defined as starting at the average age of entry into the labour market and ending at the average age of exit, without interruptions. Thus, an interesting comparison can be made between TRRs after an average career in 2019 and after a projected average career in 2059; these differ in duration, and the differences themselves vary by country, as indicated in Table 5. It must be pointed out that the AWG case is strongly influenced by the employment projection methods (observed transitions and estimated impact of employment and pension rule changes), referred to above. These make up a complete scenario that is consistent with the assumptions adopted in the Ageing Report.*

***AWG case**: a worker starts a career at the national average age of effective labour market entry and retires at the average age of effective labour market exit in 2019 and 2059; thus, the career length will vary by country and gender. Credited non-contributory periods (e.g. studying years, child care) are not taken into account.*

**In countries that have not legislated for SPA increases, rising projected labour market exit ages lead to a projected overlap between work and receiving a pension**, if exit ages rise above the SPA by 2059. In many countries, the SPA is not legislated to increase. However, in most countries, the AWG projects increasing labour market exit ages (see Table 5). Hence, in some countries where the SPA is currently lower than the effective retirement age, the number of years of overlap between work and pension may increase. This is the case in Spain, which keeps its SPA at 65, but is projected to see average exit ages for both women and men increase to over 66 by 2059. In other countries, where the SPA exceeds the average retirement age, this gap will narrow or even close. For instance, in Slovenia, a static SPA and rising exit age imply a narrowing gap between stopping work (at about 63 in 2059) and being eligible for pension benefits, at 65. In Hungary, while the SPA is set to increase by 1 year (to 65), the exit age is

[81] Chapter 1 shows the increase in exit ages from the labour market in the past 10 years.

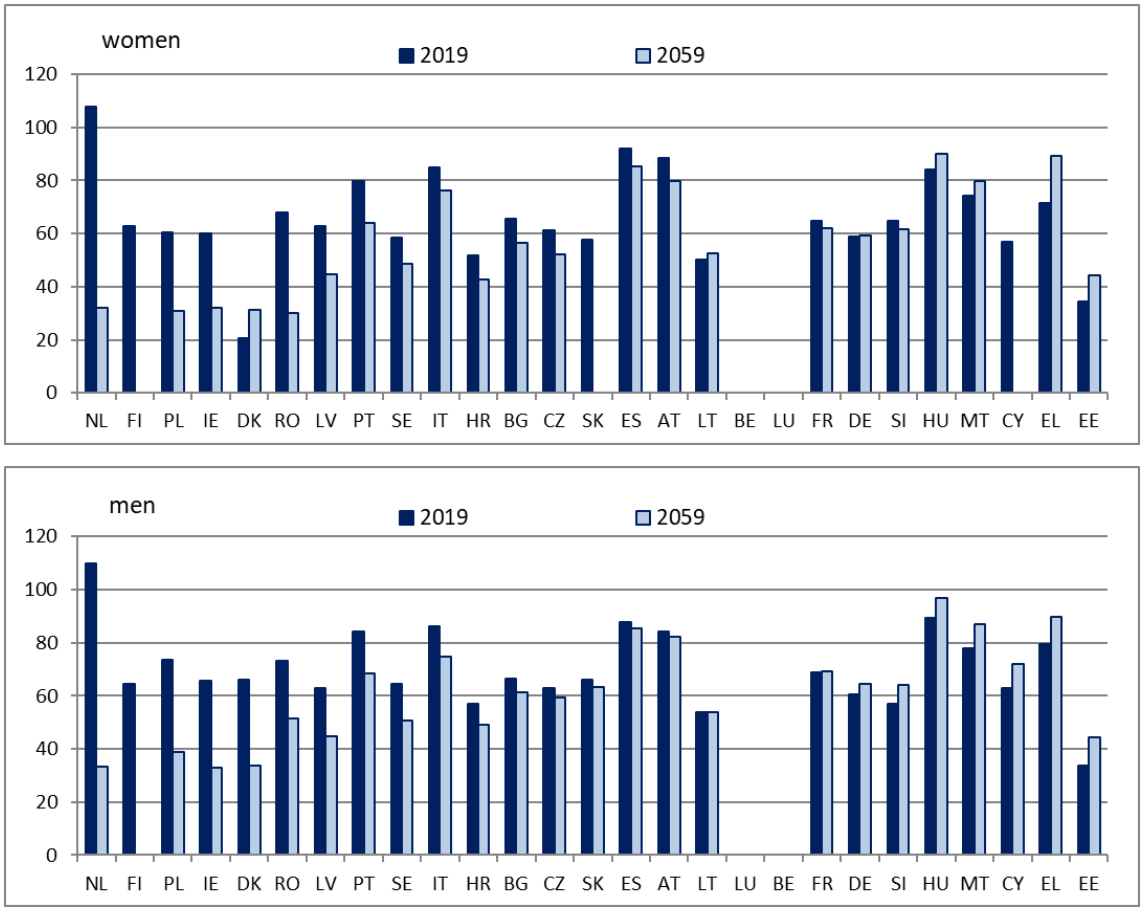
projected to increase by 2 years (reaching around 65), effectively closing the gap. Finally, in some countries, both the SPA and the effective retirement age are increasing. This may lead to a widening gap, as is the case, in particular, in Estonia (exit age rising to almost 69, but SPA rising even further to 70); and, among women, in Bulgaria and Austria, where substantial legislated SPA increases are not matched by the smaller increase in the projected average labour market exit age.

The AWG career case is an alternative to the base case, which captures the combined impact of rising labour market exit and retirement ages. It assumes that the worker starts and ends work at the observed (2019) and projected (2059) average ages in Table 5. Indicatively, in 2019 the difference between average exit and entry ages ranges from 36.7 among women in Slovakia to 44.9 among men in Sweden, and is less than 40 in only one country among men and 15 countries among women; in 2059 it is projected to range from 36.2 among women in Slovakia to 44.1 (both sexes) in Estonia; it is expected to be less than 40 in only seven countries among women (none among men).

**In a majority of countries, the AWG case TRRs, based on projected career length and currently legislated pensionable age, will decrease for both women and men** (Figure 28). In some countries, however, they are expected to increase. This observation is similar to that on the base case TRRs (i.e. assuming a 40-year career ending at the SPA) (Figure 24). In Finland, men (and women) would fail to qualify for a pension on retirement right after the career described and under the conditions of the AWG case; this is also the case in Belgium and Luxembourg (in both 2019 and 2059), as well as in Poland for men. In some countries, women would not qualify for a pension in 2059 after the projected career. This is due to the fact that they would not have reached the SPA at the end of the projected career; however, they would generally qualify for a pension once they reached the SPA, with an income gap after leaving employment. Figure 28 must be read jointly with Figure 27, which qualifies its findings, as there is a strong impact depending on whether countries have legislated for long-term retirement age increases. Generally, AWG rates for women are lower than for men; the changes from 2019 to 2059 are similar to those of men, except in Slovakia and Cyprus (where women would not qualify for a pension at the end of their careers) and Romania (where their pension would be considerably reduced – much more than that of men).

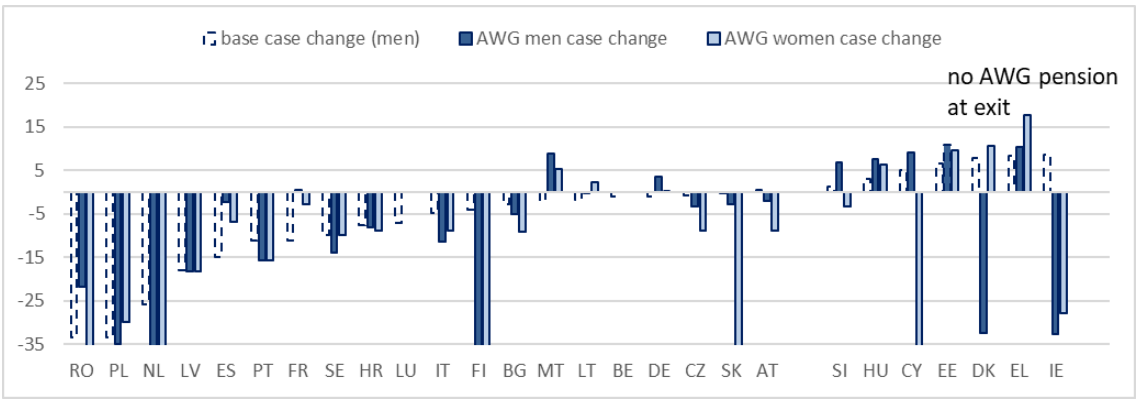
## Figure 28: Net 2019 and 2059 TRRs, AWG career case, average earner, %

*The AWG case will see stronger reductions among women*




*Notes: Ordered by change 2019-2059. In Belgium, Luxembourg and (2059) Finland, a pension is not granted on leaving employment under the AWG conditions (but at a later point in time). Similarly, in the Netherlands (2059), the state pension is only granted after the retiree reaches retirement age.*
*Source: OECD and Member States.*

## Figure 29: Change in net TRRs 2019-2059, base and AWG cases, average earner, p.p.




*Notes: Ordered by change in base case. In Belgium, Finland and Luxembourg, the AWG case does not allow a pension to be received on retirement; in the Netherlands, only the occupational part is paid. In these four countries, the retiree will receive a pension after reaching retirement age. As to the differences in the changes facing women and men in the base case, these are few and are indicated in Figure 24.*
*Source: OECD and Member States.*

**The average projected career length yields replacement rate changes (2019-2059) that are similar to the standard 40-year career – unless it fails to reach the SPA** (Figure 29). Major differences in the evolution of the base-case career (Figure 24) and the AWG career (Figure 29) are due to the interplay of rising pensionable ages and longer working lives. For example, Finland sees a reduction of less than 5 p.p. under the base case, but a 100% reduction (no pension is granted) at the labour market exit age in 2059; because the SPA is higher than the exit age (in Figure 28, the TRR is treated as being zero) and therefore the retiree receives no pension when they stop working. In 2019, a pension is granted at the AWG exit age. The situation is similar in Belgium and Luxembourg; however, in those two countries, no pension is granted either in 2019 or in 2059 under the AWG conditions, and therefore Figure 29 shows no TRR difference between 2019 and 2059. The interplay between exit age and SPA also affects the results in Italy and Portugal, where rules link life expectancy and SPA. It also explains why the countries on the right-hand side of Figure 28 see an increase over time in their AWG case TRRs: people will be working longer, while the SPA is assumed not to increase. An example of this is for women in Slovenia, whose SPA is legislated to remain constant at 65 and whose average career duration among men is projected to increase by 0.7 (some 8 months); its TRR, which would rise slightly under the base case, is projected to rise by almost 15 p.p. under the AWG case. The change in the AWG case for women generally follows that for men, but there are two notable exceptions: in Cyprus, where the men's AWG follows the base-case pattern, while the women's AWG case changes strongly in the opposite direction; in Denmark, the opposite occurs (women's TRR following the base-case pattern, the men's diverges) (Figure 29).

## 3.3 Pensions for high and low earners

**Career cases in this section**

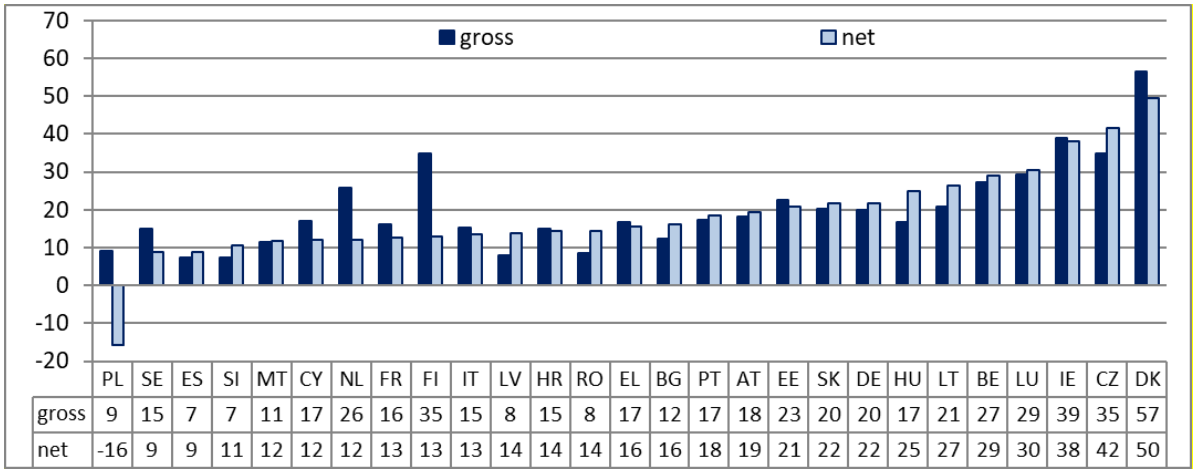
**Earning level comparison:** a worker follows a base-case career (40 years to SPA); but while the above career was premised on national average earnings, earnings vary:

- Low income earner: a constant level of 66 % of the average earning profile each year.
- High income earner: earnings grow linearly every year, from 100 % of average earnings to 200 %.

**A comparison of TRRs for high and low earners shows that low earners have higher replacement rates, testifying to the inequality-reducing effect of pension systems** (Figure 30). A comparison including a low-earning career (hypothesised as someone receiving two thirds of an average salary) and a high-earning career (hypothesised as someone starting on the average salary and progressing linearly to earn twice as much at career end) allows us to explore the equalising impact of pension and tax systems mentioned in Chapter 1 and further explored in Chapter 4. The TRR difference between low and high earners (Figure 30) ranges from -16 p.p. (9 p.p.) in Poland to 53 p.p. (57 p.p.) in Denmark for net (gross) TRRs. In Germany, the recently introduced basic pension supplement for long-term insured persons with low earnings (*Grundrente*) increased the difference from 2018.

**Figure 30: Low-earner minus high-earner TRRs 2059, gross and net, base case, men, p.p.**

*Low-earner TRRs are higher than high-earner TRRs, with one exception*




| | PL | SE | ES | SI | MT | CY | NL | FR | FI | IT | LV | HR | RO | EL | BG | PT | AT | EE | SK | DE | HU | LT | BE | LU | IE | CZ | DK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| gross | 9 | 15 | 7 | 7 | 11 | 17 | 26 | 16 | 35 | 15 | 8 | 15 | 8 | 17 | 12 | 17 | 18 | 23 | 20 | 20 | 17 | 21 | 27 | 29 | 39 | 35 | 57 |
| net | -16 | 9 | 9 | 11 | 12 | 12 | 12 | 13 | 13 | 13 | 14 | 14 | 14 | 16 | 16 | 18 | 19 | 21 | 22 | 22 | 25 | 27 | 29 | 30 | 38 | 42 | 50 |

*Note: Ordered by difference in net TRR.*
*Source: OECD and Member States.*

**In most countries, the difference in net TRR is larger than in gross TRR, indicating that taxes tend to help make disposable pensions more equal.** This finding is similar to the one presented in Section 4.1. Poland (net TRR) seems to buck the general trend, as TRRs for high earners are higher than for low earners.[82] Furthermore, **in some countries, taxation seems to**

[82] In Poland, high-earner pensions are subject to a 17 % tax rate and have an exempt part, whereas high-earner salaries are subject to 32 % without exemptions. Among low earners, both pension and salary are taxed at 17 % and benefit from exemptions. Thus, high TRRs for high earners are a 'denominator effect'. This means that the TRR ratio is low because among high earners, the TRR is high due to high tax applied to high work earnings.

**dampen the difference** between high and low earners. This effect is strongest in the Netherlands, but is also visible in other countries; part of this may be due to pensions usually being lower than work income, and therefore the income difference between high and low earners is larger while working than after retiring, leading to a lower tax-rate difference. The difference among women (not shown) is almost exactly the same as among men; there is one exception – Poland – where the difference is even higher among women, with high earners having a TRR 17 p.p. higher than low earners.

## 3.4 Career duration and incentives to work longer

**Career cases in this section**[83]

**Change career duration and retirement age:**

- A worker retiring 2 years *after* national standard pensionable age (starting point of the career is as in base case, now with 42-year career, retirement in 2061).
- A worker retiring 2 years *before* national standard pensionable age (starting point of the career is as in base case, now with 38-year career, retirement in 2057).

**Change career duration (retirement at SPA):**

- A worker retiring at SPA with *42 years* of career (starting point 2019, retirement in 2061).
- A worker retiring at SPA with *38 years* of career (starting point 2019, retirement in 2057).

**Start work at age 20 (retirement at SPA)**:

- A worker starts a career in 2019 at age 20 and then retires at the SPA, so the retirement year varies by country.

**20-year career**:

- A worker works for 10 years 2019-2029, then has a 20-year career break from 2029 to 2049, and then works 10 years until standard pensionable age in 2059.

In all cases, credited non-contributory periods (e.g. studying years) are not taken into account.

**Variants on the base case include different career durations. The results below derive from comparing the TRRs under different assumptions, implying varying career lengths, against the base-case TRRs**. First, the 38-year and 42-year durations (ending at or around the SPA) enable assessment of the end-of-career incentives for working longer. Then, more drastic variations (20-year career and career from age 20) address more extreme cases. The modelling of long careers does not include work-related effects, such as seniority or any other possible effect of career breaks on wages; even beyond the SPA, or after a prolonged break, the workers continue to earn an average salary. Therefore, changes in TRRs are only due to pension rules.

With SPA currently ranging around 65, the standard 40-year career would start at around age 25 in most countries. However, average ages at first employment in the EU are just above 20,

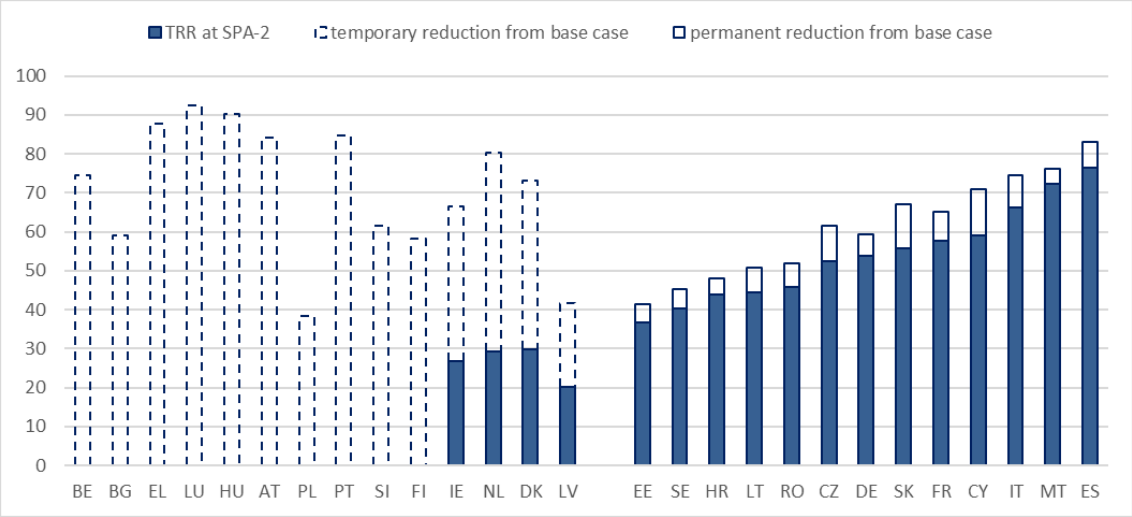
[83] In some countries, the TRR differences are influenced by different calculations; for instance, if those profiled are born in different years, different life-expectancy benefit adjustments may be applied.

meaning that many people start working nearer to their 20th birthday and the case of people working uninterruptedly from age 20 to the SPA is not uncommon. Therefore, it is interesting to check the TRR after longer (or shorter) careers. This section is about career lengths.

**Approaching retirement, people can have the option to retire earlier than the SPA or to work longer.** Most countries encourage longer working lives to reduce the impact of population ageing on both the labour market and the financial sustainability of the social security – and specifically the pension – systems; pension reductions for early retirement and bonuses for working longer are part of their policies. Figure 31 below shows estimates of TRR change linked to careers that are cut short or extended beyond the SPA by 2 years.

**Figure 31: Net TRR, base case and retiring 2 years earlier, on average earnings, 2059, %**

*Exiting employment 2 years before the SPA carries mild or temporary pension reductions*




*Notes: Ordered by TRR at SPA-2 – countries in dashed filling do not allow retirement before the SPA under the case conditions.[84] Retiring at SPA-2, the full dark blue bars represent the TRR; the dashed-border empty bars represent the temporary TRR reduction compared to the base case; when the retiree reaches the SPA, the pension is restored, albeit partially.[85] The continuous-border empty bars represent the TRR permanent difference; this persists throughout retirement. In Romania, TRRs in the case of retirement 2 years earlier than SPA are 3 p.p. higher for men than for women.*
*Source: OECD and Member States.*

**Penalties for retiring 2 years earlier are either temporary or mostly mild** (Figure 31). In particular, in the 10 countries shown on the left of Figure 31, a pension would not be granted to someone who retired 2 years before the SPA. It must be emphasised, though, that in these countries people will start to receive a pension, albeit a reduced one, when they reach pensionable age, even if they did stop working 2 years earlier. For instance, in Bulgaria, the retiree would receive a pension after turning 67 in 2061. This also applies to the four countries with dashed bars in Figure 31, where, on leaving employment, the retiree would only be entitled to part of the pension; some years later, the pensioner would start to receive a higher pension (for instance, at the age of 67 in NL, a state pension in addition to the

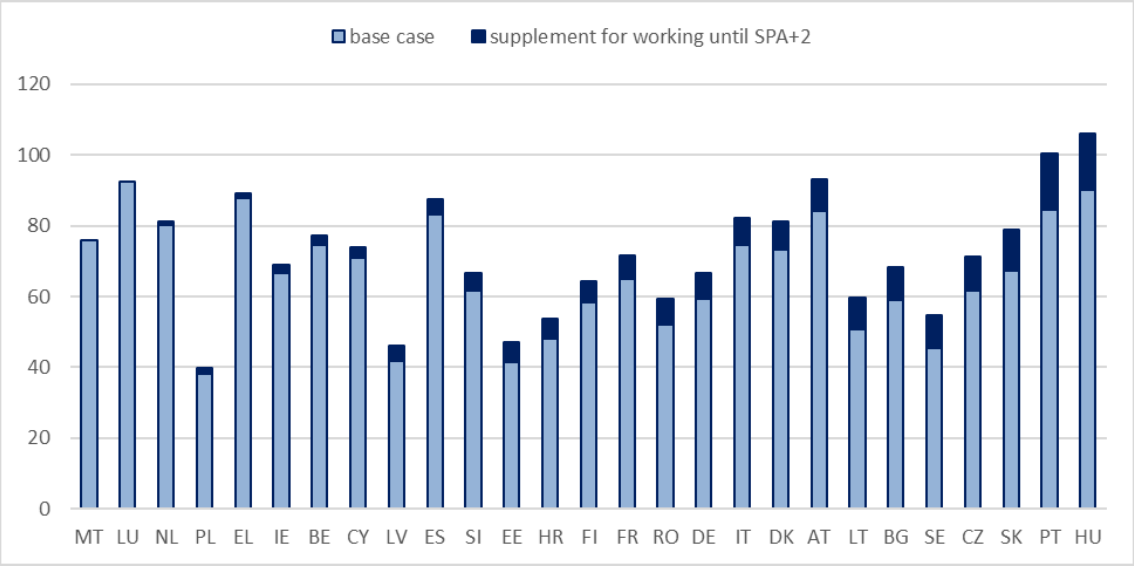
[84] For instance, in Belgium, additional credits, e.g. from study years, can yield a pension after a 38-year career ending 2 years before the SPA.
[85] But in some countries not fully: in Greece, for instance, a 38-year career will yield only a reduced pension at a later age. In Portugal, the worker would start receiving a reduced pension at the SPA.

occupational pension). Moreover, in some of these countries, a pension would be granted under variants of this case, for instance if the retiree had accumulated additional non-contributory or voluntary pension credits (BE, LU).

On the other hand, in countries that grant a pension early, the benefit reductions (ranging from about 3.1 p.p. in DE and 3.6 p.p. in MT to just over 10 p.p. in CY and SK) are permanent.

**Figure 32: Net TRR, base case and retiring 2 years later, on average earnings, 2059, %**

*Working 2 years past the SPA grants additional benefits*




*Notes: Ordered by difference in TRR between the two careers. In Romania and Poland, TRRs are higher for men than for women – by 1 p.p. and 5.9 p.p., respectively.*
*Source: OECD and Member States.*

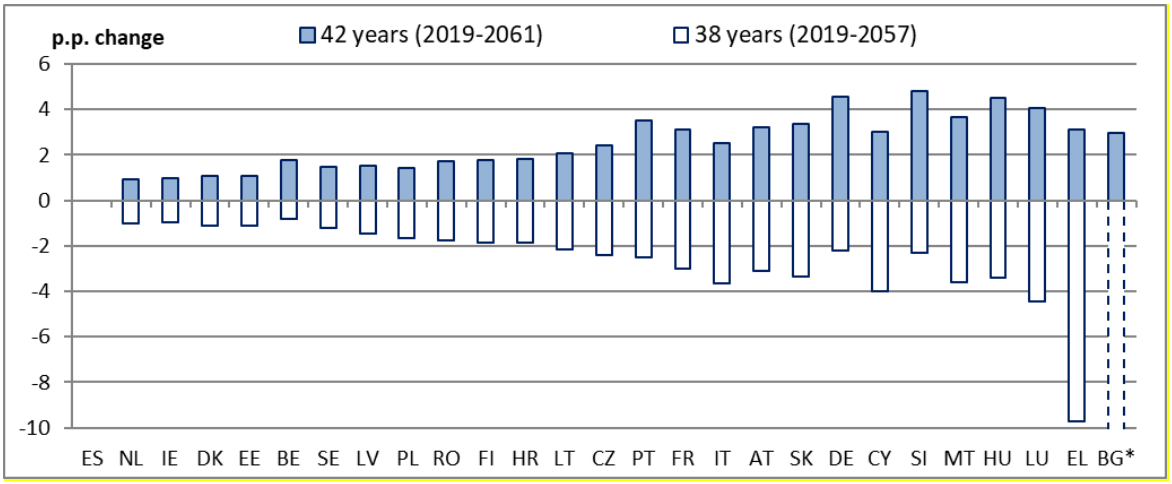
**TRR gains thanks to working beyond the SPA are substantial and continue throughout retirement** (Figure 32). Two additional years increase the career length by 5 %. But the corresponding TRR increase is over 10 % in 17 of the 27 countries and reaches almost 16 p.p. in Hungary.[86] At the other end of the scale, in Malta and Luxembourg the TRR hardly increases.[87]

**Assuming that people stop working at the SPA** (as is the case in the base case TRRs), **the age of labour market entry can make a difference**. Not everyone manages to start their career 40 years before their retirement age; meanwhile, other people start earlier than that, resulting in an especially long career. In an ageing society where the SPA is increasing careers also become longer. But as people stay longer in education – and youth unemployment is still high -, some people end up with shorter careers, with the result that career durations may become more different across individuals and socioeconomic groups.

[86] This ranges from +4.3 p.p. over a TRR of 41.7 in Latvia (so, about 10 %) to +9.4 p.p. over 45.3 in Sweden, i.e. an increase of almost 21 %.
[87] For Luxembourg this is mainly due to the fact that the SPA was set at 65 as an exception.

**Figure 33: Difference between net TRR, two career alternatives ending at the SPA, starting 38 and 42 years earlier, 2059, p.p. changes**

*Starting a career early/late has a mild impact on pensions*




*Notes: Careers start in 2019 and end in 2057 and 2061. Ordered by difference in TRR between the two careers. In Bulgaria (for a 38-year career: -46.9 p.p.), only the DC pension is paid. The difference in TRRs between a career of 38 and 42 years is smaller for women than for men in Bulgaria, Germany and Poland.*
*Source: OECD and Member States.*

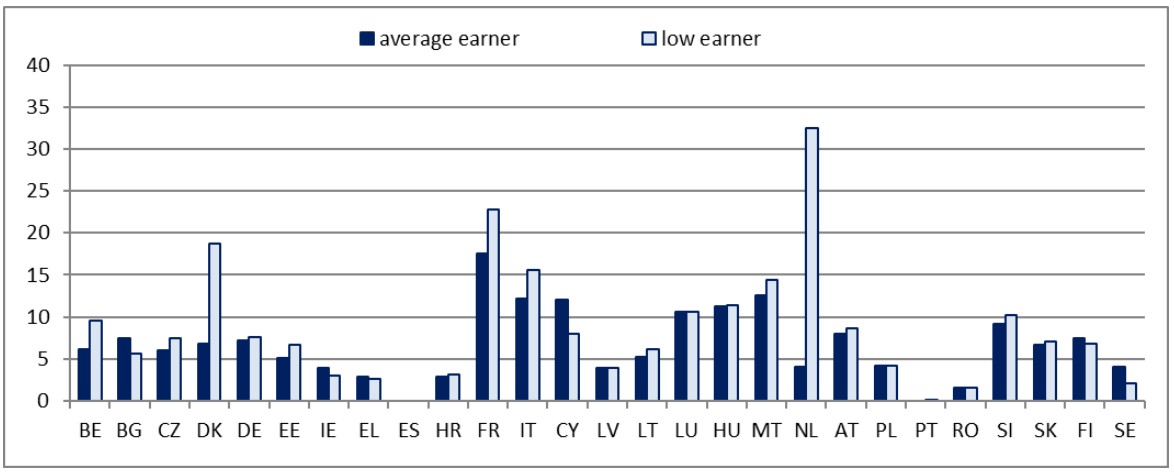
**Reductions for late starts or gains for early starts are much lower than the reductions/gains for early/deferred retirement around the SPA** (Figure 33). There are exceptions, as in Greece (where – at -9.7 p.p. – the reduction for having started only 38 years before the SPA is large) and Bulgaria (where a pension would be granted only 2 years later, in 2061, when the retiree turns 67).[88] In Germany, Luxembourg, Hungary and Slovenia, a 42-year career results in a gain of over 4 p.p.

Starting at age 20 and working until the SPA means that the career duration is longer than the 40 years in the base case. The difference ranges from zero years among women in Poland and 4 years in Slovakia to 10 years in Estonia and Italy and 13 years in Denmark; in other words, in Denmark this career case is 53 years long, 13 years longer than the base case.[89] Since career length varies between countries, along with the SPA, the country comparison below is strongly affected by different career durations.

[88] In Bulgaria, the career would be too short for a man to qualify for the first-pillar; at age 67 a pension is granted. A woman would qualify after a 37-year career.
[89] In Luxembourg and Slovenia the fact that the SPA is set at 65 implies a 45-year career in the case starting at age 20. However, earlier retirement would be allowed, in particular for starting an early career.

**Figure 34: Difference between net TRR, age 20 to SPA and base case, 2059, p.p.**

*Starting a career at age 20 carries large pension benefits in only a very few countries*




*Notes: Data not ordered because career durations vary. In Poland and Romania, TRRs age 20 to SPA are higher for men than for women – by 3 p.p. and 0.5 p.p., respectively.*
*Source: OECD and Member States.*

**A long career that starts early does not necessarily lead to very high replacement rates** (Figure 34). Most resulting TRR gains are below 10 p.p., compared to the reference scenario, even if careers are up to 25 % longer. Also, the advantages to starting a career early can depend a lot on the income level. Low earners seem to enjoy pension increases from starting early careers especially in Denmark, France, Italy and the Netherlands; in those countries (except for FR), rising SPAs make for nearly 50-year-long careers in 2059. In Denmark, the increase is much larger among low earners. It must be pointed out that an early career start is more common among those with lower educational attainment, who are also more often low earners. In Spain and Portugal, there is no impact of early starts on TRRs.[90]

**The 20-year career scenario represents an extreme case of short career, since, in some countries, this is the minimum contributory period for receiving any pension at all.** This career is modelled as working for 10 years, having a 20-year career break from 2029 to 2049, and then doing 10 further years of work until the standard pensionable age in 2059. Real 'career breaks' for social reasons are dealt with in the next section.

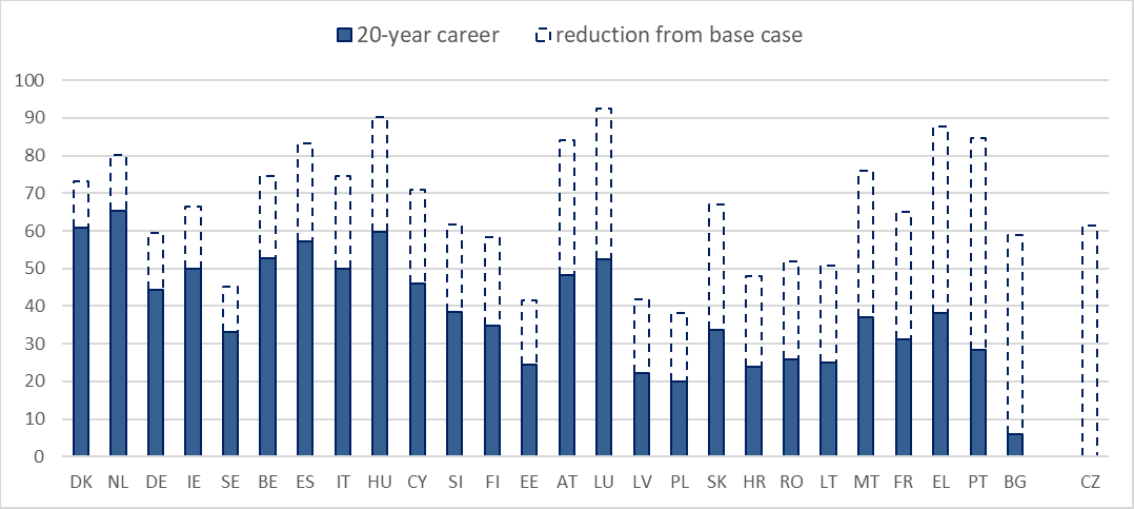
**In most countries, a short, 20-year career reduces the TRR less than proportionately, by between 20 % and 40 %** (Figure 35). Since in this case people work for half the duration of the base case, a proportional pension reduction would be 50 %. In most countries, the resulting TRR reduction from the discontinued career is between 20 % and 40 %; it is mildest in Denmark, where the short career entails a pension reduced by 7 %, compared to the base

[90] In Portugal the new flexibility regime for early retirement pension entry into force from October 2019 allows that starting working at age 20 grants an earlier access to pension since the number of contribution years at the age of 60 is equal or superior to 40; this is why there is no TRR increase compared to the base case. Among women, the reduction is the same as men's, except in Poland and Romania where the reduction is smaller.

case. The reduction amounts to just over 50 % in 13 countries, including no pension in the Czech Republic and only the DC part of the pension in Bulgaria.[91]

**Figure 35: Net TRR, 20-year career (and base case), 2059, %**

*A short, 20-year career grants a lower pension, but the reduction is less than proportional*




*Notes: Ordered by increasing percentage of TRR reduction for the short career. In the Czech Republic, a pension is not granted after a 20-year career at SPA (entitlement after a 20-year career comes at SPA + 5). Likewise, in Bulgaria, the first-pillar pension would only be granted at age 67.*
*Source: OECD and Member States.*

## 3.5 Career breaks

**Career cases in this section**

**Career break for 3 years of child care**: Start work in 2019, child care covering a period of 3 years of absence, and the worker applies for this period to be credited. Two children are born 2 years apart, in 2022 and 2024. The career ends in 2059 at the SPA.

**Break of 3 years, plus part-time work for 10 years**: Child care covering a period of 3 years of absence, as for the standard childcare case (first child born in 2022; second child 2 years later), again credited, if allowed. After the 3-year break follows a period of 10 years of part-time work at 66 % of average earnings, before full-time work resumes in 2035 until the SPA in 2059.

**Break for 3 years of unemployment**: Start in 2019, unemployment in 2029-2032, with entitlement to highest full unemployment benefits, then work until 2059.

Career break for 3 years for family care: Start in 2019, family care break 2049-2052, then work until 2059.

**Early retirement due to disability**: Leaving the labour market 5 years prior to national standard pensionable age in 2054.

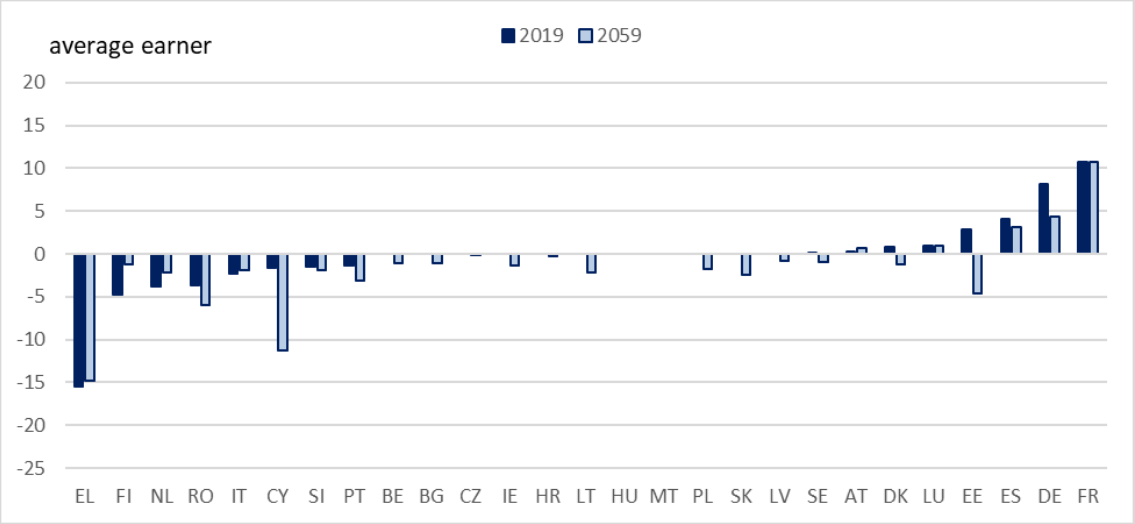
[91] In Bulgaria, the career would be too short for a man to qualify for the first pillar; at age 67 a pension is granted. A woman would qualify after a 37-year career.

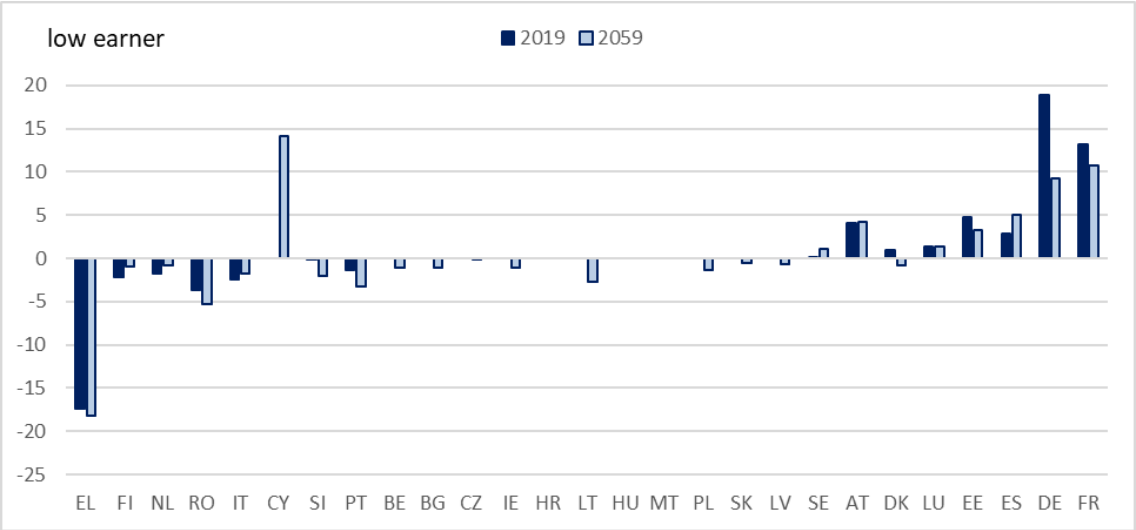
**Non-worked periods often lead to non-accrual of pension rights.** However, some of these periods are considered justified for social reasons, rather than a fully voluntary work pause. People can find themselves unemployed or in a situation where they must stop working, or reduce their working time, because of family obligations, such as caring for children (including part time) or family care (providing long-term care, such as for frail older people or adults with a disability); they can also become disabled and unable to work. Salaried workers often receive pension credits (or equivalent benefits) in such circumstances (see Section 4.1 for more on this). Such credits can dampen the impact of a (limited) absence from work and, in some countries, can even raise the pension benefit to a level above that of an uninterrupted career.

**Child care is a frequent reason for needing to discontinue work.** This is modelled as a career where a worker starts with 3 years of work, after which they have two children and start a 3-year break from working, receiving benefits. Then they work uninterruptedly for 34 years until the SPA.

**Figure 36: Difference between net TRR, childcare break and base case, average and low-earning woman, 2019 and 2059, %**

*Mild pension reductions apply to a short childcare career break, and in a few countries a bonus*






*Notes: Ordered by TRR difference, average case, 2019; the TRRs shown are for the case of a woman.*
*Source: OECD and Member States.*

**In most countries, the impact on the replacement rate of a 3-year break for child care is limited to a few per cent** (Figure 36). This is much lower than the reduction in effective career duration: 3 years out of 40, corresponding to 8 %. In Greece, however, the impact is large – around 15 % – and is even slightly larger among low earners. In the reduction amounts to over 5 % in 2059 for both earners; minor reductions apply in the Netherlands, Romania and Finland. At the opposite end of the scale, in Germany, France and, to a lesser extent, Estonia and Spain, as well as Austria among low-earners, a pension bonus for those who have raised children actually increased the TRR;[92] for low earners, this bonus is larger for people retiring in 2019 (except in ES) and will be reduced in the future, although it will remain considerable. A significant child-related supplement is also available to low earners in Cyprus (average earners experience a similarly sized reduction). More moderate gains are observed in Luxembourg, Austria, Estonia and Spain.[93]

**Overall, there is little change in the impact of credits granted for child-related work pauses between 2019 and 2059**, except in Cyprus, where there is almost no pension reduction in 2019, but a large difference in 2059. In Germany, the effect of child bearing will still be positive, but considerably reduced. In Slovenia, finally, a substantial bonus available in 2019 will have been eliminated by 2059. However, even though the end results for 2019-2059 are similar, some countries have changed their rules substantially. In Finland, for example, the rules for pension accrual from periods of family benefits that apply to 2059 retirees are different from those for 2019 retirees. A key 2005 amendment affects the 2059 case, but not the 2019 case, and results in a smaller pension reduction in 2059.

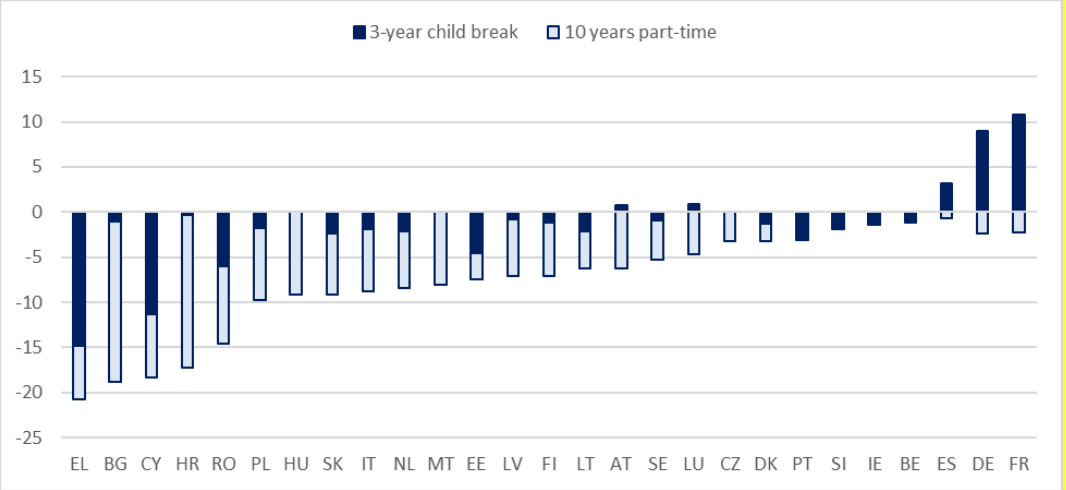
To take account of the fact that in many Member States, **mothers are overrepresented in part-time work**, a variant of the above career-break case adds a 10-year period of part-time work right after the break, followed by 24 years of full-time work until the SPA; the part-time work is assumed with earnings amounting to 66 % of the average monthly wage consistently over those 10 years. Once again, the assumption here is that, apart from the break, the career does not change; this comparison only concerns pension and tax rules, and does not take into account the potential detriment – such as wage scarring – on a career from taking breaks.

[92] This is granted regardless of whether or not the worker takes a career break.

[93] In Estonia, the pension rise resulting from a childcare-related break only applies to low earners.

**Figure 37: Difference between net TRR, childcare break plus 10-year part-time work and base case, average earner, 2059, %**

*A 10-year spell of part-time work for child care carries generally reasonable consequences*



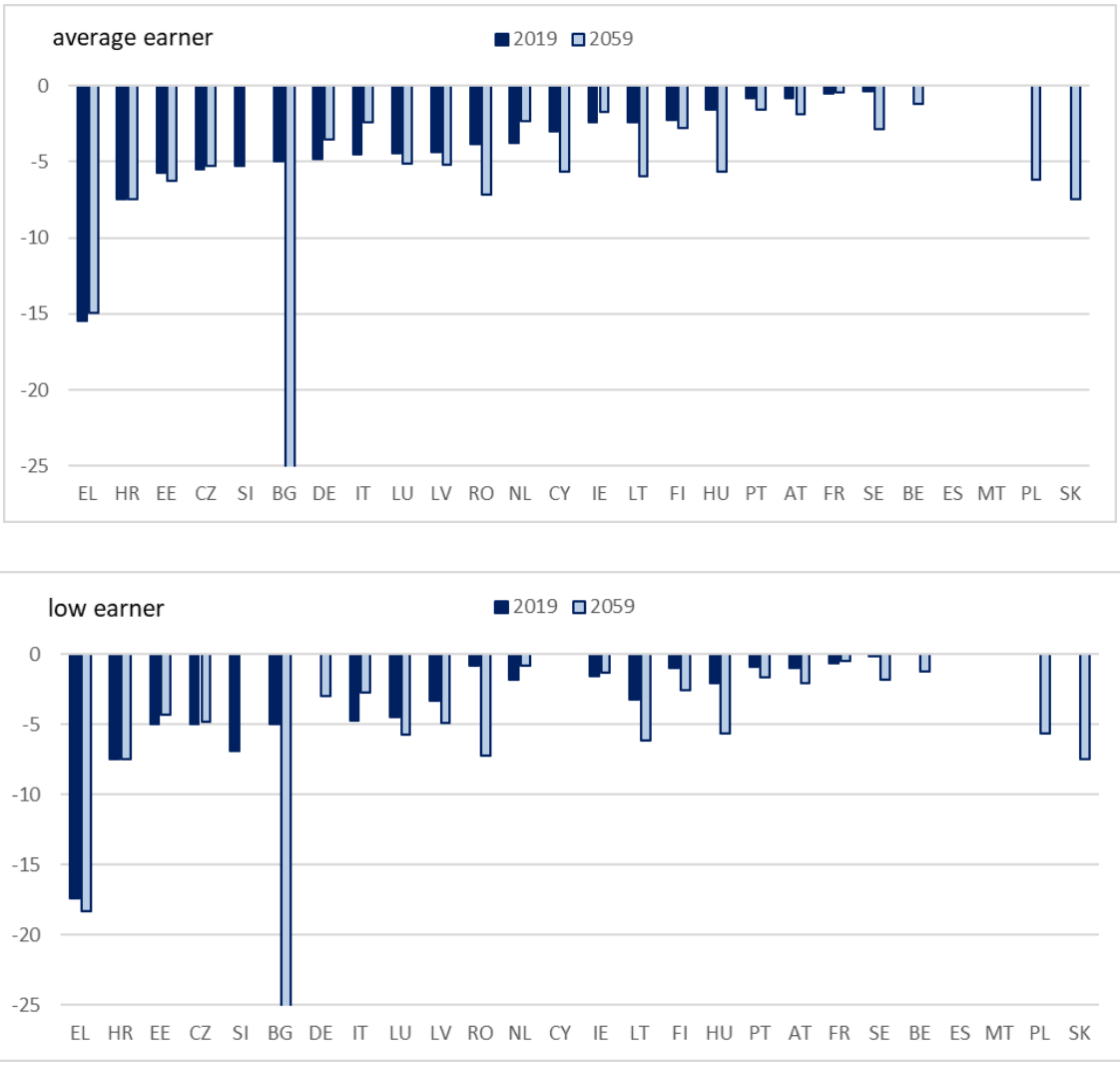

*Notes: Ordered by total TRR change; part-time case results not simulated for 2019.*
*Source: OECD and Member States.*

**In most countries, the credits limit the impact to a benefit loss of less than 10 % (for a complete and part-time childcare break that is equivalent to 16 % of the working career**; Figure 37). Again, Germany, France and, to a lesser extent, Spain stand out, as credits for this case lead to a higher pension than the uninterrupted case. At the opposite end, Greece and Cyprus apply high total reductions, mostly due to the 3-year break; Bulgaria, Croatia and Romania also apply large reductions, but mainly due to the part-time period. Part-time periods also play a relatively large role in the reductions in several of the countries where the total impact is low.

**Unemployment gives rise to similar, albeit lower, credits than child care.** The impact of unemployment stints on replacement rates is modelled through a career that is similar to the one involving a childcare break (just discussed) and consists of 10 years of work, then 3 years of unemployment, where benefits are granted, followed by 27 years of work until SPA is reached in 2059.

**Figure 38: Difference between net TRR, 3-year unemployment break and base case, average and low earner, 2019 and 2059, %**

*Unemployment breaks have more impact on pensions than childcare breaks*




*Notes: Ordered by TRR change in the average earnings career in 2019; the 2059 BG reduction is by 79.8 % for both an average and a low earner.*
*Source: OECD and Member States.*

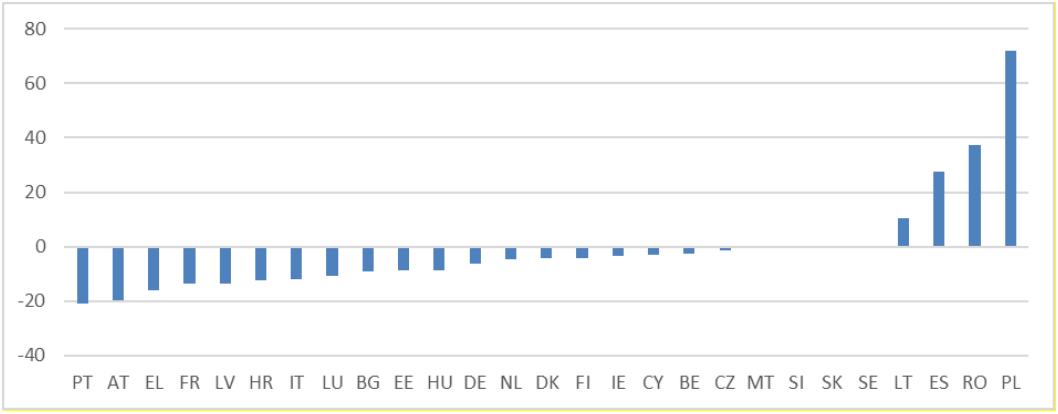
**Benefit reductions from a 3-year unemployment break are limited to below 5 % in most countries (for a break equivalent to reducing the career by 8 %;** Figure 38). The reduction seems to affect low earners more than average earners. Germany is the only country showing an (albeit very slight) increase in pension benefits for the average earning case in 2059. In most other cases (including the German low-earnings one), the benefits are cut by less than the proportion of the reduced career duration (3 years out of 40 is about 8 %), signalling that credits are granted, albeit not fully replacing the work-related contributions. Exceptions, with relatively pronounced pension reductions, are observed for Greece in both years and for both income levels, and for 2059 for both income levels in Bulgaria.

**The impact of pension rules changes little between 2019 and 2059,**[94] except in Bulgaria, where a 3-year unemployment break will lead to a much worse outcome in 2059 than in 2019, since the TRR in 2059 is reduced to its defined-contribution (second-pillar) part.[95]

**Disability can also cause people to leave the labour market.** The comparison below is between the base case and a career of 35 working years until 2054, and considers the pension benefit in 2059, when the worker would have reached the SPA.

**Figure 39: Difference between net TRR, 5-year disability and base case, average earner, 2059, %**

*Disability breaks generally lead to lower benefits, and in only few countries to higher ones*




*Note: Disability case results not simulated for 2019; in Latvia, the TRR would also depend on disability: the old-age pension granted at SPA cannot be lower than the disability pension granted in the preceding period.*
*Source: OECD and Member States.*

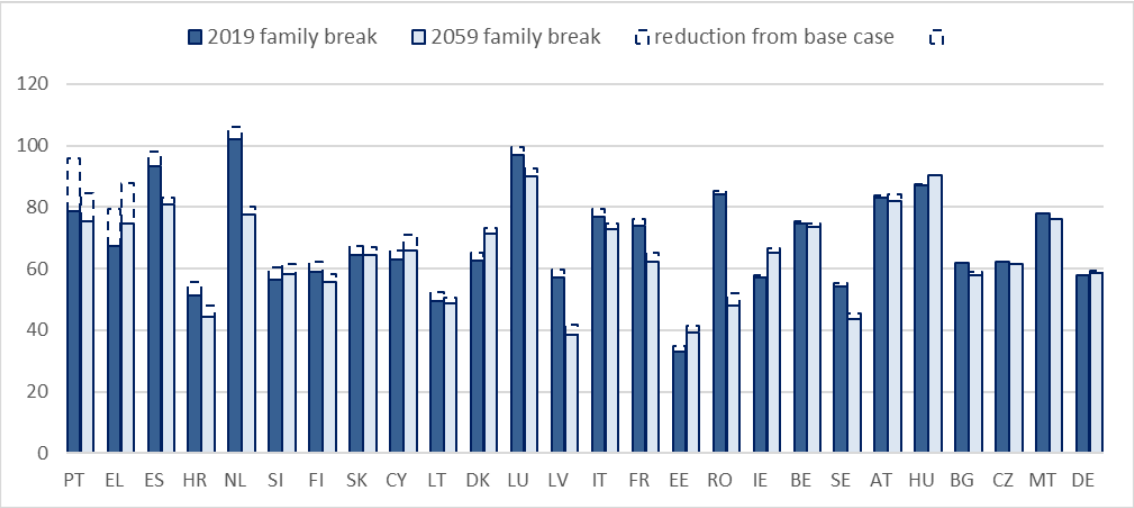
**Five countries stand out from the rest, as a 5-year period of disability at the end of one's career gives the right to higher overall pension benefits** (Figure 39), where the difference can be substantial – almost 70 % more in Poland. About half of the countries would only partly compensate for the 5 years not worked and grant benefits reduced by up to 10 % (the time not worked over a 40-year career is about 12 %). In eight countries, the pension would be more than 12 % lower, with the largest reductions in Portugal (17.6 p.p. or 20.8 %), followed by Austria and Greece (reductions of between 15 % and 20 %).

**Another common end-of-career reason for discontinuing work is the need to provide care to incapacitated family members.** A common example is informal carers (mostly women) dropping out of the labour market to provide informal long-term care to a frail old family member (see Chapter 4 of the LTC report).[96] Here, this case is modelled as a worker working uninterruptedly for 30 years, then leaving the job for 3 years to care for a family member, before returning to work for the 7 remaining years to the SPA in 2059.

[94] Once again, in some countries the rules have changed, although the specific impact in the TRR cases is low.
[95] In Bulgaria, the career would be too short for a man to qualify for the first pillar, although a pension would be granted once the man turns 67. A woman would qualify after a 37-year career.
[96]European Commission and Social Protection Committee (SPC), 2021 Long-term care report: Trends, challenges and opportunities in an ageing society Volume I, Publications Office of the European Union, Luxembourg, 2021 (section 4.2).

**Figure 40: Average earner TRR, base case and 3-year family care case, 2019 and 2059, %**

*Breaks for family care have a small impact on benefits*




*Notes: Ranked by TRR change in 2019; Poland: not available; in Latvia, this scenario only applies to the family care of a child with disability under the age of 18, for which a disabled childcare benefit is paid and the state makes contributions.*
*Source: OECD and Member States.*

**Most countries would compensate for the work loss and grant a pension which is only slightly lower (less than 5 %) than in the base case with an uninterrupted career** (Figure 40). This compares favourably to the roughly 8 % reduction in effective career duration implied by a 3-year break. Two countries grant less-substantial credits and see substantially lower replacement rates: in Portugal, the rate would decrease in 2019 by over 17 % (though by only about 11 % in 2059); in Greece, the TRR reduction would be 15 %.

## 3.6 Pensions 10 years after retiring

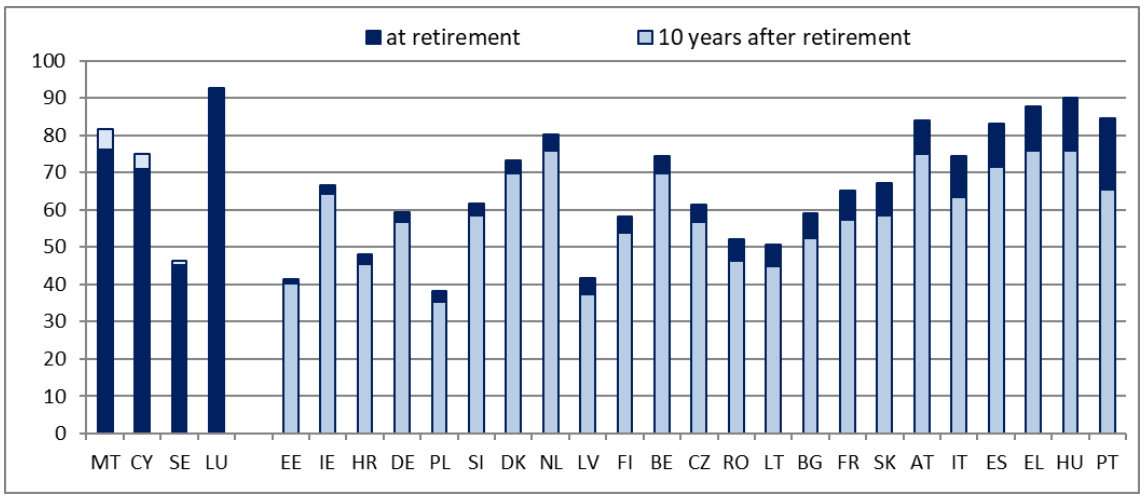
Comparing replacement rates at retirement and 10 years after (in 2069, against the base case) provides information on the impact of pension indexation and, in particular, the relationship between pensions and changes in prices and wages.[97]

This variant brings the TRRs beyond the income-maintenance dimension of pension adequacy, and into the duration dimension. Indexation is subject to the observations in Chapter 1 (where the mechanisms in the various countries are presented) and Chapter 4 (where it is linked to differences between pensioners at different ages).

[97] This is calculated considering the value of an individual's pension 10 years after retirement, i.e. in 2069, divided by the income of another average-earner worker retiring in 2069 after a 40-year career up to the national standard pensionable age in 2059 (thus, the two retirees are in different cohorts, with 2019/2029 as the relevant entry years for the calculation of the prospective replacement rates).

**Figure 41: Net TRR, base case and 10 years after retiring, average earner, 2069, %**

*In most countries, pensions decrease as a pensioner ages*




*Notes: Ranked by difference in TRR; countries on the left have higher replacement rates 10 years after retirement; those on the right have a lower TRR after 10 years. TRRs are higher for men than for women in Poland and Romania – by 5.4 p.p. and 0.7 p.p., respectively.*
*Source: OECD and Member States.*

**In most countries, pension indexation does not fully compensate for increases in earnings from work** (Figure 41). In comparison to new retirees, TRRs for people who have been in retirement for 10 years are lower in all but four countries. Of those countries where pensioners would see a reduction in the replacement rate, six have an impact of lower than 4 p.p. The biggest reductions, of over 10 p.p., are observed in Greece, Spain, Italy, Hungary and Portugal. At the opposite end, four countries have higher replacement rates 10 years after retirement than fresh 2069 retirees: the difference is at or over 4 p.p. in Malta and Cyprus.

With reference to the classification presented in Chapter 1, we can observe that countries in the first group – which index solely on prices – present some of the largest negative differences, compared to fresh retirees. Countries with gains among older retirees tend to index mostly on wages (CY, LU – 100 %; MT – 70 %). Sweden applies an ad hoc indexation.

## 3.7 Pension for surviving wives when their husbands die

**Career cases in this section**

**A couple retiring at SPA after each having a 40-year career.** Both careers are exactly as in the base case at average earnings. The man dies at retirement.

**A couple retiring at SPA after having a 40-year and a 20-year career.** The man's career is as in the base case (40 years at average earnings) with the woman's career as in the short-career case (10 years at average earnings, a break of 20 years with no credit, and then 10 years at average earnings). The male partner dies at retirement.

When a member of a couple dies, the surviving member is entitled to part of their acquired benefits under most pension schemes. Sometimes this is cumulated to the surviving member's own pension. Hereafter we focus on the situation of a widow, which is far more common than that of a widower, due to gender differences in life expectancy and age differences within

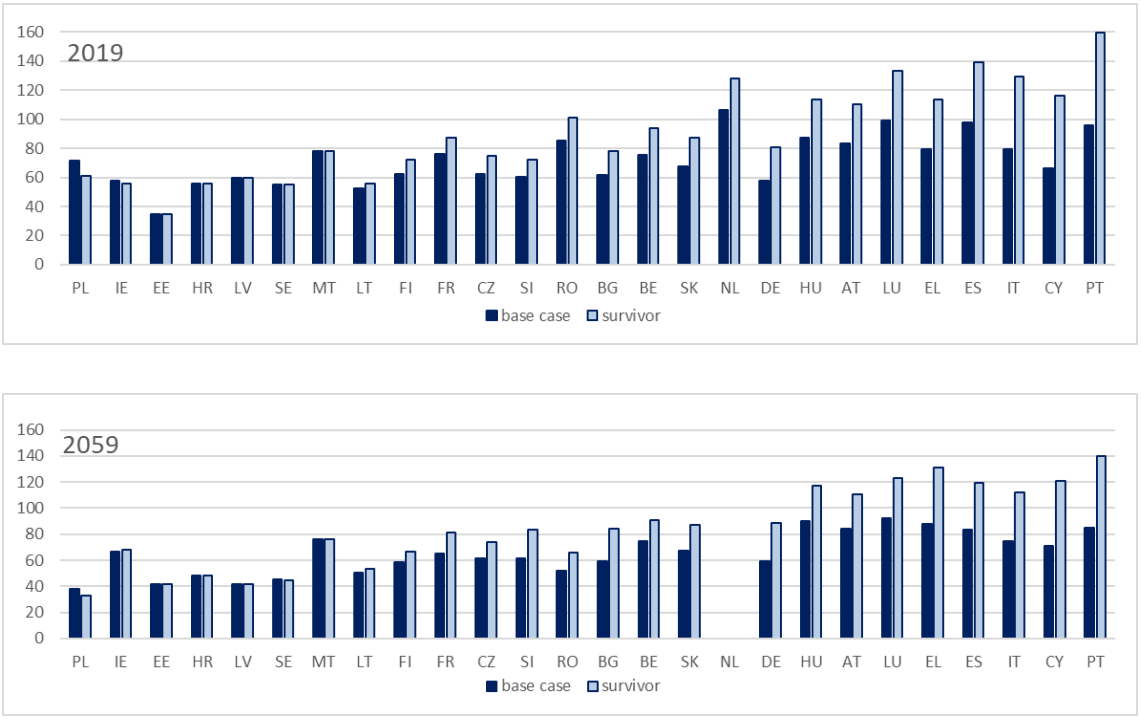
couples. Some countries grant a one-off or temporary payment upon the man's death. These payments are not taken into account in the replacement rates hereafter.

The rules and situations can be very complex in some Member States. For this reason, the survivor cases in this analysis are simplified: they assume that the man dies immediately upon reaching retirement age, and just as he retires; the man thus never lives to receive a pension. The following cases shed light on how the rules apply in 2019 and will apply in 2059.

The first case describes a couple where both members worked an uninterrupted 40-year career and together reached their SPA, as in the base case. The calculated replacement ratio is the woman's pension (which can include part of her husband's) over her last wage prior to retirement.

**Figure 42: Net TRR, base case and survivor case, full careers, average earner, 2019 and 2059, %**

*A widow's pension is often higher than a single woman's pension*




*Notes: Ranked by TRR difference in 2019; Denmark and the Netherlands – no data.*
*Source: OECD and Member States.*

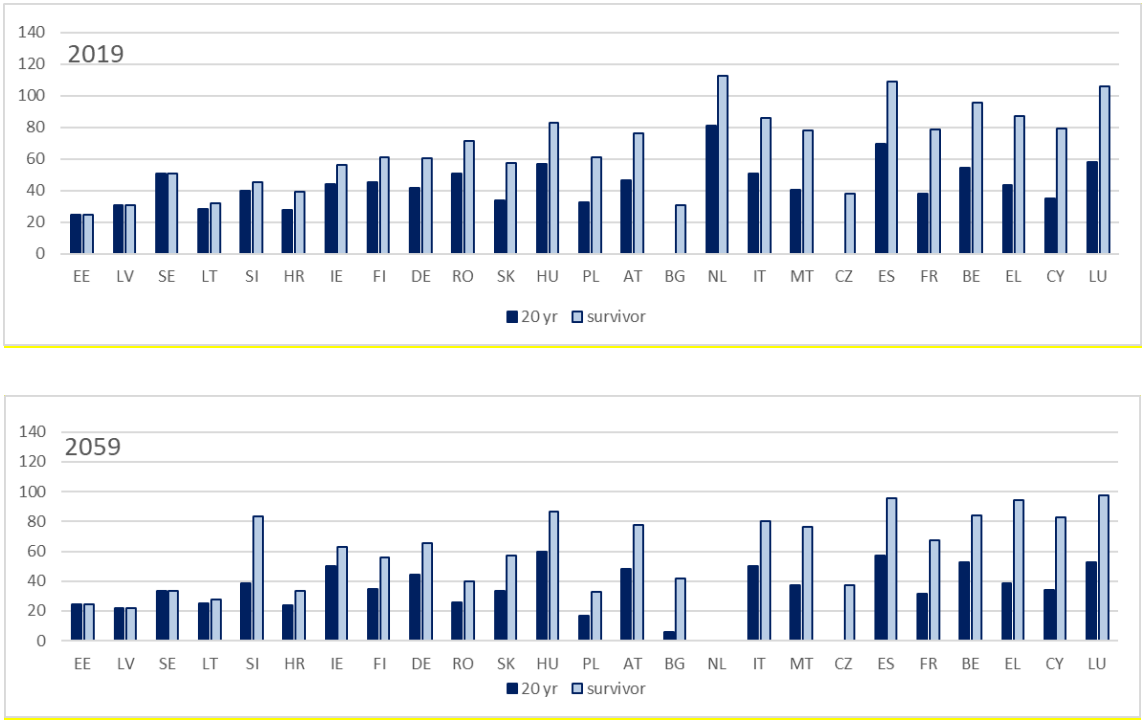
**Generally, in all countries, the widow can count on a pension that is at least equivalent to what she would have received, had she been single throughout** (Figure 42). All but seven countries grant additional benefits to the widow of someone who had accrued pension rights.[98] In 2019, Spain and Portugal stand out as granting particularly high survivor benefits (and CY grants a large supplement to the woman's own pension); in 2059, Luxembourg, Greece, Italy, Spain, Cyprus and Portugal would grant her the highest supplement from the deceased husband's pension rights, equivalent to an increase in the TRR of over 30 p.p.

[98] In Poland, there is a 'one benefit only' rule. Surviving spouses can choose between their own pension or survivor benefit.

The second case is similar to the first, but here the woman is assumed to have worked for only 20 years (the short career above), whereas the deceased husband had again worked a full base-case career. The figures below compare this survivor case to the case in which the woman is single and retires after a 20-year career, analogous to Figure 35.

**Figure 43: Net TRR, 20-year case and survivor case, full and short careers, average earner, %**

*After a 20-year career, a widow's pension is often substantially higher than a single woman's*




*Notes: Ranked by survivor TRR in 2059; Denmark and the Netherlands – no data.*
*Source: OECD and Member States.*

**Most countries would grant a woman with a short career a higher benefit, in view of her deceased husband's accrued rights** (Figure 43). The effect is larger than that observed in Figure 42, and is above 30 p.p. in both years in 11 countries. Exceptions are Sweden and Latvia (where the woman would receive a pension based solely on her own rights); Estonia in 2019; and Lithuania (where the supplement is very low). At the other end of the scale, supplements peak in Portugal, with 63.8 p.p. in 2019 and 55.3 p.p. in 2059. In percentage terms, the supplement is larger than the supplement granted to widows who worked a full 40-year career (Figure 42).

**In 2059, most countries would grant lower benefits than the base case, as the woman worked a short career.**[99] The cases of Bulgaria and the Czech Republic are also indicative, since in those countries the woman would not have acquired the right to a pension after a 20-year career (in BG, she would receive the defined contribution part); the woman only has the right to a survivor pension.

[99] There are exceptions, where the surviving widow, after a 20-year career, would receive higher benefits than if she had been single and had worked a full 40-year career: Belgium, Germany, Greece, France, Italy, Cyprus and Luxembourg.

**The survivor supplement becomes more similar across countries between 2019 and 2059.** There is no discernible trend between 2019 and 2059, as some countries will grant a higher supplement, while others will grant a lower supplement than in 2019. However, it appears that those countries that grant a high supplement in 2019 will reduce it by 2059; while countries that grant a low supplement in 2019 will increase it.

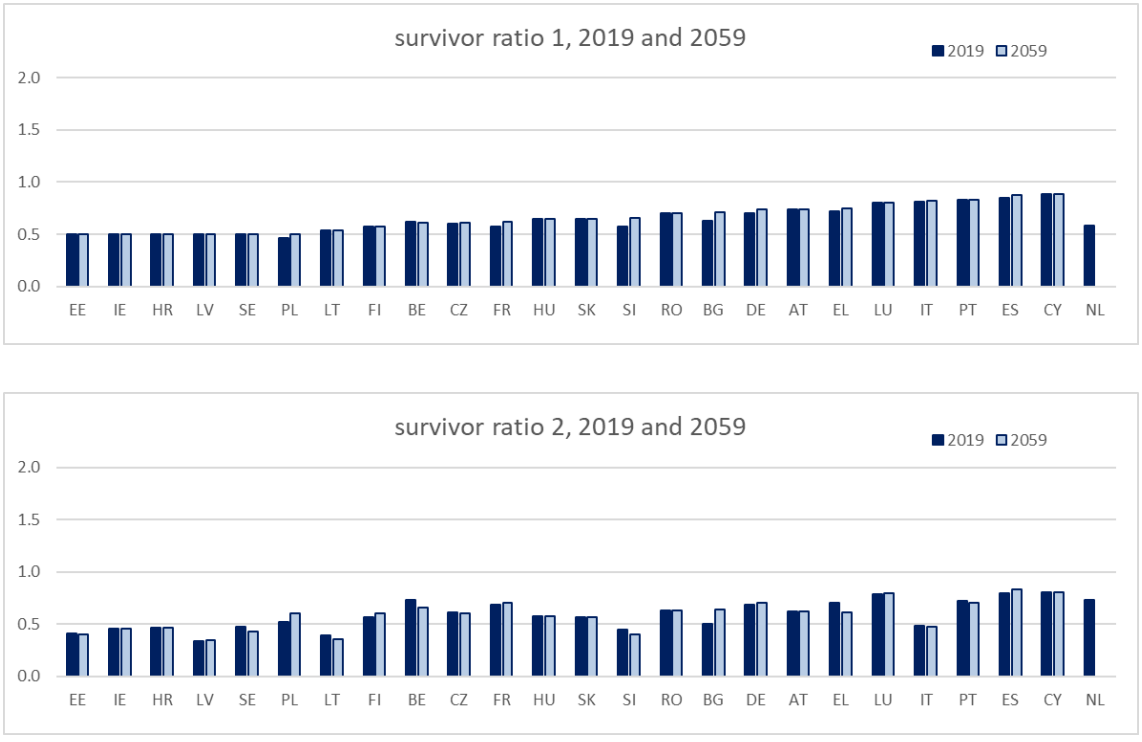
The survivor cases are supplemented by two ratios of household pension income. Whereas the replacement rates for this case are shown above (Figure 42 and Figure 43), the figures below compare the pension benefit the widow receives with the hypothetical cumulative benefit (net of tax) that she and her husband would have received if he had not died. The ratios are computed for the two cases above: namely, the woman having worked an uninterrupted 40-year career (ratio 1) and the woman having worked a short, interrupted 20-year career (ratio 2); both the woman and the man earned an average salary.

**Survivor ratio**:

The widow's total pension (her pension plus the survivor pension) over the pension income that the couple would have received if the man had not died (the woman's old-age pension plus the man's, both subject to tax, as applicable).

Ratio 1 uses the career case above, where both the woman and the man retire in 2059 at the SPA, after a 40-year career (both base cases). Ratio 2 uses the other career case above, where the man is the base case and the woman has a short 20-year career.

**Figure 44: Survivor ratios 1 and 2**




*Notes: Ordered by 2019 ratio 1; Denmark, Malta and the Netherland (2059) – no data.*
*Source: OECD and Member States.*

The ratios represent the loss of household pension income caused by the man's death, under very specific circumstances.

**In the event of the husband's death, after full careers, a quarter of the countries grant practically no survivor supplement; five countries grant substantial supplements of over half a pension; while most countries would grant a more modest supplement**. In the first ratio, the bottom value is 0.5 (six or seven countries in 2059), indicating that the widow only receives her pension (no survivor pension) and a higher rate of tax is not applied to the combined (and thus higher) household income in the ratio denominator. Seven countries are at this level in both 2019 and 2059 (EE, IE, HR, LV, LT, PL, SE). At the opposite end of the scale, the survivor component is particularly high in Luxembourg, Italy, Portugal, and especially Spain and Cyprus.

**In the event of the husband's death, after the wife has had a 20-year career, the household income would drop by more than a half in a quarter of the countries; by less than 25 % in 3-4 countries; and be a little less than halved in most countries**. The second ratio's lowest value should be the benefit arising from the short career, whose TRR is shown in Figure 35, divided by the sum of a short career and a full career. At well below 50 %, the lowest ratios are observed for Latvia, Lithuania and Estonia. This results from a combination of no survivor benefit and a large difference between pensions after a 20-year career, as opposed to a full 40 years. Croatia, Italy and Slovenia also have ratios at or right below 50 %. The ratios are high in Belgium, Germany, France and Portugal, and highest in Luxembourg, Spain and Cyprus.

**The impact of the survivor pension rules will change little between 2019 and 2059.** Ratio 2 (where the woman retires after a 20-year career) will also decrease (albeit by only a little) in Belgium, Greece and Portugal. Both ratios will increase slightly in Germany, Poland and, especially, Bulgaria. All the other countries will see only very minor changes between 2019 and 2059.

The ratios above indicate that pension rules governing survivor rights vary a lot. Some rely on the woman having acquired her own pension rights and the deceased husband's rights are not intended to support her. Other systems appear to take the position that the husband's acquired rights belong to the household and are to be paid to the surviving wife. Between these two extreme approaches there are several grades or combinations (as several schemes, each with a different approach can be combined) that yield a survivor pension that is higher than the woman's own, but lower than the combined household rights. In addition, different rates of tax on individuals and households, also depending on income level, play a role in determining net survivor pension levels.

# 4 SHARING OF RISKS AND RESOURCES IN PENSION SYSTEMS

Income inequality has been gradually increasing in many Member States over recent decades. The increasing disparities in standards of living, the emergence of new and non-standard forms of employment and the increase in precarious employment since the 2009 financial crisis are fuelling debates around the need to strengthen Europe's social dimension, focusing on the core question of how public authorities will be able to support the creation of more and better jobs and provide adequate social protection for all at all stages in life.

As the SPC/EPC joint paper on pensions observed, this brings into focus the rules that determine how risks and resources are shared between different generations of contributors and pensioners, as well as different population groups, such as between socioeconomic groups with different income levels, different labour market entry and exit ages and different life expectancy; between men and women; and between people engaged in different forms of work. As recent reforms shifting this distribution are coming (or will soon come) into effect, their impacts will become more tangible to citizens (EPC/SPC, 2020).

This chapter will analyse how risks and resources are shared in relation to the pension systems, focusing on the different groups mentioned above. It will draw on analysis of the distributional effects of taxation and will reflect on ensuring the necessary financing of pensions from an adequacy and solidarity perspective, including a discussion of potential new sources of financing. The concepts of 'social fairness' and solidarity, already mentioned in the EPC/SPC 2019 joint paper on pensions, are of growing interest to citizens and decision makers, and their relation to the analysis in this chapter will be discussed in a dedicated box (Box 7).

## 4.1 Policies affecting the sharing of risks and resources in old age

**The persistent disparities in standards of living within and between Member States, the emergence of new and non-standard forms of employment, the increase in precarious employment, the 2008 financial and economic crisis and the current COVID-19 crisis are fuelling debates around the need to strengthen Europe's social dimension.** Increasing evidence is emerging that the COVID-19 crisis is also having profound effects on poverty and vulnerability. This is currently true mostly for children and active age groups, while older people are disproportionately affected by the social consequences of the lockdown. However, the situation might, in the long run, have consequences also for the pension adequacy of future pensioners. Both the COVID-19 pandemic and the broader trends referred to above raise the question of how public authorities, as well as having to facilitate the creation of more and better jobs, can provide adequate social protection schemes, including targeted social assistance schemes, for all and at all stages in life. In the context of pensions, this brings into focus the rules that determine how risks and resources are shared between different generations of contributors and pensioners, as well as between different contemporaneous population groups.

**The design of pension systems and their interaction with tax systems both affect solidarity and redistribution between generations, as well as within the older population.** Some recent reforms have placed limits on the redistributive capacity of pension systems, and

therefore raise questions in relation to their fairness across different income groups (see also Chapter 2).[100] Similar questions also arise in relation to the treatment of early and late career starts: a common pensionable age that does not differentiate between career durations may see early starters (often with a lower educational and income level) contribute for longer periods than people with late career starts, and they may receive (often lower) pension benefits for a shorter time, given socioeconomic disparities.[101] While equal opportunities for men and women to earn pension rights primarily depend on labour market factors, pension systems could protect family-related career breaks in a way that also encourages equal sharing of family responsibilities between men and women, thus protecting female participation in the labour market. Finally, pension systems could be adapted to help ensure that non-standard forms of work are neither excluded from the sharing of risks and resources, nor disadvantaged by the rules in view of their status (for example, having more difficulty in reaching the minimum requirements to build pension entitlements or to access benefits).

**Specific old-age policy mechanisms ensure the sharing of resources and redistribution across socioeconomic groups.** Those mechanisms include pension credits, contribution and benefit ceilings, modifications of the link between contributions and benefits (especially for some specific categories of workers, such as low earners), non-contributory or minimum pensions, indexation and special rules for workers with long or arduous careers, provisions for people forced to leave the labour market early, derived rights (e.g. survivor pensions), etc.

**Relevant socioeconomic differences interact with differences in pension income, replacement rates and poverty risks.** In order to complement the corresponding analysis of the situation of pensioners presented in Chapter 1.1, this section compares the income from pensions of those aged 65 and over with the income from employment of those aged 50-64 (i.e. the aggregate replacement ratio) by quintile and by gender, for the period 2007-2018. The degree of income inequality between those aged 65 and over is compared to inequality among those aged below 65 (i.e. through the S80/S20 indicator).[102]

[100] https://ec.europa.eu/info/publications/economy-finance/pension-reforms-eu-early-2000s-achievements-and-challenges-ahead_en

[101] In Germany, the pension system closely follows the principle of equivalence of contributions and benefits. The length of a career by itself does not explain the pension payment.

[102] Breaks in series affect time lines in Belgium, Ireland, Luxembourg and Croatia; EU-SILC data from 2008 are not available.

### *Box 7: Social fairness of pensions*

*Principle 15 of the European Pillar of Social Rights states that workers and the self-employed in retirement have the right to a pension commensurate with their contributions and ensuring an adequate income. It further states that everyone in old age has the right to resources that ensure that they are able to live with dignity. The adequacy of benefits relates to the ability of pensions to protect against poverty and to maintain income for the whole duration of retirement. At the same time, pension systems should ensure a fair allocation of resources between different generations of contributors and pensioners, as well as between socioeconomic groups, genders and types of work (EPC/SPC, 2020).*

*Fairness is a normative concept that relates to equity and its perception. It implies an evaluation of economic and social principles and/or outcomes based on criteria established according to the ethical and/or moral values of societies. For example, the 2020 Employment and Social Development in Europe (ESDE) review discusses fairness in relation to principles on merit, basic needs and equality of opportunity or outcomes (European Commission, 2020a). The criteria chosen should be supported by the population, and this support is particularly important in periods of reform. This is why some studies have also analysed people's behaviour and attitudes towards certain welfare arrangements,[103] while taking into account the fact that perceptions can be altered by the context and the situation a person is accustomed to.[104]*

*The discussion in this box refers to 'social fairness'. In the context of pensions, the word 'fairness' is often associated with 'actuarial fairness', i.e. equality between the present value of lifetime contributions and the present value of lifetime benefits.[105] This concept relates to the fact that people expect 'a fair level of benefits in relation to the contributions paid'.[106] Actuarial fairness encompasses an individualistic perspective and focuses on inter-cohort transfers only, without taking into account other kinds of redistribution (for example, between genders); this leads to the implicit assumption that generations have the right to a 'just return' on their contributions to the government.[107]*

*However, fairness in relation to pensions relates also to other aspects, such as unpaid care work, mostly from women, and the fact that they miss out on opportunities for pension accrual and savings; workers in non-standard jobs, who have greater difficulty in accumulating pension entitlements; people whose background or work history (e.g. those in arduous jobs) reduces life expectancy; and other aspects. Since pension outcomes are a result of the interaction between different policies and systems, such as the labour market, health and long-term care, education and taxation, a pension system mainly based on actuarial fairness risks reproducing the inequalities created in the labour market.*

*From a collective and solidaristic point of view, the evaluation of social fairness in relation to pensions may thus also include the rules on the basis of which pensions are granted, such as pensionable age and minimum length of service. Moreover, different entries into the labour market, career breaks for the care of children or relatives, different typologies of contracts and different*

[103] Tóth et al., 2020; Joint Research Centre, 2017, JRC, 2019; European Commission, 2020a.
[104] Rawls, 1982; Dworkin, 2000; Sen, 1992; Fleurbaey, M. et al., 2011.
[105] Queisser, M. and Whitehouse E., 2006.
[106] Alonso-García et al., 2018. See also Alfano et al. 2020.
[107] Schokkaert et al., 2003, p. 252.

*levels of physical strain associated with different jobs also have to be considered. Differences in pension outcomes are usually captured through different socioeconomic indicators, such as AROP rates, inequality measures and income distributions across different socioeconomic groups within the population aged over 65. Most of the pension systems in the EU have elements of solidarity as an expression of social fairness: for example, they might include pension credits for interrupted careers for caring, child rearing or unemployment, or minimum pensions for low incomes. Other socioeconomic inequalities, such as the differences in life expectancy among different socioeconomic groups, however, are not always taken into account in the calculation of pensions.*[108]

*Finally, any talk of fairness in the context of pension systems inevitably requires an intergenerational perspective, addressing the way in which the system shares risks and resources between different generations. In trying to capture this, individuals who belong to different generations should be observed for as many years as possible, because analysing generations means aiming to compare life cycles, e.g. comparing the conditions facing individuals born in different eras at many different points in their lives.*[109] *There seems to be an agreement in the literature that, in order to have a holistic assessment of intergenerational fairness, understood as longitudinal (re)distribution of risks and resources, it is not sufficient to focus on one factor (e.g. monetary transfers); rather, one should take into account a wider set of conditions shaping generations' opportunities that are transferred from one generation to another, including education and the environment.*

### *4.1.1 Income replacement for different income groups*

**For each quartile group, the aggregate replacement ratios were higher in 2018 than in 2007.**[110] The pension income of those aged 65-74 in the bottom quartile of the income distribution amounted to 63 % of the income from employment of those aged 50-59, in the same quartile in 2018 (Figure 45). The ratio increased between 2007 and 2018 by around 8 p.p.; it rose until 2015, and then declined. The other quartiles experienced a more modest increase, of around 5-6 p.p., while the top quartile saw a rise of less than 4 p.p.

**For the EU as a whole, the aggregate replacement ratio varies across income quartiles, with higher replacement ratios found in the lower parts of the income distribution; the difference has become more accentuated over time.** The 63 % of the bottom quartile compares with a figure of only 53 % for those in the top quartile, with the replacement ratio of those in the second and third quartiles both averaging 58 %. The difference across income groups was reflected in a widening of the difference between quartiles over time (10 p.p.

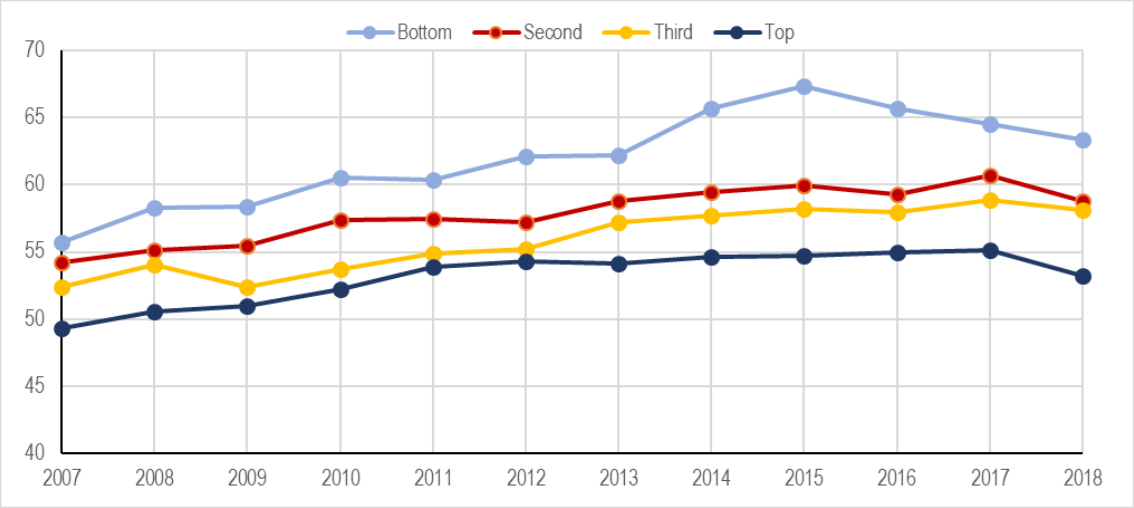
[108] https://www.lemonde.fr/blog/piketty/2019/09/10/what-is-a-fair-pension-system/; Federal Ministry of Labour and Social Affairs, 2017; Haan et al., 2019; Breyer et al., 2009.

[109] Fondazione Giacomo Brodolini (2020). This intergenerational perspective is not always applicable, since it requires long panel data and dynamic micro-simulations of future careers of individuals belonging to younger generations.

[110] The aggregate replacement ratio compares the gross income from pensions (i.e. before any taxes payable) received by those aged 65-74 (i.e. those in the early years of retirement), with the gross income from employment of those aged 50-59, who are approaching retirement. Pension income includes income from both private and public pensions of all kinds (i.e. occupational as well as basic). By taking these two age groups, the replacement rate reflects the change in income as people make the transition from work to retirement, or what those nearing retirement can expect to receive, on average, in the way of pension when they stop working, relative to their earnings from employment at present. The difference between gross and net rates can be very pronounced in some countries (e.g. BE).

between the top and bottom quartile in 2018, as opposed to 7 p.p. in 2007; it peaked in 2015, at 13 p.p.). This mainly mirrors the fact that the income from pensions of those in the bottom quartile fell in relative terms between 2015 and 2018, compared with the income of those in work aged 50-59 – just as it had risen by more in the period before 2015, especially over the 2 years 2013-2015 (the 2012-2014 income years, when GDP growth in the EU was very slow).

**Figure 45: Aggregate replacement ratios by income quartile – median income from pensions of those aged 65-74 relative to the median income from employment of those aged 50-59 in work, EU-27, 2007-2018, %**




*Note: ARR(Qx) = Pension$_{65-74}$(Qx)/Earnings$_{50-59}$(Qx), x=1,...,4 and this on the level of the EU as a whole.*
*Source: Eurostat, EU-SILC microdata and ESPN calculations.*

While for the EU as a whole, redistribution across income quartiles, shown by the aggregate replacement ratio, seems to have become more accentuated over time, at the country level this conclusion is less obvious. Between 2007 and 2018, only 12 Member States experienced an increase in aggregate replacement ratios across the income range;[111] meanwhile, in the majority of countries, people in the bottom quartile experienced an increase that was lower than the EU average, if not a decrease (Figure 46). Only in the Czech Republic and Estonia were the values for the aggregate replacement ratios in 2018 lower than in 2007 across all income quartiles.[112] In Hungary, Latvia,[113] Austria, Lithuania,[114] Sweden, Romania, the

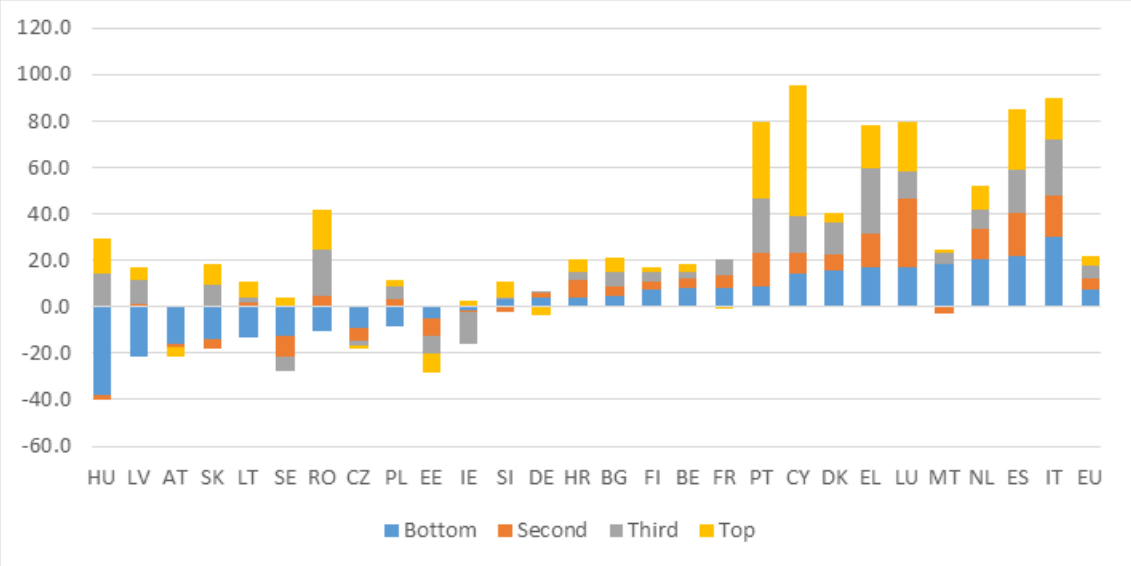
[111] Croatia, Bulgaria, Belgium, Finland, Portugal, Cyprus, Greece, Denmark, the Netherlands, Spain, Luxembourg and Italy. In Greece, the overall increase in the replacement ratios between 2007 and 2018 is solely due to the fact that the incomes of those in work fell much more than the incomes of those retired in both years, and the replacement rates for the first quartile is the highest due to the mechanism of minimum pensions. In the period between 2007 and 2018, although pensions remained frozen in nominal terms, they were affected by the introduction of several fiscal consolidation measures. The latter were mostly targeted at the top quartile (see Leventi et al., 2014), which caused the change in the pattern of replacement ratios that we observe between the 2 years.

[112] In Estonia, this was mainly because salaries grew faster than pensions, and the pension index depends 80 % on wage growth and 20 % on price growth. A higher income quartile loses more in the replacement rate because the public pension still depends mostly on length of service, and less so on contributions.

[113] In Latvia, the poorest persons in old age receive a minimum pension or a state social security benefit, which in 2007 was slightly above 60 % of the minimum wage. By 2018, the minimum wage had increased to EUR 430 from LVL 120 (EUR 170.74) in 2007, but the minimum pension and the state social security benefit have changed minimally; as a result, the

Czech Republic and Poland, the aggregate replacement ratios for those in the bottom quartile developed far less favourably than in the other quartiles. On the other hand, the aggregate replacement ratios for those in the bottom quartile increased by more than in the other quartiles only in Belgium,[115] Italy, Malta,[116] Germany,[117] Denmark, Finland and the Netherlands, suggesting an increasingly vertical redistributive element in pensions.[118] Especially in Cyprus[119] and Portugal, but also in Spain and, to some extent, in Luxembourg and Bulgaria, the aggregate replacement ratios increased particularly for those in the top quartile.

**Figure 46: Changes in the aggregate replacement ratio, by income quartile – changes in the median income from pensions of those aged 65-74 relative to the median income from employment of those aged 50-59 in work between 2007 and 2018, p.p.**




*Notes: Figure for Croatia in 2007 relates to 2010; figures for 2018 for Ireland and Slovakia relate to 2017; the graph shows the differences for the aggregate replacement ratio in 2017 and 2018 for each income quartile.*
*Source: Eurostat, EU-SILC microdata, ESPN calculations.*

### *4.1.2 Income inequality in old age*

The design of old-age pension systems also has an impact on income inequality and poverty. As the risk of poverty was largely explored in Section 1.1 (Figure 3, Figure 4 and Figure 5), in this chapter analysis will concentrate on the impact on income inequality.

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replacement level of these two benefits was much lower than in 2007. Moreover, the replacement ratio is slightly increasing by the indexation of pensions introduced in the country, which takes place every year on 1 October.

[114] In Lithuania, after the crisis, the minimum monthly wage grew faster than pensions. Pensions started to be indexed in 2017.

[115] In Belgium, the big increase in the aggregate replacement ratios in the first quartile seems logical because of the increase in the amount of the minimum pension.

[116] In Malta this is the result of several measures introduced by the government, such as pension credits and a minimum pension mechanism and rules.

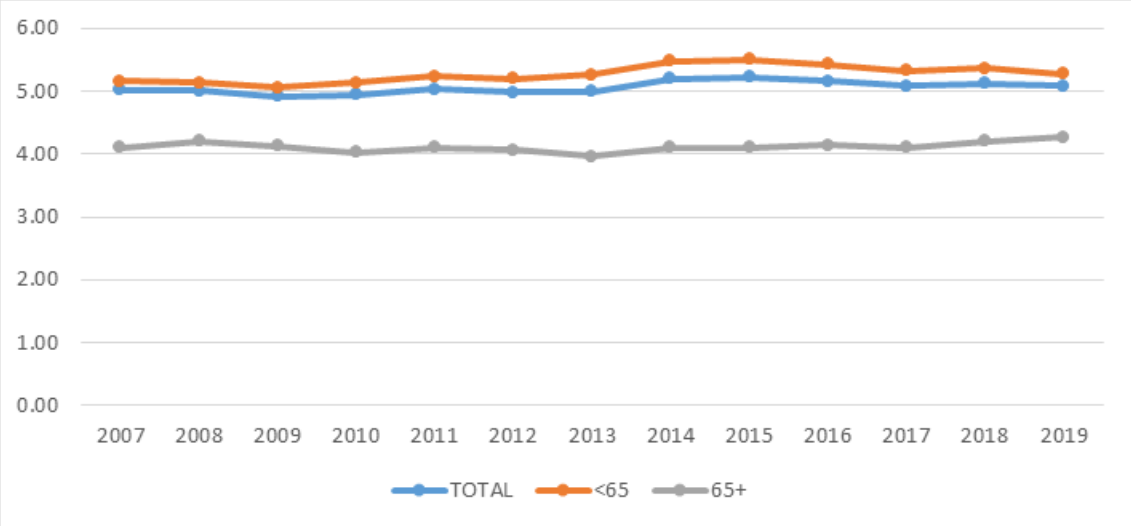
[117] In Germany, the replacement ratios increased in all quartiles except the top one, where it decreased.

[118] The increase in Belgium and Germany was below the EU average.

[119] In Cyprus, the increase in the aggregate replacement ratios in all income quartiles is due to the maturity of the national social insurance scheme pension benefits and to the introduction of the non-contributory pensions income support scheme for low-income pensioners.

**Over the period 2007-2018, inequality – as measured by the ratio between the net income of those in the top quintile and those in the bottom one[120] – fluctuated only slightly, especially among those aged 65 and over** (Figure 47). In 2018, in the EU as whole, the net income of those aged 65 and over in the top quintile was over 4 times the net income of those in the bottom quintile. This is less than the difference observed for the population below the age of 65, among whom those in the top quintile received 5 times more than those in the bottom quintile.

**Figure 47: S80/S20 – Income ratio between top and bottom quintile, by age (0-65 , 65+ and total), EU-27, 2007-2019**




*Source: Eurostat.*

In 2019, income inequality was lower among the 65+ age group than among those aged below 65 in all but three Member States,[121] testifying to the redistributive impact of pension systems (Figure 48). First, variations in the S80/S20 for the 65+ age group show differences in inequality between Member States: the income of those aged 65 and over in the top quintile compared to the income of those in the bottom quintile ranged from over 5 times greater in Portugal, Latvia[122] and Italy to only just over double in the Czech Republic and Slovakia. Moreover, between 2007 and 2019, only in Portugal, Romania, Greece[123] and Croatia did inequalities decrease for both the working-age and the older population; and in the last three mentioned, the decrease was stronger for older people. In Malta, the Netherlands and Slovenia, inequality decreased for those aged 65 and over, while it increased for those aged

[120] The income quintile ratio (or S80/S20 indicator) measures inequality between the two extremes of the income distribution. The indicator shows the size of the difference in income between those with the highest and the lowest levels. It is defined as the ratio of total income received by the 20 % of the population with the highest income (top quintile) to that received by the 20 % with the lowest income (bottom quintile), income in each case being measured (as for the at-risk-of-poverty rate) net of taxes and including social transfers on a household equivalised basis.

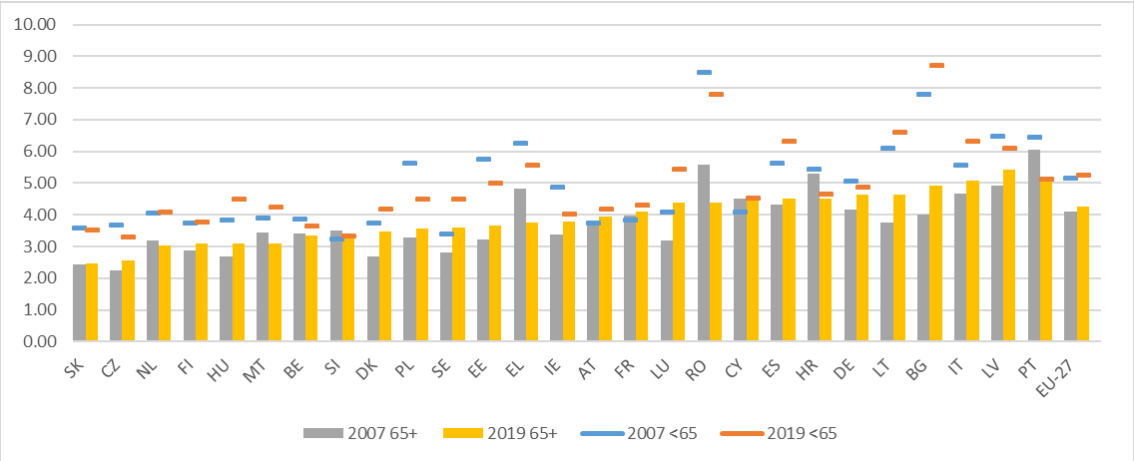
[121] Cyprus, Slovenia and Portugal.

[122] Data on Latvia refer to 2018.

[123] In Greece, fiscal consolidation affected higher pensions (for example, through the introduction of a series of pensioners' solidarity contributions) more than lower pensions, thus reducing inequality.

below 65. In Poland, the Czech Republic, Ireland and Estonia, the opposite was true. Among the countries in which inequalities increased for both groups,[124] only in Bulgaria and Luxembourg was the increase more pronounced for those aged 65 and over than for those aged below 65.

**Figure 48: S80/S20 – Income ratio between top and bottom quintile, by age (0-65 , 65+), 2007 and 2019**




*Note: Figure for Croatia in 2007 relates to 2010.*
*Source: Eurostat.*

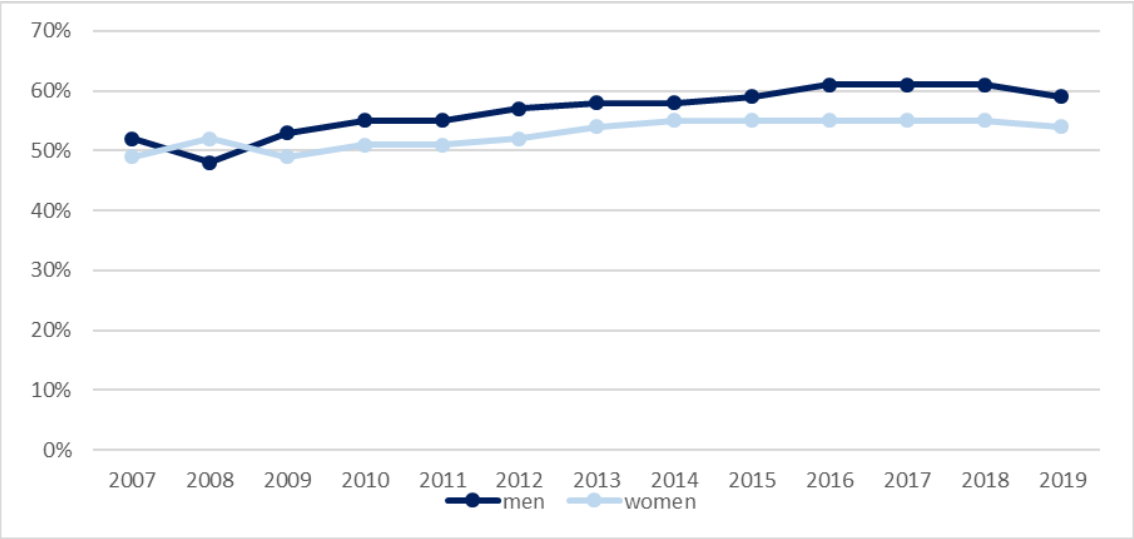
### *4.1.3 Gender differences in pension income*

The differences between the pension income of men and women can be measured by comparing the gender-specific replacement ratios or by comparing the average pension amounts using the gender pension gap indicator.

**Differences in aggregate replacement ratios between genders increased over the period 2007-2019, as the replacement ratio increased by 5 p.p. for women and 7 p.p. for men** (Figure 49).[125] It is interesting to note that women in this context seem to lag 6 years behind men, in the sense that the replacement rates in 2017 for women were at the same level as the replacement rates for men in 2011. While the difference in the replacement ratios between men and women narrowed in the recession years (2008-2010) and the period of the European debt crisis, it widened again in subsequent years (from 2013), due to a slower increase in the replacement ratio of women.

[124] The Hungarian results show that the slightly increasing wage differences gradually appear in the pension incomes, too.
[125] In this case, the gross income from pensions (i.e. before any taxes payable) received by those aged 65-74 (i.e. those in the early years of retirement) is measured as the percentage of the gross income from employment of those aged 50-59, by gender.

**Figure 49: Aggregate replacement ratios by gender – median income from pensions of those aged 65-74 relative to the median income from employment of those aged 50-59 in work, by gender, EU-27, 2007-2019, %**



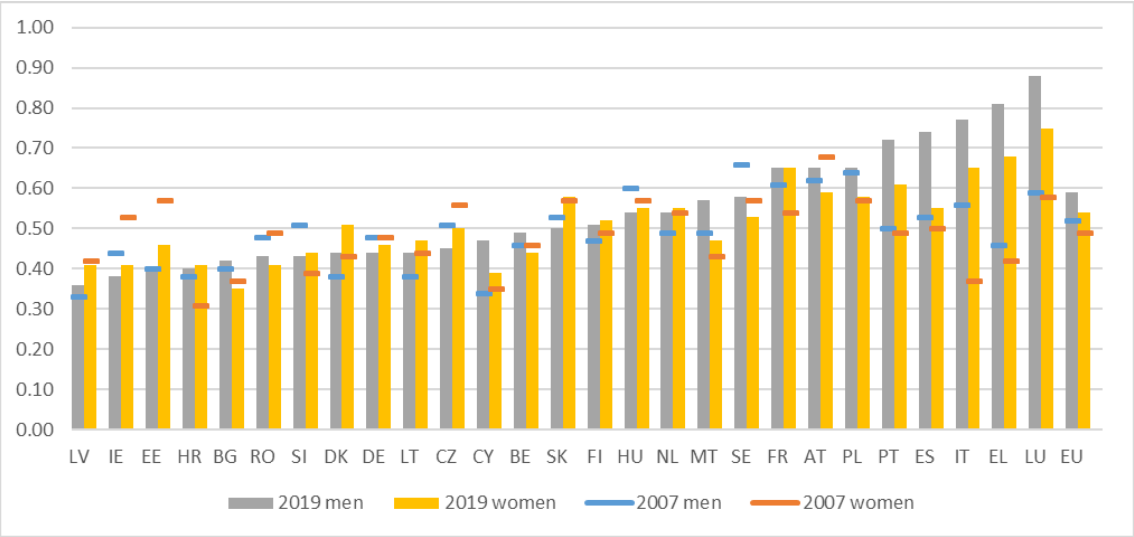

*Source: Eurostat, own calculations.*

**In about half of the Member States, the replacement ratios for men in 2019 were higher than those for women** (Figure 50).[126] However, the figure also shows that in countries where the replacement ratio is low (on the left, from LV to HU, with four exceptions), women have higher replacement rates; conversely, in countries where the ratio is high (on the right, from MT to LU, with no exceptions), men have higher – often substantially higher – replacement rates.

Changes since 2007 have led to a few countries increasing the replacement ratios in favour of men (e.g. NL, where the rate for men rose to the higher rate for women; and PT, where the rate for both genders increased from a similar level, though the men's rate rose much more) and, in some countries, reductions in the rate have also favoured men (in RO there was a similar reduction for women and men; and in AT the ratio for women ratio was reduced substantially, while for men it increased). Other countries moved in the opposite direction. In France and Croatia, for instance, the ratio rose – especially for women, who, in 2019, had levels very close to those of men; on the other hand, the ratio was reduced in Slovenia and Germany, especially for men, who by 2019 had dropped below the ratios for women.

[126] Nevertheless, it has to be taken into account that the interpretation of the ARR to gender is not that straightforward. For example, women work part time more often than men, which affects their denominator, i.e. the income of those aged 50-59, and hence drives up the ARR. Moreover, there might be a selection effect, with women on lower earnings working more often at higher active ages, hence driving down the denominator for women further, and increasing the ARR of women.

**Figure 50: Aggregate replacement ratio by gender – median income from pensions of those aged 65-74 relative to the median income from employment of those aged 50-59 in work, by gender, 2007 and 2019, %**

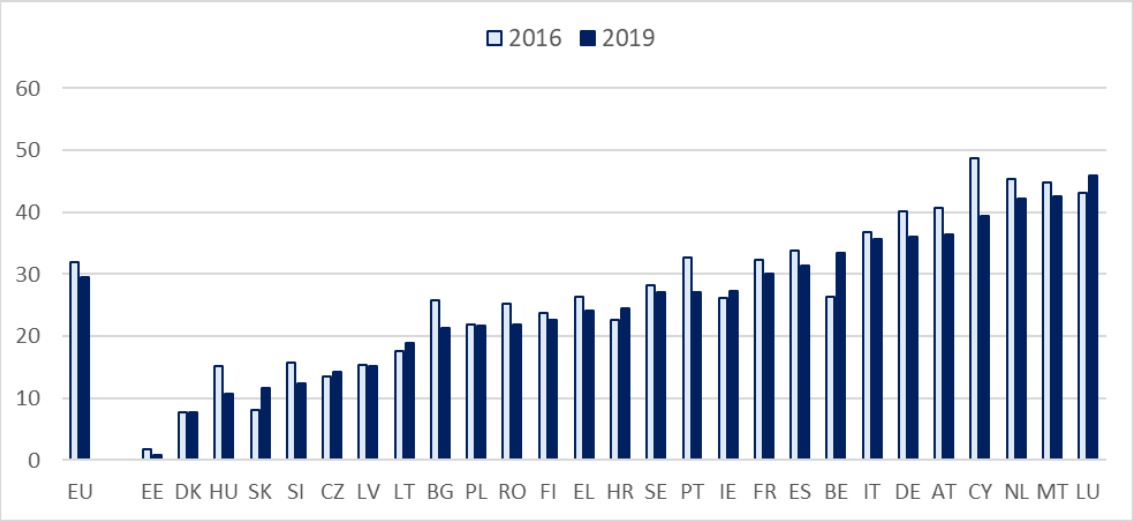



*Note: Figure for Croatia in 2007 relates to 2010.*
*Source: Eurostat.*

**The differences between the pension amounts received by women and men are continuing to narrow, albeit slowly** (Figure 51). The gender pension gap is the relative difference between average gross pensions earned by women and men. As indicated in the 2018 PAR, the gap has its roots in different professional careers: those of women are characterised by lower pay, shorter and interrupted careers, and a lower volume of hours worked. These differences are decreasing slowly, leading to a narrowing of the gap. During the past 3 years, it has narrowed from 32.3 % to 29.5 %.[127] There has been little convergence among countries, and the differences continue to be sizeable. Estonia, with the smallest observed gap, has seen a further decrease to less than 1 %. At the other end of the scale, Cyprus, which had the largest gap in 2016, has recorded the biggest reduction (almost 10 p.p.) to just below 40 %, leaving Luxembourg with the widest gap in 2019 of 46 %.

[127] In 2020, Eurostat revised the methodology for calculating the gender pension gap, including for previous years. The values presented in the current report are not directly comparable with those in the 2018 edition.

**Figure 51: Gender pension gap (65-79), 2016 and 2019, %**

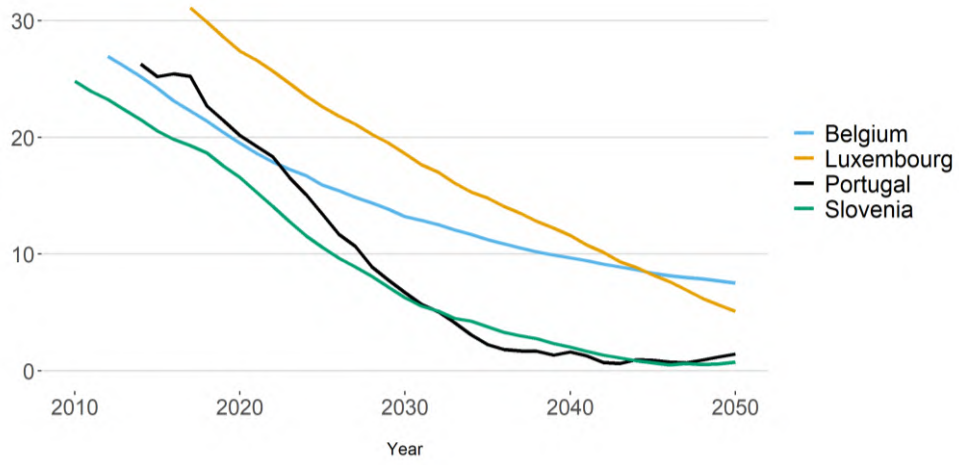



*Source: Eurostat (ilc_pnp13). Note: breaks in series affected changes in BE.*

### *Box 8: Key findings of the MIGAPE (MInd the GAp in PEnsions) project*

*A substantial part of the gender pension gap observed today derives from the fact that in most EU countries, currently retired women had shorter careers and lower pay, relative to men, than women who are active now and who will retire in the coming decades. The EU-funded MIGAPE project (MInd the GAp in PEnsions) aims to uncover the consequences of women's labour market outcomes on their future pensions. The project has produced projections of the gender pension gap for Belgium, Luxembourg, Slovenia and Portugal. Following current labour market trends and based on AWG projections, the project shows that the gap will decline substantially.*

**Figure 52: Gender pension gap under ageing working group assumptions and projections (2008-2050)**




*In Belgium, Slovenia and Portugal, the decrease will slow after 2040, by which time the historical increase in women's labour force participation will be almost completely reflected in pension outcomes. In Belgium and Slovenia, the AWG scenario incorporates continuing*

*convergence in employment rates for men and women among older workers, which causes the gap to narrow a little more after 2040. In Luxembourg, the downward trajectory of the gap continues after 2040, partly because convergence in employment rates is lagging behind that in Belgium and Portugal. Part-time working rates are assumed to be constant in the AWG scenarios and, as the gender differences in working part time are much larger in Belgium and Luxembourg than in Portugal and Slovenia, the gap will end up higher in the former countries than in the latter.*

*As women are the main recipients of survivor pensions, the gap would, in many countries, be much higher without those benefits. Projections of alternative scenarios suggest that if gender equality were to be imposed in labour market outcomes (employment and earnings) from today, the gap would decline further in the long run, to a level lower than in the AWG reference scenario, but not by much.*

*One reason for the shorter labour market careers of women is that they take on the bulk of care tasks in EU countries (see the 2021 LTC report). This often comes at the expense of their income and future pension. A second part of the MIGAPE project studied the extent to which full or partial career interruptions due to caring for children or older relatives translate into lower pensions. Pension systems were found to vary a lot in their degree of compensation for caring periods, and the (indirect) effect on future earnings of periods of caring may be as important as compensating elements in the pension system.*

*The MIGAPE project also combined various surveys and experiments in Belgium on the socio-psychological aspects of pensions. The results suggest few gender differences in knowledge of the pension system, the exception being that this knowledge is even more limited among young women. Women tend to underestimate the gender pension gap. An experiment suggested that women are more responsive (in terms of fictive career choices) when the impact of career choice on future pension is framed negatively ('what pension will one lose by not doing …'). This finding might have implications for the design of pension communication.*

### *4.1.4 Impact of taxation*

**The tax treatment of old-age pension contributions and benefits is an important factor affecting the distribution and adequacy of retirement incomes across different socioeconomic groups, and can also have intergenerational effects.** Pension contributions and/or pension benefits often enjoy specific tax rebates (e.g. tax allowances and tax credits); however, most countries either impose some taxation in the accrual phase, or else they levy a tax on the pay-out phase (Table 6).[128]

[128] The analysis below focuses on public and mandatory occupational old-age and survivor pensions (including various supplements), but not on disability pensions (as the target population in most cases will be different).

**Table 6: Current tax treatment of mandatory and occupational old-age pension benefits and worker contributions in the EU Member States**

| Tax regime | Country |
|---|---|
| EE | BG, SK |
| Et | AT, BE, CY, FI,* IT, LV, LU, MT, PT, RO, SI, ES, SE |
| ET | HR, DK, EE, EL,* PL |
| TE | HU, LT |
| Tt | CZ |
| tt | FR, DE, IE, NL |

*Notes: The first letter of each tax regime refers to the tax treatment of pension contributions, while the second letter indicates the tax treatment of the main old-age pension benefits (E = fully exempt, T = fully taxed). t refers to a partial exemption of pension contributions (e.g. via a cap) or to a reduced effective tax rate (e.g. because of the existence of specific pension or age-related tax allowances/credits) on pension benefits.*
** Greece and Finland[129] impose additional taxes on pension income on top of personal income tax (PIT).*
*Source: JRC with EUROMOD microsimulation model and EUROMOD country reports.*

**In most countries, a flat or slightly increasing pattern of tax and social contribution rates for the pre-retirement age groups is observed, which then decreases for post-retirement age groups, possibly reflecting the different treatment of old-age pensions with respect to other income sources** (Figure 53).[130] In general, in age-progressive tax systems, it could be expected that richer age groups face higher tax rates than poorer age groups, as the gross household income usually rises roughly until the age of 45-55 and then gradually decreases, as people become older.[131] Nevertheless, this is not what is observed in most countries. This could depend on differences in income tax rates, social security contributions and other tax allowances and deductions applied to different income sources, as well as to the different structure of the income across the age group.

[129] In Finland, an additional pension income tax of 5.85 % is paid only on high pensions (pension income exceeding EUR 47,000 per year). In Greece, main old-age pension benefits are treated as salary. Certain income general tax exemptions are foreseen, though, in legislation.
[130] Fondazione Giacomo Brodolini, 2020.
[131] Bussolo, 2019.

**Figure 53: Average tax and social contribution rate, by age group, 2018**


*Note: Age groups are 0-16; 17-24; 25-34; 35-44; 45-54; 55-64; 65-74; 75+; the average tax and social contribution rate of each age group is computed as the ratio of the average household tax and social security contributions to the average gross household income; age variable is missing for Malta.*
*Source: Fondazione Giacomo Brodolini, 2020; analysis of EU-SILC data.*

By analysing two extreme scenarios using EUROMOD – full tax rebates [132] and full taxation[133] of employee pension contributions[134] and pension benefits – a 2021 study for the Joint Research Centre of the European Commission[135] allows us to assess the budgetary and distributional impact of pension taxation on disposable (old-age) income[136] and ultimately on

[132] An 'EE scenario' exempts contributions to qualifying old-age pensions (mandatory public and occupational) from personal income tax (PIT), i.e. allowing for their deductibility from taxable income, *and* it exempts pensions from taxation (from both taxes on benefits and contributions, according to what exists in the country).
[133] A 'TT scenario' does not allow for the tax deduction of qualifying pension contributions, and it fully taxes the corresponding pension payments.
[134] In the majority of Member States, the payment of pension contributions is shared between the employee and the employer, although there are different balances: in 14 countries, employers pay a higher share; in Cyprus, Germany, Luxembourg, Malta and Poland the shares are equally split between the two; in Slovenia, employees pay more. On the other hand, in six countries, pension contributions are paid by one side or are tax financed: in Estonia and Croatia, pension contributions are paid only by employers, while in Lithuania and Romania responsibility rests with the employee. In Denmark, pension benefits are tax financed. The study does not include pension contributions paid by employers, but analyses only the part of pension contributions paid by employees (or the self-employed, farmers) and that is deductible from the PIT base.
[135] Ivaškaitė-Tamošiūnė, forthcoming. The study uses EUROMOD, the EU's microsimulation model (https://euromod-web.jrc.ec.europa.eu/). All simulations rely on static microsimulation, assuming no behavioural responses of affected individuals and disregarding the lifetime dimension.
[136] The analysis relies on the annual equivalised disposable income calculated with the OECD modified equivalence scale using the EUROMOD microsimulation model with the underlying EU-SILC data. Due to the lack of history in EU-SILC, most pension benefits (except mainly means-tested or lump-sum pensions) are not simulated, but are taken directly from the EU-SILC data.

poverty.[137] Given its nature, the analysis should be interpreted as a static hypothetical case study into the absence of behavioural reactions ('overnight effect'). Nevertheless, the scenarios provide a quantitative indication of the impact of pension taxation in the EU.

**The resources collected through the taxation of pension contributions and benefits represent a non-negligible share of GDP in the majority of Member States.** Such taxation appears to matter quantitatively, especially in continental and northern countries, the majority of which apply a partial exemption for pension contributions or reduced effective tax rates on pension benefits. In other, mostly central and eastern European countries,[138] the revenue share of pension-related taxation is smaller. Totally removing existing taxation of pension benefits and contributions (i.e. a shift towards an EE regime, as shown by the blue bars in Figure 54) would entail a fiscal cost of around 0.8 % of GDP on average in the EU, ranging from less than 0.2 % of GDP in Romania and Croatia to nearly 3 % of GDP in Italy and Denmark (Figure 54). Applying full personal income tax to pension benefits and contributions (i.e. eliminating existing exemptions – a shift to a TT regime, as reflected by the orange bars) could improve the fiscal balance by 1.2 % of GDP on average in the EU. Potential fiscal gains vary across the countries, depending on the quantitative importance of pensions and the extent to which preferential tax treatment of pensions (specific tax allowances, credits, reduced tax rates or complete exemption) and tax exemption of pension contributions are currently in place. Some countries would gain more than 2 % of GDP,[139] while others would be barely affected[140].[141]

[137] The same exercise is repeated, also adding private pensions and contributions to private schemes to the list of qualifying scenarios (called PEE and PTT) for Belgium, Denmark, Lithuania, Luxembourg, Poland and Slovakia. Funded pension schemes also have an intermediary phase of the fund's investment return. The model, however, cannot capture this, and therefore the analysis abstracts from it.

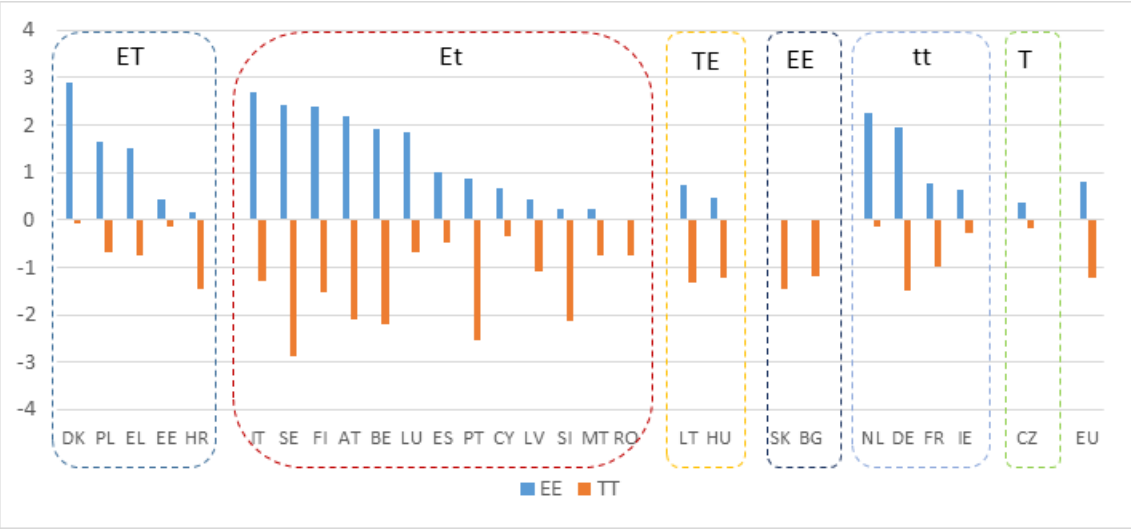
[138] Cyprus, Czech Republic, Estonia, Croatia, Hungary, Latvia, Malta, Romania, Slovenia and Slovakia.

[139] Austria, Belgium, Portugal, Sweden and Slovenia.

[140] Czech Republic, Denmark, Greece, Spain and the Netherlands.

[141] Analysis of the taxation of private pension benefits and contributions shows little difference from the EE or TT scenarios, first of all because of the very low number of observations for some countries. The exceptions are Denmark and Belgium. For both countries, removing taxation of private pensions would only slightly increase fiscal costs (by 0.3 p.p. and 1.1 p.p. of GDP, respectively), compared to the EE scenario.

**Figure 54: Fiscal cost when switching to the EE or TT scenario compared to the baseline (in % of GDP)**

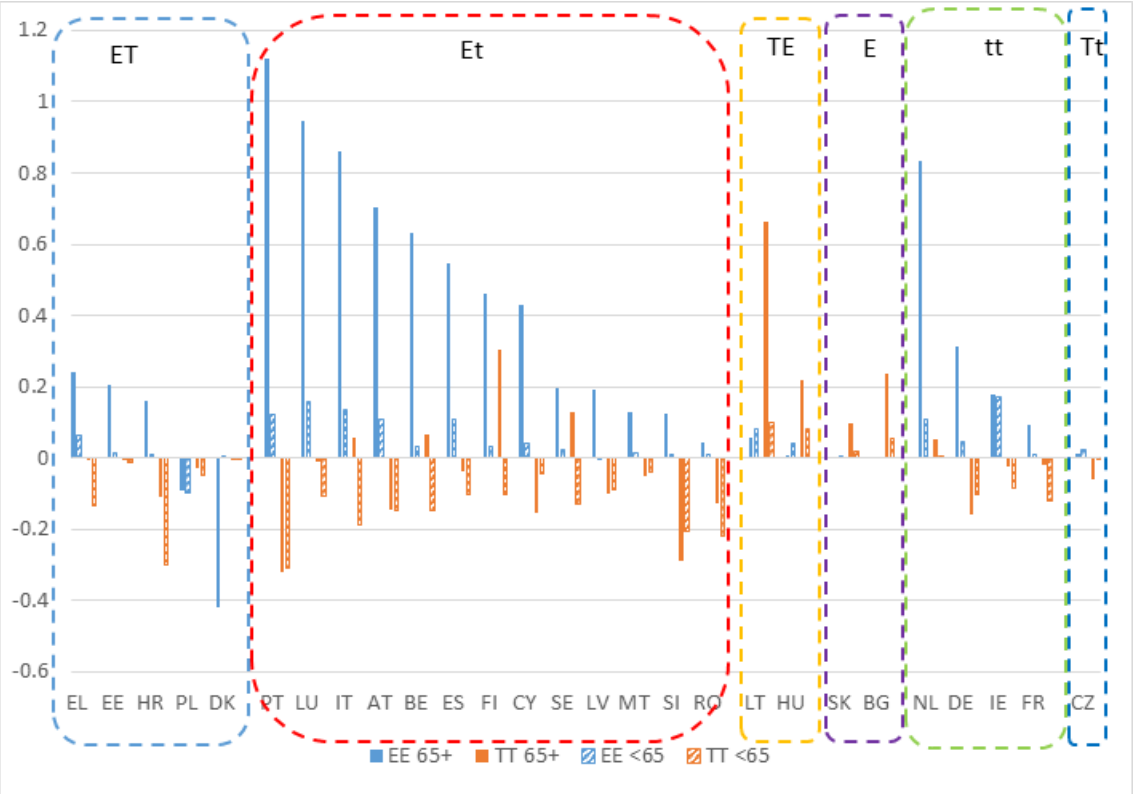



*Note: EU average calculation is weighted by GDP; countries are grouped by their tax regime in Table 6. A positive (negative) value implies an increasing (decreasing) fiscal cost as a percentage of GDP. The blue bars denote a shift towards an EE regime, while the orange bars show the impact of a shift towards a TT regime.*
*Source: European Commission, Joint Research Centre, based on the EUROMOD model.*

In almost all countries, current taxation policies contribute to limiting inequalities among pensioners, compared to a scenario where pension benefits and contributions would be fully exempt from taxation (Figure 55). Denmark and Poland are exceptions to the general pattern, as a full exemption policy would decrease inequality for both those aged 65+ and those below 65 in Poland, and for those aged 65 and above in Denmark (while having no effect on those aged below 65). The magnitude of the changes in inequality resulting from switching from the baseline in the two scenarios depends on the existing taxation of pensions and the tax exemptions of pension contributions, as well as on the relative importance of pension income across income deciles.[142] On the other side, compared to the actual situation, a full application of taxation to pension contributions and/or benefits would have more mixed effects. Inequalities would increase for both those aged above and below 65 in Lithuania, Hungary, Slovakia and Bulgaria, where pension benefits are currently not taxed (and pension contributions are deducted only in Bulgaria and Slovakia). However, inequalities would also increase for those aged 65+ in Italy, Belgium, Finland, Sweden and the Netherlands, where pension benefits (and contributions in the case of the Netherlands) are already taxed.

[142] The impact on inequality and especially poverty should be interpreted with extreme caution, since there are differences in the benefit systems – especially of means-tested benefits – across the EU. In some countries (i.e. Bulgaria, Cyprus, Denmark, Spain, Finland, Luxembourg, Malta, Sweden and Portugal), the eligibility for means-tested benefits depends on gross incomes, hence the interaction between these benefits and other tax-benefit components is limited. Means-tested benefits for Spain are not simulated and are taken directly from the data. This is also the case in Italy, but social assistance and housing benefits are rather minor in that country. Therefore, the impact of the change in the poverty level for these countries is expected to be overestimated in the TT scenario and underestimated in the EE scenario. In other countries, the eligibility for means-tested benefits depends on net incomes. Thus, the change in the taxation of pension benefits will be automatically translated to increased or decreased incomes used for assessing eligibility and, in turn, lower or higher means-tested benefits.

**Figure 55: Change in the quintile share (S80/S20) ratio of those aged above and below 65, when switching from baseline to the EE or TT scenario**



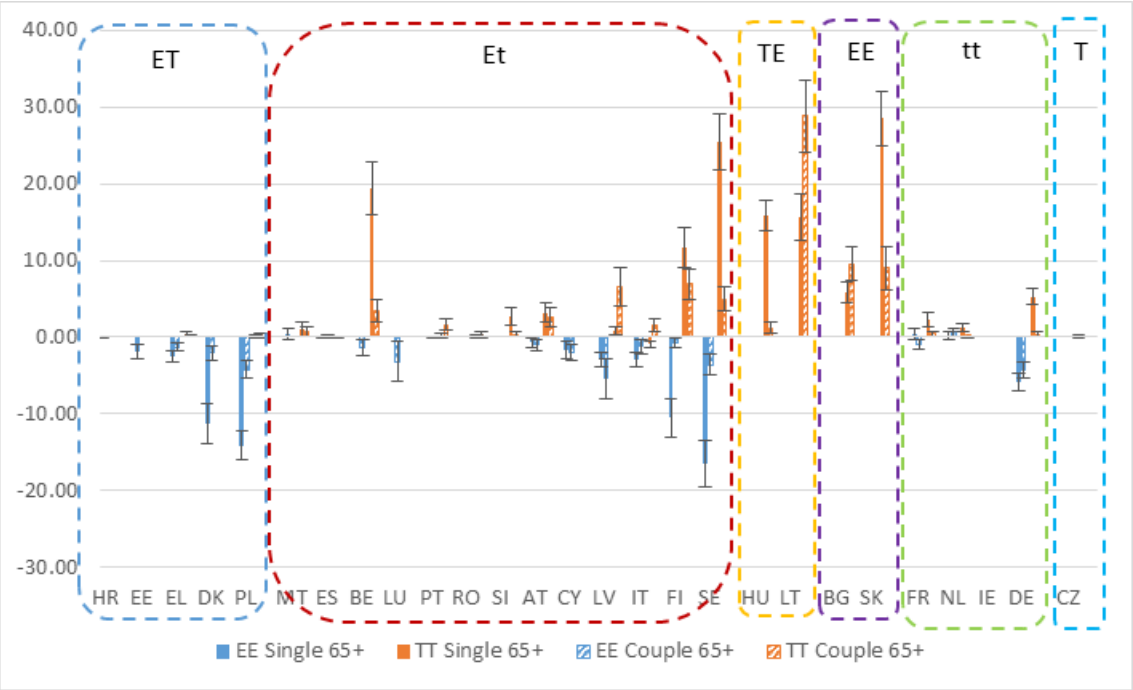

*Source: European Commission, Joint Research Centre, based on the EUROMOD model.*

**Both a full exemption of pension benefits and/or contributions from taxation and a full application of taxation would affect the risk of poverty in only a limited number of countries (**Figure 56**)**. The effect of a reduction in poverty rates is especially strong for singles aged 65 and above in Denmark, Poland, Finland and Sweden, but a small effect can also be observed in Estonia.[143] On the other side, a full application of taxation to pension contributions and benefits would increase the at-risk-of-poverty rate especially among single pensioners in Belgium, Finland, Sweden, Hungary, Slovakia and Germany, while in Latvia, Lithuania and Bulgaria the risk of poverty increases more for pensioner couples than for single pensioners.[144]

[143] Not statistically significant difference across household types in Greece, Italy and Germany.

[144] In Lithuania and Slovakia, the existing exemption of benefits taxation particularly favours very low old-age, survivor and early retirement pensions.

**Figure 56: Change in the at-risk-of-poverty rate when switching from baseline to the EE or TT scenario, by pensioner household composition (in p.p.)**

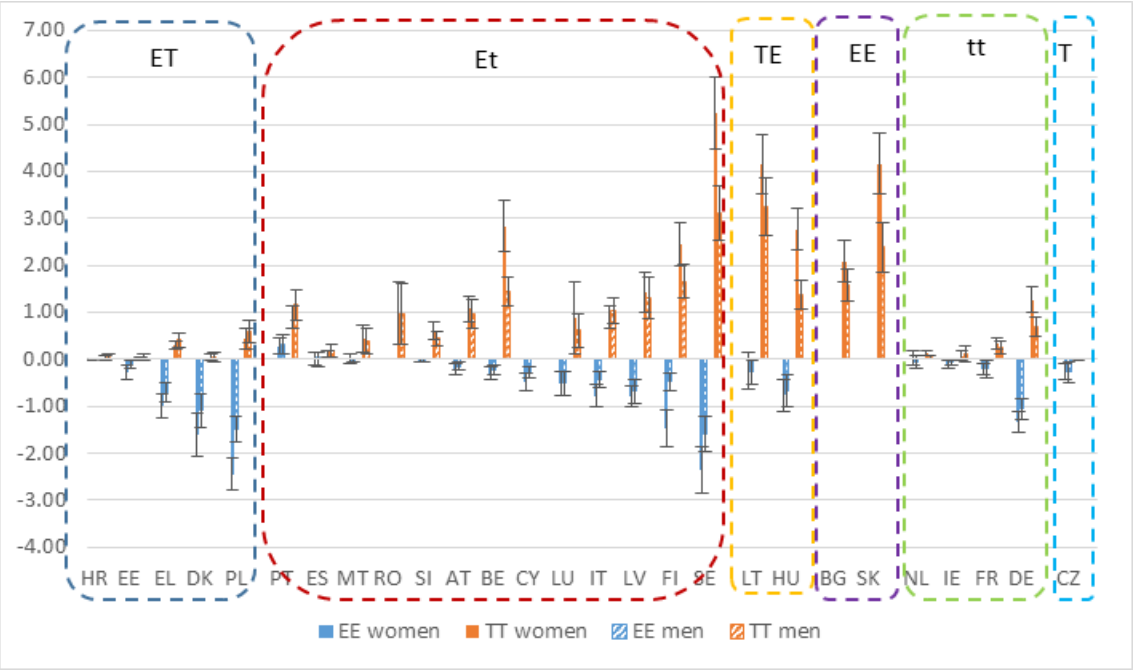



*Note: The change in the at-risk-of-poverty rate by household composition, based on equivalised disposable income; the difference is provided in percentage points; 95 % confidence intervals are provided.*
*Source: European Commission, Joint Research Centre (B2), based on the EUROMOD model.*

**Tax rebates or tax supplements would have a significant impact on the reduction or increase in poverty, respectively, in particular for women.** In almost all countries, a full exemption of pension benefits and contributions from the personal income tax base – or, conversely, a full inclusion of them in the personal income tax base – would respectively reduce or increase poverty rates, especially for women (Figure 57). The magnitude of the effects depends on the level of pension benefits, but also on the pension benefits in disposable income.[145] An exception to the general pattern is Portugal, where, in the case of a full exemption of pension benefits and contributions from taxation, the AROP rate for both men and women would increase. On the other side, the risk of poverty would increase more for women in the event of the inclusion of pension benefits and contributions in personal income taxation.

[145] In Hungary, Lithuania and Slovakia, pension benefits are higher for men, while pension benefits relative to disposable income are higher for women. As a result, women are affected more than men, relative to their disposable income in Germany, Denmark and Poland, where women receive higher pensions. In the Netherlands, where men receive higher absolute and relative pension benefits than women, women are disproportionately burdened by the removal of the old-age tax credit.

**Figure 57: Change in the at-risk-of-poverty rate when switching from baseline to the EE or TT scenario, by gender (in p.p.)**




*Note: 95 % confidence intervals are provided.*
*Source: European Commission, Joint Research Centre (B2), based on the EUROMOD model.*

### *4.1.5 Minimum benefits*

**Non-contributory pensions, contributory minimum pensions and supplements for pensioners on a low income play a key role in tilting the balance in favour of people who did not accumulate enough pension entitlements during their working life.** Table 9 in the annex provides an overview of minimum income benefits for older people in the Member States.

**In the Member States where the public pension system provides a residence-based flat-rate pension or pension component (DK, EE, NL, FI, SE), this benefit ensures minimum income protection in old age.** Ireland, too, provides a flat-rate state pension; however, it is conditional on a contribution record. Most countries with an earnings-based pension system provide a contributory minimum pension subject to qualifying conditions; the level of benefit may vary, depending on the length of career. Beyond minimum pensions, almost all Member States provide specific social assistance benefits for older people, in most cases as a protection of last resort, subject to means testing. Some benefits are targeted to cover specific needs, such as housing costs. In the case of contributory minimum pensions and means-tested benefits, the state typically only pays the difference between the threshold and the household's own income.

The level of minimum income benefits varies substantially across the Member States. While the level of minimum benefits is clearly an important element of Member States' anti-poverty efforts, the capacity of the social protection systems to keep older people out of poverty depends on a combination of factors; previous analysis suggests no straightforward

relationship between the level of minimum benefits and old-age poverty risks in a Member State.[146]

**Several Member States are introducing new benefits to expand the minimum income protection in old age.** In Italy, the establishment of the 'citizenship pension' in 2019 is expected to reduce the large proportion of low-income pensioners, by providing – subject to a means test – a monthly benefit of EUR 780, including a housing supplement.[147] Germany has adopted a new contributory minimum pension (*Grundrente*) that will be implemented from 2021. (See Section 2.1.3 for more details on recent reforms of minimum benefits.)

Table 7 presents the share of recipients of specific benefits aged 65 and over in the total population in that age group according to the latest available data, and how this share has evolved compared to that reported in the 2018 PAR. It should be noted that the coverage rates depend on the eligibility rules of the specific benefit, which means that they are not comparable across countries.

Table 7 also provides an overview of the amounts of social assistance cash benefits and minimum pensions (contributory or residence based) in Member States. Benefit amounts refer to a single non-disabled man; in many Member States, different amounts may apply to families or persons with disabilities.

**Table 7: Share of recipients of minimum income benefits in the population aged 65 and over by benefit (current situation and change since 2018 PAR) and benefit amounts (1 January 2019)**

| | Benefit name | Share of beneficiaries among population aged 65+ | | | | Benefit amount, 1 January 2019 | |
|---|---|---|---|---|---|---|---|
| | | Latest data (%) | | Change compared to the 2018 PAR data (p.p.) | | | |
| | | *Men* | *Women* | *Men* | *Women* | EUR per month | Notes |
| **BE** | *Guaranteed minimum pension* | 28.1 | 31.2 | +0.1 | +1.2 | 1245 | EUR 14,943 per year for a 45-year career |
| | *Guaranteed income for older people* | 3.8 | 5.8 | –0.2 | –0.2 | 1118 | |
| **BG** | *Minimum pension (full career)* | 3.5 | 31.2 | +1.2 | +6.9 | 106 | Excludes statutory funded pensions |
| | *Minimum pension (15-year career)* | 3.7 | 7.3 | +1.3 | +2.8 | 90 | 85 % of the full career benefit. Excludes statutory funded pensions. |
| | *Social old-age pension* | 0.4 | 0.3 | +0.1 | 0 | | |
| **CZ** | *Allowance for living* | | 0.3 | | 0 | 132 | Excludes housing supplement |
| **DK** | *Public old-age pension* | | n/a (universal coverage) | | | 847 | + means-tested supplement EUR 927 or EUR 462 per person (for singles/couples) |

[146] See 2015 PAR for more detailed analysis.

[147] The benefit is EUR 630, plus EUR 150 supplement.

| | Benefit name | Share of beneficiaries among population aged 65+ | | | | Benefit amount, 1 January 2019 | |
|---|---|---|---|---|---|---|---|
| | | Latest data (%) | | Change compared to the 2018 PAR data (p.p.) | | | |
| | | *Men* | *Women* | *Men* | *Women* | EUR per month | Notes |
| | | | | | | | + means-tested supplementary amount linked to length of residence<br>+ minimum statutory funded pension EUR 33 |
| **DE** | *Means-tested basic social assistance in old age* | 3.1[1] | 3.3[1] | +0.2 | +0.1 | 424 | Excludes housing, heating and allowance for disability |
| **EE** | *National pension* | 0.31 | 0.37 | –0.59 | –0.23 | 189.31 | Excludes statutory funded pensions, housing and other allowances.<br>+ supplement of EUR 115 per year for pensioners living alone |
| **IE** | *State pension (contributory)* | 81.3 | 44.8 | +11.3 | +13.8 | 1042.86[2] | Maximum amount.<br>Benefit varies from EUR 92.70 to EUR 243.30 per week, depending on contribution record. Excludes the qualified adult/child allowance. |
| | *State pension (non-contributory)* | 11.5 | 15.5 | –1.5 | –2.5 | 662 | |
| **EL** | *National pension* | .. | | .. | | .. | |
| | *Social solidarity allowance for uninsured older people* | .. | | .. | | 360 | + rent allowance EUR 362 |
| **ES** | *Minimum contributory pension* | 16.09 | 24.93 | –1.18 | +1.04 | 790[2] | Paid in 14 monthly instalments; means tested |
| | *Non-contributory old-age pension* | 1.67 | 3.8 | +0.12 | –0.13 | 457[2] | Paid in 14 monthly instalments of EUR 392<br>+ housing max. EUR 525/year |
| **FR** | *Minimum contributory pension* | 27.4 | 49.7 | .. | .. | 636 | Complex calculation |
| | *Solidarity allowance for older people* | 3.9 | 3.8 | –0.1 | –0.1 | 868 | |
| **HR** | *Minimum pension* | 17.8 | 19.4 | –5.1 | –2.2 | .. | Depends on the national average wage, indexation and qualifying periods |
| **IT** | *Minimum pension supplement* | .. | .. | .. | .. | 556[2] | Paid in 13 monthly instalments |
| | *Social increase* | .. | .. | .. | .. | 649 | |
| | *Social allowance* | 0.27 | 0.28 | .. | .. | 496 | |
| **CY** | *Minimum pension* | 12.8 | 26.8 | –1 | –1.2 | 357.22[2] | Paid in 13 monthly instalments |
| | *Social pension* | 0.8 | 20.9 | 0 | –1.1 | 340.41[2] | Paid in 13 monthly instalments |

| | Benefit name | Share of beneficiaries among population aged 65+ | | | | Benefit amount, 1 January 2019 | |
|---|---|---|---|---|---|---|---|
| | | Latest data (%) | | Change compared to the 2018 PAR data (p.p.) | | | |
| | | *Men* | *Women* | *Men* | *Women* | EUR per month | Notes |
| **LV** | *Minimum old-age pension* | 14.8 | 15.7 | 0 | +0.9 | 70-109 | Depending on career length (from <20 to >40 years) |
| | *State social security benefit* | | | | | 64.03 | |
| **LT** | *Pension supplement* | 7.94 | 12.59 | n/a (new benefit) | | 238.45 | Depending on career length (from 15 to 31+ years); maximum amount set at 95 % of minimum consumption needs |
| | *Social assistance pension* | 1.07 | 1.37 | .. | .. | 132 | + possibly housing costs |
| **LU** | *Minimum pension* | 4.99 | 24.17 | –2.22 | –1.99 | 1842 | Requires 40 years of contributions, otherwise reduced proportionally |
| | *Guaranteed minimum income* | 1.85 | 2.32 | +0.13 | –0.04 | 1453 | |
| **HU** | *Minimum old-age pension* | 0.5 | 0.7 | +0.1 | +0.21 | 88 | Maximum, conditional on 20 years of contributions |
| | *Old-age allowance* | | 0.4 | | +0.01 | 94-126 | Higher benefits if age 75+ |
| **MT** | *National minimum pension* | 14.6 | 18 | +3.4 | +3.3 | 639 | Maximum amount, conditional on 50 contribution weeks per year. Reduced for less intense contributions |
| | | (total of both benefits) | | (total of both benefits) | | | |
| | *Non-contributory old age pension* | | | | | 674 | Includes means-tested maximum energy allowance, supplements and bonuses |
| **NL** | *General old-age pension (AOW)* | n/a (universal coverage) | | | | 1215.81 | Full pension payable after 50 years of insurance; proportional deduction for shorter insurance period |
| **AT** | *Equalisation supplement to pension* | 5 | 5.6 | –0.47 | –4.1 | 1089 | Conditional on 15 years of insurance; higher amounts for >30 and >40 years |
| **PL** | *Minimum old-age pension* | 1.2 | 5.8 | | .. | 253 | Requires 25/20 qualifying years (for men/women), incl. non-contributory |
| **PT** | *Minimum pension (contributory)* | | 35.6 | | –2.4 | 273-396[2] | Paid in 14 monthly instalments. Depends on contribution years, from <15 to >30 |
| | *Social old-age pension (non-contributory)* | | 1.7 | | –0.3 | 245[2] | Paid in 14 monthly instalments of EUR 210 plus EUR 18-36 if aged 70 or over. Can be supplemented by LTC allowance |
| | *Solidarity supplement for older people* | 5.6 | 9.2 | +3.6 | +4.2 | .. | |

| | Benefit name | Share of beneficiaries among population aged 65+ | | | | Benefit amount, 1 January 2019 | |
|---|---|---|---|---|---|---|---|
| | | Latest data (%) | | Change compared to the 2018 PAR data (p.p.) | | | |
| | | *Men* | *Women* | *Men* | *Women* | EUR per month | Notes |
| **RO** | *Social indemnity for pensioners* | 5.9 | 21.07 | +0.9 | +7.07 | 137 | |
| **SI** | *Minimum pension* | .. | .. | 0.7 | 0.6 | 530 | Conditional on 40 years of contributions |
| **SK** | *Minimum pension* | 8.61 | 14.5 | +6.71 | +11.3 | 278.90 | Increases after 30 years of pension contributions |
| | *Assistance in material need* | .. | .. | .. | .. | 64.70 | Plus EUR 55.80 housing allowance and EUR 66.20 protection allowance |
| **FI** | *National pension* | 26.3 | 44.4 | –2 | –4.1 | 557.79 - 628.85 | Amount depends on marital status. Reduced for shorter residence periods |
| | *Guarantee pension* | 2.1 | 4.4 | +0.2 | –0.1 | 784.52 | Other pension income deducted from the full amount |
| | *Housing allowance for pensioners* | 7.2 | 13 | 0 | –0.5 | .. | |
| **SE** | *Guarantee pension* | 15.8 | 47.5 | –1.8 | –10.7 | 849 | |
| | *Maintenance support for older people* | 1.1 | 1.3 | +0.1 | +0.2 | 399 | |
| | *Housing supplement* | 8 | 19.3 | +0.3 | –1.9 | .. | |

*Notes: (1) as share of population above statutory retirement age; (2) if the benefit is paid in more than 12 instalments per year, 1/12 of the total annual amount is given; .. – no data; n/a – not applicable.*
*Source: Coverage rates – SPC WGPA (reference year varies by scheme); benefit amounts – MISSOC, SPC ISG, SPC WGPA.*

**Over the last 3 years, the share of older people receiving minimum income benefits has remained stable overall, with variations by country and scheme.** An increase in a benefit's recipient rate may point either to a deterioration in the income situation of the target population, or to changes in the benefit level or eligibility conditions that result in broader coverage. During the period under observation, several Member States took steps to raise minimum benefit levels (see Chapter 2), which could increase the number of low-income pensioners benefiting from the scheme. In some cases, such as the minimum pension in Slovakia and the solidarity supplement in Portugal, the significant increase in coverage can be directly linked to reforms that extended eligibility conditions.

**Women remain the majority of minimum income benefit recipients.** In most cases where data by gender are available, the share of older women receiving minimum income benefits is higher than that of men, sometimes overwhelmingly. The difference in absolute numbers is even larger, since women make up the majority of older persons. The overall situation has not changed since the previous PAR, though developments vary by scheme and country. This is hardly surprising, considering that older women continue to have lower incomes and higher poverty risks (see Chapter 1). Non-contributory pension schemes thus play a role in reducing the gender gap caused by unequal careers.

For instance, in Cyprus, 97 % of social pension beneficiaries are women. In Austria, in 2018 an equalisation supplement was granted for 8.8 % of all pensions. The share was lower for direct old-age pensions (i.e. excluding invalidity pensions and survivor pensions), amounting to 6.2 %. More than two thirds of all the recipients were women. Receipt was also unequally distributed across different professional groups: 3.3 % of former white-collar workers, compared to 12.1 % of former blue-collar workers; 7.2 % of former self-employed and 20.2 % of former farmers.

### *4.1.6 Other solidarity mechanisms*

**Several policy mechanisms, mostly in statutory pension schemes, act as key solidarity and redistributive mechanisms across different socioeconomic groups.** Those mechanisms aim at partially compensating for certain inequalities and circumstances, such as, for example, career breaks due to child care or unemployment, low incomes, or arduous and hazardous working conditions. Those measures aim to take into account periods of non-contribution, or to provide for people who did not manage to reach the minimum contributory requirements, or were forced to leave the labour market early. They also aim at redistributing, by establishing contribution benefits or ceilings, and keep pension income adequate through favourable indexation of lower pensions or by guaranteeing minimum benefits.

**All EU Member States provide survivor benefits for spouses,[148] and these can have a considerable impact on income redistribution in old age, especially for women, who make up the majority of recipients.** Survivor benefits tend to play a key role in reducing gender gaps in pension entitlement, and can thus be considered to be an essential solidarity mechanism. For example, Romania provides comparatively low pension accruals for most non-contributory pensions, while survivor benefits amount to around 50 % of the average pension benefit. Those mechanisms are especially important for women. For instance, in Portugal, where survivor benefits generally amount to 60 % of the deceased spouse's pension, 81 % of the beneficiaries are women. In the Czech Republic, 538,000 widows' pensions were paid out each month in 2018, in contrast to only 99,000 widowers' pensions. Almost 95 % of these survivor benefits are paid to persons already eligible for an old-age pension. Some countries have adopted reforms in order to close some gaps and amend eligibility conditions for survivor benefits. For instance, in Finland, according to a government proposal, survivors from a cohabiting relationship (and not only married couples) will be entitled to survivor

[148] The Danish public pension system only pays survivor benefits for a few months, and it will not provide for the survivor in the long term. This is because the survivor has the right to their own public old-age pension. The lack of a gender gap in Denmark is not caused by the lack of survivor benefits, but by securing individual rights. In Sweden, survivor benefit is being phased out. Among people turning 65, now only a very few will qualify, due to very strict and complicated rules. Still benefits will continue to be paid to those people who have already qualified (the survivor benefit will be paid out approximately until 2070). However, it is possible for one spouse to transfer pension rights within the premium pension system to the other spouse. In Latvia, a surviving spouse is eligible only for a short-term allowance. Since 2019, a survivor allowance is paid for 12 months to the retired surviving spouse in the amount of 50 % of the deceased's pension (supplement included); before 2019, a lump-sum payment of 2 months of the deceased's pension was paid, without supplement. See also Chapter 3.

benefits in 2022.[149] Slovenia, following a 2019 pension reform, will increase accrual rates notably for survivor benefits (see also Section 2.1). In Belgium, the eligibility age for survivor benefit is steadily being increased from 45 in 2015 to 50 in 2025 (by 6 months per year).[150]

**Lower and upper limits on contributions and benefits may play an important role in redistributing resources.** In several Member States, there are ceilings on pension contribution rates and pension contribution periods (e.g. HR, CZ, DE, LT, RO, SK) and on pension benefits (e.g. HR, ES). In Lithuania,[151] the old-age pension consists of two parts: a general part (depending on length of career) and an individual (earnings-related) part. For the individual part, the points acquired throughout the whole working career are multiplied by a point value. The value of the pension points is bounded by a ceiling. As for the countries that apply caps on pension contribution rates and pension contribution periods, in the Czech Republic, for example, individual qualifying income for a future pension benefit is counted up to a percentage of the national average wage. Over this limit, there is a marked reduction, and only 26 % of the qualifying income is taken into consideration. Likewise, in Germany, only income between a defined lower and a defined upper limit is insurable under the statutory pension scheme.[152] In Slovakia, a 'solidarity element' is embedded in the formula used for calculating old-age pension benefits; the pension benefit is the product of the average personal pension point, the contributory period and the current pension point value. There is a coefficient that reduces pension points higher than a certain value and increases those lower than a certain value. In some countries, pension benefits are capped. In Spain, for instance, there is a cap on the maximum pension benefit (set by the government annually), but not on contributions.[153] In Croatia, the maximum pension benefit is capped at 3.8 times the average salary for the country.

[149] According to the proposal, survivor benefit will become a fixed-term benefit, with a fixed period of 10 years. There will be a transition period, and this reform applies to people born after 1974.

[150] The increase is due to market labour reasons: increasing activity rates in combination with temporary (12 months, or 24 if responsible for a child) support measures for younger survivors.

[151] In Lithuania, the contribution ceiling was decreased from 120 times the monthly average wage in 2019 to 60 times in 2021.

[152] The upper monthly income threshold is EUR 6700 (western Germany) and EUR 6150 (eastern Germany).

[153] In 2018, the maximum pension was EUR 2573.

As already noted in the 2018 PAR, **pension credits[154] for career breaks (related to child rearing, long-term care or unemployment) may have a considerable impact on pension accruals, especially in defined contribution (DC) schemes**.[155] Although pension credits may not be sufficient to make up for the effect on pension entitlements of corresponding reductions or gaps in employment, their role remains undoubtedly paramount in most statutory pension schemes; some occupational schemes also provide pension credits.[156] The ability of credits to compensate for career interruptions or work reduction depends on how the pension credits are calculated and on the maximum care periods taken into account.[157] They mitigate old-age poverty and are a key redistributive mechanism from men to women, from the breadwinner to the partner, but also to non-standard workers, who are more exposed to unemployment, and the self-employed.[158] For instance, in Belgium, it was estimated in 2013 that among employees, pension credits make up 30 % of men's pensions and 37 % of women's pensions;[159] this represents a substantial redistribution from people in employment to people outside employment.[160] In residence-based public pension schemes, such as in Denmark or the Netherlands, career breaks yield pension rights in the same way as any other residence period.

**Almost all Member States provide pension credits for childcare breaks, though these may be age limited or conditional on being entitled to childcare benefits (**Table 8**).** In Lithuania, the state pays contributions equal to 1.5 % of the country's average wage for people who have children up to the age of 3 and who receive maternity benefits or are insured by the state.[161] In Greece, since 2016 it has been possible to take into account 'notional years of insurance' (credits for non-contributory periods); this is estimated to have had a positive effect for women and people in non-standard employment.[162] In Luxembourg, there is a measure to improve the pension situation of persons whose career is interrupted (e.g. due to child care or care for older relatives) for a maximum of 5 years. In Spain, in 2016, a 'maternity supplement' was introduced. This consists of a supplementary percentage (5-15 % of the pension) added to women's contributory pensions if they have had two or more children.

**Credits for periods of unemployment are also very common** (Table 8). In this case, unemployed people continue to build up pension entitlements during the periods of unemployment. That is, the state recognises such spells as insurable periods for pensions (e.g.

[154] Pension rights for career breaks can be granted in different ways, such as by crediting non-contributory periods or by levying contributions on social security benefits. Hereafter, they are referred to generally as 'pension credits'.
[155] European Commission and SPC, 2018.
[156] European Commission, 2019b.
[157] Dekkers et al., 2020. Results concerning childcare-related pension credits would have been different for a period of, say, 3 years. Also, the base scenarios always involve a career of 41 years or more.
[158] For an overview of pension credit mechanisms, see European Commission, 2018.
[159] Peeters et al., 2016, p. 18.
[160] However, for the self-employed, the corresponding estimates were only 3 % for men and 5 % for women in 2013, as they only cover periods of illness and designated care activities.
[161] Therefore, when raising a child, the father or mother does not pay into the pension fund themselves, but the state pays its share for them.
[162] Furthermore, persons with at least 12 years of contributions may purchase non-contributory periods (up to 7 years) in order either to establish entitlement to a pension or to improve the level of their pension benefit.

AT, BE, HR, FI, FR, LT, MT, PL, PT, RO, LV, ES).[163] The rules on the creditable period, the level of credits and the cohorts of pensioners vary between countries. In Slovenia, for example, periods of unemployment are additionally credited with pension contributions, even after entitlement to unemployment benefit ends, provided the beneficiaries have less than a year to go until pensionable age. In some cases, only a certain period of unemployment is credited by the state (e.g. conditional upon receipt of benefit). It may also be that credits are reduced after a certain period. For instance, in Belgium, for periods of unemployment longer than 1 year, since 2017 pension build-up for people aged below 50 has been based on the minimum wage, rather than the previous wage. In Denmark, all residents are entitled to a public old-age pension, but occupational pensions also play a key role for pension entitlements. In 2019, Denmark created a pension fund (subsidised partly by the state) – the 'compulsory pension scheme' (OP) – for social security claimants, to ensure that people temporarily or permanently not in employment build up a supplementary pension. Finally, in some countries, the period of unemployment counts towards the insurance period, but is not taken into account for the calculation of pensions (e.g. BG, EL).

**Table 8: Credited breaks for reasons of child care or unemployment in public pension schemes**

| Reason for break | Formula | Countries |
|---|---|---|
| **Child care** | credited if allowance granted | BE, EE, IE, EL, FR, IT, LV, LT, LU,[164] HU, MT, PT, RO, SE, FI |
| | credited | DK,[165] NL[166] |
| | credited up to maximum age | (6 mo) HR; (1 yr) SI; (1.5 yrs) LV; (3 yrs) BG, DE, ES, CY; (4yrs) CZ, AT; (6 yrs) SK[167] |
| | credited up to maximum time | PL (12 months) |
| | not credited | none |
| **Unemployment** | credited | BG, CZ, DK,[168] DE, EL, FR, CY, NL,[169] AT, PT |
| | credited if allowance granted | BE, EE, ES,[170] IE, IT, LV, LT, LU, HU, MT, PL, RO, SI, SE, FI |
| | credited up to maximum time | (5yrs) HR |
| | not credited | SK |

*Sources: MISSOC; SPC ISG; SPC WGPA.*

[163] In Latvia, the state pays pension contributions when unemployment benefits are received (irrespective of benefit entitlement for unemployed persons with disability). In Spain, for persons over 52 years of age, non-contributing periods are included in the contribution period.
[164] Maximum 2 years while child is aged 6 years or under.
[165] Residence-based pensions; career breaks treated the same as other residence periods
[166] Residence-based pensions.
[167] Extended to 18 years in the case of child disability.
[168] Residence-based pensions.
[169] Residence-based pensions.
[170] For persons aged over 52 years.

**Pension credits for caregivers looking after an adult family member in need of care are also becoming more widespread.** Belgium offers credits in relation to caring for a family member. Bulgaria, the Czech Republic, Germany, Estonia, Italy and Luxembourg offer credits for taking care of people with disabilities. France offers a maximum of 2 years of credits for caring for a disabled adult (disability at 80 %). In Lithuania, the state pays pension contributions for caregivers looking after an adult in need of care. Slovakia offers credits for beneficiaries of care allowance (or for periods of providing personal assistance for at least 140 hours a month).

**Pension benefit indexation is considered an important tool to improve pension adequacy, especially when it favours lower pensions** (for an overview of pension indexation mechanisms, see Box 2 in Section 1.3). In some Member States (IT, LV, PT, CZ) there are specific rules indexing lower pension benefits at a more favourable rate than the general indexation.[171] Italy, for example, has a progressive indexation rule, indexing lower pensions to 100 % of (consumer price) inflation, compared to a 50 % indexation for higher pensions. Likewise, Portugal applies a more favourable pension indexation rule (again to prices) for low pensions. Latvia, in turn, uses a more favourable formula to index part of the pension benefits for workers in arduous and hazardous jobs. There are also Member States that apply a more favourable indexation rule for lower pension benefits on an ad hoc basis (AT, BG, ES) and have repeatedly done so over the past few years. In Member States where the pension benefit comprises basic and earnings-related parts, the basic component may be subject to favourable indexation rules (e.g. EE).

**In general, special schemes or rules for workers in arduous and hazardous jobs have been phased out over the past decade.**[172] In several countries, this has been linked to the disappearance of some arduous or hazardous profession sectors, like mining. However, some countries have kept solidarity mechanisms for these kinds of workers (e.g. AT, BG, IT, RO). In Romania, for instance, workers in arduous and hazardous jobs are granted additional pension points, have a lower pensionable age and shorter contribution periods, in return for higher contribution rates paid by employers. Recently, the Netherlands also introduced favourable tax rules to make it easier for employers to offer up to 3 years of early retirement on an occupational pension for workers in arduous and hazardous jobs (see also Section 2.1). In Finland, from 2017 it has been possible to retire earlier with a long working history in arduous and hazardous jobs. Some countries also have special rules for workers with long careers (e.g. AT, PT, SI).

## 4.2 Expenditure and financing of old-age benefits and alternative sources of financing

**Despite the large variety of pension systems across the EU, all systems face a growing challenge of ensuring sufficient funding to provide adequate benefits and coverage.** In general, due to population ageing, the proportional size of the active population is decreasing

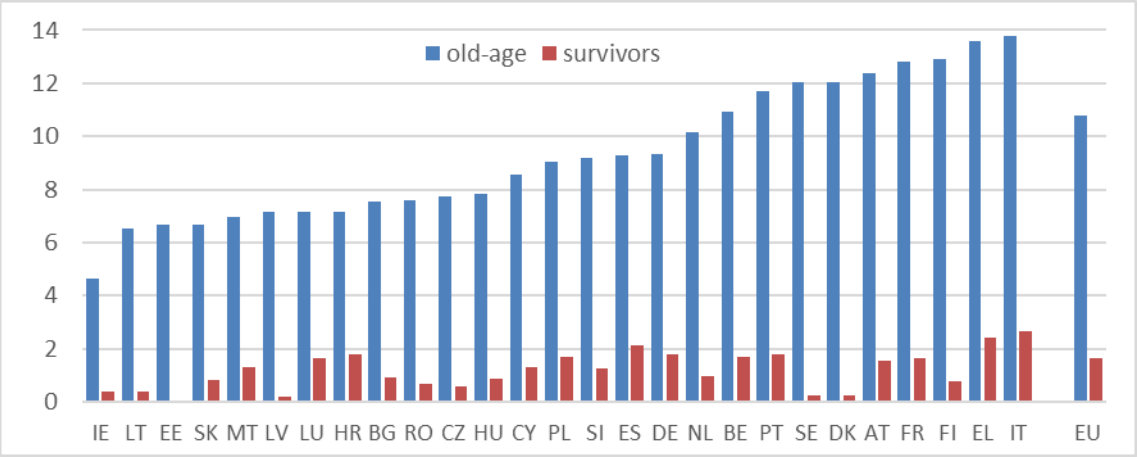
[171] In Latvia, the favourable indexation rules are applied to old-age pensions with a long insurance period and for people who worked in arduous and hazardous jobs.
[172] For more information, see Natali, et al., 2016.

and that of pensioners is increasing. Furthermore, a potentially rising number of people in non-standard careers might be excluded from social protection systems, or pay lower or no contributions.[173] All these trends contribute to the financing challenges, which have triggered various debates on the strengths and weaknesses of pension systems and on how reforms can increase resilience. In recent years, country-specific recommendations (CSRs) concerning pension systems, issued in the context of the European Semester, have centred on the long-term financial sustainability of pensions, by focusing on limiting the growth of the expenditure side (raising the pensionable age and/or restricting access to early pensions). Therefore, a number of reforms introduced by Member States over recent years, including in response to these CSRs, have focused mainly on increasing the pensionable age and closing down early retirement opportunities, though in some cases, there have also been cuts in benefits and freezes in indexation since 2010 (see Chapter 2).[174]

### *4.2.1 Spending on old-age benefits*

**The pension systems in Member States are very diverse, and this diversity is also reflected in the large disparities between expenditure as a percentage of GDP across the EU**. The expenditure share varies from 4.6 % of GDP in Ireland[175] to 13.7 % in Italy. On average, expenditure on old-age benefits in the EU accounted for around 10.8 % of GDP in the EU in 2018 (Figure 58), corresponding to 40 % of total spending on social protection benefits. While Figure 58 reflects expenditure on old-age and survivor benefits as a percentage of GDP, the remainder of this chapter will focus on old-age pensions.

**Figure 58: Old-age and survivor expenditure, as a share of GDP, 2018, %**

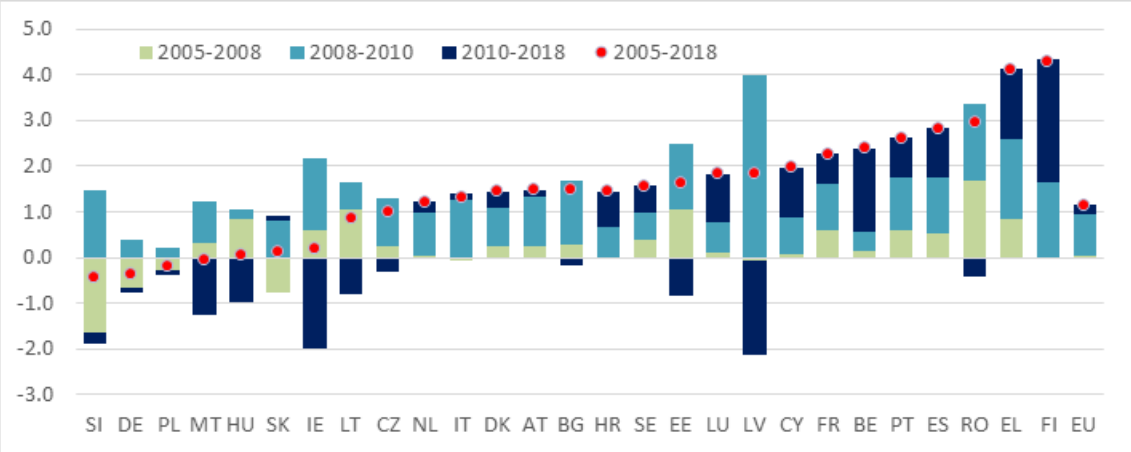



*Note: The decrease in expenditure relative to GDP in Malta was not due to cutbacks; benefit rates were not frozen or reduced, but continue to increase on an annual basis. The decrease is a result of higher GDP due to economic growth.*
*Source: Eurostat, ESSPROS.*

[173] European Commission and SPC, 2018.
[174] https://ec.europa.eu/info/publications/economy-finance/pension-reforms-eu-early-2000s-achievements-and-challenges-ahead_en
[175] When reading economic aggregate statistics expressed as a proportion of GDP, account needs to be taken of the fact that globalisation-related activities disproportionally affect Irish GDP.

**Spending on old-age benefits remained broadly unchanged in the EU as a whole between 2005 and 2018, relative both to GDP and to the total spending on social protection in nominal terms** (Figure 59 and Figure 60). The expenditure on old-age benefits relative to GDP grew in all countries between 2005 and 2018, apart from in Slovenia, Germany, Poland and Malta, where it decreased slightly (Figure 59). In relation to the total social protection spending, the expenditure on old-age benefits also grew in most countries, but fell in Slovenia, Germany, Poland, Lithuania, Italy, Bulgaria and Estonia (Figure 60). In the years of the financial and economic crisis (2008-2010), expenditure on old-age benefits increased relative to GDP in all countries and relative to social protection spending in most countries. This reflects the combined effect of different factors: on the one hand, the constraint on total expenditure and other elements of social protection as part of the fiscal consolidation policies; and on the other hand, demographic evolutions that led to an increase in spending via more recipients. Only Germany, Lithuania, the Netherlands, Denmark, Croatia, and Belgium experienced a decrease in old-age expenditure relative to total social protection expenditure between 2008 and 2010 (Figure 60).[176]

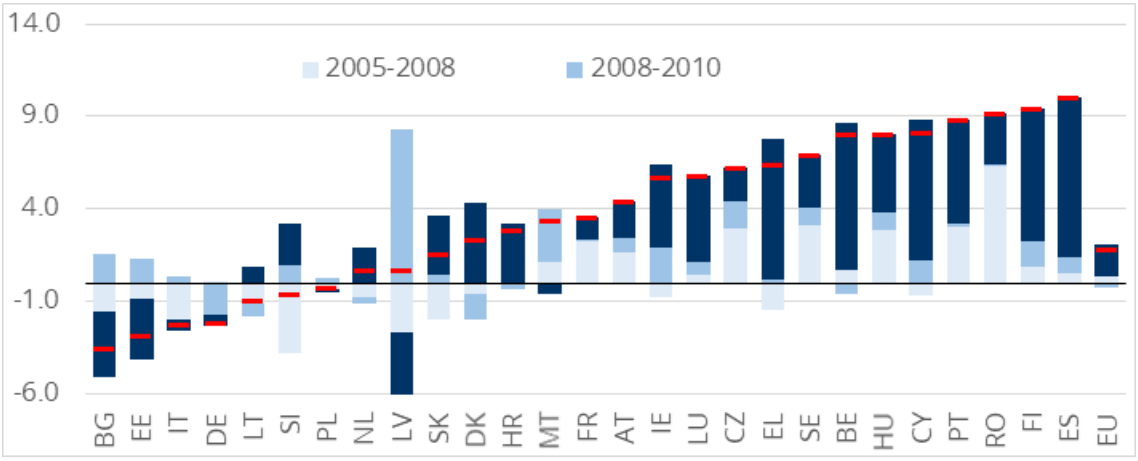
**Figure 59: Changes in expenditure on old-age benefits as a percentage of GDP, 2005-2018, p.p.**




*Note: The decrease in expenditure relative to GDP in Malta was not due to cutbacks; benefit rates were not frozen or reduced, but continue to increase on an annual basis. The decrease is a result of higher GDP due to economic growth, thus higher GDPs. No data available for Croatia before 2008.*
*Source: Eurostat, ESPROSS, ESPN elaboration.*

[176] For Germany, the labour market-support (for instance for short-term work) increased significantly during the 2008-2010 crisis.

**Figure 60: Changes in expenditure on old-age benefit as a percentage of total social protection expenditure, 2005-2018, p.p.**



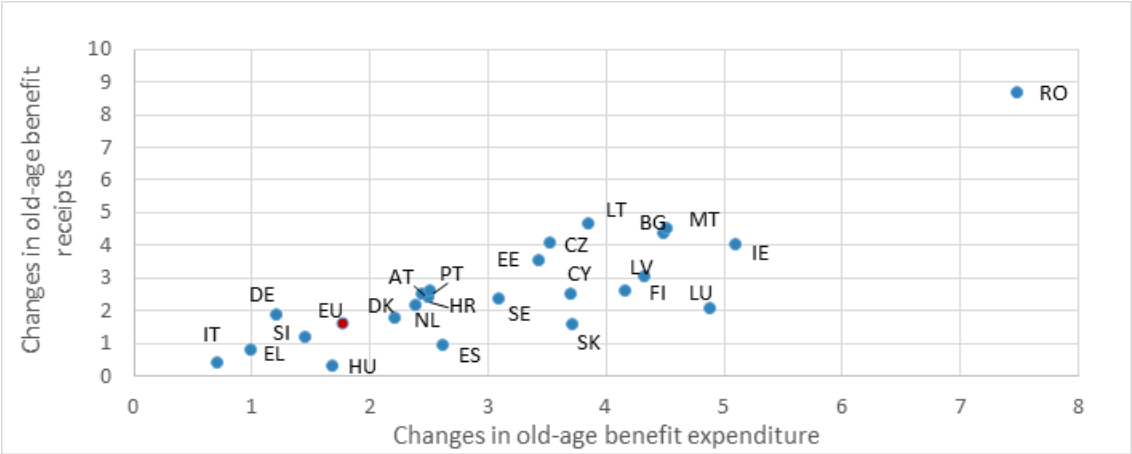

*Note: No data available for Croatia before 2008.*
*Source: Eurostat, ESPROSS and update of Figure 24 in Spasova and Ward, Social Protection Expenditure and its Financing in Europe: A study of national policies, European Social Policy Network (ESPN), European Commission, Brussels, 2019, p. 60.*

### *4.2.2 Financing old-age benefits*

**The financing challenge of pension systems remains important, as financing and expenditure are two sides of the pension systems that should be balanced while ensuring adequacy and financial sustainability in the long term.** This is why over the period 2005-2018, the changes in real terms in expenditure on old-age benefits and receipts for financing them moved in the same direction (Figure 61).[177] Nevertheless, pension systems and provisions differ between countries; and notably, in most countries, there are various combinations of PAYG systems and capital funded systems. The financing needs of pension systems differ in various countries and therefore pose different challenges in the longer run. Therefore, in a few countries, revenue is rising faster than expenditure, while others are recording the opposite development. Moreover, the dynamics differ widely in the EU. Romania shows a strong increase in both receipts and expenditure, while Italy, Germany, Greece and Slovenia register a weak increase. When the scope is broadened to social protection as a whole, academic and policy debates have mostly focused on the expenditure side, and less attention has been given to the financing side, including of pensions. This is partly explained by the fact that information on how different types of revenues contribute to financing the different branches of social protection is very often only found in national administrative data, limiting the scope for international comparisons. One of the possibilities for overcoming this obstacle is by estimating receipts by function, using ESSPROS data as explained in Box 9.

[177] In Germany, this can be explained by a significant increase in contributions due to a good employment situation on the one hand, and the increased labour market participation of older people, on the other. This increase has exceeded the modest increase in retirees. At the same time, expenditure was relatively low as a result of a high share of the 'war generation', which is significantly smaller than the 'baby-boom generation', most of whom will have retired within the next few years.

## Figure 61: Changes in real terms in expenditure on old-age benefits and receipts for financing them, 2005-2018




*Notes: Figures for Estonia for 2005-2018 relate to 2007-2018; figures for Spain for 2005-2018 relate to 2010-2018; figures for Luxembourg for 2005-2018 relate to 2012-2018. Note that EU totals do not include Belgium, France and Poland, which together are sufficiently large to have some effect on the changes shown. Changes for the EU totals are calculated for 24 Member States (i.e. excluding BE, FR and PL) by a chain-linked method to adjust for missing data for particular countries in particular years, i.e. by taking the aggregate changes shown by the countries for which data are available and assuming that these changes apply to the countries for which data are missing.*
*Source: Eurostat, ESSPROS data by scheme and ESPN calculations.*

### *Box 9: Methodologies to estimate receipts by function using ESPROSS data*

*The ESSPROS (European System of Integrated Social Protection Statistics) data on social protection expenditure and receipts published by Eurostat are based on information provided by countries on the social protection 'schemes' in place in the Member States.*[178] *The data report information on the total amount of expenditure for single schemes for eight branches of social protection linked to social risks or 'functions' (old age, survival, sickness, invalidity, unemployment, family, housing and social exclusion) and the division of funding between the main sources of financing (social contributions, general government revenues and transfers from other schemes and other receipts). Since schemes may cover benefits for more than one function (for instance, old-age and survivor benefits are often combined, or disability and sickness benefits) and since contributions are not always earmarked separately for each social risk/function, it is not straightforward to derive the division of financing for each function. Therefore, to aggregate scheme data on financing at function level, it is necessary to make assumptions on how the functions covered by given schemes are financed. For example, on the assumption that all the functions within one scheme are funded in the same way, the division between the main sources of financing can be used to reflect the unknown division for each particular scheme. In practice, two approaches were developed and tested in joint work by DG EMPL and the SPC:*[179]

a) *a function is assigned to a scheme if at least 50 % of the expenditure on benefits of the scheme are allocated to that function; and*

b) *all the schemes that provide benefits for a given function are considered, and for the aggregation at function level, the schemes' receipts are weighted by each scheme's share in the total benefits expenditure allocated to that function.*

*The results presented in this chapter follow approach (b), since it allows more schemes to be covered. Despite the limitations of both methods, these estimates allow meaningful analyses of financing arrangements by social protection function, which highlight considerable differences in the structure of receipts, across both countries and functions.*

*Data by scheme, however, are not published by Eurostat for all countries or for all years since 2005. Due to national data protection rules, the ESSPROS data are not published for France, Portugal and Slovenia. Slovenia and Portugal provided the derived results for the purposes of this publication. This approach, unfortunately, was not possible for France. Finally, no ESPROSS data by scheme are available for Luxembourg before 2012, for Estonia before 2007, for Croatia before 2008 and for Spain before 2010.*

*Some further general methodological limitations in relation to ESSPROS need to be recognised.*

*For Poland, transfers from 'other schemes' to the old-age scheme are so large that the results of*

[178] A social protection scheme is defined as 'a distinct body of rules, supported by one or more institutional units, governing the provision of social protection benefits and their financing' (Eurostat, 2019, p. 17). A function of social protection is defined as a specific risk and need for which resources and benefits are provided, irrespective of legislative or institutional structures behind them. This includes old age, survivor, disability, etc. So a scheme is defined based on institutional structure, where a function is not.

[179] All this work is documented in the joint report *Social Protection Systems in the EU: Financing arrangements and the effectiveness and efficiency of resource allocation* (European Commission and SPC, 2015b). Further details on the methodology can be found in Box 10 in Spasova and Ward, 2019, p. 82.

*the analysis are not meaningfully comparable to those of other countries.*

*In Belgium, the mass of receipts and expenditure are separated. This conflicts with methodological obligations imposed by Eurostat in view of the financing system of its social security, and therefore also hampers the analysis by scheme.*[180]

*These two countries are therefore also not included in the analysis.*

*The figures for Slovakia, Italy and, to a lesser extent, Austria need to be treated with caution, since the financing coming from 'other receipts' in the individual schemes is important, reflecting the administrative organisation of financing of social protection in these countries. This could affect the breakdown of funding, since 'other receipts' also include transfers from other schemes, which in turn could themselves be coming from contributions or general revenue, but not appearing as such.*

*The final and more general limitation relates to the fact that ESPROSS is built on a cash accounting basis, thus merely registering receipts and expenditure in any year, but not including balancing items like additions to or draws on reserves. Therefore, the total financing, or receipts, for the various schemes aggregated together in individual countries, as recorded in the Eurostat database, can be higher or lower than total expenditure. In most countries, the difference between total receipts and expenditure aggregated from the data for individual schemes is, however, small, being less than 10 % of total receipts in 2018.*

### *4.2.3 Sources of financing old-age benefits*

**Social protection contributions, general government revenue and 'other receipts' (such as return on investments or transfers from other schemes) are the three sources of financing old-age benefits**. Social contributions are paid by employers and/or employees into a pool or fund, which is then used to pay benefits according to specified rules to indemnify those participants who are in retirement and eligible to a benefit. General government revenue is financed predominantly by general taxation, including earmarked taxes, which consist of an allocation to social protection (or specific branches of social protection) of specific tax revenues (e.g. taxes on alcohol and tobacco). Other receipts can encompass transfers from other schemes, as well as, for example, returns on 'perceived' financial investments.[181] These elements are explored below, drawing on the dedicated report commissioned by the European Commission from the ESPN in 2019.[182]

[180] In Belgium, for methodological reasons imposed by Eurostat, the receipts for scheme 6 and 7 are largely collected through the schemes 67 (for scheme 6) and 12 (for scheme 7), where they are pooled with all other receipts for social security for employees in the private sector (in scheme 67) and the self-employed (in scheme 12) and then transferred to the schemes (6 and 7). As these transfers go to different branches of social security (old-age pensions and survivor pensions, sickness and invalidity, unemployment, etc.) following the financial needs of these branches after the global pooling, it is no longer possible to determine differences in the proportions of social contributions, or public interventions, etc. So the only way to 'split' the receipts for the different social security branches is proportional to the composition of the receipts in schemes 67 and 12 and apply this to the 'transfer' receipts of those two schemes (6 and 7).

[181] ESPROSS data on other receipts for the Luxembourg pension schemes (currently) include realised and unrealised capital gains of the pension reserve fund, which are very volatile. A revision of the ESPROSS compilation on this topic is envisaged in 2021. The evolution of the breakdown of financing of old-age benefits should therefore be analysed with caution.

[182] Spasova and Ward, 2019.

**In the EU, old-age benefit schemes are mainly financed through social contributions.** In 2018,[183] social contributions on average accounted for 65.5 % of the financing of old-age pensions in the Member States for which data are available (results reported as EU average in the graph), while general government revenue from taxation accounted for 25 %, the rest coming from other receipts (Figure 62). Apart from Denmark and Malta, in all the Member States for which data are available (24), more than half of the financing came from social contributions, and in four countries (LT, CZ, HU, RO) the figure was over 85 %. Social contributions also finance more than 50 % in countries where overall social protection expenditure is mainly funded by taxes (IE, CY).[184] On the other hand, general government revenue proved an important financing source, even in insurance-based pension systems. In Denmark, general government revenue represented over 60 % of the total financing for old age, while in Malta it was over 50 %.[185] Financing from general government revenue accounted for less than 15 % of total financing for old age in Slovakia, the Netherlands, Hungary, Ireland, Latvia, Lithuania and the Czech Republic. In two countries – the Netherlands and Slovakia – over 30 % of financing came from 'other receipts'. In Slovakia (as in Italy) transfers from other schemes accounted for most of such receipts. In the Netherlands, 'other receipts' mostly came from interest income, reflecting the relatively large size of capital-funded occupational pensions; in Luxembourg, 'other receipts' come mainly from income from the pension reserve fund.[186] In all countries, apart from Greece, Hungary and Romania, the general government contribution to financing comes entirely from general taxation. In 2018, a small part was raised from earmarked taxes in Greece (2.1 % of the total financing of old-age benefits, down from 4.6 % in 2010); and in Hungary and Romania, an even smaller part (0.5 % and 0.1 % of the total, respectively).

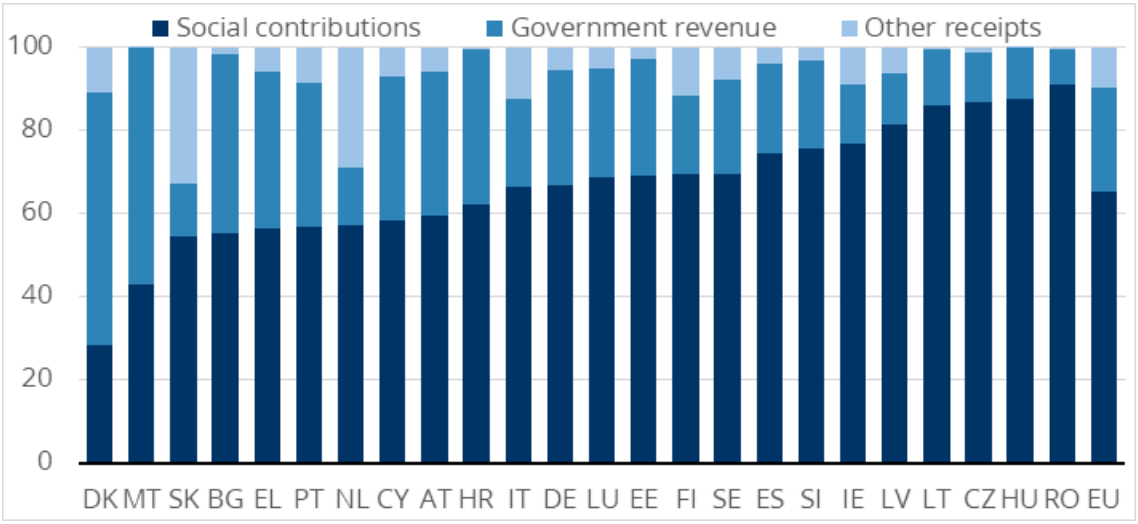
[183] The latest year for which the ESSPROS data by scheme are available at the time of writing.

[184] Spasova and Ward, 2019.

[185] In Malta, revenues from contributions cover all the contributory expenditure, not just old age. Among old-age benefits, general revenue only finances the non-contributory old-age pension (https://nso.gov.mt/en/nso/Sources_and_Methods/Unit_A2/Public_Finance/Pages/Government-Expenditure-on-Social-Security-Benefits.aspx ).

[186] As noted above, this income is very volatile and should be analysed with caution.

**Figure 62: Breakdown of financing of old-age benefits by main source, 2018 (% of total financing of old-age benefits)**

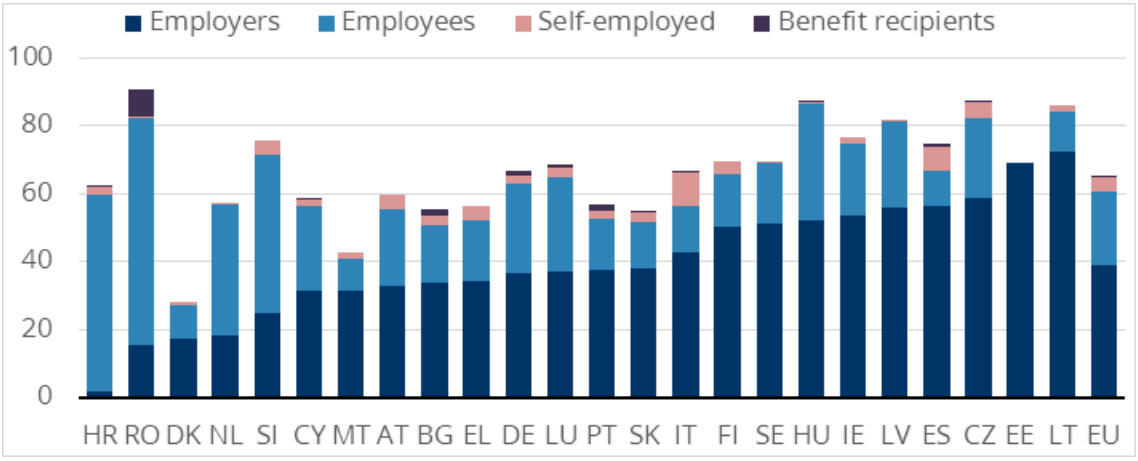



*Notes: Countries are ordered by the share of social contributions in financing. Note that the EU total does not include Belgium, France or Poland, which are sufficiently large to have some effect on the breakdown of revenue shown.*
*Source: Eurostat, ESSPROS data by scheme and ESPN calculations.*

**In the majority of Member States, social contributions financing old-age benefits come mainly from employers' contributions** (Figure 63). In line with the principle of sharing financing for the coverage of the risk, in 2018 the share of total contributions coming from employers was almost 40 % of the total funding of old-age benefits in the EU as a whole – nearly twice the share of employees. The main exceptions were, at the one extreme, Estonia, where nearly all of the social contributions levied for funding old-age benefits came from employers,[187] and Lithuania, where the figure was 72.6 %; and at the other extreme, Croatia, where employees were responsible for almost all of the social contributions levied for this purpose. Employees' contributions represented 46.7 % of the social contributions for old-age benefits in Slovenia in 2018, while in the Netherlands, Hungary[188], Germany, Luxembourg and Latvia, they made up more than a quarter. On average in the EU countries under consideration, 4.2 % of the social contributions for financing old-age pensions came from the self-employed in 2018. Only in Spain (7.2 %) and Italy (9.6 %) was the proportion much higher, reflecting the relatively large share of self-employment in those countries. Finally, only 0.7 % of social contributions comes from benefit recipients themselves. Indeed, in many countries, old-age pensioners are exempt from paying social contributions (as discussed in Section 4.1).

[187] In Estonia, employers pay 20 % social tax and employees pay 2 % pillar II contributions (compulsory funded pension).
[188] According to calculation based on the Hungarian administrative data, the ratio of the contributions paid by self-employed and benefit recipients were about 6.4 and 2% respectively in 2018. These ratios contain the contributions of employees and employers as well.

**Figure 63: Breakdown of social contributions for financing old-age benefits, by source, 2018 (% of total financing of benefits)**




*Notes: Countries are ordered by the share of financing from employers' contributions. Note that EU totals do not include Belgium, France or Poland, which are sufficiently large to have some effect on the breakdown shown.*
*Source: Eurostat, ESSPROS data for schemes and ESPN calculations.*

### *4.2.4 Trends in old-age benefit financing*

**The general widespread shift from social contributions to general government revenue for financing old-age benefits between 2005 and 2018 was especially in evidence between 2005 and 2010, while between 2010 and 2018 there were some reversals, though less widespread across countries** (Figure 64).[189] Between 2005 and 2018, the share of financing from general government increased in all countries where the share from contributions fell. The shares of both social contributions and government revenues increased marginally in Ireland, Portugal, Slovakia and Luxembourg. On the other hand, in Sweden, Slovenia, Hungary and, to some extent, Cyprus and Germany, the share of government revenues decreased, while the share of social contributions increased.[190] These trends were already visible between 2005 and 2010 and were led by several drivers:[191] the economic downturn, which reduced contributions based on employment and wages (e.g. in AT, BG, CZ, IT, LV, LT, NL, SK) , and reforms affecting the design of old-age pension schemes.[192] Nevertheless, there was already a widespread trend over the period before 2008 towards reforms reducing social contributions on labour, and especially those paid by employers;[193] meanwhile, in the labour market, the increase in non-standard forms of work with interrupted careers and new forms of self-employment not included in the social protection systems may have contributed to reducing the contribution base. The share of general government revenue in total financing increased most markedly in several central and eastern European countries, mainly due to the

[189] Spasova and Ward, 2019, p. 87.
[190] For Germany, this can be explained by an increase in contributions due to a positive employment situation and the increased labour market participation of older people.
[191] Spasova and Ward, 2019, p. 85.
[192] See Spasova and Ward, 2019, p. 85. It should also be noted that some of the developments might be attributable to reforms enacted before 2005, which are not examined in this report. For instance, in Germany most changes took place before 2005 (Gerlinger et al., 2019). A similar effect in contributions and corresponding need for higher general government financing may potentially be observed again in the economic decline caused by the COVID-19 pandemic.
[193] See Spasova and Ward, 2019 p. 85.

partial transfer of social contributions to the newly introduced statutory funded pension schemes (e.g. BG, HU)[194] and the introduction of pension supplements for low-income pensioners (e.g. CY, LV).[195] (See also Chapter 2.) On the other hand, the increase in the share coming from social contributions and the reduction in the share coming from general government revenues between 2010 and 2018 were partly a result of the improving economic and labour market situation (with increased employment), but were also brought about by specific reforms enacted during the previous period to increase pensionable age, prolong working lives and increase the revenue from contributions (e.g. BG, RO, LV, CZ, AT, IE, SE, CY, HU).[196] This is true particularly in Bulgaria, Latvia[197] and Hungary,[198] where the observed increase in the share of social contributions in total financing for old age amounted to 15 p.p. or more (Figure 64). In Luxembourg[199] and Slovakia,[200] the increase in social contributions was accompanied by a corresponding increase in general government revenue. Only in the Netherlands did the share of both social contributions and general government revenue fall as the share of financing from other receipts increased, probably reflecting improved financial returns of the occupational pension provisions as a consequence of the recovery in economic growth. On the other hand, some countries saw a further reduction in social contributions and an increase in general government revenue, either mainly as a result of the significant fall in the total number of employed persons (e.g. EL, ES, IT) or as a result of specific reforms acting on the different pillars of the pension system (e.g. DK, EE).

[194] In Bulgaria, from 2007 onwards, a series of reductions in social contribution rates were covered through increasingly large transfers from the government to the National Social Security Institute budget. In Hungary, from 1998 the government acted as guarantor for the transitional deficit of the pension system during the maturation of the statutory funded mandatory pension funds, as contributions were redirected to mandatory funded pension schemes. This increased the share of government revenues and reduced the share of contributions in financing old-age benefits. The abolition and defunding of the fund started in 2011, and involved the return of the majority of mandatory funded scheme members to the PAYG system (see Box 11, p. 92 in Spasova and Ward, 2019.

[195] In Latvia, the pension supplement introduced in 2006 – which was initially granted only to people with low pensions – has, since 2014, been financed from general government contributions. Cyprus has introduced a means-tested top-up income support scheme for low-income pensioners, financed by general government revenues (see Box 11, p. 92 in Spasova and Ward, 2019).

[196] In Bulgaria, the contribution rate for old-age pensions was reduced in the period 2005-2010 and increased in several steps in the period 2011-2018.

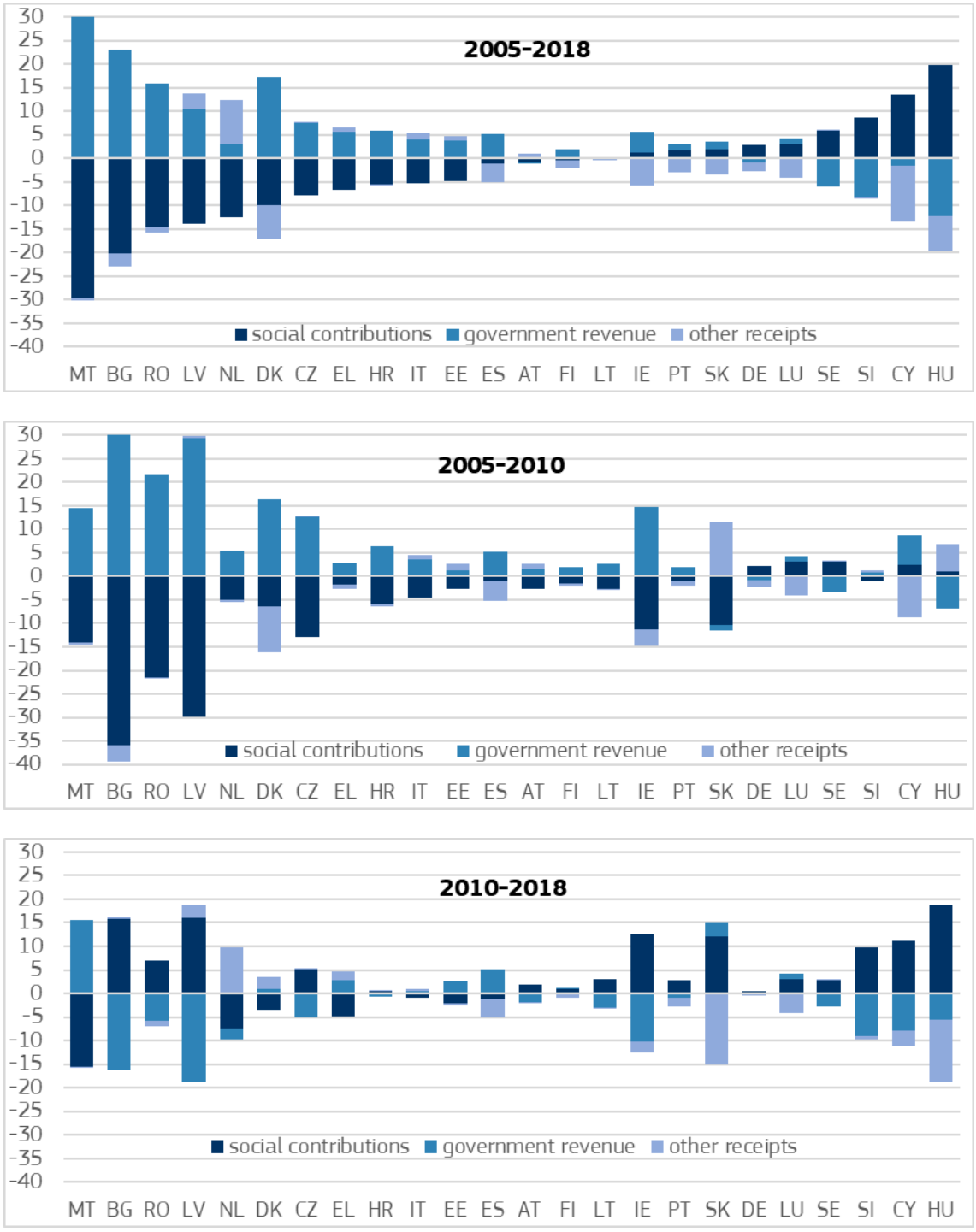
[197] In Latvia, the pension supplement introduced in 2006 has been phased out for those retiring after 2012, and the financing of the supplements was shifted in 2014 from the social insurance system to the general government account. The increase in the social contribution-funding share, however, was not in all cases accompanied by a corresponding reduction in the funding provided by general government revenue.

[198] In Hungary, the increase was partly a consequence of a budgetary procedure introduced in 2012 that annually adjusts contributions to expected benefits, removing the need for general government revenue, and partly due to the 'reversal' reform – i.e. the abandonment of the funded pillar and the shift to the PAYG system.

[199] In Luxembourg, because of sufficient contribution income, 'other receipts' (i.e. returns from the pension reserve fund) have until now not been necessary to finance actual pension expenditure. The proportion of social contributions versus government contributions has not changed (only marginally for civil servant schemes).

[200] In Slovakia, this was due to reforms changing the importance of the pillars of the pension systems and prolonging working life.

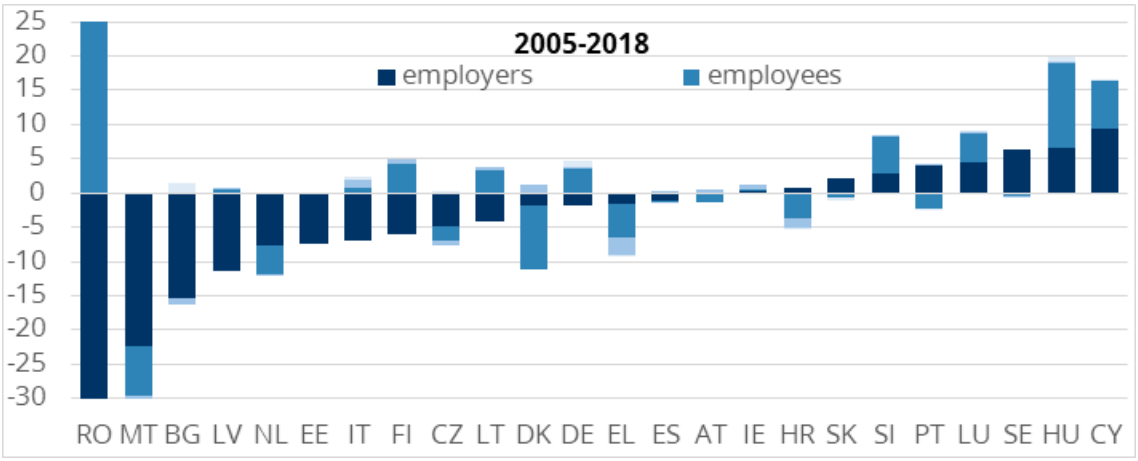
**Figure 64: Changes in financing of old-age benefits main source, 2005-2018, p.p.**




*Notes: The chart shows the change in the percentage division of financing between the three broad sources. Countries are ordered by the change in the share of financing from social contributions over the period 2005-2018. For Estonia, the data for 2005-2010 relate to 2007-2010, and for 2005-2018 to 2007-2018. For Croatia the data for 2005-2010 relate to 2008-2010, and for 2005-2018 to 2008-2018. For Luxembourg, the data for 2010-2018 relate to 2012-2018; and for Spain, the data for 2005-2018 relate to 2010-2018.*
*Source Eurostat, ESSPROS data by schemes and ESPN calculations.*

**In line with policies aimed at reducing labour costs, the reduction in the overall share of social contributions between 2005 and 2018 largely reflected a decline in the share paid by employers** (Figure 65). Such reductions in employer-paid contributions have traditionally been justified with the objective of improving a country's competitiveness and increasing the employment rate by reducing wage costs.[201] Nevertheless, depending on the measures taken to compensate for such reductions, there is a risk of shifting the burden of social protection onto the employees. Of those Member States with available data that experienced a reduction in employers' contributions, the decline in six countries was double that experienced by employees over the same period, amounting to more than 15 p.p. in Romania and Bulgaria. In Romania, Lithuania, Finland, Germany and, to some extent, Italy, the reduction in the share paid by employers was accompanied by an increase in the share of contributions paid by employees.[202] On the other hand, in four Member States the share of both employers' and employees' contributions in total financing increased over the period under consideration. The social contributions paid by the self-employed as a share of the total financing of old-age benefits changed relatively little over the period as a whole in most countries, increasing in Denmark, Finland, Italy and Lithuania, and decreasing in Malta and, particularly, in Greece (by 2.8 p.p., reflecting mainly a fall in the number of self-employed over this period).[203] The share of revenue from old-age benefit recipients themselves increased in Germany, Bulgaria and, especially, Romania, due to increases in both benefit levels and the number of old-age pensioners.

**Figure 65: Changes in the division of revenue from social contributions for financing old-age benefits, by source, 2005-2018, p.p.**




*Notes: Countries are ordered by the change in the share of financing old-age benefits from employers' contributions over the period 2005-2018. Changes for Estonia relate to 2007-2018; for Croatia to 2008-2018; for Spain to 2010-2018; and for Luxembourg to 2012-2018.*
*Source: Eurostat, ESSPROS data by scheme and ESPN calculations.*

[201] Reductions in employer-paid contributions were justified with the objective of improving a country's competitiveness and increasing the employment rate by reducing wage costs. See Bosch et al., 1990; Keuschnigg et al., 2011; Mádi et al., 2016; Valenduc et al., 2009.
[202] The changes between the share of employers and employees for Germany are related to the increase in contributions to private pensions (mainly so-called Riester pensions).
[203] See https://data.oecd.org/emp/self-employment-rate.htm

### *4.2.5 Reflection on new sources of financing for pension systems*

**In response to the challenges faced by the pension systems across Europe, governments' attention to keeping pension systems financially sustainable while safeguarding their adequacy has been rising.** The different sources of financing discussed below are not necessarily 'new', in the sense that they have been debated for some time; but they may not have been put into practice. A focus on financing is warranted, since – due to population ageing and changes on the labour markets (with non-standard forms of work reducing contributions even further) – the number of pensioners per contributor is steadily increasing. The financial and economic crisis of 2008/2009 and the resulting higher unemployment levels further exacerbated this issue, which could now worsen again because of the effects of the COVID-19 pandemic. In addition, the transition to statutory funded pension schemes in several central and eastern European countries has required supplementary financing during the maturation of the funded schemes.[204]

**Attaining the main objectives of a pension system – poverty prevention, insurance, consumption smoothing and redistribution – to ensure that people can live in dignity and with adequate income, while still maintaining the system's sustainability, is being pursued through different approaches by the Member States.** In most Member States, debates and reforms have focused on containing expenditure by increasing the pensionable age, tightening eligibility conditions, moving from defined benefit to defined contribution schemes and highlighting the potential role of supplementary pensions, which may lead to the individualisation of pension rights (see Chapter 2).[205] However, as the International Labour Organization (ILO) has noted, the argument that 'social protection is not affordable' does not hold, especially in high-income countries, since 'there are alternatives, even in the poorest countries'.[206] At the same time, the price to pay in the absence of social protection could be higher in economic and social terms.[207] Governments have a variety of tools to finance social expenditure, including raising various alternative specific taxes or increasing specific tax rates. However, changing the financing sources of a pension system might have important implications for its design, since it has been argued that increased financing from non-contributory sources should be used to improve basic pension protection for the wider population, and not only wage earners.[208]

**The design of tax systems and social contributions, including their eligibility criteria and progressivity/degressivity, affects the financing basis of pension systems and their resilience in a changing economy and labour market.** This includes the existence of floors and ceilings, the interplay between income, consumption, corporate and environmental taxation, as well as tax evasion and tax avoidance. Financing by taxes and/or social contributions can have different designs (see Section 4.1). The mandatory contribution rate can be constant across income levels (flat rate), progressive, higher for higher-income

[204] Spasova and Ward, 2019.
[205] European Commission, 2019b.
[206] International Labour Organization, 2017, p. iii.
[207] Bonilla García et al., 2003.
[208] See Behrendt et al., 2018; Banyár, 2017; Pellet, 2011; Wagner, 2012.

workers, or regressive (i.e. when higher incomes contribute proportionately less than lower income – sometimes implemented via exemption of taxes or contributions for the highest income groups). In general, public pension systems are organised to implement the financial solidarity among members of society in different economic situations and between generations, while ensuring long-term financial equilibrium.[209] In a context of increased importance of general taxation in the financing of old-age schemes and increasing inequalities, progressive income taxation is considered to be an effective measure to raise taxes, while supporting financial solidarity among economic groups.[210] In progressive taxation systems, contributions or taxes for the financing of benefits are charged on the basis of the members' ability to pay. High-income earners will contribute proportionally more to the overall resources collection, supporting a solidarity from high- to low-income earners, regardless of their probability of later being exposed to risk, which might add to social justice and fairness (see Box 7 in Section 4.1). Intergenerational solidarity is manifest in particular in long-term schemes, such as pensions, and relates to the comparison of contributions and benefits across different cohorts (as seen in Box 7 in Section 4.1). Moreover, from a purely technical point of view, not applying a ceiling on contributions, while maintaining one on benefits, makes a social protection scheme more progressive. On the other hand, since pension insurance schemes stand on the principle of 'benefit in return for contribution', capping pension contributions is another means of preventing many high pension benefits. This reduces the opportunity to receive more money in the short term, but also reduces long-term obligations. In general, it is mostly insurance pension schemes (as in BG, CZ, EL, FR, IT, LU, LT, PL, SI and SK) that have insurable earnings ceilings, and, in some cases, only for certain workers (such as the self-employed).[211] In other Member States, progressivity is primarily ensured through the general taxation system.

**In response to the spread of non-standard forms of employment and self-employment with limited access to social protection, efforts have been made to expand their social security coverage.** Those measures aim to ensure an adequate level of protection for all people in all forms of employment and self-employment, while they also result in an increased contribution base. As recognised by the Council recommendation on access to social protection for workers and the self-employed,[212] extending formal and effective coverage can also avoid having the financing base of pension systems shrink, because an increasing group of people on the labour market no longer contribute. Indeed, some forms of work (e.g. mini-jobs in DE) and some forms of self-employment can be subject to social insurance floors, which represent a threshold below which people are not required to pay regular taxes and social contributions (exemptions) or may have a specific reduced rate (e.g. in AT, CZ, DE, IE, LT, HU, SE, SI, SK). Floors on contributions may be favourable to low-

[209] Cichon et al., 2004.

[210] https://ec.europa.eu/jrc/sites/jrcsh/files/fairness_pb2019_flat-tax_countries.pdf

[211] In Poland, the maximum annual assessment basis for contributions cannot exceed average predicted remuneration multiplied by 30.

[212] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2019.387.01.0001.01.ENG&toc=OJ:C:2019:387:TOC

income groups, which cannot afford to pay contribution rates.[213] However, they may also hinder effective access to social protection benefits, if the exemption of workers or the self-employed from paying contributions does not allow them to build up entitlement to benefits (or even to contribute without building up entitlements); hence they risk having to depend on minimum income schemes after retirement. Some countries (e.g. DK, LU, CZ, NL, PL, AT, DE, RO, PT) have also introduced schemes that contribute to the systems' coverage and fiscal sustainability in the short term, by allowing people to voluntarily pay social contributions. This would allow them to build up pension entitlements for periods that would otherwise not be taken into account, such as periods of employment on wages that are below the threshold for obligatory social security contributions.

**The decline in the proportion of labour income in the national income has led to debates on expanding the type of income used as a basis for taxation or on shifting taxation from labour income to other forms of income**.[214] Over recent decades, capital has been increasing in importance, relative to labour, in the functional distribution of income; while on the labour market, the proportion of people in non-standard and precarious forms of employment (i.e. a combination of non-standard contracts and low wages earned) is increasing.[215] At the same time, the share of tax revenues from capital in overall taxation has fallen in recent decades, also due to capital mobility and tax competition between countries aiming to attract investment.[216] Today, taxes on capital account for slightly more than 20 % of the total tax revenue, against 50 % represented by taxes on labour.[217] If the importance of capital, relative to labour income, continues to increase, it might become increasingly difficult to finance social security from payroll taxes or contributions alone, challenging especially insurance-based systems – particularly if those systems have been modified in such a way as to expand coverage, increasing the universality of the systems. This could lead to situations where a shrinking contribution base needs to generate ever increasing means. The debate on tax shifts suggests that the financing mix of social protection could be diversified by taxing property, as repeatedly suggested in country-specific recommendations issued in the European Semester,[218] as well as capital.[219] The French *contribution sociale généralisée* (CSG), for instance, could be cited as an example for diversifying the tax base. It has been characterised as a tax on different forms of income, including income from capital and other investments, which is used to finance social security – and in particular, the non-contributory, solidarity-based sections of the French pension system, including minimum pensions and pension credits for periods of non-employment.[220] Policies aimed at increasing the revenues from

[213] For an overview of the rates of contribution, please refer to MISSOC (https://www.missoc.org/). A deduction of social contributions from the taxation base for workers whose earnings are below a fixed level can be established without affecting the earnings used in calculating future benefits. Because the amount deducted is fixed, it is relatively more important to low-income workers than to upper-income workers.

[214] Behrendt et al., 2018.

[215] European Commission, 2017.

[216] Piketty et al., 2014; Standing, 2014.

[217] https://ec.europa.eu/taxation_customs/business/economic-analysis-taxation/data-taxation_en

[218] Jessoula et al., 2019.

[219] The impact of a new funding model, based on the extension of the social security funding base, to include not only salaries but also the net value added of companies liable for corporate tax, has been analysed in Silva, 2018.

[220] Bouget, 1998; Wagner, 2012.

capital could usefully be accompanied by further efforts to prevent tax evasion on the part of both households and companies.[221]

**A much-investigated complementary source of public financing, including for pensions, is value-added tax (VAT).** VAT is the most-used public financing source in EU countries, after taxes on labour,[222] accounting for almost 30 % of the total tax revenue. It is considered a solid potential basis for financing government expenditure, including pensions, as it is relatively stable and has a wide tax base.[223] Belgium has used this path intensively, as more than 90 % of the financing of social security that does not come from contributions, comes from VAT.[224] Nevertheless, financing pensions through VAT tends to be regressive, also for pensioners,[225] because lower-income households spend a greater share of their income on consumption for their daily needs. This should be taken into account in the design of proposals to widen the contribution base to consumption.

**Environmental taxes, such as a carbon tax, can also play a role as sources of public financing, including pensions.** Given the strong intergenerational dimension of both environmental damage and pension costs, subsidising pensions through a tax on actions with an environmental impact seems appealing.[226] A partial replacement of social contributions by an environmental tax, such as a carbon tax, might have a neutral – or even positive – impact on growth and employment, while benefiting the environment.[227] Unlike contributions on wages, environmental taxes on externalities do not create a welfare loss.[228] Nevertheless, by their very nature, if environmental taxes are effective, the corresponding receipts are expected to diminish in the long term, making them an unreliable source of income to guarantee the long-term sustainability of pension systems. Some questions can also be raised about their social justice, as the lowest-income households often cannot afford 'green' consumer goods and investments, such as new cars, housing insulation or solar panels, and as a consequence live in less environmentally friendly conditions.[229]

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[221] With an estimated tax revenue loss of EUR 70 billion on average per year, the European economy pays the highest price in terms of revenue loss from household fiscal evasion; this does not even take into account the fiscal evasion of multinational companies. The EUR 70 billion come from a conservative estimate made by Zucman, who estimated that the wealth of European households hidden in tax havens is around EUR 2400 billion (Zucman, 2015).

[222] European Commission and SPC, 2015b.

[223] Spasova and Ward, 2019.

[224] Hindriks et al., 2019.

[225] Some studies have simulated who would be impacted by partially replacing social contributions with VAT in Belgium and Germany and identified pensioners as one social group that clearly loses from such a reform. Moreover, a shift from social contributions to VAT would increase existing inequalities. Those losing out are not only people outside paid employment. In Germany, for example, those in 'marginal jobs' – such as mini-jobs – have to pay reduced or no social contributions, but they would still be impacted by an increase in VAT. See Capéau, B. et al., 2008; Decoster et al., 2007 and Bach et al., 2006.

[226] See Hughes et al., 2012. See also https://www.oecd.org/finance/private-pensions/2391559.pdf; https://ec.europa.eu/eurostat/documents/3859598/5936129/KS-GQ-13-005-EN.PDF; https://www.eea.europa.eu/publications/environmental-tax-reform-in-europe/download

[227] https://www.frbsf.org/economic-research/files/Metcalf_Stock_Macro-Impact-of-EU-Carbon-Taxes_w27488_July-2020.pdf

[228] See Valenduc, 2009; Ono, 2007.

[229] Their houses are older, less well insulated, with less-efficient heating and energy provisions, they have older cars or need to spend a proportionally higher part of their income on public transportation, etc.

**In general, revenues from general taxation can be more stable, and thus present a more effective financing potential, if they are earmarked to directly finance social protection or a particular element thereof.** Revenues from earmarked taxes (e.g. for pensions), can become a less volatile element of social protection financing than allocated revenues from general taxation, in the sense that they are less subject to annual policy decisions about how much funding should be allocated to social protection. The earmarked taxes can be levied as separate taxes, such as the CSG in France, or as part of existing taxes on consumer spending, income or property. While there are no examples of taxes earmarked specifically for pensions, a limited number of countries use earmarked taxes for financing social protection more broadly. In Belgium, for instance, 23.5 % of VAT revenue is earmarked for social security.[230] In addition to Belgium and France, only Austria, Italy, Portugal, Greece, Luxembourg[231] and Poland raise revenue for social protection from earmarked taxes (mostly VAT, but also taxes on property and income).[232]

[230] Hindriks et al., 2019.

[231] In Luxembourg, earmarked taxes are not part of the financing of pension schemes, but are only used for the unemployment scheme and the long-term care scheme.

[232] Earmarked taxes were used to finance social protection also in Ireland, but they were abolished in 2014.

# 5 REFERENCES


Alfano, V. and Maffettone, P. 'No country for old (poor) men: Fairness and public pensions', *Political Studies Review*, 2020. https://doi.org/10.1177/1478929919887865

Alonso-García, J., Boado-Penas, María del Carmen and Devolder, Pierre , 'Adequacy, fairness and sustainability of pay-as-you-go-pension-systems: Defined benefit versus defined contribution', *The European Journal of Finance*, Vol. 24, No. 13, 2018, pp. 1100-1122.

Bach, S., Haana, P., Hoffmeistera, O. and Steinera, V., 'Increasing the value-added tax to re-finance a reduction of social security contributions? A behavioral microsimulation analysis for Germany', 2006. https://www.diw.de

Banyár, J., 'Could fiscalisation really solve the problems of the pension system?', *Public Finance Quarterly*, No. 3, 2017, pp. 411-419.

Behrendt, C. and Nguyen, A., *Innovative Approaches for Ensuring Universal Social Protection for the Future of Work*, Research Paper Series 2018.01, ILO Future of Work, Geneva, 2018.

Bonilla García, A. and Gruat, J.V., *Social Protection: A life cycle continuum investment for social justice, poverty reduction and development*, International Labour Office (ILO), Geneva, 2003.

Bosch, L.H.M. and van den Noord, P.J., 'Alternative financing of social insurance systems', *Journal of Policy Modeling*, Vol. 12, No. 1, 1990, pp. 61-76.

Bouget, D., 'The Juppé plan and the future of the French social welfare system', *Journal of European Social Policy*, 1998, Vol 8, No. 2, pp. 155-172.

Breyer, F., and Hupfeld, S., 'Fairness of public pensions and old-age poverty', *FinanzArchiv / Public Finance Analysis*, Vol. 65, No. 3, 2009, pp. 358-380. http://www.jstor.org/stable/40913232

Bussolo, M., Krolage, C., Makovec, M., Peichl, A., Stockli, M., Torre, I. and Wittneben, C., 'Vertical and horizontal redistribution: The cases of Western and Eastern Europe', *EUROMOD Working Paper* No. EM1/19, University of Essex, Institute for Social and Economic Research (ISER), Colchester, 2019.

Capéau, B., Decoster, A., De Swerdt, K. and Orsini, K., *Welfare effects of alternative financing of social security: Some calculations for Belgium*, 2008. https://ssrn.com/abstract=1130790

Cichon, M., Scholz, W., van de Meerendonk, A., Hagemejer, K., Bertranou, F., Plamondon, P., 'Financing Social Protection', *Quantitative Methods in Social Protection Series*, International Labour Office/International Social Security Association, Geneva, 2004.

Decoster, A., De Swerdt, K. and Verbist, G., *Indirect taxes and social policy: Distributional impact of alternative financing of social security*, 2007. https://ideas.repec.org/p/ete/ceswps/ces0711.html

Dekkers, G., Van den Bosch, K., Barslund, M., Kirn, T., Kump, N., Liégeois, P., Moreira, A., Stropnik, N., Thierbach, K. and Vergnat, V., *Impact on Pension Outcomes of Life Events: Standard simulations from five European countries*, Mind the Gap in Pensions (MIGAPE), 2020. http://www.migape.eu/pubs/MIGAPE_WP2_ComparativeReport_FINAL%2030%20April%202020.pdf

Dworkin, R., *Sovereign virtue: The theory and practice of equality*, Harvard University Press, Cambridge, MA, 2000.

Economic Policy Committee and Social Protection Committee (EPC/SPC), Joint paper on pensions 2019, cfin.cef.cpe(2020)469700, Brussels, 2020. https://europa.eu/epc/system/files/2020-01/Joint-Paper-on-Pensions-2019.pdf

European Commission, *Employment and Social Development in Europe 2017*, Publications Office of the European Union, Luxembourg, 2017. https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8030&furtherPubs=yes

European Commission, 'The 2018 Ageing report: Economic and Budgetary Projections for the EU Member States (2016-2070)', *Institutional Paper 079,* Brussels*,* 2018. https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-economic-and-budgetary-projections-eu-member-states-2016-2070_en

European Commission, *Employment and Social Developments in Europe: Sustainable growth for all – choices for the future of Social Europe*, Publications Office of the European Union, Luxembourg, 2019a.

European Commission, *Final Report of the High-level Group of Experts on Pensions*, 2019b. https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=38547

European Commission, *Employment and Social Developments in Europe 2020: Leaving no one behind and striving for more – Fairness and solidarity in the European social market economy*, Publications Office of the European Union, Luxembourg, 2020a. https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8342&furtherPubs=yes

European Commission, 'The 2021 Ageing report: Underlying Assumptions & Projection Methodologies', *Institutional Paper 142,* Brussels*,* 2020b. https://ec.europa.eu/info/publications/2021-ageing-report-underlying-assumptions-and-projection-methodologies_en

European Commission, *Long-term Care Report*, Publications Office of the European Union, Luxembourg, 2021.

European Commission and Social Protection Committee (SPC), *Pension Adequacy Report 2015*, Publications Office of the European Union, Luxembourg, 2015a. https://op.europa.eu/en/publication-detail/-/publication/2a4451ef-6d06-11e5-9317-01aa75ed71a1/language-en

European Commission and Social Protection Committee (SPC), *Social Protection Systems in the EU: Financing arrangements and the effectiveness and efficiency of resource allocation*, Publications Office of the European Union, Luxembourg, 2015b.

European Commission and Social Protection Committee (SPC), *Pension Adequacy Report 2018*, Publications Office of the European Union, Luxembourg, 2018. https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8084&furtherPubs=yes

Eurostat, *European System of Integrated Social Protection Statistics – ESSPROS: Manual and user guidelines*, Publications Office of the European Union, Luxembourg, 2019.

Federal Ministry of Labour and Social Affairs, *Lebenslagen in Deutschland. Der Fünfte Armuts- und Reichtumsbericht der Bundesregierung*, Berlin, 2017.

Fleurbaey, M. and Maniquet, F., *A Theory of Fairness and Social Welfare*, Cambridge University Press, Cambridge, 2011. https://journals.openedition.org/oeconomia/411

Fondazione Giacomo Brodolini, *Study on Intergenerational fairness*, 2020. https://www.euro.centre.org/projects/detail/3649

Gerlinger, T, Fachinger, U. and Hanesch, W., *ESPN Thematic Report on Financing social protection – Germany*, European Social Policy Network (ESPN), European Commission, Brussels, 2019.

Haan, P., Kemptner, D. and Lüthen, H., 'The rising longevity gap by lifetime earnings – Distributional implications for the pension system', *The Journal of the Economics of Ageing*, Vol. 17(C), 2019.

Hindriks, J. and Baurin, A., 'Financement des pensions: Rétrospectives et perspectives', *Reflets et perspectives de la vie économique*, Vol. LVII, No. 1, 2019, pp. 97-119.

Hughes, G. and Stewart, J., *Pensions in the European Union: Adapting to Economic and Social Change*, Springer Science & Business Media, New York, 2012.

International Labour Organization, *Fiscal Space for Social Protection and the SDGs: Options to expand social investments in 187 countries*, International Labour Office, Geneva, 2017.

Ivaškaitė-Tamošiūnė, V. and Thiemann A., 'Analysis of the equity impact of pension tax expenditures', *JRC Working Papers on Taxation and Structural Reforms*, European Commission, Joint Research Centre, Seville, forthcoming.

Jessoula, M., Pavolini, E., Raitano, M. and Natili M., *ESPN Thematic Report on Financing social protection – Italy*, European Social Policy Network (ESPN), European Commission, Brussels, 2019. https://ec.europa.eu/social/BlobServlet?docId=21855&langId=en

Joint Research Centre (JRC), *What Makes a Fair Society? Insights and evidence*, Publications Office of the European Union, Luxembourg, 2017. https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/what-makes-fair-society-insights-and-evidence

Joint Research Centre (JRC), *Beyond Averages: Fairness in an economy that works for people*, Publications Office of the European Union, Luxembourg. 2019. https://ec.europa.eu/jrc/en/facts4eufuture/fairness-in-an-economy-that-works-for-people

Keuschnigg, C., Keuschnigg, M. and Jaag, C., 'Aging and the financing of social security in Switzerland', *Swiss Journal of Economics and Statistics*, Vol. 147, No. 2, 2011, pp. 181-231.

Leventi C. and Matsaganis M., 'Poverty and Inequality during the Great Recession in Greece', *Political Studies Review* 12(2), 2014, pp. 209-223.

Mádi, L. and Árva, L. 'The financing reform of social security. How to kill many birds with one stone?', *Public Finance Quarterly*, No. 3, 2016, pp. 382-400.

Natali, D., Spasova, S. and Vanhercke, B., *Retirement regimes for workers in arduous or hazardous jobs in Europe. A study of national policies*, European Social Policy Network (ESPN), Publications Office of the European Union, Luxembourg, 2016. https://op.europa.eu/en/publication-detail/-/publication/e23e8180-9ac9-11e6-868c-01aa75ed71a1

OECD, *OECD Pensions Outlook 2020*, OECD Publishing, Paris, 2020. https://doi.org/10.1787/67ede41b-en

Ono, T., 'Growth and welfare effects of an environmental tax-based public pension reform', *The Japanese Economic Review*, Vol. 58, No. 3, 2007, pp. 362-381.

Peeters, H. and Van Camp, G., *Het belang en de samenstelling van gelijkgestelde periodes in de drie pensioenstelsels. Een stand van zaken*, Federaal Planbureau (Kenniscentrum pensioenen), Brussels, 2016.

Pellet, R., 'La fiscalisation du financement des retraites', *Droit Social*, No. 3, 2011, pp. 293-304; Wagner, N., 'Financing social security in the EU: Business as usual?', *International Labour Review*, Vol. 151, No. 4, 2012, pp. 333-349.

Piketty, T. and Zucman, G., 'Capital is back: Wealth-income ratios in rich countries 1700-2010', *The Quarterly Journal of Economics*, Vol. 129, No. 3, 2014, pp. 1255-1310.

Queisser, M. and Whitehouse E., 'Neutral or fair? Actuarial concepts and pension-system design', OECD Social, Employment and Migration Working Papers, No. 40, OECD, Paris, 2006.

Rawls, J., 'Social Unity and Primary Goods', in A. Sen and B. Williams (eds), *Utilitarianism and Beyond*, pp. 159-185. Cambridge University Press, Cambridge, 1982.

Schokkaert, E. and Van Parijs, P., 'Debate on social justice and pension reform', *Journal of European Social Policy*, Vol. 13, No. 3, 2003.

Sen, A., *Inequality Reexamined*, Harvard University Press, Cambridge, 1992.

Silva, A., *O Sector dos Serviços e os Desafios da Segurança Social*, Confederação do Comércio e Serviços de Portugal (CCP), Lisbon, 2018. http://bibliografia.bnportugal.gov.pt/bnp/bnp.exe/registo?2003436

Spasova, S. and Ward, T., *Social Protection Expenditure and its Financing in Europe: A study of national policies*, European Social Policy Network (ESPN), Publications Office of the European Union, Luxembourg, 2019.

Standing, G., *The Precariat: The new dangerous class*, Bloomsbury Academic, London and New York, 2014.

Tóth, I. G., Fondeville, N., Herke, B., Matsaganis, M., Medgyesi, M., Meuleman, B., Özdemir, E., Roosma, F. and Ward, T., *Attitudes towards adequacy and sustainability of social protection systems in the EU*, European Commission, Brussels, 2020.

Valenduc, C., 'Analyse du financement alternatif de la sécurité sociale', *Documentatieblad Federale Overheidsdienst Financiën – België*, Vol. 69, No. 4, 2009, pp. 275-294.

Wagner, N., 'Financing social security in the EU: Business as usual?', *International Labour Review*, Vol 151, No. 4, 2012, pp. 333-349.

Zucman, G., *The Hidden Wealth of Nations: The scourge of tax havens*, University of Chicago Press, Chicago, 2015.

# 6 ANNEX MINIMUM INCOME SCHEMES IN MEMBER STATES

### Table 9: Minimum income benefits for older people, by type of benefit, 2020

| | Residence-based pension | Contributory minimum pension | Social assistance cash benefits for older people[233] |
|---|---|---|---|
| **BE** | | Guaranteed minimum pension<br>For employees: *gewaarborgd minimumpensioen werknemers voor een volledige loopbaan / pension minimum garantie pour une carrière complete. For the self-employed: minimumpensioen voor zelfstandigen / pension minimum pour travailleurs indépendants*. For a mixed career as employee and self-employed: *voltijds gewaarborgd minimumpensioen voor een gemengde loopbaan/ pension minimum garantie à temps plein pour une carrière mixte*<br>Minimum pension rights per year of career (for employees)<br>*Minimumrecht per loopbaanjaar / droit minimum par année de carrière* | Guaranteed income for older people, from age 65<br>*Inkomensgarantie voor ouderen (IGO) / garantie de ressources aux personnes âgées (GRAPA)* |
| **BG** | | Minimum pension (full career)<br>*Пенсия за осигурителен стаж и възраст*<br>Minimum pension (15 contribution years)<br>*Пенсия за осигурителен стаж и възраст за лицата, придобили 15 години осигурителен стаж* | Social old-age pension, from age 70<br>*Социална пенсия за старост* |
| **CZ** | | | Assistance in material need (general social assistance)<br>*Pomoc v hmotné nouzi* |
| **DK** | Public old-age pension<br>*Folkepension* | | Special housing benefit for pensioners<br>*Boligydelse* |
| **DE** | | | Means-tested basic social assistance in old age<br>*Grundsicherung im Alter* |
| **EE** | National pension, from age 63 years 9 months<br>*Rahvapension* | | Pension supplement for pensioners living alone<br>*Üksi elava pensionäri toetus* |
| **IE** | | State pension (contributory) | State pension (non-contributory), from age 66 |
| **EL** | | National pension | Social solidarity allowance for uninsured older people, |

[233] Benefits specifically targeted at older people, unless stated otherwise. Table does not include long-term care benefits.

| | Residence-based pension | Contributory minimum pension | Social assistance cash benefits for older people[233] |
|---|---|---|---|
| | | Εθνικη συνταξη | from age 67<br>Επιδομα κοινωνικης αλληλεγγυης ανασφαλιστων υπερηλικων<br>Housing allowance, from age 65<br>Στεγαστικη συνδρομη |
| **ES** | | Minimum pension<br>*Pensiones mínimas* | Non-contributory old-age pension, from age 65 (with 10 years' residence/insurance period)<br>*Pensiones no contributivas de jubilación* |
| **FR** | | Minimum contributory pension<br>*Minima de pension* | Solidarity allowance for older people, from age 65<br>*Allocation de solidarité aux personnes âgées (ASPA)* |
| **HR** | | Minimum pension<br>*Najniža mirovina* | |
| **IT** | | Minimum pension supplement (for those retired before 2011 with a DB pension)<br>*Integrazione al trattamento minimo*<br>Citizen's minimum pension (from age 67)<br>*Pensione minima di cittadinanza* | Social increase to the minimum pension supplement<br>*Maggiorazione sociale*<br>Social allowance, from age 67 (and 10-year residence period)<br>*Assegno sociale*<br>Supplement from age 70 (or from age 60 with disability)<br>*Increment al milione* |
| **CY** | | Minimum pension<br>(GSIS)<br>*Κατώτατη σύνταξη* | Social pension, from age 65 (and residence period)<br>*Κοινωνική Σύνταξη*<br>Scheme supporting pensioners' households with low income<br>*Σχέδιο ενίσχυσης νοικοκυριών συνταξιούχων με χαμηλά εισοδήματα* |
| **LV** | | Minimum old-age pension<br>*Minimālā vecuma pensija* | State social security benefit, from 63 years 9 months<br>*Valsts sociālā nodrošinājuma pabalsts* |

| | Residence-based pension | Contributory minimum pension | Social assistance cash benefits for older people[233] |
|---|---|---|---|
| **LT** | | Pension supplement<br>*Pensijos priemokos* | Social assistance pension<br>*Šalpos pensija* |
| **LU** | | Minimum pension<br>*Pension minimale* | General social assistance:<br>Social inclusion income<br>*Revenu d'inclusion sociale (REVIS)*<br>and/or cost-of-living allowance<br>*Allocation de vie chère* |
| **HU** | | Minimum old-age pension<br>*Öregségi nyugdíjminimum* | Old-age allowance, from statutory retirement age<br>*Időskorúak járadéka* |
| **MT** | | National minimum pension<br>*Pensjoni minima nazjonali* | Non-contributory old-age pension, from age 60 (with 5 years' residence period)<br>*Pensjoni tal-Età mhux kontributorja* |
| **NL** | General old-age pension<br>*Algemene ouderdomswet (AOW)* | | Income supplement for older people<br>*Aanvullende inkomensvoorziening ouderen (AIO)* |
| **AT** | | Equalisation supplement to pension (with insurance period of 15 years); higher amount if career exceeds 30 or 40 years<br>*Ausgleichszulage zu Pensionen aus der Pensionsversicherung* | |
| **PL** | | Minimum pension<br>*Emerytura minimalna* | |
| **PT** | | Minimum pension (contributory)<br>*Pensão mínima do regime geral* | Social old-age pension (non-contributory), from 66 years 5 months<br>*Pensão social de velhice*<br>Solidarity supplement for older people, from 66 years 5 months<br>*Complemento solidário para idosos* |
| **RO** | | Social indemnity for pensioners, from age 61 years 4 months (women) or 65 (men)<br>*Indemnizatie sociala pentru pensionari* | |
| **SI** | | Minimum pension | Supplementary allowance, from age 63 (women) or 65 |

| | Residence-based pension | Contributory minimum pension | Social assistance cash benefits for older people[233] |
|---|---|---|---|
| | | *Najnižja pokojnina* | (men)<br>*Varstveni dodatek* |
| **SK** | | Minimum pension<br>*Minimálny dôchodok* | Assistance in material need<br>*Pomoc v hmotnej núdzi* |
| **FI** | National pension<br>*Kansaneläke*<br>Guarantee pension<br>*Takuueläke* | | Housing allowance for pensioners |
| **SE** | Guarantee pension<br>*Garantipension* | | Maintenance support for older people, from age 65<br>*Äldreförsörjningsstöd*<br>Housing supplement, from age 65<br>*Bostadstilägg* |

# 7 ABBREVIATIONS

| | |
|---|---|
| AROP | At risk of poverty |
| AROPE | At risk of poverty or social exclusion |
| ARR | Aggregate replacement ratio |
| AWG | Ageing Working Group (of the EPC) |
| CEE | Central Eastern European countries |
| CSR | Country Specific Recommendation |
| DB | Defined benefits |
| DC | Defined contributions |
| EC | European Commission |
| EPC | Economic Policy Committee |
| EPSR | European Pillar of Social Rights |
| ESPN | European Social Policy Network |
| ESSPROS | European System of Integrated Social Protection Statistics |
| EU | European Union |
| EUR | Euro |
| EUROMOD | Tax-benefit microsimulation model for the European Union |
| EU-SILC | European Union Statistics on Income and Living Conditions |
| GDP | Gross Domestic Product |
| ILO | International Labour Organisation |
| LE | Life expectancy |
| LTC | Long-term care |
| MISSOC | Mutual Information System on Social Protection |
| NDC | Notionally defined contributions |
| OECD | Organisation for Economic Co-operation and Development |
| p.p. | Percentage points |
| PAR | Pension Adequacy Report |
| PAYG | Pay-as-you-go pension scheme |
| PIT | Personal income tax |
| SMD | Severe material deprivation |
| SPA | Standard pensionable age |
| SPC | Social Protection Committee |
| TRR | Theoretical Replacement Rate |

## Member States

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