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The 2021 Ageing Report

Economic & Budgetary Projections for the EU Member States (2019-2070)

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Directorate-General for Economic and Financial Affairs

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Institutional Paper 148

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This report was prepared as part of the mandate the Economic and Financial Affairs (ECOFIN) Council gave to the Economic Policy Committee (EPC) in 2018 to update and further deepen its common exercise of age-related expenditure projections, on the basis of a new population projection by Eurostat.

This is the seventh report with long-term projections of the budgetary impact of the ageing population in the EU Member States and Norway, covering the period 2019–2070. In response to the mandate, the EPC mandated a working group, the Ageing Working Group (AWG) under the chairmanship of Godwin Mifsud, to take forward the work needed to discharge this remit.

This report is presented by the EPC and the European Commission services (Directorate General for Economic and Financial Affairs - DG ECFIN) after full discussion on the basis of the AWG's comprehensive work. The Directorate-General for Economic and Financial Affairs provided the necessary analysis and calculations used in the report. The demographic projections were carried out by Eurostat.

The report was prepared under the supervision of Lucio Pench (Director in DG ECFIN), Wolfgang Merz (Chairman of the EPC), Godwin Mifsud (Chairman of the AWG), Giuseppe Carone (Head of Unit in DG ECFIN). The main contributors were Pedro Arevalo, Santiago Calvo Ramos, Ben Deboeck, Nicola Gagliardi, Boriana Goranova, Benedetta Martinelli, Eloïse Orseau, Stéphanie Pamies, Anda Patarau, and the members of the AWG (see list of Members below). The EPC and the Economic and Financial Affairs DG would like to thank all those concerned.

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Mandate and purpose of the 2021 Ageing Report

The sustainability of public finances in the EU can be better monitored and safeguarded if its analysis rests on reliable and comparable information on possible challenges, including those stemming from the demographic changes in the coming decades. *For this reason, the ECOFIN Council gave a mandate to the Economic Policy Committee (EPC) to produce a new set of long-term projections of age-related expenditure by 2021*, on the basis of new population projections provided by Eurostat. To fulfil this mandate, the EPC and the Commission services (Directorate-General for Economic and Financial Affairs - DG ECFIN) agreed on a work programme with broad arrangements to organise the projections and validate its assumptions and methodologies (see below the overview of the projection exercise for details).

The long-term projections show where (in which countries), when, and to what extent ageing pressures will accelerate, as the baby-boom generation retires, and as the EU population is expected to live longer in the future. Hence, the projections are helpful in highlighting the immediate and future policy challenges for governments posed by projected demographic trends. The report provides a very rich set of information at the individual country level, which covers a long time-span (up to 2070), compiled in a comparable and transparent manner.

The Ageing Report projections feed into a range of policy debates and processes at EU level. In particular, they are used in the context of the coordination of economic policies to identify relevant policy challenges and options (in the context of the *European Semester*, so as to identify policy challenges, and as part of the *Stability and Growth Pact*, among others, in setting the medium-term budgetary objectives (MTOs) and in the annual assessment of the sustainability of public finances) ([1]). In addition, the projections support the analysis of the macroeconomic impact of population ageing, including on the labour market and potential economic growth.

Coverage and overview of the 2021 long-term projection exercise

The long-term projections are based on commonly agreed methodologies and assumptions. They take as starting point Eurostat's population projections for the period 2019 to 2070 ([2]). In addition, the EPC, on the basis of proposals prepared by the Commission services (DG ECFIN) and the Ageing Working Group (AWG) of the EPC, agreed upon assumptions and methodologies common for all Member States to project a set of key macroeconomic variables covering the labour force (participation, employment and unemployment rates), labour productivity, and the interest rate (see Graph 1). This set of variables allowed deriving GDP for all Member States up to 2070 ([3]). The macroeconomic assumptions

([1]) They will also feed into the Recovery and Resilience Facility, notably to inform the assessment of the Recovery and Resilience Plans submitted by Member States. The Facility is the centrepiece of NextGenerationEU, a temporary recovery instrument that allows the Commission to raise funds to help repair the immediate economic and social damage brought about by the coronavirus pandemic. The Facility is also closely aligned with the Commission's priorities to ensuring in the long-term a sustainable and inclusive recovery that promotes the green and digital transitions.

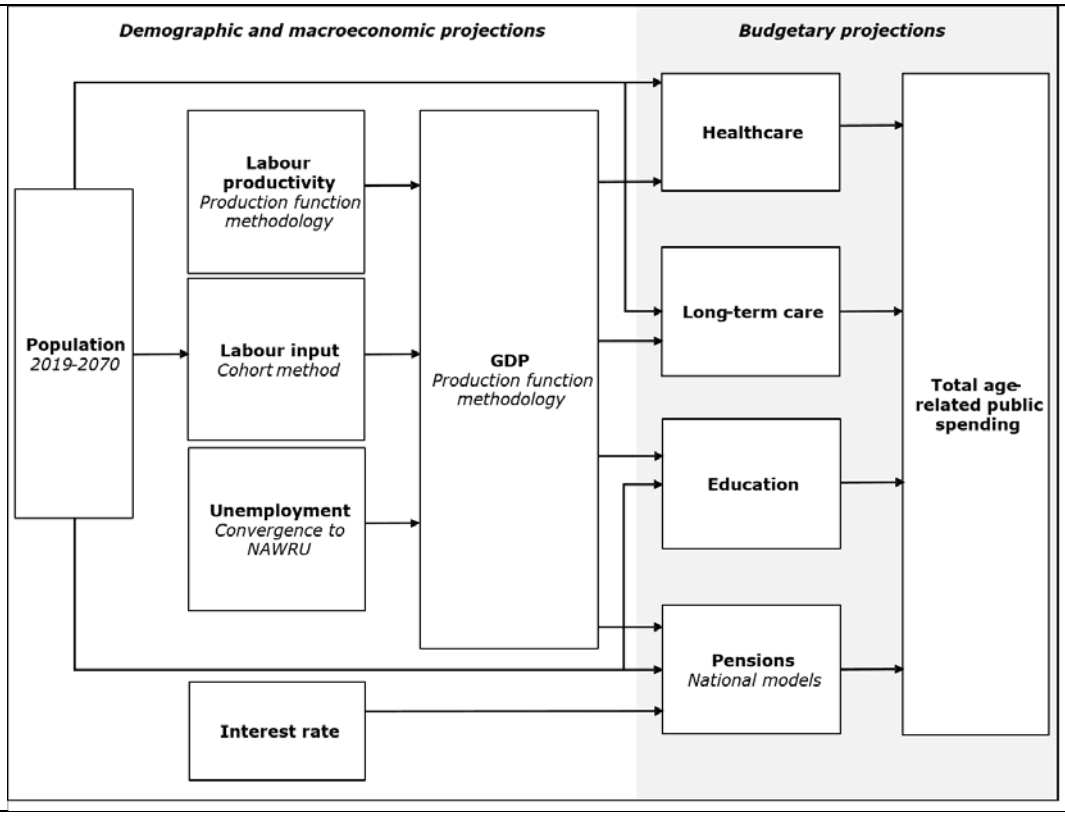
([2]) Population projections are based on EUROPOP2019 (Eurostat demographic projections with base year 2019). GDP growth projections are based on the EPC's Output Gap Working Group (OGWG) T+10 projections over the medium-term *as of the Commission spring 2020 forecast* (based on EUROPOP2018 with base year 2018, the latest one available at the time). These projections do not take into account the impact of the COVID-19 pandemic (the EUROPOP2019 projections were finalised by Eurostat in April 2020).

([3]) In addition to all EU Member States, the report includes projections for Norway.

on which this report is based were agreed upon in the first half of 2020 and published in November 2020 ([4]).

On the basis of these assumptions, separate budgetary projections were carried out for four government expenditure items, namely pension, health care, long-term care and education ([5]). The projections for *pensions* were run by the Member States using their own national model(s), reflecting current pension legislation ([6]). In this way, the projections benefit from capturing the country-specific circumstances prevailing in the different Member States as a result of different pension legislation, while at the same time ensuring consistency by basing the projections on commonly agreed underlying assumptions. The projections for *health care, long-term care and education* were run by the European Commission services (DG ECFIN) on the basis of a common projection model for each expenditure item, taking into account country-specific settings where appropriate. The results of these separate projections are aggregated to provide an overall projection of age-related public expenditure (see Graph 1).

Graph 1: **Overview of the 2021 projection exercise**



Source: European Commission, EPC.

The long-term projections include a broad range of alternative scenarios and sensitivity tests, reflecting the uncertainty surrounding the baseline scenario. The baseline projections (or AWG

([4]) See European Commission (DG ECFIN) and Economic Policy Committee (AWG) (2020) "2021 Ageing Report: Underlying assumptions and projection methodologies", *European Commission, European Economy, Institutional papers*, No. 142, November.

([5]) From this round onwards, the EPC decided not to include the unemployment benefit projections, which were already considered as not strictly age related expenditures items in the past.

([6]) In order to ensure high quality and comparability of the pension projection results, an in-depth peer review was carried out by the AWG and by the Commission services in several meetings during September-December 2020. The projections incorporate pension legislation in place at that time. No further reform measures after 31 December 2020 have been incorporated in this report.

reference scenario) are made under a 'no-policy-change' assumption, generally illustrating the evolution of age-related expenditure if current policies remain unchanged. However, there is uncertainty surrounding these projections, and the results are strongly influenced by the underlying assumptions. For this reason, a broad set of alternative scenarios and sensitivity tests are carried out, highlighting to which extent public expenditure projections are sensitive to key assumptions.

This report is structured in two parts. The first part describes the underlying assumptions: the population projection, the labour force projection and the macroeconomic assumptions. The second part presents the long-term budgetary projections on pensions, health care, long-term care, and education. The third and fourth parts contain a Statistical Annex that gives an overview of the main assumptions and macroeconomic projections, as well as projection results of age-related expenditure items at the aggregate EU/EA level and by country.

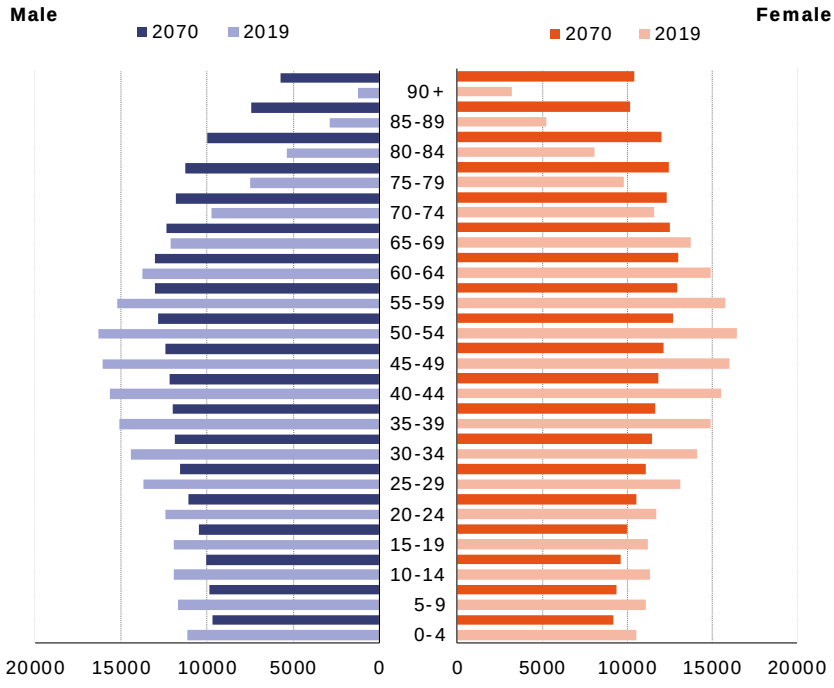
2. THE ECONOMIC AND BUDGETARY IMPACT OF POPULATION AGEING

2.1. Projected demographic and macroeconomic developments

Significantly lower working-age population is projected for the EU over the coming decades

The demographic projections over the long term reveal that the EU is 'turning increasingly grey' in the coming decades. The total population of the EU is projected not only to decline over the long term, but also to experience a significant change in its age structure in the coming decades (see Graph 2). According to Eurostat, the overall population is set to shrink by 5% between 2019 (447 million) and 2070 (424 million). The working-age population (20-64) will decrease even more markedly from 265 million in 2019 to 217 million in 2070, reflecting fertility, life expectancy and migration flow dynamics.

Graph 2: **EU – Population by age groups and gender, 2019 and 2070 (thousands)**



Source: European Commission, EPC.

Population ageing will affect both men and women, with a significant increase of the median age. The projected population in 2070 is lower than or close to the population in 2019 in all age cohorts *between 0 and 64 years old* (up to 69 years old for women). Conversely, in all age cohorts of *65 years old and above* (above 69 years old for women), the projected population in 2070 is higher than in 2019. Moreover, while in 2019, the largest cohort for both males and females was 50-54 years old, in 2070 the largest cohort will be 60-64 years old for women and 55-59 years old for men (see Graph 2). Overall, the median age will rise by 5 years for both men and women by 2070 (reaching 47.3 for men and 50.3 for women). Similar developments are projected for the euro area.

By 2070, the EU's share of the total world population is forecast to shrink to 3.7%, from its current value of 5.7% (2020), and the share of the old people in its population will be the second highest globally among large economies.

Without taking into account the impact of COVID-19 mortality and life expectancy, the projected changes in the population structure reflect assumptions on fertility rates, life expectancy and migration flows. The *total fertility rate* is assumed to rise from 1.52 in 2019 to 1.65 in 2070 for the EU as whole. This trend follows from an assumed process of convergence across Member States over the very long term to the country with the highest fertility rate (in 2019). In the EU, *life expectancy* at birth for men is expected to increase by 7.4 years over the projection period, from 78.7 in 2019 to 86.1 in 2070. For women, life expectancy at birth is projected to increase by 6.1 years, from 84.2 in 2019 to 90.3 in 2070, implying some convergence of life expectancy between men and women. The biggest increases are projected for the Member States with the lowest life expectancies in 2019. Annual *net migration inflows* to the EU are projected to decrease from about 1.3 million people in 2019 to 1.0 million people by 2070, representing a decreased contribution from 0.3% to 0.2% of the total population. ([7]) However, there are large differences between Member States.

The projected demographic old-age dependency ratio will sharply increase over the long-term

The old-age dependency ratio is projected to sharply increase over the long-term, with less than two working-age persons for every person aged 65 and more by 2070. The demographic old-age dependency ratio (people aged 65 and above relative to those aged 20 to 64) in the EU is projected to increase by 24.7 pps. over the projection period, from 34.4% in 2019 to 59.2% in 2070. This implies that the EU would go from having about three working-age people for every person aged over 65 years to only having less than two working-age persons. Most of this increase is driven by the very old-age dependency ratio (people aged 80 and above relative to those aged 20-64) which is rising by 15.8 pps. (9.9% to 25.7%) over this horizon.

Overall participation rates to the labour market are projected to rise, in particular for older workers, supported by pension reforms, and for women

Legislated pension reforms are projected to have a sizeable impact on the participation rate of older workers, as captured by the Commission cohort simulation model. Participation rates are projected using a cohort simulation model (CSM), which allows in particular taking into account the impact of legislated pension reforms on the participation rate of older workers (including measures to be phased in gradually). In most of the EU Member States, legislated pension reforms are projected to have a significant impact on the labour market participation of workers aged 55-64, with differences across the EU depending on their magnitude and phasing in. The projections show an average increase of

([7]) Eurostat's models to project immigration and emigration ensure intra-EU flow consistency and are built around three modules. For 2019, they use a nowcast component based on the latest empirical evidence. For the medium-term, they extrapolate trends observed in recent years. Finally, the long-term projections use a partial convergence module. Moreover, for all years in which the population aged 15-64 is projected to shrink, a 'feedback' correction factor triggers additional non-EU immigration amounting to 10% of the projected decline in the working-age population (see Part I Chapter 1).

approximately 10 pps. in the participation rate for this age category, from 62.3% on 2019 to 71.9% in 2070.

Larger increases in total participation are projected for women, reflecting the rising participation of younger generations to the labour market and the alignment of retirement age with men. The expected increase in the participation rates between 55-64 years old is much higher for women (about 13 pps. on average) than for men (close to 6 pps. on average), reflecting the progressive convergence of participation rates across genders in a number of countries. Overall, the total participation rate for those aged 20-64 is projected to rise from 78.2% in 2019 to 80.7% in 2070 in the EU as a whole and from 78.4% to 81% in the euro area. This is being driven by higher female participation, which is projected to rise by 4.4 pps. compared with 0.5 pps. for men in the EU and by 4.6 pps. compared with 0.4 pps. for men in the euro area.

Yet, labour supply will decline under the effect of the projected drop of the working-age population

Despite the increase of the participation rate, total labour supply is set to decline over the long-term, reflecting the powerful demographic driver. Labour supply for those aged 20 to 64 in the EU is projected to fall by 15.5% over 2019-70, of which 2.8% by 2030 and a further 13.1% between 2030 and 2070. In the euro area, the projected fall in labour supply is 12.6% over the entire period, of which 2.2% takes place between 2019 and 2030 and a further 10.7% between 2030 and 2070.

Further rises in employment rates are projected…

The total employment rate is projected to increase over the long-term, including as a result of the assumed convergence to (generally lower) equilibrium unemployment rates across the EU. Unemployment is in particular projected to decline slightly in the EU from 6.8% in 2019 to 5.8% in 2070, under the general assumption that the rate will converge to estimated 'NAWRUs' ([8]). Euro area unemployment is assumed to fall more markedly from 7.7% in 2019 to 6% in 2070. Hence, given the population projection, the labour force projection and the unemployment rate assumptions, the total employment rate (for persons aged 20 to 64) in the EU is projected to increase from 73.1% in 2019 to 76.2% in 2070. In the euro area, a somewhat bigger increase is expected, with the employment rate rising from 72.6% in 2019 to 76.3% in 2070.

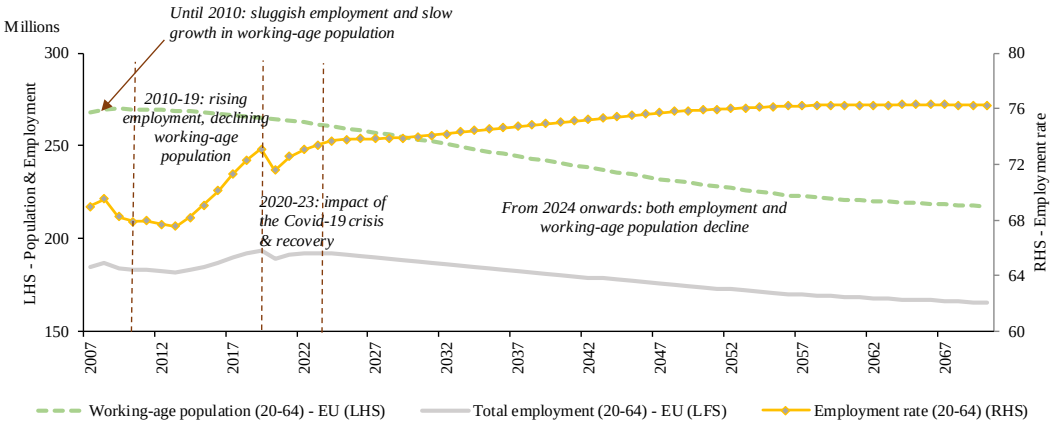
…while the level of employment is projected to fall

The population trends have significant effects on labour market, and four distinctive periods can be identified for the EU (See Graph 3): i) *2007-2010*: the working-age population was growing, but employment was sluggish as the global financial crisis weighed on job growth during this period; ii) *2011-2019*: the working-age population started to decline with the baby-boom generation entering retirement. However, the reduction in unemployment rates, and in particular, the increase in the employment rates of women and older workers cushioned the impact of demographic change, and the overall number of persons employed started to increase during the latter part of this period; iii) *2020-23*: the COVID-19 crisis led to a temporary reduction of the employment rate in 2020, followed by an assumed recovery until 2023, with the overall number of persons employed gradually going back to (close to) pre-crisis levels; iv) *from 2024*: the projected increase in employment rates is slower, as trend increases in female employment and the impact of pension reforms will be less pronounced. Hence, both the working-age population and the number of persons employed are set to fall over the rest of the projection period. Labour supply and employment for those aged 65-74 will experience somehow

([8]) NAWRU stands for 'non-accelerating wage rate of unemployment'. For countries with a high estimated NAWRU, it is assumed that structural unemployment will fall further to reach the EU median.

different trends, with an overall increase up until the mid-2030s, reflecting the extension of working lives, followed by a stabilisation over the rest of the projection period.

Graph 3: **Population and employment developments (million), EU**



Source: Commission services, Eurostat, EPC.

Stable potential GDP growth projected over the long-term, but growth relying only on productivity increases

In the EU as a whole, the average annual GDP growth rate is projected to remain fairly stable over the long-term. An average annual potential GDP growth of 1.3% in 2019-2070 is projected for the EU as a whole under the baseline scenario. ([9]) Growth will average 1.2% up to 2030, rise slightly to 1.3% in the 2030s and further to 1.4% in the 2040s, where it is expected to remain through to 2070. The projections for the euro area follow a similar (though slightly lower) trajectory, with annual growth of 1% up to 2030, 1.2% in 2031-2040 and 1.4% in 2041-2070. Overall, the average euro area growth rate in 2019-2070 is projected at 1.3%. In per capita terms, developments are projected to be similar, with average potential GDP growth of 1.4% in the EU (and 1.3% in the euro area).

The sources of GDP growth will change dramatically over the projection horizon. Labour will make a negative contribution to growth in both the EU and the euro area over the projection horizon due to two opposite effects. On the one hand, an assumed increase of employment rates will make a positive contribution to average potential GDP growth. On the other hand, this is more than offset by a decline in the share of the working-age population, which has a negative influence on growth. As a result, total employment will decline steadily over the projection period, and labour input is expected to contribute negatively to output growth on average over the projection period (by -0.2 pps. in the EU and by -0.1 pps. in the euro area). Hence, labour productivity growth, driven by TFP growth, is projected to become the sole source of potential output growth in both the EU and the euro area. Annual growth in productivity per hour worked is projected to increase from less than 1% to 1.5% by the 2030s and to remain fairly stable at around 1.6% throughout the remaining projection period. As a result, average annual labour productivity growth equals 1.6% in 2019-2070. A similar trajectory is envisaged in the euro area, though with average productivity growth of only 1.4%. The implications of a failure of the projected rise in TFP growth to materialise are the subject of analysis in the risk scenarios.

([9]) Given that these projections take as a starting point the Commission 2020 spring forecast, they do not incorporate the positive impact that the EU recovery package, in particular the Recovery and Resilience Facility, will have on the economy in the medium to long term.

2.2. Long-term budgetary projections

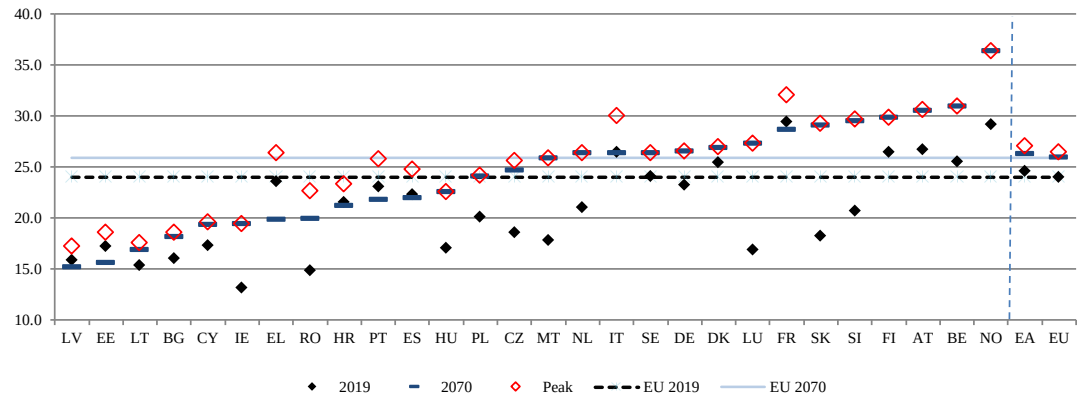
Long-term budgetary projections include a baseline scenario, and a range of sensitivity tests to capture the uncertainty surrounding the underlying assumptions. The fiscal impact of ageing is projected to represent a significant challenge in almost all Member States, with effects becoming apparent already during the next two decades in many countries. As in previous long-term projection exercises, a baseline scenario (the AWG reference scenario) focuses on the budgetary impact mostly due to demographic developments. Additionally, acknowledging the considerable uncertainty as to future developments of age-related public expenditure, a set of sensitivity tests are carried out to illustrate the extent to which the public expenditure projections are sensitive to key assumptions on demographic, labour force and productivity trends, as well as on (non-demographic) cost drivers' developments (see section on risk scenarios below). In the report, given the huge uncertainty related to the on-going COVID-19 crisis, two additional scenarios were prepared, describing the potential macroeconomic impact of the pandemic (the "lagged recovery scenario" and the "adverse structural scenario").

Baseline projection results

In the baseline scenario, the total cost of ageing (including pension, health care, long-term care and education expenditure) is set to increase over the long-term at the EU/EA aggregate level. ([10]) The total cost of ageing, which stood at 24% of GDP in 2019, is projected to rise by 1.9 pps. of GDP in the EU by 2070. In the euro area, it is projected to rise by 1.7 pps. over the same period (from 24.6% of GDP in 2019) (see Graph 4 and Table 1).

The peak in age-related expenditure as a share of GDP takes place around the middle of the projection horizon. For a majority of countries, the highest value is reached before the end of the projection horizon (see Graphs 4 and 7). This time profile results primarily from the projection of pension expenditure, given that the impact of reforms often takes a long time to set in. In addition, in several countries, the population ageing effect peaks before 2070 (the old-age dependency ratio does not increase over the entire projection horizon). Hence, even if pension expenditure (as a share of GDP) is projected to increase modestly over the whole projection period, and even decrease as from the mid-2040s, its rise during the coming two decades is set to be pronounced.

Graph 4: **Total age-related expenditure (2019, peak year and 2070), % of GDP**



Source: Commission services, EPC.

There is however considerable variety across EU Member States and also in the profile over time in the long-term spending trends (see Graphs 4, 5 and Table 1). According to the projections:

([10]) In this report, and differently from previous editions, changes in unemployment benefits, linked to the evolution of unemployment, are not included in the costs of ageing.

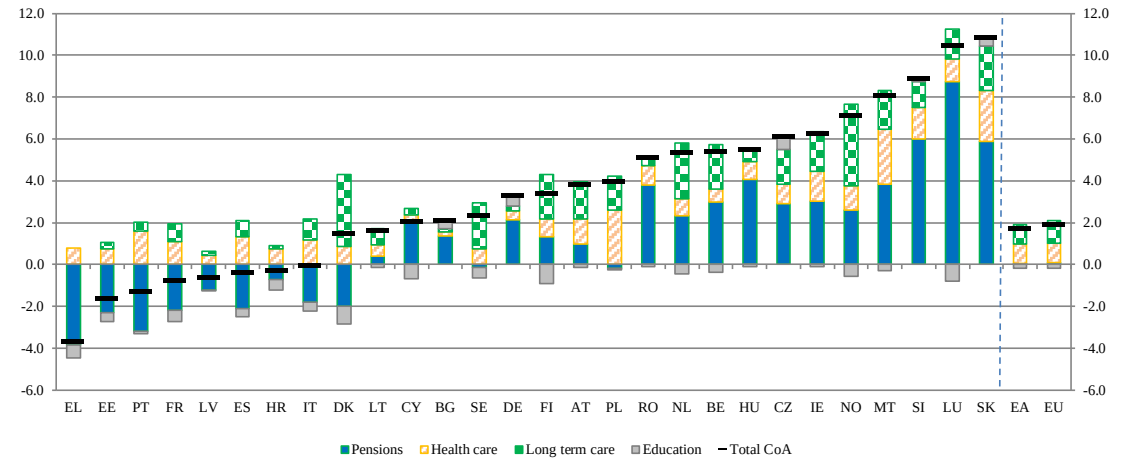
– *A fall in total age-related expenditure relative to GDP* is projected in eight Member States (EL, EE, PT, FR, LV, ES, HR and IT). In all of these countries, a decline in the pension-to-GDP ratio is projected over the long-term (exceeding 3 pps. of GDP in EL and PT). Yet, with the exception of EL, EE and LV, the overall fall in expenditure is projected to follow a rise to levels above the current average for the EU, particularly significantly in IT and PT (at or above 2.5 pps. of GDP).

– *The age-related expenditure ratio is expected to rise moderately* (by up to 3 pps. of GDP) for another set of five countries (DK, LT, CY, BG and SE). With the exception of DK and SE, age-related expenditure is currently well below EU averages in these countries.

– *The increase in the age-related expenditure ratio is projected to be the largest* in the remaining fifteen countries (DE, FI, AT, PL, RO, NL, BE, HU, CZ, IE, NO, MT, SI, LU and SK), rising by 3 pps. of GDP or more, and with pension expenditure increasing in all of these countries (exceeding 3 pps. of GDP in LU, SI, SK, HU, MT, RO and IE). In FI, AT and BE, age-related expenditure is currently already above the EU average.

Looking at the components of age-related expenditure in the baseline scenario, the increase up to 2070 is mostly driven by long-term care and health care spending. Both spending items combined are projected to rise by 2 pps. of GDP (long-term care: +1.1 pps. of GDP, health care: +0.9 pps. of GDP) in the EU (EA: +1.8 pps. of GDP). After a projected increase of 1.1 pps. of GDP up to 2045 (EA: +1.2 pps. of GDP), public pension expenditure is set to return close to its 2019 level in the latter part of the projection horizon (EU/EA: 0.1 pps. of GDP). Education expenditure is projected to slightly decline by 2070 (EU/EA: -0.2 pps. of GDP) (see Graph 5 and Table 1).

Graph 5: **Projected change in age-related expenditure (2019-70), by expenditure component, pps. of GDP**



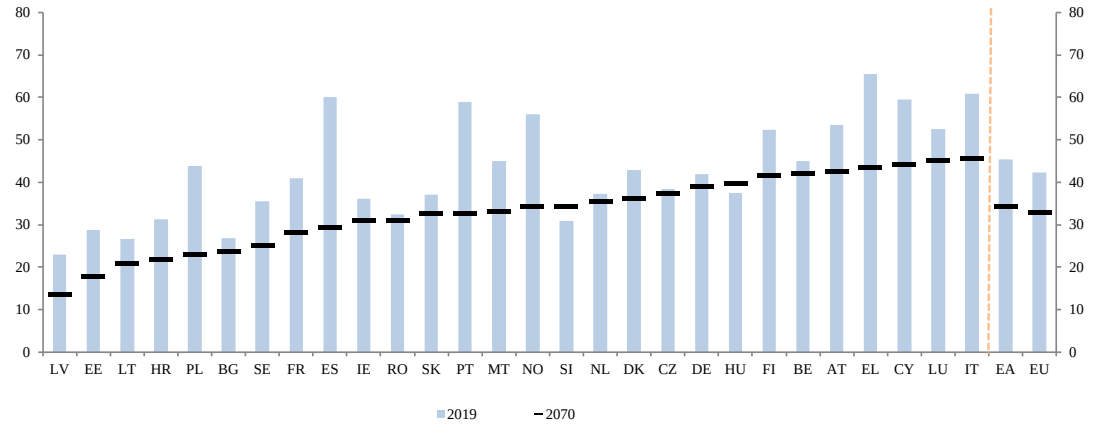
Source: Commission services, EPC.

In several Member States, a decline of pension spending is projected over the long-term, as a result of past pension reforms, including measures reducing the benefit ratio and increasing the retirement age. A reduction of public pension spending as a share of GDP over the long term is projected in eleven Member States (EL, EE, PT, FR, LV, ES, HR, IT, DK, SE and PL), as a result of implemented pension reforms (see Table 1). These reform measures, including changes to the retirement age and to the pension benefit, have primarily been adopted to address fiscal sustainability concerns of pension systems. As a consequence, the public pension benefit ratio (average pensions in relation to average wages) is projected to decline in almost all Member States and on average by 9.5 pps. in the EU over the period

2019-70 (see Graph 6) ([11]). For some countries the decline is projected to be 20 pps. or more (ES, PT, EL, NO and PL). Pension reforms leading to low public pension benefit ratios could be politically challenging over the long run, and could give rise to upward risks to the pension expenditure projections, as reflected in the "offset declining benefit ratio " scenario (see Part II Chapter 1). Recent policy reversals in some countries illustrate the importance of such risks.

Yet, the minimum pension benefit ratio should remain broadly stable over the long-term, while private pensions would allow completing pensioners' income where available. Projected changes to the minimum pension benefit ratio are much smaller in most countries, as these pensions are indexed to wages (or similar). ([12]) Over the reporting countries, ([13]) the minimum benefit ratio is projected to decrease by 1.2 pps. on average. Hence, risks relating to minimum pensions being too low in the future are contained, due to higher indexation of minimum pensions compared with the general pension scheme. Moreover, many countries also have private pension schemes, and the total benefit ratio in 2070 is on average around 9 pps. higher (for countries where private pensions are reported) ([14]).

Graph 6: **Total public pension benefit ratio, in %, 2019 and 2070**



Source: Commission services, EPC.

Risk analysis supplements the baseline projection results

Given the very long time-span over which the projections are made, there is considerable upside and downside uncertainty as to future developments of age-related public expenditure. Hence, a set of alternative scenarios were run to assess the sensitivity of age-related government expenditure to different underlying assumptions (demographic, macro-economic and in terms of (non-demographic) cost drivers). Two of these scenarios deserve particular attention, and are defined as follows: ([15])

– **TFP risk scenario** ([16]): In light of the trend decline in TFP growth performance over the last decades in the EU, and the increase projected for the future, due visibility and prominence should also be given to the risk of lower TFP growth in the future. Thus, a TFP risk scenario is included, with a lower TFP growth rate (converging to 0.8% instead of 1%). This scenario essentially shows that GDP

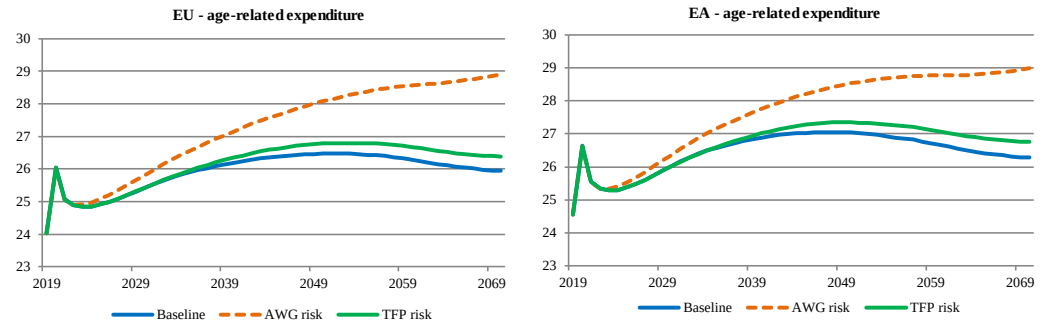
([11]) These pension projections are made on the basis of current pension policies under the 'no policy change' assumption. If pensions were to be perceived as 'too low' in the future, policy changes could occur (through measures increasing pension expenditure i.e. via higher indexation or changes to eligibility requirements).
([12]) In addition, even when this is not the case, in the projections for minimum pensions it is assumed that they are indexed to wages after ten years at the most, so as to retain the principle of those pension schemes to provide a minimum income also in the future.
([13]) Minimum pension projections are available for all but seven Member States (CZ, DE, HR, LU, NL, PL and SI).
([14]) Private pension projections are available for ten Member States (DK, EE, ES, HR, LV, LT, NL, PT, RO and SE).
([15]) The results of the two additional COVID-19 related scenarios are also presented in the report for each expenditure item.
([16]) With an impact on the projections for pensions, health care and long-term care.

growth could be much lower if future TFP growth was less dynamic than assumed in the baseline scenario, i.e. more in line with the growth rate (0.8%) observed over the last 20 years. In this scenario, potential GDP would grow by 1.1% on average up to 2070 in the EU and the euro area, as opposed to 1.3% in the baseline scenario.

– **AWG risk scenario** ([17]): Non-demographic drivers may exercise an upward push on costs in the health care and long-term care areas. In order to gain further insights into the possible importance of such developments, another set of projections was run, assuming a partial continuation of recently observed upward trends in health care expenditure, notably due to technological progress (based on empirical evidence that it has been a major driver of health-care spending). Moreover, an upward convergence of coverage and costs of long-term care towards the EU average is assumed in this scenario ([18]).

Ageing costs could show a larger increase than projected in the baseline, in particular by as much as 4½ – 5 pps. of GDP by 2070 in the EU/EA under the AWG risk scenario. Graph 7 illustrates the projected increase in age-related expenditure over 2019-70 in the three different scenarios (Baseline, TFP risk and AWG risk) for the EU and the EA. In the EU as a whole, the total cost of ageing is projected to rise by 2.4 pps. of GDP in the TFP risk scenario, and by as much as 4.9 pps. of GDP in the AWG risk scenario in the period to 2070 (against 1.9 pps. of GDP in the baseline scenario). In the euro area, it is projected to rise by 2.2 pps. of GDP in the TFP risk scenario, and by up to 4.4 pps. of GDP in the AWG risk scenario over the same period (against 1.7 pps. of GDP in the baseline scenario).

Graph 7: **Projected age-related expenditure (2019-70), different scenarios, % of GDP, EU and EA**



Source: Commission services, EPC.

The TFP risk scenario primarily affects pension expenditure, projected to rise by ½ pps. of GDP more on average (EU and EA) up to 2070 compared with the baseline scenario. This is because pensions in payments are in many countries projected to rise in line with inflation, and therefore to be invariant to lower real wage growth. By contrast, it only has a small impact on health care and long-term care, as unit costs in these areas are closely linked to labour productivity growth and hence with wage growth. The projected increase in total age-related expenditure would be about ½ pps. of GDP higher than the baseline scenario up to 2070 in the EU and EA (see Graph 8 and Table 2). These results critically highlight the need for policies geared at supporting labour productivity, in particular for older workers.

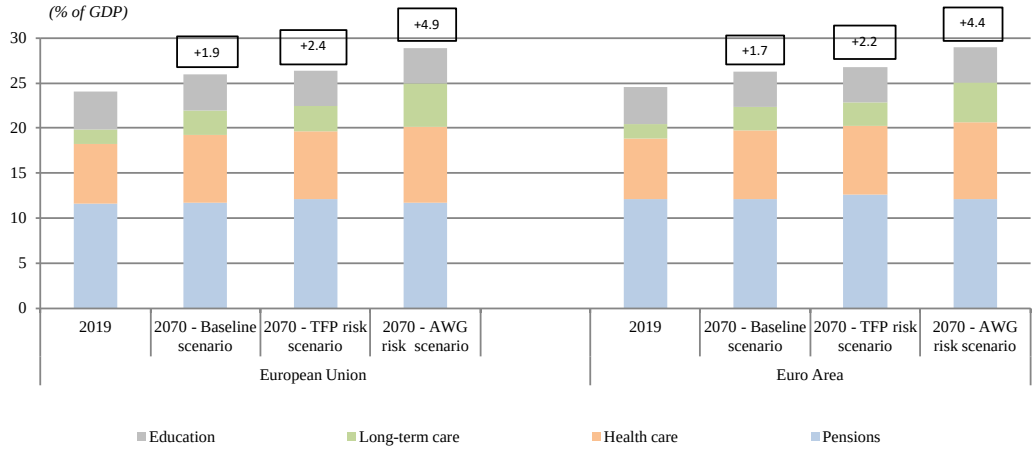
The assumptions in the AWG risk scenario (presented above) have a sizeable effect on health care and long-term care expenditure. The projected increase in total age-related expenditure would be 3 pps.

([17]) With an impact on the projections for health care and long-term care. In this scenario, it is also assumed, as in the baseline, that half of the future gains in life expectancy are spent in good health. This considerably mitigates the demographic effects of ageing and can be only achieved if health systems contribute to healthy ageing, mostly through health promotion and prevention.

([18]) In comparison to the baseline, this scenario thus captures the impact of additional cost of the increase in the demand for LTC as living standards increase.

of GDP higher than the baseline scenario up to 2070 for both the EU as a whole, and 2.7 pps. of GDP at the EA aggregate level. It would entail an increase over the entire projection horizon of 4.9 pps. in the EU and of 4.4 pps. in the EA (see Graph 8 and Table 3).

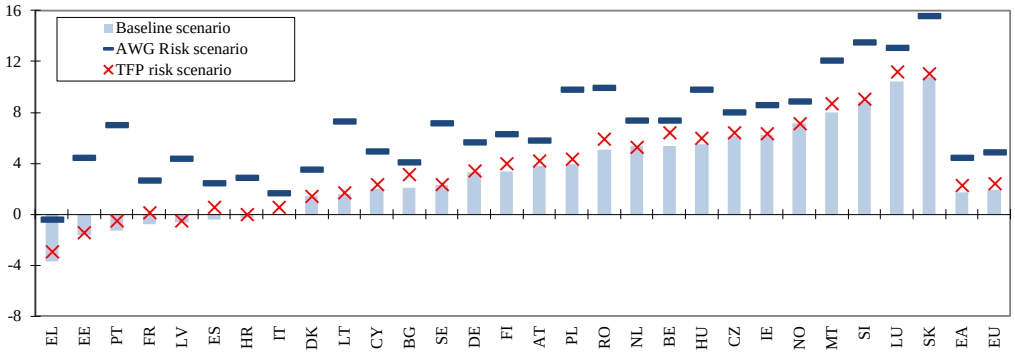
Graph 8: **Total age-related expenditure, different scenarios and by component, 2019 and 2070, % of GDP**



Source: Commission services, EPC.

However, in both risk scenarios, the EU/EA aggregates mask considerable variety and the expenditure projections are very different across Member States. Assuming a *slower TFP growth* leads to more adverse projected trends over the long-term in most countries, but not all, reflecting differences in pension benefits' indexation rules (see Graph 9 and Table 2). *Under the AWG risk scenario*, all countries but Greece would experience an increase of ageing costs by 2070 (see Graph 9). Particularly large increases are projected for SK, SI, LU, MT and RO (with a projected rise by around 10 pps. of GDP or more), reflecting the effect of convergence drivers in these countries (see Graph 9 and Table 3).

Graph 9: **Projected change in age-related expenditure (2019-70), different scenarios, pps. of GDP**

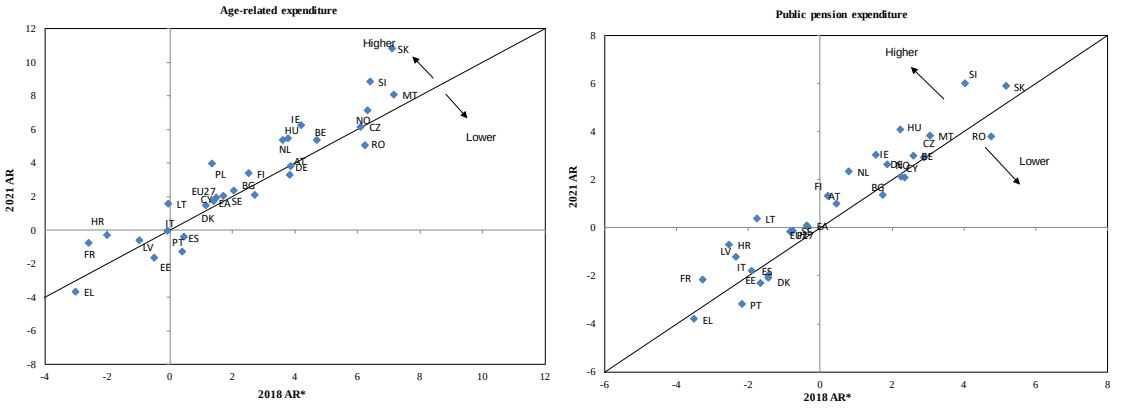


Source: Commission services, EPC.

Slightly higher projected increase in age-related spending projections compared with the 2018 Ageing Report

The increase in the age-related public expenditure is generally higher than what was projected in the 2018 Ageing Report. Under the baseline scenario, the rise in total costs of ageing ([19]) by 2070 will be higher in the EU, by 0.4 pp. of GDP, than projected for the same period in the 2018 Ageing Report. Exceptions are BG, DE, EE, EL, ES, IT, LU, AT, PT and RO. However, in 2019, the starting year of the current projections, age-related expenditure turned out to be slightly lower than what projected in the 2018 Ageing Report in the EU (-0.3 pps. of GDP). The higher projected increase is mainly due to larger rises in pension expenditure over the long-term (see Graph 10 and Table 4), and also to health-care expenditure. These results reflect a more pronounced population ageing effect in the EU up to 2070 according to the latest Eurostat population projection, but also the impact of recently adopted pension measures in some countries (e.g. SI, HU, NL and LT), often repealing or postponing previous legislated measures, which has led to higher projected pension expenditure increases.

Graph 10: **Projected change in age-related and pension expenditure compared, 2021 and 2018 AR, 2019-70, pps. of GDP**



* Pension reforms implemented and having been subject to a peer review by the EPC after the 2018 Ageing Report was published are included in the 2018 AR projections. 2018 AR age-related expenditure exclude unemployment benefits.
Source: Commission services, EPC.

([19]) Excluding unemployment benefits. In the 2018 Ageing Report, unemployment benefits contributed to decrease the total cost of ageing by 0.1 pps in the EU and EA over the period 2019-70.

Table 1: **Overview of the 2021 long-term budgetary projections – Baseline scenario**

	Age-related spending, percentage points of GDP, 2019-2070															
	Ageing Report 2021 - Baseline scenario															
	Pensions			Health-care			Long-term care			Education			Total age-related items			
	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	
BE	12.2	2.9	3.0	5.7	0.5	0.6	2.2	1.2	2.1	5.5	-0.5	-0.4	25.6	4.2	5.4	**BE**
BG	8.3	0.6	1.4	4.6	0.4	0.2	0.3	0.1	0.1	2.9	0.2	0.4	16.1	1.3	2.1	**BG**
CZ	8.0	2.7	2.9	5.6	0.8	0.9	1.5	0.9	1.7	3.4	0.4	0.6	18.6	4.8	6.1	**CZ**
DK	9.3	-1.5	-2.0	6.7	0.7	0.9	3.5	2.4	3.4	6.1	-0.6	-0.8	25.4	1.0	1.5	**DK**
DE	10.3	1.8	2.1	7.4	0.5	0.4	1.6	0.3	0.2	4.0	0.3	0.5	23.3	2.8	3.3	**DE**
EE	7.8	-1.5	-2.3	4.9	0.6	0.8	0.4	0.2	0.3	4.2	-0.5	-0.4	17.2	-1.2	-1.6	**EE**
IE	4.6	2.7	3.0	4.1	0.9	1.4	1.3	0.9	1.9	3.3	-0.1	-0.1	13.2	4.3	6.2	**IE**
EL	15.7	-2.0	-3.8	4.4	0.7	0.8	0.2	0.0	0.0	3.2	-0.6	-0.6	23.6	-1.9	-3.7	**EL**
ES	12.3	0.8	-2.1	5.7	1.2	1.3	0.7	0.4	0.8	3.6	-0.5	-0.4	22.3	2.0	-0.4	**ES**
FR	14.8	-0.2	-2.2	8.4	1.0	1.1	1.9	0.6	0.8	4.4	-0.5	-0.6	29.5	1.0	-0.8	**FR**
HR	10.2	-0.1	-0.7	5.9	0.6	0.7	0.4	0.1	0.2	5.0	-0.7	-0.5	21.5	0.0	-0.3	**HR**
IT	15.4	1.9	-1.8	5.9	1.2	1.2	1.7	0.7	1.0	3.5	-0.4	-0.4	26.5	3.4	-0.1	**IT**
CY	8.8	1.5	2.1	2.9	0.2	0.3	0.3	0.2	0.3	5.3	-0.6	-0.7	17.3	1.2	2.0	**CY**
LV	7.1	-0.9	-1.2	4.6	0.6	0.4	0.5	0.1	0.2	3.6	-0.2	0.0	15.8	-0.4	-0.6	**LV**
LT	7.1	1.2	0.4	4.2	0.5	0.6	1.0	0.5	0.8	3.0	-0.3	-0.1	15.3	1.9	1.6	**LT**
LU	9.2	4.6	8.7	3.6	0.7	1.1	1.0	0.5	1.4	3.0	-0.8	-0.8	16.9	5.0	10.4	**LU**
HU	8.3	2.4	4.1	4.8	0.7	0.9	0.6	0.3	0.7	3.4	-0.3	-0.1	17.1	3.2	5.5	**HU**
MT	7.1	0.1	3.8	5.4	1.2	2.6	1.1	0.8	1.9	4.3	-0.7	-0.3	17.9	1.4	8.0	**MT**
NL	6.8	2.2	2.3	5.7	0.7	0.8	3.7	2.0	2.7	4.9	-0.3	-0.5	21.0	4.6	5.4	**NL**
AT	13.3	1.6	1.0	6.9	1.0	1.2	1.8	1.0	1.8	4.7	-0.3	-0.1	26.7	3.3	3.8	**AT**
PL	10.6	-0.1	-0.2	4.9	2.0	2.6	0.8	0.8	1.6	3.8	-0.4	-0.1	20.1	2.3	4.0	**PL**
PT	12.7	1.0	-3.2	5.7	1.4	1.6	0.4	0.3	0.4	4.3	-0.1	-0.1	23.1	2.5	-1.3	**PT**
RO	8.1	6.6	3.8	3.9	0.8	0.9	0.4	0.2	0.4	2.5	-0.2	-0.1	14.9	7.4	5.1	**RO**
SI	10.0	4.8	6.0	5.9	1.3	1.5	1.0	0.8	1.3	3.8	-0.1	0.1	20.7	6.8	8.9	**SI**
SK	8.3	4.2	5.9	5.7	2.0	2.5	0.8	1.0	2.1	3.4	0.1	0.4	18.3	7.3	10.8	**SK**
FI	13.0	-0.4	1.3	6.1	0.6	0.8	2.0	1.4	2.1	5.3	-0.8	-0.9	26.5	0.7	3.4	**FI**
SE	7.6	-0.7	-0.1	7.2	0.4	0.8	3.3	1.1	2.2	5.9	-0.6	-0.5	24.1	0.3	2.3	**SE**
NO	11.0	1.7	2.6	7.0	0.8	1.1	4.0	2.2	3.9	7.2	-0.6	-0.6	29.2	4.1	7.1	**NO**
EA	12.1	1.2	0.1	6.7	0.8	0.9	1.7	0.6	0.9	4.1	-0.2	-0.2	24.6	2.5	1.7	**EA**
EU	11.6	1.1	0.1	6.6	0.8	0.9	1.7	0.7	1.1	4.1	-0.2	-0.2	24.0	2.4	1.9	**EU**

Source: Commission services, EPC.

Table 2: **Overview of the 2021 long-term budgetary projections – TFP risk scenario**

	Age-related spending, percentage points of GDP, 2019-2070															
	Ageing Report 2021 - TFP risk scenario															
	Pensions			Health-care			Long-term care			Education			Total age-related items			
	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	
BE	12.2	3.2	4.0	5.7	0.5	0.6	2.2	1.2	2.1	5.5	-0.5	-0.4	25.6	4.5	6.4	**BE**
BG	8.3	0.7	2.4	4.6	0.4	0.2	0.3	0.1	0.1	2.9	0.2	0.4	16.1	1.4	3.1	**BG**
CZ	8.0	2.9	3.2	5.6	0.8	0.9	1.5	0.9	1.6	3.4	0.4	0.6	18.6	5.0	6.3	**CZ**
DK	9.3	-1.5	-2.1	6.7	0.7	0.8	3.5	2.4	3.4	6.1	-0.6	-0.8	25.4	0.9	1.4	**DK**
DE	10.3	1.8	2.2	7.4	0.4	0.4	1.6	0.3	0.3	4.0	0.3	0.5	23.3	2.9	3.4	**DE**
EE	7.8	-1.4	-2.1	4.9	0.6	0.7	0.4	0.2	0.3	4.2	-0.5	-0.4	17.2	-1.1	-1.5	**EE**
IE	4.6	2.7	3.1	4.1	0.9	1.4	1.3	0.9	1.9	3.3	-0.1	-0.1	13.2	4.4	6.3	**IE**
EL	15.7	-1.7	-3.1	4.4	0.7	0.8	0.2	0.0	0.0	3.2	-0.6	-0.6	23.6	-1.6	-3.0	**EL**
ES	12.3	1.2	-1.2	5.7	1.2	1.3	0.7	0.4	0.8	3.6	-0.5	-0.4	22.3	2.3	0.5	**ES**
FR	14.8	0.3	-1.2	8.4	1.0	1.1	1.9	0.6	0.9	4.4	-0.5	-0.6	29.5	1.4	0.1	**FR**
HR	10.2	0.0	-0.5	5.9	0.6	0.7	0.4	0.1	0.2	5.0	-0.7	-0.5	21.5	0.0	0.0	**HR**
IT	15.4	2.5	-1.2	5.9	1.2	1.2	1.7	0.7	1.0	3.5	-0.4	-0.4	26.5	4.0	0.5	**IT**
CY	8.8	1.6	2.4	2.9	0.2	0.3	0.3	0.2	0.3	5.3	-0.6	-0.7	17.3	1.4	2.3	**CY**
LV	7.1	-0.8	-1.1	4.6	0.6	0.4	0.5	0.1	0.2	3.6	-0.2	0.0	15.8	-0.3	-0.5	**LV**
LT	7.1	1.2	0.5	4.2	0.5	0.5	1.0	0.5	0.8	3.0	-0.3	-0.1	15.3	1.9	1.6	**LT**
LU	9.2	5.0	9.5	3.6	0.7	1.0	1.0	0.5	1.4	3.0	-0.8	-0.8	16.9	5.4	11.1	**LU**
HU	8.3	2.8	4.6	4.8	0.7	0.8	0.6	0.3	0.7	3.4	-0.3	-0.1	17.1	3.5	6.0	**HU**
MT	7.1	0.3	4.5	5.4	1.2	2.6	1.1	0.8	1.8	4.3	-0.7	-0.3	17.9	1.5	8.6	**MT**
NL	6.8	2.1	2.3	5.7	0.6	0.8	3.7	2.0	2.7	4.9	-0.3	-0.5	21.0	4.5	5.2	**NL**
AT	13.3	1.7	1.4	6.9	1.0	1.1	1.8	1.0	1.8	4.7	-0.3	-0.1	26.7	3.4	4.2	**AT**
PL	10.6	0.3	0.2	4.9	2.0	2.5	0.8	0.8	1.6	3.8	-0.4	-0.1	20.1	2.6	4.3	**PL**
PT	12.7	1.3	-2.4	5.7	1.4	1.6	0.4	0.3	0.4	4.3	-0.1	-0.1	23.1	2.8	-0.6	**PT**
RO	8.1	7.4	4.6	3.9	0.8	0.9	0.4	0.2	0.4	2.5	-0.2	-0.1	14.9	8.2	5.8	**RO**
SI	10.0	4.9	6.2	5.9	1.3	1.4	1.0	0.8	1.3	3.8	-0.1	0.1	20.7	6.9	9.0	**SI**
SK	8.3	4.4	6.2	5.7	1.9	2.4	0.8	1.0	2.1	3.4	0.1	0.4	18.3	7.4	11.0	**SK**
FI	13.0	-0.1	1.9	6.1	0.6	0.8	2.0	1.4	2.1	5.3	-0.8	-0.9	26.5	1.1	3.9	**FI**
SE	7.6	-0.7	-0.1	7.2	0.4	0.7	3.3	1.1	2.2	5.9	-0.6	-0.5	24.1	0.3	2.3	**SE**
NO	11.0	1.7	2.6	7.0	0.7	1.1	4.0	2.2	3.9	7.2	-0.6	-0.6	29.2	4.0	7.0	**NO**
EA	12.1	1.5	0.5	6.7	0.8	0.9	1.7	0.7	0.9	4.1	-0.2	-0.2	24.6	2.7	2.2	**EA**
EU	11.6	1.3	0.5	6.6	0.8	0.9	1.7	0.7	1.1	4.1	-0.3	-0.2	24.0	2.6	2.4	**EU**

Source: Commission services, EPC.

Table 3: **Overview of the 2021 long-term budgetary projections – AWG risk scenario**

	Age-related spending, percentage points of GDP, 2019-2070															
	Ageing Report 2021 - AWG risk scenario															
	Pensions			Health-care			Long-term care			Education			Total age-related items			
	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	
BE	12.2	2.9	3.0	5.7	0.9	1.2	2.2	1.7	3.5	5.5	-0.5	-0.4	25.6	5.1	7.3	**BE**
BG	8.3	0.6	1.4	4.6	1.1	1.1	0.3	0.4	1.3	2.9	0.2	0.4	16.1	2.3	4.1	**BG**
CZ	8.0	2.7	2.9	5.6	1.6	2.1	1.5	1.2	2.4	3.4	0.4	0.6	18.6	5.9	8.0	**CZ**
DK	9.3	-1.5	-2.0	6.7	1.5	2.1	3.5	2.7	4.3	6.1	-0.6	-0.8	25.4	2.1	3.5	**DK**
DE	10.3	1.8	2.1	7.4	1.0	1.3	1.6	0.9	1.8	4.0	0.3	0.5	23.3	4.0	5.7	**DE**
EE	7.8	-1.5	-2.3	4.9	1.6	2.0	0.4	1.2	5.1	4.2	-0.5	-0.4	17.2	0.8	4.4	**EE**
IE	4.6	2.7	3.0	4.1	1.2	2.0	1.3	1.5	3.7	3.3	-0.1	-0.1	13.2	5.2	8.6	**IE**
EL	15.7	-2.0	-3.8	4.4	1.3	1.6	0.2	0.3	2.4	3.2	-0.6	-0.6	23.6	-1.0	-0.4	**EL**
ES	12.3	0.8	-2.1	5.7	1.8	2.2	0.7	1.0	2.8	3.6	-0.5	-0.4	22.3	3.1	2.4	**ES**
FR	14.8	-0.2	-2.2	8.4	1.6	2.1	1.9	1.5	3.3	4.4	-0.5	-0.6	29.5	2.5	2.6	**FR**
HR	10.2	-0.1	-0.7	5.9	1.3	1.7	0.4	0.7	2.3	5.0	-0.7	-0.5	21.5	1.2	2.9	**HR**
IT	15.4	1.9	-1.8	5.9	1.5	1.9	1.7	1.1	2.0	3.5	-0.4	-0.4	26.5	4.2	1.6	**IT**
CY	8.8	1.5	2.1	2.9	0.4	0.7	0.3	0.6	2.8	5.3	-0.6	-0.7	17.3	1.9	4.9	**CY**
LV	7.1	-0.9	-1.2	4.6	1.6	1.7	0.5	0.8	3.9	3.6	-0.2	0.0	15.8	1.4	4.3	**LV**
LT	7.1	1.2	0.4	4.2	1.4	1.6	1.0	1.7	5.4	3.0	-0.3	-0.1	15.3	4.0	7.3	**LT**
LU	9.2	4.6	8.7	3.6	1.0	1.6	1.0	1.1	3.5	3.0	-0.8	-0.8	16.9	6.0	13.1	**LU**
HU	8.3	2.4	4.1	4.8	1.6	2.1	0.6	1.1	3.8	3.4	-0.3	-0.1	17.1	4.8	9.8	**HU**
MT	7.1	0.1	3.8	5.4	2.1	3.9	1.1	1.4	4.6	4.3	-0.7	-0.3	17.9	2.9	12.1	**MT**
NL	6.8	2.2	2.3	5.7	1.0	1.4	3.7	2.6	4.1	4.9	-0.3	-0.5	21.0	5.5	7.4	**NL**
AT	13.3	1.6	1.0	6.9	1.6	2.1	1.8	1.5	2.9	4.7	-0.3	-0.1	26.7	4.3	5.8	**AT**
PL	10.6	-0.1	-0.2	4.9	3.2	4.2	0.8	1.8	5.8	3.8	-0.4	-0.1	20.1	4.6	9.8	**PL**
PT	12.7	1.0	-3.2	5.7	2.0	2.6	0.4	1.8	7.8	4.3	-0.1	-0.1	23.1	4.6	7.0	**PT**
RO	8.1	6.6	3.8	3.9	1.9	2.4	0.4	1.0	3.9	2.5	-0.2	-0.1	14.9	9.3	9.9	**RO**
SI	10.0	4.8	6.0	5.9	2.4	2.9	1.0	1.9	4.5	3.8	-0.1	0.1	20.7	9.0	13.5	**SI**
SK	8.3	4.2	5.9	5.7	2.9	3.7	0.8	1.9	5.5	3.4	0.1	0.4	18.3	9.0	15.5	**SK**
FI	13.0	-0.4	1.3	6.1	1.2	1.8	2.0	2.0	4.1	5.3	-0.8	-0.9	26.5	1.9	6.3	**FI**
SE	7.6	-0.7	-0.1	7.2	1.1	1.7	3.3	2.3	6.1	5.9	-0.6	-0.5	24.1	2.2	7.2	**SE**
NO	11.0	1.7	2.6	7.0	1.4	2.1	4.0	2.5	4.7	7.2	-0.6	-0.6	29.2	5.0	8.8	**NO**
EA	12.1	1.2	0.1	6.7	1.4	1.7	1.7	1.3	2.8	4.1	-0.2	-0.2	24.6	3.6	4.4	**EA**
EU	11.6	1.1	0.1	6.6	1.4	1.8	1.7	1.4	3.1	4.1	-0.2	-0.2	24.0	3.6	4.9	**EU**

Source: Commission services, EPC.

Table 4: **Overview of the 2021 vs. 2018 long-term budgetary projections - Baseline scenario**

	Age-related spending, percentage points of GDP, 2019-2070															
	Difference AR 2021 - AR 2018* (Baseline scenario)															
	Pensions			Health-care			Long-term care			Education			Total age-related items			
	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	2019 level	CH 19-45	CH 19-70	
BE	-0.3	0.7	0.4	-0.2	0.2	0.2	-0.2	0.2	0.5	-0.3	-0.5	-0.5	-1.0	0.7	0.7	**BE**
BG	-0.9	-0.6	-0.4	-0.5	-0.1	0.0	-0.1	0.0	0.0	-0.1	-0.2	-0.3	-1.6	-0.9	-0.6	**BG**
CZ	-0.1	0.7	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.0	-0.1	0.4	0.8	0.0	**CZ**
DK	-0.3	0.2	-0.5	-0.3	0.1	-0.1	0.9	1.1	1.3	-1.0	-0.4	-0.4	-0.8	1.0	0.3	**DK**
DE	0.1	0.0	-0.1	-0.1	-0.2	-0.2	0.1	-0.1	-0.2	0.1	0.0	-0.1	0.1	-0.3	-0.6	**DE**
EE	-0.3	-0.5	-0.6	-0.4	0.4	0.5	-0.5	-0.1	-0.1	-0.4	-0.6	-0.8	-1.5	-0.8	-1.2	**EE**
IE	-0.5	0.6	1.5	-0.2	0.1	0.5	-0.1	-0.1	0.0	-0.3	0.2	0.1	-1.0	0.8	2.0	**IE**
EL	0.5	-0.6	-0.3	-0.6	-0.3	-0.3	0.1	-0.1	-0.1	0.2	0.1	0.0	0.2	-0.9	-0.7	**EL**
ES	0.2	-1.4	-0.6	-0.3	0.4	0.9	-0.3	-0.3	-0.4	-0.1	-0.7	-0.7	-0.5	-1.9	-0.9	**ES**
FR	-0.2	0.4	1.1	0.4	0.6	0.7	0.1	0.0	0.2	-0.3	-0.4	-0.2	0.0	0.7	1.8	**FR**
HR	-0.5	1.8	1.8	0.5	0.1	0.1	-0.5	-0.1	-0.1	1.5	-0.2	-0.1	1.1	1.6	1.7	**HR**
IT	-0.4	-0.6	0.1	-0.2	0.2	0.3	-0.1	-0.1	-0.2	0.0	-0.1	-0.2	-0.7	-0.5	0.0	**IT**
CY	-1.3	0.2	-0.3	0.1	0.0	0.0	0.0	0.1	0.0	-0.1	0.9	0.5	-1.3	1.1	0.3	**CY**
LV	0.0	0.1	1.1	0.7	0.1	0.0	0.0	0.0	0.0	-0.6	-0.4	-0.9	0.2	-0.2	0.3	**LV**
LT	0.2	1.4	2.2	0.0	0.0	0.2	0.0	-0.4	-0.2	-0.4	-0.2	-0.5	-0.2	0.8	1.6	**LT**
LU	0.2	1.4	-0.2	-0.5	0.1	0.1	-0.3	-0.5	-1.3	-0.1	-0.9	-1.1	-0.7	0.2	-2.5	**LU**
HU	-0.7	1.1	1.8	-0.3	0.0	0.1	-0.1	0.0	0.2	0.0	-0.4	-0.5	-1.0	0.7	1.7	**HU**
MT	-0.8	0.1	0.8	-0.5	-0.4	0.2	0.2	0.0	0.5	-0.5	-0.6	-0.7	-1.7	-0.8	0.9	**MT**
NL	-0.3	0.9	1.5	-0.7	0.1	0.1	0.0	0.1	0.3	-0.1	-0.3	-0.2	-1.0	0.7	1.7	**NL**
AT	-0.6	0.8	0.6	0.0	0.1	-0.2	-0.2	0.1	-0.1	0.0	-0.3	-0.4	-0.8	0.7	-0.1	**AT**
PL	-0.4	-0.1	0.7	0.5	1.4	1.8	0.3	0.4	0.8	-0.2	-0.4	-0.7	0.2	1.3	2.6	**PL**
PT	-0.8	0.1	-1.0	-0.4	-0.3	-0.6	-0.2	-0.2	-0.4	0.0	0.5	0.3	-1.5	0.0	-1.7	**PT**
RO	0.4	0.5	-1.0	-0.4	0.0	0.2	0.1	0.0	0.1	0.1	-0.4	-0.5	0.1	0.1	-1.2	**RO**
SI	-0.9	0.6	2.0	0.2	0.4	0.6	0.0	0.2	0.4	-0.2	-0.4	-0.5	-0.9	0.8	2.5	**SI**
SK	-0.3	1.8	0.7	0.0	1.0	1.4	-0.1	0.6	1.4	-0.1	0.1	0.2	-0.5	3.4	3.7	**SK**
FI	-0.7	-0.1	1.1	-0.1	0.2	0.2	-0.3	0.0	0.2	-0.5	-0.7	-0.6	-1.5	-0.7	0.9	**FI**
SE	-0.1	0.4	0.6	0.2	0.0	0.1	0.1	0.1	0.5	0.1	-0.8	-1.0	0.4	-0.2	0.3	**SE**
NO	0.0	0.8	0.7	-0.8	0.0	0.0	0.2	0.4	0.6	-0.1	-0.4	-0.5	-0.6	0.8	0.8	**NO**
EA	-0.1	0.0	0.4	-0.1	0.2	0.3	0.0	-0.1	-0.1	-0.1	-0.3	-0.3	-0.3	-0.1	0.3	**EA**
EU	-0.1	0.2	0.5	-0.1	0.2	0.3	0.0	0.0	0.0	-0.1	-0.3	-0.3	-0.3	0.1	0.4	**EU**

* Pension reforms implemented and having been subject to a peer review by the EPC after the 2018 Ageing Report was published are included in the 2018 AR projections. 2018 AR age-related expenditure exclude unemployment benefits.

Source: Commission services, EPC.

Part I

Underlying demographic and macroeconomic assumptions

1. DEMOGRAPHIC ASSUMPTIONS

1.1. KEY DRIVERS

The 2021 Ageing Report budgetary projections for the period 2019-2070 rest mostly on Eurostat's April 2020 population projections ([20]) – based on 2019 data, EUROPOP2019 ([21]) ([22]). Datasets on the three key demographic drivers – fertility rates, mortality rates and net migration flows – and the underlying methodology can be found on Eurostat's dedicated website ([23]). National statistical institutes were consulted by Eurostat during the preparation of the population projections ([24]).

The 2019-based projections assume that countries converge in terms of fertility, mortality and migration developments, but only in the very long term ('partial convergence approach'). This allows the projections to take due account of recent country-specific trends and developments at the beginning of the period, while assuming some degree of convergence far into the future. In particular, fertility and mortality rates are assumed to converge towards those of the best-performing countries, that is, towards the highest fertility rate and the longest life expectancy.

The models for projecting emigration and immigration flows in each country combine several elements. They include past trends, latest empirical evidence, partial convergence in the long run and intra-EU flow consistency. Furthermore, the projections assume additional immigration in countries where the local working-age population is expected to shrink ([25]).

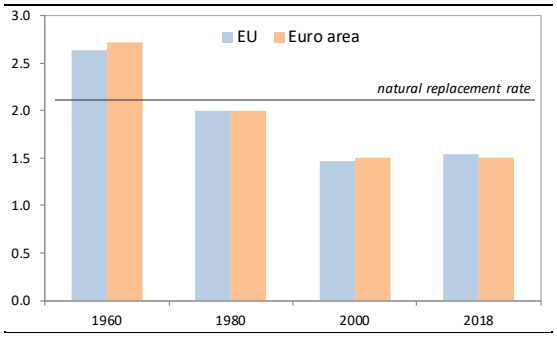
1.1.1. Fertility rates

The total fertility rate (TFR) is assumed to rise in almost all Member States between 2019 and 2070, increasing from 1.52 to 1.65 on average in the EU.

Past trends

After peaking during the post-war baby boom, fertility rates steadily declined until the turn of the century, then broadly stabilised. On average, total fertility rates (TFR) ([26]) dropped to below the natural replacement level of 2.1 in 1980 and kept declining until 2000 (see Graph I.1.1). Since then, the TFR has remained close to 1.5 in the EU as a whole, increasing slightly in the 2000s before decreasing again in the 2010s.

Graph I.1.1: **Total average fertility rates in the EU and the euro area, 1960-2018**



Note: Simple averages.
Source: Commission services based on Eurostat data.

([20]) Given the cut-off date, these projections do not take into account the impact of the COVID-19 pandemic.

([21]) Eurostat's April 2020 population projections (with 2019 as a base year) were released after the cut-off date of the Commission 2020 spring forecast, which underpins the EPC's Output Gap Working Group T+10 projections. The GDP projections for the medium term are therefore based on Eurostat's population projections with 2018 as a base year. For a more detailed presentation of the population projections, see Part I, Chapter 1 of EC-EPC (2020), '2021 Ageing Report: Underlying assumptions and projection methodologies'.

([22]) The population projections published by Eurostat refer to the population on 1 January of each year. The projections used throughout this report for year t are calculated as the average of the Eurostat projections on 1 January for year t and those for year t+1, as done in previous projection exercises. This explains minor discrepancies between some numbers in this report and Eurostat's numbers.

([23]) The datasets can be found at http://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-projections-data. Eurostat (2020) 'Methodology of the Eurostat population projections 2019-based (EUROPOP2019)' is available at https://ec.europa.eu/eurostat/cache/metadata/Annexes/proj_esms_an1.pdf.

([24]) This does not preclude national statistical institutes having different population projections based on their own assumptions and methodologies.

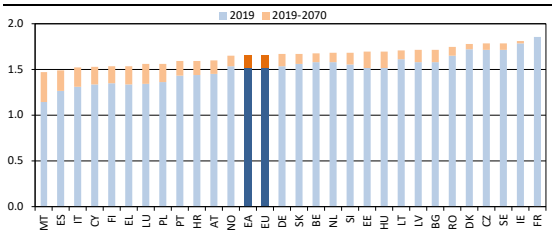
([25]) For all years in which the size of the population aged 15-64 is projected to shrink, a 'feedback' correction factor is triggered, assuming an additional non-EU immigration flow in the same year of 10% of the decline in the working-age population (see Box I.1.1 in EC-EPC (2020)).

([26]) The TFR reflects the number of children a woman would have in her life if she had, at each bearing age, the age-specific fertility rate prevailing in the year under review. The TFR is obtained by adding the age-specific fertility rates for all ages.

Eurostat's latest projections

Eurostat's EUROPOP2019 projections (released in April 2020) assume that in the very long term, fertility rates will converge slowly across Member States towards that of the front-runner (France). In the EU as a whole, the TFR is projected to increase from 1.52 in 2019 to 1.65 in 2070. At the country level, TFRs are projected to increase over the projection period in all Member States, with the exception of France (the frontrunner in 2019) where it is expected to remain stable at slightly above 1.8. Until 2070, fertility rates in all countries are therefore expected to remain below the natural replacement rate of 2.1 (see Graph I.1.2).

Graph I.1.2: **Projection of total fertility rates, 2019-2070 (number of births per woman)**



Source: Eurostat, 2019-based population projections.

1.1.2. Life expectancy

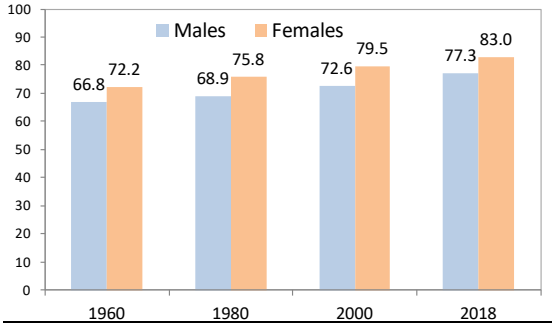
Eurostat's demographic projections show continued increases in life expectancy both at birth and at the age of 65 for both males and females over the period 2019-2070. For the EU as a whole, life expectancy at birth would increase by 7.4 years for males and by 6.1 years for females, with the largest increases in Member States that currently have the lowest life expectancy.

Past trends

Life expectancy has increased in most developed countries since 1960, with some convergence between men and women. In the EU, life expectancy at birth increased by more than 10 years between 1960 and 2018, reaching 77.3 years for males and 83 years for females in 2018 (see Graph I.1.3). The gap between female and male life expectancies has diminished since 2000 in the EU, as life expectancy has improved faster for males than for females.

There is no consensus among demographers on very long-term trends in life expectancy. This will depend in particular on whether there is a natural biological limit to longevity, the impact of future medical breakthroughs, and the long-term effect of public health programmes and societal behaviour such as the reduction of smoking rates or a higher prevalence of obesity. However, it is noteworthy that past population projections have generally underestimated the gains in life expectancy at birth, which may have led to underestimate the budgetary impact of ageing populations in some cases.

Graph I.1.3: **Life expectancy at birth in the EU, 1960-2018 (in years)**



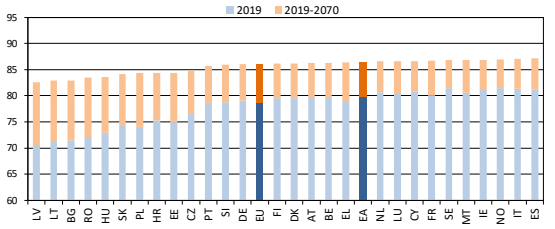
Note: Simple averages.
Source: Commission services based on Eurostat data.

Most official demographic projections nevertheless still assume that gains in life expectancy at birth will slow down. This is because mortality rates at younger ages are already very low and future gains in life expectancy would require improvements in mortality rates at older ages, which statistically have a smaller impact on life expectancy at birth. On the other hand, the current wide range of life expectancies, both across EU Member States and compared with other countries, points to considerable scope for future gains. In 2018, life expectancy at birth ranged from 78.6 years in Bulgaria to 86.3 years in Spain for females, and from 70.1 years in Latvia to 81.2 years in Italy for males.

Eurostat's latest projections

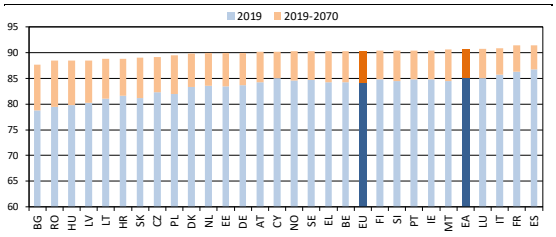
The projections assume sustained increases in life expectancy from 2019 to 2070, albeit at different speeds across Member States, in line with the partial convergence approach. In the EU as whole, life expectancy is expected to

Graph I.1.4: **Projection of life expectancy at birth, males (in years), 2019-2070**



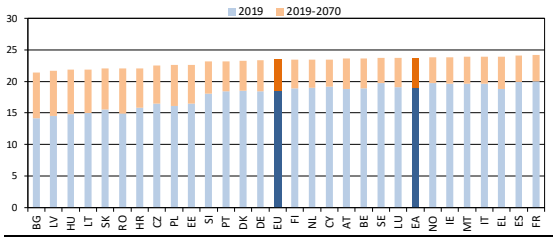
Source: Eurostat, 2019-based population projections.

Graph I.1.5: **Projection of life expectancy at birth, females (in years), 2019-2070**



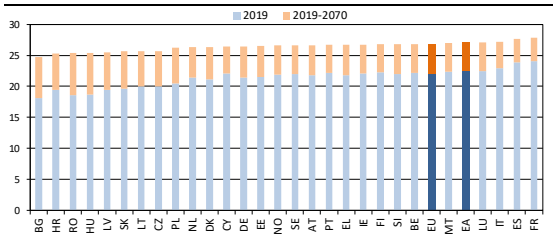
Source: Eurostat, 2019-based population projections.

Graph I.1.6: **Projection of life expectancy at 65, males (in years), 2019-2070**



Source: Eurostat, 2019-based population projections.

Graph I.1.7: **Projection of life expectancy at 65, females (in years), 2019-2070**



Source: Eurostat, 2019-based population projections.

increase for both males and females, with a narrowing gender gap. For males, life expectancy at birth is expected to increase by 7.4 years, from 78.7 in 2019 to 86.1 in 2070, while for females it would rise by 6.1 years, from 84.2 in 2019 to 90.3 in 2070. When looking at the remaining life expectancy at the age of 65, however, the reduction in the gender gap is more limited: the projected gains in life expectancy are of 5.1 years for males and 4.8 years for females, on average in the EU (see Graphs I.1.4 to I.1.7).

The Member States that currently have the lowest life expectancies at birth are expected to record the largest increases, partially catching up with the rest of the EU. For males, in 2019, life expectancy ranged between 70 and 75 years in Bulgaria, Estonia, Latvia, Lithuania, Hungary, Poland, Romania and Slovakia. It is expected to increase by 9 to 12 years by 2070 in these countries (see Graph I.1.4). For females, life expectancy was around 80 years in 2019 in Bulgaria, Latvia, Hungary and Romania. Gains of 8 to 9 years are expected by 2070 in these countries (see Graph I.1.5). As a result, the difference between the countries with the highest and lowest life expectancy would narrow from 10.8 years in 2019 to 4.5 years in 2070 for men and from 8 to 3.7 years for women.

The catch-up is also visible in the projections for life expectancy at 65. In 2019, in five countries (Bulgaria, Latvia, Lithuania, Hungary and Romania), the remaining life expectancy of males at 65 was 15 years or less, against more than 18 years in the whole EU. By 2070, life expectancy at 65 is expected to increase by around 7 years in these countries (see Graph I.1.6). For females, gains of 6 to 7 years are projected in Bulgaria, Latvia, Hungary, Romania and Slovakia, where in 2019 female life expectancy at 65 was less than 20 years, below the EU average of 22 years (see Graph I.1.7).

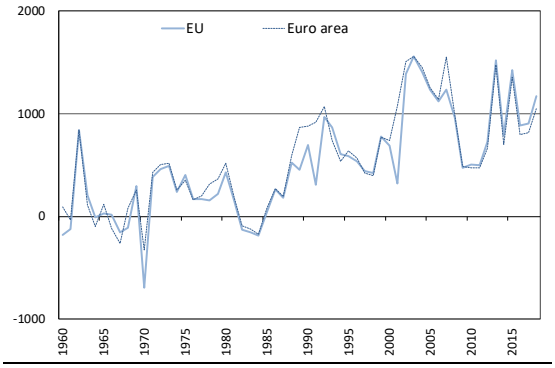
1.1.3. Net migration flows

Because of high historical volatility over time and between countries, assumptions on migration are methodologically the most difficult aspect when preparing demographic projections. On the basis of the latest projections, annual net migration inflows into the EU are expected to decrease from about 1.3 million people in 2019 (0.3% of the EU population) to around 1 million people (0.2%) during most of the projection period.

Past trends

Net migration inflows to the EU ([27]) have increased considerably over the last 50 years, albeit with fluctuations (see Graph I.1.8). From 1960 through the mid-1980s, net migration was mostly positive, with annual net inflows averaging around 118 000, though certain years saw large net outflows. Since 1985, annual net migration into the EU has been consistently positive. Despite high volatility, it rose significantly: annual net entries averaged 622 000 people in 1990-1999 and around 1.1 million in 2000-2008. Following a slowdown to around 500 000 people in 2009-2011 in the wake of the global economic crisis, net migration started to rise again, peaking at more than 1.5 million in 2013 – notably reflecting record inflows in Italy due to the statistical adjustment linked to the post-2011 census corrections (+ 966 000). In 2015, several Member States saw large inflows because of instability in North Africa and the Middle East, and net inflows surpassed 1 million people in 2018.

Graph I.1.8: **Net migration flows, 1960-2018 (thousands)**



Source: Eurostat.

Eurostat's latest projections

Eurostat's models to project immigration and emigration ensure intra-EU flow consistency and are built around three modules. For 2019, they use a nowcast component based on the latest empirical evidence. For the medium term, they extrapolate trends observed in recent years. Finally, the long-term projections use a partial convergence module. Moreover, for all years in which the population aged 15-64 is projected to shrink, a 'feedback' correction factor triggers additional non-EU immigration amounting to 10% of the projected decline in the working-age population ([28]).

Table I.1.1: **Projection of net migration flows, 2019-2070**

	Net migration ('000)				Net migration (% of population)				
	2019	2030	2050	2070	2019	2030	2050	2070	2019-70 (1)
BE	45	20	20	21	0.4	0.2	0.2	0.2	9.7
BG	-4	1	6	10	-0.1	0.0	0.1	0.2	2.9
CZ	44	16	17	18	0.4	0.2	0.2	0.2	9.2
DK	-2	12	11	11	0.0	0.2	0.2	0.2	9.9
DE	277	248	227	214	0.3	0.3	0.3	0.3	14.9
EE	7	2	2	3	0.5	0.1	0.2	0.2	8.7
IE	33	19	14	10	0.7	0.3	0.2	0.2	18.0
EL	14	12	21	26	0.1	0.1	0.2	0.3	8.7
ES	439	185	179	169	0.9	0.4	0.4	0.4	21.3
FR	38	68	75	80	0.1	0.1	0.1	0.1	5.6
HR	-4	-1	3	6	-0.1	0.0	0.1	0.2	1.7
IT	135	224	214	207	0.2	0.4	0.4	0.4	18.3
CY	8	3	3	2	0.9	0.4	0.3	0.2	18.3
LV	-4	-7	-2	1	-0.2	-0.4	-0.2	0.1	-10.1
LT	10	-10	-2	3	0.4	-0.4	-0.1	0.1	-6.0
LU	10	4	3	3	1.6	0.6	0.4	0.3	30.3
HU	36	24	23	24	0.4	0.2	0.3	0.3	12.7
MT	13	6	5	4	2.6	1.0	0.7	0.5	57.4
NL	105	33	33	33	0.6	0.2	0.2	0.2	11.0
AT	44	31	27	25	0.5	0.3	0.3	0.3	16.7
PL	3	25	48	72	0.0	0.1	0.1	0.2	5.8
PT	40	10	14	19	0.4	0.1	0.2	0.2	7.4
RO	-74	-40	-2	21	-0.4	-0.2	0.0	0.2	-4.4
SI	16	5	5	5	0.8	0.2	0.2	0.3	13.4
SK	3	5	5	7	0.1	0.1	0.1	0.2	5.1
FI	18	11	12	13	0.3	0.2	0.2	0.3	11.6
SE	67	52	40	30	0.6	0.5	0.3	0.2	22.5
NO	25	27	25	23	0.5	0.5	0.4	0.3	24.9
EA	1250	871	856	844	0.4	0.3	0.2	0.3	13.4
EU	1318	960	1001	1037	0.3	0.2	0.2	0.2	11.8

(1) Cumulative net migration in 2019-2070 as % of population in 2070.
Source: Eurostat, 2019-based population projections.

For the EU as a whole, net inflows are projected to decrease from about 1.3 million people in 2019 (0.3% of the EU population) to around 1 million per year as of the mid-2020s (0.2% of the EU population). In cumulative terms, net migration in the period up to 2070 would amount to 52.6 million people, equivalent to almost 12% of the 2019 EU population (see Table I.1.1).

([27]) Due to difficulties in producing good statistics on migration flows for all Member States, net migration is measured as the difference between the total population stocks on 31 December and 1 January for a given calendar year, minus the natural increase (the difference between births and deaths). This method is different from the approach of subtracting recorded emigration flows from immigration flows, which not only incorporates errors due to the difficulty of registering migration flows, but also includes all possible errors and adjustments in other demographic variables.

([28]) See Box I.1.1 in EC-EPC (2020) for more details on the methodology underpinning Eurostat's net migration projections in EUROPOP2019, which are used in this report. Note that, over the medium term, GDP projections are based on the EPC's Output Gap Working Group T+10 projections, as of the Commission 2020 spring forecast, which were based on EUROPOP2018 (the latest one available at the time). The latter used a conceptually different model for net migration.

Migration dynamics differ across countries. The countries expected to record the highest cumulative net migration as a share of population are Spain, Luxembourg, Malta, Sweden and Norway, with cumulative inflows of at least 20% of their 2019 population over the projection period. Net migration is assumed to turn positive in all countries during the projection period. Cumulative net migration in 2019-2070 would nevertheless be negative for Latvia, Lithuania and Romania, as in these countries, net migration flows are projected to remain negative until 2064, 2056 and 2051, respectively.

1.2. OVERALL RESULTS OF THE POPULATION PROJECTIONS

1.2.1. Main results

The EU population is projected to decline from 447 million people in 2019 to 424 million in 2070. During this period, Member States' population will age dramatically given the dynamics in fertility, life expectancy and migration. The median age would rise by five years over the next decades.

According to the baseline demographic projections, the EU population will reach a peak during the next decade. It would rise from about 447 million people in 2019 to a peak of slightly over 449 million people in 2026 (see Table I.1.2). After that, the population would start to shrink, falling back to 424 million in 2070. This is a decline by 5% compared to the base year level, most of which would take place in the second half of the projection period.

The overall downward trend masks somewhat heterogeneous developments at the country level. For 10 Member States and Norway, the total population would increase between 2019 and 2070, while 17 Member States would see the number of their inhabitants shrink. The sharpest declines are expected in Latvia, Lithuania, Romania, Bulgaria and Croatia, with falls ranging from 25% to 38%. Declines by nearly 20% are projected in Greece, Poland and Portugal, where the population is expected to dwindle steadily throughout the projection period. Among the countries with rising population between 2019 and 2070, Cyprus, Luxembourg, Sweden, Ireland and Malta would see their inhabitants increase by 25% to 41%, mainly in the first part of the projection period. In Belgium, Spain, France, the Netherlands and Austria, the initial population increase would be mitigated in the second half of the projection period.

Table I.1.2: **Total population projections, 2019-2070**

	Total population (annual average - millions)						% change
	2019	2030	2040	2050	2060	2070	2019-70
BE	11.5	11.8	11.9	11.9	11.9	11.8	3.1
BG	7.0	6.4	6.0	5.6	5.3	5.0	-27.8
CZ	10.7	10.8	10.6	10.5	10.4	10.2	-4.4
DK	5.8	6.0	6.1	6.1	6.1	6.2	6.0
DE	83.1	83.4	83.2	82.6	81.8	81.7	-1.6
EE	1.3	1.3	1.3	1.3	1.2	1.2	-10.2
IE	4.9	5.5	5.9	6.2	6.4	6.5	31.7
EL	10.7	10.3	9.9	9.5	9.0	8.6	-19.8
ES	47.1	48.8	49.4	49.3	48.3	47.0	-0.2
FR	67.1	68.8	69.8	70.0	69.7	69.4	3.5
HR	4.1	3.8	3.6	3.4	3.2	3.0	-25.5
IT	60.3	59.9	59.3	58.0	55.9	53.9	-10.7
CY	0.9	1.0	1.0	1.0	1.1	1.1	24.7
LV	1.9	1.7	1.5	1.4	1.3	1.2	-38.4
LT	2.8	2.6	2.3	2.1	2.0	1.8	-34.8
LU	0.6	0.7	0.7	0.8	0.8	0.8	27.0
HU	9.8	9.6	9.4	9.3	9.1	8.9	-8.7
MT	0.5	0.6	0.6	0.7	0.7	0.7	41.4
NL	17.3	18.0	18.2	18.1	18.0	18.0	3.7
AT	8.9	9.2	9.3	9.3	9.3	9.2	4.1
PL	38.0	37.0	35.6	34.0	32.4	30.8	-18.8
PT	10.3	10.1	9.8	9.4	8.9	8.5	-17.7
RO	19.3	17.7	16.5	15.5	14.5	13.7	-29.4
SI	2.1	2.1	2.1	2.0	2.0	1.9	-7.3
SK	5.5	5.4	5.3	5.1	4.9	4.7	-13.6
FI	5.5	5.5	5.4	5.3	5.1	5.0	-8.9
SE	10.3	11.1	11.7	12.3	12.7	13.1	27.3
NO	5.3	5.8	6.1	6.4	6.6	6.7	25.6
EA	342	347	347	344	338	333	-2.7
EU	447	449	447	441	432	424	-5.2

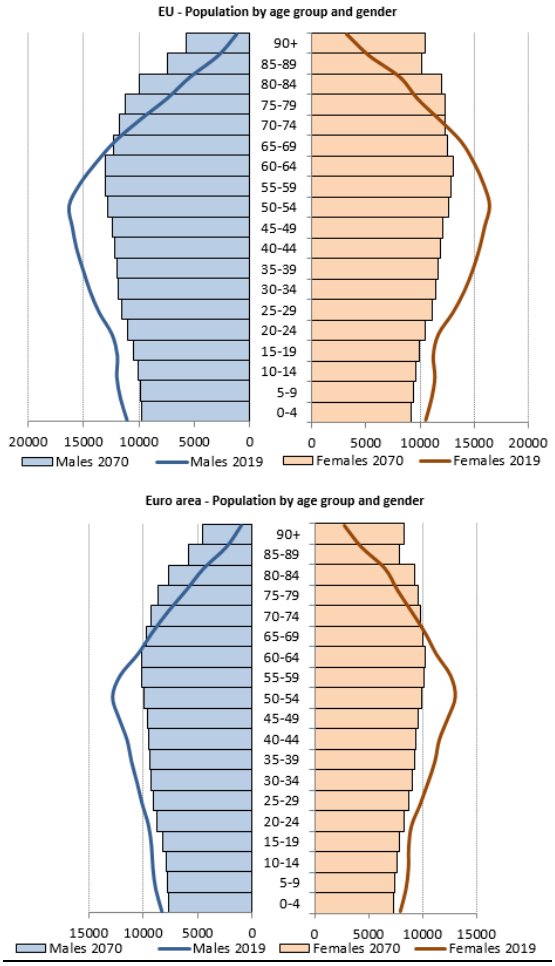
Source: Eurostat, 2019-based population projections

The ranking of most populous EU countries is not expected to change. In 2019, Germany (83.1 million people) was the Member State with the largest population, followed by France (67.1 million), Italy (60.3 million), Spain (47.1 million) and Poland (38 million). In 2070, this order would remain the same despite the reduction of population projected in Germany, Italy and Poland, and population growth in France.

The age structure of the population is expected to change significantly. A strong upward shift in the age distribution can be seen in the population pyramids for the EU and the euro area in Graph I.1.9. For both genders, the share of the older age cohorts in the population (above 64 for males and above 70 for females) is expected to be higher in 2070 than in 2019. Conversely, the share

of males aged 0-64 and females aged 0-69 will decline. Moreover, the largest cohort will shift from 50-54 years in 2019 to 60-64 years in 2070 for both genders. Over the same period, the median age will rise from 43.7 to 48.8 years – specifically, from 42.2 to 47.3 for men and from 45.2 to 50.3 for women.

Graph I.1.9: **Population by age group and gender, 2019-2070 (thousands)**



Source: Eurostat, 2019-based population projection.

These trends have three main drivers. First, the increasing share of the population in the higher age cohorts is due to the combination of the large cohorts born in the 1950s and 1960s and continuing gains in life expectancy. Second, the size of the groups aged 25-59 will shrink significantly between 2019 and 2070, as fertility rates will remain below the natural replacement rate and cohorts of women in childbearing ages dwindle. Finally, the projected net migration flows would not suffice to offset the ageing trend in the population.

As a result of ageing, the working-age population is projected to shrink as a share of the total EU population. From 2019 to 2070, the share of the age cohorts above 65 years in the EU population is expected to rise markedly from 20% to 30%, with the share of those aged 80 and over doubling from 6% to 13% (see Table I.1.3). By contrast, the share of the age group 20-64, namely the working-age population, would fall from 59% to 51% of the total population. The share of those aged 0-19 would also shrink by nearly 2 pps, to 19%.

Because of the demographic shift from younger to older age groups, demographic dependency ratios are projected to increase significantly:

– The *old-age dependency ratio (OADR)*, measuring the people aged 65 and above relative to those aged 20-64 and hence gauging how demographic ageing may in part alter the beneficiary-contributor balance of pension systems, is projected to increase from 34% in 2019 to 59% in 2070 for the EU as a whole (see Table I.1.4). This means that, for every elderly person, the EU would move from having nearly three (2.9) working-age people to less than two (1.7).

– Much of the increase in the OADR is driven by a surge in the *very-old-age dependency ratio*, i.e. the people aged 80 and above relative to those aged 20-64, from 10% to 25.7%.

– The *total dependency ratio* is also projected to rise, from 69% in 2019 to 95% in 2070 in the EU. This is the ratio of the theoretically inactive population (people younger than 20 or older than 64) to the population aged 20-64.

Although old-age dependency ratios are set to rise in all countries, the magnitude of the increase differs significantly across the EU. The projected rise in the OADR is particularly acute in Spain, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania and Slovakia, with increases of at least 30 pps. Broadly the same countries will face the largest increases in the two other

Table I.1.3: **Breakdown of the population by age groups, 2019 and 2070**

	2019				2070			
	(0-19)	(20-64)	(65+)	(80+)	(0-19)	(20-64)	(65+)	(80+)
BE	22.4%	58.6%	19.0%	5.7%	19.5%	52.5%	28.0%	11.7%
BG	18.9%	59.6%	21.5%	4.9%	18.2%	50.8%	30.9%	14.0%
CZ	20.4%	59.8%	19.8%	4.1%	20.0%	52.1%	27.9%	12.6%
DK	22.4%	57.9%	19.7%	4.6%	20.7%	51.6%	27.7%	10.9%
DE	18.4%	59.9%	21.7%	6.7%	19.5%	52.1%	28.4%	11.9%
EE	21.1%	59.0%	19.9%	5.7%	18.2%	51.3%	30.5%	13.9%
IE	26.9%	58.8%	14.3%	3.4%	20.6%	51.9%	27.5%	11.5%
EL	19.4%	58.4%	22.2%	7.2%	16.9%	50.3%	32.8%	15.2%
ES	19.7%	60.8%	19.5%	6.1%	16.8%	51.2%	32.0%	14.6%
FR	24.1%	55.6%	20.3%	6.2%	20.8%	50.5%	28.7%	12.6%
HR	19.3%	59.8%	20.8%	5.4%	16.7%	50.6%	32.7%	13.5%
IT	17.9%	59.1%	23.0%	7.3%	15.8%	50.8%	33.3%	14.5%
CY	21.6%	62.1%	16.2%	3.7%	19.4%	53.5%	27.1%	10.5%
LV	20.6%	59.0%	20.4%	5.7%	18.3%	50.0%	31.8%	14.9%
LT	19.9%	60.2%	19.8%	5.8%	17.3%	49.8%	32.9%	14.3%
LU	21.4%	64.2%	14.5%	4.0%	17.5%	52.9%	29.7%	12.3%
HU	19.6%	60.8%	19.6%	4.5%	18.7%	51.7%	29.6%	12.2%
MT	18.1%	63.1%	18.7%	4.3%	15.6%	52.0%	32.4%	13.2%
NL	21.8%	58.8%	19.3%	4.7%	19.7%	51.8%	28.6%	11.3%
AT	19.4%	61.7%	18.9%	5.2%	18.4%	52.3%	29.3%	12.2%
PL	20.1%	61.9%	17.9%	4.4%	15.9%	50.1%	34.0%	15.7%
PT	19.0%	59.0%	22.0%	6.5%	17.7%	49.2%	33.1%	14.7%
RO	21.0%	60.2%	18.7%	4.7%	17.8%	50.7%	31.5%	14.3%
SI	19.6%	60.4%	20.0%	5.4%	17.8%	51.8%	30.4%	13.8%
SK	20.6%	63.1%	16.3%	3.3%	18.1%	50.2%	31.7%	14.6%
FI	21.2%	56.7%	22.1%	5.6%	16.5%	51.4%	32.1%	13.4%
SE	23.3%	56.8%	20.0%	5.2%	20.9%	52.8%	26.3%	10.6%
NO	23.4%	59.2%	17.4%	4.3%	19.2%	53.0%	27.8%	10.9%
EA	20.3%	58.9%	20.8%	6.3%	18.6%	51.2%	30.2%	13.1%
EU	20.3%	59.3%	20.4%	5.9%	18.5%	51.2%	30.3%	13.2%

Source: Eurostat, 2019-based population projections.

Table I.1.4: **Demographic dependency ratios, 2019-2070 (%)**

	Old-age dependency ratio (65+/20-64)				*Very-old-age dependency ratio (80+/20-64)*				*Total dependency ratio ((0-19 & 65+)/20-64)*			
	2019	2045	2070	2019-2070 (pps change)	2019	2045	2070	2019-2070 (pps change)	2019	2045	2070	2019-2070 (pps change)
BE	32.5	47.7	53.3	20.8	9.7	17.8	22.2	12.5	70.8	84.8	90.5	19.8
BG	36.0	55.8	60.8	24.8	8.1	16.9	27.5	19.4	67.7	89.8	96.7	29.0
CZ	33.0	51.3	53.7	20.6	6.8	15.5	24.1	17.3	67.1	88.1	92.1	25.0
DK	34.1	48.2	53.8	19.7	8.0	17.2	21.1	13.2	72.7	88.3	94.0	21.3
DE	36.1	52.2	54.6	18.5	11.1	20.3	22.9	11.8	66.9	87.1	92.1	25.2
EE	33.8	49.5	59.4	25.6	9.7	17.5	27.0	17.3	69.5	83.3	94.9	25.4
IE	24.2	42.2	53.0	28.7	5.8	13.3	22.2	16.4	70.0	82.6	92.6	22.7
EL	37.9	64.0	65.2	27.3	12.2	22.7	30.3	18.0	71.1	96.3	98.7	27.6
ES	32.1	61.2	62.5	30.5	10.0	21.1	28.5	18.5	64.4	93.1	95.3	30.9
FR	36.5	53.1	56.9	20.4	11.1	20.8	25.0	13.9	79.8	95.1	98.1	18.3
HR	34.8	53.7	64.6	29.8	9.0	18.7	26.7	17.7	67.1	85.0	97.5	30.4
IT	38.9	65.4	65.6	26.7	12.3	23.7	28.5	16.2	69.2	95.8	96.8	27.6
CY	26.2	36.7	50.7	24.6	6.0	13.4	19.6	13.7	61.0	71.4	86.9	26.0
LV	34.6	57.4	63.6	29.0	9.7	20.6	29.9	20.2	69.5	92.0	100.2	30.7
LT	32.9	58.9	66.0	33.1	9.7	21.5	28.7	19.0	66.0	91.5	100.8	34.8
LU	22.6	41.6	56.1	33.6	6.2	13.4	23.3	17.1	55.9	72.9	89.2	33.4
HU	32.2	49.6	57.4	25.1	7.3	14.4	23.5	16.2	64.4	84.1	93.6	29.2
MT	29.7	39.3	62.4	32.7	6.8	13.7	25.4	18.7	58.5	65.7	92.3	33.9
NL	32.9	49.3	55.2	22.4	7.9	18.5	21.7	13.8	69.9	87.0	93.2	23.2
AT	30.7	49.5	55.9	25.2	8.4	18.1	23.3	14.9	62.1	82.8	91.1	29.0
PL	29.0	49.5	67.8	38.8	7.1	17.2	31.4	24.3	61.5	78.6	99.5	38.0
PT	37.3	65.9	67.3	30.0	11.0	23.4	30.0	19.0	69.4	100.7	103.3	33.9
RO	31.1	55.6	62.1	31.0	7.8	15.9	28.2	20.4	66.0	89.6	97.1	31.1
SI	33.2	55.9	58.8	25.5	8.9	19.8	26.7	17.8	65.7	88.9	93.2	27.5
SK	25.9	49.9	63.1	37.2	5.3	15.5	29.1	23.8	58.5	82.8	99.1	40.6
FI	38.9	49.9	62.5	23.6	9.8	19.8	26.1	16.2	76.4	81.7	94.7	18.3
SE	35.2	41.8	49.8	14.6	9.1	14.8	20.1	11.0	76.2	81.3	89.4	13.2
NO	29.4	42.6	52.4	23.0	7.2	14.7	20.6	13.4	69.0	78.8	88.6	19.6
EA	35.3	55.8	58.9	23.6	10.6	20.7	25.5	14.9	69.7	91.1	95.2	25.5
EU	34.4	54.6	59.2	24.7	9.9	19.7	25.7	15.8	68.8	89.4	95.3	26.5

Source: Commission services, Eurostat 2019-based population projections.

dependency ratios, namely the very-old-age dependency ratio and the total dependency ratio. In 2070, the OADR would surpass 65% in five countries (Greece, Italy, Lithuania, Poland and Portugal), but stay below 55% in seven countries (Belgium, Czechia, Denmark, Germany, Ireland, Cyprus and Sweden). Finally, the total dependency ratio is expected to exceed 100% by 2070 in Latvia, Lithuania and Portugal, while it will staybelow 90% in Cyprus, Luxembourg, Sweden and Norway.

1.2.2. Comparison with the 2018 Ageing Report

In 2070, the EU would count 15.2 million people less than assumed in the 2018 Ageing Report. This is due to lower projections for people aged less than 65 years, with the upward revision in net migration insufficient to offset the downward revision in the average fertility rate. As a result, the new demographic projections entail a larger increase in the old-age dependency ratio between 2019 and 2070.

This section describes the differences between Eurostat's latest demographic projections, EUROPOP2019, and those underlying the 2018 Ageing Report, ESSPOP2015. It starts with the revisions in the key drivers – fertility, life expectancy and net migration – for which Table I.1.6 presents an overview. It then discusses the implications for the population and OADR projections, as summarised in Table I.1.5.

The fertility rates are slightly lower in the latest projections than in those underpinning the 2018 Ageing Report. The difference amounts to 0.1 live births per woman on average. This reflects both a lower fertility rate for 2019 than assumed in 2018 and a lower anchor point for long-term convergence. For fertility rates in 2070, downward revisions are the largest for Spain (-0.4 live births per woman), followed by Malta and Finland (-0.3).

The assumptions for life expectancy at birth in the EU as a whole remained unchanged between the two projections, regarding both the level in 2019 and the expected gain by 2070. This is the case for both genders. At the individual country level, there were small revisions, in most cases not exceeding one year (see Table I.1.6).

From 2019 to 2070, cumulative net migration in the EU is expected to be about 7 million people higher than in the ESSPOP2015 projections. This represents about 1½% of the projected EU population. For most countries, the new projections entail an upward revision (see Table I.1.6), although some large downward revisions are seen for some countries (in particular, Luxembourg, and to a lower extent Belgium, Denmark, Latvia and Austria).

Table I.1.5: **2018 and 2021 Ageing Reports: Population and dependency ratio projections**

	2021 Ageing Report - 2018 Ageing Report					
	Total population (thousands)			Old-age dependency ratio (pps)		
	2019	2070	Difference in 2070 as % of 2070 population (ESSPOP2015)	2019	2070	pps change 2019-2070
BE	-63	-2070	-14.9%	0.0	3.5	3.5
BG	-6	178	3.7%	-0.2	-1.0	-0.8
CZ	31	236	2.4%	-0.3	-1.2	-0.9
DK	-56	-673	-9.9%	0.3	-1.6	-1.8
DE	-555	2488	3.1%	0.1	-6.7	-6.8
EE	10	16	1.4%	-0.2	1.4	1.6
IE	105	458	7.6%	-0.8	7.0	7.8
EL	120	925	12.1%	-0.4	-3.5	-3.1
ES	585	-2813	-5.6%	-0.9	11.0	11.8
FR	-572	-7604	-9.9%	0.3	7.2	6.9
HR	-34	-368	-10.8%	0.3	3.3	3.0
IT	-406	-986	-1.8%	0.1	0.1	0.0
CY	15	80	7.8%	0.1	-14.8	-14.9
LV	-5	-161	-12.0%	-0.3	3.6	3.9
LT	27	101	5.9%	-0.6	7.2	7.8
LU	-2	-250	-24.1%	-0.6	2.6	3.2
HU	-21	46	0.5%	-0.4	0.0	0.4
MT	50	186	35.8%	-4.8	0.9	5.7
NL	-14	-1561	-8.0%	-0.2	1.9	2.1
AT	-85	-922	-9.1%	0.2	-3.7	-3.9
PL	11	-58	-0.2%	-0.3	-0.5	-0.2
PT	57	479	6.0%	0.0	-5.6	-5.6
RO	30	-1333	-8.9%	0.0	3.7	3.7
SI	14	-19	-1.0%	-0.4	3.5	3.9
SK	-1	-186	-3.8%	0.1	0.6	0.5
FI	-30	-592	-10.5%	0.0	5.3	5.3
SE	34	-788	-5.7%	-0.3	1.8	2.1
NO	-32	-297	-4.2%	0.2	0.4	0.2
EA	-751	-12430	-3.6%	-0.1	2.0	2.1
EU	-762	-15190	-3.5%	-0.1	1.7	1.8

Source: Commission services and Eurostat, EUROPOP2019 and ESSPOP2015.

The revisions in demographic assumptions weigh on the total EU population projections. The lower fertility rates than in ESSPOP2015 imply fewer births and therefore lower projections for people aged less than 65 years. This is only partially offset by the upward revision in net migration. Developments for broad age groups show that in 2070, the 0-19 and 20-64 age brackets are on average projected to be 11% and 3% smaller, respectively, than in ESSPOP2015.

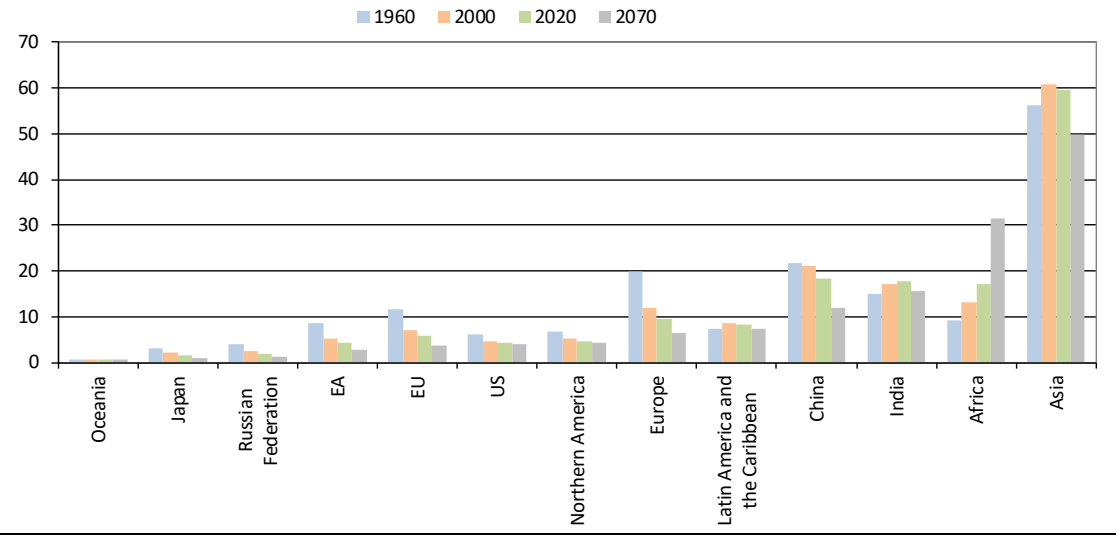
Table I.1.6: **Demographic assumptions in the 2021 and 2018 Ageing Reports, 2019-2070**

	Projection exercise 2021 Ageing Report												2021 AR - 2018 AR (2019-70)										
	Fertility rate (live births/woman)			Life expectancy at birth (y)						Net migration ('000)			Fertility rate (live births/woman)			Life expectancy at birth (y)						Net migration ('000)			
				Males			Females									Males			Females						
	2019	2070	change 2019-70	2019	2070	change 2019-70	2019	2070	change 2019-70	2019	2070	cum. change 2019-70 (1)	2019	2070	change 2019-70	2019	2070	change 2019-70	2019	2070	change 2019-70	2019	2070	cum. change 2019-70 (2)	
BE	1.58	1.68	0.10	79.8	86.3	6.5	84.3	90.3	6.0	45.0	20.5	9.7%	-0.15	-0.14	0.01	0.5	0.1	-0.4	0.1	0.1	0.0	-9.2	-5.7	-6.5%	BE
BG	1.58	1.71	0.13	71.5	82.9	11.4	78.8	87.7	8.9	-3.9	10.0	2.9%	-0.03	-0.09	-0.05	-0.9	-0.4	0.5	-0.2	-0.1	0.1	7.7	8.7	6.4%	BG
CZ	1.71	1.78	0.07	76.5	84.8	8.3	82.3	89.2	6.9	44.2	18.2	9.2%	0.04	-0.04	-0.08	-0.1	-0.1	0.0	-0.2	-0.1	0.1	21.9	9.6	2.1%	CZ
DK	1.72	1.77	0.05	79.5	86.1	6.6	83.3	89.8	6.5	-1.6	11.0	9.9%	0.01	-0.04	-0.06	0.2	0.0	-0.2	-0.1	-0.2	-0.1	-36.4	1.7	-5.4%	DK
DE	1.53	1.67	0.13	79.1	86.0	6.9	83.7	89.9	6.2	277.4	214.2	14.9%	0.04	-0.01	-0.05	-0.1	-0.1	0.0	-0.3	-0.2	0.1	-107.8	70.7	1.2%	DE
EE	1.51	1.70	0.18	74.9	84.3	9.4	83.4	89.9	6.5	6.6	2.6	8.7%	-0.14	-0.12	0.02	1.3	0.4	-0.9	1.0	0.4	-0.6	4.0	2.3	5.5%	EE
IE	1.78	1.81	0.02	81.1	86.8	5.7	84.8	90.4	5.6	32.7	10.5	18.0%	-0.18	-0.16	0.02	1.1	0.4	-0.7	0.8	0.1	-0.7	21.7	-0.4	5.4%	IE
EL	1.34	1.54	0.20	79.0	86.4	7.4	84.3	90.3	6.0	13.7	26.0	8.7%	0.01	-0.11	-0.11	-0.4	-0.1	0.3	-0.1	0.0	0.1	33.6	15.0	9.1%	EL
ES	1.27	1.49	0.22	81.2	87.1	5.9	86.8	91.4	4.6	438.5	169.0	21.3%	-0.27	-0.39	-0.13	0.4	0.2	-0.2	0.6	0.2	-0.4	399.4	32.2	5.8%	ES
FR	1.85	1.84	-0.01	80.1	86.7	6.6	86.3	91.4	5.1	38.1	80.2	5.6%	-0.16	-0.14	0.01	0.1	0.1	0.0	0.3	0.3	0.0	-35.1	24.9	0.0%	FR
HR	1.43	1.59	0.16	75.3	84.3	9.0	81.6	88.8	7.2	-3.8	6.0	1.7%	-0.04	-0.06	-0.03	-0.3	-0.1	0.2	0.0	-0.1	-0.1	0.4	1.5	-4.5%	HR
IT	1.31	1.52	0.21	81.3	87.0	5.7	85.7	90.9	5.2	134.7	206.6	18.3%	-0.05	-0.14	-0.09	0.2	0.1	-0.1	0.0	0.0	0.0	-19.9	42.8	2.0%	IT
CY	1.33	1.53	0.20	80.8	86.6	5.8	85.1	90.2	5.1	7.8	2.3	18.3%	-0.01	-0.09	-0.08	-0.5	-0.4	0.1	0.2	0.0	-0.2	6.4	-1.5	-3.1%	CY
LV	1.58	1.71	0.13	70.6	82.6	12.0	80.2	88.5	8.3	-3.9	0.7	-10.1%	-0.25	-0.16	0.09	0.2	-0.1	-0.3	0.0	-0.1	-0.1	3.8	0.6	-6.0%	LV
LT	1.61	1.70	0.09	71.3	82.9	11.6	81.1	88.8	7.7	10.1	2.6	-6.0%	-0.09	-0.13	-0.04	0.7	0.1	-0.6	0.3	0.0	-0.3	34.0	2.6	11.6%	LT
LU	1.34	1.56	0.22	80.3	86.6	6.3	85.0	90.8	5.8	10.2	2.5	30.3%	-0.19	-0.13	0.06	0.4	0.2	-0.2	-0.2	-0.1	0.1	-0.3	-1.4	-14.7%	LU
HU	1.51	1.70	0.18	72.9	83.6	10.7	79.8	88.5	8.7	36.3	23.5	12.7%	-0.08	-0.10	-0.02	-0.6	-0.3	0.3	-0.4	-0.1	0.3	15.5	12.4	4.7%	HU
MT	1.14	1.47	0.33	80.5	86.8	6.3	84.5	90.6	6.1	12.8	3.8	57.4%	-0.38	-0.28	0.10	0.2	0.0	-0.2	-0.1	0.0	0.1	9.4	2.8	36.0%	MT
NL	1.58	1.68	0.10	80.7	86.6	5.9	83.6	89.9	6.3	105.4	33.2	11.0%	-0.15	-0.14	0.01	0.2	0.1	-0.1	-0.4	-0.2	0.2	37.1	8.7	-1.5%	NL
AT	1.45	1.60	0.15	79.8	86.3	6.5	84.3	90.2	5.9	44.3	25.5	16.7%	-0.04	-0.06	-0.02	0.1	0.0	-0.1	-0.1	0.0	0.1	-26.6	4.9	-5.4%	AT
PL	1.36	1.56	0.20	74.1	84.3	10.2	82.0	89.5	7.5	3.3	72.4	5.8%	-0.07	-0.15	-0.08	-0.6	-0.1	0.5	-0.2	0.0	0.2	13.0	65.1	5.5%	PL
PT	1.43	1.59	0.16	78.6	85.7	7.1	84.8	90.4	5.6	40.1	18.6	7.4%	0.16	0.00	-0.16	-0.2	-0.2	0.0	0.0	0.0	0.0	40.1	4.4	0.5%	PT
RO	1.65	1.74	0.10	71.9	83.5	11.6	79.5	88.5	9.0	-73.5	21.0	-4.4%	-0.06	-0.15	-0.09	-0.8	-0.1	0.7	-0.2	0.2	0.4	-9.2	18.4	0.3%	RO
SI	1.55	1.68	0.13	78.7	85.9	7.2	84.5	90.4	5.9	15.7	5.2	13.4%	-0.07	-0.13	-0.06	0.0	0.1	0.1	0.2	0.3	0.1	11.7	2.7	4.6%	SI
SK	1.56	1.67	0.11	74.4	84.1	9.7	81.2	89.0	7.8	3.4	7.4	5.1%	0.10	-0.16	-0.26	0.0	-0.1	-0.1	0.0	-0.1	-0.1	-2.4	4.1	0.2%	SK
FI	1.35	1.53	0.19	79.5	86.1	6.6	84.8	90.4	5.6	17.6	13.2	11.6%	-0.36	-0.27	0.09	0.6	0.2	-0.4	0.3	0.2	-0.1	1.5	6.5	1.8%	FI
SE	1.71	1.78	0.07	81.4	86.8	5.4	84.7	90.3	5.6	66.7	30.3	22.5%	-0.16	-0.25	-0.09	0.4	0.1	-0.3	0.0	0.0	0.0	-3.0	5.9	0.9%	SE
NO	1.53	1.65	0.12	81.4	86.9	5.5	84.6	90.3	5.7	25.3	23.4	24.9%	-0.21	-0.19	0.03	0.8	0.3	-0.5	-0.1	-0.1	0.0	-2.1	7.3	2.6%	NO
EA	1.51	1.65	0.13	79.9	86.5	6.6	85.0	90.6	5.6	1,249.9	844.5	13.4%	-0.09	-0.15	-0.06	0.1	0.0	-0.1	0.1	0.0	0.0	401.5	216.2	1.3%	EA
EU	1.52	1.65	0.14	78.7	86.1	7.4	84.2	90.3	6.1	1,317.5	1,036.8	11.8%	-0.08	-0.14	-0.06	0.0	0.0	0.0	0.0	0.0	0.0	411.2	339.5	1.6%	EU

(1) Cumulated net migration as % of total population in 2019 (EUROPOP2019).
(2) Cumulated difference as % of total population in 2019 (ESSPOP2015).

Source: Commission services and Eurostat.

Graph I.1.10: **Population of main geographic areas and selected countries as percentage of the world population**



Source: UN World population prospects, 2019.

Overall, the latest projections for the total EU population in 2070 are lower than in ESSPOP2015 by 15.2 million people (see Table I.1.5). This is 3% lower than previously envisaged. At the country level, population projections were revised downwards in 16 Member States and Norway. Among them, the downward revisions amount to at least 10% of the previous 2070 population projection in five countries (Belgium, Croatia, Latvia, Luxembourg and Finland). Upward revisions were generally smaller, with the exceptions of Greece (+12%) and Malta (+36%).

These revisions result in a higher projected increase in the OADR. For the EU as a whole, the OADR would increase by 2 pps more than envisaged in the 2018 Ageing Report. The largest upward revisions are for Spain (+12 pps), Ireland and Lithuania (+8 pps), France (+7 pps), Malta (+6 pps) and Finland (+5 pps). By contrast, projections for Germany, Cyprus and Portugal show significantly smaller increases in the OADR than assumed in the 2018 Ageing Report.

1.3. POPULATION AGEING IN THE EU IN A GLOBAL CONTEXT

The EU's share in the world population is forecast to shrink from 5.7% in 2020 to 3.7% by 2070. The projected increase in dependency ratios is comparatively high for the EU, in particular given the current demographic balance compared to 'younger' continents.

The share of EU Member States in world population has diminished since 1960. The UN population statistics and projections provide a global perspective of demographic trends ([29]). The combined share of EU Member States in the world population has halved since 1960, when the EU represented almost 12% of the world population (see Graph I.1.10). While the EU population grew by 25% over the past six decades, demographic growth was faster outside of Europe, with the global population increasing by more than 150% over the same period. The shares of China, Japan, Russia and the US in the global population have also declined compared to 1960, in contrast with the rising shares of Africa, India and Latin America.

Looking forward, the UN projections point to large shares for African and Asian populations. Given that fast population growth is expected to continue, the African continent's share in the world population would increase further, to about 32% in 2070. While staying the most populous continent, Asia's share would decline over the next five decades to around 50%. This fall is driven by

([29]) The United Nations Population Division updates its global population projections every two years. The latest projections are the 2019 UN World Population Prospects.

Table I.1.7: **Global demographic dependency ratios, 1960-2070**

	Old-age dependency ratio (65+/20-64)						*Very-old-age dependency ratio (80+/20-64)*					
	1960	2000	2020	2070	(pps change) 1960-2020	(pps change) 2020-2070	1960	2000	2020	2070	(pps change) 1960-2020	(pps change) 2020-2070
World	10.1	12.8	16.3	34.3	6.2	18.0	1.2	2.2	3.3	11.1	2.1	7.9
Africa	7.0	7.8	7.7	14.8	0.6	7.2	0.6	0.8	1.0	2.7	0.4	1.7
Asia	7.6	10.6	14.8	41.1	7.2	26.3	0.7	1.5	2.6	13.5	1.9	10.9
China	7.6	11.3	18.5	58.2	10.9	39.7	0.4	1.6	2.9	24.0	2.5	21.2
Japan	10.4	27.3	52.0	81.9	41.6	30.0	1.3	5.9	16.4	42.2	15.1	25.7
India	6.4	8.6	11.3	35.5	4.9	24.2	0.7	1.0	1.7	8.7	1.0	7.1
Europe	15.3	24.3	32.0	55.6	16.7	23.6	2.2	4.9	8.9	24.2	6.6	15.4
EU	16.7	25.7	35.2	62.5	18.5	27.3	2.4	5.4	10.2	28.0	7.8	17.7
Euro area	17.8	26.7	36.0	63.7	18.2	27.7	2.7	5.9	11.0	28.6	8.3	17.6
Russian Federation	10.5	20.4	25.3	40.1	14.8	14.8	1.5	3.3	6.3	17.2	4.9	10.9
Latin America and the Caribbean	8.1	10.9	15.2	48.0	7.1	32.7	0.9	1.9	3.2	16.9	2.3	13.7
North America	17.1	20.9	28.5	48.7	11.5	20.2	2.6	5.4	6.8	18.9	4.2	12.0
US	17.3	20.9	28.4	48.3	11.1	19.9	2.7	5.5	6.8	18.7	4.1	11.9
Oceania	14.3	17.4	22.6	36.7	8.3	14.1	2.1	3.8	5.4	13.6	3.2	8.2

Source: UN World population prospects, 2019.

China, India and Japan – in particular China, whose share would decrease by a third in 2020-2070 – with a broadly stable share of about 22% for the other Asian countries.

By contrast, by 2070, the EU's share in the global population is expected to drop to 3.7% (i.e. 2 pps below its current share). The UN projections expect the EU population to peak in 2021 before falling to 392 million people in 2070, 32 million below Eurostat's baseline ([30]). The estimated share of 3.7% in 2070 for the EU in the global population is comparable to the projected share of the US, which is expected to remain broadly stable.

Looking at the age structure in the UN projections, the EU OADR is currently already comparatively high, and should further increase in the long-term. At 35%, it is below the Japanese ratio of 52% but considerably above that of other large economies, and it has recorded a larger increase in recent decades (see Table I.1.7). Population ageing will affect the EU's dependency ratios relatively strongly compared to other continents. Globally, the UN demographic projections expect the OADR to rise by 18 pps, from 16% in 2020 to 34% in 2070. The EU ratio would increase by 27 pps, reaching 63% in 2070; these figures are comparable to Eurostat's projections (Table I.1.3). All continents are expected to see an increase in their OADR, and in the case of Asia and Latin America, this will be by a larger amount than in the EU. However, given that the current situation is generally more favourable in other regions, European Member States will on average undergo a more radical ageing process than the rest of the world, with the notable exceptions of Japan and China. Developments for the very-old age dependency ratio lead to the same conclusion.

([30]) Compared to Eurostat's projections, the UN figures also point to a larger decline (or a smaller increase) for a majority of Member States.

2. MACROECONOMIC ASSUMPTIONS

2.1. BACKGROUND

This chapter describes how the main assumptions regarding demographics, labour and productivity underpin the long-term GDP projections ([31]). To project potential GDP growth, the Ageing Report methodology uses a production function framework, ([32]) in which potential GDP has two drivers: labour input and labour productivity. Labour input is measured by the total number of hours worked; it depends on how large the working-age population is, what share of it is in employment and how many hours each person works on average. Labour productivity, defined as output per hour worked, depends on the amount of capital stock per worker and a set of technological and institutional factors grouped under total factor productivity (TFP).

The main assumptions underpinning labour input projections are presented in Section 2.2. First, participation rates – the share of the labour force in the working-age population, broken down by gender and age – are projected using a cohort simulation model developed by the European Commission ([33]). The labour supply projections are then obtained by multiplying the participation rates by the corresponding population, based on Eurostat's latest projections as described in Chapter 1. Next, the labour supply is corrected for the projected unemployment, and finally labour input is obtained by multiplying employment by average hours worked per person.

Labour productivity and GDP growth projections, as well as a comparison with the 2018 Ageing Report projections, are reported in Sections 2.3 and 2.4. These projections are based on assumptions on the long-run developments of the two determinants of labour productivity growth, namely labour-augmenting TFP growth and the growth in the capital stock per worker, also referred to as capital deepening. In particular, labour productivity is assumed to converge toward the same value at the end of the projection horizon for all Member States.

All assumptions were approved by the EPC. This includes the T+10 methodology developed by the EPC's Output Gap Working Group (OGWG). Both the T+10 projections and the long-term projections in this report are based on the *Commission 2020 spring forecast* ([34]).

2.2. LABOUR FORCE PROJECTIONS

Although labour forces largely vary across countries, some common features stand out in the EU and need to be taken into account in the projections:

– The participation rates of prime-age male workers (aged 25-54) are the highest of all groups, reaching 92% in the EU and more than 90% in nearly all countries.

– The participation rates of men aged 55-64 have risen considerably since 2000, mostly as a result of pension reforms raising the early and statutory retirement ages. Given that women's retirement conditions generally converge to those for men, there has also been a strong increase in participation rates of women of the 55-64 age bracket, although from a lower starting point.

– Female overall participation rates have steadily increased in recent decades, largely reflecting societal trends.

– The participation rates of young people (aged 20-24) have declined, mostly because more of

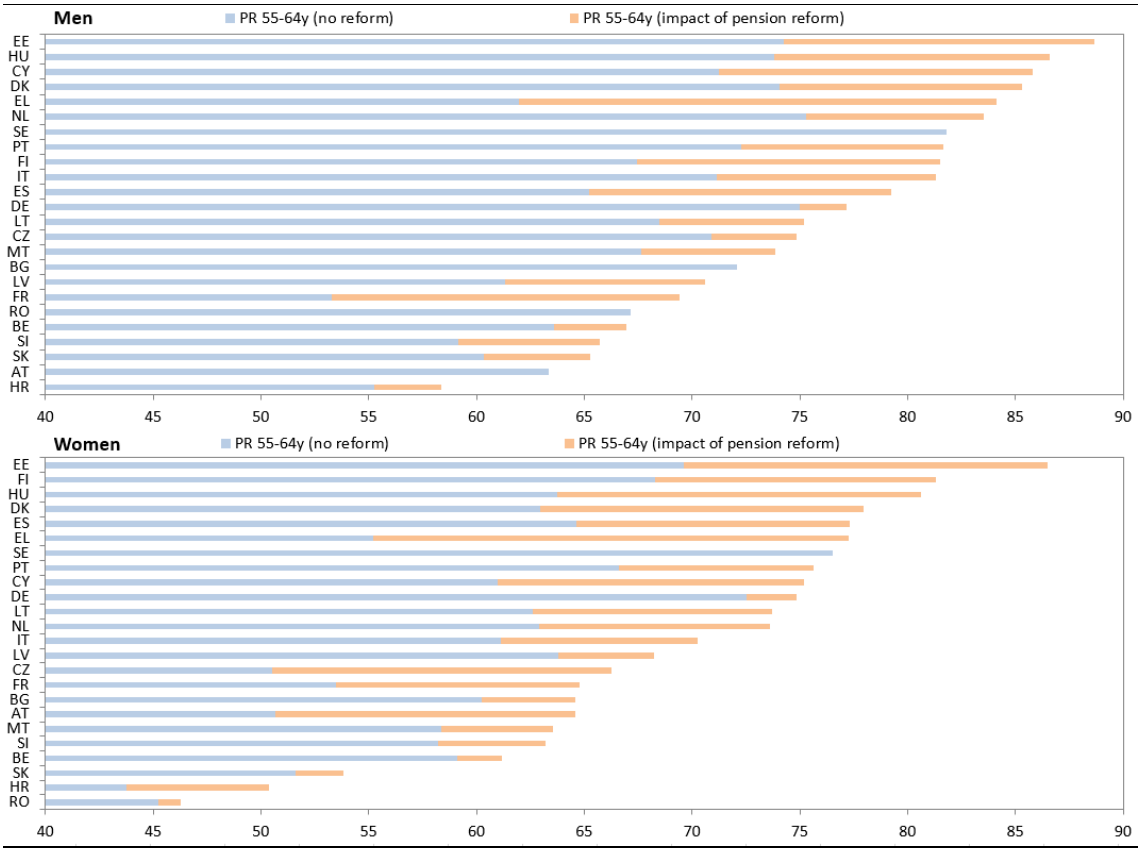
([31]) For a more detailed presentation, see Part I of EC-EPC (2020), '2021 Ageing Report: Underlying assumptions and projection methodologies'. See in particular Chapter 2 of that report for more details on the labour force projections, Chapter 3 for a detailed description of the production function framework and the key assumptions underpinning the long-term GDP projections, and Annex 3 for further details on the macroeconomic assumptions and projections. Moreover, assumptions on interest rates, which are not reported here, are described in Chapter 4 of that report.

([32]) It uses a standard specification of the Cobb-Douglas production function with constant returns to scale.

([33]) Compared to the first volume of the 2021 Ageing Report, the underlying assumptions for Ireland have been updated to include the impact of the Social Welfare Act 2020 of 22 December 2020. As a result, the participation rates in Ireland were changed, also affecting the other macroeconomic assumptions.

([34]) Given that these projections take as a starting point the Commission 2020 spring forecast, they do not incorporate the positive impact that the EU recovery package, in particular the Recovery and Resilience Facility, will have on the economy in the medium to long term.

Graph I.2.1: **Impact of pension reforms on participation rates of persons aged 55-64 in 2070 (percentage points)**



Note: Ireland, Luxembourg, Poland and Norway are not included in this graph as they have not legislated any pension measures that will affect retirement behaviour between 2019 and 2070.
Source: Commission services, EPC.

them are now spending longer time in education, as reflected in higher average educational attainment.

Given these trends, the main drivers of future changes in the total labour market participation rate reflect changes in the labour force attachment of women aged 25-54, older workers (especially women) and, to a lesser extent, young people.

2.2.1. Impact of legislated pension reforms

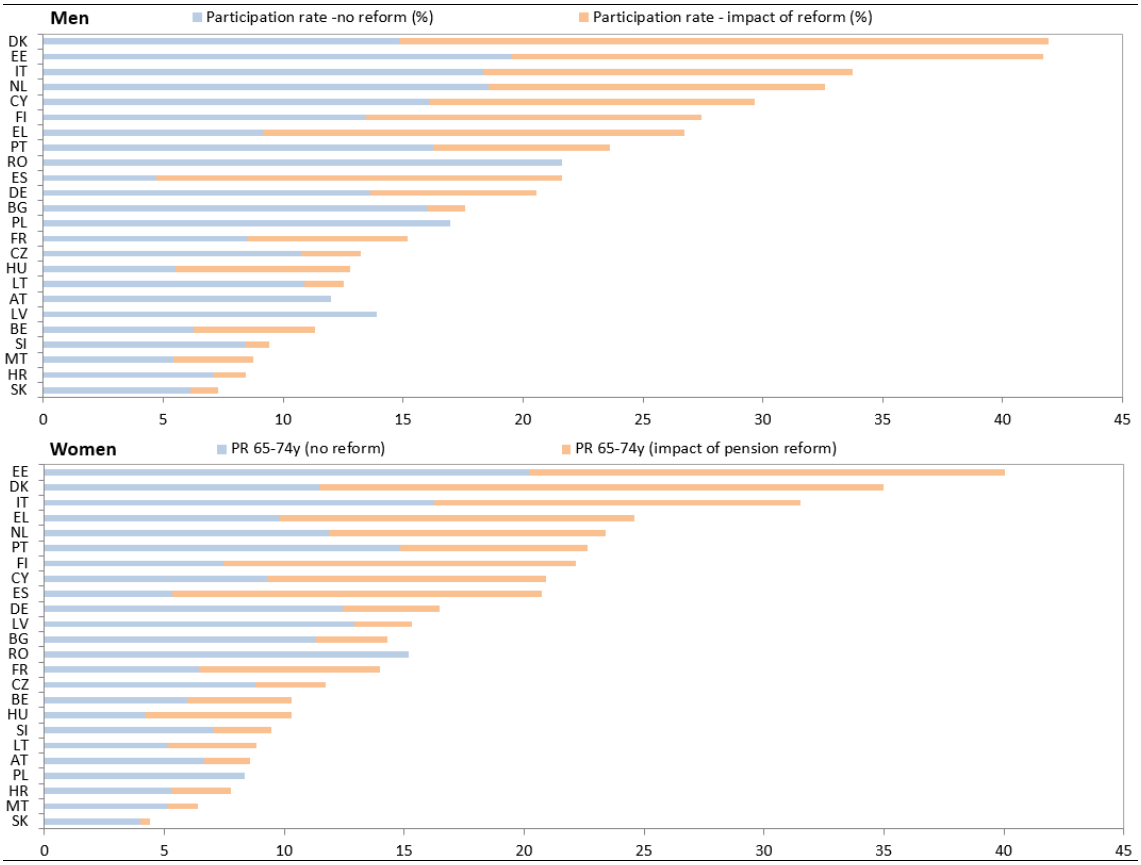
Over the past decade, many Member States have adopted gradual and substantial pension reforms. However, more recently, some reversals of previous reforms have occurred in several countries. By changing eligibility criteria and retirement incentives, reforms will affect the behaviour of older workers in the coming decades. Effective labour market exit ages are projected to increase by around 2 years on average in the EU by 2070.

To measure the impact of pension reforms on participation rates, the projections use a tool developed by Commission services, DG ECFIN's cohort simulation model (CSM), and some judgement ([35]). A strong point of the CSM is its ability to take into account the expected effects of legislated pension reforms on the participation rate of older workers, including for measures that are phased in gradually ([36]). Moreover, DG ECFIN and the EPC-AWG delegates apply some judgement to take into account all the factors that underlie the decision to retire.

Since 2000 and especially in the past decade, many Member States have adopted substantial pension reforms that already affect the age of effective retirement. Aside from systemic reforms such as the introduction of point systems, there

([35]) See Carone (2005).
([36]) For a detailed description, see Box I.2.1 of EC-EPC (2020).

Graph I.2.2: **Impact of pension reforms on participation rates of persons aged 65-74 in 2070 (percentage points)**



Note: Ireland, Luxembourg, Poland and Norway are not included in this graph as they have not legislated any pension measures that will affect retirement behaviour between 2019 and 2070.
Source: Commission services, EPC.

have been mainly three kinds of measures: some consist in making pension benefits less generous; others in increasing the contributions paid by current workers to the pensions systems; finally, most of the reforms have tightened the eligibility requirements for pension benefits ([37]). In particular, nearly all Member States have increased their early and statutory retirement ages. This is probably the measure with the largest direct impact on workers' decision to retire. The most affected group is the age group 55-64, for which the participation rate increased from 38% in 2000 to 62% in 2019 in the EU ([38]).

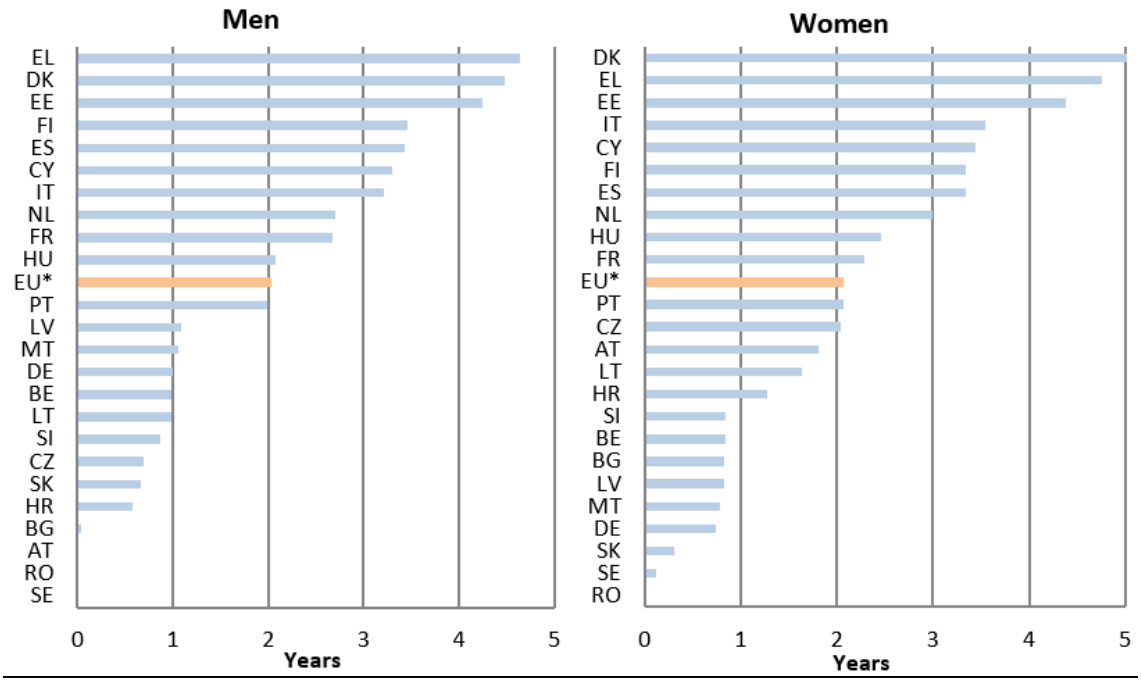
The measures legislated in 24 Member States over the last decade will further affect people's retirement decisions. Many Member States envisage further increases in retirement ages, bringing the statutory retirement age for men from 65 years today to around 67 years in 2070, and from 60.4 to 63 years for women on average in the EU. Moreover, there will be changes in qualifying conditions, such as longer minimum contributory periods, and stronger disincentives to retire, for instance through penalties for early retirement and bonuses for postponing retirement.

Some Member States, however, have recently reversed previously legislated reforms. This is for example the case in Poland, Czechia, Croatia and Slovakia. In other cases, the impact of legislated reforms was suspended or postponed (e.g. in Spain) or new, temporary possibilities to retire early were created, as in Italy.

In most countries, the pension reforms are projected to have a sizeable impact on the labour market participation of older workers.

([37]) A description of past legislated pension reforms that have an impact on future participation rates is available in Box I.2.2 of EC-EPC (2020).
([38]) See Table I.2.1 in EC-EPC (2020).

Graph I.2.3: **Impact of pension reforms on the average exit age from the labour force for persons aged 55-64, 2019-2070**



Notes: (1) Ireland, Luxembourg, Poland and Norway are not included in this graph as they have not legislated any pension measures that will affect retirement behaviour between 2019 and 2070. (2) EU* is the simple average of the countries included.
Source: Commission services, EPC.

For the countries concerned, the reforms alone will lift the participation rate of people aged 55-64 by about 9 pps for men and 10 pps for women on average by 2070 (see Graph I.2.1). For the age group 65-74 as well, the reforms are estimated to push up participation rates by 2070, by 9 pps for men and 8 pps for women (see Graph I.2.2).

Overall, the recent pension reforms are likely to postpone the effective exit age from the labour market by around 2 years in the EU by 2070, for both women and men. The exit ages are calculated on the basis of the participation rates of older age brackets and provide a summary measure of the impact of pension reforms (see Graph I.2.3). For some countries, especially Austria and Czechia, the increase in the exit age is higher for women than for men because the retirement age for women will progressively converge to that of men. Countries that introduced an automatic link between retirement ages and gains in life expectancy show the highest increases. In the cases of Greece, Denmark and Estonia, which have a full link with life expectancy, exit ages are set to rise by 4 to 5 years for both men and women. The other countries with a full link – Finland, Cyprus and Italy – have projected increases of 3 to 3.5 years, reflecting slightly lower increases in life expectancy. The Netherlands and Portugal, which apply a partial link, show increases of around 3 and 2 years respectively.

2.2.2. Projections of labour market participation rates

The total participation rate in the EU is projected to increase by 2.5 pps, with female labour market participation anticipated to rise by 4.4 pps and the largest increases generally among older age groups. These higher participation rates reflect social and institutional factors, such as a higher attachment to the labour market of younger generations of women and pension reforms.

In the EU, the participation rate of those aged 20-64 is projected to increase from 78.2% in 2019 to 80.7% in 2070, driven mainly by a higher participation of women and older workers. While the projections indicate an increase in participation rates for all ages, it is particularly visible for those aged 55-64 (+9.6 pps.) and reflects the effect of pension

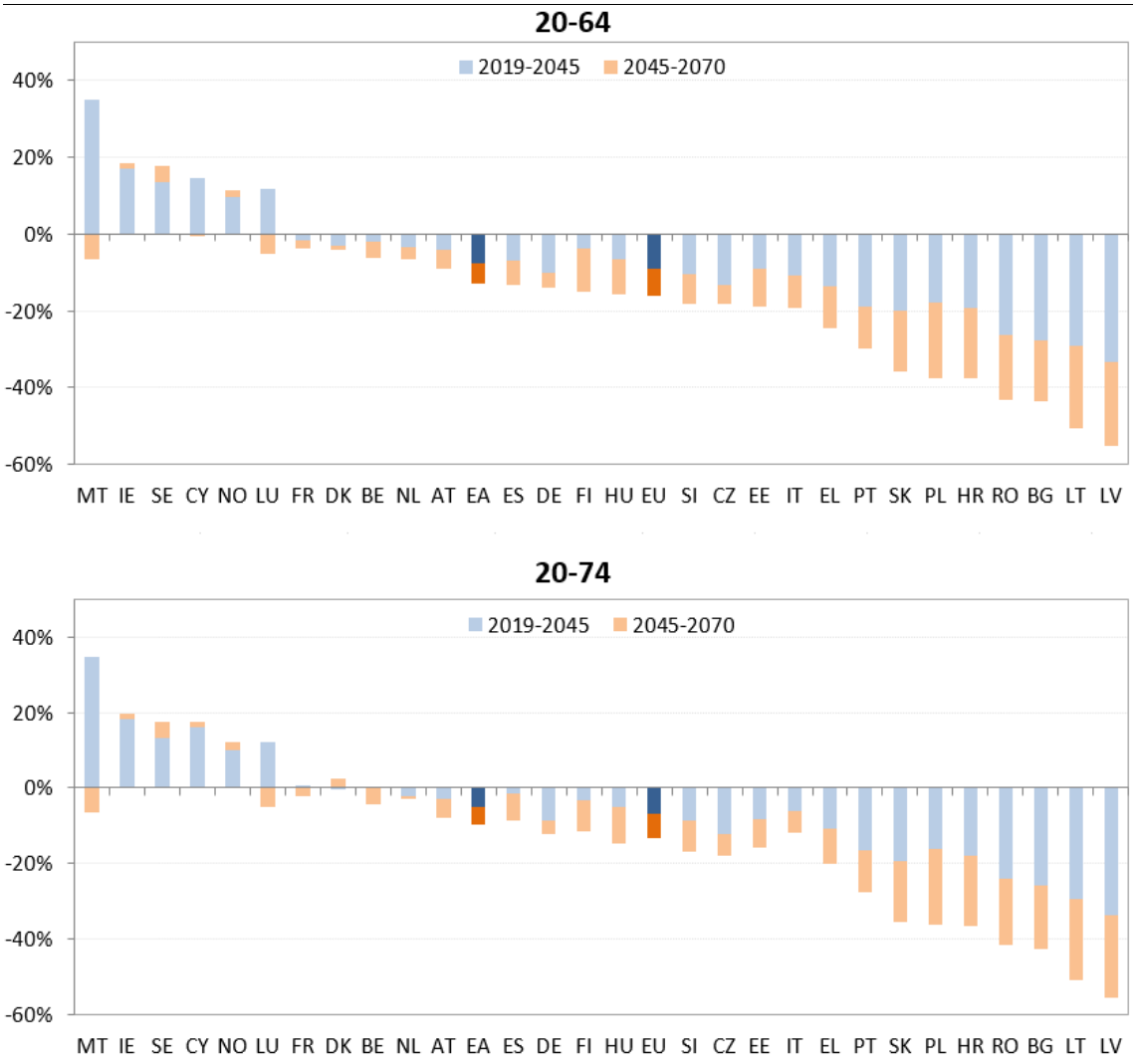
Graph I.2.4: **Participation rates across ages and genders, 2019-2070 (%)**

Source: Commission services, EPC.

reforms (see Graph I.2.4). Moreover, there is a general upward shift in female participation, showing the rising attachment of younger generations of women to the labour market.

The participation rates show a narrowing gender gap in terms of participation rates for all age groups. Men's overall participation rate, starting from a higher level, is expected to broadly stabilise, increasing by only 0.5 pps. against 4.4 pps for women. For the prime-age bracket (25-54 years), the participation rates even move in opposite directions, with an increase by 2.2 pps for women but a marginal decline by 0.7 pps for men (still remaining slightly above 90%), mainly driven a continuing trend of a lengthening of studies. With 77% of the female working-age population expected to be active on the labour market in 2070, female participation would nevertheless remain 8 pps below male participation (see Tables III.1.36 and III.1.42).

Graph I.2.5: **Percentage changes in total labour supply of the population aged 20-64 and 20-74, 2019-2070**



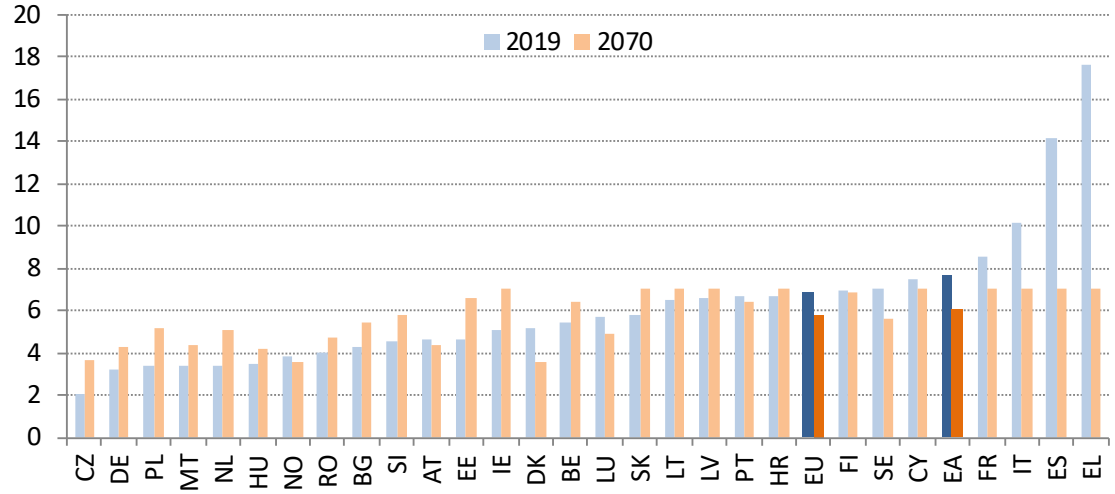
Note: Countries are ranked by descending order of total changes over the period 2019-2070.
Source: Commission services, EPC.

Beyond this general trend, there are some differences across countries. Overall participation rates are expected to increase in all but four Member States, with the largest fall in Slovakia (-1.6 pps.), compared to an increase by more than 8 pps. in Greece (see Graph I.2.4). Only Bulgaria and Slovakia are expected to see female participation fall from current levels, reflecting both early retirement possibilities and composition effects ([39]). Among men, more countries would show a decline in participation. Participation among the youngest age bracket (20-24y) is expected to rise in all Member States, except for women in Bulgaria and men in Poland. As for people aged 25-54, only Italy would have a participation rate below 80% in 2070 while 11 Member States would have a participation rate of at least 90%. Finally, participation among the group of older workers (55-64y) is expected to increase substantially in most countries, exceeding 60% by 2070 in all but five countries (Croatia, Luxembourg, Poland, Romania and Slovakia) ([40]).

([39]) In particular, the share of the 55-64 age group in the working-age population is projected to increase, which weighs on the overall participation rate. This is because the participation rate of that age group (even if it increases) is lower than that of the prime-age population.

([40]) See Table III.1.34.

Graph I.2.6: **Unemployment rate assumptions for the population aged 20-64, 2019-2070 (% of labour force)**



Note: Countries are ranked by ascending order of unemployment in 2019.
Source: Commission services, EPC.

2.2.3. Projection of labour supply

The size of the EU labour supply is expected to decrease by 16% over the projection horizon, with the largest decline of labour supply for males.

Total labour supply in the EU is expected to decrease substantially over the projection horizon. Labour supply projections, calculated by age and gender, are obtained by multiplying the relevant participation rates by the corresponding population. By 2070, the labour force would shrink by almost 16% compared to 2019, with an average annual decrease of 0.3% (see Graph I.2.5). This entails a total loss of 32.1 million potential workers in the EU, of which 18.6 million men (-17%) and 13.5 million women (-14%).

There are substantial differences in labour supply projections across Member States. The projected changes by 2070 range from a surge of 26% in Malta to a fall of 48% in Latvia (see Graph I.2.5). The labour force would be larger in 2070 than in 2019 for only six countries, while in six others (Poland, Croatia, Romania, Bulgaria, Lithuania and Latvia), it would shrink by a third or more.

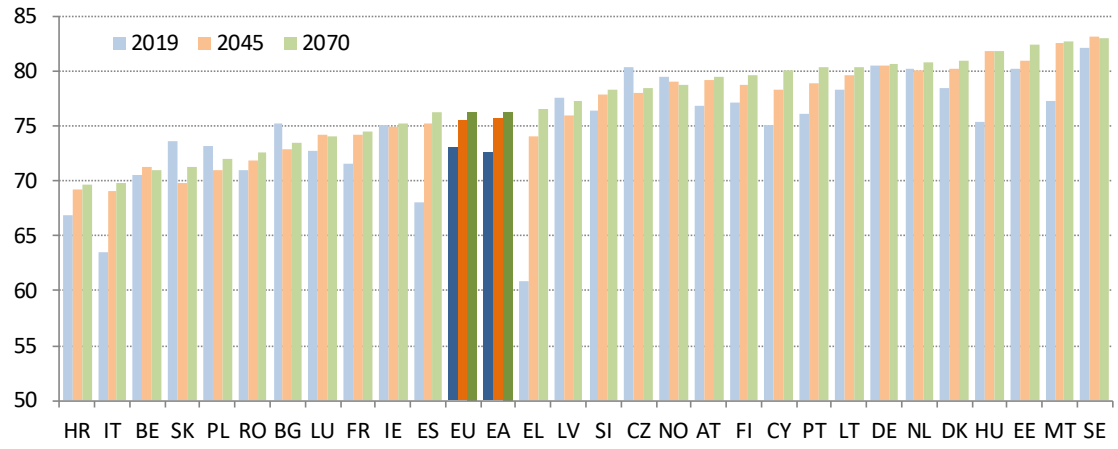
The projected decline in the labour supply is particularly strong during the first half of the projection period. The general decline expected in the first half of the projection period (2019-2045) is expected to continue in the second half (2045-2070), although at a slower pace in most cases. The countries with the sharpest fall in 2019-2045 also show the steepest declines in 2045-2070.

Overall, the projected decline in the labour supply is mainly attributable to the decline in the working-age population and composition effects, partly offset by higher participation rates. Since most participation rates – especially for older workers and women – are projected to increase over the period, the projected decline in the labour force is mainly driven by demographic developments. More specifically, the share of the age group 55-64 in the working-age population is set to increase; as this age group is associated with a lower (although increasing) participation rate than the prime-age population, this pulls down the overall participation rate.

2.2.4. Assumptions on structural unemployment and employment projections

The unemployment rate in the EU is projected to decline slightly, from 6.0% in 2019 to 5.8% in 2070. The total employment rate is projected to increase from 73% to 76%. This change mostly reflects higher employment rates among older people and women in general.

Graph I.2.7: **Employment rate assumptions for those aged 20-64, 2019-2070 (% of working-age population)**



Note: Countries are ranked by ascending order in terms of the employment rate in 2070.
Source: Commission services, EPC.

The unemployment projections assume that unemployment rates will converge to 'equilibrium' values in the long term. These projections start with actual unemployment in the short to medium term and align with structural unemployment thereafter. As a general rule, actual unemployment rates are assumed to converge to NAWRU rates in 5 years (currently 2024), corresponding to the closure of the output gap all else being equal. Afterwards, NAWRU rates are assumed to gradually converge to the minimum of country-specific 'anchors' or the median of national 'anchors', whichever is the lowest ([41]) ([42]) ([43]).

Aggregate unemployment rates are set to decrease by around 1 pp in the long term, with a stronger decline in the euro area. Graph I.2.6 presents the unemployment rate assumptions underlying the projections. In the EU, the unemployment rate among those aged 20-64 is assumed to decline from 6.8% in 2019 to 5.8% in 2070. In the euro area, the unemployment rate is expected to fall from 7.7% in 2019 to 6.0% in 2070 ([44]).

The overall employment rate among people aged 20-64 is expected to rise in a vast majority of Member States, reaching 76% in the EU as a whole by 2070. This is 3 pps. above its level of 2019. The largest rise (by more than 15 pps.) is projected in Greece, the Member State with the lowest employment rate in 2019. As a result, employment rates will significantly converge within the EU, with the difference between the countries with the highest and the lowest employment rates falling from 21 pps. in 2019 to 12 pps. by 2070 (see Graph I.2.7).

The key groups that will drive the increase in the aggregate employment rate are women and older workers. The employment rate of women is projected to rise from 67.2% in 2019 to 72.3% in 2070, and that of older workers even more markedly, from 59.1% to 68.7% ([45]). As explained above, this reflects both a higher participation of women to the labour market and recent pension reforms in many Member States, which will postpone the age at which workers effectively retire.

([41]) Anchors values are country-specific values for the NAWRU that are calculated on the basis of the coefficients of a panel estimation model. In this model, the short-term NAWRU for EU old member states is regressed on a set of structural variables together with a set of cyclical variables. To derive country-specific anchors, it is assumed that the non-structural variables are set at their average values. For details, see Box I.2.3 of EC-EPC (2020).

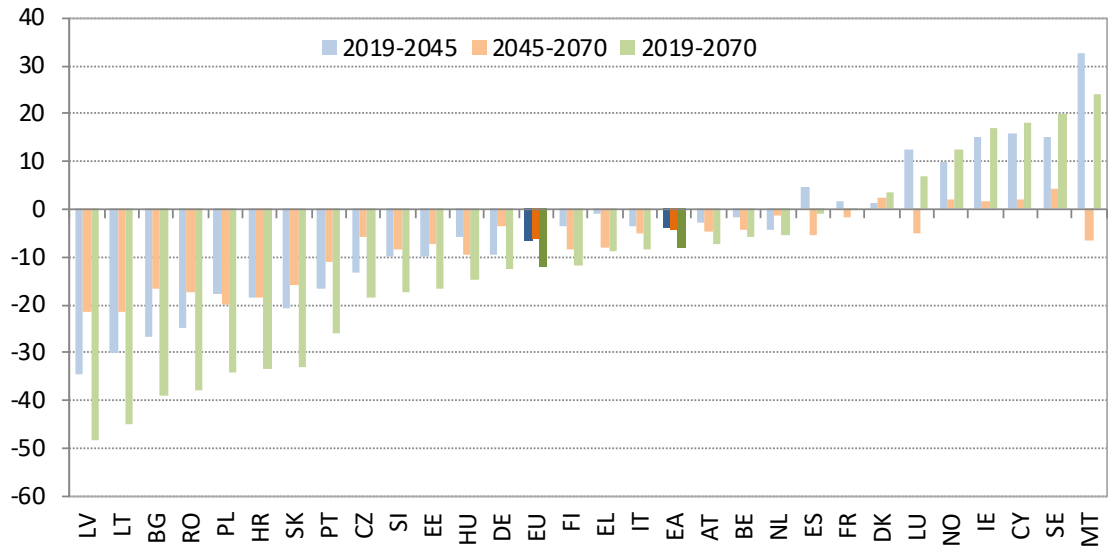
([42]) In addition, the estimated NAWRU 10 years ahead (2029) is assumed to replace the country-specific anchor if it is lower than this anchor. The gradual convergence, for countries whose NAWRU is higher than the EU median, is assumed to be completed by 2050.

([43]) Under the guidance of the EPC-OGWG and with the twin objectives of improving the medium-term framework for fiscal surveillance up to T+10 (currently 2029), DG ECFIN carried out some econometric work (Orlandi, 2012) leading to the estimation of anchor values for the NAWRU.

([44]) Unemployment rates for the age group 15-64 are available in the statistical annex.

([45]) See Tables I.2.11 and I.2.13 in EC-ECP (2020).

Graph I.2.8: **Change in total hours worked by persons aged 15-74, 2019-2070 (%)**



Note: Countries are ranked by ascending order of the change between 2019 and 2070.
Source: Commission services, EPC.

Mainly as a result of the ageing process, the age structure of the working population will undergo a number of significant changes. The share of older workers in total employment at the EU level is projected to rise from 18% in 2019 to around 21% in 2045 and to remain around this level thereafter ([46]). The share of older workers rises generally more for women than men, for two reasons. First, this is due to cohort effects, with younger generations of women having a higher participation rate. Second, women need to stay longer in employment to qualify for retirement if they entered the labour market at a later age or interrupted their working careers. Exceptions are countries where older women are working currently more often than men, such as the Baltic countries, or countries with more favourable retirement conditions for women, for instance Poland and Slovakia.

2.2.5. Labour input projections

Labour input, i.e. the number of hours worked, is expected to fall by 12% in the EU over the projection period, with decreases projected for most countries.

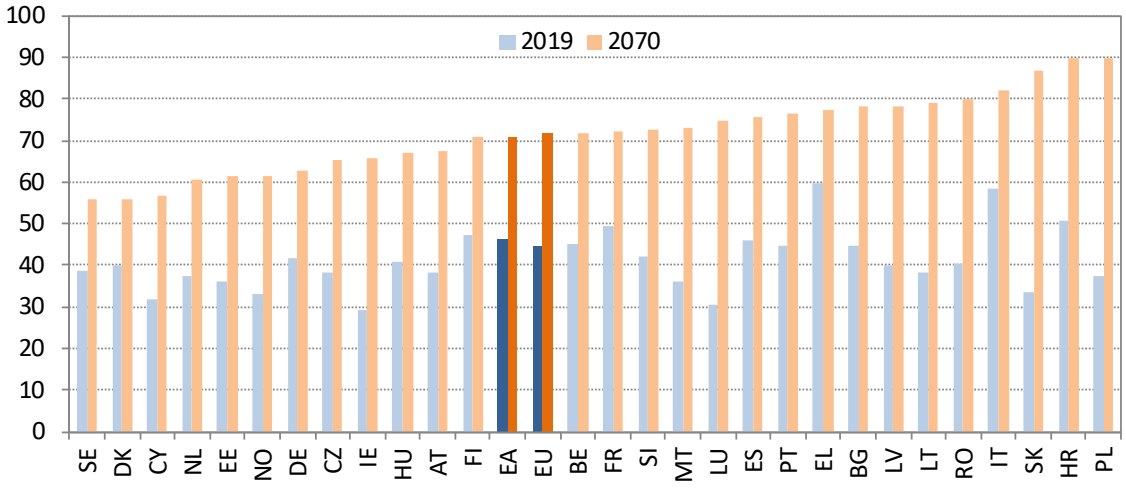
Labour input – employment multiplied by hours worked per person – is projected to decrease steadily by a total of 12% by 2070 in the EU ([47]). This decline reflects the projected decrease in employment. The reduction would occur at a similar pace before and after 2045, with hours worked dropping by around 6% in each half of the projection period (see Graph I.2.8).

There are large differences in projected hours worked across Member States. Total hours worked are expected to decline in most countries between 2019 and 2070, with large drops by 30 to 50% in seven member States (see Graph I.2.8). By contrast, seven countries are expected to see a rise in the number of hours worked, by up to 20-25% in Malta and Sweden. Moreover, the projections assume that the share of part-time work will remain broadly unchanged, implying persistent large differences between countries in this regard too. In particular, part-time labour accounts for less than 4% of total hours worked in eight Member States (Bulgaria, Czechia, Croatia, Lithuania, Hungary, Poland, Portugal and

([46]) See Table I.2.14 in EC-ECP (2020).

([47]) The total number of hours worked is the product of employment by hours worked per person. Regarding hours worked, the following assumptions are made: i) the total amount of hours worked per person in the base year 2019 is kept constant by gender and type of work (part-time versus full-time); and ii) the part-time share of total work by gender and age groups (20-24, 25-54 and 55-74) is kept constant over the entire projection period.

Graph I.2.9: **Effective economic old-age dependency ratio (inactive population aged 65+/employed persons aged 20-64), 2019-2070 (%)**



Note: Countries are ranked by ascending order of the economic old-age dependency ratio in 2070.
Source: Commission services, EPC.

Slovakia), while it amounts to 35% of total hours in the Netherlands ([48]).

2.2.6. The balance of non-workers to workers: economic dependency ratios

The economic old-age dependency ratio (inactive elderly versus employed people) is projected to rise significantly in all Member States, especially in the first half of the projection period. Similarly, the ratio between the total inactive population and employed people (economic dependency ratio) would rise strongly amid demographic ageing with large variability across countries.

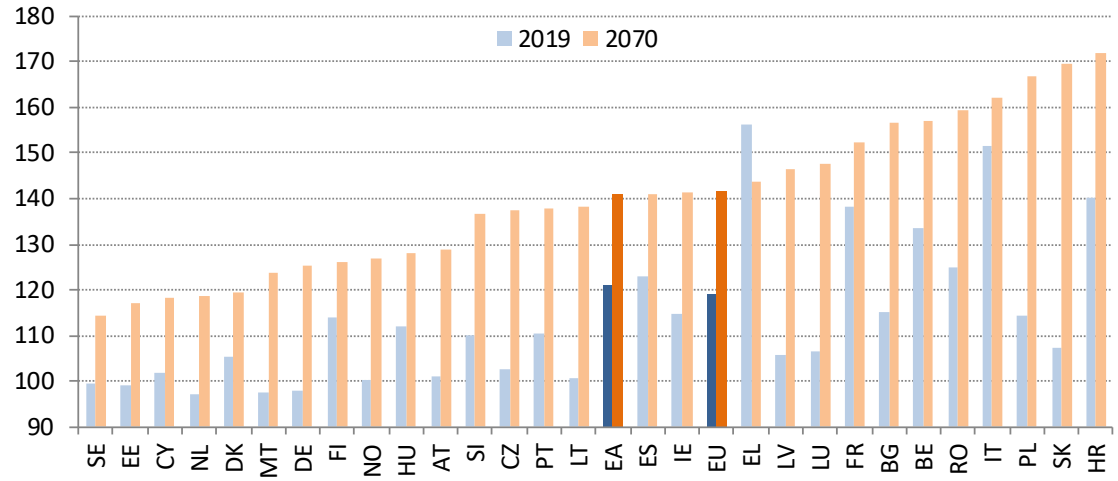
An important indicator to assess the impact of ageing on budgetary expenditure, particularly on its pension component, is the economic old-age dependency ratio. This indicator expresses the inactive elderly population, aged 65 and over, with respect to total employment, aged either 20-64 or 20-74. The economic old-age dependency ratio is projected to rise significantly in the EU, especially in the first half of the projection period: from 45% in 2019 to 67% in 2045, and further up to 72% in 2070 in terms of employment in the 20-64 age group (see Graph I.2.9). This means that there will be less than 2 employed persons aged 20-64 (1.4) per inactive person aged more than 65 in 2070, down from more than 2 employed persons in 2019 (2.2). The ratio defined with regard to the 20-74 age group follows a similar trend, increasing from 44% in 2019 to 64% in 2045 and 68% in 2070.

Large differences across countries will prevail. The projected economic old-age dependency ratio for 2070 ranges from a minimum of 56% in Sweden and Denmark to a maximum of 90% in Poland (see Graph I.2.9). The bulk of the expected increase is generally concentrated in the first half of the projection period, 2019-2045, though with some exceptions. The largest overall increases would be in Slovakia, Poland, Luxembourg, Lithuania, Romania, Croatia, Latvia and Malta. The ratio is expected to be above or equal to 80% in 2070 in Croatia, Italy, Poland and Slovakia; in Greece, it will exceed 80% in 2045 but decrease afterwards.

The total economic dependency ratio, another important indicator calculated as the ratio between the total inactive population and employment, is also set to increase significantly in the long term. This ratio gives a measure of the average number of individuals that each employed person 'supports' economically, which is relevant for potential GDP per capita growth. The total economic dependency ratio is expected to constantly grow over the projection period, from an average of 119% in 2019 to 142% in 2070 in

([48]) See Table I.2.17 in EC-EPC (2020).

Graph I.2.10: **Total economic dependency ratio (total inactive population/employed persons aged 20-64), 2019-2070 (%)**



Note: Countries are ranked by ascending order of the total economic dependency ratio in 2070.
Source: Commission services, EPC.

the EU (see Graph I.2.10). This reflects the profound societal impact of the changes in life expectancy and fertility rates during the next few decades.

The projected increase in the total economic dependency ratio affects nearly all Member States, albeit with large differences across countries. In some countries, the projections point to large increases by more than 40 pps. (Bulgaria, Latvia, Luxembourg, Poland and Slovakia), while other countries show more limited increases. In Greece, the ratio is projected to drop in the 2020s as youth unemployment declines, and to broadly stabilise thereafter. Moreover, a smaller increase is projected when considering employment in the age group 20-74 rather than 20-64 ([49]).

2.3. PROJECTIONS OF LABOUR PRODUCTIVITY AND GDP

Relatively stable potential annual GDP growth of almost 1½% is projected over the long term for the EU in the baseline scenario. This is much lower than in previous decades and involves downside risks should future TFP growth develop less favourably than assumed.

2.3.1. Baseline scenario

Under the baseline scenario, potential GDP growth in the EU and the euro area will average 1.3% per year over the while projection period. Starting from 1.2% in the EU and 1.0% in the euro area, it will first increase gradually to 1.4% until the 2040s and then stabilise at that level afterwards ([50]).

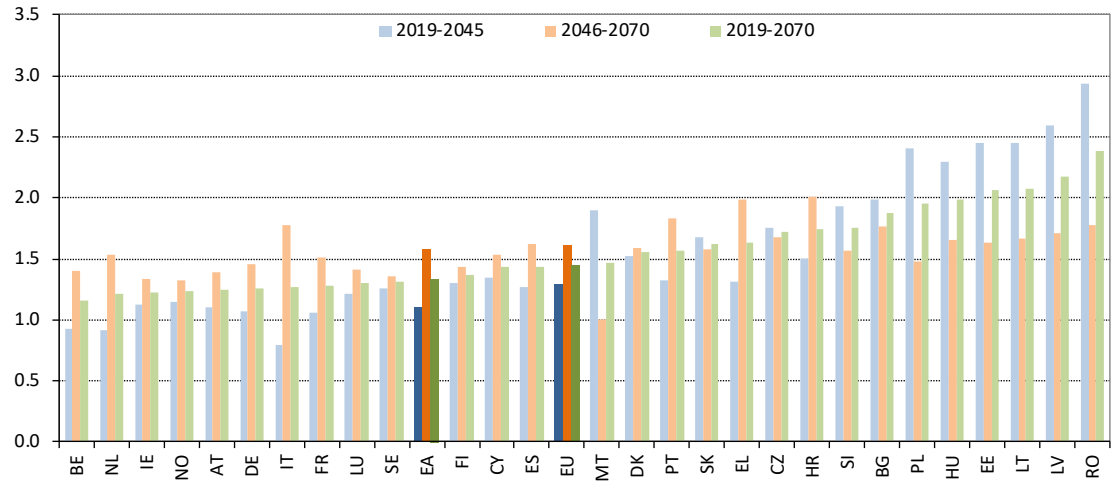
While the GDP projections over the long term are aligned with those of potential GDP growth, in the short to medium term they include a cyclical component. After the major recession of 2020 and a partial rebound in 2021, and under the assumption that the output gap will be closed by 2024, actual GDP growth would be slightly above potential growth in 2022-2024 and in line with it in 2025-2029. Given the size of the crisis in 2020, actual GDP growth would be slightly lower than potential growth on average over 2019-2029 (see Graph I.2.13).

Differences in output growth per capita across countries are relatively contained and concentrated in the beginning of the projection period. In the short to medium term, the range in GDP growth rates is quite wide, reflecting country specificities such as cyclical developments, periods of (protracted) economic adjustment and catching-

([49]) See Table I.2.16 in EC-EPC (2020).

([50]) See Table I.3.1 in EC-EPC (2020).

Graph I.2.11: **Average annual GDP per capita growth rates, 2019-2070 (%)**



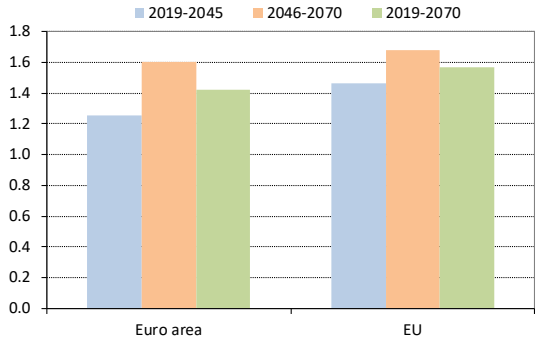
Note: Countries are ranked by ascending order of the 2019-2070 average.
Source: Commission services, EPC.

up (see Graph I.2.13). This translates into large differences in average annual output growth per capita in the first half of the projection period, from 0.7% in Italy to 3.2% in Romania (see Graph I.2.11). In 2045-2070, however, growth rates are projected to converge towards the EU average of 1.6%, ranging in most countries from 1.3% to 1.8%, reflecting convergence assumptions.

Labour input will not support potential growth in Europe in coming decades. The decline in labour input is expected to make a slightly negative contribution to potential growth in the EU and the euro area. This can be seen in Table I.2.1, which summarises the contributions of labour input and labour productivity (and their determinants) to potential growth over the entire projection period. More specifically, the projected increase in the employment rate (contributing +0.1 pps to potential growth) will not be sufficient to counterbalance the marginal decline in the total EU population (-0.1 pps) accentuated by the projected decline in the share of the working-age population (-0.2 pps). Average hours worked are assumed to remain unchanged and will therefore not affect potential growth. Overall, labour input is projected to decline, reducing potential growth by 0.2 pps. in the EU and 0.1 pps in the euro area.

Most EU Member States are projected to experience null or negative contributions of labour input, due to adverse demographic developments. Labour input is expected to contribute positively to potential growth in only seven EU countries (Denmark, Ireland, France, Cyprus, Luxembourg, Malta and Sweden) and Norway (see Table I.2.1).

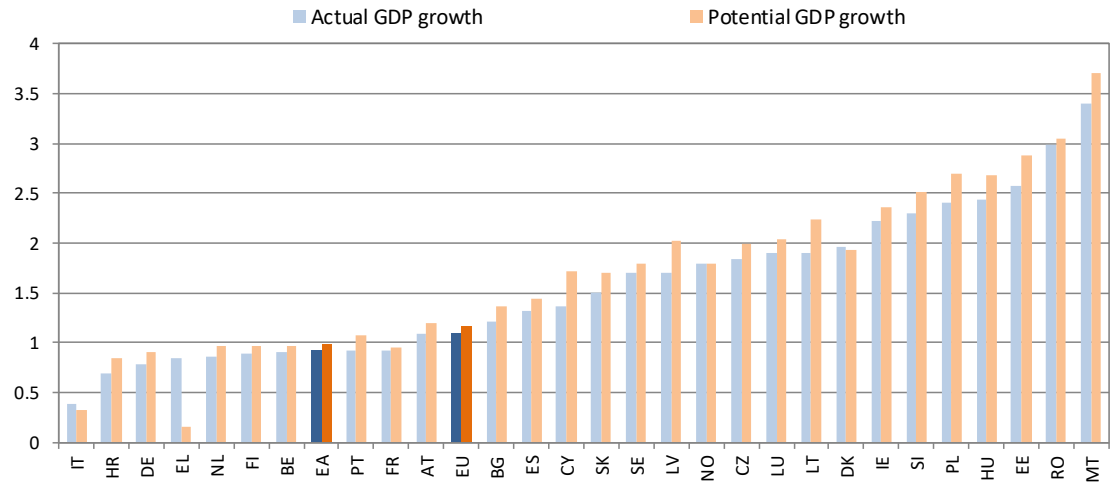
Graph I.2.12: **Annual average growth of labour productivity per hour, 2019-2070 (%)**



Source: Commission services, EPC.

As a result, potential GDP growth will be almost entirely driven by labour productivity. After the negative shock of 2020-2021, annual labour productivity growth in the EU is expected to accelerate from 1.2% in the 2020s to 1.8% in the early 2040s (recording an average pace of 1.5% in 2019-2045) and to decelerate slightly afterwards, converging to 1.6% in both the EU (see Graph I.2.12). In the euro area, the projected profile is similar, although starting from a lower level. On average over the whole projection

Graph I.2.13: **Annual average growth rate of actual and potential GDP, 2019-2029 (%)**



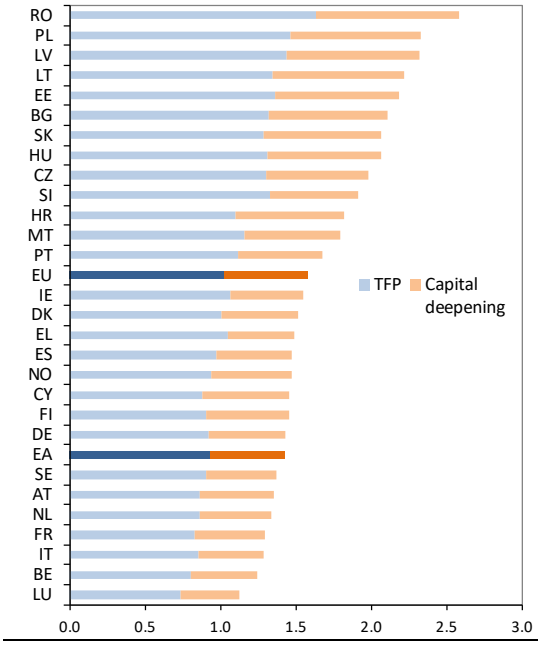
Note: Countries are ranked by ascending order of actual growth.
Source: Commission services, EPC.

period, annual growth in output per hour worked is projected at 1.6% in the EU and 1.4% in the euro area, slightly above potential growth (see Table I.2.1). At the country level as well, labour productivity will be the main if not sole source of potential growth in most countries (see Table I.2.1).

TFP growth explains around two-thirds of labour productivity growth, the rest being due to capital deepening (see Graph I.2.14). By assumption, annual TFP growth converges to 1% by 2070 in all Member States ([51]).Given a constant labour income share of 0.65, this implies that labour productivity will grow by around 1.5% in all Member States in the long term. As for capital deepening, its contribution gradually converges to the steady-state value of 0.5%.

For countries with a relatively low GDP per capita by EU standards, labour productivity growth is projected to be higher, especially in the first half of the projection period. This reflects the assumed catching-up process of converging economies, with a very high contribution from capital deepening and rapid TFP growth. This is the case for instance in Romania, Poland and the Baltic countries.

Graph I.2.14: **Drivers of annual average labour productivity growth, 2019-2070 (contributions in pps.)**



Source: Commission services, EPC.

([51]) In the baseline scenario, annual TFP growth converges to 1% by 2045 at the earliest and 2070 at the latest for all Member States. The paths are country-specific: those countries where GDP per capita is below the EU average have a catching-up potential which translates into higher growth in the first half of the projection period. See Box I.3.2 of EC-EPC (2020).

Table I.2.1: **Breakdown of annual average potential GDP growth rates, 2019-2070 (%)**

	GDP growth in 2019-2070	*Labour productivity (GDP per hour worked)*	*TFP*	*Capital deepening*	*Labour input*	*Total population*	*Employment rate*	*Share of working age population*	*Change in average hours worked*	GDP per capita growth in 2019-2070
Country	1=2+5	2=3+4	3	4	5=6+7+8+9	6	7	8	9	10=1-6
BE	1.2	1.2	0.8	0.4	0.0	0.1	0.1	-0.2	0.0	1.2
BG	1.2	2.1	1.3	0.8	-0.9	-0.6	0.0	-0.3	0.0	1.9
CZ	1.6	2.0	1.3	0.7	-0.3	-0.1	0.0	-0.3	0.0	1.7
DK	1.7	1.5	1.0	0.5	0.2	0.1	0.3	-0.2	0.0	1.6
DE	1.2	1.4	0.9	0.5	-0.2	0.0	0.0	-0.2	0.0	1.3
EE	1.9	2.2	1.4	0.8	-0.3	-0.2	0.1	-0.2	-0.1	2.1
IE	1.8	1.5	1.1	0.5	0.2	0.6	-0.2	-0.1	0.0	1.2
EL	1.2	1.5	1.0	0.4	-0.3	-0.4	0.3	-0.2	0.0	1.6
ES	1.4	1.5	1.0	0.5	0.0	0.0	0.2	-0.2	0.0	1.4
FR	1.3	1.3	0.8	0.5	0.1	0.1	0.1	-0.2	0.0	1.3
HR	1.1	1.8	1.1	0.7	-0.7	-0.6	0.1	-0.2	0.0	1.7
IT	1.0	1.3	0.8	0.4	-0.2	-0.2	0.2	-0.2	0.0	1.3
CY	1.9	1.5	0.9	0.6	0.4	0.5	0.2	-0.2	0.0	1.4
LV	1.2	2.3	1.4	0.9	-1.1	-0.9	0.1	-0.2	0.0	2.2
LT	1.2	2.2	1.3	0.9	-1.0	-0.8	0.1	-0.2	0.0	2.1
LU	1.8	1.1	0.7	0.4	0.7	0.5	0.4	-0.2	0.0	1.3
HU	1.8	2.1	1.3	0.7	-0.3	-0.2	0.2	-0.2	0.0	2.0
MT	2.2	1.8	1.2	0.6	0.4	0.7	0.1	-0.3	-0.1	1.5
NL	1.3	1.3	0.9	0.5	0.0	0.1	0.1	-0.2	0.0	1.2
AT	1.3	1.4	0.9	0.5	0.0	0.1	0.1	-0.2	0.0	1.2
PL	1.5	2.3	1.5	0.9	-0.8	-0.4	-0.1	-0.3	0.0	1.9
PT	1.2	1.7	1.1	0.6	-0.5	-0.4	0.1	-0.3	0.0	1.6
RO	1.7	2.6	1.6	0.9	-0.9	-0.7	0.0	-0.2	0.0	2.4
SI	1.6	1.9	1.3	0.6	-0.3	-0.1	0.1	-0.2	0.0	1.7
SK	1.3	2.1	1.3	0.8	-0.7	-0.3	-0.1	-0.3	0.0	1.6
FI	1.2	1.5	0.9	0.5	-0.3	-0.2	0.1	-0.2	0.0	1.4
SE	1.8	1.4	0.9	0.5	0.4	0.5	0.1	-0.1	0.0	1.3
NO	1.7	1.5	0.9	0.5	0.2	0.5	-0.1	-0.1	0.0	1.2
EA	1.3	1.4	0.9	0.5	-0.1	0.0	0.1	-0.2	0.0	1.3
EU	1.3	1.6	1.0	0.5	-0.2	-0.1	0.1	-0.2	0.0	1.4

Source: Commission services, EPC.

2.3.2. TFP risk scenario

One important macroeconomic alternative scenario carried out in this report to stress-test the baseline assumptions is the TFP risk scenario. This scenario reflects more conservative assumptions than in the baseline for TFP growth rates, in the light of the trend decline in TFP growth over the last decades ([52]). It assumes that annual TFP growth converges to a long-term value of 0.8% instead of 1.0% in the baseline. This would lower the average annual TFP growth up to 2070 to 0.9% in the EU and 0.8% in the euro area, in both cases 0.1 pps below the baseline assumption.

In this scenario, potential GDP in the EU would grow on average by 1.1% per year in the EU and the euro area, as opposed to 1.3% in the baseline (see Graph I.2.15). The impact is of the same order of magnitude for most individual countries.

In addition to standard macroeconomic sensitivity scenarios, given the exceptional uncertainty regarding GDP growth in the wake of the COVID-19 crisis, supplementary scenarios envisage more adverse developments. In particular, potential growth would be lower than assumed in the baseline for the early years of the projection period if the recovery in the 2020s were lagged, and it could remain permanently lower if the crisis had a structural impact notably on the labour force ([53]).

2.4. COMPARISON WITH THE 2018 AGEING REPORT

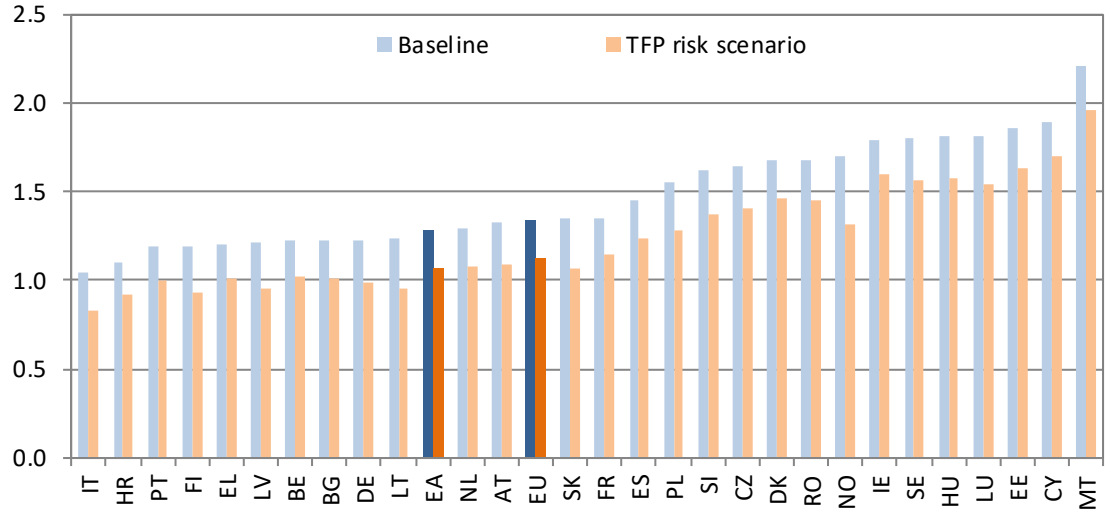
2.4.1. Labour force developments

Labour market figures for the base year 2019 were better than assumed in the 2018 Ageing Report. The improved starting point for employment, participation and unemployment rates are reflected in the labour market assumptions, which are generally more

([52]) See Box I.3.2 of EC-EPC (2020).

([53]) See Box I.3.1 of EC-EPC (2020).

Graph I.2.15: **Average annual potential GDP growth rates under the baseline and TFP risk scenarios, 2019-2070 (%)**



Source: Commission services, EPC.

favourable than in the previous exercise. Yet, the revised population projections result in considerably lower employment for several countries in 2070.

The EU labour market situation in 2019 turned out more favourable than projected in the 2018 Ageing Report. Both the participation and employment rates were higher than projected, by 1.4 pps and 0.5 pps respectively (see Table I.2.2). This reflects a larger-than-projected impact of pension reforms on those aged 55-64, a larger labour force and a lower unemployment rate (-1.1 pps).

The improved starting conditions largely carry over in the new projections up to 2070. Compared to the 2018 Ageing Report, average EU participation rates in 2070 have been revised slightly upward for those aged 20-64, by 0.7 pps, especially driven by the 55-64 age bracket. The overall employment rate has been revised up by 1.2 pps and the unemployment rate down by 0.8 pps.

Despite the revision in participation and employment rates, the level of employment in 2070 is now projected to be 1.1% lower than in the previous exercise. This is due to the downward revision in population projections, by 2.7%, which particularly affects five EU countries: Belgium, France, Croatia, Latvia and Luxembourg.

2.4.2. Labour productivity and GDP developments

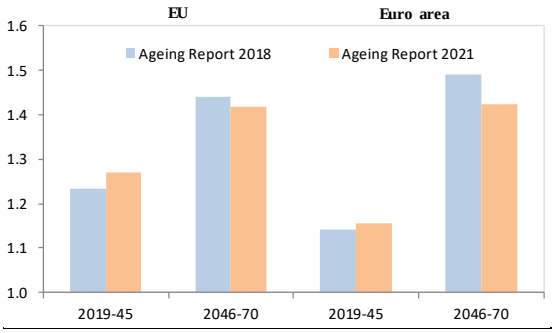
Over the whole projection period, potential GDP growth is similar in the 2021 and 2018 exercises; however, there are some differences by sub-periods and especially across countries.

The 2021 Ageing Report brings about marginal changes regarding potential GDP growth and its drivers in the EU as a whole. Aggregate potential GDP in the EU and the euro area is projected to grow at an annual rate of 1.3% on average until 2070, overall unchanged from the 2018 Ageing Report (see Table I.2.3). Looking more closely at subperiods, the revisions show marginally lower growth projections in 2046-2070 offsetting marginally higher growth in 2019-2045 (see Graph I.2.16). The projected average contributions from labour productivity growth and labour input growth are also broadly unchanged in both the EU and the euro area over the whole projection period.

However, there is more substantial variation across revisions in average annual potential growth for individual countries. The largest downward revisions are for Latvia (-0.7 pps) and Slovakia (-0.5 pps), driven by both lower labour productivity and lower labour input growth, while the largest upward revisions concern Estonia and

Cyprus (+0.4 pps), both of which benefiting from stronger labour productivity and labour input.

Graph I.2.16: **Average annual GDP growth rates in the 2021 and 2018 baseline projections, 2019-2045 and 2046-2070 (%)**



Source: Commission services, EPC.

Table I.2.2: **Comparison of 2021 and 2018 long-term projections: labour force developments**

	Projection exercise 2021															2021 AR - 2018 AR (2019-70)														
	Employment rate						Participation rate						Unemployment rate			Employment rate						Participation rate						Unemployment rate			
	(20-64y)			(55-64y)			(20-64y)			(55-64y)			(15-64y)			(20-64y)			(55-64y)			(20-64y)			(55-64y)			(15-64y)			
	2019	2070	pps. change	2019	2070	pps. change	2019	2070	pps. change	2019	2070	pps. change	2019	2070	pps. change	2019	2070	pps. change	2019	2070	pps. change	2019	2070	pps. change	2019	2070	pps. change	2019	2070	pps. change	
BE	70.6	70.9	0.3	52.4	60.8	8.5	74.5	75.7	1.1	54.6	64.0	9.4	5.4	6.4	1.0	1.6	-0.4	-2.1	2.2	-1.5	-3.8	-0.1	-1.7	-1.6	1.6	-1.8	-3.4	-2.3	-1.5	0.8	BE
BG	75.2	73.5	-1.7	64.5	64.5	0.0	78.5	77.5	-0.9	67.1	67.7	0.6	4.3	5.4	1.1	5.4	5.7	0.3	9.0	5.1	-3.9	4.5	5.0	0.5	8.3	4.4	-3.9	-1.4	-1.3	0.1	BG
CZ	80.4	78.5	-1.9	67.1	68.3	1.3	82.0	81.3	-0.7	68.4	70.7	2.3	2.1	3.7	1.6	2.5	1.9	-0.6	8.9	3.4	-5.5	1.6	1.5	-0.1	8.4	3.3	-5.1	-1.1	-0.5	0.6	CZ
DK	78.4	80.9	2.5	71.9	79.7	7.8	82.3	83.7	1.4	74.4	81.7	7.3	5.1	3.6	-1.6	-0.7	1.0	1.7	-0.4	4.8	5.2	-0.8	0.3	1.1	-0.3	4.7	5.0	-0.1	-1.0	-0.9	DK
DE	80.6	80.7	0.2	72.6	73.4	0.7	83.2	84.2	1.0	74.6	76.0	1.4	3.2	4.2	1.0	1.7	1.9	0.2	3.5	2.4	-1.1	1.3	1.5	0.2	3.1	1.9	-1.2	-0.5	-0.5	0.0	DE
EE	80.2	82.5	2.3	72.7	82.7	10.0	83.8	88.0	4.1	75.7	87.6	11.9	4.6	6.6	2.0	3.6	6.8	3.3	7.8	17.7	9.9	1.2	6.1	4.9	4.9	16.6	11.7	-2.9	-1.3	1.6	EE
IE	75.1	75.2	0.1	61.8	64.3	2.5	78.8	80.4	1.6	64.1	67.7	3.6	5.1	7.0	1.9	3.0	3.9	0.9	2.6	1.7	-0.9	2.6	4.3	1.7	2.2	2.0	-0.3	-0.4	0.5	0.9	IE
EL	60.9	76.5	15.6	43.7	76.4	32.7	73.8	82.2	8.4	50.4	80.8	30.4	17.6	7.0	-10.6	0.4	2.2	1.7	3.1	5.8	2.7	-0.3	1.6	1.8	2.7	5.5	2.8	-0.9	-0.9	0.0	EL
ES	68.1	76.2	8.2	53.9	73.5	19.6	79.0	81.8	2.8	61.7	78.3	16.6	14.2	7.0	-7.2	0.4	-1.4	-1.8	-2.1	-3.1	-1.0	-1.6	-2.3	-0.7	-3.5	-3.5	0.0	-2.2	-0.9	1.3	ES
FR	71.6	74.5	2.9	53.0	63.3	10.2	78.0	80.0	1.9	56.9	67.0	10.1	8.6	7.0	-1.6	0.6	-0.3	-0.8	0.3	-1.1	-1.4	0.1	-1.0	-1.1	0.5	-1.1	-1.6	-0.7	-0.9	-0.2	FR
HR	66.8	69.6	2.8	44.3	52.5	8.2	71.4	74.6	3.2	45.8	54.5	8.6	6.7	7.0	0.3	3.4	-0.3	-3.7	4.6	0.6	-4.1	0.1	-1.0	-1.1	2.7	-0.3	-3.0	-4.9	-0.9	4.0	HR
IT	63.6	69.8	6.2	54.4	73.2	18.8	70.5	74.9	4.4	57.5	75.9	18.4	10.2	7.0	-3.2	0.4	2.5	2.1	-1.1	2.7	3.8	0.0	2.0	2.0	-1.0	2.8	3.8	-0.7	-0.9	-0.2	IT
CY	75.1	80.1	5.0	61.2	75.4	14.2	80.9	85.9	4.9	65.3	80.1	14.8	7.5	7.0	-0.5	3.8	1.5	-2.4	5.7	2.7	-3.0	0.8	2.3	1.5	3.9	3.4	-0.6	-3.8	0.9	4.8	CY
LV	77.6	77.4	-0.2	67.7	64.7	-3.0	82.9	83.0	0.1	72.5	69.4	-3.1	6.6	7.0	0.4	3.9	-0.2	-4.1	8.3	-2.7	-11.1	1.9	-1.2	-3.1	7.7	-3.0	-10.7	-2.5	-0.9	1.6	LV
LT	78.3	80.4	2.2	68.7	69.1	0.4	83.6	86.4	2.8	73.8	74.5	0.7	6.5	7.0	0.5	2.9	2.1	-0.8	8.8	0.8	-8.0	2.5	1.4	-1.1	9.3	0.8	-8.6	-0.6	-0.9	-0.3	LT
LU	72.7	74.1	1.4	43.3	43.6	0.3	76.8	77.5	0.8	45.2	45.2	0.0	5.7	4.9	-0.9	1.1	2.9	1.8	0.6	2.3	1.7	1.1	2.9	1.8	0.9	2.7	1.8	0.0	-0.1	-0.2	LU
HU	75.4	81.9	6.5	56.9	81.4	24.5	77.9	85.3	7.3	58.2	83.7	25.5	3.5	4.2	0.7	1.5	2.5	1.0	6.6	3.4	-3.1	1.1	1.8	0.8	6.1	2.3	-3.8	-0.5	-0.8	-0.3	HU
MT	77.3	82.7	5.5	51.5	67.5	16.0	79.7	86.0	6.4	52.3	69.2	16.8	3.4	4.4	1.0	5.4	2.0	-3.4	8.1	-0.5	-8.6	4.7	1.0	-3.7	7.5	-0.9	-8.4	-1.2	-1.2	0.0	MT
NL	80.2	80.7	0.6	69.7	74.7	4.9	82.6	84.6	1.9	72.0	78.5	6.5	3.4	5.0	1.7	2.3	-0.3	-2.6	5.8	0.2	-5.6	1.1	0.1	-1.0	4.2	-0.2	-4.4	-1.7	0.5	2.2	NL
AT	76.8	79.5	2.7	54.6	62.1	7.5	80.3	82.9	2.6	56.5	63.9	7.4	4.6	4.3	-0.3	0.9	0.9	0.0	1.5	2.8	1.4	0.1	0.5	0.4	1.0	2.6	1.7	-1.0	-0.5	0.5	AT
PL	73.3	72.1	-1.2	49.9	53.1	3.2	75.7	75.9	0.2	51.1	55.1	4.0	3.3	5.2	1.8	1.5	1.4	-0.1	1.3	2.3	1.0	0.4	1.0	0.6	0.8	2.2	1.3	-1.5	-0.7	0.8	PL
PT	76.2	80.4	4.2	60.4	73.8	13.3	81.4	85.7	4.3	64.5	78.4	14.0	6.7	6.4	-0.2	3.4	4.6	1.2	3.8	9.4	5.7	0.8	3.6	2.7	2.0	9.1	7.1	-3.3	-1.5	1.8	PT
RO	71.0	72.7	1.7	47.9	55.7	7.8	73.7	76.0	2.2	49.0	57.2	8.2	4.0	4.8	0.7	3.1	6.1	3.0	2.5	6.5	4.0	2.4	5.4	2.9	2.4	6.5	4.1	-1.1	-1.4	-0.4	RO
SI	76.4	78.3	1.9	48.0	60.7	12.8	79.9	83.0	3.1	50.3	64.6	14.3	4.5	5.8	1.3	3.9	3.6	-0.3	3.0	2.6	-0.4	2.2	3.6	1.4	2.7	3.7	1.0	-2.3	-0.1	2.2	SI
SK	73.6	71.3	-2.3	57.7	56.4	-1.3	78.0	76.4	-1.6	60.5	59.6	-0.9	5.8	7.0	1.2	1.9	-0.6	-2.5	6.9	0.5	-6.4	-0.1	-1.5	-1.3	5.5	-0.4	-6.0	-2.6	-0.9	1.7	SK
FI	77.1	79.7	2.6	66.8	76.0	9.2	82.2	85.0	2.8	71.5	81.4	9.9	6.9	6.9	0.0	2.4	2.5	0.1	3.9	1.2	-2.7	2.1	2.1	0.0	4.6	1.8	-2.8	-0.4	-0.7	-0.2	FI
SE	82.1	83.0	0.8	77.9	76.0	-1.9	87.3	87.1	-0.3	81.7	78.9	-2.8	7.0	5.6	-1.4	-0.2	0.7	0.9	2.6	1.5	-1.1	0.5	0.6	0.1	2.9	1.2	-1.8	1.0	-0.2	-1.2	SE
NO	79.4	78.7	-0.7	72.8	69.2	-3.6	82.1	81.2	-0.9	73.9	70.3	-3.6	3.8	3.6	-0.2	-0.4	-1.6	-1.2	1.0	-2.6	-3.6	-0.1	-1.5	-1.4	1.2	-2.5	-3.7	0.5	0.2	-0.2	NO
EA	72.6	76.3	3.7	60.0	70.2	10.2	78.4	81.0	2.5	63.7	73.7	10.0	7.7	6.0	-1.7	1.2	1.0	-0.2	1.5	0.9	-0.6	0.3	0.4	0.1	1.0	0.7	-0.3	-1.1	-0.8	0.4	EA
EU	73.1	76.2	3.1	59.1	68.7	9.6	78.2	80.7	2.5	62.3	71.9	9.6	6.8	5.8	-1.0	1.4	1.2	-0.1	1.9	1.4	-0.5	0.5	0.7	0.2	1.5	1.2	-0.3	-1.1	-0.8	0.4	EU27

Source: Commission services, EPC.

Table I.2.3: **Comparison of 2021 and 2018 long-term projections: potential GDP growth and its determinants**

	Projection exercise 2021										2021 AR - 2018 AR (2019-70)										
		Due to growth in										Due to growth in									
	GDP growth 2019-70	Labour prod. (GDP/ hours worked)	TFP	Capital deepening	Labour input	Total population	Employment rate	Share of working age population	Change in average hours worked	GDP per capita growth 2019-70	GDP growth 2019-70	Labour prod. (GDP/ hours worked)	TFP	Capital deepening	Labour input	Total population	Employment rate	Share of working age population	Change in average hours worked	GDP per capita growth 2019-70	
	1=2+5	2=3+4	3	4	5=6+7+8+9	6	7	8	9	10=1-6	1=2+5	2=3+4	3	4	5=6+7+8+9	6	7	8	9	10=1-6	
BE	1.2	1.2	0.8	0.4	0.0	0.1	0.1	-0.2	0.0	1.2	-0.3	-0.1	-0.1	0.0	-0.3	-0.3	0.0	0.0	0.0	0.0	BE
BG	1.2	2.1	1.3	0.8	-0.9	-0.6	0.0	-0.3	0.0	1.9	-0.1	-0.2	-0.1	-0.1	0.2	0.1	0.1	0.0	0.0	-0.1	BG
CZ	1.6	2.0	1.3	0.7	-0.3	-0.1	0.0	-0.3	0.0	1.7	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	CZ
DK	1.7	1.5	1.0	0.5	0.2	0.1	0.3	-0.2	0.0	1.6	0.1	0.1	0.1	0.0	0.0	-0.2	0.2	0.0	0.0	0.3	DK
DE	1.2	1.4	0.9	0.5	-0.2	0.0	0.0	-0.2	0.0	1.3	0.1	-0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	DE
EE	1.9	2.2	1.4	0.8	-0.3	-0.2	0.1	-0.2	-0.1	2.1	0.4	0.3	0.2	0.1	0.1	0.0	0.1	0.0	-0.1	0.4	EE
IE	1.8	1.5	1.1	0.5	0.2	0.6	-0.2	-0.1	0.0	1.2	-0.1	0.0	0.0	0.0	-0.1	0.1	-0.2	0.0	0.0	-0.2	IE
EL	1.2	1.5	1.0	0.4	-0.3	-0.4	0.3	-0.2	0.0	1.6	0.3	0.2	0.2	0.0	0.1	0.2	-0.1	0.0	0.0	0.1	EL
ES	1.4	1.5	1.0	0.5	0.0	0.0	0.2	-0.2	0.0	1.4	-0.1	0.1	0.1	0.0	-0.2	-0.1	-0.1	0.0	0.0	0.1	ES
FR	1.3	1.3	0.8	0.5	0.1	0.1	0.1	-0.2	0.0	1.3	-0.2	0.0	0.0	0.0	-0.2	-0.2	0.0	0.0	0.0	0.0	FR
HR	1.1	1.8	1.1	0.7	-0.7	-0.6	0.1	-0.2	0.0	1.7	-0.1	0.1	0.1	0.1	-0.3	-0.2	-0.1	0.0	0.0	0.1	HR
IT	1.0	1.3	0.8	0.4	-0.2	-0.2	0.2	-0.2	0.0	1.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	IT
CY	1.9	1.5	0.9	0.6	0.4	0.5	0.2	-0.2	0.0	1.4	0.4	0.2	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.3	CY
LV	1.2	2.3	1.4	0.9	-1.1	-0.9	0.1	-0.2	0.0	2.2	-0.7	-0.4	-0.3	-0.1	-0.3	-0.2	0.0	0.0	0.0	-0.4	LV
LT	1.2	2.2	1.3	0.9	-1.0	-0.8	0.1	-0.2	0.0	2.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	LT
LU	1.8	1.1	0.7	0.4	0.7	0.5	0.4	-0.2	0.0	1.3	-0.4	-0.3	-0.2	-0.1	0.0	-0.5	0.5	0.0	0.0	0.2	LU
HU	1.8	2.1	1.3	0.7	-0.3	-0.2	0.2	-0.2	0.0	2.0	0.2	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.2	HU
MT	2.2	1.8	1.2	0.6	0.4	0.7	0.1	-0.3	-0.1	1.5	0.1	-0.1	-0.1	-0.1	0.2	0.4	-0.2	0.0	-0.1	-0.3	MT
NL	1.3	1.3	0.9	0.5	0.0	0.1	0.1	-0.2	0.0	1.2	-0.2	0.0	0.0	0.0	-0.2	-0.2	0.0	0.0	0.0	0.0	NL
AT	1.3	1.4	0.9	0.5	0.0	0.1	0.1	-0.2	0.0	1.2	-0.1	-0.1	-0.1	0.0	-0.1	-0.2	0.1	0.0	0.0	0.0	AT
PL	1.5	2.3	1.5	0.9	-0.8	-0.4	-0.1	-0.3	0.0	1.9	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	PL
PT	1.2	1.7	1.1	0.6	-0.5	-0.4	0.1	-0.3	0.0	1.6	0.3	0.1	0.1	0.0	0.2	0.1	0.1	0.0	0.0	0.2	PT
RO	1.7	2.6	1.6	0.9	-0.9	-0.7	0.0	-0.2	0.0	2.4	0.0	0.1	0.0	0.1	-0.1	-0.2	0.1	0.0	0.0	0.2	RO
SI	1.6	1.9	1.3	0.6	-0.3	-0.1	0.1	-0.2	0.0	1.7	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	SI
SK	1.3	2.1	1.3	0.8	-0.7	-0.3	-0.1	-0.3	0.0	1.6	-0.3	-0.2	-0.2	0.0	-0.1	-0.1	0.0	0.0	0.0	-0.2	SK
FI	1.2	1.5	0.9	0.5	-0.3	-0.2	0.1	-0.2	0.0	1.4	-0.1	0.1	0.1	0.0	-0.2	-0.2	0.0	0.0	0.0	0.1	FI
SE	1.8	1.4	0.9	0.5	0.4	0.5	0.1	-0.1	0.0	1.3	-0.1	-0.1	-0.1	0.0	0.0	-0.1	0.1	0.0	0.0	0.0	SE
NO	1.7	1.5	0.9	0.5	0.2	0.5	-0.1	-0.1	0.0	1.2	-0.1	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	NO
EA	1.3	1.4	0.9	0.5	-0.1	0.0	0.1	-0.2	0.0	1.3	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	EA
EU	1.3	1.6	1.0	0.5	-0.2	-0.1	0.1	-0.2	0.0	1.4	0.0	0.1	0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.1	EU27

Source: Commission services, EPC.

3. SENSITIVITY TESTS

3.1. OVERVIEW OF SENSITIVITY SCENARIOS

The Ageing Report baseline projections attempt to measure how population ageing can influence economic and budgetary developments over the long term. However, given the inherent uncertainty of the assumptions underpinning any long-run projections, it is essential to carry out a number of sensitivity tests to quantify the responsiveness of projection results to changes in key underlying assumptions. Moreover, additional scenarios are included given the high level of uncertainty about the magnitude and duration of the COVID-19 crisis.

To assess how changes in the macroeconomic and budgetary assumptions affect the projections, the Ageing Report includes sensitivity tests and alternative scenarios. Sensitivity tests are an indispensable element of long-term projections, as they quantify the responsiveness of age-related expenditure to changes in policy assumptions and in key drivers, such as population and macroeconomic variables. This chapter describes the impact of the various scenarios on potential GDP growth, while the impact on expenditure is described in Part II.

This report contains standard sensitivity scenarios and two ad-hoc macroeconomic scenarios related to the COVID-19 crisis. Among the standard sensitivity scenarios, the analysis considers scenarios for five variables affecting the population, labour force and productivity, and three policy risk scenarios. The assumptions underpinning these scenarios are summarised in Table I.3.1. Moreover, the report includes two additional macroeconomic scenarios reflecting the uncertainty about the magnitude, impact and duration of the COVID-19 crisis.

The selection of sensitivity tests draws on experience from previous rounds of Ageing Report. In general, the set of scenarios applied in the 2018 Ageing Report was appropriate to conduct a sensitivity analysis of changes in age-related expenditure. Reproducing these tests ensures consistency and enables comparison between projection exercises. At the same time, experience and the need to assess new types of risks warrant a number of modifications.

Compared with the previous round, some tests were therefore removed and new ones added. The higher/lower employment rate scenarios covering the age group 20-64 are no longer carried out. Nevertheless, the scenario assuming a higher employment rate among older workers aged 55-74 is maintained as it highlights how increasing employment among older people can benefit the economy. As for labour productivity, this round

Table I.3.1: **Overview of sensitivity tests and alternative scenarios**

Population			Labour force	Productivity	Policy risk scenarios		
Higher life expectancy	**Lower / higher net migration**	**Lower fertility**	**Higher employment rate older workers**	**Higher TFP growth and TFP risk scenario**	**Linking retirement age**	**Unchanged retirement age**	**Offset declining pension benefit ratio**
Increase in life expectancy at birth of **two years** by 2070 compared with the baseline projection.	**33% less / more** net migration compared with the baseline over the entire projection horizon.	**20% lower** fertility compared with the baseline over the entire projection horizon.	Employment rate of older workers (55-74y) **10 pps higher** compared with the baseline projection.	TFP growth assumed to **converge to 0.8% / 1.2%** (instead of 1%). As done for the baseline scenario, a period of fast convergence for 'followers' is assumed (i.e. rising by up to 0.8% + 0.5% and 1.2% + 0.5%, respectively).	The effective retirement age is shifted year-over-year in line with **3/4 of the change in life expectancy** at current retirement ages (in the Cohort Simulation Model).	The early and statutory retirement ages, as well as career requirements, are **frozen** at the situation in the base year.	When the earnings-related public pension benefit ratio declines by 10% compared to the base year level, measures are taken to **stabilise the benefit ratio**.
			The increase is introduced linearly over the period 2021-2033 and remains 10 pps higher thereafter.	*Convergence to the target rate in 2045 from the latest outturn year, i.e. 2019.*			
			The higher employment rate of this group of workers is assumed to be achieved through a reduction of the inactive population.				

Note: For details on the sensitivity scenarios, see Part I, Chapter 5 in EC-EPC (2020).
Source: Commission services, EPC.

Table I.3.2: **Breakdown of the impact of scenarios on average annual potential GDP growth, EU, 2019-2070 (%)**

	Annual potential GDP growth in 2019-2070	of which								Annual GDP per capita growth in 2019-2070
		Labour productivity (GDP per hour worked)	of which		Labour input	of which				
			TFP	Capital deepening		Total population	Employment rate	Share of working age population	Change in average hours worked	
	1=2+5	2=3+4	3	4	5=6+7+8+9	6	7	8	9	10=1-6
Baseline	**1.3**	**1.6**	1.0	0.5	**-0.2**	-0.1	0.1	-0.2	0.0	**1.4**
Sensitivity tests										
Higher life expectancy	**1.4**	**1.6**	1.0	0.5	**-0.2**	-0.1	0.1	-0.2	0.0	**1.4**
Higher migration	**1.5**	**1.6**	1.0	0.5	**-0.1**	0.0	0.1	-0.2	0.0	**1.5**
Lower migration	**1.2**	**1.6**	1.0	0.6	**-0.4**	-0.2	0.1	-0.2	0.0	**1.4**
Lower fertility	**1.1**	**1.6**	1.0	0.5	**-0.5**	-0.3	0.1	-0.2	0.0	**1.4**
Higher employment rate of older workers	**1.4**	**1.5**	1.0	0.5	**-0.1**	-0.1	0.2	-0.2	0.0	**1.5**
TFP risk scenario	**1.1**	**1.3**	0.9	0.5	**-0.2**	-0.1	0.1	-0.2	0.0	**1.2**
Higher TFP growth	**1.6**	**1.8**	1.2	0.6	**-0.2**	-0.1	0.1	-0.2	0.0	**1.7**
Policy risk scenarios										
Linking retirement age to life expectancy	**1.4**	**1.6**	1.0	0.5	**-0.2**	-0.1	0.2	-0.2	0.0	**1.5**
Unchanged retirement age	**1.3**	**1.6**	1.0	0.6	**-0.3**	-0.1	0.0	-0.2	0.0	**1.4**
Offsetting declining pension benefit ratio	**1.3**	**1.6**	1.0	0.5	**-0.2**	-0.1	0.1	-0.2	0.0	**1.4**
Macroeconomic scenarios										
Lagged recovery	**1.3**	**1.6**	1.0	0.5	**-0.2**	-0.1	0.1	-0.2	0.0	**1.4**
Adverse structural	**1.0**	**1.2**	0.8	0.4	**-0.3**	-0.1	0.1	-0.2	0.0	**1.1**

Note: The 'offsetting declining pension benefit ratio' scenario uses the same macroeconomic assumptions as the baseline and therefore does not affect GDP.
Source: Commission services, EPC.

considers only a 'higher TFP growth' scenario combined with a 'TFP risk' scenario, dropping the 'lower TFP growth' scenario of the 2018 Ageing Report.

The report also includes two new policy scenarios in addition to the one linking the retirement age to life expectancy. The first one assumes that the age requirements for retiring remain unchanged throughout the projection period ([54]). The second scenario assumes that policy measures prevent the pension benefit ratio from declining by more than 10%.

Finally, the report envisages two adverse macroeconomic scenarios reflecting COVID-19 related risks ([55]). The 'lagged recovery' scenario assumes a slightly larger impact on potential growth than in the baseline, but with a much more pronounced cyclical downturn and a longer recovery phase. The 'adverse structural' scenario additionally assumes that the growth potential will be lower over the next decade, with a permanent negative impact compared the baseline scenario.

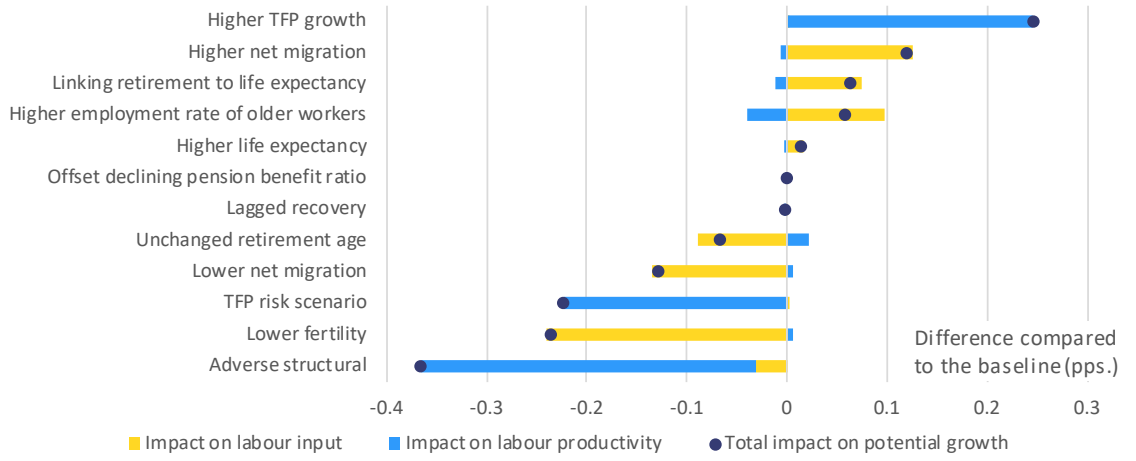
3.2. PROJECTION RESULTS

The sensitivity analysis highlights that more adverse assumptions on employment, labour productivity growth and the consequences of the COVID-19 crisis put sizeable downside risks on GDP growth. Conversely, upside risks exist, including linking the retirement age to increases in life expectancy, which strengthens employment and potential growth perspectives.

Five scenarios improve the growth outlook compared to the baseline (see Table I.3.2 and Graph I.3.1). Four of them do so because they offset at least partially the projected drop in labour input entailed in the baseline: higher net migration, a higher employment rate of older workers, linking the retirement age to gains in life expectancy and, to a lesser extent, a longer life expectancy itself. The fifth scenario, which assumes higher TFP growth, increases potential growth by boosting labour productivity.

([54]) As this scenario uses the same macroeconomic assumptions as the baseline, it does not affect GDP but, as discussed in Part II, it affects pension expenditure.
([55]) For an illustration of these scenarios for the EU and a detailed description, see Box I.3.1 in EC-EPC (2020).

Graph I.3.1: **Alternative scenarios: deviation from the baseline (pps), annual averages, 2019-2070**



Source: Commission services, EPC.

Conversely, five scenarios worsen potential growth. Lower net migration, lower fertility and not increasing the retirement age would exacerbate the decline in labour input, while lower TFP growth as assumed in the TFP risk scenario would hamper labour productivity growth. Moreover, if the COVID-19 crisis had a permanent negative impact as assumed in the adverse structural scenario, this would imply both lower labour input and lower productivity.

The last two scenarios have a limited impact on GDP, if any. These are the policy scenario offsetting large declines in pension benefit ratios, which by design affects age-related expenditure rather than GDP, and the lagged recovery scenario, which only has a transitory effect.

Part II

Long-term projections of age-related expenditure

1. PENSIONS

1.1. INTRODUCTION

Public pensions are a major component of general government spending and projecting future developments is key to identify potential pressures on public finances in the long term. One of the crucial parts of the EC-EPC budgetary projection exercise is assessing the impact of ageing populations on pension expenditure. Given that the State plays a key role in the pension provision in all EU Member States, the main emphasis of the pension projections is on public schemes ([56]). A broad definition of public schemes and other public pensions includes those schemes that are statutory and administered by the government. Public pension schemes affect public finances as they are part of the general government sector in the national accounts system. The State is the ultimate guarantor of public pension benefits, bearing the costs and risks attached to the scheme.

This chapter presents the main features of public pension systems in the EU and long-term projections, notably reflecting the impact of reforms in recent decades. The set-up of public pension systems varies significantly across the EU, complicating cross-country comparisons (see Sections 1.2 to 1.4). These differences stem from traditionally divergent approaches on how to provide retirement income. Moreover, many countries have implemented comprehensive pension reforms in recent decades, as reflected in the projections (see Sections 1.5 to 1.9).

1.2. TAXONOMY OF PUBLIC PENSION SCHEMES IN EU MEMBER STATES ([57])

Public pension systems can be classified according to different criteria. Two of the most common ones are the funding source and the specific risk they cover. Looking at the funding source, pensions can be either based on contributions (i.e. earnings-related or contributory) or based on taxes or other sources (i.e. non-earnings-related or non-contributory). By risk covered, schemes can be subdivided into old-age and early pensions, disability, survivor, minimum or other schemes such as special pensions (see Box II.1.1). The public pension projections discussed in this chapter reflect this diversity (see Annex I and II).

Three broad types of public pension scheme can be distinguished in the EU, depending on how the pension benefit is determined. In particular, among publicly provided earnings-related pensions, a distinction is made between defined benefit (DB), notional defined contribution (NDC), and point systems (PS) (see Table II.1.1). In a few countries – e.g. Denmark, Ireland and the Netherlands – the public pension system is based on a flat-rate pension, which can be supplemented by occupational schemes. Ireland has a specific occupational earnings-related public pension scheme for its civil servants, while other countries rely on private occupational schemes.

In most countries, the public pension system consists of statutory old-age pension schemes, based on earnings or contributions. These mandatory schemes can take the form of a common scheme for all employees or several parallel sectorial or occupational schemes.

Table II.1.1: **Main type of public pension scheme**

Country	*Type*	*Country*	*Type*
BE	DB	LT	PS
BG	DB	LU	DB
CZ	DB	HU	DB
DK	Flat rate + DB	MT	Flat rate + DB
DE	PS	NL	Flat rate + DB
EE	PS	AT	DB
IE	Flat rate + DB	PL	NDC
EL(1)	Flat rate + DB + NDC	PT	DB
ES	DB	RO	PS
FR(2)	DB + PS	SI	DB
HR	PS	SK	PS
IT	NDC	FI	DB
CY	PS	SE	NDC
LV	NDC	NO	NDC

(1) The NDC is an auxiliary mandatory pension scheme;
(2) PS refers to the complementary schemes AGIRC and ARRCO.
Source: European Commission, EPC.

The type of risk covered by publicly provided pension benefits varies across countries. Besides old-age pension schemes, most pension schemes provide also early retirement, disability and

([56]) Public pension expenditure include all public expenditure on pension and equivalent cash benefits granted for a long period, see Annex II for details on the coverage of the projections.

([57]) For a detailed description of pension schemes in EU Member States, please consult the PENSREF database, available at: https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases_en.

survivors' pensions (see Table II.AII.1). Some countries, however, have specific arrangements for some of these benefits. In particular, in some countries, disability benefits are not considered pensions (although they are granted for long periods to people outside of the labour market), and, in some cases, they are covered by the sickness insurance scheme rather than by the pension scheme.

In addition, most public pension systems provide a (quasi-)minimum guaranteed or basic pension to those who do not qualify for the earnings-related scheme or have accrued limited pension rights (see Table II.AII.1). Minimum guaranteed pensions are either provided through earnings-related schemes or are means-tested, provided by a specific minimum pension or general social assistance scheme.

Special pensions constitute another group of public benefits, often non-contributory. Such preferential schemes, which deviate from the standard regime in terms of eligibility, benefit calculation or higher state funding, are granted on the basis of a *strenuous occupational activity* – e.g. difficult working conditions, security forces – or a *special status* – e.g. most groups of civil servants, persons with merits achieved or in a situation of deprivation or victimhood (see Box II.1.1 for more details). A mapping of the prevalence and size of special schemes in the 2018 Ageing Report led to the conclusion that such schemes exist in nearly all EU Member States. In the context of the 2021 Ageing Report, Member States reported figures on special schemes on a voluntary basis only. As a result, in most cases, no detailed projections for special pension schemes are available, though the schemes are generally included in the projections (see Box II.1.1 for more details).

Pensions provided by occupational schemes are those that, rather than being legally mandatory, are linked to an employment relationship with the scheme provider. However, in some countries, the occupational pension provision is similar to earnings-related public pension schemes.

Several countries ([58]) switched part of their public pension schemes into (quasi-)mandatory private funded schemes. This provision is typically statutory but the insurance relationship is between the individual and the pension fund. Consequently, insured people maintain ownership of the pension assets, meaning that they enjoy the returns and bear the risks. Participation in a funded scheme is conditional on being already covered by the public scheme and is generally mandatory for new labour market entrants, being usually voluntary for older workers (the Swedish system is mandatory for all non-retired taxpayers).

The mandatory individual schemes have been the subject of repeated reforms, which in some cases led to their abolition. The latter was for example the case in the Czech Republic and Hungary. A reform adopted by Estonia in October 2020 means that, while new entrants to the labour market are still automatically added to the second pillar, existing and new participants can suspend contributions or opt-out of the scheme if they wish. In Lithuania, people can opt-out within 6 months of their auto-enrolment. Also the Slovakian scheme is no longer fully mandatory.

The way in which countries finance their pension systems differs, with large variation in the extent to which contributions suffice to cover expenditure. In particular:

– *Employment-related systems are usually financed from compulsory contributions made by workers and employers* (normally a percentage of earnings). Most public pension schemes operate on a pay-as-you-go (PAYG) basis, whereby revenues from current contributions fund current pension benefits. Moreover, in many countries, the authorities participate in the financing of employment-related as well as other social security programs.

– *In most countries, guaranteed minimum pensions are covered by general taxes, and earnings-related schemes are often subsidised from general government means*. The government may contribute through an appropriation from general revenues based on a percentage of total wages paid to insured workers, finance part or all of the cost of a programme, or pay a subsidy to cover deficits of insurance funds. In some cases, the government pays the contributions for low-paid

([58]) Bulgaria, Estonia, Croatia, Latvia, Lithuania, Poland, Romania, Slovakia and Sweden.

workers. Social security contributions and other earmarked income are kept in dedicated funds and are shown as a separate item in government accounts.

– *Some specific arrangements – notably those covering public sector employees – sometimes do not constitute a clear scheme*, as pension disbursements appear as direct expenditure in the government budget.

– *On the other hand, some predominantly PAYG pension schemes have statutory requirements for partial pre-funding* and, in view of rising pension expenditure, several countries have created reserve funds for their public pension schemes.

While occupational and individual pension schemes are usually funded, the degree of their funding relative to the pension promises may differ. Future pension benefits can be related either to the salary and career length (defined benefit system) or to paid contributions (defined contribution system).

1.3. COVERAGE OF PENSION PROJECTIONS

Publicly provided or first pillar pensions account for the lion's share of retirement income in EU countries. They are the main focus of the current projection exercise. In particular, the projection exercise focuses mainly on public pension expenditure and its main components (minimum, old-age, early retirement, disability and survivors' pensions). In addition, many countries have private pension schemes, either occupational or individual, constituting respective second and third pillar pensions, for which projections are provided on a voluntary basis. Annex II provides details on the coverage of the projections. The coverage of public pensions is generally exhaustive, including pension-like benefits for several countries – e.g. the *Ausgleichszulage* and *Rehabilitationsgeld* in the case of Austria and the work ability benefits for Estonia ([59]). This broad interpretation of pension benefits improves cross-country comparability.

([59]) For details on these benefits, see pension fiches for Austria and Estonia.

Public pension projections in this report are based on national projection models and subject to in-depth peer-reviews by the AWG and the Commission. Given the diversity and complexity of national pension systems, it is difficult to project pension expenditure using one common model for all 27 EU countries. Therefore, the approach of past exercises is maintained, using national projection models to reflect more in detail the budgetary impact of institutional features and reforms of the pension systems in individual countries. Using country-specific projection models introduces nevertheless an element of heterogeneity in the results. Therefore, to ensure high quality and comparable pension projections, the AWG and the Commission appraised the results in-depth during five peer review meetings between September and December 2020. In particular, they checked the projected figures' adherence to the agreed methodology and macroeconomic assumptions described in Part I of this report ([60]) and to the legislation in force in each country, with a cut-off date on 1 December 2020 ([61]). The AWG revised the projections where necessary and validated them before endorsement by the EPC.

1.4. FEATURES OF PENSION SYSTEMS IN THE EU

This section discusses in turn key features that are determinant for pension expenditure developments, as well as pension system funding. On the expenditure side, the size and development of public pension spending is not only determined by demographic factors, but also by the generosity of the system (including accrual rates) and eligibility requirements. Moreover, the main characteristics of existing pension schemes across EU Member States are summarised in Table II.AII.1 in Annex II, which shows which types of benefits exist, whether pensions are provided on a flat-rate or on an earnings-related basis, and whether enrolment in the scheme is mandatory or

([60]) EC-EPC (2020), 'The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies', European Economy No. 142-2020.

([61]) The exception is Ireland, for which projections take account of the Social Welfare Act 2020 of 22 December 2020, with assumptions being updated accordingly compared to Part I of the report. For details on the legislation in place in all countries, see PENSREF database.

voluntary. It also informs about the scheme's coverage in the pension projections.

Pensionable earnings, valorisation and indexation

Three important factors for future pension spending are: i) the definition of pensionable earnings, ii) the valorisation rule and iii) the indexation rule (see Table II.AII.2 in Annex II). These factors are discussed in turn below.

Most Member States use full career earnings to determine pension entitlements, thus establishing a close relationship between the contributory period and the pension benefit. In terms of financial sustainability, this leads, *ceteris paribus*, to lower pension expenditure in comparison to countries where benefits are calculated on only part of the entire career. Considering only the best or last earning years results in higher entitlements as wages generally rise throughout careers. In countries where flat-rate benefits are the main pension component (Denmark, Ireland and the Netherlands), the pensionable earnings reference is irrelevant.

Valorisation rules define how past pension contributions are capitalised upon retirement. Fifteen Member States and Norway valorise acquired rights on the basis of wage growth or a combination of wage and price growth. Estonia, Latvia and Lithuania account for the demographic impact on the contributory base by valorising on the basis of changes in the wage bill or social contributions. Italy uses GDP growth to time-adjust past contributions. Five countries (BE, ES, FR, MT and PT) apply pure price valorisation. The flat-rate systems of Denmark, Ireland and the Netherlands do not require a valorisation of pension rights.

Another way to look at the pensionable earnings reference and the valorisation rule is from the angle of the replacement rate and personal income distribution. Different mixes of the two parameters will result in a higher or lower average initial pension benefit relative to the last average wage received – the replacement rate ([62]). This determines whether pensioners will be in a higher or lower percentile of the income distribution compared to before retirement. Countries aiming to preserve the relative position of new pensioners in the overall personal income distribution tend to use the full career as reference for the pensionable earnings and to apply a wage valorisation rule. Alternatively, using the best career wages or an average of final years as reference for the pensionable earnings tends to preserve the relative income of the pensioners compared to the distribution of wages at retirement. Valorisation rules that disregard or only partially consider the increase in labour productivity lead to lower pension benefits and hence a lower position in the income distribution at retirement.

Once the average replacement rate at retirement is determined, an important element is the indexation of pensions in payment, i.e. how benefits are adjusted over time. The change of the average public pension relative to the average wage – the benefit ratio – is therefore also influenced by the pension indexation parameter. The latter determines whether pensioners can expect to maintain their position in the income distribution over time. In the projections, wages are assumed to evolve in line with prices and labour productivity. A nominal wage indexation rule thus preserves pensioners' relative position in the income distribution. On the contrary, partial nominal wage indexation or price indexation drives pensioners towards lower income percentiles over time. Hence, overall, the generosity of a pension system is affected by:

– The average replacement rate at retirement (influenced by the valorisation rule) and

– The evolution of the benefit ratio (influenced additionally by the indexation rule) ([63]).

Indexation rules are generally different from valorisation rules. 23 Member States apply an indexation rule below nominal wage growth, with indexation of pension benefits in five of them limited to inflation (FR, IT, HU, AT and SK). The legislated indexation rule is particularly important for minimum pensions. Section 1.6.4 of this

([62]) The accrual rate and the contributory period are the other determinants of the pension benefit in an earnings-related system. See Section 1.7.

([63]) See Sections 1.6.2 and 1.6.3 for a more detailed analysis of the indicators.

chapter provides a more detailed analysis of the minimum pension projections.

In addition, several countries have introduced automatic balancing mechanisms or sustainability factors (see Table II.1.2). A number of countries have automatic balancing mechanisms (DE, ES, LT and SE), which reduce pension indexation to prevent the pension system from running a deficit over time. Another adjustment mechanism found in several countries (FR, FI, ES, IT, LV, PL, PT, SE and NO) is a sustainability factor, which determines the initial pension benefit in function of life expectancy.

Table II.1.2: **Automatic balancing mechanisms, sustainability factors and links to life expectancy in pension systems**

	Automatic balancing mechanism	Sustainability factor (benefit linked to life expectancy)(6)	Retirement age linked to life expectancy
CY			X
DE	X		
DK(1)			X
FR(2)		X	
FI		X	X
EL(3)			X
ES	X	X	
EE			X
IT		X	X
LT	X		
LV		X	
MT(4)			X
NL(5)			X
PL		X	
PT(5)		X	X
SE	X	X	
NO		X	

(1) Subject to Parliamentary decision.
(2) Pension benefits evolve in line with life expectancy through the 'proratisation' coefficient; it has been legislated until 2035.
(3) An automatic balancing mechanism is applied in the auxiliary pension system.
(4) Subject to Parliamentary decision. The Government is obliged to provide Parliament, at least every five years, with recommendations to keep a stable proportion between the contribution period and life expectancy at retirement.
(5) The retirement age increases by two thirds of the increase in life expectancy in PT and NL. The PT sustainability factor is applied to some early pension benefits.
(6) In NDC systems (IT, LV, PL and SE), the benefit is linked to changes in life expectancy through the annuity factor.
Source: European Commission, EPC.

Legal and effective retirement ages

Large differences exist between countries regarding actual retirement ages and incentives to postpone retirement. The statutory retirement age, early retirement possibilities and the presence of bonuses and penalties all influence the retirement behaviour of individuals (see Table II.1.3) and determine the effective exit ages from the labour market (see Table II.1.4) ([64]). Early retirement schemes or other government measures providing pension income before reaching the official retirement age create an opportunity to advance one's labour market exit ([65]). Hence, to ensure that higher statutory retirement ages are reflected in higher labour market exit ages, governments need to tighten early exit possibilities accordingly, e.g. by extending career requirements or early retirement ages. Another way are financial incentives to stay longer in the labour market, i.e. applying penalties/bonuses in the pension calculation for those who stop working before/after reaching the statutory retirement age.

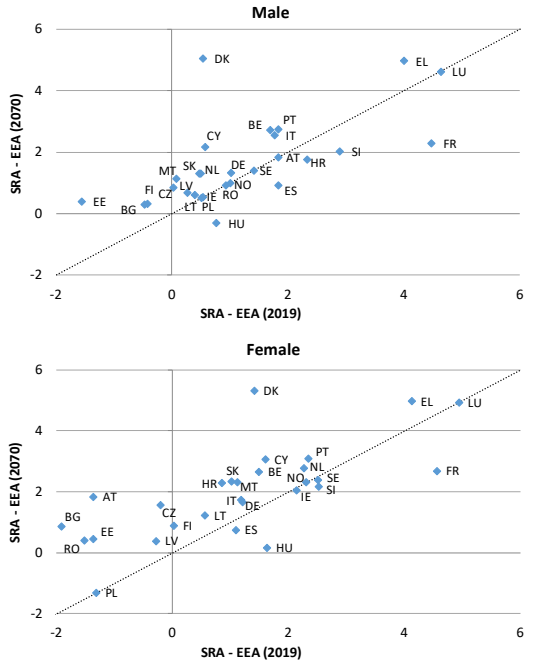
In almost every Member State, current legislation means that statutory retirement ages will rise substantially by 2070. This reflects either planned increases in the near future, including a convergence of female with male legal retirement ages ([66]), or steady increases due to links to life expectancy (see Table II.1.2). The average statutory retirement age for men/women is set to rise from 65/64 years today to around 67 years in 2070 (see Table II.1.3).

The Commission model allows projecting the future labour market exit age, which is a good proxy of the effective retirement age. The pension expenditure projections in this report are based on labour force projections using a Cohort Simulation Model (see Part I, Chapter 2). By calculating participation rates by gender and single age, average probabilities of labour force entry and exit are obtained, which are subsequently used to estimate 'effective exit ages from the labour market' throughout the projection period, taking into account legislated pension reforms when relevant. The labour market exit age serves as a

([64]) Figures concerning the average effective exit age from the labour market for 2019-2070 are projected based on the commonly agreed macroeconomic assumptions discussed in Part I of this report and the Cohort Simulation Model (see EC-EPC, 2020).
([65]) Exit behaviour is also influenced by other policies and institutional factors, such as active labour market policies or active ageing.
([66]) In 2019, eight Member States had a lower statutory retirement age for women than for men. In 2070, based on current legislation, this would be the case only in Poland and Romania.

proxy for the effective retirement age in the projection exercise.

Graph II.1.1: **Difference between statutory retirement age (SRA) and average effective exit age (EEA): 2019 and 2070 (years)**

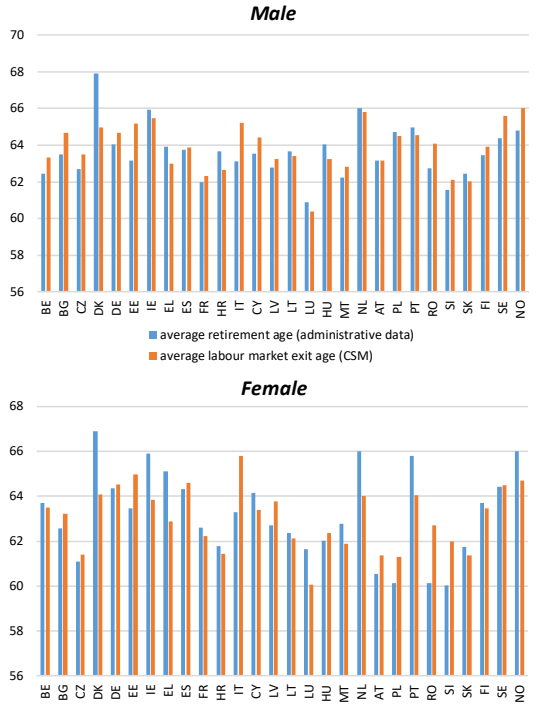


Source: European Commission, EPC

A significant gap exists between the statutory and the effective retirement age, and would widen further over the projection horizon. In most countries, people currently leave the labour market before reaching the statutory retirement age (see Table II.1.4), with a difference of a little over one year on average in the EU for both men and women. According to the labour participation projections, this difference would widen to about 2 year for both men and women in 2070 (see Graph II.1.1). Only Hungarian men and Polish women are expected to continue working, on average, beyond the statutory retirement age in 2070. Countries situated left (right) of the 45-degree line in Graph II.1.1 are expected to see the gap between statutory and effective retirement ages widen (narrow). The generally widening gap reflects the modelling assumptions: legislated increases in statutory retirement ages are not fully passed through to exit ages as people are assumed to leave the labour market through alternative pathways, e.g. disability or early retirement schemes. While the average legal retirement age for men is legislated to rise by about 1 year by 2030 in the EU, the average labour market exit age would rise by just 0.7 year.

Comparing average labour market exit ages with effective retirement ages points to a diversity in retirement behaviour. Graph II.1.2 compares the CSM-based labour market exit ages with the average age at which people effectively start receiving pension benefits. The latter is calculated based on the administrative data on the age distribution of new old-age and early pensioners for 2019, as reported by the Member States. The moment people leave the labour market – and thus stop paying pension contributions – does not necessarily coincide with the moment they actually start drawing pension benefits. For example, many countries allow people to continue working upon (partial) retirement. Conversely, people might be neither active on the labour market nor entitled to pension benefits yet.

Graph II.1.2: **Average retirement age (old-age and early retirement) and average labour market exit age**



Administrative data shows 2019 figures; 2018 for BE, DK and FR. Average labour market exit ages refer to 2020.
Source: European Commission, EPC.

Table II.1.3: **Statutory retirement ages, early retirement (in brackets) and incentives to postpone retirement**

	Statutory retirement age (early retirement age)								Incentives**	
	MALE				FEMALE					
	2019	2030	2050	2070	2019	2030	2050	2070	Penalty	Bonus
BE	65 (63)	67 (63)	67 (63)	67 (63)	65 (63)	67 (63)	67 (63)	67 (63)		
BG	64.2 (63.2)	65 (64)	65 (64)	65 (64)	61.3 (60.3)	63.3 (62.3)	65 (64)	65 (64)	X	X
CZ	63.5 (60)	65 (60)	65 (60)	65 (60)	61.2 (58.2)	65 (60)	65 (60)	65 (60)	X	X
DK*	65.5 (63)	68 (65)	72 (69)	74 (71)	65.5 (63)	68 (65)	72 (69)	74 (71)		
DE	65.7 (63)	67 (63)	67 (63)	67 (63)	65.7 (63)	67 (63)	67 (63)	67 (63)	X	X
EE*	63.6 (60.6)	65.5 (60.5)	67.7 (62.7)	69.8 (64.8)	63.6 (60.6)	65.5 (60.5)	67.7 (62.7)	69.8 (64.8)	X	X
IE	66 (66)	66 (66)	66 (66)	66 (66)	66 (66)	66 (66)	66 (66)	66 (66)		
EL*	67 (62)	68.8 (63.8)	70.8 (65.8)	72.6 (67.6)	67 (62)	68.8 (63.8)	70.8 (65.8)	72.6 (67.6)	X	
ES	65.7 (63.7)	67 (65)	67 (65)	67 (65)	65.7 (63.7)	67 (65)	67 (65)	67 (65)	X	X
FR	66.8 (61.8)	67 (62)	67 (62)	67 (62)	66.8 (61.8)	67 (62)	67 (62)	67 (62)	X	X
HR	65 (60)	65 (60)	65 (60)	65 (60)	62.3 (57.3)	65 (60)	65 (60)	65 (60)	X	X
IT*	67 (64)	67.7 (64.7)	69.3 (66.3)	71 (68)	67 (64)	67.7 (64.7)	69.3 (66.3)	71 (68)		
CY*	65 (65)	66.5 (66.5)	68.3 (68.3)	69.9 (69.9)	65 (65)	66.5 (66.5)	68.3 (68.3)	69.9 (69.9)	X	X
LV	63.5 (61.5)	65 (63)	65 (63)	65 (63)	63.5 (61.5)	65 (63)	65 (63)	65 (63)		
LT	63.8 (58.8)	65 (60)	65 (60)	65 (60)	62.7 (57.7)	65 (60)	65 (60)	65 (60)	X	X
LU	65 (57)	65 (57)	65 (57)	65 (57)	65 (57)	65 (57)	65 (57)	65 (57)		
HU	64 (64.3)	65 (65)	65 (65)	65 (65)	64 (64.3)	65 (65)	65 (65)	65 (65)		X
MT	62.9 (61)	65 (61)	65 (61)	65 (61)	62.9 (61)	65 (61)	65 (61)	65 (61)		X
NL*	66.3 (66.3)	67.3 (67.3)	68.5 (68.5)	69.8 (69.8)	66.3 (66.3)	67.3 (67.3)	68.5 (68.5)	69.8 (69.8)		
AT	65 (60)	65 (60)	65 (60)	65 (60)	60 (58)	63.5 (60)	65 (60)	65 (60)	X	X
PL	65 (65)	65 (65)	65 (65)	65 (65)	60 (60)	60 (60)	60 (60)	60 (60)		
PT*	66.4 (60)	67 (60)	68.3 (60)	69.3 (60)	66.4 (60)	67 (60)	68.3 (60)	69.3 (60)	X	X
RO	65 (60)	65 (60)	65 (60)	65 (60)	61.2 (56.2)	63 (58)	63 (58)	63 (58)	X	
SI	65 (60)	65 (60)	65 (60)	65 (60)	64.5 (60)	65 (60)	65 (60)	65 (60)	X	X
SK	62.5 (60.5)	64 (62)	64 (62)	64 (62)	62.5 (60.5)	64 (62)	64 (62)	64 (62)	X	X
FI*	63.5 (61)	65.1 (62.3)	66.5 (63.7)	67.7 (64.8)	63.5 (61)	65.1 (62.3)	66.5 (63.7)	67.7 (64.8)	X	X
SE	67 (61)	67 (62)	67 (62)	67 (62)	67 (61)	67 (62)	67 (62)	67 (62)		
NO	67 (62)	67 (62)	67 (62)	67 (62)	67 (62)	67 (62)	67 (62)	67 (62)		

BG – The latest pension reform included a provision to link retirement ages to life expectancy as from 2037. This provision has not been implemented, though.
CZ – Statutory retirement age depends on the number of children. Values for women with two children are reported.
DK – Increase in the retirement age is subject to a Parliamentary decision.
IT – Retirement is allowed with at least 20 years of contribution and a minimum pension amount of 1.5 times the 2012 old-age allowance. In bracket the minimum age for early retirement under the NDC system is reported (a minimum pension amount of 2.8 times the old-age allowance is required in addition to a minimum of 20 years of contribution). Early retirement is also allowed regardless of age, with a contribution requirement of 43.142 years and 10 months (1 year less for women) in 2019, indexed to changes in life expectancy (43 years and 2 months.4 in 2030, 44 years and 5.110 months in 2050 and 46 years and 6 months.8 in 2070). Workers who reach the age of 62 with a minimum contribution requirement of 38 years (so-called Quota 100) may retire earlier in the period 2019-2021.
PT – Since 2015, early retirement is possible from the age of 60 with 40 contributory years. For each contributory year surpassing 40, the statutory retirement age is reduced by 4 months. The pension benefit is reduced by 0.5% for each month of anticipation to the statutory retirement age (penalty).
SK – Retirement ages are for childless women. For mothers, the retirement age is decreased by 6 months for each child (maximum 18 months).
SE – Retirement age flexible from age of 61 without an upper limit. Under the Employment Protection Act, an employee is entitled to stay in employment until the age of 67.
*Countries where the statutory retirement age is legislated to increase in line with life expectancy. Reported retirement ages are calculated on the basis of life expectancy expectation in the Eurostat population projections.
**Actuarial equivalence is not considered as a penalty/bonus.
Source: European Commission, EPC.

Data show differences between average exit ages and effective retirement ages for men, generally of less than one year. For men, 12 countries show effective retirement ages that were higher in 2019 than the estimated labour exit ages (see Graph II.1.2), with a difference of 0.7 year on average, meaning a period of less than one year of neither activity, nor retirement. In 16 countries, men enter the pension system before fully leaving the labour market, with an average gap of 0.9 year.

Table II.1.4: **Average effective labour market exit age, by gender.**

	MALE				FEMALE			
	2019(1)	2030	2050	2070	2019(1)	2030	2050	2070
BE	63.3	64.3	64.3	64.3	63.5	64.3	64.3	64.3
BG	64.7	64.7	64.7	64.7	63.2	63.6	64.1	64.1
CZ	63.5	64.2	64.2	64.2	61.4	63.4	63.4	63.4
DK*	65.0	66.1	68.0	69.5	64.1	65.5	67.6	69.2
DE	64.7	65.7	65.7	65.7	64.5	65.3	65.3	65.3
EE*	65.2	66.1	67.9	69.4	65.0	65.9	67.6	69.3
IE	65.5	65.5	65.5	65.5	63.9	64.0	64.0	64.0
EL*	63.0	64.8	66.6	67.6	62.9	64.8	66.6	67.6
ES	63.9	65.3	66.4	66.1	64.6	65.4	66.5	66.2
FR	62.3	63.6	64.7	64.7	62.2	63.3	64.3	64.3
HR	62.7	62.9	63.2	63.2	61.4	62.4	62.7	62.7
IT*	65.2	66.0	67.0	68.5	65.8	66.9	68.2	69.3
CY*	64.4	65.3	66.7	67.7	63.4	64.2	65.8	66.8
LV	63.2	64.3	64.3	64.3	63.8	64.6	64.6	64.6
LT	63.4	64.4	64.4	64.4	62.1	63.8	63.8	63.8
LU	60.4	60.4	60.4	60.4	60.1	60.1	60.1	60.1
HU	63.2	65.3	65.3	65.3	62.4	64.8	64.8	64.8
MT	62.8	63.9	63.9	63.9	61.9	62.7	62.7	62.7
NL*	65.8	66.6	67.6	68.5	64.0	65.0	65.9	67.0
AT	63.2	63.2	63.2	63.2	61.4	62.6	63.2	63.2
PL	64.5	64.5	64.5	64.5	61.3	61.3	61.3	61.3
PT*	64.6	65.1	65.8	66.6	64.1	64.6	65.4	66.2
RO	64.1	64.1	64.1	64.1	62.7	62.6	62.6	62.6
SI	62.1	63.0	63.0	63.0	62.0	62.8	62.8	62.8
SK	62.0	62.7	62.7	62.7	61.4	61.7	61.7	61.7
FI*	63.9	64.7	66.1	67.4	63.5	64.1	65.5	66.8
SE	65.6	65.6	65.6	65.6	64.5	64.6	64.6	64.6
NO	66.0	66.0	66.0	66.0	64.7	64.7	64.7	64.7
EA	63.6	64.5	65.1	65.5	63.2	64.0	64.6	65.1
EU	63.8	64.5	65.0	65.4	63.0	63.9	64.4	64.8

(1) 2020 figures.
(2) The average effective exit age from the labour market is based on the Cohort Simulation Model's cumulated exit probabilities for the reference age group 51-74 and may thus differ from official national exit age calculations.
(3) EU and EA are weighted averages.
(4) IE: exit ages and related macroeconomic assumptions were updated compared to Part I of this report (EC-EPC, 2020), to reflect the December 2020 reform.
(5) ES: exit ages were corrected compared to Part I of this report (EC-EPC, 2020). These corrections did not imply changes to the macroeconomic assumptions.
*Countries where the statutory retirement age is legislated to increase in line with the increase in life expectancy.
Source: European Commission, EPC.

In 2019, men in Bulgaria, Estonia, Italy, Romania, Sweden and Norway drew a pension at least one year earlier than suggested by the average labour market exit age, reflecting the possibility to combine work and retirement in some countries.

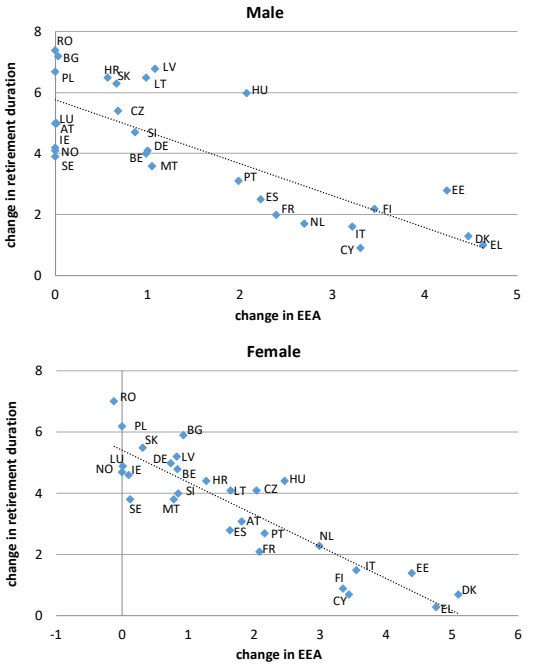
Differences are somewhat larger when looking at women. In 15 countries, women retire on average 1.1 year beyond the labour market exit age. For 13 countries, the opposite holds, with women retiring before reaching the estimated labour market exit age, by 1 year on average. In the cases of Estonia, Italy, Latvia, Poland, Romania and Slovenia, this difference exceeded one year.

Duration of retirement

By 2070, the average age at which people exit the labour market in the EU would increase by 1.6 years for men and by 1.8 years for women (see Table II.1.4). This is due to legislated increases in the retirement age to specific levels or to the fact that countries have introduced a link between retirement ages and life expectancy in their pension system (see Table II.1.3).

The estimated duration of retirement in the EU shows that current pension legislation entails about four additional years of retirement by 2070 (see Table II.1.5) ([67]). Not surprisingly, in those Member States that have legislated a link to life expectancy, the duration of retirement increases less. For people retiring in 2070, retirement would last roughly 2 years less in these countries than the EU average. Graph II.1.3 shows the inverse relationship between the increase in the effective retirement age and the shift in duration of retirement, by gender. The countries with a link to life expectancy are situated at the bottom right.

Graph II.1.3: **Increase in the average effective exit age from the labour market versus shift in duration of retirement over the period 2019-2070**



Source: European Commission, EPC.

([67]) Duration of retirement is measured as remaining years of life at the average effective labour market exit age, as calculated from life expectancy data in the Eurostat 2019-based population projections.

Table II.1.5: **Duration of retirement: by gender, as percentage of average working career and as percentage of adult life**

	Duration of retirement (years)						Duration of retirement as a share of average working career						Percentage of adult life spent in retirement						
	MALE			FEMALE			MALE			FEMALE			MALE			FEMALE			
	2019	2070	*change*	2019	2070	*change*	2019	2070	*change*	2019	2070	*change*	2019	2070	*change*	2019	2070	*change*	
BE	20.5	24.5	*4.0*	23.0	27.8	*4.8*	49.7	59.1	9.4	56.9	69.1	*12.2*	31.2	34.6	*3.5*	33.6	37.5	*3.9*	BE
BG	14.2	21.4	*7.2*	19.7	25.6	*5.9*	33.8	51.4	17.6	50.7	66.4	*15.7*	23.3	31.4	*8.1*	30.3	35.7	*5.3*	BG
CZ	17.9	23.3	*5.4*	23.5	27.6	*4.1*	43.5	55.5	12.0	65.0	71.6	*6.6*	28.2	33.5	*5.3*	35.1	37.8	*2.7*	CZ
DK*	18.5	19.8	*1.3*	21.9	22.6	*0.7*	42.4	41.8	-0.5	53.1	49.9	*-3.1*	28.3	27.8	*-0.5*	32.2	30.6	*-1.6*	DK*
DE	18.4	22.5	*4.1*	21.4	26.4	*5.0*	41.3	50.2	8.9	50.3	61.5	*11.2*	28.3	32.1	*3.8*	31.5	35.8	*4.3*	DE
EE*	16.5	19.3	*2.8*	21.5	22.9	*1.4*	38.3	39.8	1.5	52.7	48.5	*-4.1*	25.9	27.3	*1.4*	31.4	30.8	*-0.6*	EE*
IE	19.6	23.8	*4.2*	23.0	27.6	*4.6*	43.8	53.2	9.4	54.4	65.6	*11.1*	29.2	33.4	*4.2*	33.4	37.5	*4.1*	IE
EL*	20.3	21.3	*1.0*	23.6	23.9	*0.3*	51.7	47.9	-3.8	61.4	55.1	*-6.3*	31.1	30.0	*-1.1*	34.5	32.5	*-2.0*	EL*
ES	20.7	23.2	*2.5*	23.9	26.7	*2.8*	50.0	53.1	3.1	58.7	62.7	*4.0*	31.1	32.5	*1.4*	33.9	35.6	*1.7*	ES
FR	22.2	24.2	*2.0*	26.7	28.8	*2.1*	56.0	56.3	0.3	69.0	70.1	*1.1*	33.4	34.1	*0.8*	37.6	38.3	*0.7*	FR
HR	17.2	23.7	*6.5*	22.8	27.2	*4.4*	42.6	57.5	14.9	62.0	69.9	*7.9*	27.8	34.4	*6.6*	34.4	37.8	*3.4*	HR
IT*	19.6	21.2	*1.6*	22.0	23.5	*1.5*	47.5	47.6	0.1	55.4	54.5	*-1.0*	29.3	29.6	*0.3*	31.5	31.4	*-0.1*	IT*
CY*	20.0	20.9	*0.9*	23.8	24.5	*0.7*	46.6	45.2	-1.4	58.7	54.8	*-3.9*	30.1	29.6	*-0.5*	34.4	33.4	*-1.0*	CY*
LV	15.7	22.5	*6.8*	20.3	25.5	*5.2*	37.3	52.3	15.0	49.4	60.2	*10.8*	25.8	32.7	*6.9*	30.7	35.4	*4.6*	LV
LT	16.2	22.7	*6.5*	22.5	26.6	*4.1*	39.0	52.9	13.8	56.3	64.4	*8.1*	26.3	32.9	*6.6*	33.8	36.8	*3.0*	LT
LU	23.2	28.2	*5.0*	26.9	31.8	*4.9*	60.0	74.0	14.1	73.3	85.6	*12.3*	35.4	40.0	*4.6*	39.0	43.0	*4.0*	LU
HU	15.9	21.9	*6.0*	21.0	25.4	*4.4*	38.5	50.5	11.9	55.6	63.2	*7.6*	26.0	31.6	*5.6*	32.1	35.2	*3.0*	HU
MT	21.2	24.8	*3.6*	25.1	28.9	*3.8*	49.5	56.6	7.1	62.3	69.1	*6.9*	32.1	35.1	*3.0*	36.4	39.3	*2.9*	MT
NL*	18.3	20.0	*1.7*	22.2	24.5	*2.3*	40.5	42.7	2.1	52.6	55.3	*2.7*	27.7	28.4	*0.7*	32.5	33.3	*0.8*	NL*
AT	20.3	25.3	*5.0*	25.3	28.4	*3.1*	47.0	59.2	12.2	65.2	69.1	*3.9*	31.0	35.9	*4.9*	36.8	38.6	*1.8*	AT
PL	16.7	23.4	*6.7*	23.7	29.9	*6.2*	39.1	54.9	15.8	63.9	80.1	*16.2*	26.4	33.5	*7.1*	35.4	40.8	*5.5*	PL
PT*	18.4	21.5	*3.1*	23.1	25.8	*2.7*	44.4	48.6	4.2	55.6	59.2	*3.6*	28.3	30.7	*2.4*	33.4	34.9	*1.5*	PT*
RO	15.5	22.9	*7.4*	20.2	27.2	*7.0*	36.9	54.7	17.8	55.6	73.2	*17.6*	25.2	33.2	*8.0*	31.1	37.9	*6.8*	RO
SI	20.3	25.0	*4.7*	24.6	28.6	*4.0*	51.7	60.5	8.8	63.5	71.4	*7.9*	31.5	35.7	*4.2*	35.9	39.0	*3.1*	SI
SK	17.6	23.9	*6.3*	22.9	28.4	*5.5*	44.6	58.5	13.9	67.7	78.6	*10.9*	28.6	34.8	*6.3*	34.6	39.4	*4.8*	SK
FI*	19.6	21.8	*2.2*	24.0	24.9	*0.9*	45.7	47.7	2.0	58.1	56.7	*-1.4*	29.9	30.6	*0.7*	34.5	33.8	*-0.8*	FI*
SE	18.9	22.8	*3.9*	22.8	26.6	*3.8*	42.0	51.2	9.3	52.4	61.6	*9.2*	28.4	32.4	*4.0*	32.9	36.3	*3.4*	SE
NO	18.8	22.9	*4.1*	21.9	26.6	*4.7*	41.6	51.6	10.0	49.9	61.7	*11.8*	28.1	32.3	*4.2*	31.9	36.3	*4.4*	NO
EA	19.4	23.0	*3.6*	23.5	26.6	*3.1*	46.6	52.9	6.4	59.0	63.8	*4.7*	29.8	32.6	*2.8*	34.2	36.1	*1.9*	EA
EU	18.6	22.8	*4.2*	23.0	26.6	*3.6*	44.6	52.7	8.1	58.5	64.7	*6.2*	28.9	32.5	*3.6*	33.8	36.2	*2.4*	EU

(1) Duration of retirement is calculated on the basis of life expectancy according to EUROPOP 2019 at the average effective exit age from the labour market.
(2) The average working career is defined as the effective exit age from the labour market minus the effective entry age.
(3) Adult life spent in retirement is defined as the ratio between the life expectancy at the average effective exit age and the estimated age of death minus 18 years.
*Countries where the statutory retirement age is legislated to increase in line with the increase in life expectancy.

Source: European Commission, EPC.

Pension system funding

Contributions to pension schemes paid by employers, employees and self-employed persons allow surveying potential future deficits in the pension system. State contributions, i.e. specific tax revenues allocated to the pension system, are also taken into account, insofar such transfers are rooted in legislation. The same holds for revenues from other sources, e.g. assets from private schemes being transferred to the public scheme.

In 2019, revenues of public pension schemes in the EU represented about 10% of GDP (see Table II.1.6). However, there are significant differences across Member States. System revenues reached almost 22% of GDP in Finland, as a result of the existence of large reserves and rising stock markets. Legislation stipulates that the Finnish contribution rate is set at a level that covers the funded part of the public scheme and keeps the buffer funds at their target level. In Germany, Italy, Norway, Spain, France, Greece and Portugal, the pension system's total revenues ranged between 10% and 14% of GDP in 2019.

Projected changes reveal important cross-country differences in terms of pension contributions. They are projected to slightly increase by 2070, with countries generally assuming a constant contribution-to-GDP ratio, unless legislation implies future changes. By 2070, substantial increases are projected in Ireland (+2.6 pps of GDP), Norway (+2.6 pps), the Netherlands (+2.2 pps), Germany (+2 pps), Cyprus (+1.6 pps) and Croatia (+1.1 pps). These projections reflect legislated contribution rate increases or automatic built-in pension system stabilisers ([68]). The revenue of the public pension system is projected to decrease in eleven countries, in particular in Finland (-7.8 pps of GDP, though stable at around 14% over the projection period), Portugal (-3.7 pps), Greece (-2 pps), Latvia (-1.6 pps) and Estonia (-1 pp).

Table II.1.6: **Contributions to the public pension system in 2019 and 2070 (% of GDP)**

	2019	2070	*change*
BE	:	:	*:*
BG	5.0	5.4	*0.4*
CZ	8.5	8.5	*0.0*
DK	0.1	0.0	*0.0*
DE	10.1	12.2	*2.0*
EE	6.5	5.5	*-1.0*
IE	2.6	5.3	*2.6*
EL	13.3	11.4	*-2.0*
ES	11.8	11.8	*0.0*
FR	11.8	11.6	*-0.2*
HR	6.0	7.1	*1.1*
IT	10.7	11.0	*0.2*
CY	8.4	10.0	*1.6*
LV	8.4	6.8	*-1.6*
LT	7.2	6.9	*-0.2*
LU	9.9	9.9	*0.0*
HU	7.7	7.4	*-0.3*
MT	7.9	7.0	*-0.9*
NL	6.5	8.7	*2.2*
AT	9.4	9.0	*-0.4*
PL	8.4	8.7	*0.3*
PT	13.3	9.6	*-3.7*
RO	6.8	6.5	*-0.3*
SI	9.3	9.3	*0.0*
SK	7.4	7.5	*0.0*
FI	21.7	13.9	*-7.8*
SE	5.7	6.1	*0.3*
NO	11.0	13.6	*2.6*
EA	10.1	10.6	*0.5*
EU	9.9	10.2	*0.3*

(1) BE: public pensions are financed through a global social security contribution.
(2) DK: public pension scheme is financed through general taxes.
Source: European Commission, EPC.

([68]) For example, in Germany, contributions evolve in line with expenditure developments. The contribution rate is automatically adjusted to ensure the financial sustainability of the public pension system (see Table II.1.7). In Cyprus, several increases of contribution rates have been legislated. In Ireland, State contributions are projected to rise as a share of GDP, due to the State's obligation to cover any remaining financial gap.

Table II.1.7: **Contribution rates to the public pension system**

	Contribution rate: employer	Contribution rate: employee	State contributions		Contribution rate: self-employed
			Contribution rate	Other provisions	
BE	24.92% (for all Social Security schemes)	13.07% (for all Social Security schemes)	-	Social security spending is also funded by State subisidies (17.7% of total revenue in 2019) and alternative funding (15.7% of total revenue), mainly VAT revenues.	In 2020, 20.5% for revenues up to 60428 EUR and 14.16% for revenues between 60428 EUR and 89051 EUR.
BG	8.22% when born after 1959; 11.02% when born before 1960	6.58% when born after 1959; 8.78% when born before 1960	-	State commitment for covering the deficit on an annual basis.	born before 1960: 19.8% of declared covered earnings in the preceding year; born after 1959: 14.8% of declared covered earnings
CZ	21.5%	6.5%	-	Balance of pension system is part of general governement budget	28%
DK	-	-	-	-	-
DE	9.3%	9.3%	-	State subsidies with annual indexation. 'Sustainability fund' fluctuates between 20% and 150% of monthly pension expenditures. The contribution rate is set so that this requirement is met.	18.6%
EE	20% (if not participating to 2nd pillar); 16% (if participating to 2nd pillar)	-	-	-	20%
IE	Varies	Varies	-	Social Insurance Fund and Social Assistance Fund (to finance other, non-pension social benefits). Shortfalls are met by the Exchequer.	4% of covered income
EL	Main pensions 13.33%; auxiliary pensions 3%	Main pensions 6.67%; auxiliary pensions 3%	-	National budget/other sources	Contributions are based on insurance classes. Corresponding insurable base is derived taking into account contribution rate of 20%
ES	Private sector: 23.6%	Private sector: 4.7%	-	Pension Reserve Fund. If needed, annual funding gaps are covered through central government transfers.	28.3%
FR	Private sector (CNAV): 10.45% up to the Social Security Ceiling (SSC)	Private sector (CNAV): 7.3% up to the social security ceiling (SSC). Reduced contribution rates are applied to some specific groups (artists, journalists and part-time medical workers)		Pensions Reserve Fund and Old-age solidarity fund	17.75% up to the SSC.
HR	4.86% to 17.58% for employees in arduous and hazardous occupations	20% (public PAYG scheme participants only); 15% (participants in both public PAYG scheme and mandatory fully-funded DC scheme)	-	Government is committed to cover deficits.	20% (public PAYG scheme participants only); 15% (participants in both public PAYG scheme and mandatory fully-funded DC scheme)
IT	23.81%	9.19%	-	Residual funding by the State (pension expenditure exceeding contributions)	24%
CY	8.3%	8.3%	4.9%	Reserve fund	15.6% of insurable income
LV	Total contribution rate for old-age pension capital (employer and employee): 20% (if no participant of 2nd tier) or 16% (if participant of 2nd tier), with 4% contribution to the 2nd tier	-	-	-	Contribution rate for old-age pension capital: 20% (if no participant of 2nd tier) or 16% (if participant of 2nd tier) with 4% contribution to the 2nd tier
LT	0.0%	8.72%	-	State provides funds from the national budget to cover the general pension part of public pension scheme	8.72% - based on 50% of declared earnings
LU	8%	8%	8%	Buffer fund of at least 1.5 times the amount of annual pension expenditure	16%
HU	15.5% in 2018, 13.0% in 2019, 11.8% in 2020 (part of social contribution tax payed into Pension Insurance Fund)	10%	-	-	10% of declared monthly earnings and 11.8% of declared monthly earnings in the form of a social contribution tax
MT	10%	10%	10%	-	15% of the annual income, subject to the same ceiling as for employees
NL	-	17.9%	-	Government supplements shortfall between expenditure and funds raised by the 17.9% tax levy	17.9%
AT	12.55%	10.25%	For farmers, self employed and liberal professions, the difference with the standard contribution rate of 22.8% is borne by federal transfers	Federal budget covers the deficits in public pension schemes	17% for farmers, 18.5% for self-employed and 20% for liberal professions
PL	9.76%	9.76%	-	Demographic Reserve Fund	19.52%
PT	23.75%	11%	-	Social Security Trust Fund	Employee: 21.4% or 25.2%; employer: 10%, if economic dependence is higher than 80%, or 7%
RO	Between 0% and 8%: 0% (normal working conditions); 4% (difficult working conditions) and 8% (special working conditions)	25%	-	State provides funds from the national budget to cover the public pension system deficit.	10.5% or 26.3%
SI	8.85%	15.5%	-	State provides funds from the national budget and other sources to cover shortfalls.	24.35%
SK	21.75% of gross wage (including disability insurance contribution) if one does not participate in the 2nd pillar; otherwise 4.75% is sent to the second pillar in 2019 (rising to 6 % by 2024)	7% of gross wage (including disability insurance contribution)	-	Government makes contributions for people insured by the state (e.g. maternity leave) and covers special benefits (e.g. Christmas bonus). Otherwise, social security system deficits are covered by state transfers.	28.75% (including disability insurance contribution) if only covered in the 1st pillar; otherwise 4.75% is sent to the second pillar in 2019 (rising to 6% by 2024)
FI	17.35% for private sector; 21.17% for local government (in 2019)	6.75% (18-52y and +63y); 8.25% (53-62y)	17.1% for State pensions	National and guarantee pensions are fully funded by the State. Part of farmers', self-employed persons' and seafarers' pension are funded by the State. 25% of private sector pension are prefunded.	24.1% (18-52y and +63y); 25.6% (53-62y)
SE	10.21% (including Premium Pension)	7% (including Premium Pension)	Employer contribution' for social insurance	Buffer funds	17.21%
NO	PAYG system without earmarked tax going to pensions.	PAYG system without earmarked tax going to pensions	PAYG system without earmarked tax going to pensions	State Pension Fund contributes to financing government expenditures (pension and other)	11.4%

When several schemes exist, the information refers to the main (general regime) pension scheme.
EL: Main pensions: unified rates from 2022 onwards. Auxiliary pensions: 2019-21: 3.25%

Source: European Commission, EPC.

Box II.1.1: Special pensions across two Ageing Reports

Special pensions in the EU were defined and gauged for the first time in the 2018 Ageing Report ([1]). While expenditure with special pensions must be covered by the Ageing Report projections, Member States provide information about these schemes only on a voluntary basis.

Definition and classification

A scheme is considered to be a 'special pension' if it is simultaneously: (1) allocated based on *occupational activity* or *special status*; (2) funded publically - *'Pillar 1'*; and (3) *more advantageous than the general scheme*. Advantages compared with the general scheme include one or more of the following factors: (i) contributory period counted more favourably; (ii) higher pension benefits through either pensionable earnings defined more favourably or higher effective accrual rate or equivalent; (iii) more favourable indexation rule; (iv) lower retirement age; (v) higher state funding; and (vi) other benefits compared to the main scheme, for instance health hazard compensations, free public transport, tax exemptions and an obligation of the employer to contribute to a private pension pillar.

Special pensions are of three main types. The first two refer to *occupational activities* that are strenuous or physically demanding, while the third concerns groups with a *special status*.

Category 1 — Difficult conditions: arduous, hazardous, dangerous or unhealthy conditions such as miners, steelworkers, maritime, fishing and harbour workers, artistic workers ([2]).

Category 2 — Security and defence forces and certain civil professions with medically verified special conditions associated to the requirement to keep physically fit and the responsibility to ensure other people's security and safety such as military, police, national security and intelligence, firefighters, rescue workers, public order workers, railway police, customs officers, pilots and air traffic controllers.

Category 3 — Other special pensions are due to a special status often associated with merits achieved or a situation of deprivation or victimhood that is arguably beyond a person's control, such as victims of political repression or nuclear disasters, families of disabled children, long-term unemployed before retirement age, etc. For state employees, the special status is not related to a vulnerable condition. The specific sub-categories of other special pensions are: (i) ***certain self-employed*** individuals with no paid / accumulated contributions such as farmers or providers of unpaid work caring for others; (ii) ***people with special merit, victims, or deprived individuals,*** such as those with distinguished achievements for the state, war veterans, former political prisoners, politically repressed individuals, Chernobyl victims, parents or guardians of large families or disabled children, military widowers or long-term unemployed; (iii) ***state employees of all branches (executive, legislative, judicial)***, at local or central level, as well as employees of (former) major public companies, including staff of public institutions and authorities, MPs, medical staff, teachers, academics, scientists, employees of national railways, public utility companies, judges and prosecutors, magistrates, lawyers, notaries, the Auditor General, the Chancellor of Justice and Constitutional Court staff etc.) and (iv) ***atypical*** categories such as clerics, new migrants or other infrequently encountered conditions.

Disability and survivor pensions are not considered special pensions.

Previous evidence and coverage of special pensions

Evidence shows that, in 2016, all EU countries except Sweden had special schemes in place ([3]).

In the 2021 Ageing Report, most countries' projections include such special schemes, similarly to the previous round. For

([1]) See Box II.1.2 of European Commission (DG ECFIN), Economic Policy Committee (Ageing Working Group) (2018) 'The 2018 Ageing Report: Economic and Budgetary Projections for the EU Member States (2016-2070)'.

([2]) Other professions such as health care providers or employees of utility companies may be part of Category 1 if these are legally recognised as difficult or physically demanding, with varying legislation, depending on the country.

([3]) See Pensref database and Eckefeldt, P. and Patarau, A. (2020), "Special Pensions in the EU", *European Economy Discussion Paper*, No. 125, April.

(Continued on the next page)

Box (continued)

comprehensive and comparable reporting of public pension expenditure, special pensions need to be covered by the Ageing Report projections. In the 2021 Ageing Report, this is the case for all countries except for DE and NL (Table 1). In DE, the amount of excluded pension expenditure with miners' and farmers' special schemes is known for the base year, amounting to less than 0.5% of GDP in 2019 and no projection on future expenditure has been provided. For NL, no information is available about the excluded amounts. For some countries known to have had special schemes in the past, there is no explicit information about the coverage of special schemes in the 2021 Ageing Report projections (CY) or about the size of these special pensions in 2019 (CY, FR, LV and AT).

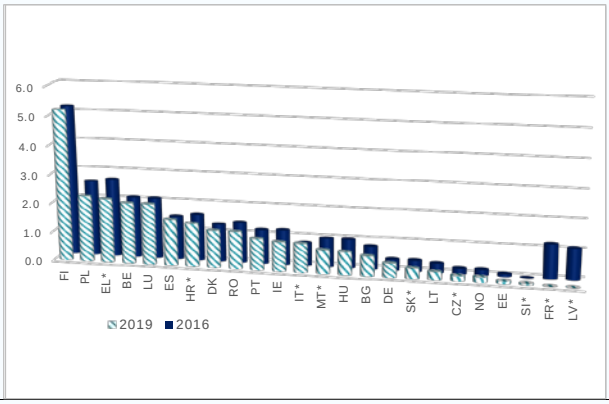
The base year expenditure with such schemes varies significantly, is not directly comparable across countries or Ageing Reports and hence should be interpreted with caution. Since Member States provide information about special schemes on a voluntary basis, the availability of these data as well as the degree of detail differ greatly across countries. For some countries, the figures provided in the previous Ageing Report may not be comparable either, because the scale of special pension expenditure known for the base year may describe different subsets of special pension beneficiaries every time. In PT, MT, FI, IE and RO the methodology evaluating special pensions or the coverage of base year data have been revised, leading to some changes in special pension expenditure estimates compared with the 2018 Ageing Report and generally allowing better comparison or more accurate recording (Table 1).

Cautions aside, special pension expenditure remained above 1% of GDP in several countries in 2019 (Graph 1). This is the case for FI, PL, EL, BE, LU, ES, HR, DK, RO, PT, and IE, for which relatively higher values were also reported in the 2018 Ageing Report. For FR, special pension expenditure is known only for 2018, for fewer schemes than those currently in place and gauged in 2016, when such expenditure represented 1.2% of GDP (Table 1).

In other countries, the scale of special pension expenditure is still relatively low in the base year. Similarly to 3 years ago, special pension spending hovers at lower levels for EE, NO, CZ, LT, SK and DE, where it ranges, respectively, between 0.1% and 0.5% of GDP in 2019.

In the 2021 Ageing Report, seven countries endeavoured to deliver separate special pension projections, on a voluntary basis. This is the case for EL, FI, IE, LT, PL, RO and SK. In countries currently reporting higher special pension expenditure as a % of GDP or public pension expenditure (FI, EL, PL and RO), these values are expected to fall by the end of projections, as certain schemes phase out. In countries with lower levels of special pensions expenditure (LT and SK), the proportions would remain broadly stable over time

Graph 1: **Special pension expenditure (% of GDP) - proportions known for the base year of the projections, AR 2021 (base year 2019) vs AR 2018 (base year 2016)**



(1) (*) incomplete coverage; figures do not reflect all special schemes.
(2) data behind the graph are shown in Table 1.
(3) figures are not exactly comparable across rounds for Malta (2016 data corresponds to fewer special pension groups).
Source: European Commission, EPC.

(Continued on the next page)

Box (continued)

Table 1: **Special pension coverage in subsequent Ageing Report projections**

	Special pension expenditure included in the projections		Special pension expenditure known for the base year of the projections				Separate projections for special pensions (voluntary)
			% of GDP		% of public pension expenditure		
	AR 2018	AR 2021	AR 2018, base year 2016	AR 2021, base year 2019	AR 2018, base year 2016	AR 2021, base year 2019	AR 2021
BE	yes	yes	2.1	2.1	17.6	17.3	no
BG	yes*	yes*	0.8	0.7	8.7	8.4	no
CZ	partly	partly	0.2*	0.2*	2.5*	2.5*	no
DK	yes*	yes*	1.3	1.3	13.4	14.0	no
DE	no	no*	0.4	0.5	4.0	4.8	no
EE	partly	yes (mostly)	0.1	0.1	1.2	1.3	no
IE	yes	yes	1.2	1.0	20.8	18.8	yes
EL	yes	yes	2.7*	2.2*	15.6*	15.0*	yes
ES	yes	yes	1.5	1.6	12.4	13.0	no
FR	yes	yes	1.2*	n.a.	8.5*	n.a.	no
HR	yes	yes	1.6*	1.5*	15.3*	14.7*	no
IT	yes	yes	0.8*	1.0	5.2*	6.5	no
CY	yes	n.a.*	n.a.	n.a.	n.a.	n.a.	n.a.
LV	partly	partly	1.1*	n.a.	15.0*	n.a.	no
LT	yes	yes	0.3	0.3	5.0	4.0	yes
LU	yes	yes	2.1	2.1	21.9	22.8	no
HU	yes	yes	1.0	0.8	10.3	9.6	no
MT	yes	yes	1.0*	0.8	12.8	11.7	no
NL	no	no	n.a.	n.a.	n.a.	n.a.	no
AT	yes	yes	no	no	no	no	no
PL	yes	yes	2.6	2.3	23.5	21.3	yes
PT	yes	yes	1.2	1.1	8.8	8.5	no
RO	yes*	yes*	1.4	1.3	16.9	16.0	yes
SI	yes	yes	no	0.05*	no	0.5	no
SK	yes	yes	0.4*	0.4*	4.9*	4.3*	yes
FI	yes*	yes*	5.2	5.2	39.5	39.9	yes
SE	no special pensions	no special pensions	no special pensions	no special pensions	no special pensions	no special pensions	no special pensions
NO	no*	no*	0.2	0.2	1.9	1.8	no

(1) (*) does not include all special schemes.
(2) 2016 public pension expenditure for DE, EL, and HU is the one reported with the AR 2018 (no historical data available from the AR 2021).
Source: European Commission, EPC

(Graph 2). In IE, where special pensions correspond to public sector employees, such expenditure is projected to fall only from the midpoint of the century, when the effects of unifying special pensions under the Single Scheme are strongest; specifically, special pension retirees having joined this scheme after 2013 receive most of their entitlements from the general old-age scheme and a residual from a special fund (the public sector pension fund). If beneficiaries retire before the age in the general scheme (State Pension age), they receive all of their entitlement from the public sector pension fund until they reach the State Pension age.

Country-specific notes Table 1

BG: Special pensions for teachers bridging the period between early retirement and the statutory retirement age (old-age pension) are not included in the projections; yet, the corresponding expenditure would not materially influence the projections, representing some 0.03% of GDP in both 2016 and 2019.
CZ: Figures for 2016 and 2019 concern only armed forces, which are excluded from the projections due to lack of data. Special schemes also exist for miners. Miners are included in the projections and are phasing out. These consist of lower retirement age only, with no additional benefit compared to other pensioners. Armed forces' pensions are administered by different institutions, but it is known that this pension expenditure amounts to 0.2% of GDP, stable over time and in the future, as these schemes are not phasing out.
DK: Special pensions for fishing controllers (phasing out), military (phasing out), police and prison guards, priests and bishops are not covered by the projections. However, they would not materially influence the projections, representing less than 0.2% of GDP in 2019.
DE: Special pension schemes for miners and farmers, with expenditures of less than 0.5% of GDP in 2019, have not been included in the projections in either round.
IE: The value for 2016 has been revised compared to the one published in the AR 2018 to include all groups of special pensions in place, similarly to the 2019 figure. Both values cover now public sector occupational

(Continued on the next page)

Box (continued)

pensions: military, police, firefighters, state employees of all branches – executive, legislative and judiciary.

EL: 2016 and 2019 figures are estimations based on available data. They include arduous professions, military staff, and farmers (the latter receiving exclusively "Basic" pension and phasing out). Expenditure with certain special privileges that are phasing out (not known separately) is included in the general scheme projections, but excluded from the 2016-2019 base year estimates and separate projections for special pension expenditure.

FR: The 2016 figure does not include all special schemes. It is also know that in 2018, expenditure with a subset of special schemes - SNCF, CRPCEN, CAVIMAC, ENIM, CANSSM, CNBF – amounted to 0.5% of GDP.

HR: Most workers in arduous and hazardous occupations with certain advantages compared to the general scheme (such as lower retirement age and contributory period counted more favourably) are covered by the projections, but excluded from the 2016-2019 estimates of special pension expenditure (no separate recording and financing).

CY: no data available from the 2018-21 Ageing Reports or any of the special pension surveys; however, it Is known that during the country's economic adjustment programme, specific groups such as army, police, tax tribunal benefited from a preferential treatment.

LT: The 2016 figure has been slightly revised backward compared to the one published in the AR 2018.

MT: The 2019 figure covers all special schemes. The 2016 figure excludes pensions for police, armed forces of Malta (AFM) personnel, correctional facilities officials, and members of the civil protection, for which estimates only became available later, with 0.025%of GDP in 2019.

PT: The 2016 figure has been revised compared to the one published in the AR 2018, using the same methodology as for the 2019 figure (i.e. special pensions are those not yet converted into ordinary pensions; for example, a pension classified as special due to a lower retirement age is converted into a normal pension when the pensioner reaches the legal retirement age).

RO: The 2016 figure has been amended compared to the one published in the AR 2018 to include the same groups of special pensions gauged in 2019 (2019 figures are more comprehensive, as they now include judicial employees, aeronautic personnel, diplomatic staff and MPs, in addition to the categories covered in 2016). Special pensions for clergy are not covered by any of the projections. However, this group represents only some 0.003% of GDP in 2019 and would thus not influence the projections materially.

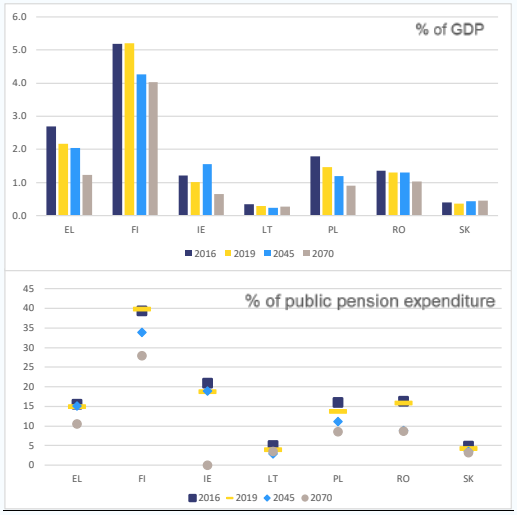
SI: The 2019 figure covers only military and farmers. Expenditure with the other special schemes in place, i.e. occupational insurance schemes for difficult conditions (arduous and hazardous jobs), police, and state employees of all branches, is not known separately, but it is included in the projections.

SK: Both the 2016 and 2019 values concern the system of police and professional soldiers, which account for some 85% of all armed forces' pension expenditure. The latter also applies to the members of the Fire and Rescue Brigades, Mountain Rescue Service, Slovak Information Service, National Security Authority, Corps of Prison, Court Guards and Railway Police and customs officers; these are excluded from the overall pension projections due to insufficient data, but represent less than 0.1% of GDP in 2019. The remaining special schemes for miners and political prisoners (low proportion of GDP, phasing out) are included in the general scheme projections, but excluded from the 2016-2019 base year estimates and the separate projections for special pension expenditure.

FI: 2016 data has been revised compared to the one published in the AR 2018 to gauge special pensions more comprehensively, similarly to the 2019 figure. Both figures include now seafarers and years-of-service pension (both difficult conditions), self-employed (partially financed by the state), farmers (mostly financed by the state), state employees, local government employees, and other public sector employees. The last 3 of these categories are more advantageous than the general scheme (private sector) in terms of their conditions for receiving disability pension (other rules used to be more advantageous, but they are phasing out). Both figures exclude dancers of the Finnish National Ballets, spouses of diplomats, supplementary pensions for award winning artists and athletes, but these represent very low proportions of GDP and would not materially influence the projections.

NO: Special pensions are associated with labour conditions and professions with particular age requirements' ('særalderspensjoner'), e.g. hospital nurses. Since the proportion of these schemes in GDP was 0.2% in 2016 and 2019, the inclusion of special pension expenditure would not materially influence the projections.

Graph 2: **Special pension expenditure, outturn and projections, selected countries (% GDP and % public pension expenditure)**



(1) for Poland, projections reflect a subset of special schemes, i.e. military (MIL) and farmers (KRUS), thus excluding miners, bridging pensions, and other state employees (teachers); this coverage differs from data in Graph 1 and Table 1, which include all special schemes. For all other countries in Graph 2, special pension coverage is the same as in Graph 1 and Table 1.

Source: European Commission, EPC.

1.5. PENSION EXPENDITURE PROJECTIONS

1.5.1. Public pensions

Overall expenditure projections 2019-2070

Overall, public pension spending is set to increase significantly over the first part of the projection period, declining thereafter. Public pension expenditure is projected to increase from an EU average of 11.6% of GDP in 2019 to 12.7% in 2045 (Table II.1.8). In the second half of the projection period, spending would fall again, to 11.7% of GDP in 2070, similar to the current level.

Table II.1.8: **Level and change in gross public pension expenditure; 2019-2070, baseline scenario (%/pps of GDP)**

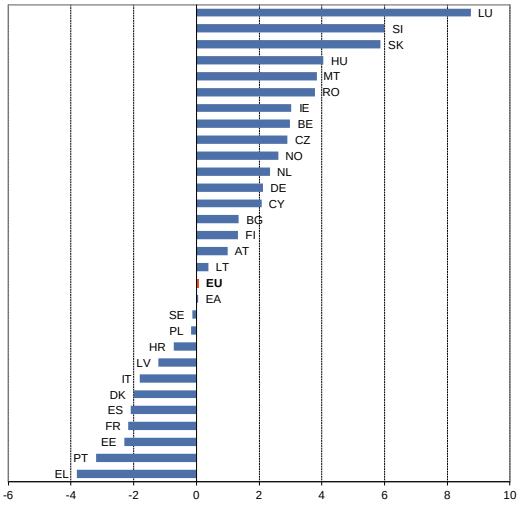
	2019	2045	2070	Change 2019-45	Change 2019-70
BE	12.2	15.1	15.2	2.9	3.0
BG	8.3	8.9	9.7	0.6	1.4
CZ	8.0	10.7	10.9	2.7	2.9
DK	9.3	7.8	7.3	-1.5	-2.0
DE	10.3	12.1	12.4	1.8	2.1
EE	7.8	6.3	5.4	-1.5	-2.3
IE(1)	4.6	7.2	7.6	2.7	3.0
EL	15.7	13.7	11.9	-2.0	-3.8
ES	12.3	13.2	10.3	0.8	-2.1
FR	14.8	14.6	12.6	-0.2	-2.2
HR	10.2	10.1	9.5	-0.1	-0.7
IT	15.4	17.3	13.6	1.9	-1.8
CY	8.8	10.3	10.9	1.5	2.1
LV	7.1	6.3	5.9	-0.9	-1.2
LT	7.1	8.3	7.5	1.2	0.4
LU	9.2	13.9	18.0	4.6	8.7
HU	8.3	10.8	12.4	2.4	4.1
MT	7.1	7.2	10.9	0.1	3.8
NL	6.8	9.0	9.1	2.2	2.3
AT	13.3	14.9	14.3	1.6	1.0
PL	10.6	10.6	10.5	-0.1	-0.2
PT	12.7	13.7	9.5	1.0	-3.2
RO	8.1	14.7	11.9	6.6	3.8
SI	10.0	14.8	16.0	4.8	6.0
SK	8.3	12.5	14.2	4.2	5.9
FI	13.0	12.6	14.4	-0.4	1.3
SE	7.6	7.0	7.5	-0.7	-0.1
NO	11.0	12.6	13.6	1.7	2.6
EA	12.1	13.3	12.1	1.2	0.1
EU	11.6	12.7	11.7	1.1	0.1

(1) IE: figures include the public service occupational scheme, paying pension benefits to civil servants.
Source: European Commission, EPC.

This overall pattern conceals, however, notable differences between Member States. In 2019-2045, projected changes in public pension expenditure vary from -2 pps of GDP in Greece to +6.6 pps in Romania ([69]) with a rising expenditure ratio in 18 Member States and in Norway. In 2045-2070, changes range between -4.2 pps of GDP in Portugal and +4.1 pps in Luxembourg. For 14 Member States plus Norway, spending would increase in the second half of the projection exercise.

Overall, public pension spending would rise in 16 Member States and in Norway between 2019 and 2070. Expenditure is projected to rise by as much as 8.7 pps of GDP in Luxembourg by 2070, the highest increase of all countries (see Graph II.1.4). Also Slovenia (+6 pps), Slovakia (+5.9 pps), Hungary (+4.1 pps), Malta and Romania (+3.8 pps), Ireland and Belgium (+3 pps), the Czech Republic (+2.9 pps), Norway (+2.6 pps), the Netherlands (+2.3 pps), and Germany and Cyprus (+2.1 pps) have an expected increase of more than two percentage points of GDP. Bulgaria, Finland, Austria and Lithuania would see pension expenditure increase by less than 1.5 pps of GDP in 2070.

Graph II.1.4: **Change in gross public pension expenditure; 2019-2070 (pps of GDP)**



Source: European Commission, EPC.

Conversely, 11 Member States are expected to experience an overall decline in public pension expenditure. The largest decrease would be in Greece (-3.8 pps of GDP), followed by Portugal (-3.2 pps), Estonia (-2.3 pps), France (-2.2 pps), Spain (-2.1 pps) and Denmark (-2 pps). Five other Member States would see spending decline by less than 2 pps of GDP, namely Italy, Latvia, Croatia, Poland and Sweden.

([69]) After the cut-off date of the projections, the Romanian government adopted legislation to postpone the pension increases foreseen in Law no. 127/2019 for the period 2020-2022.

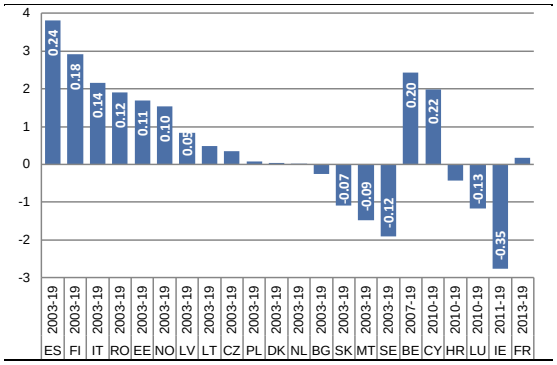
While projected expenditure changes are important for tracing potential sustainability risks, the overall level of pension spending needs to be factored in as well to obtain a balanced picture of the potential challenge. A similar increase in pension expenditure does not necessarily imply equal risks for a country that currently spends less on pension benefits than other countries, especially if overall government spending is lower. In particular:

– *Countries located in the upper-right quadrant of Graph II.1.6 have a higher public pension expenditure level than the EU average, both in 2019 and 2070.* Those situated right of the 45-degree line in this quadrant (e.g. Slovenia, Belgium, Norway and Germany) show a larger than average increase over the projection period. Conversely, a projected decrease in pension expenditure move Greece, France and Italy closer to the EU average by 2070.

– *In the case of Luxembourg, the large expenditure increase is to some extent mitigated by the country's starting position, namely an expenditure ratio below the current EU average*. At 18% of GDP, the country would nevertheless have the highest pension expenditure ratio of all Member States in 2070, compared to the 14th highest in 2019.

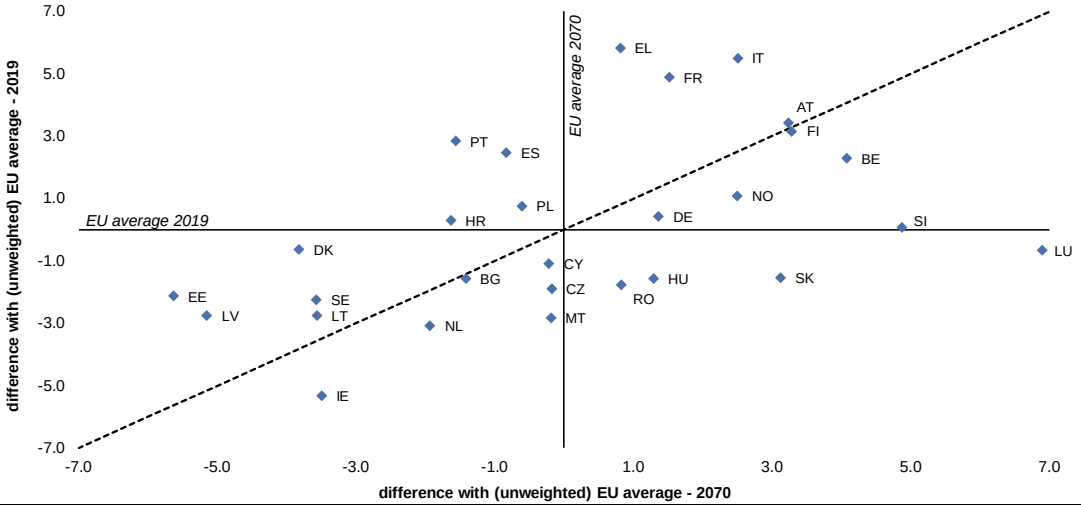
In the period before 2019, many Member States already registered rising pension costs. Between 2003 and 2019 the pension expenditure-to-GDP ratio rose, for example, sharply in Spain (+3.8 pps), Finland (+2.9 pps), Italy (+2.2 pps), Romania (+1.9 pps), Estonia (+1.7 pps) and Norway (+1.5 pps). Also Belgium (+2.4 pps), and Cyprus (+2 pps) saw strong increases in pension spending, especially when considering the shorter period during which these took place (see Graph II.1.5). Past increases add to future challenges, considering how for several of these countries pension expenditure is projected to continue rising considerably. At the same time, pension expenditure in several other Member States remained more stable in recent years or even fell.

Graph II.1.5: **Change in gross public pension expenditure prior to 2019, selected countries and years (pps of GDP)**



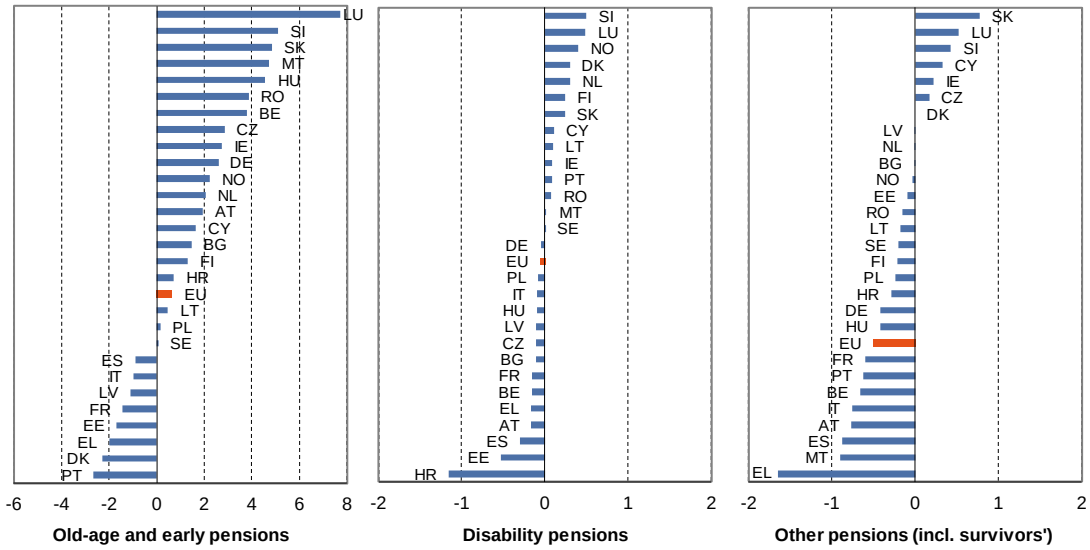
(1) The labels show the average annual change over the reported period in case above 0.05 pps/year.
(2) Only those countries that reported historical expenditure figures are presented in the graph.
Source: European Commission, EPC.

Graph II.1.6: **Pension spending in 2019 and 2070: relative position towards the EU average (pps of GDP)**



Source: European Commission, EPC.

Graph II.1.7: **Change in gross pension expenditure for the main general public schemes, 2019-2070 (pps of GDP)**



(1) IE: 'Old-age and early pensions' include the public service occupational scheme.
(2) EE: 'Disability pensions' include the work ability allowance.
(3) AT: 'Other pensions' include the Ausgleichszulage and Rehabilitationsgeld, which decline by 0.1 pps of GDP in 2019-2070.
(4) EL: In 2019, one-off elements are included, linked to retroactive benefit payments and a 13th pension
Source: European Commission, EPC.

Changes for the main general schemes

Overall changes in public pension expenditure are predominantly driven by the old-age and early pension schemes (see Graph II.1.7). All countries that are projected to have a higher total expenditure ratio in 2070 compared to 2019 would see spending on old-age and early pensions rise. For the EU, the average increase amounts to 0.6 pps of GDP. The largest increase is projected in Luxembourg (+7.7 pps). Slovenia, Slovakia, Malta, Hungary, Romania and Belgium also show substantial increases of around 4-5 pps of GDP. At the opposite end, Portugal has the largest projected fall, at 2.7 pps of GDP, with also Denmark and Greece expected to see a decrease of at least 2 pps of GDP in spending on old-age and early pensions.

Average spending on disability pensions would be broadly stable over the long term in the EU as a whole. A slight fall by 0.1 pps of GDP is projected between 2019 and 2070. Changes are small for almost all countries. An increase of 0.5 pps of GDP is expected in Slovenia and Luxembourg – the two countries that also feature the highest increase for old-age and early schemes. The largest decrease would be in Croatia (-1.2 pps), caused by the gradual disappearance of the large group of war veterans that currently receive disability benefits. The latter represented 15% of all pensioners in 2019, falling to 8% as of 2060. In the case of Estonia, the projections show a decrease of 0.5 pps in disability pensions. This reflects how, as of 2021, the scheme is replaced by a less beneficial unemployment scheme until recipients reach the statutory retirement age. To allow for cross-country comparability and exhaustive projections, this 'work ability allowance' is included under disability pensions in the projections.

Other pension schemes, which comprise survivors' pensions and any other scheme not included elsewhere, would fall by 0.5 pps of GDP at the EU level in 2019-2070. Slovakia (+0.8 pps of GDP) shows the highest expected increase, followed by Luxembourg and Slovenia with increases of around 0.5 pps. In the case of Slovakia, the driver is the thirteenth pension, which was doubled in both 2019 and 2020, causing spending to increase by 0.6 pps by 2070. For most other countries, this third category reflects expected changes for survivors' pensions, with a general decrease because of higher female labour market participation and the associated build-up of personal pension rights, as well as fewer marriages and an upward convergence in male and female life expectancy. In the cases of Greece (-1 pp),

Malta (-0.6 pps) and Romania (-0.3 pps), other benefits than survivors' pensions drive changes for this third category. For Greece, the fall is caused by considerable one-off elements in 2019, linked to retroactive benefit payments and a 13th pension. In Malta, the decrease reflects lower top-ups because of the phasing-out of the Treasury Pension scheme. In the case of Romania, lower special pensions for farmers and deprived groups are behind the decrease ([70]).

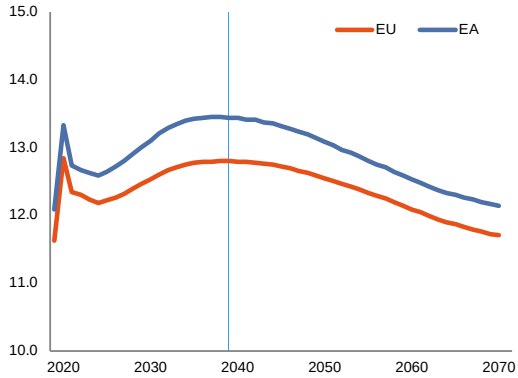
Luxembourg, Slovenia, Slovakia, Ireland and Cyprus are the only countries with a projected increase for all three general schemes. Six countries report expected declines for the three categories by 2070: Greece, Estonia, France, Latvia, Italy and Spain.

Public pension expenditure: time profile

The COVID-19 crisis mechanically led to a surge of the public pension spending-to-GDP ratio in 2020, set to revert in 2021. The public pension expenditure-to-GDP ratio surged in 2020 because of the sharp fall in GDP due to the recession triggered by the pandemic. This was be the case in all Member States, with an EU average increase of 1.2 pps of GDP. In 2021, all countries ([71]) would see the expenditure ratio fall again as, in the baseline scenario, the economy is assumed to recover progressively ([72]). The temporary hike induced by the pandemic is shown in Graph II.1.8 for the EU and the euro area. Average spending in the EU rises from 11.6% in 2019 to 12.8% in 2020, falling to 12.2% in 2021.

Thereafter, countries generally return to their underlying trends. For instance, as of 2025, the expenditure-to-GDP ratio would start rising steadily, to peak in 2038 at 12.8%, the same level touched upon already in 2020. Average pension spending would remain close to this peak for about a decade and then fall for the remainder of the projection period, decreasing by 1.1 pps from its peak. This two-phased trajectory – making abstraction of the pandemic at the start – reflects how, initially, pension expenditure would experience a strong upward push driven by an increase in the dependency ratio (see Section 1.6.1). The latter's rise would slow down beyond 2040. In addition, the delayed effect of automatic pension system stabilisers and phased-in reforms in certain countries, would progressively counteract the initial expenditure rise.

Graph II.1.8: **Gross public pension expenditure in the EU: time profile 2019-2070 (%GDP)**



Source: European Commission, EPC.

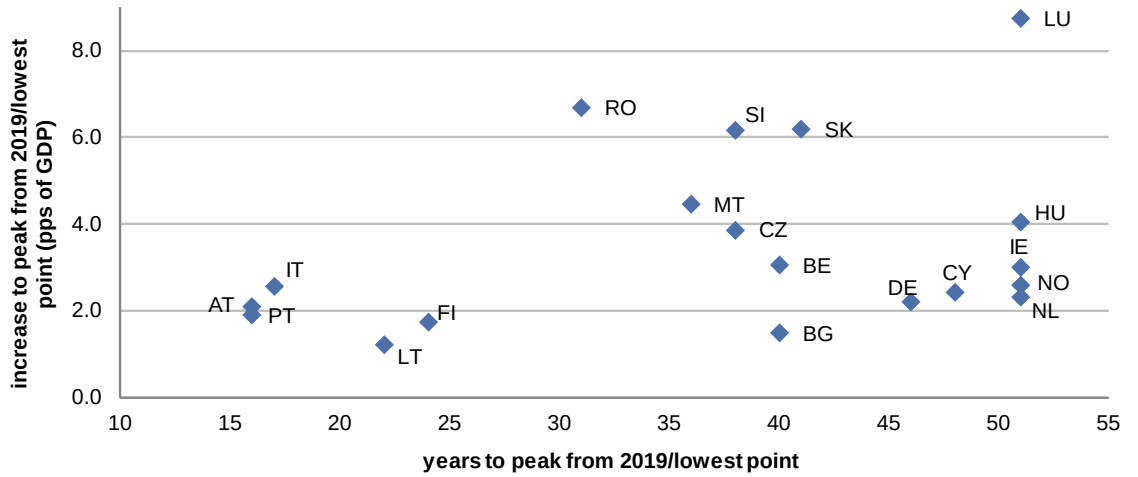
However, the bell-shaped aggregate curve does not apply to many individual Member States. As shown in Graph II.1.9, the number of years until reaching a peak and the expenditure increase from low to peak vary greatly among countries. As a result, the total change in public pension expenditure between 2019 and 2070, as shown in Graph II.1.4 above, does not appropriately signal risks for those countries where pension expenditure peaks in the first decades of the projection horizon and decreases afterwards. For example, in the cases of Portugal and Italy, pension spending would be lower in 2070 than it was 2019. However, the peak for these countries is around 2035, at 2-3 pps of GDP above the 2019 starting point. Similarly, for Romania, Austria and Lithuania, expenditure peaks in the coming decades, with – especially for Romania – a decrease thereafter.

Looking at spending dynamics by sub-period, the following patterns emerge (see Table II.1.9):

- *In 2019-2030, pension expenditure rises by 0.9 pps on average in the EU, increasing in 20 Member States*. By far the sharpest increase

([70]) Special pension schemes, which should in principle be included in the projections for all countries, are often included under the old-age and early retirement scheme.
([71]) With the exception of Romania, where adopted policy measures result in significantly higher pensions as of September 2021.
([72]) The sensitivity scenarios include two more adverse COVID-19 scenarios. The results for these scenarios are discussed in Section 1.8 of this chapter.

Graph II.1.9: **Years and increase to peak expenditure**



(1) The graph shows on the horizontal axis the number of years between the lowest point (situated between 2019 and the peak) and the year expenditure peaks. The increase in pension expenditure over this low-to-peak period is shown along the vertical axis.
(2) The graph excludes countries for which expenditure peaks in 2020 due to the epidemic: Denmark, Estonia, Greece, Spain, France, Croatia, Latvia, Poland and Sweden. This concerns countries for which spending generally follows a downward trajectory, with the peak thus situated around the start of the projection period in any case.
Source: European Commission, EPC.

would be in Romania (+4.7 pps of GDP), with spending rising considerably as well in Luxembourg (+2.2 pps), Italy (+1.9 pps) and Belgium, Austria and Slovakia (+1.8 pps). The projections for Greece entail an expenditure decline of 1.9 pps by 2030, with smaller decreases in a limited number of other countries.

- *During the 2030s, the upward trend continues, though at a slower pace, with a rise of 0.3 pps in the EU and increases in 19 Member States.* Slovenia is projected to see spending grow by 2.7 pps of GDP, followed by Luxembourg (+1.6 pps), Slovakia (+1.4 pps), and Hungary and Romania (+1.3 pps). Aside from Finland (-0.9 pps), falls in the expenditure-to-GDP ratio are 0.5 pps at most.

- *A trend shift takes place over the next decade (2040s), with an average decline of 0.2 pps in half of the Member States.* The largest decrease is expected for Portugal (-1.8 pps), Italy (-1.6 pps) and France (-0.9 pps). Still, increases remain considerable in several Member States, at 2.1 pps in Slovenia, and 1.8 pps in Luxembourg and Slovakia. Moreover, a number of Member States that until then saw rather moderate increases, would face more intense expenditure pressures in 2040-2050: the Czech Republic (+1.6 pps), Hungary (+1.5 pps) and Malta (+1.4 pps).

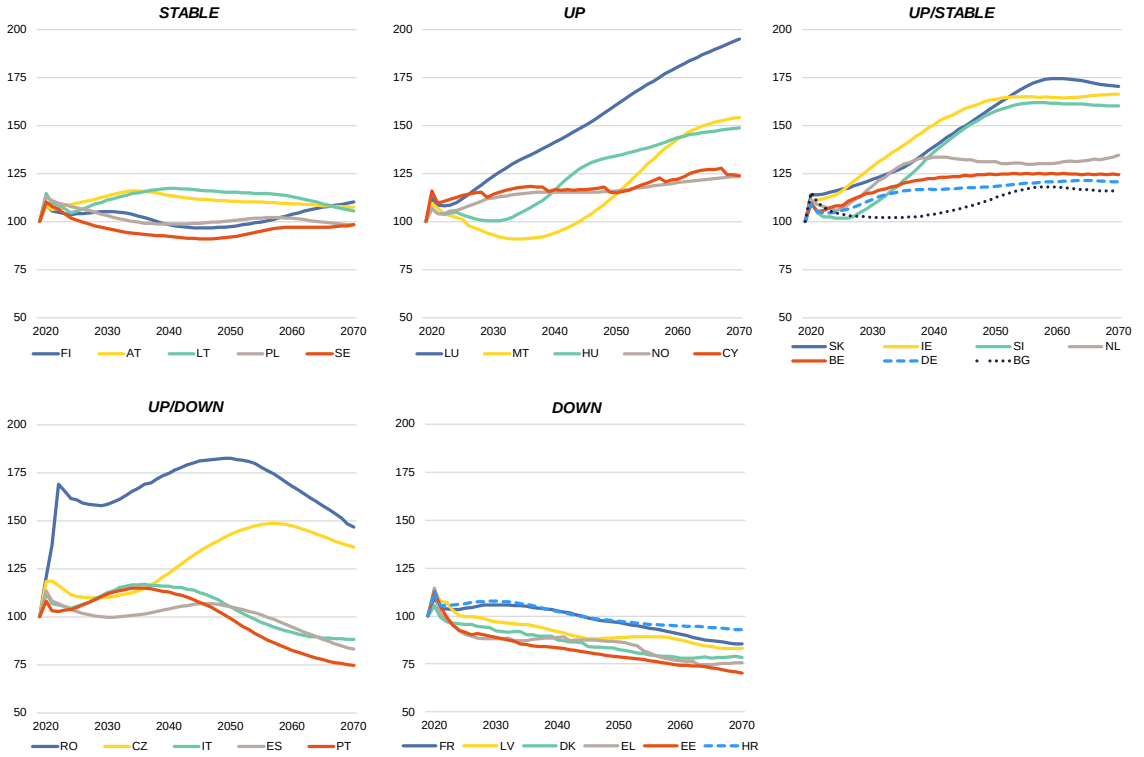
Table II.1.9: **Gross public pension expenditure: change per decade (pps of GDP)**

	2019-30	2030-40	2040-50	2050-60	2060-70	2019-70
BE	1.8	0.9	0.2	0.0	0.0	3.0
BG	0.2	0.1	0.7	0.5	-0.1	1.4
CZ	0.8	1.0	1.6	0.4	-0.9	2.9
DK	-0.7	-0.4	-0.5	-0.4	0.0	-2.0
DE	1.2	0.5	0.2	0.3	0.0	2.1
EE	-0.9	-0.4	-0.4	-0.3	-0.3	-2.3
IE	1.3	1.0	0.6	0.0	0.1	3.0
EL	-1.9	0.1	-0.4	-1.5	-0.2	-3.8
ES	0.0	0.5	0.2	-1.3	-1.4	-2.1
FR	0.8	-0.4	-0.9	-0.9	-0.8	-2.2
HR	0.8	-0.5	-0.5	-0.2	-0.2	-0.7
IT	1.9	0.5	-1.6	-2.1	-0.6	-1.8
CY	1.3	0.2	-0.1	0.6	0.1	2.1
LV	-0.2	-0.4	-0.2	-0.1	-0.3	-1.2
LT	0.8	0.4	-0.1	-0.2	-0.5	0.4
LU	2.2	1.6	1.8	1.8	1.3	8.7
HU	0.0	1.3	1.5	0.8	0.4	4.1
MT	-0.5	0.1	1.4	2.0	0.8	3.8
NL	1.3	1.0	-0.2	0.0	0.3	2.3
AT	1.8	0.1	-0.4	-0.2	-0.3	1.0
PL	0.3	-0.5	0.2	0.1	-0.3	-0.2
PT	1.5	0.1	-1.8	-2.1	-1.0	-3.2
RO	4.7	1.3	0.6	-1.2	-1.7	3.8
SI	0.9	2.7	2.1	0.4	-0.1	6.0
SK	1.8	1.4	1.8	1.2	-0.3	5.9
FI	0.7	-0.9	-0.1	0.8	0.8	1.3
SE	-0.3	-0.3	0.0	0.4	0.1	-0.1
NO	1.4	0.3	0.1	0.5	0.4	2.6
EA	1.0	0.3	-0.3	-0.6	-0.4	0.1
EU	0.9	0.3	-0.2	-0.5	-0.4	0.1

Source: European Commission, EPC.

- *In 2050-2060, expenditure decreases are generally more pronounced, leading to an average fall of 0.5 pps in the EU.* Italy and Portugal (-2.1 pps), Greece (-1.5 pps), Spain

Graph II.1.10: **Gross public pension expenditure-to-GDP ratio: time profile 2019-2070 (2019=100)**



Source: European Commission, EPC.

(-1.3 pps), Romania (-1.2 pps) and France (-0.9 pps) show the largest projected decline. At the same time, spending would continue to rise rapidly in Malta (+2 pps), Luxembourg (+1.8 pps) and Slovakia (+1.2 pps) during the 2050s.

- *Finally, in 2060-2070, pension spending would fall in a majority of Member States, with an average decrease of 0.4 pps in the EU*. Among the countries were expenditure would rise, Luxembourg would see an increase of 1.3 pps in the final decade of the projections, followed by Malta and Finland (+0.8 pps).

When considering the entire projection horizon, five broad profiles can be distinguished across countries (see Graph II.1.10):

1. *STABLE*: for five countries (Finland, Austria, Lithuania, Poland and Sweden), pension expenditure is projected to be broadly stable all through 2070, notwithstanding some fluctuations. Moving between 90% and 120% of the base year value, pension expenditure is relatively steady compared to that in other countries, with a low standard deviation.

2. *UP:* five countries (Luxembourg, Malta, Hungary, Norway and Cyprus) display an upward trending profile during the projection period – with a limited initial decline for Malta. Peak values are situated at the end of the projections, at around 125% of the 2019 value for Cyprus and Norway, around 150% for Malta and Hungary, and nearly 200% for Luxembourg.

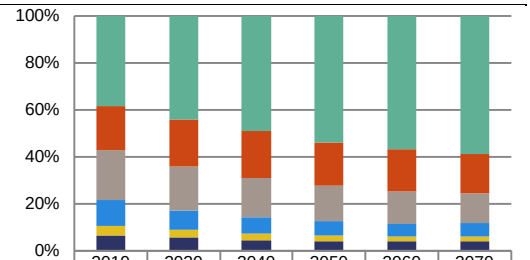
3. *UP/STABLE:* a group of seven countries (Slovakia, Ireland, Slovenia, the Netherlands, Belgium, Germany and Bulgaria) has an upward sloping profile, followed by a stabilisation close to the peak value. At 160-170% of 2019 expenditure, stabilisation occurs at a notably higher level for Slovakia, Ireland and Slovenia than for the other countries, which level off at about 120-130%.

4. *UP/DOWN:* for a group of five countries (Romania, the Czech Republic, Italy, Spain

and Portugal), an initial upward trend is followed by a reversal. For Spain, Italy and Portugal, which peak more early, the decline more than reverses the initial increase. Romania and the Czech Republic peak in the 2050s, at considerably higher levels so that at the end of the projection period, expenditure still corresponds to about 140% of the 2019 level.

- *DOWN:* six countries do not show any major increase throughout the projection horizon, following mostly a downward trajectory: France, Latvia, Denmark, Greece, Estonia and Croatia. For these countries expenditure peaks at the very start of the projections, accentuated by the 2020 recession.

Graph II.1.11: **Share of public pensioners per age group: EU (% of total public pensioners)**



	2019	2030	2040	2050	2060	2070
75+	38.6	44.3	49.2	53.9	57.0	58.7
70-74	18.9	20.0	20.0	18.6	17.9	16.8
65-69	21.1	18.8	16.7	15.2	13.7	12.9
60-64	11.0	8.3	6.9	6.0	5.2	5.4
55-59	3.9	3.2	2.7	2.3	2.2	2.2
-54	6.6	5.5	4.5	4.0	4.0	3.9

(1) Excluding AT (no data on pensioners by age group).
Source: European Commission, EPC.

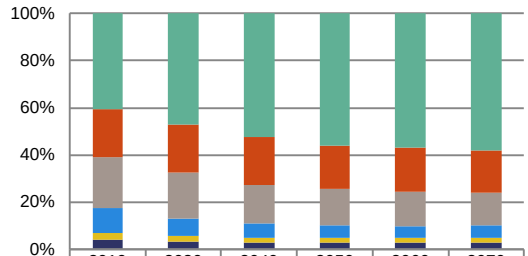
Developments by age groups

For all age groups below the age of 75, the share in the total number of public pensioners is projected to decrease between 2019 and 2070 (see Graph II.1.11). The shares of pensioners younger than 54 and those in the age group 55-59 would fall by about 2-3 pps, mostly in the period up to 2040. These groups are affected by tighter eligibility rules for survivors' and disability pensions. For the 60-64 and the 65-69 age groups, shares fall by about 6 and 8 pps, respectively. These age brackets are subject to rising early and statutory retirement ages in many countries. The share of pensioners aged 70-74 in total pensioners rises initially but this is more than reversed thereafter.

Lower shares of pensioners younger than 75 in the EU mirror the rising share of pensioners beyond the age of 75. The latter would go from around four in ten of all retirees now to almost six in ten in 2070. Aside from stricter access to retirement for the lower age brackets, this shift also reflects the rising life expectancy across the board, which, together with the inflow of the baby boomers, expand the 75+ age cohort.

The aggregate picture for the EU is also valid for individual Member States: a shift towards more pensioners aged over 75. The charts in Graph II.1.13 compare the shares of the age groups in 2019 and 2070. Countries situated above (below) the 45-degree line are projected to have a higher (lower) share of public pensioners in that respective age group in 2070 than currently. The graph also visualises the impact of linking retirement ages to life expectancy ([73]). Such links bring about large compositional changes: by 2070, these countries are among those with the largest shares of pensioners aged over 70 and the lowest shares of pensioners aged 60-69.

Graph II.1.12: **Share of public pension expenditure per age group: EU (% of total expenditure)**



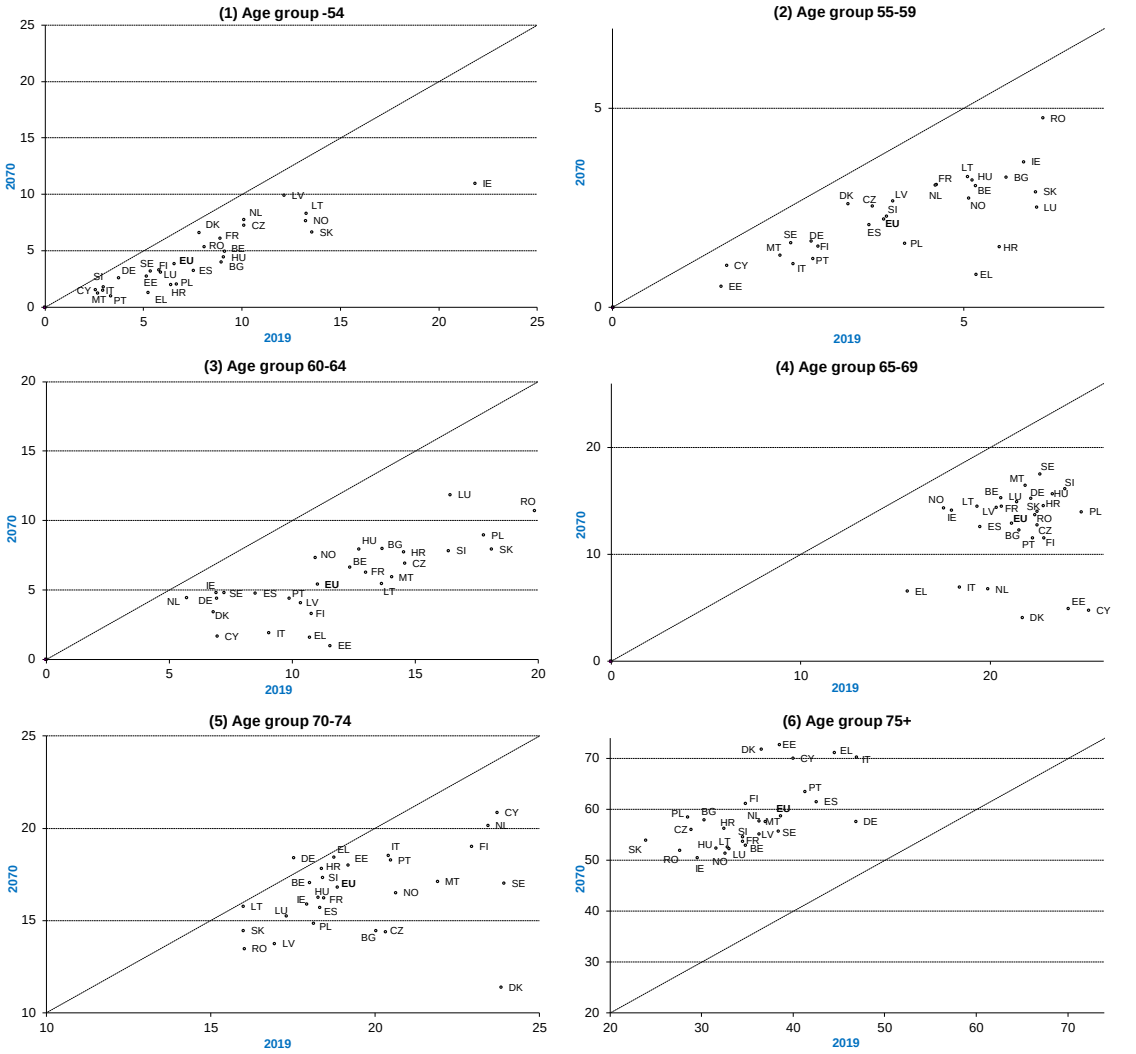
	2019	2030	2040	2050	2060	2070
75+	4.7	5.9	6.7	7.0	6.9	6.8
70-74	2.4	2.6	2.6	2.3	2.2	2.1
65-69	2.5	2.4	2.1	1.9	1.8	1.6
60-64	1.2	0.9	0.8	0.7	0.6	0.6
55-59	0.3	0.3	0.3	0.2	0.2	0.2
-54	0.5	0.4	0.4	0.4	0.4	0.3

(1) The bottom table shows spending as % of GDP.
Source: European Commission, EPC.

When looking at the age groups' share in total pension expenditure rather than their share in the number of pensioners, a similar picture emerges. For the EU as a whole, pension

([73]) Such links are applied in IT, FI, PT, EL, DK, NL, CY and EE (partial links in NL and PT). See Table II.1.2.

Graph II.1.13: **Share of public pensioners per age group: 2070 vs. 2019 (% of total public pensioners)**



(1) Excluding AT (no data on pensioners by age group).
Source: European Commission, EPC.

expenditure is projected to decrease for the age groups below 75 (see Graph II.1.12), thereby compensating for the higher spending on the 75+ age cohort. The latter would represent almost 60% of total pension spending in 2070, compared to around 40% in 2019. This change is very close to that observed for the number of pensioners and corresponds to an increase of 2.1 pps of GDP. The biggest reduction in pension spending is for the age groups 60-64 (-0.6 pps) and 65-69 (-0.9 pps). Total benefits of people younger than 60 would reduce slightly, from 0.8% of GDP in 2019 to 0.6% of GDP in 2070. The 70-74 age bracket is relatively stable as well in terms of expenditure share.

With the exceptions of Luxembourg, Ireland and Norway, all countries are expected to spend less on pensioners below the age of 70 (see Table II.1.10). Expenditure on pensioners up to 69 would reduce the most in Greece (-4.7 pps of GDP) and Italy (-3.9 pps). For the age group 70-74 the picture is mixed. Higher pension spending is projected for 12 countries, while 16 countries would see a decline. All countries are projected to have spending go up for pensioners aged over 75. This increase amounts to 4-6 pps of GDP for Belgium, the Czech Republic, Cyprus, Luxembourg, Romania, Slovenia and Slovakia. The increase remains below 1 pp of GDP for Estonia, Spain, Latvia, Portugal and Sweden.

Table II.1.10: **Change in public pension expenditure per age group in 2019-2070 (pps of GDP)**

	Age group					
	-54	55-59	60-64	65-69	70-74	75+
BE	-0.3	-0.2	-0.7	-0.3	0.4	4.0
BG	-0.3	-0.1	-0.3	-0.3	-0.1	2.6
CZ	0.0	0.0	-0.6	-0.5	0.0	4.0
DK	-0.2	-0.1	-0.5	-1.5	-1.1	1.5
DE	-0.1	-0.1	-0.2	-0.3	0.5	2.3
EE	-0.2	-0.1	-0.6	-1.4	-0.5	0.7
IE	-0.1	0.0	0.1	0.3	0.5	2.6
EL	-0.4	-0.7	-1.7	-1.8	-0.4	2.3
ES	-0.3	-0.2	-0.6	-1.2	-0.7	1.0
FR	-0.2	-0.1	-0.9	-1.3	-1.0	1.4
HR	-0.7	-0.4	-0.7	-0.8	-0.1	1.9
IT	-0.1	-0.3	-1.5	-2.0	-0.3	2.4
CY	0.0	-0.1	-0.6	-1.7	0.1	4.4
LV	-0.1	-0.1	-0.2	-1.0	-0.7	0.9
LT	0.0	0.0	-0.5	-0.4	-0.1	1.3
LU	0.1	-0.1	0.8	1.1	1.4	5.4
HU	-0.2	0.0	0.0	0.2	0.7	3.3
MT	0.0	0.0	-0.3	0.3	0.3	3.6
NL	-0.1	-0.1	0.0	-0.5	0.2	2.8
AT	-0.1	-0.2	-0.8	0.0	0.2	1.9
PL	-0.3	-0.2	-0.8	-1.4	-0.4	2.9
PT	-0.1	-0.2	-0.8	-1.6	-1.1	0.6
RO	0.0	0.0	-0.3	-0.3	0.2	4.1
SI	0.0	0.0	-0.4	-0.2	0.7	5.8
SK	0.0	0.0	-0.4	0.2	0.7	5.4
FI	-0.2	-0.1	-0.6	-1.4	-0.3	3.9
SE	0.0	0.0	-0.1	-0.1	-0.5	0.7
NO	0.2	0.1	0.1	0.0	-0.2	2.4
EU	-0.1	-0.1	-0.6	-0.9	-0.2	2.1

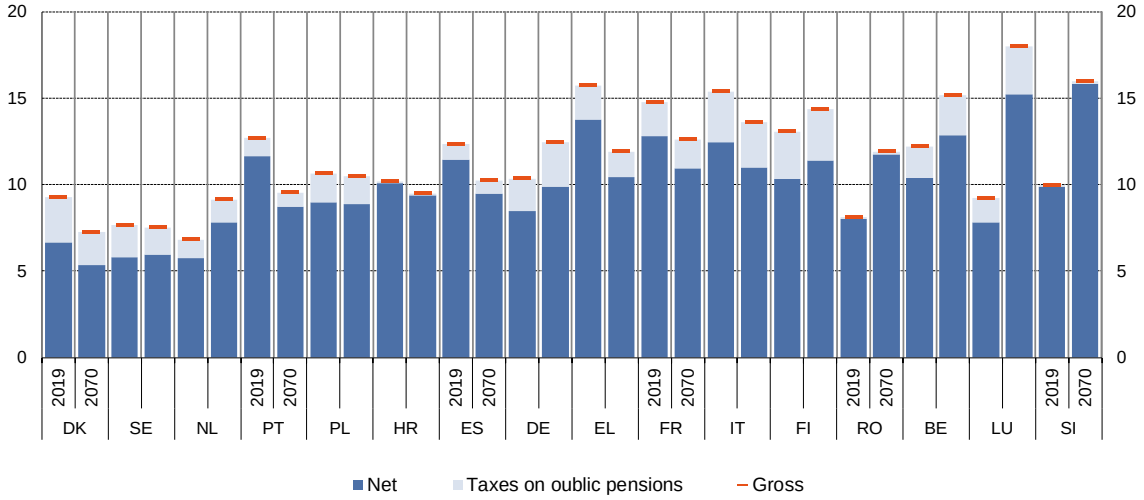
(1) EE: excluding work ability allowance.
(2) IE: excluding occupational scheme of civil servants.
(3) EL: excluding one-off payments in 2019 (retroactive and 13th pension payments).
(4) AT: excluding Ausgleichszulage and Rehabilitationsgeld.
Source: European Commission, EPC.

Net pension expenditure

Net pension expenditure would be 1.5 pps of GDP lower on average than gross spending in the countries providing data. All expenditure developments discussed hitherto, concerns expenditure in *gross* terms. Deducting taxes paid on pension benefits and any compulsory social security contributions paid by beneficiaries, provides *net* projections. 16 countries reported taxes on pensions (see Graph II.1.14) – in some cases there is no reporting because no taxes are due on pension benefits, e.g. in Lithuania. For the available set of countries, taxes on public pensions represented 1.5% of GDP on average in 2019, corresponding to an implicit average tax rate of a little over 13% on gross benefits. These averages are unchanged in 2070 in the projections.

Projected trends in net expenditures largely reflect developments in gross spending. Countries where the tax level would increase by at least 0.5 pps of GDP are Luxembourg (+1.3 pps), Germany (+0.7 pps) and Belgium (+0.5 pps). Denmark (-0.7 pps) shows the largest decline in the tax level. These trends mainly capture changes in the gross pension expenditure-to-GDP ratio, considering that the projections generally assume tax revenues to remain constant relative to gross expenditures. This is evident also in the implicit tax rate, which would remain mostly unchanged in the cases of Luxembourg and Belgium. For Germany, the implicit tax rate would rise from

Graph II.1.14: **Gross versus net public pension expenditure in 2019 and 2070 (% of GDP)**



(1) The graph shows only those countries that reported taxes on pensions.
(2) Countries are ranked in order of ascending net public pension expenditure in 2070.
Source: European Commission, EPC.

18% in 2019 to 21% in 2070. This reflects an ongoing reform, which fully exempts contributions as of 2025, while fully taxing benefits by 2040.

1.5.2. Private pensions

Private pension schemes have become more widespread in the EU as participation in both occupational and individual schemes has been increasing. Most countries encourage the build-up of supplementary private pension savings to soften the burden of ageing populations on social security schemes. In some countries, participation to certain private schemes is mandatory as discussed before. The fact that countries increasingly employ civil servants on a contractual basis, rather than on a statutory basis, also gives rise to higher pension spending through occupational schemes. In particular:

– *Occupational schemes exist in 22 countries* (see Annex II, Table II.AII.1). In nine of them participation is mandatory for at least part of those working.

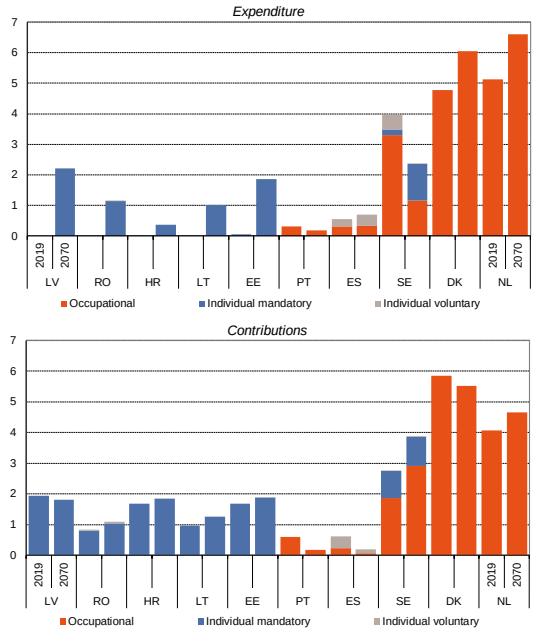
– *All countries have individual voluntary schemes*. Individual mandatory saving plans are less common; eight countries have them.

– **Within the context of the AWG projection exercise, Member States report private pension expenditure on a voluntary basis**. In this cycle, 10 countries reported non-zero data, mostly for occupational and individual mandatory schemes (see Graph II.1.15).

In spite of their rising prevalence, privately managed schemes still represent only a fraction of total pension benefits in most countries. Only in the cases of the Netherlands (43% of total pension spending), Denmark (34%) and Sweden (34%) private pensions had a significant share of total pension benefits in 2019. These countries have a tradition of providing *occupational* pensions to employees, with more than 90% of all employees covered.

Private *individual* schemes are expected to expand further over the next decades as they mature in some countries, while remaining limited in other. In 2070, pension expenditure through individual mandatory schemes would amount to about 1-2% of GDP in Latvia, Romania, Lithuania, Estonia and Sweden, providing about a quarter of total pensions in Latvia and Estonia. Given that these schemes were introduced in recent decades for younger workers, spending is currently low or even zero, while contributions already more substantial. Moreover, in many countries, these schemes have been the subject of repeated reforms since their conception. For example, the Croatian scheme has been reformed in recent years, with the option for all retirees to return to the public scheme upon retirement, resulting in lower projected spending under the scheme (0.4% of GDP in 2070) than was the case in the past. Only Spain, Sweden and Romania report data for individual voluntary pensions, though amounts are negligible in Romania and would disappear in the case of Sweden following the abolition of the tax deduction for employees since 2016, reflected in the zero new contributions to the scheme in 2019.

Graph II.1.15: **Private (occupational and individual) pension schemes: expenditure and contributions in 2019 and 2070 (% of GDP)**



(1) Figures are shown for those countries that reported (non-zero) data for one of the three private pension scheme types.
(2) DK: individual voluntary plans are included in the data for occupational schemes.
Source: European Commission, EPC.

Box II.1.2: Breakdown of the pension expenditure-to-GDP ratio

The following formula is used to analyse the underlying drivers of pension expenditure over time:

$$\frac{pension\ expenditure}{GDP}$$

$$= \frac{population + 65}{population\ 20-64} \text{ x } \frac{number\ of\ pensioners}{population + 65} \text{ x } \frac{average\ pension\ income}{\frac{GDP}{hours\ worked\ 20-74}} \text{ x } \frac{population\ 20-64}{hours\ worked\ 20-74}$$

$$= (dependency\ ratio) \text{ x } (coverage\ ratio) \text{ x } (benefit\ ratio) \text{ x } (labour\ market\ effect)$$

The overall change in public pension expenditure-to-GDP ratio is expressed as the sum of the contribution of the following four main factors:

- **The dependency ratio effect** quantifies the impact of demographic changes, more precisely the relative change in the old-age versus the working-age population. An increase in this ratio indicates a higher proportion of older individuals with respect to working age population, i.e. an ageing population.

- **The coverage ratio effect** is defined as the number of pensioners of all ages to the population above 65. The analysis of the coverage ratio provides information about how developments in the effective exit age and the share of the population covered by the pension system influence pension spending.

- **The benefit ratio effect** indicates how the average pension (public pension spending divided by the number of pensioners) develops relative to the average wage. It reflects the characteristics of the legal framework of pension systems concerning calculation and indexation rules.

- **The labour market effect** describes the effect labour market behaviour has on pension expenditure. A further breakdown is applied to come to drivers that are more intuitive:

$$\frac{population\ 20-64}{hours\ worked\ 20-74} = \frac{population\ 20-64}{working\ people\ 20-64} \text{ x } \frac{working\ people\ 20-64}{hours\ worked\ 20-64} \text{ x } \frac{hours\ worked\ 20-64}{hours\ worked\ 20-74}$$

$$= \left(\frac{1}{employment\ rate}\right) \text{ x } \left(\frac{1}{labour\ intensity}\right) \text{ x } \left(\frac{1}{career\ shift}\right)$$

These three different labour market behaviour components can be interpreted as follows:

- **The employment rate effect** is defined as the ratio of population aged 20-64 to the number of working people aged 20-64, i.e. the inverse of the employment rate. Under pay-as-you-go systems, a higher employment rate widens the contribution base, which enhances the sustainability of the pension system, at least in the short term. When the employment rate increases, the pension expenditure ratio falls.

- **The labour intensity effect** is defined as the ratio of the working population 20-64 to the hours worked by the population 20-64, i.e. the inverse of labour intensity. As the labour intensity increases, the pension expenditure ratio falls.

- **The career prolongation effect** is defined as the ratio of hours worked by the population 20-64 to the hours worked by the population 20-74, i.e. the inverse of the career shift. A decrease of this ratio captures the effect of a career prolongation beyond 65, e.g. because of reforms that increase the statutory retirement age or because of active ageing policies. An increase in the hours worked by people aged more than 65 brings the pension expenditure ratio down.

1.6. DRIVERS OF PENSION EXPENDITURE

1.6.1. Breakdown of expenditure projections

Projected changes in pension spending can be broken-down into different components, which help explain overall dynamics. The overall change in gross public pension expenditure can be split into four components: the dependency ratio, the coverage ratio, the benefit ratio and the labour market impact. The latter is further divided into three sub-components: employment, labour intensity and career shift effects (see also Box II.1.2). The results of this breakdown for the change in the pension expenditure ratios between 2019 and 2070 are shown in Table II.1.11 and Graph II.1.16.

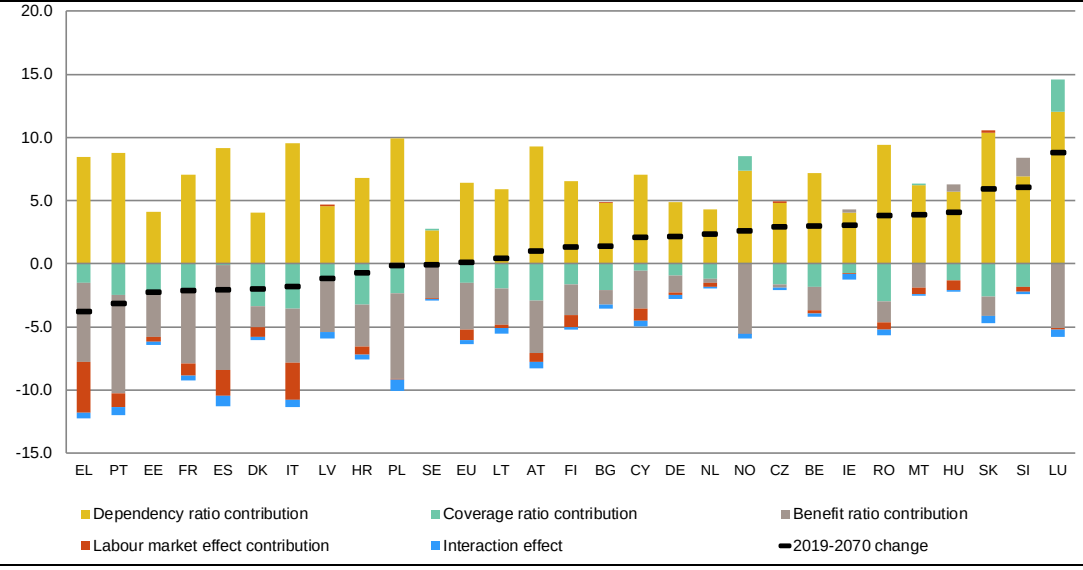
The demographic factor, captured by the dependency ratio, is the driving force behind upward expenditure trends. Its impact on the expenditure ratio is positive for all countries, being the only component that leads to a significant spending increase. The contribution amounts to 6.4 pps of GDP on average in the EU and ranges from 2.6 pps of GDP in Sweden to 12.1 pps of GDP in Luxembourg. Other countries where the demographic effect alone would result in pension expenditure rising by at least 8 pps of GDP in 2019-2070 are Greece, Spain, Italy, Austria, Poland, Portugal, Romania and Slovakia.

Yet, in several countries that adopted automatic adjustment mechanisms, public pension expenditure is set to decrease despite strong population ageing. It is noteworthy that several of the countries displaying a high increase in the dependency ratio are nevertheless expected to see pension expenditure decrease. This is for example the case in Greece, Spain, Italy, Poland and Portugal, all of which have enhanced their pension system with adjustment mechanisms, such as links to life expectancy or sustainability factors.

The upward dependency ratio effect is countered by almost equally universal downward contributions for the coverage ratio, the benefit ratio and the labour market effect. For the EU as a whole, these three components together fully offset the adverse demographic impact over the projection period. This is in particular due to the benefit ratio (-3.7 pps of GDP) and to a lesser extent because of the coverage ratio (-1.5 pps) and changes in the labour market (-0.8 pps). The small interaction effect between the different components is favourable for all countries (-0.3 pps on average).

The coverage ratio is expected to mitigate ageing effects in most countries. In 24 countries, the coverage ratio is expected to reduce pension expenditure, by 3 to 3.5 pps of GDP in the cases of Romania, Croatia, Denmark and Italy. Countries that link the statutory retirement age to life

Graph II.1.16: **Contribution to change in gross public pension expenditure; 2019-2070 (pps of GDP)**



(1) LU: see note Table II.1.11.
Source: European Commission, EPC.

Table II.1.11: **Breakdown of change in gross public pension expenditure; 2019-2070 (pps of GDP)**

	2019 level	Dependency ratio contribution	Coverage ratio contribution	Benefit ratio contribution	Labour market effect contribution				Interaction effect	2070 level
					Total (a+b+c)	*Employment rate (a)*	*Labour intensity (b)*	*Career shift (c)*		
BE	12.2	7.2	-1.8	-1.8	-0.3	*-0.1*	*0.0*	*-0.3*	-0.2	15.2
BG	8.3	4.8	-2.1	-1.1	0.1	*0.2*	*0.0*	*-0.1*	-0.3	9.7
CZ	8.0	4.8	-1.6	-0.3	0.2	*0.2*	*0.0*	*0.0*	-0.1	10.9
DK	9.3	4.0	-3.4	-1.7	-0.8	*-0.3*	*0.0*	*-0.5*	-0.2	7.3
DE	10.3	4.9	-0.9	-1.4	-0.2	*0.0*	*0.0*	*-0.2*	-0.3	12.4
EE	7.8	4.1	-2.4	-3.4	-0.4	*-0.2*	*0.0*	*-0.2*	-0.2	5.4
IE	4.6	4.0	-0.7	0.2	-0.1	*0.0*	*0.0*	*-0.1*	-0.4	7.6
EL	15.7	8.4	-1.5	-6.2	-4.1	*-3.4*	*0.1*	*-0.7*	-0.4	11.9
ES	12.3	9.2	-0.1	-8.3	-2.1	*-1.5*	*0.1*	*-0.7*	-0.8	10.3
FR	14.8	7.1	-2.0	-5.9	-1.0	*-0.6*	*0.0*	*-0.4*	-0.4	12.6
HR	10.2	6.8	-3.2	-3.3	-0.6	*-0.5*	*0.0*	*-0.2*	-0.4	9.5
IT	15.4	9.5	-3.5	-4.3	-2.9	*-1.6*	*0.0*	*-1.4*	-0.6	13.6
CY	8.8	7.1	-0.6	-3.0	-1.0	*-0.7*	*0.0*	*-0.4*	-0.5	10.9
LV	7.1	4.6	-1.4	-4.1	0.1	*0.1*	*0.0*	*0.1*	-0.5	5.9
LT	7.1	5.9	-1.9	-2.9	-0.2	*-0.3*	*0.0*	*0.0*	-0.5	7.5
LU	9.2	12.1	2.5	-5.1	-0.2	*-0.2*	*0.1*	*-0.1*	-0.6	18.0
HU	8.3	5.7	-1.3	0.6	-0.8	*-0.7*	*0.0*	*-0.1*	-0.1	12.4
MT	7.1	6.2	0.1	-1.9	-0.5	*-0.5*	*0.0*	*0.0*	-0.1	10.9
NL	6.8	4.3	-1.2	-0.3	-0.4	*-0.1*	*0.0*	*-0.3*	-0.1	9.1
AT	13.3	9.3	-2.9	-4.2	-0.7	*-0.5*	*0.0*	*-0.2*	-0.6	14.3
PL	10.6	9.9	-2.4	-6.8	-0.1	*0.1*	*0.0*	*-0.2*	-0.9	10.5
PT	12.7	8.8	-2.5	-7.8	-1.1	*-0.7*	*0.0*	*-0.4*	-0.7	9.5
RO	8.1	9.4	-3.0	-1.7	-0.6	*-0.3*	*0.0*	*-0.3*	-0.4	11.9
SI	10.0	7.0	-1.8	1.4	-0.4	*-0.3*	*0.0*	*-0.1*	-0.2	16.0
SK	8.3	10.4	-2.6	-1.6	0.2	*0.2*	*0.0*	*0.0*	-0.6	14.2
FI	13.0	6.5	-1.7	-2.4	-1.0	*-0.4*	*0.0*	*-0.5*	-0.2	14.4
SE	7.6	2.6	0.1	-2.7	-0.1	*-0.1*	*0.0*	*0.0*	-0.1	7.5
NO	11.0	7.4	1.1	-5.5	0.0	*0.1*	*0.0*	*-0.1*	-0.4	13.6
EA	12.1	0.1	7.0	-6.5	-3.9	*-1.1*	*-0.7*	*0.0*	3.5	12.1
EU	11.6	6.4	-1.5	-3.7	-0.8	*-0.5*	*0.1*	*-0.4*	-0.3	11.7

(1) Breakdown is based on number of pensioners.
(2) LU: As cross-border workers in Luxembourg are not covered in the labour force projections for the pension projection exercise, a deeper analysis of the employment effect contribution as well as the coverage ratio contribution from the standard breakdown is not meaningful. When limiting the breakdown to alternative dependency ratio (number of pensioners/number of contributors) and benefit ratio (average pension income/(GDP/number of contributors)) components, these would explain respectively 11.7 pps and -1.3 pps of GDP of the change in total pension expenditure between 2019 and 2070, with a residual of -1.7 pps of GDP. This remark also applies to the other tables in this section.
Source: European Commission, EPC.

expectancy, should be expected to see the number of pensioners increase by less than the 65+ population, leading to a lower coverage ratio as people start to draw pension benefits later. The coverage ratio is expected to cause pension expenditure to increase in just four countries: Luxembourg (+2.5 pps of GDP), Norway (+1.1 pps), and Malta and Sweden (+0.1 pps).

The average downward contribution from the benefit ratio is even more important. With the exceptions of Slovenia (+1.4 pps of GDP), Hungary (+0.6 pps) and Ireland (+0.2 pps), the benefit ratio effect is set to reduce pension expenditure over time. Lower benefit ratios result in the steepest decline in pension spending in Spain (-8.3 pps), Portugal (-7.8 pps), Poland (-6.8 pps), Greece (-6.2 pps), France (-5.9 pps) and Norway (-5.5 pps). Also for Luxembourg, Italy, Austria and Latvia, pension benefits growing slower than the average wage reduces pension expenditure by at least 4 pps of GDP during the projection period.

The varying impact of the coverage ratio and the benefit ratio effects mostly reflect the extent to which and the way in which countries have implemented reforms. Measures that tighten access to the public pension scheme can affect both ratios, e.g. the decision to increase the statutory retirement age or a shift to second pillar pension schemes classified outside the public sector. Measures that change the generosity of future pension benefits produce an impact on the benefit ratio, e.g. through the introduction of sustainability factors or the application of less generous indexation rules.

The labour market effect is generally low and negative, meaning that changes in the labour market mostly reduce pension spending. The employment rate and the career shift are driving the overall labour market effect. The contribution from changes in labour intensity is about neutral for all countries. This reflects the macroeconomic assumptions underlying the projections. For Bulgaria, the Czech Republic, Latvia and Slovakia,

there is a small expenditure-increasing impact, stemming from a slightly lower employment rate over time. For the other countries, labour market dynamics reduce expenditure by up to 1 pp of GDP, with the exceptions of Greece (-4.1 pps), Italy (-2.9 pps), Spain (-2.1 pps) and Portugal (-1.1 pps). The latter countries are expected to see a strong decline in unemployment rates from their current levels (see Chapter 2 of Part I), with an additional impact from the career shift effect for these countries.

Dependency ratio effect

As discussed higher, a higher dependency ratio pushes up pension expenditure for all countries in 2019-2070. This reflects an ageing society: for every person in the EU older than 65 years in 2019, there were almost 3 persons aged between 20 and 64. By 2040, this ratio would fall to just 2, decreasing further to 1.7 persons of working-age for every person older than 65 year in 2070. This corresponds to a higher dependency ratio and thus a contribution base that narrows relative to the number of beneficiaries. Policy measures aimed at increasing statutory and effective retirement ages, lifting employment rates of older worker and controlling future adjustments of pension benefits could help offset the impact such demographic shift has on public finances.

The contribution of the dependency ratio over time shows a strong ageing effect in the next decades, somewhat abating as from the 2040s (see Table II.1.12). In particular:

– *In the period 2019-2030, the dependency ratio rises fast as the post-war baby-boom generation continues to enter retirement*, driving up pension spending by 2.7 pps on average in the EU. A rising dependency ratio leads to the largest increase in pension expenditure in Austria (+4.2 pps of GDP), with spending rising by at least 3 pps of GDP in Poland, Italy, Spain, France, Portugal, Slovakia, Greece, Belgium, Slovenia and Luxembourg.

– *The demographic effect continues to exert upward pressure on pension expenditure for all countries in 2030-2040*, by 2.1 pps on average. Shifting demographics drive up pension expenditure by 4.6 pps of GDP in Italy, with increase of 3-4 pps in Romania, Spain, Portugal, Greece and Luxembourg over the same period.

Table II.1.12: **Contribution of the dependency ratio effect to the change in public pension expenditure (pps of GDP)**

	2019-30	2030-40	2040-50	2050-60	2060-70	2019-70
BE	3.0	1.9	1.0	0.8	0.4	*7.2*
BG	1.6	1.4	1.7	0.9	-0.8	*4.8*
CZ	1.5	1.5	2.1	0.9	-1.1	*4.8*
DK	1.9	1.2	0.1	0.5	0.4	*4.0*
DE	2.9	1.4	0.1	0.3	0.1	*4.9*
EE	1.6	0.8	1.0	0.8	-0.2	*4.1*
IE	0.9	1.0	1.3	0.5	0.4	*4.0*
EL	3.3	3.3	2.4	-0.2	-0.4	*8.4*
ES	3.4	3.7	2.5	-0.1	-0.3	*9.2*
FR	3.4	2.3	0.9	0.3	0.2	*7.1*
HR	2.9	1.4	1.3	0.7	0.5	*6.8*
IT	3.7	4.6	1.5	-0.2	0.0	*9.5*
CY	2.4	0.8	0.9	1.7	1.3	*7.1*
LV	2.3	1.2	1.0	0.7	-0.5	*4.6*
LT	2.7	1.8	0.8	0.9	-0.3	*5.9*
LU	3.0	3.1	2.6	2.4	1.0	*12.1*
HU	1.1	1.6	1.9	1.1	0.1	*5.7*
MT	1.1	0.4	1.3	2.4	1.0	*6.2*
NL	2.0	1.3	0.0	0.4	0.6	*4.3*
AT	4.2	2.8	1.0	0.9	0.3	*9.3*
PL	3.7	1.3	2.9	2.0	-0.1	*9.9*
PT	3.4	3.6	2.1	-0.2	-0.1	*8.8*
RO	1.8	3.9	3.1	1.1	-0.5	*9.4*
SI	3.0	1.9	2.4	0.5	-0.8	*7.0*
SK	3.3	2.0	3.5	2.3	-0.7	*10.4*
FI	2.7	0.5	1.0	1.4	1.0	*6.5*
SE	0.7	0.5	0.3	0.9	0.2	*2.6*
NO	2.3	2.0	0.8	1.3	1.1	*7.4*
EA	1.0	0.3	-0.3	-0.6	-0.4	*0.1*
EU	2.7	2.1	-0.2	0.5	0.0	*5.0*

(1) LU: the alternative dependency ratio effect (see comment Table II.1.11) amounts to 2.0, 2.6, 2.9, 2.6 and 1.6 pps of GDP for the respective time periods, with a total of 11.7 pps of GDP in 2019-2070. Considering the broad similarity of the numbers, the text refers to the numbers for the standard breakdown, which only accounts for the resident population, though.
Source: European Commission, EPC.

– *The demographic push generally abates in 2040-2050*, when continued increases in dependency ratios lift pension expenditure by 1.2 pps on average. The dependency ratio effect remains positive for all countries. The highest impact would be in Slovakia (+3.5 pps of GDP), Romania (+3.1 pps) and Poland (+2.9 pps).

– *This attenuating trend continues in 2050-2060, when the demographic change would have a downward impact on pension expenditure in four countries*. The dependency ratio effect is the highest in Malta, Luxembourg, Slovakia and Poland, at 2-2.5 pps of GDP. Finally, in 2060-2070, the demographic factor is expected to reduce pension expenditure in twelve countries, having a neutral impact on average

in the EU. Only Cyprus, Norway, Malta and Luxembourg would see pension expenditure increase by more than 1 pp of GDP as a result of a further increase in the dependency ratio.

Coverage ratio effect

The coverage ratio relates the number of pensioners to the number of persons older than 65 years. It thus gives an idea about the extent to which a country grants pension benefits to people below the age of 65. As a result, reforms that eliminate or tighten access to early retirement, increase the statutory retirement age or, more generally, try to increase the effective retirement age (e.g. through a bonus-penalty system), reduce the coverage ratio.

Table II.1.13: **Coverage ratio (% of population >65y)**

	2019	2030	2040	2050	2060	2070	Change 2019-2070 (pps)
BE	135.0	127.3	121.4	119.3	118.2	118.2	*-16.8*
BG	143.2	129.8	117.1	108.9	106.6	111.4	*-31.8*
CZ	137.4	123.0	118.3	113.8	111.9	114.8	*-22.6*
DK	113.8	95.5	87.3	85.0	78.1	76.0	*-37.9*
DE	127.2	120.8	118.2	117.9	117.2	116.9	*-10.3*
EE	157.9	138.6	128.3	117.3	109.2	111.7	*-46.2*
IE	141.8	133.8	128.5	121.5	121.9	121.0	*-20.9*
EL	105.6	95.7	94.6	94.8	93.9	96.4	*-9.2*
ES	108.3	98.3	98.4	102.3	107.0	107.3	*-1.0*
FR	176.9	165.1	159.0	158.1	156.8	155.1	*-21.8*
HR	146.7	128.4	120.1	112.2	109.1	107.8	*-38.9*
IT	106.7	97.2	91.7	90.7	89.0	85.8	*-20.9*
CY	111.5	106.7	114.1	120.1	118.0	105.6	*-5.9*
LV	142.6	126.0	121.4	118.1	115.4	117.9	*-24.7*
LT	162.3	140.8	133.1	129.9	126.2	126.3	*-36.0*
LU	230.9	245.7	253.5	265.1	273.4	279.9	*49.1*
HU	137.3	129.7	127.9	121.8	119.6	119.6	*-17.8*
MT	98.1	92.7	96.9	99.0	98.0	99.7	*1.6*
NL	118.0	109.6	107.8	106.4	103.0	101.5	*-16.5*
AT	145.1	134.5	126.0	123.2	119.6	119.0	*-26.1*
PL	141.5	124.3	125.5	120.2	114.3	114.2	*-27.3*
PT	117.6	106.3	101.9	98.1	99.1	97.8	*-19.8*
RO	141.7	142.8	134.0	123.7	116.1	113.0	*-28.7*
SI	148.7	132.5	130.3	125.6	124.0	126.2	*-22.5*
SK	156.2	142.7	139.9	129.9	123.0	123.5	*-32.7*
FI	127.8	119.4	117.2	115.7	113.9	112.9	*-14.9*
SE	128.6	128.7	127.0	129.3	129.5	130.9	*2.3*
NO	142.4	150.2	149.1	155.5	160.3	156.4	*14.0*
EA	130.7	121.3	117.3	116.8	116.8	116.2	*-14.5*
EU	132.3	122.5	118.6	117.1	116.1	115.7	*-16.6*

(1) The coverage ratio is calculated as the total number of public pensioners as a share of the population 65 and over.
Source: European Commission, EPC.

A significant fall of the coverage ratio is expected, especially in the next two decades. In the EU, the coverage ratio is projected to fall by 17 pps between 2019 and 2070, mostly in the period up to 2040 (see Table II.1.13). It would increase in only a few countries. A decrease by more than 30 pps is expected for Estonia, Croatia, Denmark, Lithuania, Slovakia and Bulgaria. The projected contribution of variations in the coverage ratio to changes in the pension expenditure-to-GDP ratio is shown in Table II.1.14, split out per decade. In the EU as a whole, it reduces pension expenditure especially in the 2020s and 2030s, with a more or less neutral impact beyond 2040.

Table II.1.14: **Contribution of the coverage ratio effect to the change in public pension expenditure (pps of GDP)**

	2019-30	2030-40	2040-50	2050-60	2060-70	2019-70
BE	-0.8	-0.7	-0.3	-0.1	0.0	*-1.8*
BG	-0.9	-0.9	-0.6	-0.2	0.4	*-2.1*
CZ	-1.0	-0.3	-0.4	-0.2	0.3	*-1.6*
DK	-1.6	-0.7	-0.2	-0.6	-0.2	*-3.4*
DE	-0.6	-0.2	0.0	-0.1	0.0	*-0.9*
EE	-1.0	-0.5	-0.6	-0.4	0.1	*-2.4*
IE	-0.2	-0.2	-0.3	0.0	-0.1	*-0.7*
EL	-1.6	-0.1	0.0	-0.1	0.3	*-1.5*
ES	-1.3	0.0	0.5	0.6	0.0	*-0.1*
FR	-1.1	-0.6	-0.1	-0.1	-0.1	*-2.0*
HR	-1.4	-0.7	-0.7	-0.3	-0.1	*-3.2*
IT	-1.5	-1.0	-0.2	-0.3	-0.5	*-3.5*
CY	-0.4	0.7	0.5	-0.2	-1.2	*-0.6*
LV	-0.9	-0.3	-0.2	-0.1	0.1	*-1.4*
LT	-1.1	-0.4	-0.2	-0.2	0.0	*-1.9*
LU	0.7	0.4	0.6	0.5	0.4	*2.5*
HU	-0.5	-0.1	-0.5	-0.2	0.0	*-1.3*
MT	-0.4	0.3	0.1	-0.1	0.2	*0.1*
NL	-0.5	-0.1	-0.1	-0.3	-0.1	*-1.2*
AT	-1.1	-1.0	-0.3	-0.4	-0.1	*-2.9*
PL	-1.5	0.1	-0.5	-0.5	0.0	*-2.4*
PT	-1.3	-0.6	-0.5	0.1	-0.1	*-2.5*
RO	0.3	-0.8	-1.1	-0.9	-0.4	*-3.0*
SI	-1.2	-0.2	-0.5	-0.2	0.3	*-1.8*
SK	-0.8	-0.2	-0.9	-0.7	0.1	*-2.6*
FI	-0.9	-0.2	-0.2	-0.2	-0.1	*-1.7*
SE	0.0	-0.1	0.1	0.0	0.1	*0.1*
NO	0.6	-0.1	0.5	0.4	-0.3	*1.1*
EA	3.1	2.5	1.1	0.2	0.1	*7.0*
EU	-0.9	-0.4	-0.1	-0.1	0.0	*-1.5*

Source: European Commission, EPC.

Benefit ratio effect

Future pension expenditure is impacted by the way in which pension benefits are adjusted for inflation and productivity gains. The valorisation of acquired pension rights, accrual rates and conditions for enjoying full pension benefits are other important parameters. Together these design features determine the generosity of the pensions system, which can be measured through the benefit ratio. The latter expresses the average pension benefit in function of the average wage. A lower relative generosity of pensions because of parametric reforms is thus reflected in a lower benefit ratio. Section 1.6.2 takes a closer look at benefit ratios.

On average in the EU, benefit ratios are expected to decline, reducing pension spending by 3.7 pps of GDP. Table II.1.15 shows the benefit ratio effect, i.e. the increase or decrease of public pension expenditure that is the result of

changes in the benefit ratio. Over the entire projection horizon, pension systems would become more generous in just a few countries, namely Ireland, Hungary and Slovenia, corresponding to higher pension spending.

Table II.1.15: **Contribution of the benefit ratio effect to the change in public pension expenditure (pps of GDP)**

	2019-30	2030-40	2040-50	2050-60	2060-70	2019-70
BE	0.0	-0.2	-0.6	-0.6	-0.5	*-1.8*
BG	-0.6	-0.4	-0.2	-0.1	0.1	*-1.1*
CZ	0.2	-0.1	0.1	-0.2	-0.2	*-0.3*
DK	-0.7	-0.6	-0.3	0.0	-0.1	*-1.7*
DE	-0.8	-0.6	0.0	0.0	-0.1	*-1.4*
EE	-1.5	-0.6	-0.6	-0.5	-0.2	*-3.4*
IE	0.2	0.0	0.0	0.0	0.0	*0.2*
EL	-1.6	-1.7	-1.8	-1.2	0.1	*-6.2*
ES	-1.0	-2.1	-2.1	-1.8	-1.2	*-8.3*
FR	-1.0	-1.6	-1.4	-1.1	-0.9	*-5.9*
HR	-0.2	-1.0	-1.0	-0.7	-0.5	*-3.3*
IT	1.2	-1.9	-2.5	-1.4	0.2	*-4.3*
CY	-0.3	-1.0	-1.3	-0.6	0.2	*-3.0*
LV	-1.6	-1.1	-0.8	-0.5	0.0	*-4.1*
LT	-0.6	-0.7	-0.7	-0.7	-0.3	*-2.9*
LU	-1.0	-1.6	-1.4	-0.9	-0.2	*-5.1*
HU	0.1	0.0	0.2	-0.1	0.3	*0.6*
MT	-0.7	-0.5	0.0	-0.2	-0.4	*-1.9*
NL	-0.1	-0.1	0.0	0.0	-0.1	*-0.3*
AT	-0.8	-1.2	-1.1	-0.6	-0.5	*-4.2*
PL	-1.4	-2.0	-1.8	-1.1	-0.4	*-6.8*
PT	0.0	-2.2	-2.9	-2.1	-0.6	*-7.8*
RO	2.6	-1.2	-0.9	-1.2	-1.1	*-1.7*
SI	-0.4	1.0	0.5	0.2	0.3	*1.4*
SK	-0.7	-0.6	-0.5	-0.1	0.2	*-1.6*
FI	-0.8	-0.9	-0.7	-0.1	0.1	*-2.4*
SE	-0.9	-0.7	-0.5	-0.4	-0.3	*-2.7*
NO	-1.4	-1.4	-1.3	-1.1	-0.3	*-5.5*
EA	-2.5	-2.6	-1.2	-0.1	0.0	*-6.5*
EU	-0.5	-1.1	-1.1	-0.7	-0.3	*-3.7*

(1) LU: the alternative benefit ratio effect (see comment Table II.1.11) results in contributions of 0.2, -0.7, -0.5, -0.2 and 0, with a total of -1.3 pps of GDP in 2019-2070.
Source: European Commission, EPC.

In the period 2019-2030, benefits are set to grow slower than wages in most countries, with a generally decreasing benefit ratio lowering pension expenditure by 0.5 pps on average. More negative contributions, by around 1.5 pps, are expected in Estonia, Greece, Latvia, Poland and Norway. On the other hand, pension benefits rising faster than wages would cause the pension expenditure ratio to rise in Romania (+2.6 pps of GDP) and Italy (+1.2 pps), with minor increases in the Czech Republic, Ireland and Hungary.

From 2030 to 2070, the benefit ratio effect remains negative in most countries, with Slovenia being the main exception to this rule. The benefit ratio effect causes pension expenditure to decrease steadily, by about 3 pps in total in 2030-2070. The expenditure reducing effect is generally the largest in 2030-2050, at -2.2 pps of GDP on average in the EU and large declines in Portugal (-5.1 pps), Italy (-4.4 pps), Spain (-4.2 pps), Poland (-3.8 pps), Greece (-3.5 pps), and in France and Luxembourg (-3 pps).

Table II.1.16: **Contribution of the labour market effect to the change in public pension expenditure (pps of GDP)**

	2019-30	2030-40	2040-50	2050-60	2060-70	2019-70
BE	-0.4	0.0	0.1	0.0	0.0	*-0.3*
BG	0.1	0.0	-0.1	-0.1	0.2	*0.1*
CZ	0.2	0.1	-0.1	-0.1	0.2	*0.2*
DK	-0.2	-0.2	-0.1	-0.2	-0.1	*-0.8*
DE	-0.2	0.0	0.0	-0.1	0.0	*-0.2*
EE	0.1	-0.1	-0.2	-0.2	0.0	*-0.4*
IE	0.0	-0.1	-0.1	0.0	0.0	*-0.1*
EL	-1.9	-1.0	-0.9	-0.1	-0.2	*-4.1*
ES	-0.9	-0.8	-0.4	0.1	0.0	*-2.1*
FR	-0.3	-0.4	-0.2	0.0	0.0	*-1.0*
HR	-0.4	-0.2	-0.1	0.0	0.0	*-0.6*
IT	-1.3	-0.8	-0.3	-0.2	-0.3	*-2.9*
CY	-0.2	-0.2	-0.2	-0.2	-0.1	*-1.0*
LV	0.3	-0.1	-0.1	-0.1	0.1	*0.1*
LT	0.0	-0.1	0.0	-0.1	0.1	*-0.2*
LU	-0.2	0.0	0.1	-0.1	0.1	*-0.2*
HU	-0.7	-0.1	0.0	0.0	0.0	*-0.8*
MT	-0.4	0.0	0.0	-0.1	0.0	*-0.5*
NL	0.0	-0.1	0.0	-0.1	-0.1	*-0.4*
AT	-0.3	-0.4	0.0	-0.1	0.0	*-0.7*
PL	-0.1	0.2	-0.2	-0.2	0.2	*-0.1*
PT	-0.3	-0.3	-0.2	0.0	-0.2	*-1.1*
RO	0.0	-0.3	-0.2	-0.1	0.1	*-0.6*
SI	-0.3	0.0	-0.2	0.0	0.1	*-0.4*
SK	0.2	0.3	-0.2	-0.2	0.1	*0.2*
FI	-0.1	-0.2	-0.3	-0.3	-0.2	*-1.0*
SE	-0.1	0.0	0.0	-0.1	0.1	*-0.1*
NO	0.0	-0.1	0.1	0.0	0.0	*0.0*
EA	-0.5	-1.2	-1.1	-0.7	-0.3	*-3.9*
EU	-0.5	0.0	-0.1	-0.1	0.0	*-0.8*

Source: European Commission, EPC.

Labour market effect

Policy measures to lift employment increase the economic growth potential and expand the contribution base. Moreover, when employment increases among older age groups, this leads to higher effective retirement ages and a shorter retirement duration. Such labour market reforms thus potentially bear multiple gains with respect to the sustainability of pension systems.

As discussed higher, the labour market effect mainly reflects expected changes in the employment rate and the career shift. Table II.1.16 shows how the total labour market effect generally reduces pension costs, in particular during the next two decades, albeit to a limited extent for most countries. The total effect is the largest for Greece (-4.1 pps of GDP), followed by Italy (-2.9 pps) and Spain (-2.1 pps). For Portugal, France, Cyprus and Finland assumed labour market developments would reduce pension

Table II.1.17: **Benefit ratio: 2019 and 2070 (%)**

	Public pensions: earnings-related			Public pensions: total			All pensions (public & private)		
	2019	2070	change (pps)	2019	2070	change (pps)	2019	2070	change (pps)
BE	47.0	42.6	-4.3	45.0	41.9	-3.2			
BG	29.5	25.7	-3.7	26.7	23.5	-3.2			
CZ	38.7	38.1	-0.6	38.5	37.3	-1.2			
DK	40.7	32.0	-8.7	42.8	36.1	-6.7	64.9	66.2	1.3
DE	39.3	38.1	-1.2	41.8	39.1	-2.8			
EE	31.3	19.0	-12.3	28.8	17.7	-11.1	35.6	29.1	-6.5
IE	48.4	33.7	-14.7	36.1	30.8	-5.3			
EL	68.0	46.4	-21.6	65.4	43.5	-22.0			
ES	66.1	29.0	-37.1	60.0	29.4	-30.7	62.7	31.4	-31.3
FR	52.4	35.0	-17.4	40.9	27.9	-13.0			
HR	30.9	22.8	-8.0	31.2	21.8	-9.4	31.2	22.6	-8.6
IT	61.8	47.2	-14.7	60.8	45.6	-15.2			
CY	63.8	40.1	-23.6	59.5	44.1	-15.4			
LV	25.7	14.3	-11.4	23.0	13.5	-9.5	23.0	18.5	-4.5
LT	28.8	20.7	-8.0	26.7	20.8	-5.8	26.7	23.7	-3.0
LU	58.6	47.8	-10.8	52.6	45.0	-7.5			
HU	37.8	40.6	2.8	37.5	39.6	2.0			
MT	41.2	33.1	-8.2	44.9	33.0	-11.9			
NL	34.1	33.7	-0.4	37.2	35.3	-2.0	65.3	60.7	-4.6
AT	54.3	45.1	-9.2	53.6	42.5	-11.1			
PL	40.2	20.9	-19.3	43.8	22.8	-20.9			
PT	54.3	30.8	-23.5	58.9	32.5	-26.4	59.4	32.4	-27.0
RO	32.8	30.9	-1.9	32.5	30.8	-1.6	32.5	33.9	1.4
SI	32.8	36.5	3.7	30.8	34.2	3.4			
SK	37.2	29.6	-7.6	37.0	32.4	-4.7			
FI	49.1	38.8	-10.3	52.2	41.6	-10.7			
SE	33.0	20.4	-12.6	35.5	24.8	-10.7	53.9	32.7	-21.3
NO	43.8	45.6	1.8	56.0	34.1	-21.9			
EA	47.1	34.8	-12.2	45.0	34.2	-10.8			
EU	43.6	33.1	-10.5	42.4	32.9	-9.5			

(1) The benefit ratio expresses the average pension as a share of the economy-wide average wage (gross wages and salaries divided by employees).
(2) 'Public pension: earnings-related' refers to old-age earnings-related pensions, including flat-rate pension components. 'Public pensions: total' includes disability, survivor and non-earnings-related benefits. 'All pensions' also includes private occupational and private individual benefits; it is reported insofar Member States reported private pension data.
(3) Unweighted averages for EA/EU.
(4) IE: occupational scheme of civil servants included in public pensions (earnings-related and total).
Source: European Commission, EPC.

expenditure by about 1 pp of GDP. Additional labour market reforms might help countries soften rising pension costs to the extent that they successfully increase employment rates, especially among older persons (see Section 1.8 below on sensitivity tests).

1.6.2. Benefit ratio

As discussed higher, the main downward pull on pension spending comes from the benefit ratio effect, which captures the generosity of pension systems. This highlights the importance of the benefit ratio in the overall development of pension expenditure, all the more so as the benefit ratio effect is positive for some of the countries with the highest projected expenditure increase, e.g. Slovenia and Hungary.

A range of reforms implemented in several countries over the past decade to strengthen the financial sustainability of the pension system results in a reduction of the benefit ratio. Evidently, for countries with a relatively low current benefit ratio, such adjustments could affect pension adequacy, defined as the extent to which pension benefits suffice to ensure retirees a decent living standard and protect them from poverty, thus putting the focus on retirement incomes for people at the lower end of the income distribution. This is the subject of the Pension Adequacy Report ([74]). The 2021 Ageing Report projections include a sensitivity scenario that estimates the budgetary cost of preventing the earnings-related

([74]) This is a joint triennial report from the Social Protection Committee and the European Commission. The 2021 edition is scheduled for publication in June 2021.

benefit ratio from falling below 90% of the base year level (see Section 1.8).

Nearly all countries project a decline in the benefit ratio for earnings-related public pensions. Table II.1.17 provides the level and the change in the benefit ratio for the public pension system (earnings-related and total benefits), as well as for the overall pension system for those countries that provided projections on private pension schemes. For the EU as a whole, a decrease of 10.5 pps is expected. The earnings-related benefit ratio would decrease the most in Spain (-37 pps), Cyprus (-24 pps), Portugal (-23 pps), Greece (-22 pps), Poland (-19 pps) and France (-17 pps). Apart from Poland, these countries were among those with the highest benefit ratios in 2019. In 2070, this would still be the case for Greece and Cyprus, while Spain and Portugal would fall below the (lower) EU average. The decline in the benefit ratio for these countries is caused by a combination of falling replacement rates because of automatic adjustment mechanisms and indexation of benefits at rates below wage growth. Specific measures in Greece and Cyprus also play a role ([75]). Only in Slovenia, Hungary and Norway, public pensions would become somewhat more generous.

Trends for total public pensions are similar to those for earnings-related benefits: a decline in the benefit ratio. The decrease is generally somewhat smaller, though, as non-earnings-related benefits tend to be indexed at higher rates – with wage indexation assumed for the minimum pension projections (see Section 1.6.4).

Private pension schemes soften the projected decrease of public pension benefit ratios. A subset of ten countries reported data for occupational and individual private pension schemes, allowing to calculate overall pension benefit ratios. These supplementary schemes generally compensate for a lower generosity of public pensions, resulting in a lower decline in the total benefit ratio as compared to that for public pensions alone. Still, in countries such as Estonia, Croatia, Latvia, Lithuania and Romania, low pension adequacy remains an issue, even when accounting for private schemes.

For countries with very large private schemes, total benefit ratios are substantially higher than public ones, although in Sweden the projected decline is also acute. The Netherlands and Denmark, which have near-universal private occupational pension schemes, had a total pension benefit ratio of around 65% in 2019 – not yet accounting for individual voluntary pension savings. This is 20-30 pps higher than the benefit ratio of their public pension schemes. In 2070, total benefit ratios would remain above 60% in both countries. In the case of Sweden, which also has sizeable private schemes (see Section 1.5.2), the NDC public system results in a decline in the benefit ratio over the projection horizon as unchanged retirement ages and rising life expectancy lead to lower annuities. This downward trend is even larger for the total pension benefit ratio given the growing importance of defined contribution schemes among occupational pensions.

1.6.3. Replacement rate

Replacement rates measure the very first pension benefit against the last wage before retirement. As such, a downward trend in the replacement rate might cause the benefit ratio to decrease. Changes in replacement rates between 2019 and 2070 are shown in Table II.1.18 for earnings-related public pensions and, for those countries that provided data on private schemes, the total pension system.

On average in the EU, the projected decline in the replacement rate for earnings-related public pensions (-9 pps) is smaller than the decline in the pension benefit ratio (-11 pps). The largest declines are projected in Spain (-36 pps), Latvia (-35 pps), Portugal (-33 pps), Poland (-29 pps), France (-20 pps), Italy (-15 pps) and Estonia (-14 pps). In the case of Spain, the sharp decline reflects the use of more career years to determine benefits (25 years as of 2023 compared to 15 years before) and the introduction of a sustainability factor, which adjusts new pensions to changes in

([75]) In the case of Greece, the indexation freeze until 2022 and a one-off 13th pension payment in 2019 contribute to a falling benefit ratio at the start of the projections. For Cyprus, which projects an increase in the replacement rate of public pensions, the decline in the benefit ratio is caused by the closure of the civil servant scheme (GEPS) for new members since 2011.

life expectancy ([76]). Latvia – as well as Italy and Poland – has a NDC public pension system, which have built-in sustainability factors. Moreover, Latvia valorises pension rights on the basis of the overall wage bill, thus applying an additional demographic correction given the decline of the working-age population. Estonia has a similar valorisation rule, based on changes in social contributions and prices. Portugal and France both use prices to time-adjust pensionable earnings upon retirement and apply a sustainability factor – legislated until 2035 in France. Moreover, in the case of Portugal, the best 40 career years will be used to determine the pension benefits of future retirees, compared to more favourable reference periods for current pensioners. On the other hand, a rising replacement rate is expected in Cyprus and Malta (+9 pps), with more limited increases in Hungary, Romania, Slovenia and Slovakia.

Table II.1.18: **Replacement rate: 2019 and 2070 (%)**

	Public pensions: earnings-related			All pensions (public & private)		
	2019	2070	change (pps)	2019	2070	change (pps)
BE	35.1	33.2	-1.9			
BG	36.2	29.5	-6.7			
CZ	45.1	42.9	-2.2			
DK	35.6	28.0	-7.6	56.7	57.9	1.2
DE	39.8	37.2	-2.6			
EE	39.8	25.8	-13.9	41.4	43.7	2.3
IE	36.7	36.0	-0.7			
EL	69.0	56.2	-12.8			
ES	77.0	41.3	-35.7			
FR	54.4	34.7	-19.7			
HR	32.5	22.8	-9.7	30.8	22.2	-8.6
IT	66.9	51.5	-15.4			
CY	35.7	44.4	8.7			
LV	54.8	20.0	-34.7	55.5	30.5	-25.1
LT	31.7	21.2	-10.4	31.7	27.9	-3.8
LU	67.1	60.1	-7.0			
HU	44.8	48.2	3.3			
MT	48.4	57.1	8.7			
NL	30.9	29.2	-1.6	54.1	50.3	-3.8
AT	55.4	52.1	-3.3			
PL	54.1	25.1	-28.9			
PT	74.0	41.4	-32.7	72.2	39.9	-32.2
RO	27.1	27.6	0.5	32.0	35.6	3.6
SI	33.2	37.5	4.3			
SK	41.6	43.2	1.6	41.6	42.2	0.6
FI	45.9	37.3	-8.5			
SE	34.2	29.9	-4.4	41.3	36.0	-5.3
NO						
EA	49.3	40.0	-9.4			
EU	46.2	37.5	-8.7			

(1) The replacement rate expresses the average new pension as a share of the average gross wage at retirement.
(2) Flat-rate pension components are included in the earnings-related public pensions.
(3) Unweighted averages for EA/EU.
(4) EL & MT refer to 2020 instead of 2019.
(5) ES & PT: denominator is the average wage rather than the average wage at retirement.
Source: European Commission, EPC.

For most of the countries that provided data on the replacement rate for the overall pension system, private pension schemes would mitigate the decline in the public pension replacement rate. This is for example the case in the Baltic countries and Denmark, where the overall replacement rate would remain stable at about 57% of the final wage.

1.6.4. Minimum pensions

Strong attention should be paid to changes in pension benefit ratios over time, also from a pension adequacy perspective. This is particularly the case in countries that currently have low replacement rates, or in those countries where many people depend on non-contributory minimum or basic pensions. In order to better grasp the ability of public pension systems in the EU to ensure decent income to pensioners in the future, this report also includes specific projections for minimum pensions.

Minimum pensions or social allowance benefits are meant to protect against old-age poverty in case of incomplete careers or insufficient contribution years to qualify for earnings-related benefits. Amounts are usually means-tested and generally lower than earnings-related benefits – some countries have separate earnings-related minimum pensions. To protect recipients against poverty, both absolute amounts and the degree to which these keep pace with living standards matter. As seen in Table II.1.19, legal indexation rules for minimum pension and social assistance surpass inflation in most countries. Exceptions are France, Italy, Malta, Austria, Slovakia, Finland and Sweden, which adjust minimum benefits based on prices. In Spain, minimum benefits are subject to the 'Index for pension revaluation' – the system's automatic balancing mechanism – which would imply indexation of 0.25% in 2022-2070. Ireland, Latvia, Lithuania and Hungary ([77]) have no formal indexation rules.

The indexation rules assumed for minimum pensions in this report reflect these schemes' purpose to protect pensioners against poverty. The strict application of legal indexation rules close to price growth, would eventually lead to

([76]) Current legislation stipulates that the sustainability factor will be applied as of 1 January 2023, at the latest. In the projections, the mechanism is applied from 2023 onwards.

([77]) The granting of a minimum old-age pension, which has no fixed indexation rule, is relatively rare in Hungary. However, the old-age social allowance is indexed to prices.

Table II.1.19: **Minimum pensions (non-contributory)**

	Minimum pension expenditure (% GDP)		Minimum pension benefit ratio			Indexation rule	
	2019	2070	2019	2070	change (pps)	Legislated	Projections
BE	0.1	0.2	12.7	14.6	1.9	Prices & living standard	Wages
BG	0.0	0.0	10.0	6.2	-3.8	Prices & wages	Prices & wages
CZ							
DK	5.7	5.0	33.0	31.8	-1.2	Wages	Wages
DE							
EE	0.0	0.0	13.0	8.4	-4.6	Prices & social taxes	Prices & social taxes
IE	0.3	0.2	25.0	24.8	-0.2	No fixed rule	Wages
EL	0.1	0.1	26.2	24.8	-1.4	Prices & GDP (max 100% prices)	Wages
ES	0.1	0.2	14.2	13.9	-0.2	Index for pension revaluation	Prices (wages as of 2049)
FR	0.2	0.2	10.3	7.0	-3.3	Prices	Prices (wages as of 2063)
HR							
IT	0.3	0.4	20.1	17.9	-2.2	Prices	GDP/capita
CY	0.3	0.1				Wages	Wages
LV	0.0	0.0	4.5	2.7	-1.8	No fixed rule	Wages
LT	0.0	0.1	10.5	10.3	-0.2	No fixed rule	Wages
LU							
HU	0.0	0.0	9.1	3.8	-5.3	No fixed rule	Wages
MT	0.2	0.3	20.0	19.8	-0.2	Prices	Wages
NL						Wages	Wages
AT	0.2	0.3				Prices	Prices
PL							
PT	0.3	0.4	13.2	8.7	-4.5	Prices & GDP	Wages
RO	0.1	0.3	4.0	4.6	0.6	Prices & wages (prices as of 2030)	Wages
SI							
SK	0.0	0.7				Prices	Wages
FI	0.6	0.7	6.9	6.2	-0.7	Prices	Wages
SE	0.5	1.0	9.8	6.7	-3.1	Prices	Wages
NO	2.6	0.7				Wages	Wages

(1) Data refer to minimum pensions (non-contributory), i.e. minimum income guarantees for retired people.
(2) The minimum pension benefit ratio is the average minimum pension divided by the economy-wide average wage.
(3) CZ: No separate minimum pension scheme exists; minimum benefits are ensured by the flat-rate component and a minimum earnings-related component.
(4) EL: Indexation is frozen until 2022.
(5) DE: Means-tested basic social assistance in old-age not covered by the projections; the new basic pension (as of 2021) is earnings-related and means-tested.
(6) FR: Wage indexation as of 2063 (price indexation before), when the minimum pension would fall below 50% of the poverty threshold.
(7) ES: The minimum pension is indexed to prices up to 2049 (when the minimum pension converges to the minimum guaranteed income ('Ingreso Mínimo Vital'), assumed to be indexed to nominal wage growth) and to wages thereafter.
(8) HR: Minimum pensions depend on contribution period; therefore reported under earnings-related benefits.
(9) LU: Minimum pensions not covered in the projections.
(10) NL & PL: No separate minimum pension figures reported.
(11) AT: Concerns projections for the Ausgleichszulage.
(12) SI: No separate minimum pension scheme exists.
Source: European Commission, EPC.

minimum pensions all but disappearing. If this were the case, their effectiveness in protecting retirees against poverty would be completely eroded over time. However, also in countries with less generous indexation rules – or no formally fixed rules – minimum benefits have in practice been revised more in line with wages through discretionary adjustments beyond the legal indexation, exactly to correct for the standard of living and uphold the adequacy of benefits over time. For this reason, Member States agreed that, for the purposes of long-term pension projections, it can reasonably be assumed that minimum pensions are adjusted in line with existing legislation for a maximum of ten years, after which they should follow wage growth. There are some exceptions to this assumption, detailed in the notes of Table II.1.19.

Spending on minimum pensions is generally limited in terms of GDP, with the exceptions of Denmark (5.7% of GDP in 2019 ([78])) and Norway (2.6%), and should remain so by 2070 (see Table II.1.19). This can be explained by the

([78]) Out of total public pension expenditure of 9.3% of GDP. This reflects the specific set-up of the Danish first pillar scheme: a universal scheme aimed at guaranteeing a (high) minimum pension to retirees.

fact that in many countries support flows through social assistance, whether or not in combination with minimum pension benefits ([79]). Spending on minimum pensions would decrease to 5% of GDP in Denmark in 2070 and to 0.7% in Norway ([80]), while rising to 1% of GDP in Sweden and to 0.7% in Slovakia and Finland. In all other countries, minimum schemes or similar support would represent less than 0.5% of GDP in 2070.

1.7. DISAGGREGATION OF NEW PENSIONS

Analysing the dynamic of new pensions – the benefits granted to newly retired people – allows assessing the effects reforms have. Public pension expenditure projections can be considered as the sum of the stock of existing pensions and the flows of new pensions that arise over the projection horizon. Indexation rules and mortality rates determine how existing pensions change over time. As to new pensions, their dynamic is affected by the flow of new pensioners, as well as their first pension benefit, in turn determined by the career length of new pensioners, their average pensionable earnings (linked to past wages) and the way the latter are accrued over time. More precisely, the following disaggregation can be applied:

$$P_{new} = \bar{C}_{new}\, \bar{A}_{new}\, \overline{PE}_{new}\, \bar{N}_{new}$$

With P_{new} total spending on new pensions; $\bar{C}_{new}$ the average contributory period or career length of new pensions; $\bar{A}_{new}$ the average effective accrual rate of the new pensions; $\overline{PE}_{new}$ the average pensionable earnings during the contributory period; and $\bar{N}_{new}$ the number of new pensions (pensioners). For some countries, an additional sustainability factor or adjustment factor might apply.

Data on contributory years and average accrual rates provide a clearer picture of the future drivers of (new) pension expenditure and the viability of the pension system as accrual rates might change over time and across different types of pensions. In the case of DB systems, the accrual rate is predefined. For NDC systems, it is determined by the contribution rate to the notional accounts and the annuity factor. For point systems, a disaggregation based on the above formula is either not possible (because, for example, pensionable earnings are not explicitly considered but rather accounted for through the point accumulation), or not meaningful because of the inherent nature of a point system. For this reason, an alternative formula is used for point systems:

$$P_{new} = N_{new}\bar{P}_{new} = N_{new}\, v_T\, \overline{pp}_T$$

Where total new pension expenditure P_{new} is the product of the number of new pensioners N_{new} and the average new pension benefit $\bar{P}_{new}$. The latter equals the pension point value at retirement v_T, multiplied by the average number of accumulated pension points of new pensioners $\overline{pp}_T$. For some countries, an additional sustainability factor or adjustment factor might apply. The average number of pension points ($\overline{pp}_T$) can be further disaggregated. Under some social-security regimes, one can accrue pension points in ways other than contributions, and those points can be considerable in terms of the final amount. Accordingly, it is relevant to have information on the time span needed to accumulate pension points, independently of how they were accrued.

$$\overline{pp}_T = \bar{C}_T\, \overline{pp}_t$$

With $\bar{C}_T$ the average contributory period (actual and virtual) and $\overline{pp}_t$ the average yearly number of pension points (which can be interpreted as an implicit accrual rate in the case of a point system, i.e. the number of pension points at retirement over the contributory period).

Contributory period

Contributory periods can increase for several reasons, for example rising statutory retirement ages that force employees to continue working to receive full benefits. The abolition of early retirement schemes or the tightening of eligibility criteria for certain benefits (e.g. disability pensions or additional contributory years for military service periods, years of study or number of children) are

([79]) Social assistance benefits are included in the projections if they are equivalent to minimum pensions and targeted to older people.

([80]) In Norway, the notable drop in spending on minimum pensions by 2070 reflects the reform of the public old-age pension system. Fixed basic pensions are being phased out as pensions become more income-related. There will still be a minimum guaranteed pension, though.

other factors that might lead to longer contributory periods.

Average contributory periods for new pensions are generally expected to follow an upward trend over the long term, with an average increase of 2 years in the EU (see Table II.1.20). The largest increase in the contribution period would be in Luxembourg and Greece, at about 6 years. Both were among the countries with the lowest value in 2019. For Luxembourg, this notable increase reflects how migrants and cross-border workers are expected to achieve more complete careers. As to Greece, a longer contributory period stems from the link to life expectancy, with also other countries featuring such mechanism generally expected to see contributory periods rise. In Norway and the Czech Republic however, contribution periods would fall by 8 and 2 years, respectively. In the case of Norway, the reduction reflects immigration (including returning Norwegians that spent part of their working life abroad): immigrants on average spent fewer years in Norway compared to natives and accordingly have fewer contributory years. In addition, the figures do not account for the continuation of work beyond taking up an old-age pension. For the Czech Republic, the decline is due to the cancellation of studies as non-contributory periods ([81]).

Longer average careers translate into a shorter period spent into retirement – making abstraction of rising life expectancy – and into higher economic growth because of higher employment rates. As such, a rising trend in the average contributory period exerts downward pressure on public pension expenditure. At the same time, however, a longer working life allows people to accumulate more pension rights, thus increasing pension expenditure, unless average yearly accrual rates are reduced in parallel.

Table II.1.20: **Contributory period for new earnings-related public pensions (number of years)**

	2019	2030	2040	2050	2060	2070	2019-70
BE	37.5	40.5	39.8	39.7	39.5	39.6	*2.1*
BG	34.8	37.0	37.4	37.1	36.8	36.4	*1.5*
CZ	44.1	47.0	47.0	43.0	42.0	42.0	*-2.0*
DK	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:
EE	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:
EL	31.2	32.3	32.9	35.1	36.1	37.8	*6.6*
ES	38.9	39.5	40.2	41.0	41.8	42.6	*3.7*
FR	33.0	31.1	32.8	32.7	32.8	33.0	*0.0*
HR	32.0	32.9	33.6	33.7	33.7	33.7	*1.7*
IT	36.2	35.2	35.3	35.1	36.6	38.1	*1.9*
CY	:	:	:	:	:	:	:
LV	36.1	37.0	37.0	37.0	37.0	37.0	*0.9*
LT	40.7	42.7	42.7	42.7	42.7	42.7	*2.0*
LU	27.7	27.4	29.0	31.3	33.9	35.2	*7.4*
HU	34.6	37.8	38.1	37.7	38.5	38.1	*3.6*
MT	36.0	36.9	37.0	37.1	37.3	37.6	*1.6*
NL	:	:	:	:	:	:	:
AT	37.3	38.1	38.2	38.3	38.4	38.3	*1.0*
PL	34.9	35.8	35.9	35.4	36.0	35.8	*0.9*
PT	30.3	32.3	32.9	33.2	33.6	33.7	*3.4*
RO	32.0	34.4	34.3	34.4	34.5	34.4	*2.4*
SI	38.8	39.0	39.3	39.2	39.3	39.3	*0.5*
SK	39.3	39.9	39.7	39.6	39.6	39.6	*0.3*
FI	34.7	35.1	34.9	35.9	35.8	37.1	*2.4*
SE	40.5	40.6	38.5	40.2	40.7	41.5	*1.0*
NO	38.6	33.5	30.3	27.9	27.9	30.2	*-8.4*
EA	35.6	36.2	36.5	37.0	37.5	38.0	*2.4*
EU	35.7	36.8	37.0	37.1	37.5	37.8	*2.0*

(1) In countries with point systems (see Table II.1.1), new systems do not (solely) depend on the contribution period. As a result, no data is available for DE, EE and CY.
(2) DK, NL: flat-rate system based on years of residence.
(3) IE: no data available (flat-rate system).
(4) EL: 2020 instead of 2019; figures concern the main pension scheme.
(5) MT: 2020 instead of 2019.
(6) For countries using microsimulation models (e.g. CZ, FR, HU, SE, NO), part of the volatility in the average contributory period from one year to another is due to sample size.
Source: European Commission, EPC.

Accrual rate

For most countries, the projections assume an accrual rate that remains constant or that decreases slightly between 2019 and 2070 (see Table II.1.21). Spain shows a steady fall in the average accrual rate of new pensions (-1 pp in 2019-2070), due to the interplay between the different pension determinants: the extension of the average contributory periods (see Table II.1.20) and the sustainability factor cause the implicit average accrual rate to fall.

([81]) The Czech figures include non-contributory periods during which people can acquire pension rights, hence the generally high figures.

Table II.1.21: **Average effective accrual rate of new earnings-related public pensions (%)**

	2019	2030	2040	2050	2060	2070	2019-70 (pps change)
BE	1.4	1.4	1.4	1.4	1.4	1.4	*0.0*
BG	1.2	1.2	1.2	1.2	1.2	1.2	*0.0*
CZ	1.5	1.5	1.4	1.5	1.5	1.5	*0.0*
DK	:	:	:	:	:	:	*:*
DE*	0.8	0.8	0.8	0.9	0.9	0.9	*0.1*
EE*	0.9	0.8	0.8	0.8	0.8	0.8	*-0.1*
IE	:	:	:	:	:	:	*:*
EL	1.1	1.1	1.1	1.1	1.1	1.2	*0.1*
ES	2.4	2.1	1.9	1.7	1.6	1.4	*-1.0*
FR*	1.1	1.2	1.1	1.1	1.0	1.0	*0.0*
HR*	1.3	1.2	1.1	1.1	1.1	1.1	*-0.2*
IT	1.9	1.7	1.7	1.7	1.7	1.7	*-0.2*
CY*	1.3	1.3	1.3	1.3	1.3	1.2	*-0.1*
LV	1.1	1.0	0.8	0.7	0.6	0.6	*-0.5*
LT*	1.1	1.1	1.1	1.1	1.2	1.2	*0.1*
LU	1.8	1.8	1.7	1.6	1.6	1.6	*-0.2*
HU	2.3	2.1	2.1	2.1	2.1	2.1	*-0.2*
MT	2.0	1.7	1.7	1.7	1.7	1.7	*-0.3*
NL	:	:	:	:	:	:	*:*
AT	1.8	1.8	1.8	1.8	1.8	1.8	*0.0*
PL	0.9	0.9	0.8	0.8	0.8	0.7	*-0.2*
PT	2.2	2.2	2.2	2.2	2.2	2.2	*0.0*
RO*	0.9	1.0	1.0	1.0	1.0	0.9	*0.1*
SI	1.6	1.7	1.7	1.7	1.7	1.7	*0.2*
SK*	1.1	0.9	0.8	0.8	0.9	0.9	*-0.2*
FI	1.7	1.5	1.4	1.5	1.5	1.6	*-0.1*
SE	0.9	0.9	0.9	0.8	0.8	0.8	*-0.1*
NO	0.9	0.9	0.9	0.9	0.9	0.8	*0.0*

*point system countries (average accrual rate = average pension points/average contribution period); FR has a mixture of DB (main scheme) and PS (complementary schemes); see pension fiche for more details.
(1) DK, NL, IE: flat-rate system with new pensions not depending on accrual rates.
(2) EL: 2020 instead of 2019; figures concern the main pension scheme.
(3) MT: 2020 instead of 2019.
Source: European Commission, EPC.

1.8. SENSITIVITY TESTS

The 2021 pension projection exercise is carried out on the basis of commonly-agreed demographic and macroeconomic assumptions, as well as a 'no-policy change' scenario and complementary sensitivity tests (see Part I for a detailed description). Indeed, considerable uncertainty surrounds the assumptions used for this type of long-run projections. Therefore, a number of sensitivity tests have been carried out. These allow quantifying the responsiveness of pension expenditure to changes in key underlying assumptions.

In practice, changes to two types of variables were applied (see Part I, Chapter 3 for a detailed description): demographic variables (life expectancy, migration flows and fertility) and macroeconomic variables (employment rate and productivity). Compared to the 2018 Ageing Report, the higher/lower total employment rate tests are not carried out in this projection exercise. Nevertheless, the scenario assuming a higher employment rate among older workers (age 55-74) was maintained. The 2018 Ageing Report also included three alternative labour productivity scenarios. In this round, only a '*TFP risk*' and a '*Higher TFP growth*' scenario are performed.

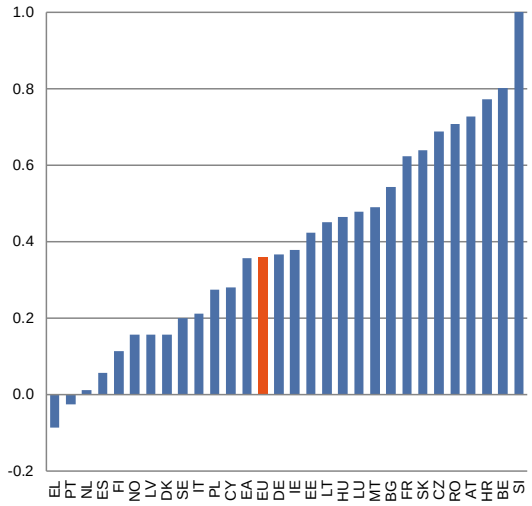
In addition to testing changes to the macroeconomic and demographic assumptions, a set of policy scenarios is also run. In line with the 2018 Ageing Report, a policy-change scenario that estimatesthe impact of linking the retirement age to changes in life expectancy is included. Futhermore, in this exercise, two additional policy scenarios, aimed at capturing the impact on public pension expenditure of specific policy risks ('*Unchanged retirement age*' and '*Offset declining pension benefit ratio*') ([82]), are also conducted. Moreover, additional scenarios are included given the high level of uncertainty about the magnitude and duration of the COVID-19 crisis (see Box II.1.3).

This section presents the results of the alternative scenarios as deviations from the baseline scenario. This relative impact can also be read as an elasticity parameter.

1.8.1. Sensitivity tests on demographic variables

An increase in life expectancy at birth of around two years as compared to the assumptions in the baseline scenario would push up average pension expenditure by 0.4 pps of GDP in 2070 (see Graph II.1.17). This reflects how people, as they live longer, would also earn a pension during a longer period. This upward impact on public finances would be offset to some extent by the positive effect through the labour force on economic growth. Moreover, some countries have introduced automatic adjustment mechanisms in their pension system (see Table II.1.2). This reflects in the estimated impact on the pension expenditure ratio for these countries: all Member States with an impact of at most 0.3 pps of GDP have such mechanisms. In Greece and Portugal, estimates even point to a reduction of the pension expenditure ratio (reflecting favourable denominator effects). The stronger-than-assumed rise in life expectancy would have the biggest impact on pension spending in Slovenia (+1.0 pp of GDP), Belgium and Croatia (+0.8 pps), and Austria and Romania (+0.7 pps).

Graph II.1.17: **Impact of an increase of life expectancy on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**

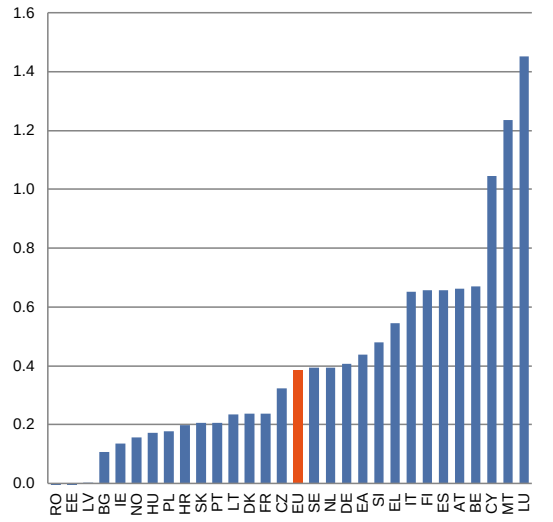


Source: European Commission, EPC.

([82]) For a detailed description of the policy scenarios, see EC-EPC (2020).

Pension expenditure would increase for most countries under the assumption of net migration being 33% lower during the entire projection horizon (see Graph II.1.18). Countries generally assume that a large share of migrants enters the labour market upon arrival and will be making pension contributions during the projection horizon rather than enjoying pensions themselves. As a result, the impact on the pension expenditure-to-GDP ratio averages 0.4 pps of GDP by 2070. This impact stems mainly from the denominator as lower net migration inflows shrink labour force projections and thus economic growth. The highest impact would be in smaller countries where net migration flows represent a high proportion of total population in the baseline scenario: Luxembourg (+1.5 pps of GDP), Malta (+1.2 pps) and Cyprus (+1.0 pp). Impacts would also be non-negligible in Belgium, Austria, Spain, Finland, and Italy (+0.7 pps). Greece and Slovenia would see pension expenditure increase by an estimated 0.5 pps of GDP if this scenario were to occur.

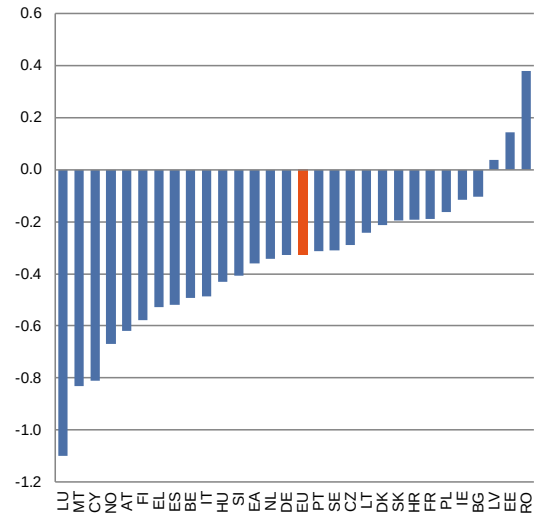
Graph II.1.18: **Impact of lower migration on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**



Source: European Commission, EPC.

The opposite scenario of net migration being 33% higher than the baseline assumption would result in a picture more or less symmetric to the lower migration scenario (see Graph II.1.19). Luxembourg would benefit the most from a 33% increase in net migration, though the effect is smaller than that of a 33% lower net migration. The fact that pension expenditure would rise in the cases of Romania, Estonia, and Latvia when assuming higher net migration is explained by their baseline migration profile.

Graph II.1.19: **Impact of higher migration on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**

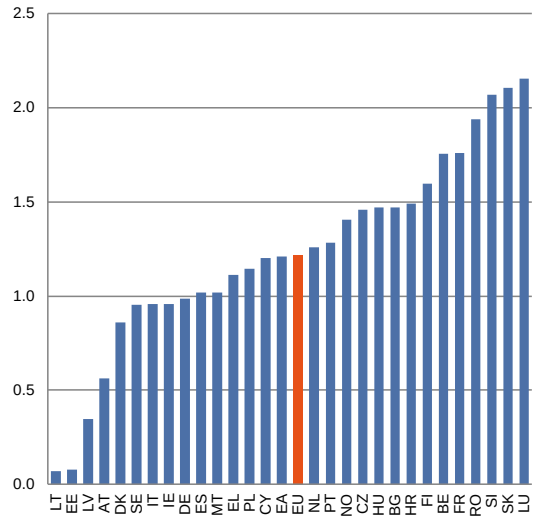


Source: European Commission, EPC.

Setting fertility rates 20% lower during the entire projection period would push up pension spending in all countries. This scenario implies not only a lower population growth, but also a more pronounced ageing process. While the baseline scenario assumes an upward convergence in fertility rates, they would nevertheless stay below the natural replacement rate of 2.1 in all countries by 2070. A more conservative assumption, as in this scenario, would result in higher dependency ratios, i.e. the older population representing a higher share of the working-age population. Higher employment rates would not offset the drop in employment. In particular, lower fertility would push up pension expenditure by as much as 1.2 pps of GDP on average. As shown in Graph II.1.20, Luxembourg (+2.2 pps of GDP on top of baseline), Slovakia and Slovenia (+2.1 pps), Romania (+1.9 pps), France and Belgium (+1.8 pps) are expected to show the largest additional pension expenditure increase in case fertility would turn out to be lower than assumed. Six other countries would also have pension spending increase by 1.4-1.6 pps of GDP, though. The impact is estimated at less than 1 pp of GDP in just two countries: Estonia and Lithuania. The latter even projects a neutral impact given that the

indexation rule reacts to a shrinking employment to the same extent as the GDP. Such balancing mechanism also plays for other countries, namely Spain, Sweden and Germany.

Graph II.1.20: **Impact of lower fertility on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**



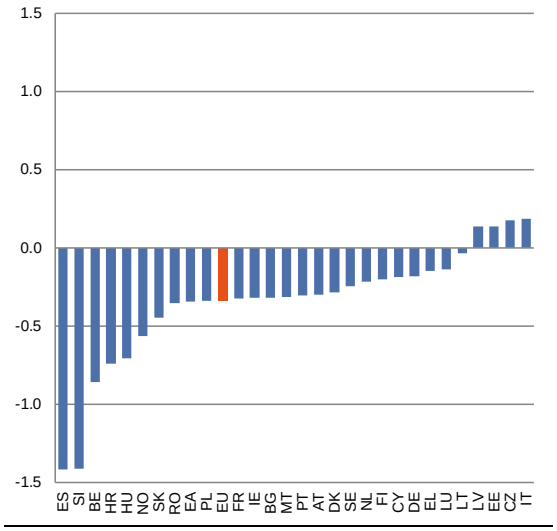
Source: European Commission, EPC.

1.8.2. Sensitivity tests on macroeconomic variables

Employment

If the employment rate of workers aged 55 to 74 years were to rise by 10 pps on top of the baseline assumption ([83]), this would cut pension expenditure by 0.3 pps of GDP on average in the EU. The effect of such development is estimated to be fairly similar across countries, though with some outliers in both directions. Two opposite dynamics would take place. On the one hand, increased employment among workers aged 55-74 leads to higher GDP growth, fewer pensioners and a shorter pension spell. These factors reduce public pension expenditure ([84]). On the other hand, though, a longer average career would enable employees to accrue additional pension rights, especially in countries that apply a bonus system beyond a certain age or career length. This leads to higher public pension expenditure.

Graph II.1.21: **Impact of higher employment rate among older workers on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**



Source: European Commission, EPC.

As shown in Graph II.1.21, the expenditure-reducing factors dominate in about all countries. Spain and Slovenia (-1.4 pps of GDP), Belgium (-0.9 pps), and Croatia and Hungary (-0.7 pps) have the most to gain from lifting employment among older workers. It should be noted that those gains are often even more substantial on a shorter time horizon. When looking at the period 2019-2045, the decrease relative to the baseline amounts to 1.7 pps of GDP for Slovenia and 2.8 pps for Spain. For the EU as a whole, pension expenditure would be 0.6 pps of GDP lower compared to the baseline scenario in 2045.

In other cases, the overall impact would be neutral or even expenditure-increasing. In the cases of Lithuania, Latvia and Estonia, the impact would be broadly neutral in 2070. The same holds when a shorter time horizon is applied. If employment were effectively to be lifted among older workers, Italy and the Czech Republic would expect pension expenditure to increase by 0.2 pps of GDP relative to the baseline in 2070. This reflects how the accumulation of additional rights outweighs the expenditure-reducing factors, at least in the long term. Indeed, when considering the period 2019-2045, also Italy (-0.7 pps of GDP

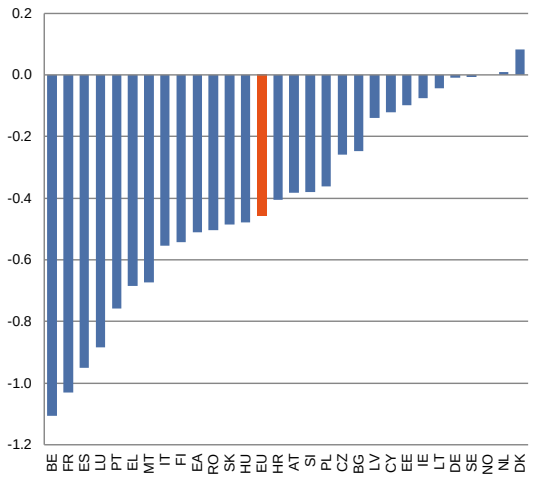
([83]) By drawing on people that are assumed to be inactive under the baseline scenario.
([84]) Other favourable effects such as on social contributions are not accounted for in the simulations.

relative to the baseline) and the Czech Republic (-1.0 pp) would benefit from higher employment rates for people above the age of 55.

Productivity

A **higher growth rate of total factor productivity (TFP), than assumed in the baseline, would generally have a reducing impact on pension expenditure** (see Graph II.1.22). In this scenario, TFP growth is assumed to converge by 2045 to a rate that is 0.2 pps higher than the baseline scenario assumption. This scenario reflects for example the possibility of a better-than-anticipated economic absorption of technology or a higher average level of education. The aggregate effect on pension spending from a permanent increase in TFP growth for the EU is estimated at -0.5 pps of GDP. It surpasses 1 pp of GDP for two countries: Belgium (-1.1 pps of GDP) and France (-1.0 pp of GDP). Yet, in another group of countries, no or only a limited impact (in the case of Denmark, with a +0.1 pp of GDP) on pension spending in case of higher productivity gains is estimated. The distinctive feature between both groups of countries is generally whether or not pension indexation fully adjusts to wage growth. The latter is assumed to fully reflect higher productivity growth.

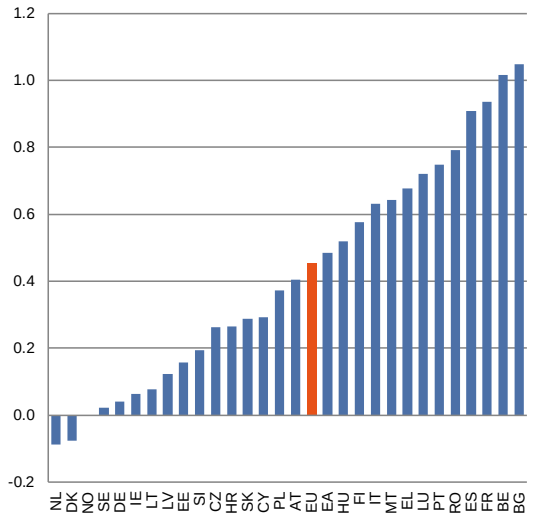
Graph II.1.22: **Impact of higher TFP growth on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**



Source: European Commission, EPC.

In case of less favourable productivity developments (under the 'TFP risk scenario'), than assumed in the baseline, pension expenditure would generally be increased. An alternative TFP scenario looks into the impact on pension expenditure if TFP growth is assumed to converge to only 0.8% by 2045 for all countries as compared to the 1% in the baseline scenario. Under this scenario (the 'TFP risk scenario'), gross public pension expenditure would be raised by 0.5 pps of GDP in the EU relative to the baseline (see Graph II.1.23). Belgium and Bulgaria (+1.0 pp of GDP), and France and Spain (+0.9 pps) would be the most affected by such development. At the other end of the spectrum there are countries with either a negative (-0.1 pp. of GDP for the Netherlands and Denmark), or limited (Norway, Sweden, Germany, Ireland, and Lithuania) impact.

Graph II.1.23: **TFP risk scenario: impact on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**



Source: European Commission, EPC.

1.8.3. Policy-change scenarios

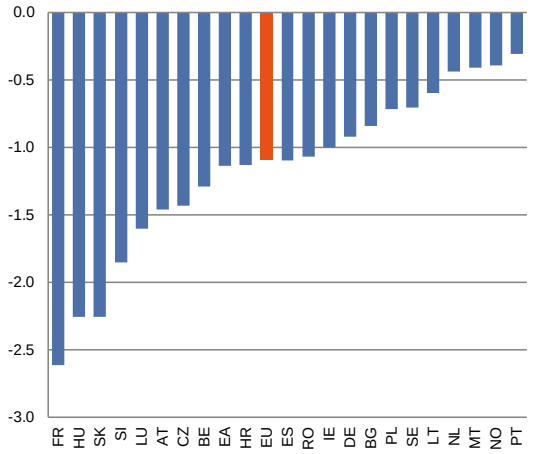
Linking the retirement age to increases in life expectancy

The introduction of an automatic link between early and statutory retirement ages and life expectancy would have a substantial downward impact on pension expenditure in many countries (see Graph II.1.24) ([85]). As careers

([85]) This link translates into a rise of the effective retirement age compared to the baseline. To account for the fact that the baseline scenario incorporates already legislated changes in the retirement age, the highest effective

would be rising in line with longevity, the decline in the number of pensioners results in a lower coverage ratio so that pension expenditure falls in comparison to the baseline. In addition, higher labour activity pushes up economic growth. At the same time, longer careers lead to a higher benefit ratio as more rights accrue. Nevertheless, pension expenditure ratios are estimated to go down in all countries for which the policy-change scenario was run. For those countries that already have a full link between retirement ages and life expectancy, the scenario was not run as it would concur with their baseline. This is the case for Denmark, Estonia, Greece, Italy, Cyprus, and Finland.

Graph II.1.24: **Impact of linking retirement age to life expectancy on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**



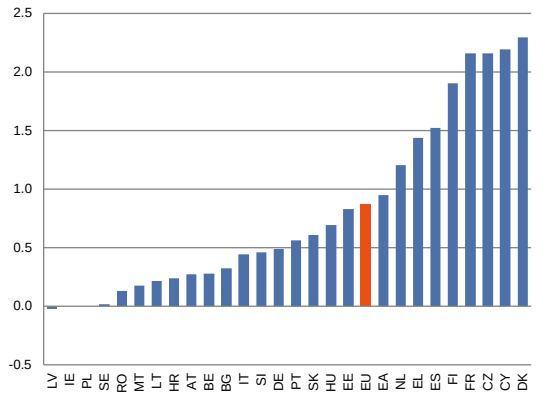
Source: European Commission, EPC.

Impacts would be particularly strong in countries where no (other) automatic adjustment mechanisms exist. The strongest impact would be for France, at -2.6 pps of GDP in 2070 as compared to the baseline. It is followed by Hungary and Slovakia (-2.3 pps), and Slovenia, Luxembourg, Austria and the Czech Republic, all of which would see spending increase by 1.4-1.9 pps of GDP less than under the baseline. The impact is estimated at 1 pp of GDP or more for Belgium, Croatia, Spain, Romania, and Ireland. Countries that would gain less in terms of spending dynamics from introducing an automatic link often already have other automatic adjustment mechanisms. This is for example the case in Sweden ([86]), Germany, Portugal and the Netherlands (where a partial link applies), Poland, and Lithuania.

Unchanged retirement age

Unchanged (main) eligibility requirements (e.g. early and statutory retirement age, career requirement) over the entire projection horizon (from the starting point) would have a sizeable upward impact on pension expenditure in most countries (see Graph II.1.25). This scenario allows to isolate both the expected impact of already legislated but not yet applicable reforms (included in the baseline projection) and the risk those reforms are being reversed. The most affected countries would be Denmark (+2.3 pps of GDP), followed by Cyprus, the Czech Republic, and France (+2.2 pps). The impact is estimated at between 1.2-1.9 pps of GDP for the Netherlands, Greece, Spain and Finland. The impact is near zero for the countries that, given current legislation, have an unchanged retirement age in the baseline, Latvia, Ireland, Poland and Sweden.

Graph II.1.25: **Unchanged retirement age scenario: impact on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**



Source: European Commission, EPC.

retirement age (baseline vs. policy-change scenario) is assumed at every point in time over the projection horizon. Therefore, differences may occur also in case of countries where the legislated statutory retirement age develops in line with life expectancy.

([86]) For Sweden, this sensitivity scenario is modelled on a pending reform of the pension system, which was proposed in the budget bill for 2021 and involves indexing legal retirement ages by two thirds of the increase in life expectancy.

Table II.1.22: **Summary table: impact of all sensitivity tests on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**

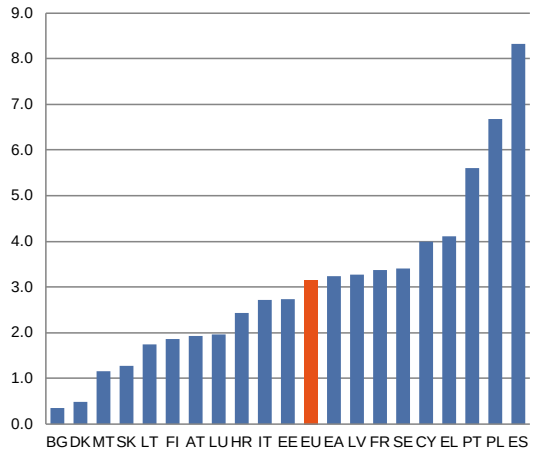
	baseline 2019-2070 (%GDP)	*impact of unfavourable scenarios (pps of GDP)*						*impact of favourable scenarios (pps of GDP)*			
		Higher life expectancy	Lower migration	Lower fertility	TFP risk scenario	Unchanged ret. age	Offset BR	Higher migration	Higher empl. 55-74	Higher TFP growth	Link to life expectancy
LU	8.7	0.5	1.5	2.2	0.7	0.0	2.0	-1.1	-0.1	-0.9	-1.6
SI	6.0	1.0	0.5	2.1	0.2	0.5	0.0	-0.4	-1.4	-0.4	-1.9
SK	5.9	0.6	0.2	2.1	0.3	0.6	1.3	-0.2	-0.4	-0.5	-2.3
HU	4.1	0.5	0.2	1.5	0.5	0.7	0.0	-0.4	-0.7	-0.5	-2.3
MT	3.8	0.5	1.2	1.0	0.6	0.2	1.2	-0.8	-0.3	-0.7	-0.4
RO	3.8	0.7	-0.3	1.9	0.8	0.1	0.0	0.4	-0.4	-0.5	-1.1
IE	3.0	0.4	0.1	1.0	0.1	0.0	0.0	-0.1	-0.3	-0.1	-1.0
BE	3.0	0.8	0.7	1.8	1.0	0.3	0.0	-0.5	-0.9	-1.1	-1.3
CZ	2.9	0.7	0.3	1.5	0.3	2.2	0.0	-0.3	0.2	-0.3	-1.4
NO	2.6	0.2	0.2	1.4	0.0	0.0	0.0	-0.7	-0.6	0.0	-0.4
NL	2.3	0.0	0.4	1.3	-0.1	1.2	0.0	-0.3	-0.2	0.0	-0.4
DE	2.1	0.4	0.4	1.0	0.0	0.5	0.0	-0.3	-0.2	0.0	-0.9
CY	2.1	0.3	1.0	1.2	0.3	2.2	4.0	-0.8	-0.2	-0.1	0.0
BG	1.4	0.5	0.1	1.5	1.0	0.3	0.4	-0.1	-0.3	-0.2	-0.8
FI	1.3	0.1	0.7	1.6	0.6	1.9	1.9	-0.6	-0.2	-0.5	0.0
AT	1.0	0.7	0.7	0.6	0.4	0.3	1.9	-0.6	-0.3	-0.4	-1.5
LT	0.4	0.5	0.2	0.1	0.1	0.2	1.7	-0.2	0.0	0.0	-0.6
EU	0.1	0.4	0.4	1.2	0.5	0.9	3.2	-0.3	-0.3	-0.5	-1.1
EA	0.1	0.4	0.4	1.2	0.5	0.9	3.2	-0.4	-0.3	-0.5	-1.1
SE	-0.1	0.2	0.4	1.0	0.0	0.0	3.4	-0.3	-0.2	0.0	-0.7
PL	-0.2	0.3	0.2	1.1	0.4	0.0	6.7	-0.2	-0.3	-0.4	-0.7
HR	-0.7	0.8	0.2	1.5	0.3	0.2	2.4	-0.2	-0.7	-0.4	-1.1
LV	-1.2	0.2	0.0	0.3	0.1	0.0	3.3	0.0	0.1	-0.1	0.0
IT	-1.8	0.2	0.7	1.0	0.6	0.4	2.7	-0.5	0.2	-0.6	0.0
DK	-2.0	0.2	0.2	0.9	-0.1	2.3	0.5	-0.2	-0.3	0.1	0.0
ES	-2.1	0.1	0.7	1.0	0.9	1.5	8.3	-0.5	-1.4	-0.9	-1.1
FR	-2.2	0.6	0.2	1.8	0.9	2.2	3.4	-0.2	-0.3	-1.0	-2.6
EE	-2.3	0.4	0.0	0.1	0.2	0.8	2.7	0.1	0.1	-0.1	0.0
PT	-3.2	0.0	0.2	1.3	0.7	0.6	5.6	-0.3	-0.3	-0.8	-0.3
EL	-3.8	-0.1	0.5	1.1	0.7	1.4	4.1	-0.5	-0.1	-0.7	0.0

Source: European Commission, EPC.

Offset declining pension benefit ratio

Assuming a limited decline of pension benefit ratios, compared with the baseline, would put very large upward pressures on pension spending over the long term. This illustrates the strong role of measures affecting the generosity of the pension system to contain future pension developments. The scenario is run for all countries that, according to the baseline projections, would see a fall of the benefit ratio by more than 10% relative to the base year. In these cases, it is assumed that the benefit ratio would remain constant at the lower 90% mark for the remainder of the projection period. As shown in Graph II.1.26, Spain (+8.3 pps of GDP), Poland (+6.7 pps) and Portugal (+5.6 pps) would be the most affected by measures to preserve pension adequacy close to current levels, with an impact of 2-4 pps of GDP for Croatia, Italy, Estonia, Latvia, France, Sweden, Cyprus and Greece. The impact is estimated at between 1.2-1.9 pps of GDP for Malta, Slovakia, Lithuania, Finland, and Austria. It should be noted that for countries with developed supplementary schemes (see Section 1.6.2), the total pension benefit ratio might compensate for a decline in the public benefit ratio.

Graph II.1.26: **Offset declining benefit ratio scenario: impact on the change in gross public pension expenditure in 2019-2070 (deviation from the baseline, pps of GDP)**



Source: European Commission, EPC.

Box II.1.3: Adverse macroeconomic scenarios due to COVID-19 related risks

The 2021 Ageing Report includes additional scenarios relating to the COVID-19 crisis, given the high level of uncertainty about its magnitude, duration and economic impact. Hence, in this projection exercise, two adverse macroeconomic scenarios are run in addition to the baseline scenario ([1]), both of which are described below ([2]).

Lagged recovery scenario

This scenario maintains the assumption of a relatively limited impact on potential growth (slightly higher than in the baseline scenario), but with a much more pronounced cyclical downturn and a longer recovery phase, resulting in a wide '*U-shaped'* recovery instead.

The impact on public pension expenditure is shown in Graph 1. The aggregate effect on pension spending for the EU is estimated at +0.1 pps of GDP. Italy, Estonia, Lithuania, Malta, Latvia, and Germany would be the most affected, with an upward impact of 0.2-0.3 pps of GDP in 2070, as compared to the baseline. It remains at around 0.1 pp of GDP for Hungary, Croatia, and Poland. At the other end of the spectrum, are countries that would report either a neutral or a downward impact.

Adverse structural scenario

On top of the stronger cyclical downturn in the lagged recovery scenario described above, this adverse structural scenario additionally assumes that the growth potential will be lower over the next decade and potential output growth will thus be permanently lower than under the baseline scenario.

First, labour productivity growth would recover to a lower trend growth, through lower investment and/or TFP growth stemming from reduced business activity for a long period of time, with the crisis contributing to the historical downward trend. Second, the deeper recession and slower recovery would lead to unemployment becoming permanently higher as a result of lower business activity, leading to a hysteresis effect and permanently higher unemployment.

The impact on public pension expenditure is shown in Graph 2. The aggregate effect on pension spending for the EU is estimated at +0.9 pps of GDP. The upward impact varies significantly across countries. The most affected would be Belgium (+2.0 pps of GDP), France and Italy (+1.6 pps of GDP), Malta and Romania (+1.5 pps of GDP), Hungary, Portugal, and Spain (+1.4 pps of GDP), and Luxembourg (+1.3 pps of GDP). The impact is estimated at 1 pp of GDP for Slovenia and Slovakia. For the remaining countries, it ranges between 0.3-0.9 pps of GDP. An almost neutral impact is reported for Denmark and the Netherlands. For highly impacted countries, this scenario illustrates the potential lack of resilience of pension systems to more adverse macroeconomic conditions. In other words, it highlights how scares on the economy left by the COVID-19 crisis could durably affect the pension system in some countries.

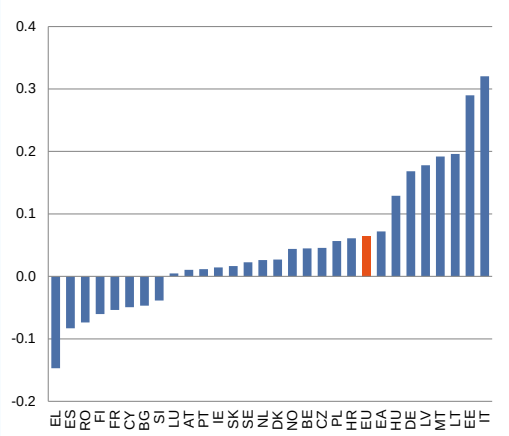
([1]) The baseline scenario in the 2021 Ageing Report takes the Commission's spring 2020 forecast as a starting point, reflecting the impact of the crisis and assuming recovery as of May 2020 and a rebound of growth in 2021, broadly resulting in a narrow '*U-shaped'* recovery scenario. In addition, it incorporates the't+10' projections according to the methodology agreed by the OGWG.

([2]) See also Box I.3.1 in EC-EPC (2020).

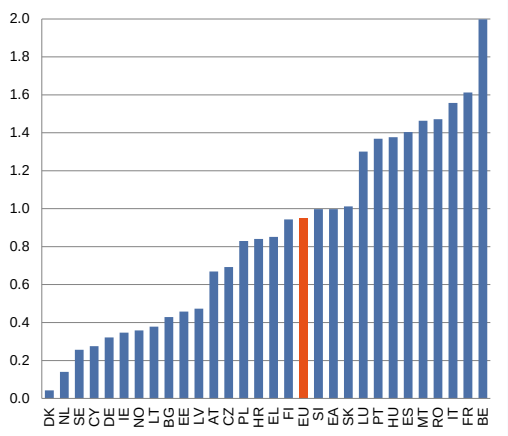
(Continued on the next page)

Box (continued)

Graph 1: **Lagged recovery scenario: impact on the change in gross public pension expenditure in 2019-2070 (deviation from baseline, pps of GDP)**



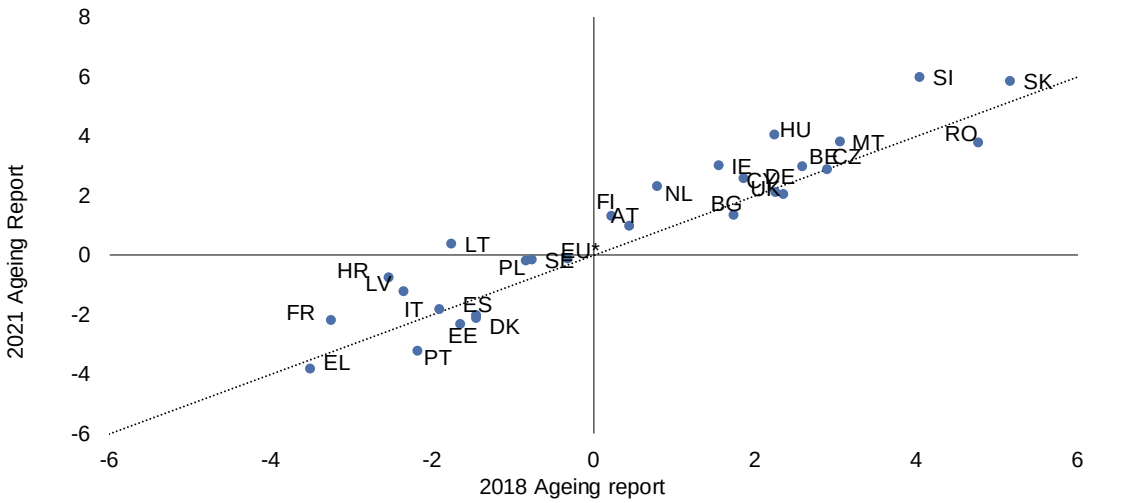
Graph 2: **Structural adverse scenario: impact on the change in gross public pension expenditure in 2019-2070 (deviation from baseline, pps of GDP)**



1.8.4. Overview of sensitivity scenarios

Table II.1.22 brings together the impact of the different scenarios compared to the baseline projections for 2019-2070. It shows how upward risks are mainly associated with lower-than-assumed fertility rates, lower migration for smaller countries and lower than assumed productivity growth for a number of countries. The high impact of the unchanged retirement age scenario underscores the risks of policy reversals on future pension expenditure in a series of countries that enacted far-reaching reforms. In turn, result for the offsetting pension benefit ratio scenario highlights how avoiding pension adequacy to decline beyond a certain point carries considerably budgetary costs in the long term. In general, the countries with the highest pension expenditure increase in the baseline projections also tend to be the most exposed to the unfavourable scenarios. Among the favourable scenarios, the most positive impact would be expected from the policy decision to link retirement ages to life expectancy, and, in certain countries, from lifting employment among older people.

Graph II.1.27: **Change in gross public pension expenditure in 2019-2070: latest projections vs. 2018 Ageing Report (pps of GDP)**



(1) For Greece, Croatia, Italy, Romania, and Slovakia, the 2018 Ageing Report projections refer to the updated figures following pension reforms adopted since 2018. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
Source: European Commission, EPC.

1.9. COMPARISON WITH THE 2018 AGEING REPORT

For the EU as a whole, the projected change in public pension expenditure in 2019-2070 is basically unaltered compared to the 2018 Ageing Report. The projected change over the period 2019-70 is +0.1 pps of GDP versus -0.3 pps of GDP in the 2018 exercise (see Table II.1.23). The same holds for seven countries with a revision of at most 0.4 pps of GDP since the previous projections.

Yet, for several other countries, projections were significantly revised. The distance from the 45-degree line in Graph II.1.27 indicates the size of the revision. The change in pension spending over the period 2019-2070 was revised upwards for a majority of 16 countries. Now, nine countries would see spending increase by at least 1 pp of GDP more than previously expected. These are Lithuania (+2.2 pps), Slovenia (+2.0 pps), Croatia (+1.8 pps) Hungary (+1.8 pps), Ireland and the Netherlands (+1.5 pps), France, Latvia and Finland (+1.1 pps). Of the countries for which the change in the pension expenditure ratio in 2019-2070 is lower than in the 2018 Ageing Report, Portugal and Romania record the largest change (-1 pp of GDP). For Estonia, Greece, Spain, Denmark, Bulgaria, Cyprus, Luxembourg, the change compared to the previous projections is 0.6 pps of GDP or less.

In many countries, outturn values of the pension expenditure ratio in 2019 turned out lower than projected in the 2018 exercise. Actual spending in 2019 turned out 0.3-1.3 pps of GDP lower for the majority of countries. The base year effect amounts to -0.9 pps of GDP for Bulgaria and Slovenia, and -1.3 pps of GDP for Cyprus. This generally reflects a denominator effect, i.e. GDP being higher than anticipated. However, the pension expenditure ratio in 2019 turned out higher in Greece (+0.5 pps of GDP), Spain, Lithuania and Luxembourg (+0.2 pps) and Germany (+0.1 pps).

Looking at the drivers of the revisions across the two Ageing Report vintages reveal that for most countries revisions in either direction are driven by developments in the dependency ratio and the benefit ratio. Table II.1.24 allocates the change in the 2019-2070 public pension expenditure projections between the 2018 and 2021 Ageing Reports over the dependency ratio effect, the coverage ratio effect, the benefit ratio effect and the labour market effect. In particular:

– *The old-age dependency ratio slightly changes for the EU as a whole* (see Graph II.1.28). The

Table II.1.23: **Comparison of gross public pension expenditure levels in 2019 and 2070: 2018 vs. 2021 Ageing Reports (% and pps of GDP)**

	2019		2070		Change 2019-2070		Difference AR 2021 - AR 2018		
	AR 2018	AR 2021	AR 2018	AR 2021	AR 2018	AR 2021	Difference 2019	Difference 2070	Difference 2019-2070
BE	12.5	12.2	15.0	15.2	2.6	3.0	-0.3	0.1	0.4
BG	9.2	8.3	10.9	9.7	1.7	1.4	-0.9	-1.3	-0.4
CZ	8.1	8.0	10.9	10.9	2.9	2.9	-0.1	0.0	0.0
DK	9.5	9.3	8.1	7.3	-1.5	-2.0	-0.3	-0.8	-0.5
DE	10.2	10.3	12.5	12.4	2.3	2.1	0.1	0.0	-0.1
EE	8.0	7.8	6.4	5.4	-1.7	-2.3	-0.3	-0.9	-0.6
IE	5.0	4.6	6.6	7.6	1.5	3.0	-0.5	1.0	1.5
EL	15.2	15.7	11.7	11.9	-3.5	-3.8	0.5	0.2	-0.3
ES	12.1	12.3	10.7	10.3	-1.5	-2.1	0.2	-0.4	-0.6
FR	15.0	14.8	11.8	12.6	-3.3	-2.2	-0.2	0.8	1.1
HR	10.7	10.2	8.1	9.5	-2.5	-0.7	-0.5	1.3	1.8
IT	15.8	15.4	13.9	13.6	-1.9	-1.8	-0.4	-0.3	0.1
CY	10.1	8.8	12.4	10.9	2.4	2.1	-1.3	-1.6	-0.3
LV	7.1	7.1	4.7	5.9	-2.4	-1.2	0.0	1.2	1.1
LT	6.9	7.1	5.2	7.5	-1.8	0.4	0.2	2.3	2.2
LU	9.0	9.2	17.9	18.0	8.9	8.7	0.2	0.0	-0.2
HU	9.0	8.3	11.2	12.4	2.2	4.1	-0.7	1.2	1.8
MT	7.8	7.1	10.9	10.9	3.0	3.8	-0.8	0.0	0.8
NL	7.1	6.8	7.9	9.1	0.8	2.3	-0.3	1.3	1.5
AT	13.9	13.3	14.3	14.3	0.4	1.0	-0.6	0.0	0.6
PL	11.0	10.6	10.2	10.5	-0.8	-0.2	-0.4	0.3	0.7
PT	13.5	12.7	11.4	9.5	-2.2	-3.2	-0.8	-1.8	-1.0
RO	7.8	8.1	12.5	11.9	4.8	3.8	0.4	-0.6	-1.0
SI	10.8	10.0	14.9	16.0	4.0	6.0	-0.9	1.1	2.0
SK	8.6	8.3	13.8	14.2	5.2	5.9	-0.3	0.4	0.7
FI	13.7	13.0	13.9	14.4	0.2	1.3	-0.7	0.5	1.1
SE	7.7	7.6	7.0	7.5	-0.8	-0.1	-0.1	0.6	0.6
NO	11.0	11.0	12.8	13.6	1.9	2.6	0.0	0.8	0.7
EA	12.3	12.1	11.9	12.1	-0.3	0.1	-0.2	0.2	0.4
EU	11.8	11.6	11.5	11.7	-0.3	0.1	-0.2	0.2	0.4

(1) For Greece, Croatia, Italy, Romania, and Slovakia, the 2018 Ageing Report projections refer to the updated figures following pension reforms adopted since 2018. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
Source: European Commission, EPC.

largest increases as compared to the 2018 projections are for Spain (+2.4 pps) France (+2.1 pps) and Luxembourg (+1.9 pps). The largest downward revisions in the dependency ratio effect in 2019-2070 as compared to the 2018 projections are for Cyprus (-3.8 pps of GDP), Germany (-1.4 pps), Portugal (-1.2 pps), Bulgaria (-0.5 pps) and Austria (-0.5 pps).

– *Also the benefit ratio effect is about stable for the EU when compared to the previous projections* (see Graph II.1.29). Higher pension benefits relative to wages drive, however, the upward revisions for Hungary (+1.5 pps), and Slovenia (+1.1 pps). For other countries with considerably higher contributions from the benefit ratio effect than in 2018, the impact on overall public pensions is offset by other factors. This is for example the case for Austria (+0.5 pps of GDP). Conversely, a lower-than-previously-projected benefit ratio effect reduces the pension expenditure projections in Luxembourg (-4.6 pps of GDP), Spain (-3.3 pps) and France (-1.4 pps).

– *For some countries, the coverage ratio effect contributes notably to the revision in the pension expenditure ratio*. This is for example the case for the Netherlands (+1.1 pps of GDP) ([87]). The effect on the overall

([87]) Also for Luxembourg the coverage ratio effect amounts to +3.2 pps of GDP. However, as cross-border workers in Luxembourg are not covered in the labour force projections

Table II.1.24: **Breakdown of the difference in the gross public pension expenditure change in 2019-2070 between the 2021 and 2018 Ageing Reports (pps of GDP)**

	Change 2019-2070 (1+2+3+4+5)	Dependency ratio (1)	Coverage ratio (2)	Benefit ratio (3)	Labour market ratio (4)	Residual (5)
BE	0.4	1.1	0.0	-1.1	0.4	-0.1
BG	-0.4	-0.5	0.4	-0.4	-0.1	0.1
CZ	0.0	0.3	-0.2	-0.2	0.0	0.1
DK	-0.5	-0.2	0.0	-0.2	-0.2	0.0
DE	-0.1	-1.4	0.3	0.9	0.0	0.0
EE	-0.6	0.0	-0.8	1.0	-0.6	-0.3
IE	1.5	0.2	0.0	0.2	-0.1	1.1
EL	-0.3	-0.3	-0.3	0.1	-0.1	0.4
ES	-0.6	2.4	0.2	-3.3	0.0	0.0
FR	1.1	2.1	0.4	-1.4	0.2	-0.1
HR	1.8	0.9	-0.2	0.4	0.7	0.0
IT	0.1	-0.1	0.5	0.2	-0.5	0.1
CY	-0.3	-3.8	1.7	0.9	0.7	0.3
LV	1.1	0.7	-0.2	0.3	0.5	0.0
LT	2.2	1.3	-0.4	1.0	0.0	0.1
LU	-0.2	1.9	3.2	-4.6	-0.2	-0.4
HU	1.8	0.3	0.0	1.5	0.0	0.1
MT	0.8	1.3	-0.7	-0.1	0.3	0.0
NL	1.5	0.6	1.1	-0.6	0.3	0.0
AT	0.6	-0.5	0.4	0.5	0.2	0.0
PL	0.7	-0.1	0.1	0.6	0.0	0.0
PT	-1.0	-1.2	0.2	-0.6	0.4	0.1
RO	-1.0	1.7	-0.8	-1.3	-0.6	0.0
SI	2.0	0.7	0.0	1.1	-0.1	0.1
SK	0.7	1.3	0.3	-1.1	0.3	-0.1
FI	1.1	1.1	0.6	-0.6	0.1	-0.1
SE	0.6	0.5	-0.6	0.8	-0.1	0.0
NO	0.7	0.4	1.9	-1.6	0.1	-0.1
EU	0.4	0.0	0.4	-0.3	0.3	0.0

(1) For Greece, Croatia, Italy, Romania, and Slovakia, the 2018 Ageing Report projections refer to the updated figures following pension reforms adopted since 2018. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
(2) Based on change in ratios in 2016-2070 for 2018 Ageing Report; the non-allocated portion of expected total change in 2019-2070 according to 2021 Ageing Report was added to the residual term.
Source: European Commission, EPC.

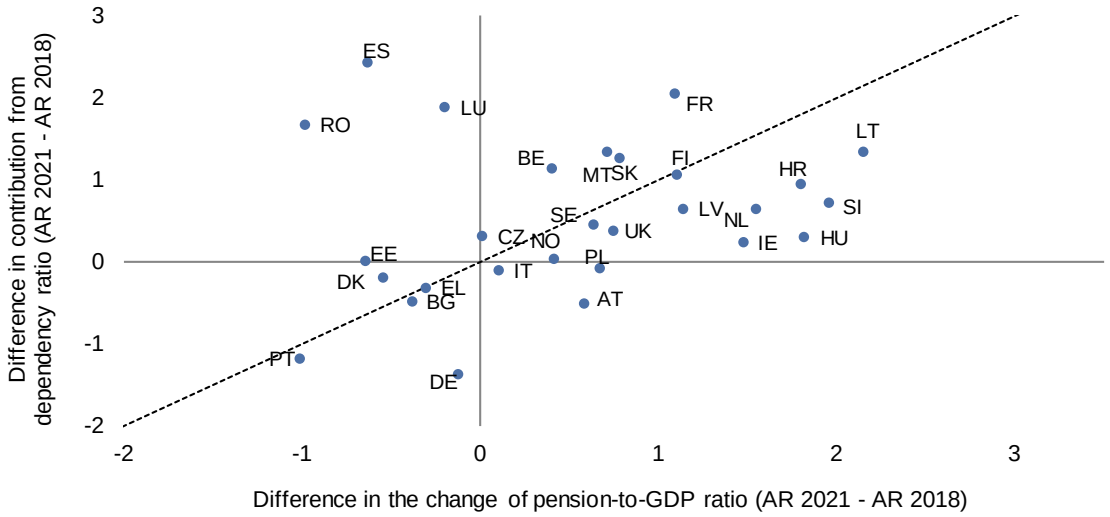
expenditure ratio is mostly neutralised by other drivers.

– *The labour market effect is generally not a major driver of the revisions in the pension expenditure projections*. However, in the case of Slovakia, it is one of several factors behind the upward revision compared to the previous projections.

An alternative breakdown of the change in the public pension expenditure ratio compared to the 2018 Ageing Report interestingly put into evidence the contribution of a change in the underlying assumptions, better modelling, the interpretation of constant policy and pension reforms adopted in recent years (see Table II.1.25). The breakdown shows that changes in demographic and macroeconomic assumptions are the main drivers behind revisions as compared to the 2018 exercise. For most countries that provided the breakdown, the new set of assumptions resulted in an upward revision of the change in pension expenditure between 2019 and 2070. The impact amounts to 0.5 pps of GDP for the EU as a whole, but goes as high as 2.4 pps of GDP in the case of Bulgaria. The downward impact of updated assumptions is the largest for Portugal, at -1.4 pps of GDP.

for the pension projection exercise, deriving conclusions from the coverage ratio is not meaningful.

Graph II.1.28: **Revision of the dependency ratio and of the change in gross public pension expenditure ratio in 2019-2070 in the 2021 Ageing Report, as compared to the 2018 Ageing Report (pps of GDP)**



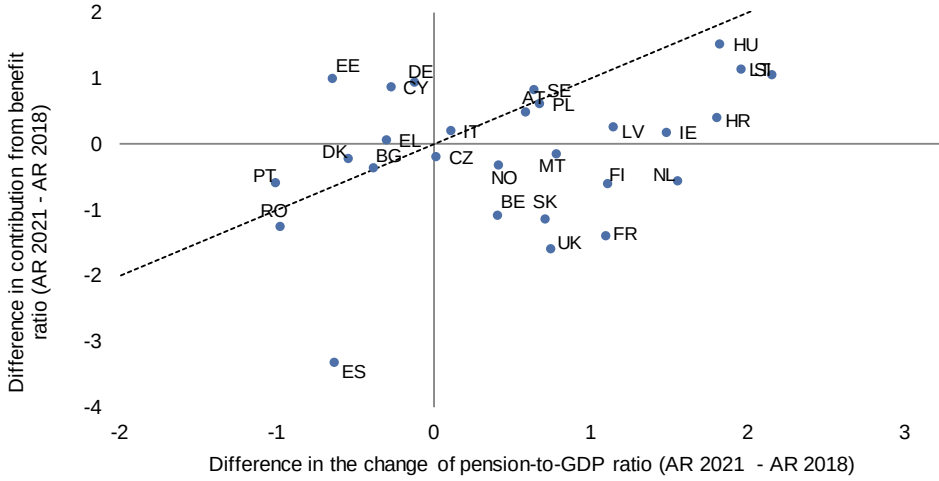
(1) For Greece, Croatia, Italy, Romania, and Slovakia, the 2018 Ageing Report projections refer to the updated figures following pension reforms adopted since 2018. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
Source: European Commission, EPC.

Pension reforms adopted since 2018 are a second source of revisions. Their impact is generally smaller, though, at +0.1 pps of GDP on average in the EU. The exceptions are Bulgaria (-2.8 pps of GDP), Slovenia (+1.5 pps), Hungary (+0.9 pps), Lithuania (+0.8 pps) and Estonia (-0.8 pps) ([88]). For Bulgaria, this foremost reflects changes in the values of accrual rate to be used in pension formulas. In the case of Slovenia, the adequacy-improving reforms of 2019 (with the benefit ratio having an expenditure-increasing effect) is expected to lead to a substantially higher increase of pension expenditure. For Hungary, the re-introduction of a 13th month pension as of 2021 leads to an upward revision in the projections. In Lithuania, the quasi-mandatory private pension scheme reform in 2019 also leads to an upward revision, given that private pension accumulation contributions and related expenditure are no longer transferred to the private pillar. In Estonia, the downward revision stems from the introduction, as of 2027, of a link between the statutory retirement age and changes in life expectancy. Overall, policy-related changes play a smaller role than was the case with respect to revisions in the 2018 Ageing Report as compared to the 2015 Ageing Report.

For most countries, modelling techniques, a broader coverage by the projections and the constant policy assumption did not lead to major revisions. An exception is Spain, for which a downward revision of 1.0 pp of GDP is due to modelling refinements.

([88]) It should be noted that for Greece, Croatia, Italy, Romania, and Slovakia reforms were enacted since 2018 and peer reviewed by the EPC-AWG on the basis of the macroeconomic and demographic assumptions from the 2018 Ageing Report. These updated projections are referred to as '2018 Ageing Report' figures as they provide the previous baseline.

Graph II.1.29: **Revision of the benefit ratio and of the change in gross public pension expenditure ratio in 2019-2070 in the 2021 Ageing Report as compared to the 2018 Ageing Report (pps. of GDP)**



(1) For Greece, Croatia, Italy, Romania, and Slovakia, the 2018 Ageing Report projections refer to the updated figures following pension reforms adopted since 2018. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
Source: European Commission, EPC

Table II.1.25: **Alternative breakdown of the difference in the gross public pension expenditure change in 2019-2070 between the 2021 and 2018 Ageing Reports (pps of GDP)**

	AR 2018	Change in assumptions	Improvements coverage / modelling	Constant policy interpretation	Policy-related changes	AR 2021	AR 2021 - AR 2018
BE	2.6	0.4	0.0	0.0	0.0	3.0	0.4
BG	1.7	2.4	0.0	0.0	-2.8	1.4	-0.3
CZ	2.8	0.2	-0.2	0.0	0.0	2.9	0.1
DK	-1.4	-0.5	0.0	0.0	0.0	-2.0	-0.6
DE	2.3	-0.7	0.0	0.0	0.5	2.1	-0.2
EE	-1.6	0.0	0.0	0.0	-0.8	-2.4	-0.8
IE	2.2	1.1	0.2	0.0	0.0	3.4	1.2
EL	-3.5	-0.8	0.0	0.0	0.5	-3.8	-0.3
ES	-1.4	0.6	-1.0	-0.5	0.3	-2.0	-0.6
FR	-3.2	1.1	-0.1	0.0	0.0	-2.1	1.1
HR	-2.6	1.5	-0.1	0.0	0.4	-0.7	1.9
IT	-1.9	0.1	0.0	0.0	0.0	-1.8	0.1
CY	2.3	-0.2	0.0	0.0	0.0	2.1	-0.2
LV	-2.4	1.2	0.0	0.0	0.0	-1.2	1.2
LT	-1.7	1.3	0.1	0.0	0.8	0.4	2.1
LU	8.9	1.3	-0.4	-1.1	0.0	8.8	-0.1
HU	2.2	1.0	0.0	0.0	0.9	4.1	1.9
MT	3.1	0.8	0.0	0.0	0.0	3.8	0.7
NL	0.8	0.7	0.0	0.0	0.8	2.3	1.5
AT	0.4	:	:	:	:	1.0	0.6
PL	-0.8	0.6	0.1	0.0	0.0	-0.1	0.7
PT	-2.2	-1.4	-0.1	0.0	0.5	-3.2	-1.0
RO	4.7	-0.7	-0.2	0.0	0.0	3.8	-0.9
SI	4.1	0.3	-0.3	0.3	1.5	6.0	1.9
SK	5.2	1.2	-0.3	0.0	-0.2	5.9	0.7
FI	0.2	1.6	-0.6	0.0	0.1	1.4	1.2
SE	-0.7	0.6	0.0	0.0	0.1	-0.1	0.6
NO	1.8	0.8	0.0	0.0	0.0	2.6	0.8
EA	0.8	0.3	-0.2	0.0	0.2	1.2	0.5
EU	0.7	0.5	-0.1	0.0	0.1	1.2	0.5

(1) For Greece, Croatia, Italy, Romania and Slovakia, the 2018 Ageing Report projections refer to the updated figures following pension reforms adopted since 2018. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
(2) IE: breakdown only concerns Public Social Security Schemes.
Source: European Commission, EPC.

2. HEALTH CARE EXPENDITURE

2.1. INTRODUCTION

The size and growing importance of public expenditure on health care, notably driven by population ageing and innovations in health technology, impinges on the sustainability of public finances. The pandemic has also brought into prominence health care expenditure. Hence, health care expenditure is an important topic in the policy debate on how to guarantee universal access to quality care, while ensuring long-term fiscal sustainability. In this context, long-term budgetary projections are very helpful in that they allow policy makers considering different possible public expenditure trajectories. They also reveal the role of the main underlying drivers underpinning health care costs' developments.

This chapter presents the projection results regarding public expenditure on health care from 2019 to 2070 across the EU. Projections were run using Commission services' (DG ECFIN) models on the basis of the methodology and data agreed with the Member States delegates in the AWG-EPC. The chapter, after providing a brief overview of the determinants of health care expenditure, recalls the methodology used to project public expenditure on health care under different scenarios. Finally, projection results by scenario are reported and compared to the previous projection exercise.

2.2. DETERMINANTS OF HEALTH CARE EXPENDITURE

Demand for health care provisions is considerable, and generally associated with high potential benefits; its weight in EU GDP has risen over time. In the EU, total expenditure on health care (public and private, including long-term nursing care) represented 10 % of GDP in 2018. A substantial part of this expenditure – 7.8 % of GDP on average ([89]) in the EU in 2018 – is public spending, with important variation across Member States ranging from 3% of GDP in Cyprus to 9.7% of GDP in Sweden. Overall, public expenditure on health care has risen in most EU Member States over time, and represents a significant share of total government expenditure. Box II.2.1 presents the evolution of public spending on health care (including long-term nursing care), its share in total (public and private) expenditure and total government outlays over the last decades.

Public expenditure on health care is driven by a range of factors that affect both demand and supply of health care goods and services. Population size and structure, its health status, the individual and national income and provisions regulating access to health care goods and services are seen as key determinants of demand. Supply side determinants include the availability and distance to health care services, technological progress and the framework regulating the provision of those goods and services (institutional settings). The next sections briefly describe the relation between these factors and public spending on health care.

2.2.1. Demographic structure of the population

Demand for health care goods and services depends on the number of people in need of care. This depends not only on the size but also on the health status of the population, which is linked to the age and gender structure of the population and notably with the share of elderly people in the overall population. This is because older people often develop multi-morbidity conditions, which require costly medical care.

The relationship between the age of individuals and their use of health care is well displayed by the so-called "age-related expenditure profiles" (as shown in Graph II.2.1). The graph plots average public per capita spending on health care excluding long-term nursing care (as % of GDP per capita) against the age of individuals in each country of the EU. Spending generally increases with the age of a person, notably from the ages of 55 and more for men, and of 60 and more for women, coinciding naturally with higher morbidity at an older age. The demand for health care is also high at very young ages and during maternity years for women. Consequently, population structure, and ageing in particular, is one of the drivers of increasing health care expenditure.

([89]) The averages presented in this chapter are weighted according to GDP.

Box II.2.1: **Public health care expenditure through the last decades**

Public (and private) health care expenditures rose rapidly during the 1960s and 1970s, triggered by an increase in population coverage and improvements in the provision of the health services associated with higher populations' expectations and their willingness to pay more for better health care services. In the 1980s and 1990s, the growth of public expenditure on health slowed down, and even reversed in a few countries. This was largely due to budgetary consolidation efforts, as growth in health care expenditures was perceived as too strong.

In the late 1990s and especially in the first decade of the 21st century, health expenditure growth picked up again, peaking around 2009, before the fiscal tightening brought on by the financial and economic crises led to a reversal of the trend with slower growth and falls in spending in some countries. This reversal was however temporary. Public health expenditure (including long-term nursing care) ([1]) has reached an average level of 7.8% of GDP in 2018 in the EU, though ranging from 3.0 % of GDP in Cyprus to 9.7 % of GDP in Sweden (Table 1).

Table 1 Public health care expenditure (incl. long-term nursing care) in EU Member States and Norway, 1970-2018

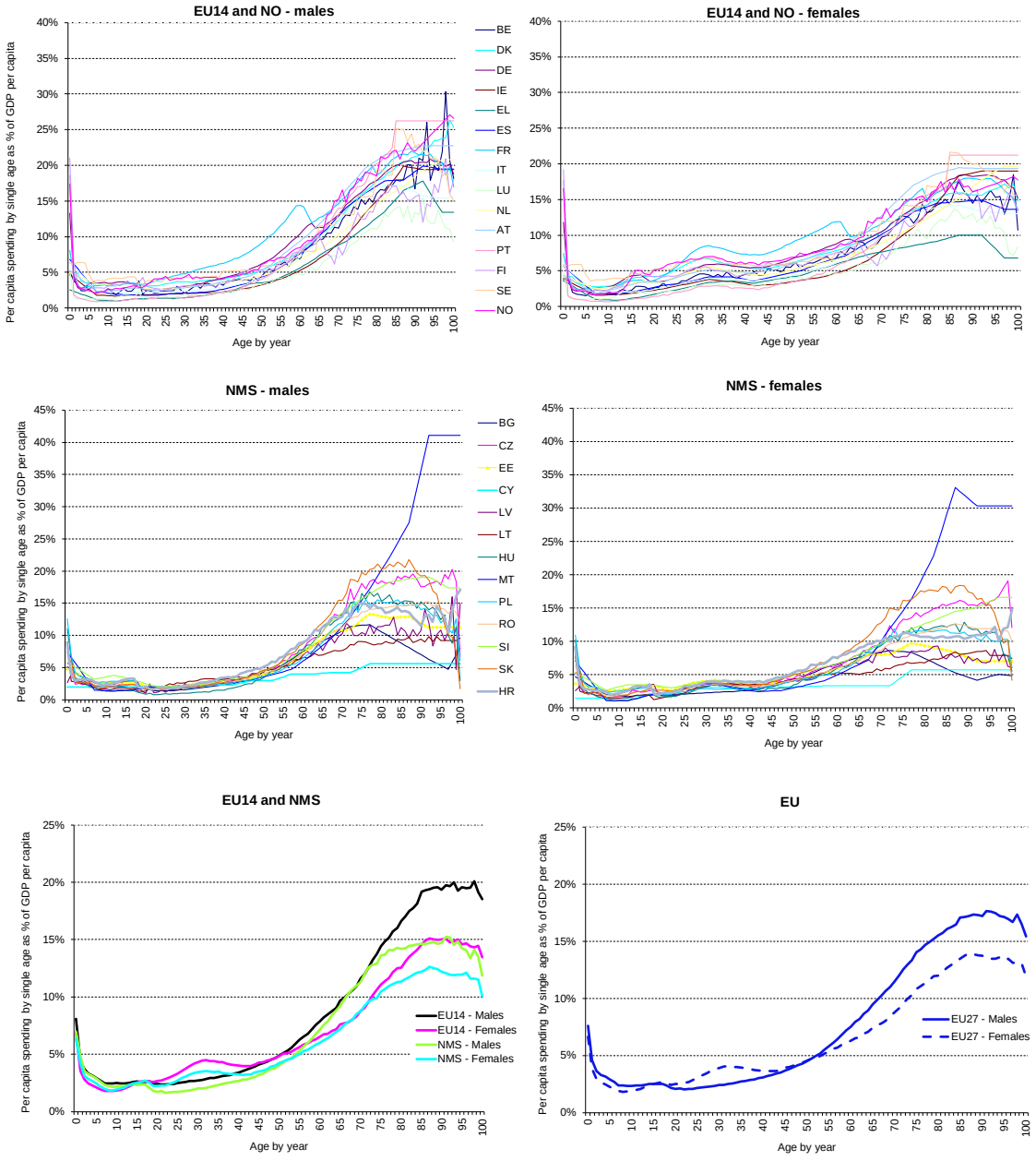
	Public health care expenditure as % of													
	GDP					total health expenditure					total government expenditure			
	1970	1980	1990	2011	2018	1970	1980	1990	2011	2018	1990	2011	2018	
BE	:	:	:	7.9	7.8	:	:	:	76.0	75.8	10	14.3	15.0	BE
BG	:	:	5.2	4.0	4.4	:	:	100	55.1	59.5	:	11.8	12.1	BG
CZ	:	:	4.6	6.1	6.6	:	:	98	81.8	83.7	:	14.2	16.4	CZ
DK	:	7.9	6.9	8.9	8.9	:	89	83.2	84.3	84.6	11.9	15.8	17.5	DK
DE*	:	:	:	8.1	8.9	:	:	:	75.1	77.4	:	17.9	20.0	DE*
EE	:	:	:	4.8	5.3	:	:	:	78.0	74.9	:	12.8	13.4	EE
IE	4.1	6.8	4.4	8.0	5.3	80.4	82	72	76.3	74.7	:	17.1	21.1	IE
EL	2.3	3.3	3.5	6.1	4.7	42.6	55.9	53	52.3	59.0	:	11.0	9.8	EL
ES	2.3	4.2	5.1	6.9	6.4	65.7	79	79.1	74.0	70.7	:	15.0	15.4	ES
FR	4.1	5.6	6.4	8.9	9.6	75.9	80.4	78	76.7	83.9	:	15.7	17.2	FR
HR		:	:	6.5	6.0	:	:	:	84.0	83.8	:	15.3	13.2	HR
IT	:	:	6.1	7.0	6.5	:	:	79.2	77.6	74.3	11.7	14.2	13.5	IT
CY	0.9	1.5	1.8	3.2	3.0	33.3	53.6	40	48.4	44.4	:	7.5	7.1	CY
LV	:	:	2.5	3.8	4.0	:	:	100	65.1	61.6	:	9.4	10.3	LV
LT	:	:	3	5.1	4.6	:	:	90.9	73.1	68.3	:	12.1	13.7	LT
LU	2.8	4.8	5	5.1	4.5	90.3	92	93	83.3	84.2	11.1	12.1	10.7	LU
HU	:	:	:	5.2	4.8	:	:	:	67.5	70.4	:	10.6	10.4	HU
MT	:	:	:	6.8	5.9	:	:	:	54.8	57.5	:	12.1	16.3	MT
NL	:	5.1	5.4	8.5	8.2	:	69	68	82.7	82.1	:	18.1	19.4	NL
AT	3.3	5.1	6.1	7.8	8.1	63.5	69.2	73	75.5	75.5	:	15.4	16.5	AT
PL	:	:	4.4	4.9	4.8	:	:	92.1	69.3	72.5	:	11.1	11.5	PL
PT	1.5	3.4	3.8	6.7	5.9	60	64	64	68.5	61.9	:	13.4	13.6	PT
RO	:	:	2.9	3.8	4.6	:	:	100	76.6	80.2	:	9.6	13.1	RO
SI	4.2	4.4	5.6	6.6	6.3	100	100	100	73.4	73.6	:	12.9	14.4	SI
SK	:	:	:	5.7	5.6	:	:	:	71.5	80.8	:	13.8	13.3	SK
FI	4.1	5	6.2	7.5	7.4	74.5	79	81.3	78.3	78.0	12.1	13.9	13.9	FI
SE	5.8	8.2	7.4	9.2	9.7	85.3	92.7	90.4	85.1	85.6	:	18.6	19.4	SE
NO	4	5.9	6.3	7.7	8.9	:	:	83	84.9	85.9	12.6	17.5	18.3	NO
EA	:	:	:	7.8	7.9	:	:	:	75.7	77.0	:	15.8	17.0	EA
EU	:	:	:	7.7	7.8	:	:	:	75.7	77.4	:	15.6	16.8	EU

Notes: *The figures for DE include government and social health insurance schemes, but exclude compulsory private health insurance schemes.
The EU and EA averages are weighted according to GDP.
Source: Eurostat; OECD Health data; United Nations Statistics Devision; WHO Health for all database.

As far as the share of public in total health expenditure is converned, it has increased on average in the EU in the past seven years. Public spending in 2018 was as much as 77.4 % of total health expenditure in the EU, ranging from 57.5 % in Malta to 85.9 % in Sweden. The overall share of health care in total government expenditure has increased in most EU Member States in the same period. In the counries, where it has fallen, this is due mainly to reforms in the health care system. Public spending on health care in 2018 accounted on average for 16.8 % of total government spending in the EU, ranging from 7.1 % in Cyprus to 19.4 % in Sweden.

([1]) Public health care expenditure in this historical overview includes long-term nursing spending, while the long-term public health care projections exclude it. The reason for this is the lack of compararable statistics based on the System of Health Accounts for years before 2011 for most EU Member States.

Graph II.2.1: **Age-related expenditure profiles of health care provision (spending per capita as % of GDP per capita) in 2019**



Notes: (1) The first four graphs represent (per capita) health care age-cost profile by country (across the EU14 and the New member States (NMS), respectively for men and women). The two last graphs report the same series at aggregate level (EU14, NMS and EU), respectively for men and women. (2) The EU14 aggregate includes the profiles of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and Sweden. (3) The NMS aggregate includes Bulgaria, Croatia, Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Romania, Slovakia, and Slovenia. (4) Romania did not provide an age-cost profile. It was imputed as the average cost profile of the NMS.
Source: Commission services (DG ECFIN), EPC.

Population ageing may pose a risk for the sustainability of health care financing in two ways. *Firstly*, increased longevity, without an improvement in health status, leads to increased demand for services over a longer period of the lifetime, increasing total lifetime health care expenditure and overall health care spending (Breyer et al. 2010, Zweifel et al. 2005). It is often argued that new medical technologies have been successful in saving lives from a growing number of fatal diseases, but have been less successful in keeping people in good health. *Secondly*, in many EU Member States, public health care is largely financed by social security contributions of the working population. Ageing leads to an increase in the old age dependency ratio i.e. fewer contributors to the recipients of services. The old age dependency ratio is projected to increase from 34.4 % in 2019 to 59.2 % in 2070 (Eurostat 2019-based population projections). Consequently, in the future far fewer people will contribute to finance public health care, while a growing share of older people may require additional health care goods and services.

Longer working lives accompanied by a healthier working population can mitigate the impact of ageing. In addition, many researchers have shown that ageing has contributed much less than widely thought to the observed growth in expenditure, and in many Member States an actual reduction in per capita spending at very old age (85+) can be observed. This is because alongside real needs, social, economic and cultural considerations determine the allocation of resources to the sector and use of resources across different age groups. Therefore, ageing should be analysed in conjunction with other determinants of expenditure, such as health status, income, non-demographic factors, legal and institutional settings and resources, as explained next.

2.2.2. Health status

The impact of increasing longevity on health care expenditure critically depends on the health status of people over the additional life time (i.e. whether extra years are spent "in good or bad health"). As a result of falling mortality rates at all ages, including for older people, life expectancy is increasing. However, in some cases mortality has decreased at the expense of increased morbidity, meaning that more years are spent with chronic illnesses. If increasing longevity goes in line with an increasing number of healthy life years, then ageing may not necessarily translate into rising health care costs. Better health goes along with lower health care needs and may drive down health services use and health expenditure (Rechel et al. 2009). Therefore, it is crucial to understand if longevity is accompanied by more or less good health.

Projecting the future evolution in the health status of the population is challenging due to the difficulties associated with predicting the changes in morbidity and measuring ill-health. While the evolution in mortality rates and life expectancy can be estimated on the basis of administrative information (censuses, surveys, etc.), epidemiological data is subject to much higher uncertainty. Three different hypotheses have been put forward to predict a possible future interaction between evolution in life expectancy and changes in the prevalence of disability and ill-health:

- *The "expansion of morbidity" hypothesis* (Gruenberg, 1977; Verbrugge, 1984; Olshansky et al. 1991) claims that the decline in mortality is largely due to a decreasing fatality rate of diseases, rather than due to a reduction in their prevalence/incidence. Consequently, falling mortality is accompanied by an increase in morbidity and disability.

- *The "compression of morbidity" hypothesis* (Fries, 1980, 1989) suggests that disability and ill-health is compressed towards the later period of life at a faster pace than mortality. Therefore, people are expected to live not only longer, but also in better health.

- *The "dynamic equilibrium" hypothesis* (Manton, 1982) suggests counterbalancing effects of two phenomena: decreasing fatality rates of diseases leading to higher life expectancy on the one hand, and increasing prevalence of chronic diseases though with reduced severity and rate of progression, on the other.

Recent empirical evidence has not come to a clear conclusion regarding these hypotheses ([90]). International evidence is mixed ([91]) and, while health may continue to improve, some causes of disability may at the same time become more prominent. For example, higher levels of some disabling conditions (dementia, musculoskeletal diseases) go along with decreasing rates of prevalence of others (cardiovascular and chronic respiratory diseases). Consequently, it remains very difficult to predict the levels of morbidity and therefore potential demand for health services, even in the near future.

Moreover, it has been argued by other authors that better health throughout a lifetime can induce savings overall, because proximity to death is a more important determinant of health expenditure than ageing per se. Indeed, a large share of lifelong expenditures on health occurs at the last year before death and even in the last few weeks before dying. As can be seen in Graph II.2.1 the per capita cost of health care decreases at very old ages.

The reduction in per capita spending at the very old age can be explained by three different phenomena: (1) health care rationing for utilitarian (devoting limited resources to the treatment of younger age cohorts) or professional reasons (less knowledge about the treatment of the elderly); (2) voluntary restraining from receiving health care by older people who find the investment in health will not pay back any more; (3) generation effect which reflects differences in perceived needs, mentality and habits between older and younger generations. However, to achieve savings from living longer - dying at an older age and being healthy for much of a lifetime - the per capita costs of health care at very old ages have to be lower than in childhood, youth or working ages.

([90]) See Heger D. and I.W.K. Kolodziej (2016) "Changes in morbidity over time: Evidence from Europe", Ruhr Economic Papers, No. 640.

([91]) See Chatterji S. et al. (2015) "Health, functioning, and disability in older adults—present status and future implications"; Cutler et al. (2013) "Evidence for Significant Compression of Morbidity in the Elderly U.S. Population" and Salomon et al. (2012) "Healthy life expectancy for 187 countries, 1990—2010: a systematic analysis for the Global Burden Disease Study 2010".

2.2.3. Individual and national income

An important determinant of health care expenditure is income, although at individual level, the presence of insurance reduces this link. A significant relationship between income and health care spending is observable at both individual and national level. At the individual level, spending on health care depends in particular on whether a health care intervention is covered by public or private insurance and to what extent. If an individual is fully covered by health insurance, health care demand is independent of individual income, i.e. the income elasticity on health care spending is zero. However, if a health care intervention is not or only partially covered by insurance, demand will depend on the individual income. All other things equal, increasing health insurance coverage reduces the sensitivity of changes of income on changes on demand.

At the national level, spending in health care tends to grow with countries GDP per capita, although this relationship is also influenced by policy choices. On the one hand, spending must be covered by revenues at an aggregate level. This is why the correlation between health care spending and income is stronger at the national than at the individual level (in the presence of insurance). On the other hand, policy measures to control spending and political priorities to devote less or more resources to different areas of public spending may reduce the link between public expenditure on health care and national income. Therefore, while it is generally agreed that the growth in per capita income brings about an increase in health spending, the strength of this relationship, i.e. the value of the income elasticity of health services demand, is difficult to precisely pin down (as shown in the empirical literature, see below).

A number of empirical studies attempted to estimate the correlation between income and health expenditure. Most of the earlier studies led to the conclusion that health care is an individual necessity and a national luxury good. In other words, health spending is highly inelastic at an individual level, but at the national level its elasticity with respect to income exceeds unity. However, the earlier empirical literature is subject to methodological problems and more recent estimates attempt to overcome these problems by

Box II.2.2: **Income elasticity of health care demand, a short literature survey**

Time-series and cross-country evidence usually suggest income elasticities on health care expenditure above one. However, there is no consensus on a precise estimate of the income elasticity of health care demand. Older, purely cross-sectional studies find higher income elasticities, such as Newhouse (1977) with a point estimate of around 1.35 for 30 OECD countries or Leu (1986) for 19 OECD countries with an estimate of 1.2. Studies based on panel data find in general lower income elasticities around or below one, e.g. Gerdtham et al. (1991) and (1995); Mahieu (2000); Bac et al. (2002); Azizi et al. (2005), or, more recently, Xu at al. (2011); Medeiros and Schwierz (2013); Vargas and Shimoga (2017) and Baltagi et al. (2017). For an overview, see Clements et al. (2012) and Baltagi et al. (2017).

A general critique is that the estimated elasticities are likely to be biased when other relevant factors are not included in the model, i.e. that the increase in health care spending is not determined by income alone but by other factors that happen to be correlated with income. Moreover, the estimates are probably affected by misspecification and endogeneity problems: health – and therefore also health care spending – is likely to affect economic growth. Acemoglu et al. (2013) attempt to overcome these problems and estimate the causal effect of income on health care expenditures. They find an income elasticity of 0.72 with an upper value of 1.13. Finally, cross-sectional studies on individual income show small or even negative elasticities (Newhouse et al. 1993). For an overview, see Getzen (2000) and Baltagi et al. (2017).

estimating the real causal effect of income on demand of health services, better controlling for other factors (Box II.2.2). The general implication, however, remains that as national income or wealth increases, expectations will rise and health spending will rise too, regardless of changes in needs.

2.2.4. Health technology

Health care expenditure has been growing much faster than what is suggested by changes in demographic structure, morbidity and income (see above discussion on income elasticity). Empirical research suggests that health technology has been a major driver of health-care expenditures. Different authors attribute from 27% up to 75% of health expenditure growth in the industrialised countries to technological change (Box II.2.3).

Whether a particular technological development increases or decreases costs depends on its impact on unit cost, its level of use and whether the treatment complements or replaces the existing methods. If technological development leads to a more cost-efficient treatment of previously treated medical conditions, the new technology is likely to replace the old one reducing the unit cost of treatment. This effect is called *the substitution effect*: replacing less by more efficient treatments. If this is also accompanied by no changes in the number of individuals treated, the overall cost is reduced. However, if treatment with the new technology becomes more frequent, expenditure may increase.

If medical innovations allow for treating conditions that were not treated previously, then expenditures may rise. This is called the *expansion or extension mechanism*: extending health care procedures to previously untreated medical conditions for scientific reasons (the methods of treatment were simply unknown) or economic reasons (previous methods of treatment were known, but not affordable). In other words, the supply of new products matches with previously unmet demand. As such, the health sector is similar to other expanding sectors of the economy, e.g. such as those producing ICT-related products.

The currently prevalent view is that technological change is an important driver of health care expenditure. This is despite the measurement problems of technological change on expenditures and health restoring or life-saving effects. It is to be kept in mind that new inventions have been used in areas judged necessary from the societal point of view such as in palliative care, where ethical consideration are of considerable importance.

Box II.2.3: **Excess cost growth in health care expenditures, a short literature survey**

The impact of non-demographic drivers on health care expenditure, sometimes referred to as excess cost growth (Smith et al. 2009), is used in two scenarios in the Ageing Report 2021. The literature on excess cost growth estimates the excess of growth in per capita health expenditures over the growth in per capita GDP after controlling for the effect of demographic change. Thus, whereas the income elasticity (see Box II.2.2) should capture changes in health care expenditure due to changes in income only, excess cost growth estimates may also capture effects due to other factors than income, for instance technological change, health policies, institutional settings and Baumol's cost disease.

The literature generally finds that health care expenditure grow 1-2 % faster than GDP per capita. The IMF (2010), for instance, estimate an excess cost growth of 1.2 % for 27 advanced economies over the period 1980-2008, while Hagist and Kotlikoff (2009) estimate an excess cost growth of about 1.5 % over 1970-2002 for ten OECD countries. See also Medeiros and Schwierz (2013) and OECD (2006). However, the excess cost growth rates vary considerably across countries. IMF (2010), for instance, finds excess cost growth rates in Europe that vary between -0.9 % (the Czech Republic) and 2.4 % (Luxembourg). On average, however, their findings are consistent with the 1.5 elasticity estimate used in this report for the scenario on non-demographic drivers and the AWG risk scenarios.

Innovations in medical technology are generally believed to be the primary driver of health care spending. Recent estimates suggest that medical technology explains 27-48 % of health care spending growth since 1960 (Smith et al. 2009). Willemé and Dumont (2015) estimated the contribution of medical technology on past growth of health expenditure for 18 OECD countries over 1980-2009 to be 37 % on average, ranging from 19 % in Ireland to 56 % in Italy. Earlier studies found that technology explained a somewhat larger fraction of the increase, 50-75 % (see Newhouse (1992); Cutler (1995); Okunade and Murthy (2002); and Oliveira Martins and de la Maisonneuve (2005)).

2.2.5. Legal and institutional setting

On the top of the above factors, public expenditure on health care is strongly influenced by the legal setting and institutional arrangements according to which health care is provided and financed. These factors play an important role in delineating provision and use of health care services and therefore health care costs. Institutional settings may or not limit the introduction, coverage and use of services and new technology through the set of incentives patients and providers face. Legal provisions, such as strict spending constraints defined by public authorities may curb the provision and use of health care services.

A number of such variables have been tested in the literature for assessing their impact on health expenditure. These include the role of general practitioners (GPs) as an independent entity and gatekeeper ([92]), the type of remuneration of physicians ([93]) or the type of system financing. Despite such studies, it is not feasible to draw unequivocal conclusions.

2.2.6. Human and physical capital

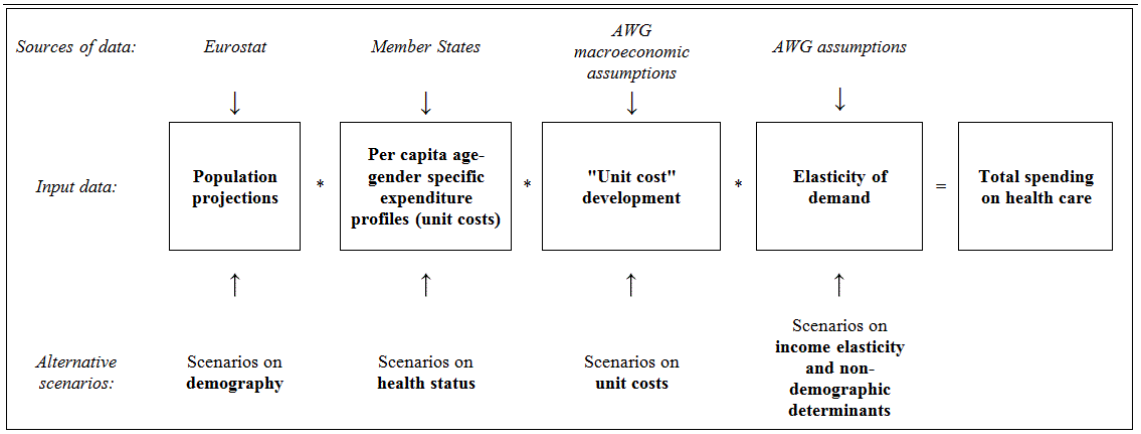
The health care sector is highly labour-intensive, more so than many other sectors of society. Health professionals are vital to the provision of health services and goods. As a result, changes associated with the health workforce have an impact on provision and therefore expenditure. For example, the ageing of the workforce could have an impact on expenditure through reducing staff numbers and increasing wages for example. On the other hand, an over-supply of physicians may induce an over-supply of health care services.

In addition, human and physical capital resources devoted to the health care sector are determined by policy decisions (e.g. quantitative

([92]) For systematic literature reviews of GPs' gatekeeping effects see Garrido V. et al. (2011) and Shripa P. et al. (2019).

([93]) For a systemtic literature review of effective health care cost-containment policies see Stadhouders N. et al. (2018). For a structured literature review of effects of provider payment systems on health expenditure growth see Feldhaus I. et al. (2018).

Graph II.2.2: **Schematic presentation of the projection methodology**



Source: Commission services, EPC.

limits and qualitative requirements on the access to medical schools or professional certificates, decisions on the location of facilities, eHealth and digitalisation, legal regulations on the density of health care staff per capita, etc.). A number of studies have attempted to find statistical correlation between the size of medical staff and health expenditure ([94]), but the results are not conclusive.

2.3. SHORT OVERVIEW OF THE PROJECTION METHODOLOGY

2.3.1. Model

On the basis of the description just presented, a series of scenarios are run, allowing to capture the impact of the different determinants of public spending on health care. The impact of each determinant is calculated separately on the basis of hypothetical assumptions (a "what if" situation). This indicates how each determinant may contribute to the evolution of public health care over the next 50 years. This analysis may help inform future policy decisions, which notably aim at improving the fiscal sustainability of health care spending.

The complexity of health care markets makes expenditure projections a challenging task ([95]).The projections presented in this report are bound with uncertainty, which is inherent to any long-term projection exercise ([96]).

All scenarios, including the AWG reference scenario that is used for EU fiscal surveillance, are based on a "no-policy change" assumption, i.e. reflecting only already enacted legislation. Future levels of public health care spending are modelled to a large extent exogenously. Future health policy reforms and behavioural changes by individuals are not taken into account. In many scenarios, the adjustments observed relate solely to health care provision adjusting automatically to the needs that result from changes in population structure, health status and changes in income. As such, most scenarios should be considered as "no-policy change" scenarios.

([94]) For literature overview on supplier-induced demand studies see Léonard C. et al. (2009) and Van Dijk C. et al. (2013).

([95]) Health care markets may suffer from adverse selection (higher health risks have difficulty in obtaining affordable coverage), moral hazard (insured people have an incentive to over consume health care services as they do not bear the full cost) and asymmetric information (physicians have more information than patients, which could lead to supply-induced demand and economic rents, depending on the type of remuneration of physicians: capitation, fee-for-service, pay-for-performance). These market failures are the economic rationale for public sector involvement (financing and regulations) in health care markets based on efficiency and equity considerations.

([96]) Uncertainty relates to three factors. First, public expenditure on health care is determined by an interrelated play of numerous demand and supply-related factors, often not fully observed or quantifiable. Second, ad-hoc policy reforms may change their relevance and impact upon future health care spending. Third, the long-term horizon of the projections increases the uncertainty of the results.

Box II.2.4: **Internationally comparable data on total public health care expenditure**

In the 2021 Ageing Report, the age-gender cost profiles provided by Member States are applied to the population structure and are then adjusted to add up to the total public expenditure on health care in the specific year of reference. There are three possible data sets on public health care expenditure based on internationally comparable statistical classifications: the System of Health Accounts (SHA); the European System of Integrated Social Protection Statistics (ESSPROS); and the Classification of the Functions of the Government (COFOG). The decision of the EPC-AWG on which data to use for calculating the total public health expenditure is guided by two fundamental principles: (1) the data needed for running long-term budgetary projections for public expenditure on health care has to be as comparable as possible across the 27 EU Member States plus Norway, and (2) it has to allow for the best separation between expenditure on health care ([1]) and long-term nursing care (LTC (health)) ([2]). The latter together with public spending on LTC (social) is used for the expenditure projections on long-term care (see Chapter 3, Part II).

The issue of delineating public expenditure on "acute" health care and public expenditure on LTC (health) is one of the main difficulties faced by the various expenditure classification systems. Another important aspect is the availability of data on gross capital formation ([3]), which next to the current health expenditure on health care consumed by patients in a given year is considered essential for capturing the total amount of ageing-related expenditure and therefore its actual fiscal impact.

As shown in Table 1, the aggregate figures on current public expenditure on health care (CHE) and total public expenditure on health care (THE) as percentage of GDP differ considerably across the three international expenditure classification systems. The variation between the SHA and COFOG aggregate figures in 2018 ranges from -1.8 pps of GDP for Lithuania to 3.5 pps of GDP for Sweden; between SHA and ESSPROS aggregates from -0.5 pps of GDP for UK to 3.5 pps of GDP for Sweden; and between COFOG and ESSPROS public expenditure on health care from -1.2 pps of GDP for Germany to 2.8 pps of GDP for Czechia. The main reasons for these variations can be found in the different underlying definitions on health care used by the respective classification systems, as explained in more detail below; in the particular way the common methodologies are applied by the countries depending on their national data sources and, lastly, in the availability of capital formation data.

The System of Health Accounts (SHA) defines internationally harmonised boundaries of health care for tracking expenditure on consumption, provision and financing of health care services ([4]). On the basis of the SHA methodology, current public expenditure on health is defined as spending on the core functions of health care (HC.1-HC.9). SHA data allows for calculating public expenditure on health care in a clear and structured way. It gives the possibility to remove from the aggregate public expenditure on health care the expenditure on LTC (health) corresponding to SHA category HC.3. Additionally, total spending on health also includes gross fixed capital formation in health (classified as memorandum item HK.1). However,

([1]) According to the international and functional classification of health care (ICHA-HC) used by SHA, health care in broad terms include "all activities with the primary purpose of improving, maintaining and preventing the deterioration of the health status of persons and mitigating the consequences of ill-health, through the application of qualified health knowledge (medical, paramedical, and nursing knowledge including technology, and traditional, complementary and alternative medicine".

([2]) The term "LTC services" according to SHA refers to the organisation and delivery of a broad range of services and assistance to people who are limited in their ability to function independently on a daily basis over an extended period of time. The services may be provided in a variety of settings including institutional, residential – i.e. in supported living arrangements, other than nursing homes – or home care. LTC comprises a mix of both health and social components pertaining to both health care and social care sectors.

([3]) Gross fixed capital formation in the health sector is measured by the total value of the fixed assets that health providers have acquired during the accounting period (less the value of the disposals of assets) and that are used repeatedly or continuously for more than one year in the production of health services. The breakdown by assets includes infrastructure (e.g. hospitals, clinics, etc.), machinery and equipment (including diagnostic and surgical machinery, ambulances, and ICT equipment), as well as software and databases.

([4]) SHA 2011 manual (2011).

(Continued on the next page)

Box (continued)

public capital formation data is provided as an aggregate of public and private capital formation only and is available for a limited number of EU Member States.

Table 1 Public expenditure on health care as a % of GDP from available data sources, 2018

	SHA 2011 [a]					COFOG [b]			ESSPROS [c]				
	"Ageing Report" HC CHE * without LTC (health)	LTC (health)	CHE *	Capital Formation (4-year avg.)	THE ** (1)	CHE * without R&D	Capital Formation without R&D (4-year avg.)	THE ** without R&D (2)	CHE * (3)	Diff. (1) - (2)	Diff. (1) - (3)	Diff. (2) - (3)	
BE	5.7	2.1	7.8	:	**7.8**	7.6	0.0	**7.6**	**6.6**	0.2	1.2	1.0	**BE**
BG	4.3	0.0	4.3	:	**4.3**	5.0	0.3	**5.3**	**4.8**	-1.0	-0.5	0.5	**BG**
CZ	5.3	1.1	6.4	0.1	**6.5**	7.5	0.4	**7.9**	**5.1**	-1.4	1.4	2.8	**CZ**
DK	6.2	2.3	8.5	0.6	**9.1**	8.1	0.5	**8.6**	**6.3**	0.5	2.8	2.3	**DK**
DE* **	7.4	1.5	8.9	:	**8.9**	7.1	0.0	**7.1**	**8.3**	1.7	0.6	-1.2	**DE*** **
EE	4.6	0.3	4.9	0.4	**5.3**	5.0	0.3	**5.3**	**4.0**	0.0	1.3	1.3	**EE**
IE	3.9	1.3	5.1	0.4	**5.5**	5.0	0.2	**5.2**	**4.5**	0.3	1.0	0.7	**IE**
EL	4.4	0.2	4.5	0.2	**4.7**	5.0	0.1	**5.1**	**4.5**	-0.4	0.2	0.6	**EL**
ES	5.6	0.7	6.3	:	**6.3**	5.8	0.1	**5.9**	**5.5**	0.4	0.8	0.4	**ES**
FR	8.1	1.3	9.4	0.6	**10.0**	8.0	0.3	**8.3**	**8.3**	1.7	1.7	0.0	**FR**
HR	5.5	0.2	5.7	:	**5.7**	6.6	0.3	**6.9**	**6.0**	-1.3	-0.3	0.9	**HR**
IT	5.7	0.7	6.4	:	**6.4**	6.7	0.2	**6.9**	**6.2**	-0.5	0.2	0.7	**IT**
CY	2.8	0.2	2.9	:	**2.9**	2.7	0.1	**2.8**	**3.0**	0.1	-0.1	-0.2	**CY**
LV	3.5	0.3	3.7	0.4	**4.1**	4.0	0.3	**4.3**	**3.2**	-0.2	0.9	1.1	**LV**
LT	3.9	0.5	4.4	:	**4.4**	5.9	0.3	**6.2**	**4.1**	-1.8	0.3	2.1	**LT**
LU	3.6	0.9	4.4	0.4	**4.9**	4.5	0.0	**4.5**	**4.4**	0.4	0.5	0.1	**LU**
HU	4.4	0.2	4.7	0.1	**4.8**	4.7	0.3	**5.0**	**4.6**	-0.2	0.2	0.4	**HU**
MT	4.6	1.1	5.7	:	**5.7**	5.3	0.4	**5.7**	**4.3**	0.0	1.4	1.4	**MT**
NL	5.7	2.5	8.2	:	**8.2**	7.2	0.0	**7.2**	**7.4**	1.0	0.8	-0.2	**NL**
AT	6.6	1.1	7.7	0.7	**8.4**	7.7	0.4	**8.1**	**6.1**	0.4	2.3	2.0	**AT**
PL	4.2	0.4	4.5	0.5	**5.0**	4.7	0.2	**4.9**	**3.2**	0.1	1.8	1.7	**PL**
PT	5.6	0.3	5.8	:	**5.8**	6.1	0.1	**6.2**	**4.6**	-0.4	1.2	1.6	**PT**
RO	4.1	0.3	4.4	:	**4.4**	4.7	0.2	**4.9**	**3.9**	-0.4	0.5	1.0	**RO**
SI	5.3	0.8	6.0	0.4	**6.4**	6.5	0.3	**6.8**	**6.0**	-0.4	0.4	0.8	**SI**
SK	5.3	0.0	5.4	0.4	**5.7**	7.3	0.2	**7.5**	**5.1**	-1.8	0.6	2.4	**SK**
FI	5.7	1.3	7.0	0.4	**7.4**	6.9	0.5	**7.4**	**6.0**	0.0	1.4	1.4	**FI**
SE	6.6	2.7	9.3	0.6	**9.8**	6.8	0.4	**7.2**	**6.3**	2.6	3.5	0.9	**SE**
NO	5.9	2.7	8.6	0.5	**9.0**	7.8	0.4	**8.2**	**6.0**	0.8	3.0	2.2	**NO**

Notes: * Current health expenditure (CHE); ** Total health expenditure (THE); (a) Public expenditure on health care according to the core SHA health care functions HC.1-HC.9 plus the memorandum item on gross capital formation HK.1. (b) COFOG public expenditure on health care calculated in a way similar to the SHA definition by summing all categories of COFOG within the "Health" function except for R&D in health which is not considered in the core SHA functions and ESSPROS. (c) ESSPROS data used to calculate a proxy for public expenditure on health care on the basis of tentative ESSPROS correspondence tables with the SHA classification (ESSPROS manual, 2016) includes data for the "Inpatient" and "Outpatient" categories within the "Sickness/Health care" function, the category "Other benefits in kind" under the "Family/children" function and the category "Rehabilitation of alcohol and drug abusers" under the "Social exclusion" function. (d) In the 2018 Ageing Report total public expenditure on health care is calculated with SHA and COFOG data. SHA data is used for the current public expenditure on health care, computed as the sum of all "core" health care SHA expenditure functions HC.1 to HC.9, excluding HC.3 defined as "LTC (health). COFOG data is used for the last four-year average value on capital formation in health based on the "Health" function but excluding the "R&D" category. (d) The SHA figures for DE include government and social health insurance schemes, but exclude compulsory private health insurance schemes.*** SHA data for DE covers governmental and social health insurances expenditure excluding spending of compulsory private health insurances.
Source: Eurostat database, OECD Health Data.

Another expenditure classification system reporting public spending on health is the system of national accounts organised according to **the classification of the Functions of the Government (COFOG)**. ([5]) COFOG disaggregates the general government spending into functions of government including health and social protection. Each of the functions can then be disaggregated, including by current expenditure and by gross capital formation ([6]). Of particular interest for the Ageing Report is the availability of public gross capital formation data for health care, disaggregated by function, which allows calculating gross capital formation for the relevant health care functions. A short-coming is that COFOG expenditure classification

([5]) Eurostat COFOG manual (2011b).
([6]) For definitions, see "Classification of the functions of government" (COFOG), United Nations (1999).

(Continued on the next page)

Box (continued)

system does not aim at classifying health expenditure in detail and therefore a clear-cut separation between "core" health care and LTC (health) expenditure is not possible. Public spending on health care calculated on the basis of COFOG deviates from the corresponding SHA aggregate, because of the scope of services covered and because it includes transactions for non-consumption purposes as capital formation, and outlays for non-residents.

The European System of Integrated Social Protection Statistics (ESSPROS) classifies spending from the perspective of social protection schemes and benefits ([7]). ESSPROS data can be used to calculate a proxy for public expenditure on health care, by combining expenditure categories across several functions. However, there are some important limitations with ESSPROS data. A first limitation is that contrary to the SHA classification system, ESSPROS primary aim is not to classify health expenditure in detail. Therefore, the delimitation of health care and LTC (health) is not as unambiguous as in the case of the SHA classification system. Using ESSPROS data for public expenditure on health may also lead to double counting if public expenditure on LTC is computed using data other than ESSPROS data. Moreover, health promotion and community health programmes are not necessarily included in ESSPROS, while they are part of the SHA health care expenditure categories and core functions. Furthermore, ESSPROS data refers to various types of schemes which are not only government expenditure. Finally, ESSPROS does not include data on capital formation.

In conclusion, the only methodology that allows for a good delimitation between current health care and LTC health public expenditure is SHA, while COFOG data is the best source for public expenditure on gross capital formation in health. Therefore, in order to calculate total public expenditure on health care for the long-term budgetary projections in the 2021 Ageing Report, the EPC-AWG agreed to use: (1) SHA data for the current public expenditure on health care, computed as the sum of all "core" health care SHA expenditure functions HC.1 to HC.9, excluding HC.3 defined as "LTC (health); and (2) COFOG data on capital formation in health, based on the "Health" function but excluding the "R&D" category to make it comparable to the definition on gross capital formation followed in SHA. In order to smooth the volatility inherent to capital formation, the average value for the last four years is used. SHA and COFOG data are available for all EU Member States and Norway and are reported by Eurostat and OECD.

([7]) Eurostat ESSPROS manual and user guidelines (2016).

The basic setup of the model used to project future expenditure on health care is a standard macro-simulation model, whereby the overall population is disaggregated into a number of groups having a common set of features, such as age and sex. As the number of individuals in each group changes over time, so do the aggregate values of the endogenous variables. The schematic methodology to project health care expenditure is presented in Graph II.2.2. The common elements of all projection scenarios are the labour force and macroeconomic assumptions agreed by the Commission services (DG ECFIN) and the EPC-AWG, and the 2019-based population projections provided by Eurostat.

The age and gender-specific per capita public expenditure (on health care) profiles are provided by Member States. They are combined with the demographic projections provided by Eurostat in order to calculate nominal spending on health care. In a further step, the age-gender cost profiles applied to the population structure are adjusted to add up to the total public expenditure on health care ([97]) in the specific year of reference (Box II.2.4). The adjustments reflecting the effects of different factors on health care spending are applied by correspondingly changing one of three main inputs: (1) the demographic/population projections, (2) the age-related expenditure profiles

([97]) Public expenditure on health in this publication (with the exception of table 1 on Box II.2.1, which includes SHA category HC.3) is defined as the "core" health care categories (SHA categories HC.1 to HC.9), excluding long-term nursing care category (HC.3), but including capital investment in health (COFOG gross capital formation for GF07 excluding GF0705). The data and methodology for running the long-term expenditure projections is explained in detail in the "2021 Ageing Report - Underlying assumptions and projection methodologies": https://ec.europa.eu/info/sites/info/files/economy-finance/ip142_en.pdf.

(capturing unit costs) and (3) assumptions regarding the development of unit costs over time, as driven by the macroeconomic variables, assumptions on the evolution of the population's health status or assumptions on the elasticity of demand.

2.3.2. Scenarios

Different scenarios simulate changes in the main underlying drivers of health care spending. In particular, these concern demographic drivers (changes in the demographic structure and life expectancy), health status of the population, the importance of health care costs in the last years of life (death-related costs), an income elasticity of demand for health care higher than one in some of the scenarios (but always converging to 1 at the end of the projection period), different patterns of unit cost evolution and the cost-convergence of age profiles across the EU Member States, notably capturing the influence of health technological factors. The ideas behind the different scenarios are presented in Table II.2.1 ([98]).

Compared to the 2018 Ageing Report, there are no major methodological changes in the scenarios. Yet, a slight increase of non-demographic indexation from 1.4 to 1.5 applicable to the “non-demographic scenario” and the “AWG risk scenario” is assumed. Additionally, the country-specific 10-year average growth rates in the “sector-specific indexation scenario” are calculated on the basis of GDP growth rates instead of GDP per capita growth rates. All scenarios are described in more detail below:

I. The *"demographic scenario"* attempts to isolate the ‘pure’ effect of an ageing population on health care spending. It assumes that age-specific morbidity rates do not change over time. This implies that age-related public health care spending per capita, considered as the proxy for morbidity rate ([99]), remains constant in real terms over the projection period. As the health status is fixed but accompanied by a gradual increase in life expectancy (Eurostat 2019-based population projections), all gains in life expectancy are assumed to be spent in bad health. As such, this scenario reflects the *expansion of morbidity* hypothesis explained above. It is further assumed that the costs, and therefore expenditure per capita, evolve in line with GDP per capita. This implies that without a change in the age structure of the population and in life expectancy, the share of health care spending in GDP would remain constant over the projection period.

II. The *"high life expectancy scenario"* is a variant to the "demographic scenario". It tries to measure the impact of an alternative assumption on mortality rates. It assumes, as in the sensitivity tests used for pension projections, that life expectancy at birth in 2070 is higher, by two years, than the projected life expectancy used in the "demographic scenario". In comparison to the "demographic scenario", alternative demographic and macroeconomic data are used as a different demographic structure impacts on several variables including GDP ([100]).

III. The *"healthy ageing scenario"* (referred to in previous Ageing Reports as the *"constant health scenario"*) is based on the *compression of morbidity* hypothesis and captures the potential impact of improvements in the health status, should this occur in parallel with projected declines in mortality rates. It assumes that the number of years spent in bad health remains constant over the whole projection period, i.e. all future gains in life expectancy are spent in good health. To generate a fall in morbidity rate in line with the decline in the mortality rate, this scenario is modelled by assuming that per capita age profiles observed in the base year are shifted outwards, in direct proportion to the projected gains in age and gender-specific life expectancy ([101]).

([98]) A detailed account of the projection methods is given in EC– EPC (2020), "The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies": https://ec.europa.eu/info/sites/info/files/economy-finance/ip142_en.pdf.

([99]) Strictly speaking, age-expenditure profiles are not a measure of health status or morbidity. However, given the lack of a reliable and comparable data on the latter, it is plausible to assume that the shape of the profiles follows the evolution of health status over the lifespan.

([100]) Since GDP data also captures the impact of changes in life expectancy through their impact on labour forces.

([101]) The method is applied to those age-gender groups where expenditure per capita is growing. For the young and the oldest old, the age-gender per capita public expenditure profile remains the same over the whole projection period.

IV. The *"death-related costs scenario"* employs an alternative method to project health care spending, taking into account a probable postponement in health care spending resulting from the evolution of mortality rates. There is empirical evidence that a large share of total spending on health care during a person's life is concentrated in its final years (Palangkaraya and Yong, 2009) ([102]). Therefore, as mortality rates at relatively younger age decline and a smaller share of each age cohort is in its terminal phase of life, the health care expenditure calculated using constant expenditure profiles may be overestimated. To run this scenario, profiles of death-related costs by age have been supplied by some Member States, where unit costs are differentiated between decedents and survivors ([103]). The cost profiles change over the projection period, taking into account that the ratio of the health costs of decedents and those of survivors is linked to life expectancy rather than to age per se.

V. The *"income elasticity scenario"* shows the effect of income elasticity of demand exceeding unity on the evolution of public spending on health care. The impact of income growth on health care expenditure may incorporate the effects of a number of factors: higher living standards, growing expectations and social pressure to catch-up with the quality and coverage of health care provided to the populations in the neighbouring countries and possibly the development of medical knowledge and technologies. In practical terms, the scenario is identical to the "demographic scenario" except that the income elasticity of demand is equal to 1.1 in the base year and converges linearly to 1 by the end of projection horizon in 2070.

VI. The "*EU cost convergence scenario*" is meant to capture the possible effect of a convergence in real living standards (which emerges from the macroeconomic assumptions) on health care spending. The "cost convergence scenario" considers the convergence of all EU countries that are below the EU average, by comparing the age-gender specific per capita public expenditure relative to GDP per capita (i.e. age-gender specific per capita public expenditure as a share of GDP per capita) to the age-gender specific EU relative average. This means that the country-specific age-gender per capita public expenditure profiles as a share of GDP per capita which are below the corresponding EU profiles in the base year (i.e. 2019) are assumed to increase to the EU relative average profile up to 2070. The convergence speeds for all the countries below the EU age-gender relative averages differ, as they take into account the differences in the initial situation, i.e. the extent of the initial gap between country-specific and EU relative average profile.

VII. The *"labour intensity scenario"* is an attempt to estimate the evolution in health care expenditure under the assumption that unit costs are driven by changes in labour productivity, rather than growth in the national income, as health care is a highly labour-intensive sector. This assumption implies as well that, contrary to the "demographic scenario", the cost of public provision of health care is supply- rather than demand-driven. This scenario is similar to the "demographic scenario" except that costs are assumed to evolve in line with the evolution of GDP per worker instead of GDP per capita. As wages are projected to grow in line with productivity (generally faster than GDP per capita), this scenario provides an insight into the effects of unit costs in the health care sector being driven mostly by increases in wages and salaries.

([102]) The authors find that population ageing does not add anything to growth in health expenditure once proximity to death is accounted for. As a consequence, the effects of ageing on health expenditure growth might be estimated as too high, whilst the high costs of medical care at the end of life are probably underestimated.

([103]) Data was provided by 17 Member States: Belgium, Bulgaria, Czech Republic, Denmark, Germany, Spain, France, Italy, Latvia, Hungary, the Netherlands, Austria, Poland, Slovenia, Slovakia, Finland, and Sweden. For countries that did not provide this data, no projections for this scenario were done.

Table II.2.1: **Overview of the scenarios used to project health care spending**

	Demographic scenario	**High life expectancy scenario**	**Healthy ageing scenario**	**Death-related costs scenario**	**Income elasticity scenario**	**EU27 cost convergence scenario**	**Labour intensity scenario**	**Sector-specific composite indexation scenario**	**Non-demographic determinants scenario**	**AWG reference scenario**	**AWG risk scenario**	**TFP risk growth scenario**
	I	II	III	IV	V	VI	VII	VIII	IX	**X**	XI	XII
Population projection	Eurostat 2019-based population projections	Alternative higher life expectancy scenario (+2 years)	Eurostat 2019-based population projections	Eurostat 2019-based population projections	Eurostat 2019-based population projections	Eurostat 2019-based population projections	Eurostat 2019-based population projections	Eurostat 2019-based population projections	Eurostat 2019-based population projections	**Eurostat 2019-based population projections**	Eurostat 2019-based population projections	Eurostat 2019-based population projections
Age-related expenditure profiles	2019 profiles held constant over the projection period	2019 profiles held constant over the projection period	2019 profiles shift in line with changes in age-specific life expectancy	2019 profiles split into profiles of decedents and survivors and adjust in line with changes in age-specific life expectancy	2019 profiles held constant over the projection period	Individual country profiles converging upwards to the EU27 average profile over the projection period	2019 profiles held constant over the projection period	2019 profiles held constant over the projection period	2019 profiles held constant over the projection period	**Intermediate scenarios I and III whereby 2019 profiles shift by half the change in age-specific life expectacy**	Intermediate scenarios I and III whereby 2019 profiles shift by half the change in age-specific life expectacy	Intermediate scenarios I and III whereby 2019 profiles shift by half the change in age-specific life expectacy
Unit cost development	GDP per capita	GDP per capita	GDP per capita	GDP per capita	GDP per capita	GDP per capita	GDP per hours worked	Input-specific indexation	GDP per capita	**GDP per capita**	GDP per capita	GDP per capita
Elasticity of demand	1	1	1	1	Cost sensitivity of 1.1 in 2019 converging to 1 by 2070	1	1	1	Cost sensitivity of 1.5 in 2019 converging to 1 by 2070	**Cost sensitivity of 1.1 in 2019 converging to 1 by 2070**	Cost sensitivity of 1.5 in 2019 converging to 1 by 2070	Cost sensitivity of 1.1 in 2019 converging to 1 by 2070

Source: Commission services, EPC.

VIII. The *"sector-specific composite indexation scenario"* aims at capturing the relative importance and different past trends of most relevant health care expenditure items: hospital care, outpatient care, pharmaceuticals and therapeutic appliances, preventive health care services, governance and administration cost, and capital investment. Given the special character of the health care sector (high level of government regulation, investment in new technologies, high labour intensity), considering health care sector-specific rather than economy-wide determinants of unit costs is particularly informative. In this scenario, the growth rate of each item is estimated separately, based on past trends, thus creating a sort of composite indexation for "unit cost development" ([104]). As such, their relative contribution to future changes in health care spending can be traced over time.

IX. The *"non-demographic determinants scenario"* is an attempt to estimate the impact of non-demographic drivers on health care expenditure, i.e. income, technology, institutional settings. It is also referred to as *excess cost growth* (Smith, et al. 2009). Ignoring the effect of non-demographic determinants ([105]) on health care expenditure would imply making the assumption that past trends of health care expenditure related to these drivers will disappear in the future. This scenario is similar to the "income elasticity scenario" with the two exceptions being that the elasticity of demand is set equal to 1.5 in the base year (rather than 1.1 in the case of the "income elasticity scenario") and that its convergence to 1 by the end of projection horizon in 2070 follows a non-linear path ([106]) .

X. The *"AWG reference scenario"* is used as the baseline scenario when calculating the overall budgetary impact of ageing. It is the scenario used for EU fiscal surveillance, and this is why it is the point of reference for comparisons with the 2018 Ageing Report. In this scenario health care expenditures are driven by the assumption that half of the future gains in life expectancy are spent in good health and an income elasticity of health care spending is converging linearly from 1.1 in 2019 to unity in 2070.

XI. The "*AWG risk scenario*", as the "AWG reference scenario", keeps the assumption that half of the future gains in life expectancy are spent in good health but attempts to take into account technological changes and institutional mechanisms which have stimulated expenditure growth in recent decades, following an approach similar to the "non-demographic determinants scenario". A proxy for the non-demographic costs with estimated EU average elasticity of 1.5, based on Commission research ([107]) and endorsed by the Ageing Working Group, is used in 2019, which then converges linearly to 1 until the end of the projection period.

XII. The *"Total factor productivity risk scenario"* explores the risk that Total Factor Productivity (TFP) growth may decline in the future below the assumptions of the "AWG reference scenario". This is plausible in light of the trend decline of TFP growth performance over the last decades. This scenario assumes that TFP converges to a growth rate of 0.8 % by 2045 (vs. 1.0 % for the baseline scenario). In both cases, allowance for higher TFP growth for countries with below average GDP per capita is factored in for a period of time, as in previous projection exercises, to reflect the potential that these countries have for a catching-up with the rest.

2.3.3. Country-specific policy reforms

In the past years, many countries have undertaken policy reforms in health care, which are reflected in the projection for some countries. The fiscal impact of some of those reforms is not easy to estimate. However, seven countries estimated the potential budgetary effects on health care spending triggered by some of their

([104]) The relative growth rates were calculated on the basis of COFOG data for the past 10 years and GDP growth rates. Note that in previous Ageing Reports GDP per capita growth rates were used instead. For more information on the sector-specific composite indexation calculation method see Annex III.

([105]) In practice, the effect of demographic changes – captured using the above mentioned econometric analysis – is subtracted from the total increase in expenditure and the remaining part (i.e. the residual) is attributed to the impact of non-demographic determinants.

([106]) The elasticity of demand for excess cost growth was set to 1.4 in the 2018 Ageing Report, both in the "non-demographic" and "AWG risk" scenarios.

([107]) Medeiros J. and Schwierz C. (2013), "Estimating the drivers and projecting long-term public health expenditure in the European Union: Baumol's 'cost disease' revisited", European Economy, Economic Papers No 507.

legislated health care reforms. In all cases, the impact of reforms was modelled as a percentage change of health care expenditure relative to the base year of projections, upon agreement with the respective Member States. Where possible, the impact of these reforms on expenditure has been distinguished between the different health system sub-sectors, namely: hospitals, outpatient care, pharmaceuticals and therapeutic appliances, preventive care, governance and administration, and capital formation. Countries such as Italy and Belgium have legislated a ceiling on health expenditure and/or its future growth. Wage adjustments have been legislated in France, Latvia, Poland, Slovakia, and Slovenia. Reforms to improve the overall accessibility of health care services were legislated in Latvia, Poland, and Slovenia (Table II.2.2).

Table II.2.2: **Health care reforms with direct budget impact taken into account in the projections**

Country	Policy reform (timeline)
Belgium	Growth ceiling on health care expenditure according to growth norm of public health expenditure (2022-2024)
Italy	Budgeted containment in health expenditure (2019-2023)
France	Wage adjustments of health personnel (2020-2022)
Latvia	Reforms to improve the overall accessibility of health care services and wage increases of health care personnel (2020-2021)
Poland	Wage adjustments of health personnel and overall improvement of accessibility of health care services with direct budgetary impact (2019-2023)
Slovakia	Wage adjustments of health personnel (2019-2023)
Slovenia	Wage adjustments of health personnel (2019-2021); improved access to (2019-2021) and efficiency measures in (2019-2020) medical goods; capital investments (2019-2021)

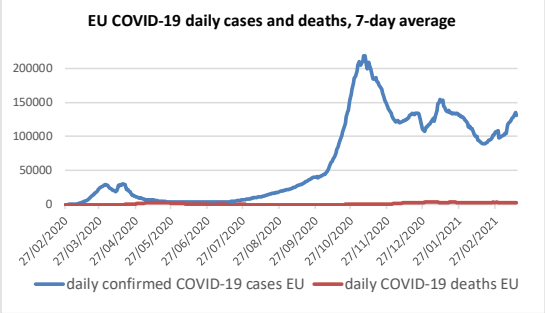
Source: Commission services, EPC.

2.3.4. COVID-19 related health care public expenditure

The emergence of the COVID-19 pandemic in early 2020 put unprecedented pressure on the health systems in the EU. They had to be urgently reorganised in order to cope with an increased demand for care, in particular in terms of hospital care, diagnostics and prevention. In the absence of effective cure and vaccines up until the end of 2020, health systems in the EU have worked last year at their limits, both in terms of physical infrastructure and health workforce. Preventive, curative and rehabilitative care will remain in higher than usual demand also in 2021, at least until large proportions of the population are vaccinated. Additionally, health systems will face increased demand for services that were postponed during the COVID-19 pandemic.

The initial wave of the COVID-19 pandemic crisis affected EU Member States to a different degree. While all Member States introduced confinement measures and reorganised their hospital care to better deal with increasing number of COVID-19 patients, some Member States like IT, ES and FR had to make use of field facilities to cope with the overwhelming demand on their health systems.

Graph II.2.3: **EU COVID-19 daily confirmed cases and deaths**



(1) The daily COVID-19 confirmed cases and deaths are displayed as 7-day average.
Source: ECDC and Johns Hopkings University CSSE.

In late 2020, the COVID-19 crisis hit severely all EU Member States, and the second wave threatened to overwhelm the health care systems of the majority of EU Member States (Graph II.2.3). Even after the initiation of mass administration of effective and safe vaccines in Europe by the very end of 2020, the pandemic is far from being over. New more transmissible variants of the SARs-COV-2 virus are on the rise in the EU. It is therefore highly likely that health systems in the EU will remain under strong pressure in the first half of 2021.

Box II.2.5: **Impact of the COVID-19 pandemic on public spending on health care**

The Ageing Report 2021 health care projections were conducted in the mids of the first year of the COVID-19 crisis. Though it can be expected that most of the additional public spending required to address this unprecedented in recent years health care challenge will be of temporary nature, an attempt was made to at least capture the COVID-19 related expenditure in the estimates for the years 2020, 2021 and 2022 and if indicated by countries also some of the long-term effects on spending (mostly a permanent increase in salaries of the health care workforce).

An overview of the data on COVID-19 related public health care spending as provided by EU Member States and Norway for the 2021 Ageing Report projections is presented in Table 1 below. In total, 16 countries provided data on COVID-19 spending. The reporting periods ranged 6 months (SE) reflecting actual costs until the data collection in September 2020, to five years (FR) including also spending forecasts. Unsurprisingly, the highest spending amounts were related to hospital care (54%), followed by medical goods (23%) and outpatient care (15%). It should be noted, however, that at the current juncture, a comprehensive reporting and breakdown on the shares of the main spending categories to tackling COVID-19 is not possible, especially as this is an evolving crisis.

Table 1 COVID-19 related public expenditure on health care used in the 2021 Ageing Report projections

Country	Total COVID-19 spending provided by countries for the AR21 (in million euro)	Period	COVID-19 spending breakdown by category						Main COVID-19 related spending items as indicated by the country
			Hospital care	Outpatient care	Medical goods	Preventive care	Governance	Capital formation	
BE	1254	2020-2021	1254						Additional financing for hospitals
BG	129	2020-2022	125		5				PPE, medical equipment, salary bonuses
CZ	3	2020-2021	3						Increase in salaries and state payments to health insurance funds
EL	884	2020	248		166	51	307	113	Health workforce, PPEs, medicines and medical equipment
FR	25450	2020-2025	14140	3680	6800	120	710		Increase in salaries and spending on medical goods
HR	19	2020		18		1			PPE and testing
IT	10490	2020-2023	6265	2004	2220				Hospitals, testing
LV	160	2020-2021	2	9	13		1	136	ICUs and emergency care
LU	288	2020-2022	138	44	5	101			Salary bonuses in hospitals and testing
HU	1791	2020	67			1661	19	44	PPE, testing, ventilators, lab equipment
MT	71	2020	13	9	47			1	Medical supplies
PT	322	2020	35		156	1	37	93	PPE and ventilators
RO	105	2020	105						Salary bonuses in hospitals
SI	147	2020-2021	110	32			1	5	Salary bonuses
SK	177	2020-2021	7	5	121		39	5	Vaccines
SE	672	until Sept 2020		660			12		Testing

Notes: Data for LT, IE, FI, ES, EE, DK, DE, AT, and NO was not provided. PL provided data on COVID-19 spending covered by EU Funds without specifying the national contribution and was therefore not included in the projections.

Source: Commission services, EPC.

The immediate health systems' response to the COVID-19 pandemic was to reorganise hospital care, to free up cure and intensive care beds by postponing elective surgical procedures and to secure the safety of non-COVID-19 patients in need of hospital care. Furthermore, additional hospital and intensive care beds, ventilators, laboratory equipment and testing materials were purchased. More medical personnel was mobilised and hired (longer shifts, medical students, retired doctors and nurses).

Beyond the costs of responding to the immediate challenge of containing the spread of the SARS-Cov-2 virus, additional costs to the health care system occurred and are even expected to grow. Hospitals in many countries have already accumulated a substantial amount of losses (foregone revenues, due to the postponement of elective surgical procedures and reserved though not always used capacities for COVID-19 patients). As a number of these surgical procedures will have to be carried out as soon as the situation allows it, the pressure on the health systems will remain high for a number of reasons. Firstly, the health condition of some patients on the waiting lists may deteriorate over time, which is commonly associated with higher treatment costs and longer recovery periods. Secondly, some of the elective cases may turn into emergency cases, which together with the substantial backlog of surgical and diagnostics procedures will exert additional

(Continued on the next page)

Box (continued)

pressure on hospitals. Thirdly, some of the hospital care capacities will remain filled with and/or reserved for COVID-19 patients, meaning that enhanced hygiene measures have to be maintained for a longer period.

Another important aspect of the initiatl phase of the COVID-19 pandemic was that the worldwide shortages in personal protective equipment (PPE) increased market prices in the short term and urged governments to invest in domestic production to ensure sufficient supply in the medium term. The same was true for ventilators and laboratory tests and materials. Additional payments to hospital personnel as a reward for the hard and long working hours was a common practice in EU Member States and for some the pressure to permanently increase salaries of the health workforce and increase staff numbers will persist after the crisis.

Even though the increased workload of GPs did not receive as much media attention as hospital care, ambulatory health care and laboratories have been in high demand during the pandemics. Primary care clinics also had to reorganise their facilities to separate COVID-19 patients and use PPE in order to ensure the safety of patients with other health conditions. More prominently, public health, an area systematically underfinanced in the past decades, was and will remain the most important instrument until the effects of mass vaccination become visible in reduction of mortality and hospitalisations. Tracing and isolating COVID-19 active cases required additional staff in public health settings. Social distancing and patient safety measures required smart eHealth and digital solutions. Health systems are experiencing a boost in investments in IT solutions, especially in countries that were lagging behind before the crisis. Tracing apps, ePrescriptions, eConsultations, and building of registers are only a few examples of the necessary digitalisation of health care linked to the COVID-19 crisis.

The phase of relaxation of lockdown measures after May 2020 required more testing and tracing capacities, while the burden on the ambulatory and hospital care sectors remained high and close to capacity limits. The emergence of variants with higher transmissibility by the end of 2020 has required the increase in sequencing of testing samples. Investments in clinical trials for cure, research and clinical trials for vaccines have been needed throughout 2020 and 2021. The mass production and administration of anti-COVID vaccines (but also in view of increased demand for seasonal flu vaccination) have generated substantial additional costs. Limited global production capacities for medicines may lead to higher prices of medicines for cure and palliative care. Additional spending can be expected for COVID-19 treatment medication, once medical trials have confirmed the efficacy and safety of active substances.

Finally, the pandemic led to an increase in administrative costs because of the need to reorganise work processes, purchase additional PPE and other equipment, hire additional staff and handle many other organisational aspects of a dynamically evolving situation in hospitals, ambulatory settings and vaccination centres. Sustaining new and existing health facilities to address COVID-19 also had an impact on administrative and operational infrastructure of health entities.

To make the health care projected estimates for years 2020, 2021 and 2022 as accurate as possible, countries provided available as of September 2020 data on their respective COVID-19 related health care public spending (see Box II.2.5). This spending was taken into account as one-off expenditure in the given year with no impact on the overall projections in the long-term, except if a permanent nature of the changes was indicated by the countries. Additionally, the health expenditure levels in euro for years 2020 and 2021 were interpolated linearly for the majority of the countries ([108]).

2.3.5. Accounting for institutional setting specificities

The projections account for some institutional specificities for Germany. In Germany, 89% of the population was insured by social health insurance (SHI) in 2019, with the remainder

([108]) For a description of the linear interpolation methodology see Annex III.

insured by mandatory substitutional private health insurance (PHI) schemes. To account for the existence of a mandatory substitutional PHI, the population projections used in the model are adjusted downwards to equal the number of people insured in SHI in the base year of projections.

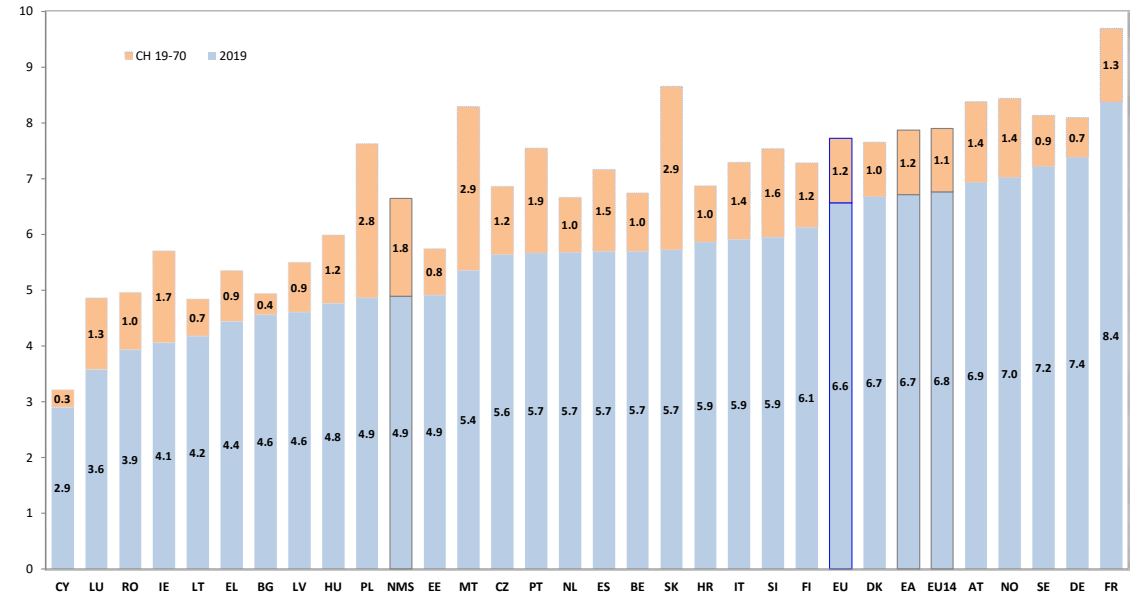
In addition, similar to the approach applied in the 2018 Ageing Report, it is assumed that given the younger age structure of PHI and the current legislative set-up, which heavily restricts opting out from PHI to SHI, ageing will be more pronounced in PHI than SHI. This implies a reduced burden of ageing within the SHI scheme in future. Furthermore, it is assumed that the share of the privately insured among the total population will increase faster than the share of the insured under the public insurance scheme, adding to the estimated reduced ageing effect of the population covered by SHI. Together, these assumptions imply a reduction of the population figures to roughly 89 % in 2019 to account only for those covered by SHI, and a further reduction to 88 % by 2070, with a more relatively pronounced decrease in older age groups.

2.4. PROJECTION RESULTS

Projection results are not meant to be spending forecasts, but a useful analytical tool to raise awareness on the possible future trends in public health care spending, the role played by some of the major drivers and their potential impact on long-term sustainability of public finances. Consequently, the projected health care spending levels should be interpreted accordingly. In the following, the projections of the "demographic scenario" are assessed against eight other scenarios with different features. Furthermore, the results of the "AWG reference scenario", used for multilateral budgetary surveillance in the EU, and two more risk scenarios are discussed. Finally, additional sensitivity tests results run around the "AWG reference scenario" are reviewed.

Public expenditure on health care include expenditure on capital formation, but exclude long-term nursing care expenditure. Long-term nursing care expenditure are part of the long-term care expenditure projections (see Chapter 3).

Graph II.2.4: **Projected increase in public expenditure on health care due to demographic change over 2019-2070, as % of GDP**



Notes: The EU, EA, EU14 and NMS averages in all result tables are weighted according to GDP. The level of public expenditure in 2019 is the first year of projected expenditure based on latest available data. Health care expenditure excludes long-term nursing care.
Source: Commission services, EPC.

2.4.1. Changes in demography and health status

According to the *"demographic scenario"*, public health care expenditure in the EU is projected to increase by 1.2 pps. of GDP i.e. from 6.6% to 7.7% of GDP from 2019 to 2070. For two third of the countries the expenditure increase lies between 1.0 and 2.9 pps. of GDP over the whole projection period. The impact of ageing on health care spending in each country is shown in Table II.2.3 and Graph II.2.4 where the blue colour bars show expenditure over the GDP in 2019 and the orange bars above them the expected increase in percentage points up to 2070 ([109]) .

Table II.2.3: **Demographic scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.7	1.0	18%
BG	4.6	4.9	0.4	8%
CZ	5.6	6.9	1.2	22%
DK	6.7	7.7	1.0	15%
DE	7.4	8.1	0.7	10%
EE	4.9	5.7	0.8	17%
IE	4.1	5.7	1.7	41%
EL	4.4	5.4	0.9	20%
ES	5.7	7.2	1.5	26%
FR	8.4	9.7	1.3	16%
HR	5.9	6.9	1.0	17%
IT	5.9	7.3	1.4	23%
CY	2.9	3.2	0.3	11%
LV	4.6	5.5	0.9	20%
LT	4.2	4.8	0.7	16%
LU	3.6	4.9	1.3	36%
HU	4.8	6.0	1.2	26%
MT	5.4	8.3	2.9	55%
NL	5.7	6.7	1.0	17%
AT	6.9	8.4	1.4	21%
PL	4.9	7.6	2.8	57%
PT	5.7	7.5	1.9	33%
RO	3.9	5.0	1.0	26%
SI	5.9	7.5	1.6	27%
SK	5.7	8.7	2.9	51%
FI	6.1	7.3	1.2	19%
SE	7.2	8.1	0.9	13%
NO	7.0	8.4	1.4	20%
EA	6.7	7.9	1.2	17%
EU	6.6	7.7	1.2	18%

Notes: The EA and EU averages in all result tables are weighted according to GDP. Public health care expenditure includes capital formation, but excludes long-term nursing care.
Source: Commission services, EPC.

Projections reflecting only demographic changes may turn out to be either optimistic or pessimistic, depending on whether living longer will go along with increasing or decreasing morbidity. **The *"high life expectancy scenario"* provides a sensitivity test to assess the potential implication of future gains in life expectancy higher than those assumed in the population projections** (Eurostat 2019-based population projections). It provides an estimate of the budgetary impact of two extra years of life under the (pessimistic) view that these additional years are associated with two extra years in "bad health" (along the line of the *morbidity expansion* hypothesis). Under this assumption, two extra years of life expectancy lead to a projected increase for the EU average that is close to 0.2 pps. of GDP higher than under the "demographic scenario" (Table II.2.4).

Table II.2.4: **High life expectancy scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP.**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.9	1.2	21%
BG	4.6	4.9	0.3	7%
CZ	5.6	7.0	1.4	24%
DK	6.7	7.8	1.1	16%
DE	7.4	8.3	0.9	12%
EE	4.9	5.7	0.8	17%
IE	4.1	5.9	1.8	45%
EL	4.4	5.5	1.0	23%
ES	5.7	7.4	1.7	29%
FR	8.4	9.8	1.5	18%
HR	5.9	7.0	1.1	19%
IT	5.9	7.5	1.5	26%
CY	2.9	3.2	0.3	12%
LV	4.6	5.5	0.9	20%
LT	4.2	4.9	0.7	17%
LU	3.6	5.0	1.4	39%
HU	4.8	6.1	1.3	28%
MT	5.4	8.6	3.2	61%
NL	5.7	6.9	1.2	21%
AT	6.9	8.6	1.6	24%
PL	4.9	7.7	2.9	59%
PT	5.7	7.9	2.2	39%
RO	3.9	5.0	1.1	28%
SI	5.9	7.7	1.8	29%
SK	5.7	8.8	3.1	54%
FI	6.1	7.4	1.3	21%
SE	7.2	8.3	1.1	15%
NO	7.0	8.6	1.5	22%
EA	6.7	8.0	1.3	20%
EU	6.6	7.9	1.3	20%

Source: Commission services, EPC.

([109]) Some of the figures on change in pp. (2070-2019) in Tables II.2.3 – II.2.14 may not appear entirely acccurate due to rounding issues.

In line with the (optimistic) assumptions of the *compression of morbidity* hypothesis, the *"healthy ageing scenario"* assumes that all future gains in life expectancy are spent in good health. Comparison of the "demographic" or "high life expectancy scenario" with the "healthy ageing scenario" illustrates how shifts in the health status of the population can impact on health expenditure.

Table II.2.5: **Healthy ageing scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	5.8	0.1	2%
BG	4.6	4.2	-0.3	-7%
CZ	5.6	5.9	0.3	5%
DK	6.7	6.9	0.2	3%
DE	7.4	7.2	-0.2	-2%
EE	4.9	5.1	0.2	4%
IE	4.1	5.1	1.0	25%
EL	4.4	4.8	0.3	7%
ES	5.7	6.5	0.8	14%
FR	8.4	8.8	0.4	5%
HR	5.9	5.9	0.1	1%
IT	5.9	6.6	0.7	12%
CY	2.9	3.0	0.1	4%
LV	4.6	4.0	-0.6	-13%
LT	4.2	4.2	0.1	2%
LU	3.6	4.2	0.7	18%
HU	4.8	4.9	0.1	2%
MT	5.4	7.1	1.8	33%
NL	5.7	6.0	0.4	6%
AT	6.9	7.5	0.5	8%
PL	4.9	6.7	1.8	37%
PT	5.7	6.6	0.9	16%
RO	3.9	4.3	0.3	8%
SI	5.9	6.7	0.8	13%
SK	5.7	7.2	1.5	26%
FI	6.1	6.4	0.2	4%
SE	7.2	7.4	0.2	3%
NO	7.0	7.5	0.5	7%
EA	6.7	7.1	0.3	5%
EU	6.6	6.9	0.3	5%

Note: The "healthy ageing scenario" is identical with the "constant health scenario" from previous Ageing Reports.
Source: Commission services, EPC.

As expected, in the "healthy ageing scenario" increases in public expenditure on health care are significantly lower than those obtained in the "demographic scenario". The ageing effect on expenditure growth is reduced to only a fifth compared to the "demographic scenario". For the EU, a 0.3 pps. of GDP increase is expected over the overall projection period (Table II.2.5). Most of the Member States can expect an expenditure growth of below 1 pp. of GDP and three countries even experience a decrease. Therefore, improvements in health status may be crucial for keeping expenditure on health care under control in the future.**The *"death-related costs scenario"* follows a similar logic to the "healthy ageing scenario": the years spent with ill-health are compressed towards the later period of life**. However, a different methodological approach and different features of the data used lead to results varying considerably between the two scenarios. Note that data on death-related costs was provided only by 17 Member States ([110]).

Incorporating the concept of death-related costs in the projection methodology leads to a reduction in the projected health care expenditure relative to the "demographic scenario" for most of the countries (Table II.2.6) ([111]). The projected increase in public expenditure ranges from 0.3 pps. of GDP for Germany to 2.6 pps. of GDP for Poland.

Table II.2.6: **Death-related costs scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

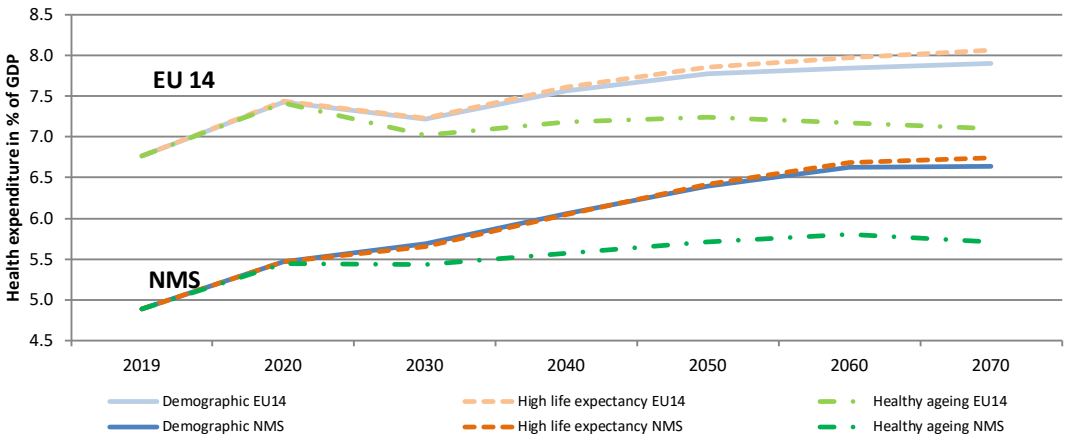
	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.4	0.7	13%
BG	4.6	5.0	0.4	9%
CZ	5.6	6.4	0.8	14%
DK	6.7	7.4	0.8	12%
DE	7.4	7.7	0.3	4%
ES	5.7	7.1	1.4	24%
FR	8.4	9.5	1.2	14%
IT	5.9	7.3	1.3	23%
LV	4.6	5.5	0.9	19%
HU	4.8	5.6	0.8	17%
NL	5.7	6.5	0.8	14%
AT	6.9	8.1	1.2	17%
PL	4.9	7.4	2.6	53%
SI	5.9	7.3	1.3	22%
SK	5.7	8.1	2.4	42%
FI	6.1	7.1	1.0	16%
SE	7.2	7.9	0.7	10%

Source: Commission services, EPC.

([110]) In the current projections exercise the methodology behind the death-related costs scenario does not perfectly illustrate the underlying theoretical concept. In particular, the period of time defined as 'close to death' is limited to one year, due to the characteristics of the data as provided by Member States, while several studies argue that the health care costs of decedents are higher than those of survivors up to six years before death.

([111]) In fact, using this methodological approach does not reduce the overall amount of expenditure devoted to health care. Instead, it spreads the costs of health care over time by assuming that with a decline in mortality rate the share of decedents in each age cohort is decreasing.

Graph II.2.5: **Impact of demography and health status - comparison between scenarios in EU14 and NMS**



Note: The "healthy ageing scenario" is identical with the "constant health scenario" from previous Ageing Reports.
Source: Commission services (ECFIN), EPC.

A comparison of the results of the health status related scenarios highlights the importance of the on-going demographic transition (ageing of the baby-boom cohorts), with slightly delayed patterns for NMS. Graph II.2.5 shows a comparison of the results of the three scenarios related to the future evolution of health status. The comparison between the shapes of the curves for EU14 and New Member States (NMS) highlights the more pronounced growing path of the "*demographic scenario"* in the NMS. This is driven by more adverse demographic developments. Another interesting observation in this context is that the dynamic of the demographic projections leads to a peak in the expenditure growth rate in 2060 for NMS and in 2050 for EU14, slowing down the expenditure increase thereafter until 2070.

In fact, the future impact of the demographic trends on health care expenditure to GDP depends on three factors: (1) decreasing fertility rates; (2) expected increases in life expectancy; and (3) the demographic transition (ageing of the baby boom cohorts). All these three driving forces are expected to cause relevant changes on the population structure over the forecasting period in almost all Member States (e.g. increase in the old age dependency ratio). However, the impact of the demographic transition due to ageing of the baby boom cohorts will have a dominant impact on the population structure over the next 2-3 decades. This is independent of changes to longevity. No compensating effect can be expected from changes in longevity according to the "*high life expectancy scenario*" and from changes in morbidity as displayed by the *"healthy ageing scenario"*.

Understanding the demographic drivers of health care spending dynamic is essential for policy decisions. This important conceptual distinction not only explains the clear slowdown in the dynamics of health care public expenditure to GDP ratio projected in the last decades of the forecasting period (from 2050 for EU14 MS and from 2060 for NMS), which is linked to the exit period of the baby boom generations. It also helps to explain why the impact of demography on the dynamics of health care expenditure to GDP ratio has not been found particularly significant over the past decades ([112]). Indeed the conceptual distinction of the demographic change drivers can have important policy-making implications, as policy options dealing with the adverse demographic trends on health care expenditure may differ substantially depending on whether they come from a decline in birth rates and increases in longevity or from the ageing of baby boom cohorts.

2.4.2. Changes in income and macroeconomic variables

Beyond demographic drivers already discussed, the "*income elasticity scenario*" allows capturing growth in health care spending driven by per capita income increases, notably by assuming

([112]) See Medeiros J. and C. Schwierz (2013).

that trends in health spending exceed the growth rate of national income ([113]). Assuming a slightly higher growth in spending relative to national income (i.e. an income elasticity of 1.1) in the ***"income elasticity scenario"*** adds an extra 0.2 pps. of GDP to health expenditure increase relative to the results for the EU in the "demographic scenario" (Table II.2.7).

Table II.2.7: **Income elasticity scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.9	1.2	21%
BG	4.6	5.2	0.6	13%
CZ	5.6	7.1	1.5	27%
DK	6.7	7.9	1.3	19%
DE	7.4	8.3	0.9	13%
EE	4.9	6.0	1.1	23%
IE	4.1	5.8	1.8	44%
EL	4.4	5.6	1.1	25%
ES	5.7	7.4	1.7	30%
FR	8.4	9.9	1.6	19%
HR	5.9	7.1	1.3	22%
IT	5.9	7.5	1.5	26%
CY	2.9	3.3	0.4	14%
LV	4.6	5.8	1.2	26%
LT	4.2	5.1	0.9	22%
LU	3.6	5.0	1.4	40%
HU	4.8	6.3	1.5	32%
MT	5.4	8.6	3.3	61%
NL	5.7	6.8	1.1	20%
AT	6.9	8.6	1.7	24%
PL	4.9	8.0	3.2	65%
PT	5.7	7.8	2.1	37%
RO	3.9	5.3	1.4	34%
SI	5.9	7.9	1.9	32%
SK	5.7	9.0	3.3	57%
FI	6.1	7.5	1.4	22%
SE	7.2	8.4	1.2	16%
NO	7.0	8.7	1.7	24%
EA	6.7	8.1	1.4	20%
EU	6.6	8.0	1.4	21%

Source: Commission services, EPC.

The *"EU cost convergence scenario"*, performed solely for those Member States with shares of GDP per capita spending profiles below the EU relative average profile, captures the possible effect of a convergence in real living standards across EU countries on public expenditure on health care ([114]). Depending on the current age-gender expenditure profiles, governments would, on average, need to spend up to 1.4 pps. of GDP more over the next five decades (Table II.2.8). This is 0.2 pps. of GDP more compared to the EU average of the "demographic scenario". The countries with highest increase in health care expenditure in the long run driven by a convergence of health care age-gender costs to the EU average are Poland, Malta, Cyprus, and Slovakia.

Table II.2.8: **The EU cost convergence scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.8	1.1	20%
BG	4.6	6.6	2.0	45%
CZ	5.6	7.0	1.3	24%
DK	6.7	7.7	1.0	15%
DE	7.4	8.1	0.7	10%
EE	4.9	6.7	1.8	36%
IE	4.1	6.5	2.5	61%
EL	4.4	6.8	2.3	52%
ES	5.7	7.3	1.6	28%
FR	8.4	9.7	1.3	16%
HR	5.9	7.3	1.4	25%
IT	5.9	7.4	1.5	26%
CY	2.9	6.0	3.1	109%
LV	4.6	6.9	2.3	51%
LT	4.2	6.8	2.6	62%
LU	3.6	6.4	2.9	80%
HU	4.8	6.8	2.0	42%
MT	5.4	8.9	3.5	66%
NL	5.7	6.9	1.2	21%
AT	6.9	8.4	1.5	21%
PL	4.9	8.4	3.6	73%
PT	5.7	8.2	2.5	44%
RO	3.9	6.6	2.7	68%
SI	5.9	7.6	1.6	27%
SK	5.7	8.9	3.1	55%
FI	6.1	7.6	1.5	25%
SE	7.2	8.2	0.9	13%
NO	7.0	8.5	1.4	21%
EA	6.7	8.0	1.3	20%
EU	6.6	8.0	1.4	21%

Source: Commission services, EPC.

([113]) The "demographic scenario" assumes that per capita spending grows in line with national income per capita. The effect is that without population ageing, the share of health spending in percentage of national income would stay constant. However, empirical research shows that growth in both public and total health care spending may exceed the growth rate of national income, be it because of rising expectations towards more and better health care and/or a higher willingness to pay for health care services. Consequently, the "demographic scenario" may substantially underestimate health spending growth.

([114]) Please note that the "cost convergence" scenario does not assume convergence in absolute costs but in relative costs, that is in per capita public expenditure relative to GDP per capita.

However, these results are sensitive to the simulated convergence process ([115]). An alternative perspective of unit costs evolution is illustrated by the "*labour intensity scenario*". For most of the Member States, the productivity (and therefore real wages) grows faster than per capita income. The effect of productivity replacing income as the driver of unit costs of health care provision in the projections of the "labour intensity scenario" leads to an additional spending of 0.5 pps. of GDP relative to the EU average of the "demographic scenario" (Table II.2.9).

Table II.2.9: **Labour intensity scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	7.2	1.5	26%
BG	4.6	5.7	1.1	25%
CZ	5.6	8.0	2.4	43%
DK	6.7	7.5	0.9	13%
DE	7.4	9.1	1.7	23%
EE	4.9	6.2	1.3	26%
IE	4.1	6.9	2.9	71%
EL	4.4	4.7	0.3	6%
ES	5.7	7.5	1.8	32%
FR	8.4	9.9	1.5	18%
HR	5.9	7.6	1.8	30%
IT	5.9	7.4	1.5	25%
CY	2.9	3.4	0.5	16%
LV	4.6	6.1	1.5	33%
LT	4.2	5.4	1.3	30%
LU	3.6	4.5	0.9	26%
HU	4.8	6.4	1.7	35%
MT	5.4	10.2	4.8	90%
NL	5.7	7.3	1.6	29%
AT	6.9	9.0	2.1	30%
PL	4.9	9.5	4.7	96%
PT	5.7	8.2	2.5	44%
RO	3.9	5.6	1.7	43%
SI	5.9	8.3	2.4	40%
SK	5.7	11.2	5.5	96%
FI	6.1	7.7	1.5	25%
SE	7.2	8.4	1.1	16%
NO	7.0	9.6	2.5	36%
EA	6.7	8.4	1.7	25%
EU	6.6	8.3	1.7	27%

Source: Commission services, EPC.

The *"sector-specific composite indexation scenario"* in which future expenditure of each different health system sub-sector evolves in line with their specific past trends (Table II.2.10), leads to an average projected increase 0.6 pps. of GDP higher than the EU average in the "demographic scenario".

Table II.2.10: **Sector-specific composite indexation scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.9	1.2	21%
BG	4.6	6.1	1.5	33%
CZ	5.6	7.8	2.2	39%
DK	6.7	8.5	1.8	27%
DE	7.4	8.8	1.4	19%
EE	4.9	6.3	1.4	28%
IE	4.1	5.7	1.7	41%
EL	4.4	6.4	1.9	44%
ES	5.7	7.9	2.2	39%
FR	8.4	10.8	2.4	29%
HR	5.9	8.2	2.4	40%
IT	5.9	7.4	1.5	25%
CY	2.9	3.3	0.4	12%
LV	4.6	6.2	1.6	35%
LT	4.2	4.7	0.6	13%
LU	3.6	4.7	1.1	31%
HU	4.8	6.7	1.9	40%
MT	5.4	8.5	3.1	58%
NL	5.7	7.4	1.7	29%
AT	6.9	9.0	2.1	30%
PL	4.9	7.7	2.8	58%
PT	5.7	7.4	1.7	31%
RO	3.9	7.0	3.1	79%
SI	5.9	8.6	2.6	44%
SK	5.7	9.6	3.9	68%
FI	6.1	8.3	2.1	35%
SE	7.2	8.3	1.1	16%
NO	7.0	9.7	2.7	38%
EA	6.7	8.5	1.8	27%
EU	6.6	8.4	1.8	27%

Source: Commission services, EPC.

Table II.2.11 **presents the projection results under the *"non-demographic determinants scenario"***. Following econometric analysis ([116]), an average elasticity of 1.5 converging non-linearly to 1 in 2070 is applied to the age-gender expenditure profiles. On average, the increase in public expenditure on health care is projected to be 3.1 pps. of GDP (compared to the 1.2 pps. projected for the EU under the "demographic scenario"). The results highlight the potential

([115]) See comparison of results between the Ageing Report 2018 and 2021 in Section 2.5.

([116]) For details see EC/EPC (2020) "The 2021 Ageing Report "Underlying assumptions and projection methodologies", https://ec.europa.eu/info/sites/info/files/economy-finance/ip142_en.pdf.

impact of non-demographic drivers on health care expenditure, such as innovations in medical technology, institutional settings and individual behaviour. Such upward risk on the future evolution of public expenditure on health care is not captured in the "demographic scenario".

Table II.2.11: **Non-demographic determinants scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	8.1	2.4	42%
BG	4.6	6.8	2.2	49%
CZ	5.6	9.2	3.5	63%
DK	6.7	10.1	3.4	51%
DE	7.4	9.9	2.5	34%
EE	4.9	8.2	3.3	67%
IE	4.1	6.9	2.8	69%
EL	4.4	7.2	2.8	62%
ES	5.7	9.0	3.3	59%
FR	8.4	11.9	3.5	42%
HR	5.9	9.1	3.2	55%
IT	5.9	8.9	3.0	51%
CY	2.9	4.0	1.1	39%
LV	4.6	8.1	3.5	75%
LT	4.2	6.9	2.7	65%
LU	3.6	6.1	2.5	69%
HU	4.8	8.4	3.7	77%
MT	5.4	10.8	5.4	101%
NL	5.7	8.1	2.4	42%
AT	6.9	10.3	3.3	48%
PL	4.9	10.8	5.9	121%
PT	5.7	9.7	4.0	71%
RO	3.9	7.7	3.7	95%
SI	5.9	10.2	4.3	72%
SK	5.7	11.3	5.6	98%
FI	6.1	9.2	3.1	50%
SE	7.2	10.2	3.0	41%
NO	7.0	10.4	3.4	49%
EA	6.7	9.7	3.0	44%
EU	6.6	9.7	3.1	48%

Source: Commission services, EPC.

2.4.3. AWG reference scenario

The *"AWG reference scenario"* is used as the baseline scenario, in particular in the context of EU fiscal surveillance. In this scenario, health care expenditures are driven by the assumption that half of the future gains in life expectancy are spent in good health and an income elasticity of health care spending converging linearly from 1.1 in 2019 to unity in 2070. The joint impact of those factors is a projected increase in spending of about 0.9 pps. of GDP in the EU by 2070 (Table II.2.12). Individual countries' results range between 0.2 pps. in Bulgaria to 2.6 pps. of GDP in Malta. The estimated increases in spending are 0.3 pps. of GDP lower for the EU than in the "demographic scenario".

Table II.2.12: **AWG reference scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.3	0.6	11%
BG	4.6	4.8	0.2	5%
CZ	5.6	6.6	0.9	17%
DK	6.7	7.5	0.9	13%
DE	7.4	7.8	0.4	6%
EE	4.9	5.7	0.8	16%
IE	4.1	5.5	1.4	35%
EL	4.4	5.2	0.8	18%
ES	5.7	7.0	1.3	23%
FR	8.4	9.5	1.1	13%
HR	5.9	6.6	0.7	13%
IT	5.9	7.1	1.2	20%
CY	2.9	3.2	0.3	11%
LV	4.6	5.1	0.4	10%
LT	4.2	4.7	0.6	14%
LU	3.6	4.6	1.1	30%
HU	4.8	5.6	0.9	18%
MT	5.4	8.0	2.6	49%
NL	5.7	6.5	0.8	14%
AT	6.9	8.1	1.2	17%
PL	4.9	7.4	2.6	53%
PT	5.7	7.3	1.6	28%
RO	3.9	4.9	0.9	24%
SI	5.9	7.4	1.5	25%
SK	5.7	8.2	2.5	43%
FI	6.1	7.0	0.8	14%
SE	7.2	8.0	0.8	10%
NO	7.0	8.2	1.1	16%
EA	6.7	7.6	0.9	14%
EU	6.6	7.5	0.9	14%

Source: Commission services, EPC.

2.4.4. AWG risk scenario

The *"AWG risk scenario"* assumes the partial continuation of recently observed trends in health care expenditure. This scenario assumes that half of the future gains in life expectancy are spent in good health and the impact of non-demographic drivers on future trends is captured by using an elasticity of health care spending of 1.5 in 2019 converging linearly to unity in 2070. It projects spending in the EU to 8.4 % of GDP in 2070, i.e. an increase of 1.8 pps. of GDP relative to 2019 (Table II.2.13). Over the whole projection period, Cyprus is expected to have the lowest increase with 0.7 pps. of GDP. Malta has the highest increase with 3.9 pps. of GDP. On average, the projected increase in public health spending in the EU is 0.6 pps. of GDP higher than in the "demographic scenario" and 0.8 pps. of GDP

higher compared to the "AWG reference scenario".

Table II.2.13: **AWG risk scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.9	1.2	22%
BG	4.6	5.7	1.1	24%
CZ	5.6	7.7	2.1	36%
DK	6.7	8.7	2.1	31%
DE	7.4	8.7	1.3	17%
EE	4.9	7.0	2.0	41%
IE	4.1	6.0	2.0	48%
EL	4.4	6.1	1.6	37%
ES	5.7	7.9	2.2	38%
FR	8.4	10.5	2.1	25%
HR	5.9	7.6	1.7	30%
IT	5.9	7.8	1.9	32%
CY	2.9	3.6	0.7	23%
LV	4.6	6.3	1.7	36%
LT	4.2	5.8	1.6	39%
LU	3.6	5.2	1.6	45%
HU	4.8	6.8	2.1	43%
MT	5.4	9.3	3.9	73%
NL	5.7	7.1	1.4	25%
AT	6.9	9.0	2.1	30%
PL	4.9	9.1	4.2	87%
PT	5.7	8.2	2.6	45%
RO	3.9	6.3	2.4	60%
SI	5.9	8.8	2.9	48%
SK	5.7	9.5	3.7	65%
FI	6.1	7.9	1.8	29%
SE	7.2	9.0	1.7	24%
NO	7.0	9.1	2.1	30%
EA	6.7	8.5	1.7	26%
EU	6.6	8.4	1.8	28%

Source: Commission services, EPC.

2.4.5. TFP risk scenario

Finally, the *"total factor productivity risk scenario"* takes into account the risk that Total Factor Productivity growth may decline in the future below the assumptions of the "AWG reference scenario", by assuming that TFP converges to a growth rate of 0.8 % by 2045 (vs. 1.0 % for the baseline scenario). On average, the increase in public expenditure on health care is projected to be 0.9 pps. of GDP (Table II.2.14). This is broadly as much as the projected increase for the EU under the "AWG reference scenario" and 0.3 pps. of GDP lower compared to the EU average in the "demographic scenario".

Table II.2.14: **TFP risk scenario - projected increase in public expenditure on health care over 2019-2070, as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	in %
BE	5.7	6.3	0.6	11%
BG	4.6	4.7	0.2	4%
CZ	5.6	6.5	0.9	16%
DK	6.7	7.5	0.8	13%
DE	7.4	7.8	0.4	6%
EE	4.9	5.7	0.7	15%
IE	4.1	5.5	1.4	35%
EL	4.4	5.2	0.8	18%
ES	5.7	7.0	1.3	23%
FR	8.4	9.4	1.1	13%
HR	5.9	6.6	0.7	12%
IT	5.9	7.1	1.2	20%
CY	2.9	3.2	0.3	10%
LV	4.6	5.0	0.4	9%
LT	4.2	4.7	0.5	13%
LU	3.6	4.6	1.0	29%
HU	4.8	5.6	0.8	18%
MT	5.4	7.9	2.6	48%
NL	5.7	6.5	0.8	14%
AT	6.9	8.1	1.1	17%
PL	4.9	7.4	2.5	52%
PT	5.7	7.2	1.6	28%
RO	3.9	4.9	0.9	24%
SI	5.9	7.4	1.4	24%
SK	5.7	8.1	2.4	42%
FI	6.1	6.9	0.8	13%
SE	7.2	7.9	0.7	10%
NO	7.0	8.1	1.1	15%
EA	6.7	7.6	0.9	13%
EU	6.6	7.5	0.9	14%

Source: Commission services, EPC.

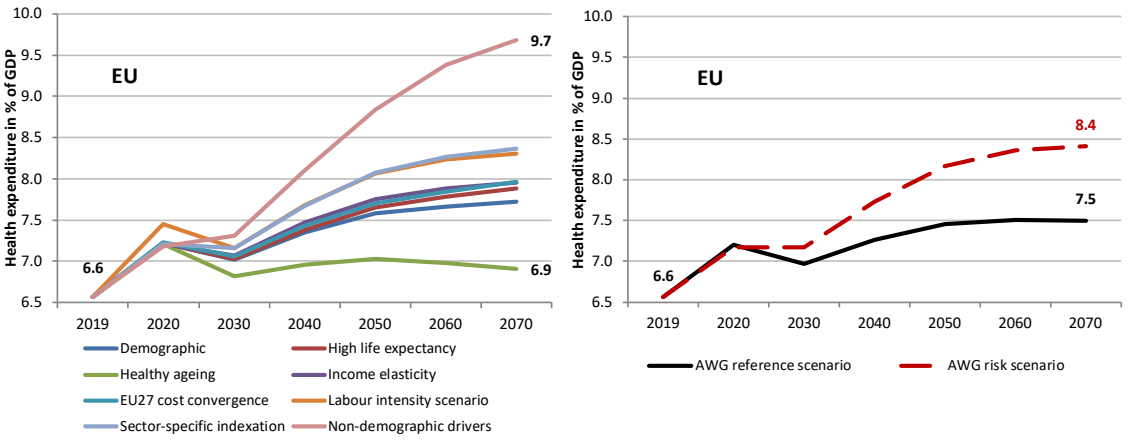
An overview of the projection results for all scenarios is presented in Table II.2.15 and Graph II.2.6.

Table II.2.15: **Overview of scenario results - increase in public expenditure on health care over 2019-2070, as pps. of GDP**

	Demographic scenario	High life expectancy scenario	Healthy ageing scenario	Death-related costs scenario	Income elasticity scenario	EU27 cost convergence scenario	Labour intensity scenario	Sector-specific composite indexation scenario	Non-demographic determinants scenario	AWG reference scenario	AWG risk scenario	TFP risk growth scenario	
BE	1.0	1.2	0.1	0.7	1.2	1.1	1.5	1.2	2.4	0.6	1.2	0.6	**BE**
BG	0.4	0.3	-0.3	0.4	0.6	2.0	1.1	1.5	2.2	0.2	1.1	0.2	**BG**
CZ	1.2	1.4	0.3	0.8	1.5	1.3	2.4	2.2	3.5	0.9	2.1	0.9	**CZ**
DK	1.0	1.1	0.2	0.8	1.3	1.0	0.9	1.8	3.4	0.9	2.1	0.8	**DK**
DE	0.7	0.9	-0.2	0.3	0.9	0.7	1.7	1.4	2.5	0.4	1.3	0.4	**DE**
EE	0.8	0.8	0.2	:	1.1	1.8	1.3	1.4	3.3	0.8	2.0	0.7	**EE**
IE	1.7	1.8	1.0	:	1.8	2.5	2.9	1.7	2.8	1.4	2.0	1.4	**IE**
EL	0.9	1.0	0.3	:	1.1	2.3	0.3	1.9	2.8	0.8	1.6	0.8	**EL**
ES	1.5	1.7	0.8	1.4	1.7	1.6	1.8	2.2	3.3	1.3	2.2	1.3	**ES**
FR	1.3	1.5	0.4	1.2	1.6	1.3	1.5	2.4	3.5	1.1	2.1	1.1	**FR**
HR	1.0	1.1	0.1	:	1.3	1.4	1.8	2.4	3.2	0.7	1.7	0.7	**HR**
IT	1.4	1.5	0.7	1.3	1.5	1.5	1.5	1.5	3.0	1.2	1.9	1.2	**IT**
CY	0.3	0.3	0.1	:	0.4	3.1	0.5	0.4	1.1	0.3	0.7	0.3	**CY**
LV	0.9	0.9	-0.6	0.9	1.2	2.3	1.5	1.6	3.5	0.4	1.7	0.4	**LV**
LT	0.7	0.7	0.1	:	0.9	2.6	1.3	0.6	2.7	0.6	1.6	0.5	**LT**
LU	1.3	1.4	0.7	:	1.4	2.9	0.9	1.1	2.5	1.1	1.6	1.0	**LU**
HU	1.2	1.3	0.1	0.8	1.5	2.0	1.7	1.9	3.7	0.9	2.1	0.8	**HU**
MT	2.9	3.2	1.8	:	3.3	3.5	4.8	3.1	5.4	2.6	3.9	2.6	**MT**
NL	1.0	1.2	0.4	0.8	1.1	1.2	1.6	1.7	2.4	0.8	1.4	0.8	**NL**
AT	1.4	1.6	0.5	1.2	1.7	1.5	2.1	2.1	3.3	1.2	2.1	1.1	**AT**
PL	2.8	2.9	1.8	2.6	3.2	3.6	4.7	2.8	5.9	2.6	4.2	2.5	**PL**
PT	1.9	2.2	0.9	:	2.1	2.5	2.5	1.7	4.0	1.6	2.6	1.6	**PT**
RO	1.0	1.1	0.3	:	1.4	2.7	1.7	3.1	3.7	0.9	2.4	0.9	**RO**
SI	1.6	1.8	0.8	1.3	1.9	1.6	2.4	2.6	4.3	1.5	2.9	1.4	**SI**
SK	2.9	3.1	1.5	2.4	3.3	3.1	5.5	3.9	5.6	2.5	3.7	2.4	**SK**
FI	1.2	1.3	0.2	1.0	1.4	1.5	1.5	2.1	3.1	0.8	1.8	0.8	**FI**
SE	0.9	1.1	0.2	0.7	1.2	0.9	1.1	1.1	3.0	0.8	1.7	0.7	**SE**
NO	1.4	1.5	0.5	:	1.7	1.4	2.5	2.7	3.4	1.1	2.1	1.1	**NO**
EA	1.2	1.3	0.3	:	1.4	1.3	1.7	1.8	3.0	0.9	1.7	0.9	**EA**
EU	**1.2**	**1.3**	**0.3**	**:**	**1.4**	**1.4**	**1.7**	**1.8**	**3.1**	**0.9**	**1.8**	**0.9**	**EU**

Notes: (1) The "healthy ageing scenario" is identical to the "constant health scenario" from previous Ageing Reports. (2) The EU and EA averages are weighted according to GDP.
Source: Commission services, EPC.

Graph II.2.6: **Range of results from different scenarios on health care in the EU**

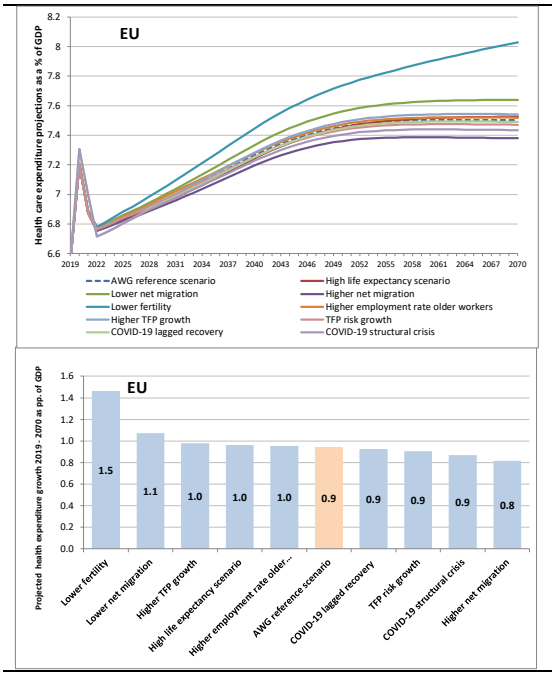


Note: The "healthy ageing scenario" is identical to the "constant health scenario" from previous Ageing Reports.
Source: Commission services, EPC.

2.4.6. AWG reference scenario sensitivity tests

The results of the "AWG reference scenario", the central scenario used for multilateral budgetary surveillance in the EU, are stress tested to changes in key demographic and macroeconomic assumptions. These sensitivity tests are applied consistently to the baseline scenario of all age-related expenditure items in this report and are described in Chapter 3 of Part I. As can be seen in Graph II.2.7, the EU health care expenditure projections are more responsive to changes in demographic assumptions than to macroeconomic assumptions. Thus the largest impact on the projected increase in public expenditure on health care as a share of GDP can be assigned to lower fertility and lower net migration, while higher net migration can slow down expenditure growth on health care. The country-specific results of the sensitivity tests of the AWG reference scenario on health care are also shown in Table II.2.16.

Graph II.2.7: **Sensitivity tests of the AWG reference scenario on health care in the EU**



Source: Commission services, EPC.

Table II.2.16: **Sensitivity tests of the AWG reference scenario on health care - increase in public expenditure on health care over 2019-2070, as pps. of GDP**

	HC expenditure	AWG reference scenario	High life expectancy scenario	Lower net migration	Higher net migration	Lower fertility	Higher employment rate older workers	Higher TFP growth	TFP risk growth	COVID-19 lagged recovery	COVID-19 structural crisis	
	% of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	
	2019	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	
BE	5.7	**0.6**	0.6	0.8	0.5	1.1	0.6	0.7	0.6	0.6	0.6	BE
BG	4.6	**0.2**	0.2	0.2	0.2	0.6	0.2	0.2	0.2	0.2	0.2	BG
CZ	5.6	**0.9**	1.0	1.0	0.9	1.5	1.0	1.0	0.9	0.9	0.9	CZ
DK	6.7	**0.9**	0.9	1.0	0.8	1.4	0.9	0.9	0.8	0.9	0.8	DK
DE	7.4	**0.4**	0.5	0.7	0.3	1.0	0.5	0.5	0.4	0.4	0.4	DE
EE	4.9	**0.8**	0.8	0.8	0.7	1.1	0.8	0.8	0.7	0.8	0.7	EE
IE	4.1	**1.4**	1.5	1.5	1.4	1.9	1.5	1.5	1.4	1.4	1.4	IE
EL	4.4	**0.8**	0.8	0.9	0.7	1.2	0.8	0.8	0.8	0.8	0.8	EL
ES	5.7	**1.3**	1.4	1.6	1.2	1.8	1.4	1.4	1.3	1.3	1.3	ES
FR	8.4	**1.1**	1.1	1.1	1.1	1.8	1.1	1.1	1.1	1.1	1.0	FR
HR	5.9	**0.7**	0.7	0.8	0.7	1.2	0.8	0.8	0.7	0.7	0.7	HR
IT	5.9	**1.2**	1.2	1.3	1.1	1.6	1.2	1.2	1.2	1.2	1.1	IT
CY	2.9	**0.3**	0.3	0.4	0.2	0.4	0.3	0.3	0.3	0.3	0.3	CY
LV	4.6	**0.4**	0.4	0.4	0.5	0.9	0.5	0.5	0.4	0.4	0.4	LV
LT	4.2	**0.6**	0.6	0.5	0.6	0.9	0.6	0.6	0.5	0.6	0.5	LT
LU	3.6	**1.1**	1.1	1.2	0.9	1.4	1.1	1.1	1.0	1.1	1.0	LU
HU	4.8	**0.9**	0.9	0.9	0.8	1.4	0.9	0.9	0.8	0.9	0.8	HU
MT	5.4	**2.6**	2.7	3.1	2.3	3.1	2.7	2.7	2.6	2.6	2.6	MT
NL	5.7	**0.8**	0.9	0.9	0.7	1.2	0.8	0.8	0.8	0.8	0.7	NL
AT	6.9	**1.2**	1.2	1.5	1.0	1.8	1.2	1.2	1.1	1.2	1.1	AT
PL	4.9	**2.6**	2.6	2.7	2.5	3.1	2.6	2.6	2.5	2.6	2.5	PL
PT	5.7	**1.6**	1.8	1.7	1.5	2.3	1.6	1.6	1.6	1.6	1.5	PT
RO	3.9	**0.9**	1.0	0.9	1.0	1.4	1.0	1.0	0.9	0.9	0.9	RO
SI	5.9	**1.5**	1.6	1.6	1.4	2.0	1.5	1.5	1.4	1.5	1.4	SI
SK	5.7	**2.5**	2.5	2.5	2.4	3.3	2.5	2.5	2.4	2.5	2.4	SK
FI	6.1	**0.8**	0.8	1.0	0.8	1.2	0.9	0.9	0.8	0.8	0.8	FI
SE	7.2	**0.8**	0.8	0.9	0.6	1.2	0.8	0.8	0.7	0.7	0.7	SE
NO	7.0	**1.1**	1.2	1.3	1.0	1.7	1.2	1.1	1.1	1.1	1.1	NO
EA	6.7	**0.9**	0.9	1.1	0.8	1.5	0.9	1.0	0.9	0.9	0.9	EA
EU	6.6	**0.9**	1.0	1.1	0.8	1.5	1.0	1.0	0.9	0.9	0.9	EU27

Notes: The "high life expectancy scenario" as a sensitivity test of the "AWG reference scenario" differs from the "high life expectancy scenario" used as a sensitivity test of the "demographic scenario".
Source: Commission services, EPC

2.5. COMPARISON WITH THE 2018 AGEING REPORT

Results of the "AWG reference scenario" in this report are compared with the previous edition (the Ageing Report 2018 ([117])). The *"AWG reference scenario"* is the point of reference for comparisons with the 2018 Ageing Report. Differences across the two waves of projections may arise from different demographic assumptions (faster/slower ageing of population) or changes in the age-gender expenditure profiles. However, when making these comparisons, it has to be kept in mind that there are many reasons why differences in results may not simply reflect changes in the underlying ageing process. Differences may stem from a different base-year for starting the projections, updated macroeconomic assumptions resulting in different GDP per capita growth rates, GDP levels for the period under analysis, and changes in scenario assumptions.

A decomposition of the drivers ([118]), aiming at quantifying which factors can explain the differences in projected spending between the 2018 and the 2021 projection exercises, is proposed in Table II.2.17**.** The considered drivers next to the already mentioned age-gender cost profiles and projected population are the GDP per capita growth, the base-year and reforms effect, as well as an interaction effect.

At the EU aggregate level, projected health care spending has been revised upward this round compared with the Ageing Report 2018 (+0.3 pps. of GDP). Most drivers have contributed to this upward revision: the new *age-cost profiles* have slightly increased the spending (by 0.1 pps. of GDP); updated *demographic* projections have also driven up spending projections (by 0.2 pps. of GDP), as well as the updated *GDP per capita growth* projections (by roughly 0.1 pps. of GDP). Base-year (the 2019 level of public expenditure) and reforms effects also pushed projected health care spending in the EU (0.1 pps. of GDP higher in the current Ageing Report than in the 2018 projections). In aggregate, EU countries now start from a slightly lower level of spending. Ceteris paribus, this shift results in slightly lower increases in projected levels of health spending. This base year effect, however, is counterbalanced by the reforms effect.

Graph II.2.8 **shows the EU age-gender expenditure profiles as percentage of GDP for all ages and their evolution in comparison to the 2018 Ageing Report.** In the EU, the cost profiles for males decreased for the ages of 85 and above compared to the 2018 cost profiles. Similarly, the cost profiles for females decreased for all ages, but more prominently for the old ages of 90 and above. These changes in the age-cost profiles would have resulted in a smaller increase in public expenditure on health care as compared to the 2018 Ageing Report, would they have not been outweighted by the relatively high impacts in some countries pointing to the opposite direction.

However, there is considerable variation between countries in terms of overall revision and drivers:

- For example, *base-year and reform effects* range from +1.3 pps. of GDP in Poland to -0.2 pps. of GDP in Malta. The fiscal impact of legislated measures has significantly increased the public expenditure projections on health care for Poland, Slovakia, Slovenia and France.

- Looking at *age-gender costs profiles*, though their aggregate impact is relatively low, a wide range of variation is seen across Member States, from an increase of 0.9 pps. of GPD for Slovakia, 0.6 pps. of GDP for Poland and 0.4 pps. of GDP for Spain to a decrease of -0.3 pps. of GDP for Luxembourg. The reason for these changes is due to the fact that in most cases age-cost profiles have been updated, resulting in different dynamics of ageing costs for many countries. In many cases this also reflects an improvement in the quality of data used and in the construction of the profiles.

([117]) The health care expenditure projection results are identical with the published figures in the 2018 Ageing Report. Any impact on macroeconomic variables of pension peer-reviews conducted in between the Ageing Reports 2018 and 2021 is not taken into account.

([118]) For the decomposition, departing from the level of expenditure in 2019, each driver's impact is estimated by replacing *ceteris paribus* its current value with the 2018 Ageing Report data. This is done subsequently for the base year and reforms, the age-cost profiles, GDP per capita growth and population data.

- The latest demographic projections for Spain, France and Malta substantially worsens the projected health care spending growth, while the changes in projected demographics favourably impact on the projected health care growth for Portugal, Cyprus, and Germany.

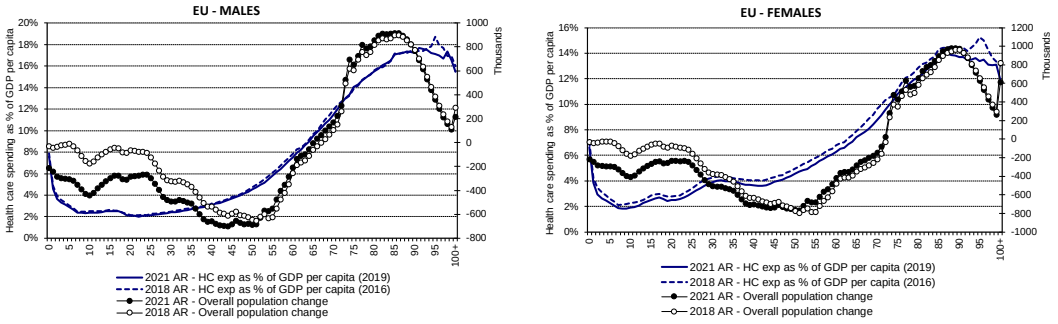
- In terms of revisions to the GDP growth rates per capita, Malta, Germany, Greece, Ireland, and Portugal are most strongly affected by revisions to GDP projections reducing projected expenditure growth, whereas for Luxembourg, Belgium and France, the effect is opposite.

Table II.2.17: **Decomposing the impact of drivers on differences in spending growth in health care expenditures between the 2021 and 2018 Ageing Reports, in pps. of GDP**

	Difference in spending growth between the 2021 and 2018 Ageing Reports	Determinants of change behind 2021 Ageing Report health care expenditure as % of GDP compared to 2018 Ageing Report projections (AWG reference scenario, change 2019-2070)					
		Due to:					
		Base-year and reforms effect	Change in age-cost profiles	Change in demographic projections	Change related to GDP growth	Interaction effect (1)	
BE	0.2	0.0	0.0	0.3	0.9	-1.0	**BE**
BG	0.0	0.0	0.0	0.0	-0.3	0.3	**BG**
CZ	0.0	0.0	0.1	-0.1	-0.3	0.2	**CZ**
DK	-0.1	0.0	-0.1	0.0	0.7	-0.7	**DK**
DE	-0.2	0.0	0.0	-0.2	-0.6	0.6	**DE**
EE	0.5	-0.1	0.0	0.1	-0.2	0.6	**EE**
IE	0.5	-0.1	0.3	0.2	-0.6	0.6	**IE**
EL	-0.3	-0.1	-0.1	-0.1	-0.6	0.6	**EL**
ES	0.9	-0.1	0.4	0.7	0.4	-0.6	**ES**
FR	0.7	0.3	0.1	0.5	0.8	-1.0	**FR**
HR	0.1	0.1	0.1	0.2	0.7	-0.8	**HR**
IT	0.3	0.2	0.0	0.1	0.1	0.0	**IT**
CY	0.0	0.0	0.1	-0.2	-0.3	0.3	**CY**
LV	0.0	0.2	-0.2	0.2	0.5	-0.8	**LV**
LT	0.2	0.0	0.0	0.2	-0.3	0.4	**LT**
LU	0.1	-0.1	-0.3	0.3	1.1	-0.9	**LU**
HU	0.1	0.0	0.0	0.1	-0.2	0.2	**HU**
MT	0.2	-0.2	-0.1	0.5	-2.7	2.8	**MT**
NL	0.1	-0.1	0.0	0.2	0.5	-0.4	**NL**
AT	-0.2	0.0	0.0	-0.1	0.6	-0.7	**AT**
PL	1.8	1.3	0.6	0.1	-0.3	0.2	**PL**
PT	-0.6	-0.1	-0.1	-0.4	-0.6	0.7	**PT**
RO	0.2	-0.1	-0.1	0.2	0.4	-0.2	**RO**
SI	0.6	0.3	0.1	0.3	0.0	-0.1	**SI**
SK	1.4	0.6	0.9	0.1	0.0	-0.3	**SK**
FI	0.2	0.0	-0.1	0.3	0.7	-0.7	**FI**
SE	0.1	0.0	-0.2	0.2	0.5	-0.4	**SE**
NO	0.0	-0.1	-0.2	0.2	0.3	-0.1	**NO**
EA	0.3	0.1	0.1	0.2	0.1	-0.2	**EA**
EU	0.3	0.1	0.1	0.2	0.1	-0.2	**EU**

Notes: (1) The interaction effect is the unexplained difference between the change in all drivers and the sum of the effects of the individual drivers. The change in all drivers is estimated by replacing the current data with the 2018 Ageing Report data for all drivers at once. (2) The EU and EA averages are weighted according to GDP.
Source: Commission services, EPC.

Graph II.2.8: **Age-gender expenditure profiles and population changes in the 2021 and 2018 Ageing Reports**



Source: Commission services, EPC.

2.6. CONCLUSIONS

Growing public health care expenditure raises concerns about its long-term sustainability. This report takes into account the possibility that alternative scenarios materialise in a context subject to considerable uncertainty. Public health expenditure in EU was at 6.6 % of GDP in 2019 ([119]). The projections show that expenditure may grow to 7.7 % of GDP in 2070 only on accounts of demographic ageing – and to higher levels when other push up factors are accounted for as in the other scenarios presented in this report.

The *"demographic scenario"* assumes that per capita spending grows in line with national income per capita. The effect is that without population ageing, the share of health spending in percentage of national income would stay constant. However, on the one hand empirical research shows that growth in both public and total health care spending may exceed the growth rate of national income, be it because of rising expectations towards more and better health care and a higher willingness to pay for health care services. On the other hand, the scenario assumes that all future gains in life expectancy are spent in bad health. Consequently, the "demographic scenario", with projected public expenditure increase on health care of 1.2 pps. of GDP by 2070, may under- or overestimate health spending growth.

Indeed, the projections show that whilst ageing per se has a non-negligible effect on expenditure growth, it is rather moderate. **In effect, much depends on whether gains in life expectancy are spent in good or bad health.** Considering higher life expectancy, but in a similarly pessimistic note as in "the demographic scenario", with all additional life year gains spent in bad health as suggested in the "***high life expectancy scenario***", the ageing impact on the projected public expenditure on health care will amount to 1.3 pps. of GDP. Optimistically, if all additional life years of the "demographic scenario" are healthy life years, the additional cost burden from ageing can be lowered to only 0.3 pps. of GDP, as exemplified in the "***healthy ageing scenario***" ([120]).

Non-demographic factors will be one of the key driving forces of health expenditure, if past trends persist. With rising income and longevity, older people are willing to spend more on health care services ([121]). Assuming a higher growth in spending relative to national income (i.e. income elasticity of 1.1) adds an extra 0.2 pps. of GDP to health expenditure and the projected increase in health expenditure in 2070 for the "***income elasticity scenario***" amounts to 1.4 pps. of GDP.

Rising income, in turn, drives technological innovations in the health sector, which have been confirmed in many studies to be crucial in explaining past increases in health expenditure. In addition, policy decisions to expand access and improve quality to health services especially for

([119]) Note that public expenditure on health care include capital formation, but exclude long-term nursing care.

([120]) The "healthy ageing scenario" is identical to the "constant health scenario" from previous Ageing Reports.

([121]) In the past decade there was an increase in the expenditure associated with old age diseases such as Alzheimer or dementia for example.

older people will inextricably mean that ageing remains at the core of public debates related to health expenditure. The projections show that - on the basis of an econometric estimate (i.e. elasticity of 1.5) - when the impact of future income growth on the demand for more and better health care is taken into consideration, projected expenditure becomes much higher – a projected increase of 3.1 pps. of GDP for the EU on average by 2070 for the *"**non-demographic determinants scenario**"*. This is reasonable, as increasing economic wealth puts governments at pressure to provide more health services and to improve the quality of care. Also, growing living standards change people's attitude towards their own health and raise their expectations on living a longer, healthier life. Innovations can produce efficiency gains and thus be cost-saving. Furthermore, in medical care they have also expanded the possibilities of life-saving treatments. However, these have added to costs, both by adding extra expenditure to previously non-curable diseases and by saving peoples' lives at the cost of longer periods of morbidity, especially at old ages. Overall, this had a strong increasing and dominant effect on public spending. The currently prevalent consensus is that there will also be other supply related drivers, such as the costs of wages, are a non-negligible component of health expenditures.

Health care is highly labour-intensive and requires highly skilled medical personnel who have strong bargaining power in a number of countries. Assuming that wages grow in line with labour productivity (therefore exceeding growth in GDP per capita), such as in the ***"labour intensity scenario"***, leads to an additional spending of 0.5 pps. of GDP relative to the "demographic scenario", which equals to 1.7 pps. of GDP projected increase in public expenditure on health for the EU on average by 2070.

Growing convergence in citizens' income per capita and expectations towards benefitting from a similar basket of health services and goods across countries may push expenditures up, especially for below EU average income countries. In the ***"EU cost convergence scenario"*** Member States with age-gender spending profiles as shares of GDP per capita below the EU average age-gender cost profile converge in real living standards to the EU average. On average for the EU the projected increase in public expenditure on health care for this scenario is 1.4 pps. of GDP or 0.2 pps. of GDP higher relative to the EU average of the "demographic scenario".

Hospital and outpatient care, medicinal goods and health care infrastructure constitute large shares of total health care expenditure. Disentangling the contribution of the individual costs components and their contribution to changes in health care spending improves the understanding of the actual expenditure drivers. The "*sector-specific composite indexation scenario*", in which future expenditure of each different driver evolves in line with their specific past trends, leads to an average projected increase 0.6 pps. of GDP higher than in the "demographic scenario". This is the second highest projected increase in public spending on health care (1.8 pps. of GDP by 2070) and as much as the projected increase in the "AWG risk scenario". The "sector-specific composite indexation scenario" increase in public spending on health care is influenced mainly by the three very important drivers of expenditure growth – inpatient care, outpatient care and pharmaceuticals.

Based on a combination of different scenarios, the "***AWG reference scenario", used for EU fiscal surveillance,*** and the "***AWG risk scenario"*** show that spending in the EU may increase between 0.9 and 1.8 pps. of GDP (Graph II.2.6).

Finally, expenditure on health care is also influenced by the productivity of the economy. The ***"total factor productivity risk scenario"*** assumes that, compared with the baseline, the productivity of the economy will grow slower in the future. The projected increase for the EU on average is therefore 0.03 pps. of GDP lower than in the "AWG reference scenario".

Different institutional and legal settings (financing mechanisms, ownership structure, organisation of health provision, etc.), as well as policy changes, are not sufficiently well reflected in the projections. Despite these limitations, all scenarios for almost all Member States point to considerable continuous pressures on public spending from the health care sectors – even under conservative assumptions.

In comparison to the 2018 Ageing Report projections, the projected increase of EU health care spending has been revised upward (+0.3 pps. of GDP). Differences across the two waves of projections arise from different demographic assumptions and changes in the age-gender expenditure profiles. Other drivers are a different base-year for starting the projections, updated macroeconomic assumptions resulting in different GDP per capita growth rates and GDP levels for the period under analysis and changes in scenario assumptions. The results at the level of the EU show that the new age-cost profiles have slightly increased the spending by 0.1 pps. of GDP. The GDP per capita growth projections have driven up the results by roughly 0.1 pps. of GDP, while new demographic data has driven up spending projections by 0.2 pps. of GDP. Changes in the base year and reforms account for 0.1 pps. of GDP increase in the projections. However, there is considerable variation between countries.

Furthermore, the current Eurostat 2019-based population projections show a slowing down of ageing from 2050 onwards, visibly slowing expenditure growth of public spending on health care as a proportion of GDP in the last two decades for most scenarios. This is partly due to the link between ageing (including the gradual exit of the baby boom generation) and public expenditure on health care. Additionally, it is also influenced by the health status of the population reflected in the assumption that half of the additional years in life expectancy increase are spent in good health as well as other non-demographic determinants as national income and technological progress.

Therefore, it may be concluded that ageing and non-demographic drivers of health care expenditure are likely to exert a continuous pressure on public finances, in the long-run, extending even beyond the current trends in population ageing. Due to market failures in health care markets, public financing will remain a large share of health care provision. Private spending may play a more important role but will likely remain of a complementary character in many Member States, closing gaps in public financing and enabling treatment in areas not considered as lifesaving.

All in all, ageing as well as non-demographic drivers of health care expenditures will continue putting pressure on the long-term sustainability of public finances. Balancing the health care needs of the European populations with spending resources, as well as continuous efforts to increase the efficiency and quality of health service delivery, will continue to be high on the political and economic reform agenda of Member States.

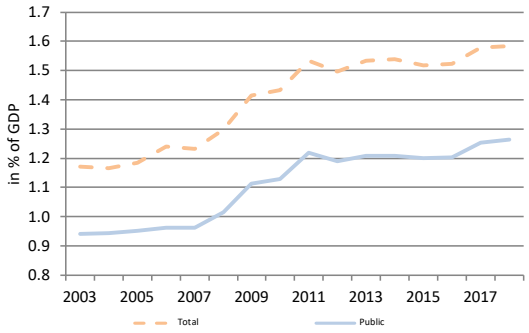
3. LONG TERM CARE

3.1. INTRODUCTION

As in past Ageing Reports, the projections for public expenditure on long-term care (LTC) have been run using Commission services' (DG ECFIN) models on the basis of a methodology and data agreed with the Member States delegates in the AWG-EPC ([122]). The projections go from 2019, the base year, until 2070.

LTC expenditure represents an important and growing share of GDP and of health spending (public and total - including private) (Graphs II.3.1 **and** II.3.2**).** As is the case for health care, future trends are likely to be heavily influenced by population ageing, as well as a range of non-demographic determinants. After a few years of relative stagnation, in 2017 and 2018, LTC expenditure has begun to grow again as a proportion of GDP. As such, public expenditure on LTC is a relevant factor for the long-term sustainability of public finances.

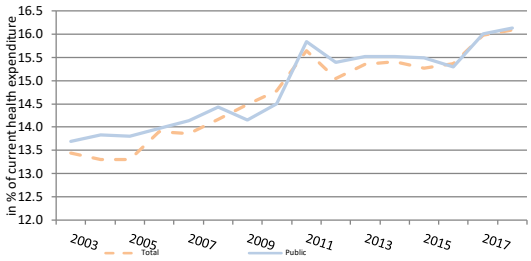
Graph II.3.1: **Total and public long-term care expenditure in the EU, as % GDP**



Notes: Expenditure based only on the medical care component (HC.3) of system of health accounts data.
Source: European Commission, EPC.

Long-term care covers a broad range of services. It is usually defined as a set of services required by persons with a reduced degree of functional capacity (whether physical or cognitive) and who, as a consequence of this, are dependent for an extended period of time on help with basic and/or instrumental Activities of Daily Living (ADL. *Basic* ADL (Katz et al., 1963) are often provided in tandem with basic medical services such as nursing care, prevention, rehabilitation or services of palliative care ([123])). *Instrumental* Activities of Daily Living (IADL ([124])) (Lawton and Brody, 1969) or assistance care services are mostly linked to home help. (Colombo et al., 2011).

Graph II.3.2: **Total (public) expenditure on long-term care in the EU, as a share of total (public) current health expenditure**



Notes: Expenditure based only on the medical care component (HC.3) of system of health accounts data.
Source: European Commission, EPC.

Long-term care can be provided as "in-kind" benefits or via cash benefits. EU Member States finance formal LTC as "in-kind" services, i.e., either by paying for or providing directly care for eligible recipients, or via "cash benefits", where recipients are paid money and can purchase services themselves. Cash benefits can therefore also be used to compensate informal carers, such as family members. It should be noted that the analysis in this report focuses on formal care financed, at least partly, by the public sector. Therefore, it does not cover formal care which is fully privately funded, nor informal care, which is provided free of charge by relatives or friends.

The provision of LTC services appears fragmented in the EU and statistical data is insufficient. Due to historical and organisational reasons, public financing and organisation of LTC

([122]) Data and methodology are briefly summarised in Annex IV to the Chapter. The technical methodology for running the long-term expenditure projections is explained in detail in the Joint Report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (AWG): "The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy 20. November 2020. Brussels: https://ec.europa.eu/info/publications/2021-ageing-report-underlying-assumptions-and-projection-methodologies_en

([123]) ADL are: eating, bathing, washing, dressing, getting in and out of bed, getting to and from the toilet and continence management.

([124]) IADL are: shopping, laundry, vacuuming, cooking and performing housework, managing finances, using the telephone, etc.

tends to be highly fragmented, with different government authorities being in charge of different care settings. It has also historically been a relatively low policy priority and, consequently, in terms of the development of statistical data definitions and collections. For instance, data on overall LTC expenditure by care setting is not available from a single source for every EU Member State, which requires combining different international and national-level data sets.

In terms of coverage of the public LTC systems, the Member States provide administrative data by care setting (i.e. home care/ institutional care/cash benefits) for the projections, with some risk of overlaps however. Although by definition there is no overlap between home care and institutional care ([125]) it is relatively common for the same recipient to receive both in-kind and cash benefits. For example, a person who received publicly financed home care in their own home can also receive cash benefits with which they may finance additional care or pay for the co-payments of the care they receive. However, the data on each type of care tends to be collected and managed separately by different public bodies or government departments, with the consequence being that people who receive both in-kind and cash benefits may be counted twice if we simply add up the number of recipients of in-kind benefits with the number of recipients of cash benefits. In fact, out of the countries that have cash benefits, only a minority have reported data on the extent of the overlaps with in-kind care. In countries without cash benefits no overlaps are expected between institutional and home care.

Overall, these shortcomings imply that it is not straightforward to ascertain exactly such basic facts as how much is spent on LTC, how many dependents are covered by LTC and what amount of LTC benefits is provided to each of them. In this context, a critical value added of the Ageing Report projection exercise is to build a comprehensive set of long-term care expenditure and coverage data that provides an accurate overview of the sector at national and EU level. Annex 4 explains the efforts that have been made in these projections to that end.

([125]) Institutional care is provided in an institution where the recipient resides. Home care is provided in the private home of the care recipient.

In order to project LTC expenditure, two factors need to be taken into account. First, the ageing of the population, if not accompanied by a compensating improvement in health status, leads to an increase in the number of dependent elderly and LTC needs. Second, the availability of informal care may decline due to societal trends, evolving family structures and increasing female labour-force participation ([126]), increasing in turn he need to resort to publicly financed formal care and thereby putting pressure on public expenditure on LTC.

Anticipating future trends in LTC spending is essential in order to devise appropriate policies, notably to ensure that good quality and accessible services are provided and fiscal sustainability is not endangered. Improving the efficiency of LTC systems is necessary in order to respond to the increasing need for care. These can include improving governance, targeting care at those that need it most and can least afford to pay it, ensuring availability of carers, supporting informal carers, as well as health promotion and rehabilitation ([127]).

3.2. DETERMINANTS OF LONG-TERM CARE EXPENDITURE

3.2.1. Overview

Public expenditure on LTC is dependent on several factors that affect the demand and supply of these services. Main factors include the dependency status of the population (itself driven by social, epidemiological and demographic factors), the model of LTC provision (organisation and financing of the system, which shape the mix between publicly-financed formal care (the focus of this report), privately-finance formal care and informal care) and availability of human resources. The rate of economic growth also plays a role, as does the progress in medical science and the development and use of new technologies.

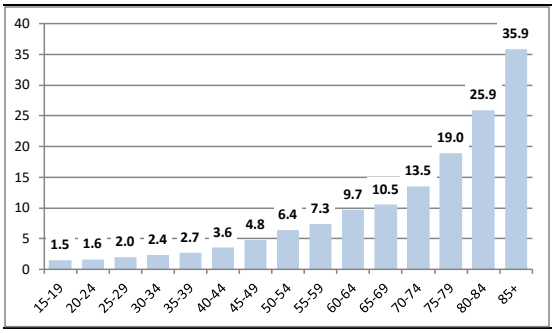
([126]) Women tend to be the main providers of informal LTC. See Gender Equality Index 2019. Online report, European Institute for Gender Equality, https://eige.europa.eu/publications/gender-equality-index-2019-report/informal-care-older-people-people-disabilities-and-long-term-care-services

([127]) See the Joint Report on Health Systems and Long-Term Care systems for a more in-depth discussion (European Commission (ECFIN) and EPC (AWG) (2016).

3.2.2. Demographic structure of the population

The ageing of the population is a key determinant of future public expenditure on LTC. On the one hand, it is the result of the demographic transition that results from the ageing of the baby boom cohorts and on the other hand, the result of the increase of life expectancy and the decrease of fertility rates. The increasing number of old and very old people is likely to lead to an increase in the number of people who will need and receive LTC. The prevalence of physical or mental disability increases with age (especially with very old age groups, 80+) and in many cases can lead to dependency, as shown in Graph II.3.3. The link between ageing and dependency is explored further in the next section.

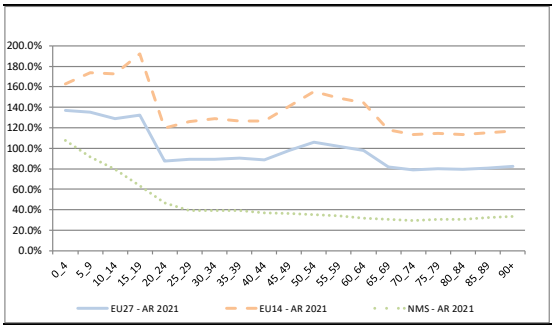
Graph II.3.3: **Median dependency rates by age-group for EU27, based on EU-SILC**



Notes: The dependency rates are based on EU-SILC data on "self-perceived longstanding severe limitation in activities because of health problems [for at least the last 6 months]".
Source: European Commission, EPC. 2019 (base year) estimate.

LTC expenditure data reveal however that LTC costs do not increase linearly with age. The age-related expenditure profiles provided by each Member State and Norway ([128]) for the 2021 Ageing Report show that expenditure (spending per user as % of GDP per capita) does not register a relative increase in costs for LTC recipients for higher age-groups to the extent that it does in the health care age-cost profiles shown in the previous chapter or to the extent that would be suggested by the dependency ratio age profile. This suggests that the LTC costs per recipient related to severe disability have a complex interaction with age. Indeed, the dependent population can be split into the young disabled population (a minority, but in some cases with high costs per head), and the elderly population (the majority, with typically an increase in dependency as age increases), with different care needs. The increase in dependency as age advances may, in some cases, not be reflected in an increase in the average age-cost profiles for a specific benefit. Rather it is associated with a shift between different care settings (for example from home care to institutional care). The coverage of LTC systems also has a strong impact on the age-cost profiles. LTC systems with very limited coverage generally focus only on those people who have the greatest need, for instance those who are young and heavily disabled. Therefore their age-cost profile may show very high cost for the young and very low cost for the elderly, as the system provides very little LTC for the elderly. In contrast countries with comprehensive LTC systems will provide coverage for both the young disabled and the elderly and may show an age-cost profile that relates more closely to the relative cost of providing care for each age-group.

Graph II.3.4: **Institutional care: Expenditure per recipient of long-term care services in institutional care, as % of GDP per capita**



Notes: EU14: Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland and Sweden. NMS: New Member States: Bulgaria, Czech Republic, Estonia, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Romania, Slovenia and Slovakia.
Source: European Commission, EPC. 2019 (base year) estimate.

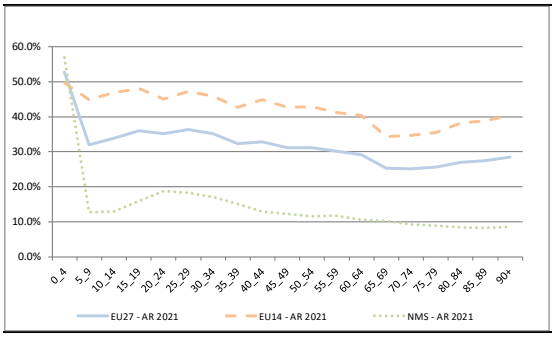
Some of these differences can be seen in the age-cost profiles on Graphs II.3.4, II.3.5 and II.3.6**, which show the specific profiles for institutional care, home care and cash benefits**. ([129]) It should however be noted that the averaging of age-cost

([128]) These age-cost profiles are based on national data sources and are accepted for use in the report on the basis of a plausible explanation of national methodology.

([129]) Annex IV also contains a comparison of the overall age-cost profiles with those used in AR2018.

profiles across Member States may even out excessively the distribution of costs due to the large disparity in coverage and focus of each system. The average cost profiles need to be interpreted carefully and may be less informative than those of individual Member States. Keeping this in mind, a few patterns can still be identified.

Graph II.3.5: **Home care: Expenditure per recipient of long-term care services in home care, as % of GDP per capita**



Source: European Commission, EPC. 2019 (base year) estimate.

In general, the values for EU14 countries are typically higher than those for New Member States (NMS), and follow somehow different patterns. These results are driven by a greater depth of coverage, as those who are covered receive a greater quantity of care.

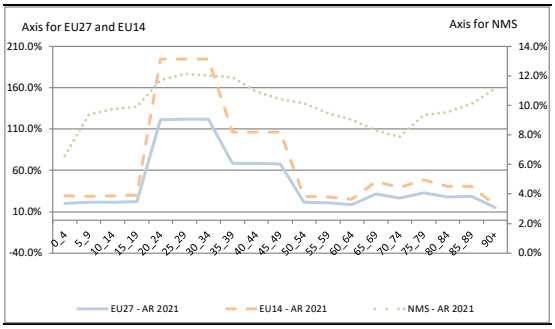
– *Institutional care* patterns show, for the EU14, a peak at relatively young ages, which is likely to reflect care for young disabled care recipients with a high degree of dependency. They also reveal a second, but lower peak, around 50 years of age, reflecting the relatively shorter life expectancy of some of the young disabled care recipients. Then, the elderly population dominates from age 65 onwards and the cost per recipient increase gently as age increases For the NMS the age-cost profile follows a similar pattern, albeit with no peak around age 50 and a gentler increase in older age. This may be due to NMS having on average less comprehensive LTC systems.

– *Home care* shows a broadly similar picture, although with less variation overall across age groups. The peak in expenditure per recipient occurs in young age groups for both EU14 and NMS and then drops gently up to age 65. From then onwards, as the elderly dominate the estimates, there is a gradual increase in average costs more notable for the EU14.

– The comparison of *cash benefits* between EU14 and NMS shows that the shape of the two age-cost profiles is relatively similar, with a peak around 25 to 34 years of age and a gentle increase in older age (which continues increasing gradually for the NMS but which decreases gradually after the initial lift for the EU14).

Overall, these results reveal that population ageing affects LTC spending mainly through increases in the number of dependent people (while the influence of the age-cost profile is less straightforward). By contrast, for health care, ageing leads to higher spending also due to composition effects (due to increasing age-cost profiles).

Graph II.3.6: **Cash benefits: Expenditure per recipient of long-term care cash benefits care, as % of GDP per capita**



Source: European Commission, EPC. 2019 (base year) estimate.

3.2.3. Dependency rates - developments in health status

The need for LTC does not arise from ageing itself, but it is instead a consequence of disability, sickness or frailty ([130]) causing dependency on others.

***All else being equal*, the number of dependent people is expected to increase as the number of elderly people rises**. As shown in the previous

([130]) For an example of the link between frailty and need for LTC, see Campitelli, M. et al. (2016), "The prevalence and health consequences of frailty in a population-based older home care cohort: a comparison of different measures" BMC Geriatrics, 2016; 16:133.

section, dependency rates are higher for older age groups. Therefore, *all else being equal* (i.e. if dependency rates for each age group stay constant), the number of people with dependency issues increases as the ageing phenomenon accentuates.

The projected number of dependent people will also depend on future developments of the "quality" of life (affecting the dependency rates for any given age group). Population ageing can also have an additional effect on the number of dependents, in that the dependency rates for specific age groups may actually change as well over time. Ageing of the population is the result of both reduced birth rates and increased longevity (i.e. increased life expectancy). Increased life expectancy results in an increase in the number of elderly people. However, as in health care, the impact depends on the extent to which longevity is accompanied by a corresponding improvement or worsening in the "quality" of life (and so whether the dependency rates for a specific age group decrease or increase due to people living longer). Hence, it is not necessarily age per se but the dependency rates that determine LTC expenditure.

Moreover, dependency does not equate disability, which relates to some functional impairment of an individual. Dependency relates instead to the inability to perform ADLs and IADLs and therefore requiring some external assistance. Therefore, it could be said that disability translates into dependency leading to the need for LTC. The links between disability, dependency and demand/use of LTC are not straightforward. There are many people with some form of disability who can lead completely independent lives without the need for care services. Further, dependency as reported in EU-SILC also depends on a person's perception of his or her ability to perform activities associated with daily living. On the one hand, survey data can underestimate some forms of disability ([131]). On the other hand, disability data can be too inclusive and capture relatively minor difficulties in functioning that do not require the provision of LTC ([132]).

The projections rely on data that encompass different forms of dependency. For the purpose of these projections, the EU-SILC data on "self-perceived longstanding limitation in activities because of health problems [for at least the last 6 months]" is used. This is done in order to minimise errors and in line with the usual eligibility conditions of public schemes in many EU countries which focus on relatively "severe" disability. This is considered an adequate measure of dependency and is available for all EU Member States and Norway for people aged 15+ and by age group ([133]). To further improve the reliability of the data, a four-year average is used. As the EU-SILC survey is only sent to private homes, it will not include institutional care recipients. To correct this, in the model the number of care recipients in care homes are added to the figures shown on Graph II.3.3 to provide a more accurate estimate of the dependent population. It should also be noted that this measure of dependency focusing as it does on severe dependency might underestimate the dependency rates for those EU MS with comprehensive long-term care systems that cover relatively light levels of dependency.

As suggested above, a key question when projecting LTC expenditure is the impact of increased longevity on dependency rates. Recent empirical research has not come to a clear conclusion regarding this question. Some evidence suggests that specific causes of disability may become more prominent with increasing age ([134]). In particular, the number of people with dementia (e.g. Alzheimer's disease) is expected to increase ([135]). On the other hand, some studies

([131]) People may not report certain socially stigmatised conditions, such as alcohol and drug related conditions, schizophrenia, and mental degeneration.

([132]) As these people are most in need of income support and services, such as long-term care. This minimises the chance to mistakenly capture people who are not dependent, although some people with lower levels of dependency may be missed.

([133]) As this data is based on subjective assessment of care needs. The comparability of cross-country data is more limited, then would be the case for objective measures of care needs, which are ,however, not available on a comparable basis for all EU countries.

([134]) Heger, D. and Kolodziej, I.W.K. "Changes in Morbidity over Time – Evidence from Europe", Ruhr Economic Papers #640.

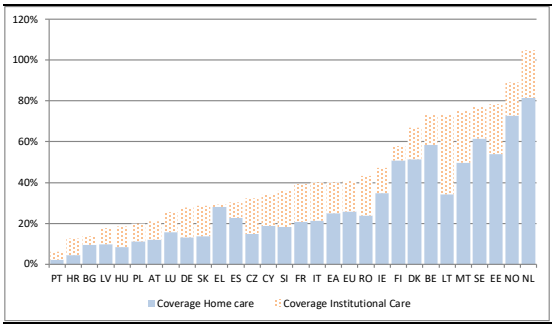
([135]) According to OECD (2015), dementia is already the second largest cause of disability for the over-70s and costs societies more than half a trillion US dollars every year

have noted that the increase of life expectancy can lead to a postponement in the incidence of severe disability, leading to a reduction in the prevalence of severe disability for some age-groups ([136]).

3.2.4. Patterns of long-term care provision

Whether a country relies mainly on formal care or informal care and whether formal care is largely provided in institutions or at home are important determinants of public expenditure on LTC. Formal long-term care includes both in-kind care and cash benefits. In-kind long-term care is provided by professionals at home or in an institution (such as care centres and nursing homes). Cash benefits are payments that can be used to purchase formal care at home or in an institution or which can be paid to informal caregivers as income support. All EU Member States are involved in either the public provision and/or financing of formal LTC services (delivered by care assistants who are paid under some form of employment contract), although the degree to which this is the case varies across EU Member States.

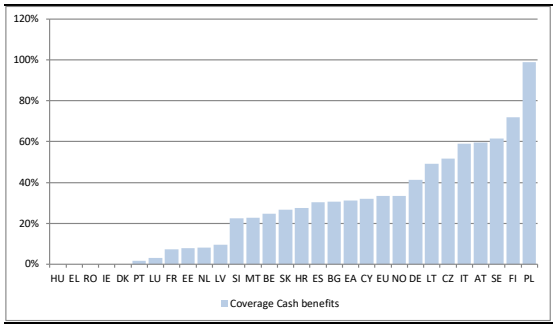
Graph II.3.7: **Coverage of in-kind care by country (% of the estimated dependent population)**



(1) In-kind care includes home care and institutional care
Source: EPC and European Commission

The coverage of total in-kind care and between home and institutional care varies largely across EU countries. Given the potential overlaps between cash benefits and in-kind benefits (institutional care and home care), the model considers the coverage of each care setting separately. Graphs II.3.7 and II.3.8 show the coverage for in-kind care (institutional care + home care) and cash benefits respectively. ([137]) Although the estimated coverage of the dependent population by in-kind care is very high for several EU MS and even above 100% for the NL, specifically, this does not necessarily mean that the data on LTC recipients is problematic. It is instead likely to be linked to the fact that very comprehensive LTC systems (such as that of the NL) cover not only severe disability but also less severe forms of disability. The high coverage of cash benefits in countries such as PL, which is close to 100% is also explained by elderly cash benefits eligibility criteria going beyond the coverage of less severe forms of disability (albeit with a relatively low average cost).

Graph II.3.8: **Coverage of cash benefits by country (% of the dependent population)**



(1) No data for HU
Source: European Commission and EPC

The above discussion focuses on coverage of LTC that is at least partly publicly funded. However, a large proportion of LTC in the EU is actually provided by informal carers such as family members and friends – mainly spouses and children. Informal care is in principle not paid and there is no formalised contract, even though an informal caregiver may receive income transfers and, possibly, some payments from the person receiving care. Although it substitutes publicly funded LTC, it should be noted that there are "opportunity costs" derived from informal care: the impact on labour market and productivity, as well as on carers' health status itself. According to the data collected, countries such as the Netherlands,

globally, while ageing populations mean these costs are rising. OECD (2015). "Addressing Dementia: The OECD Response".

([136]) Lindgren, B. (2016), "The Rise in Life Expectancy, Health Trends among the Elderly, and the Demand for Care - A Selected Literature Review" NBER Working Paper No. 22521. http://www.nber.org/papers/w22521.

([137]) If we divide the number of recipients for each care setting as a proportion of the dependent population estimated by using EU-SILC (as described in the previous section), we can calculate the coverage of the public LTC system.

Denmark and Sweden rely mostly on formal care, while countries such as Greece, Latvia, Bulgaria, Cyprus, Romania, Estonia, Portugal and Croatia rely almost exclusively on informal care or privately funded care. Pressure for increased public provision and financing of LTC services may grow substantially in coming decades as countries become richer, especially in those Member States where the bulk of LTC is currently provided informally.

3.2.5. Care supply – availability of human resources

This report relies on the same technical assumptions as the previous edition of the Ageing Report as regards the definition of dependent people. In the 2021 Ageing Report, similar to the report published in 2018, it is assumed that all those receiving home care, institutional care or cash benefits are dependent, and that all persons deemed dependent receive either home care, institutional care, cash benefits or informal care. However, one should be aware that the provision of LTC is not as clear-cut, be it for formal or for informal care. Furthermore, the substitution effects between formal and informal care are not as straightforward.

Since at present, labour is the main input when providing LTC ([138]), we focus on the workforce as a key factor in the projections. The formal care workforce is often associated with low recognition and salaries, which leads to relatively high staff turnover and staff shortages in some countries. In the future, population ageing will mean there will be fewer people of working age, and education trends may lead to a decline in the size of the low-skilled workforce (which may be relevant for some home-care services), potentially increasing staff shortages. These factors, combined with higher demand for formal provision of LTC may increase wages in the sector. As the cost of LTC is dominated by labour costs, changes in wage rates of LTC workers are likely to influence future costs of LTC.

Member States with more comprehensive LTC service provision have attempted to deal with staff shortages by developing policies to attract migrants. Differences in pay and working conditions among Member States influence the inflow of migrant workers, who are mainly female. However, while this can help mitigate short-term shortages, the extent to which migrants may compensate for staff shortages in the longer term is unclear (particularly if high turnover persists), while they may generate staff shortages elsewhere.

Another important factor considered in the projections is developments concerning informal care. The latter influence (formal) long term care projections, through substitution effects. For those dependents that do not receive (publicly financed) formal care (in kind or in cash), it is assumed that they receive informal care or privately funded care. . Two dimensions should be taken into account: the future availability of potential informal carers and their propensity to provide care.

– *Availability of potential informal caregivers*: Key variables affecting the future availability of potential informal carers are the future numbers of elderly who will have children who live near enough to provide care (i.e. co-residence or geographical proximity), and the future numbers of people who will be living with their spouse (the spouse tends to be the prime provider of long-term care in many cases).

– *Propensity to provide care*: The propensity to provide care will be affected by the participation in the labour market (particularly that of women, who tend to be the main carers at present), as well as the ability/willingness to provide care.

Following current trends, increasing labour participation by women and new family structures may mean that providing informal care may become more difficult. Similarly, the ability to provide care is likely to decrease due to population ageing as spouses, children and relatives themselves become older and frailer. It should be noted that providing care might have negative consequences for the carer in cases of intensive caring: there may be a negative impact

([138]) This may be challenged by digitalisation, although its relatively low current use in the field of LTC makes it difficult to make assumptions about future trends.

on the carer's health status, reducing their ability to care and to participate in the labour market ([139]).

In summary, the current institutional arrangements for the provision and financing of LTC by the public sector may be under strong pressure in the future, if the availability of informal carers and their propensity to provide care diminish. The impact is nevertheless uncertain and depends on whether informal and home care are complements or substitutes. In case of complementarity, a decreasing supply of informal carers will reduce the demand for home care, increasing the demand for residential care. This is because a lack of informal carers will force dependents to move to institutional care. If informal care is a substitute for formal home care, a shortage of informal carers could lead to an increase in demand for home care. Recent evidence from a group of EU countries suggests that informal care and home care are indeed substitutes, although the extent to which this is the case depends on the country ([140]).

3.2.6. Accounting for country specific policies

LTC policy reforms may change the projected path of LTC expenditure through a variety of channels. While some of the reforms may have a fiscal impact in the short term already, such as wage increases of care personnel or budget caps, others may have a long-term impact, such as changing treatment guidelines or the eligibility criteria to receive LTC benefits. The impact of these reforms on future LTC expenditure is explicitly modelled in this projection exercise and discussed further in section 3.4.1. In addition, institutional specificities in France, Germany and Slovenia are an important determinant for projecting LTC expenditure. Their implementation in the projections is described in section 3.4.2.

3.3. OVERVIEW OF THE PROJECTION METHODOLOGY

3.3.1. The model

The macro-simulation model captures the effect of demographic and non-demographic variables on future public expenditure on long-term care. The model includes many of the described drivers of care, based on data availability considerations ([141]).

The methodology proposes sensitivity analysis for key assumptions based on a series of scenarios estimating changes in:

- the future relative numbers of elderly people, reflecting changes in the population projections;
- the future numbers of dependent elderly people, by applying changes to the prevalence rates of dependency;
- the balance between formal and informal care provision;
- the balance between home care and institutional care within the formal care system; and
- the unit costs of care.

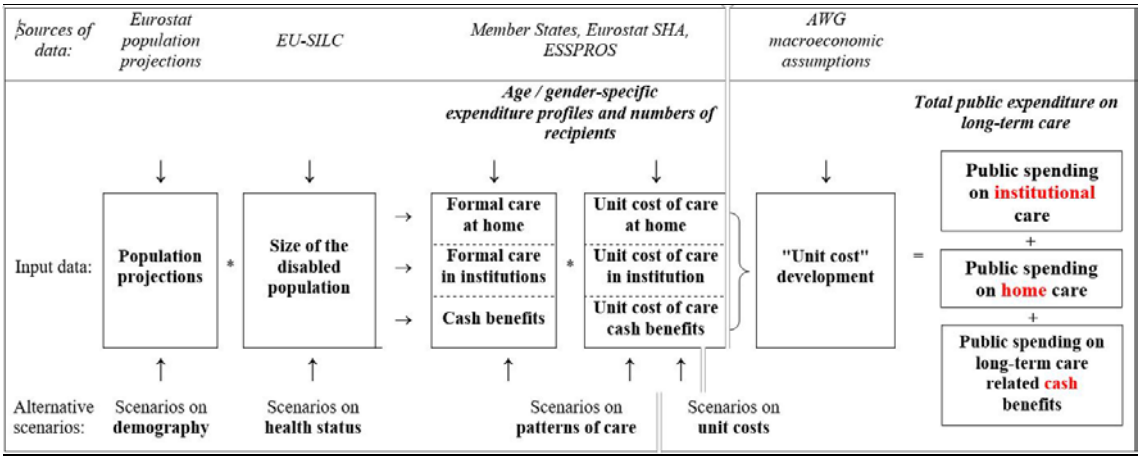
This macro-simulation model splits the whole population into groups that are assigned certain characteristics (e.g. age, gender, per capita expenditure, health status, type of care/support, etc.). Changes in the (relative) size or features of these groups lead to expenditure changes over time. A schematic presentation of the methodology can be found in Graph II.3.9. A more detailed description can be retrieved in Annex IV.

([139]) See OECD (2011) "Health-reform: meeting the challenge of ageing and multiple morbidities".

([140]) Bremer P. et al. (2017) "Informal and formal care: Substitutes or complements in care for people with dementia? Empirical evidence for 8 European countries". Health Policy. 2017 June; 121(6):613-622.

([141]) The methodology for running the long-term expenditure projections is explained in detail in the Joint Report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (AWG): "The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies", Institutional Paper 142. November 2020. Brussels: https://ec.europa.eu/info/publications/2021-ageing-report-underlying-assumptions-and-projection-methodologies_en

Graph II.3.9: **Schematic presentation of the projection methodology**



(1) As in 2018, the projections need to be viewed in the context of the overall projection exercise. Consequently, the common elements of all scenarios will be the population projections provided by Eurostat and the baseline assumptions on labour force and macroeconomic variables agreed by the Commission and the AWG-EPC. The age and gender-specific per capita public expenditure (on long-term care) profiles are provided by Member States. They are applied to the demographic projections provided by Eurostat to calculate nominal spending on long-term care.
(2) This schematic representation shows the methodology for projecting long-term care benefits. Total public expenditure on long-term care is the sum of public expenditure on long-term care in-kind benefits plus public expenditure on long-term care in cash benefits.
Source: European Commission, EPC.

In past exercises, it has been decided that the base case long-term budgetary projections should illustrate the basic scenario which is used to generate specific scenarios that explore the impact of different hypotheses on the projections. These hypotheses include pressure for increased public provision and financing of long-term care services may grow substantially in coming decades, especially in Member States where the bulk of long-term care is currently provided informally. Therefore, additional "policy scenarios" have been prepared to illustrate the impact of possible future policy changes on that matter, such as Member States deciding to provide more formal care.

The AWG reference scenario represents a plausible combination of the hypotheses explored in the previous alternative scenarios and is the main output of the model. It is a no-policy change scenarios. This is the situation where future changes in government policy are not considered ([142]). In other words, any potential future institutional or legal changes to the financing and organisation of long-term care systems are not reflected in the methodology used for projecting expenditure, except for policies which i) are specified in sufficient detail, and (ii) have been adopted or at least credibly announced.

3.3.2. Scenarios

Different scenarios are examined, with different assumptions regarding the evolution of dependency rates, unit costs and policy settings. These scenarios and sensitivity tests can be used to assess the potential impact of each of the determinants on future public expenditure on long-term care. Building on the 2018 EC-EPC projections exercise ([143]), the present exercise maintains most of the existing scenarios and sensitivity tests, while attempting to improve the specification of the AWG reference scenario.

The analysis tries to identify the impact of each quantifiable determinant separately, based on hypothetical assumptions like an estimated

([142]) It is implicitly assumed that the eligibility requirements do not change, as the proportion of persons covered is kept constant. Therefore, the supply of LTC will follow any related changes in demand.

([143]) See Economic Policy Committee and European Commission (EPC/EC) (2018), The 2018 Ageing Report: economic and budgetary projections for the 27 EU Member States (2016-2070), European Economy, No. 3/2018, Directorate General Economic and Financial Affairs, European Commission 2018. Available at: https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-economic-and-budgetary-projections-eu-member-states-2016-2070_en

Table II.3.1: **Overview of different scenarios used to project long-term care spending**

	Demographic scenario	Base case scenario	High life expectancy scenario	Healthy ageing scenario	Shift to formal care scenario	Coverage convergence scenario	Cost convergence scenario	Cost and coverage convergence scenario	AWG reference scenario	AWG risk scenario	TFP risk scenario
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Population projection	Eurostat population projections	Eurostat population projections	Alternative higher life expectancy scenario	Eurostat population projections	Eurostat population projections	Eurostat population projections	Eurostat population projections	Eurostat population projections	Eurostat population projections	Eurostat population projections	Eurostat population projections
Dependency status	2016-2019 average disability rates held constant over projection period	2016-2019 average disability rates held constant over projection period	2016-2019 average disability rates held constant over projection period	2016-2019 average disability rates held constant over projection period	2016-2019 average disability rates held constant over projection period	2016-2019 average disability rates held constant over projection period	2016-2019 average disability rates held constant over projection period	2016-2019 average disability rates held constant over projection period	Half of projected gains in life expectancy are spent without disability.	Half of projected gains in life expectancy are spent without disability.	Half of projected gains in life expectancy are spent without disability.
Age-related expenditure profiles	2019 cost profiles	2019 cost profiles	2019 cost profiles	2019 profiles shift in line with changes in age-specific life expectancy	2019 cost profiles	2019 cost profiles	Cost profiles per Member State converge upwards to the EU27 average by 2070	Cost profiles per Member State converge upwards to the EU27 average by 2070	2019 cost profiles	Cost profiles per Member State converge upwards to the EU27 average by 2070	2019 cost profiles
Policy setting / Care mix	Probability of receiving each type of care held constant at 2019 level	Probability of receiving each type of care held constant at 2019 level	Probability of receiving each type of care held constant at 2019 level	Probability of receiving each type of care held constant at 2019 level	Gradual increase (1% per year during 10 years) of the share of the disabled population receiving formal care (at home or in an institution).	Probability of receiving any type of formal in-kind care converging until 2070 upwards to the EU27 average.	Probability of receiving each type of care held constant at 2019 level	Probability of receiving any type of formal in-kind care converging until 2070 upwards to the EU27 average.	Probability of receiving each type of care held constant at 2019 level	Probability of receiving any type of formal in-kind care converging until 2070 upwards to the EU27 average.	Probability of receiving each type of care held constant at 2019 level
Unit cost development	GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita	*In-kind*: GDP per hours worked; *cash benefits*: GDP per capita
Elasticity of demand	1	1	1	1	1	1	1	1	1 for MS in highest LTc expenditure quartile in 2019, for the rest 1.1 in 2019 converging to 1 by 2070	1	1 for MS in highest LTc expenditure quartile in 2019, for the rest 1.1 in 2019 converging to 1 by 2070

Notes: *
Unit cost development for the reference scenario also includes different country-specific assumptions for France, Germany and Slovenia.
Source: Commission services, EPC.

guess or a "what if" situation. Therefore, the results of the alternative scenario projections will not necessarily be plausible, as they only explore one assumption relating to one specific aspect.

The scenarios used in these projections retain the methodology used for the 2018 Ageing Report, and are described thereafter (see also Table II.3.1):

I. The *"demographic scenario"* assumes that the base year shares of the dependent population who receive either informal care, formal care at home or institutional care remain constant by age cohort over the projection period. Those constant shares are then applied to the projected changes in the dependent population. Thus, the dependent population evolves precisely in line with the total elderly population and all gains in life expectancy are spent in bad health/with disability. ([144])

Moreover, over the projection period, unit costs of care are assumed to evolve in line with GDP per capita.

II. The *"base case scenario"* amends unit cost growth assumptions of the *"demographic scenario"*. In particular, unit costs of in-kind care are assumed to grow in line with GDP per worker, rather than GDP per capita. This reflects the highly labour-intensive nature of LTC and the fact that productivity gains are expected to be particularly slow in this sector, as the services are difficult to automate or re-engineer. Given the current deficit of formal care provision, the LTC market is expected to be supply-driven rather than demand-driven. Therefore, wages are assumed to be the main driver for unit costs for in-kind benefits. By contrast, unit costs for cash benefits are considered to be more related to a form of income support, so

([144]) In Annex 4 the so-called "age-gender expenditure profiles", i.e. the relationship between the age of an average individual and his/her demand for long-term care, are shown. In particular, the graph plots each age-gender specific average public spending on LTC per user (and not per capita as in the case of health care) as a share of GDP per capita in the NMS and EU14, as used in this report.

they are assumed to evolve in line with GDP per capita growth.

III. The *"high life expectancy scenario"* models the budgetary impact of alternative demographic assumptions, according to which life expectancy is higher for all ages than in the *"AWG reference scenario"*. In this scenario, as in the health care and pension models, it is assumed that life expectancy at birth is higher by two years. The rationale for examining the effect of longer lives is twofold. First, there is a marked increase in public expenditure with older age (i.e. 80 and more). In fact, the age profile for long-term care expenditure tends to be steeper at the highest age groups than that for health expenditure, and the share of institutionalised individuals increases sharply among persons aged over 80. Second, the higher age groups are also the part of the demographic projections, which are likely to be the most uncertain.

IV. The *"healthy ageing scenario"* reflects an alternative assumption about trends in age-specific ADL-dependency rates to model a relative decrease in morbidity. It is inspired by the so-called "*relative compression of morbidity*", and it is analogous to the "*Healthy ageing*" performed in the framework of health care expenditure projections. It assumes that the age-specific disability profile shifts in line with life-expectancy, and so the disability rate of a specific age group in the future is equal to that of a younger cohort today, with the shift corresponding to the shift in life-expectancy. This results in a gradual decrease over time in disability prevalence for each age cohort.

V. The *"shift to formal care scenario"* policy-change scenario is run to assess the impact of a demand-driven increase in the (public) provision of in-kind formal care, replacing care provided in an informal setting. ([145]) In particular, this scenario examines the budgetary impact of a progressive shift into the in-kind formal sector of care of 1 percentage point per year of dependent persons who have so far received only informal care. ([146]) This extra shift takes place during the first ten years of the projection period only. The shift from informal to formal care maintains the current shares of home care and institutional care in total formal care. In other words, if currently 10% of the dependents receiving in-kind formal care receive care at home, the shift/increase will also go for 10% to home care (and 90% to institutional care).

VI. The *"coverage convergence scenario"* scenario assumes that the economic convergence across Member States, the exchange of best practices and growing expectations of the populations will drive an expansion of publicly financed formal in-kind care provision into the groups of population that have not been covered by the public programmes so far. Similarly to the scenarios assessing the effect of a shift from informal to formal care, this scenario should also be considered as a policy-change scenario, as it assumes a considerable shift in the current long-term care provision policy, while aiming to take into account the high diversity of country-specific current care mix. Convergence is calculated for each age group and relative proportions of each type of formal in-kind care are kept constant. As in the 'base case scenario', public expenditure on long-term care in-kind services is assumed to develop in line with GDP per hours worked, while expenditure on cash benefits evolves in line with GDP per capita. More specifically, the Member States where the formal in-kind coverage rate is below the EU27 average in the starting year are assumed to converge to this average by 2070 for that age group. By contrast, for countries with coverage above the EU average in the base year this scenario is equivalent to the base case scenario for that age group.

VII. The *"cost convergence scenario"* is a policy change scenario that models upward convergence to the EU average of the relative cost profiles (as a proportion of GDP per capita) for those countries

([145]) The scenarios on coverage use in-kind care coverage as a proxy for overall formal care coverage. This is justified by the lack of comprehensive data on the overlaps between in-kind care coverage and cash benefit coverage, which means that estimates of overall coverage will be biased.

([146]) This scenario captures pressure for increased public financing and of LTC services that may grow substantially in coming decades, especially in Member States where the bulk of long-term care is currently provided informally. Hence, it reflects the possible pressure for increased public provision of LTC services over time, particularly in those countries that rely the most on informal care. The extent to which this will translate into (direct) public expenditure depends on future policy decisions on the funding of the LTC system and its institutional setting.

Table II.3.2: **Long-term care reforms with direct budget impact taken into account in the projections**

Country	Policy reform (2019 and beyond)	COVID-19 spending
Croatia		Including costs of PPE, cleaning, personnel costs, etc.
France		Expenses to cope with the COVID crisis in care homes
Germany		Expenses to cope with the COVID crisis, such as premiums and compensations for excess expenditure, additional material, etc.
Italy	Measures to ensure that growth in institutional and home care is in line with growth in health care.	
Malta		Expenses to cope with the COVID crisis in care homes
Portugal		Increase of the RNCCI capacity to respond to COVID-19 (46 beds more) in the typology long term and maintenance (dispatch no. 3871/2020)
Slovakia	Increase in funding for care homes and for cash benefits	
Slovenia	New care home concessions, increase in availability of home care providers and increase in cash benefit allocations	Funding for additional staff in care homes
Spain	Social security contributions for informal carers to be paid by the state.	
Sweden	Measures to improve LTC system	

Source: European Commission, EPC.

that in the base year are below the EU average. This is applied to every type of formal coverage (home care, institutional care and cash benefits). Indeed, while convergence in LTC systems across EU Member States can occur in terms of coverage, it can also occur in terms of the quantity and quality of services provided and therefore in unit costs, particularly as living standards converge (as they do given the macroeconomic assumptions used in the projections).

VIII. The *"cost and coverage convergence scenario"* combines the coverage convergence scenario and the cost convergence scenario, as described in the sections above. This scenario proposes a balanced and plausible hypothesis of how the same pressures may lead to convergences in both cost and coverage of services.

IX. The *"AWG reference scenario*" combines the assumptions of the "demographic" and the "healthy ageing" scenarios. This scenario is used in the multilateral budgetary surveillance at EU level. Specifically, it is assumed that half of the projected gains in life expectancy are spent without disability (i.e. demanding care), taking thus an intermediate position between the *"demographic"* and *"healthy ageing"* scenario assumptions. As countries become richer, they are likely to spend a larger proportion of their GDP on long-term care. This is modelled in the AWG reference scenario (and TFP risk scenario, see below) by including the assumption that income elasticity starts at 1.1 in the base year of 2019, falling to 1 by the end of the projection period. Since the GDP projections include a degree of catching-up, this leads to a degree of convergence in long-term care expenditure, albeit more moderate than in the cost and coverage convergence scenario.

Taking into account this increase in long-term care expenditure may not affect countries that already have highly developed long-term care systems, those EU Member States in the highest quartile of long-term care expenditure as a proportion of GDP in the base year are excluded from this and therefore their income elasticity will be assumed to remain 1.

X. The *"AWG risk scenario"* keeps the assumption that half of the future gains in life expectancy are spent with no care-demanding disability, as in the *"AWG reference scenario"*. In addition, it combines it with the *"cost and coverage convergence scenario"* by assuming convergence upwards of unit costs to the EU-average as well as coverage convergence upwards to the EU-average. In comparison to the "AWG reference scenario", this scenario thus captures the impact of additional cost drivers to demography and health status, i.e. the possible effect of a convergence in coverage and in real living standards on LTC spending.

3.4. PROJECTION RESULTS

3.4.1. Country specific policy reforms

Important policy measures in LTC have been adopted over the past years, with a recent acceleration linked to the COVID-19 crisis. In the past years, many countries have undertaken policy reforms in LTC to improve their performance in terms of fiscal sustainability, accessibility and/or quality. Additionally, the COVID-19 crisis has had a large impact on the LTC sector since 2020. This has required additional investment, for instance to provide Personal Protective Equipment (PPE) to staff, testing of staff and carers, increases in wages and capacity, etc.

The impact of the COVID-19 crisis on LTC spending is reflected in the projections where possible. Table II.3.2 sets out the approved reforms reported by Member States for this report. It shows that 6 countries provided information regarding the budgetary effects of policy reforms related to COVID-19 and 5 additional countries provided information regarding the budgetary effects of other policy reforms. In all cases, the impact of reforms was modelled as a percentage change of long-term care expenditure relative to the base year of projections, differentiated for the areas of institutional care, home care and cash benefits where applicable and upon agreement with the respective Member States. One-off expenditures that only apply during a short period of time (as is the case for many of the COVID-19 reforms) therefore affect the path of expenditure projection for that country in the years in which the measures apply but not the overall long-term projections. Additionally, the long-term care expenditure levels in euro for years 2020 and 2021 were interpolated for the majority of the countries ([147]).

3.4.2. Accounting for institutional specificities

Institutional specificities have been considered for some countries, notably to reflect the presence of mandatory substitutional private health insurance. As described in the health care chapter, Germany's specific set-up of insurance combining social health insurance with private health insurance implies a reduced burden of ageing within the SHI scheme in future as it reduces the additional number of future recipients that will need to be covered by the public LTC system by 2070. As for health care projections, this is taken into account in the same way for estimating LTC projections. ([148]) In this country, in 2019 only 89 % of the population was insured by social health insurance (SHI), with the remainder insured by mandatory substitutional private health insurance (PHI) schemes. This is relatively rare, as entitlement to coverage is not limited to a proportion of the population for other MS. To account for the existence of a mandatory substitutional PHI, the population projections used in the model are adjusted downwards to equal the number of people insured in SHI in the base year of projections.

Additionally, several EU MS have specific legislation to regulate the indexation of LTC benefits. The impact of country-specific legislation has been taken into account in the *"AWG reference scenario"* of the Ageing Report.

([147]) For a description of the interpolation methodology see Annex III.

([148]) Reducing the number of SHI insurees in working age also implies that SHI income from insurance contributions will decrease.

– *In the case of Germany*, this relates to the impact of German legislation on the ceiling of LTC expenditure. According to the standard assumptions (explained below), unit costs are indexed to GDP per hours worked or GDP per capita. Under current rules in Germany, both in-kind and cash long-term care benefits are indexed to prices. With contribution rates indexed by inflation, LTC expenditure shares would be almost unchanged until 2070. The difference between the amounts financed by the State and the costs of long-term care are either recovered by private insurance or are paid by the beneficiaries themselves. The German government is required by law to check every three years the need and extent of adjusting LTC benefits according to inflation.

– *For France*, this relates to the fact that the majority of cash benefits are legislated to be indexed according to prices.

– *For Slovenia*, this relates to the fact that all cash benefits are legislated to be indexed according to prices.

Although this legislation binds these states to these indexations methodology, there are limits to the extent to which it can be taken into account in the projection. In an extreme case, indexing all benefits to prices for the duration of the projection period could lead to a noticeable reduction in long-term care expenditure as a share of GDP and in per capita terms compared to the standard assumptions. This would represent a de facto policy change scenario and break the no-policy change scenario requirement.

To account for this legislation and the financial precaution principle while preserving the realism of the projections, the following assumptions are used for the *"AWG reference scenario"* projections in the 2021 Ageing Report:

- *For Germany*, 2/3 of in-kind benefit expenditure are indexed in line with the Ageing Report standard assumptions and the remaining 1/3 in line with prices. For cash benefits, 2/3 of expenditure are indexed in line with prices and the remaining 1/3 in line with AR standard assumptions. This applies for the entire projection period.

- *For France*, price indexation is applied to cash benefit expenditure, with the rest being indexed according to standard assumptions. This applies for the entire projection period.

- *For Slovenia*, price indexation is applied to cash benefit expenditure, with the rest being indexed according to standard assumptions. This applies for the first 10 years of the projection.

Table II.3.3 shows the quantified impact of these indexations assumptions by comparing the 2021 AWG reference scenario projections using these country-specific indexation assumptions with alternative projections using standard indexation assumptions.

Table II.3.3: **Projections with country-specific indexation vs standard indexation**

	2019	2070	Change 2019-2070	
			pp.	In %
DE (standard)	1.6	2.4	0.9	56%
DE AWG 2021	1.6	1.8	0.2	14%
FR (standard)	1.9	2.8	0.9	47%
FR AWG 2021	1.9	2.7	0.8	45%
SI (standard)	1.0	2.3	1.4	143%
SI AWG 2021	1.0	2.2	1.3	132%

(1) Please note that due to rounding the elements in this table may not add up. This applies as well for the remaining scenario results tables in this chapter.
Source: Commission services.

3.4.3. Changes in demography and health status

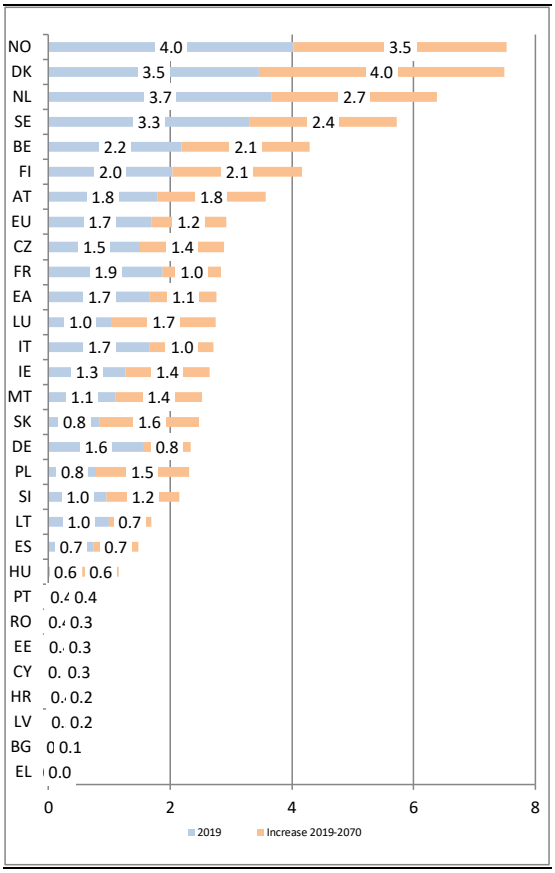
Results of four no policy change scenarios are presented and discussed first. These scenarios capture varying assumptions that the isolated effects of ageing, health status and the labour intensity of LTC have on expenditure.

Table II.3.4: **Demographic scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	4.3	2.1	96%
BG	0.3	0.4	0.1	38%
CZ	1.5	2.9	1.4	92%
DK	3.5	7.5	4.0	117%
DE	1.6	2.3	0.8	50%
EE	0.4	0.7	0.3	70%
IE	1.3	2.6	1.4	110%
EL	0.2	0.2	0.0	10%
ES	0.7	1.5	0.7	100%
FR	1.9	2.8	1.0	51%
HR	0.4	0.6	0.2	42%
IT	1.7	2.7	1.0	63%
CY	0.3	0.6	0.3	85%
LV	0.5	0.6	0.2	32%
LT	1.0	1.7	0.7	70%
LU	1.0	2.7	1.7	164%
HU	0.6	1.2	0.6	109%
MT	1.1	2.5	1.4	129%
NL	3.7	6.4	2.7	74%
AT	1.8	3.6	1.8	100%
PL	0.8	2.3	1.5	196%
PT	0.4	0.8	0.4	85%
RO	0.4	0.7	0.3	94%
SI	1.0	2.1	1.2	123%
SK	0.8	2.5	1.6	193%
FI	2.0	4.2	2.1	105%
SE	3.3	5.7	2.4	73%
NO	4.0	7.5	3.5	87%
EA	1.7	2.8	1.1	66%
EU	1.7	2.9	1.2	74%

Source: Commission services, EPC.

Graph II.3.10: **Demographic scenario, current and projected levels of public expenditure on LTC as % of GDP over 2019-2070**



Notes: Public expenditure on LTC is defined as long-term care (health) variable HC.3 and long-term care (social) variable HCR.1 based on the System of Health Accounts 2011. Where HCR.1 is not available, a proxy is constructed from ESSPROS data and validated with each Member State's authorities. Level of expenditure in 2019 is the first year of projected expenditure based on latest data.
Source: European Commission, EPC.

The *"demographic scenario"* aims to isolate the size effect of an ageing population on public expenditure on LTC. For all types of LTC services, expenditure per user grows in line with GDP per capita. Graph II.3.10 shows the projected increase in public expenditure in this scenario from 2019 to 2070, while Table II.3.4 shows projected expenditure levels. For the EU, public expenditure on LTC is projected to increase by 1.2 pps. of GDP i.e. from 1.7% in 2016 to 2.9 % of GDP in 2070. This is equivalent to an increase of expenditure by 74%. The variation in projected expenditures ranges from no change in GDP in Greece to an increase of 4 pps. in the Denmark.

The *"base case scenario"* additionally focuses on the highly labour-intensive characteristic of the long-term care services by letting in-kind LTC benefits profile grow in line with GDP per hours worked. This is the common assumption to all scenarios – except in the *"demographic scenario"*. Table II.3.5 presents the projected expenditure for the "*base case scenario"*. When LTC in-kind costs evolve in line with labour productivity, public expenditure is projected to increase on average by 1.4 pps. of GDP in the EU between 2019 and 2070. This is slightly higher than in the *"demographic scenario"*.

Table II.3.5: **Base case scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	4.6	2.4	108%
BG	0.3	0.5	0.2	52%
CZ	1.5	3.2	1.7	115%
DK	3.5	7.4	3.9	113%
DE	1.6	2.5	1.0	61%
EE	0.4	0.7	0.3	83%
IE	1.3	3.2	1.9	154%
EL	0.2	0.2	0.0	-4%
ES	0.7	1.5	0.8	108%
FR	1.9	2.9	1.0	54%
HR	0.4	0.7	0.2	50%
IT	1.7	2.7	1.1	64%
CY	0.3	0.7	0.3	89%
LV	0.5	0.7	0.2	43%
LT	1.0	1.8	0.8	81%
LU	1.0	2.5	1.5	144%
HU	0.6	1.2	0.7	124%
MT	1.1	3.0	1.9	176%
NL	3.7	6.8	3.2	86%
AT	1.8	3.7	1.9	109%
PL	0.8	2.4	1.6	212%
PT	0.4	0.9	0.4	101%
RO	0.4	0.8	0.4	121%
SI	1.0	2.3	1.4	142%
SK	0.8	3.0	2.2	256%
FI	2.0	4.4	2.3	115%
SE	3.3	5.9	2.6	78%
NO	4.0	8.5	4.5	111%
EA	1.7	2.9	1.2	74%
EU	1.7	3.1	1.4	82%

Source: Commission services, EPC.

These results are due to the fact that, for most countries, the growth in GDP per hours worked is higher than the growth in GDP per capita for most or all of the projection period. The smallest expenditure change is observed for Greece (+0.0 pps.) and the largest projected increases are observed for Denmark (+3.9 pps.) and Norway (+4.5 pps.).

The *"high life expectancy scenario"* assumes that life expectancy in 2070 is higher by two years than in the "base case scenario". Table II.3.6 presents the projected expenditure for this scenario. As the assumed two extra years of increase in life expectancy (at birth) would imply an increased period of time within which care needs to be provided, public expenditure would increase by 0.3 pps. above the "base case scenario" for the EU.

Table II.3.6: **High life expectancy scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	5.2	3.1	140%
BG	0.3	0.5	0.2	61%
CZ	1.5	3.6	2.1	140%
DK	3.5	8.5	5.0	146%
DE	1.6	2.8	1.2	80%
EE	0.4	0.8	0.4	96%
IE	1.3	3.6	2.3	183%
EL	0.2	0.2	0.0	-1%
ES	0.7	1.7	1.0	135%
FR	1.9	3.2	1.3	68%
HR	0.4	0.7	0.3	59%
IT	1.7	3.0	1.3	78%
CY	0.3	0.7	0.4	103%
LV	0.5	0.7	0.2	52%
LT	1.0	2.0	1.0	100%
LU	1.0	2.9	1.8	177%
HU	0.6	1.4	0.9	155%
MT	1.1	3.8	2.6	240%
NL	3.7	7.6	3.9	106%
AT	1.8	4.2	2.4	136%
PL	0.8	2.6	1.9	239%
PT	0.4	1.0	0.5	122%
RO	0.4	0.9	0.5	148%
SI	1.0	2.6	1.7	175%
SK	0.8	3.4	2.5	301%
FI	2.0	4.8	2.8	138%
SE	3.3	6.6	3.3	100%
NO	4.0	9.6	5.5	138%
EA	1.7	3.2	1.6	93%
EU	1.7	3.4	1.7	102%

Source: Commission services, EPC.

The *"healthy ageing scenario"* (relative decrease in morbidity) aims to capture the potential impact of assumed improvements in the health (or non-disability) status of the population. The results presented in Table II.3.7 show that an improved disability status would lead to a considerably lower expenditure in future. Public expenditure would increase by 1 pps. for the EU or 0.3 pps. below the base case scenario. This lower increase is due to the fact that lower

dependency rates translate in lower demand for LTC services.

Table II.3.7: **Healthy ageing scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	4.1	1.9	87%
BG	0.3	0.4	0.1	27%
CZ	1.5	2.8	1.3	86%
DK	3.5	6.5	3.1	89%
DE	1.6	2.2	0.7	42%
EE	0.4	0.6	0.2	57%
IE	1.3	2.9	1.6	129%
EL	0.2	0.1	0.0	-17%
ES	0.7	1.4	0.7	89%
FR	1.9	2.7	0.8	42%
HR	0.4	0.6	0.1	25%
IT	1.7	2.4	0.7	45%
CY	0.3	0.6	0.2	66%
LV	0.5	0.6	0.1	19%
LT	1.0	1.6	0.6	58%
LU	1.0	2.3	1.3	123%
HU	0.6	1.1	0.5	94%
MT	1.1	2.6	1.5	138%
NL	3.7	5.9	2.3	62%
AT	1.8	3.4	1.6	88%
PL	0.8	2.1	1.4	174%
PT	0.4	0.8	0.3	81%
RO	0.4	0.7	0.3	86%
SI	1.0	2.1	1.1	120%
SK	0.8	2.6	1.8	210%
FI	2.0	3.9	1.9	94%
SE	3.3	5.2	1.9	57%
NO	4.0	7.5	3.5	86%
EA	1.7	2.6	0.9	56%
EU	1.7	2.7	1.0	62%

Source: Commission services, EPC.

Compared to the assumption of no change in health status in the "*high life expectancy scenario*", the countries that see the highest decrease in this scenario (in pps. of GDP) are Norway, Denmark and Sweden. This may be expected, as these are the countries with some of the highest spending levels on LTC and where a decrease in dependency may therefore make a more visible difference.

3.4.4. Changes in cost and coverage

Results of four policy-change scenarios are presented and discussed here. These capture varying assumptions of changing costs and coverage of LTC.

The *"shift to formal care scenario"* illustrates the impact of a 10-year progressive shift into the formal in-kind service sector of 1% per year of dependent population who has so far received only cash benefits or informal care. For the EU, LTC is projected to increase by 1.8 pps. of GDP from 2019 up until 2070 (Table II.3.8), compared to the 1.4 pps. of GDP under the *"base case scenario"*.

Table II.3.8: **Shift from informal to formal care scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	4.9	2.7	126%
BG	0.3	0.7	0.4	122%
CZ	1.5	3.9	2.3	156%
DK	3.5	8.0	4.5	131%
DE	1.6	3.0	1.4	91%
EE	0.4	0.8	0.4	102%
IE	1.3	3.7	2.5	196%
EL	0.2	0.2	0.0	26%
ES	0.7	1.8	1.1	151%
FR	1.9	3.5	1.6	85%
HR	0.4	0.9	0.5	111%
IT	1.7	3.0	1.4	81%
CY	0.3	0.7	0.4	108%
LV	0.5	1.0	0.5	108%
LT	1.0	1.9	0.9	94%
LU	1.0	3.1	2.1	199%
HU	0.6	1.7	1.2	209%
MT	1.1	3.3	2.2	202%
NL	3.7	7.2	3.5	96%
AT	1.8	4.4	2.7	150%
PL	0.8	2.6	1.9	241%
PT	0.4	2.0	1.5	359%
RO	0.4	1.0	0.6	164%
SI	1.0	2.7	1.8	184%
SK	0.8	3.5	2.6	311%
FI	2.0	4.8	2.8	136%
SE	3.3	6.5	3.2	98%
NO	4.0	9.2	5.1	128%
EA	1.7	3.4	1.7	101%
EU	1.7	3.5	1.8	109%

Source: Commission services, EPC.

The *"coverage convergence scenario"* assumes an extension of the formal/public coverage of in-kind care (institutional or home care) towards the average EU rate. This is calculated per age-sex group. As in the *"shift to formal scenario"*, this higher but expected increase vis-à-vis the "base case" scenario is the result of an increased coverage of dependent individuals, especially in countries where the coverage of the dependent population is low compared to the EU average. In this scenario, LTC spending is projected to increase by 2.4 pps. of GDP on average in the EU over the period 2019-70.

Table II.3.9: **Coverage convergence scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	4.6	2.4	108%
BG	0.3	1.1	0.8	278%
CZ	1.5	3.2	1.7	116%
DK	3.5	8.2	4.7	137%
DE	1.6	2.8	1.3	81%
EE	0.4	0.7	0.3	88%
IE	1.3	5.3	4.0	317%
EL	0.2	0.4	0.2	116%
ES	0.7	3.1	2.4	322%
FR	1.9	4.6	2.7	146%
HR	0.4	1.0	0.5	121%
IT	1.7	3.0	1.3	77%
CY	0.3	0.7	0.3	89%
LV	0.5	2.1	1.6	345%
LT	1.0	1.8	0.8	81%
LU	1.0	4.6	3.5	339%
HU	0.6	4.3	3.7	668%
MT	1.1	4.8	3.7	332%
NL	3.7	6.9	3.2	88%
AT	1.8	3.7	2.0	110%
PL	0.8	2.8	2.0	261%
PT	0.4	8.5	8.0	1878%
RO	0.4	1.5	1.1	298%
SI	1.0	2.5	1.5	158%
SK	0.8	3.0	2.2	256%
FI	2.0	4.5	2.4	120%
SE	3.3	9.9	6.6	200%
NO	4.0	8.5	4.5	112%
EA	1.7	3.8	2.1	127%
EU	1.7	4.1	2.4	141%

Source: Commission services, EPC.

Interestingly, even countries where expenditure level and coverage rate are already relatively high (such as Sweden or Norway) show a projected increase that is much higher than in the *"base case scenario"*. This is because as long as in-kind coverage of the dependent population is less than 100% of the EU average in any age-sex group, the scenario assumes an additional increase in coverage of the dependent population in the respective age groups. The small number of recipients in specific age-sex groups may lead to some volatility in coverage so that even countries with comprehensive overall coverage may appear as being below the EU average for those age groups. Additionally, countries where a substantial part of the care is provided through cash benefits may show relatively low coverage in terms of in-kind care.

The *"cost convergence scenario"* is meant to capture the potential impact of a convergence in real living standards on LTC spending. Table II.3.10 shows the results under this scenario.

Table II.3.10: **Cost convergence scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	6.0	3.9	176%
BG	0.3	0.8	0.5	177%
CZ	1.5	4.2	2.7	179%
DK	3.5	7.4	3.9	114%
DE	1.6	3.2	1.6	104%
EE	0.4	5.8	5.4	1403%
IE	1.3	3.2	1.9	154%
EL	0.2	1.2	1.1	600%
ES	0.7	1.9	1.2	162%
FR	1.9	3.4	1.6	84%
HR	0.4	2.0	1.6	356%
IT	1.7	3.6	1.9	115%
CY	0.3	3.4	3.0	872%
LV	0.5	1.5	1.0	221%
LT	1.0	7.0	6.0	605%
LU	1.0	2.7	1.7	163%
HU	0.6	1.3	0.8	139%
MT	1.1	4.0	2.9	265%
NL	3.7	8.3	4.6	126%
AT	1.8	4.9	3.2	177%
PL	0.8	6.2	5.4	701%
PT	0.4	0.9	0.5	113%
RO	0.4	2.6	2.2	608%
SI	1.0	5.4	4.4	462%
SK	0.8	6.8	6.0	712%
FI	2.0	6.4	4.4	215%
SE	3.3	5.9	2.6	79%
NO	4.0	9.3	5.3	130%
EA	1.7	3.7	2.0	123%
EU	1.7	3.9	2.3	135%

Source: Commission services, EPC.

For the EU, public expenditure on LTC is projected to increase by 2.3 pps. of GDP from 2019 up until 2070, with the impact of an increased cost per user of LTC services, assumed to be the result of economic convergence and higher patient expectations. As for the *"coverage convergence scenario"* the fact that the methodology compares the unit cost for each age-sex group to the EU average separately leads to some Member States with comprehensive LTC systems experiencing some degree of upwards convergence. Note that, for both scenarios, some outlier results may be partly due to data issues. Indeed, as explained in the annex, non-available or partial data lead to the (full or partial) application of the EU averages for the missing parts – in terms of coverage and related cost profile – adjusted to the national expenditure level.

In general, as can be expected, a country with high coverage and therefore relatively low average costs per beneficiary in the base year 2019 will show a relatively bigger increase in the *"cost convergence scenario"*, while the expenditure increase projected for a country with relatively low coverage, and relatively high starting average cost profile, will be relatively bigger in the *"coverage convergence scenario"*.

Table II.3.11 shows the projection results under the ***"cost and coverage convergence scenario"***. It assumes a combination of coverage and cost convergence, combining the effects of the previous two scenarios. In the EU, this scenario leads to a projected increase in spending of 3.4 pps. of GDP until 2070.

Table II.3.11: **Cost and coverage convergence scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	6.0	3.9	176%
BG	0.3	1.8	1.5	487%
CZ	1.5	4.2	2.7	180%
DK	3.5	8.2	4.8	138%
DE	1.6	3.6	2.0	130%
EE	0.4	5.9	5.5	1440%
IE	1.3	5.3	4.0	317%
EL	0.2	2.8	2.6	1475%
ES	0.7	3.7	2.9	401%
FR	1.9	5.4	3.5	188%
HR	0.4	3.0	2.5	571%
IT	1.7	3.9	2.2	134%
CY	0.3	3.4	3.1	875%
LV	0.5	4.6	4.2	900%
LT	1.0	7.0	6.0	605%
LU	1.0	4.8	3.8	362%
HU	0.6	4.7	4.2	752%
MT	1.1	6.1	5.0	458%
NL	3.7	8.4	4.7	128%
AT	1.8	4.9	3.2	178%
PL	0.8	7.1	6.3	813%
PT	0.4	8.6	8.2	1909%
RO	0.4	4.6	4.3	1170%
SI	1.0	5.8	4.8	506%
SK	0.8	6.9	6.0	714%
FI	2.0	6.5	4.5	220%
SE	3.3	10.0	6.7	202%
NO	4.0	9.3	5.3	131%
EA	1.7	4.7	3.1	184%
EU	1.7	5.1	3.4	204%

Source: Commission services, EPC.

Note that for countries with relatively high coverage across age groups, such as Belgium, the results are very close to the cost convergence scenario, and vice versa. For countries with low initial levels of coverage and low unit costs per recipient, the convergence process occurs from both sides.

3.4.5. AWG reference scenario

The *"AWG reference scenario"* combines the assumptions of the *"base case scenario"* and the "*healthy ageing*" scenarios. Specifically, it is assumed that half of the projected gains in life expectancy are spent without disability (i.e. demanding care), taking thus an intermediate position between the *"demographic" and "healthy ageing" scenarios* assumptions. Additionally, income elasticity is assumed to converge from 1.1 in 2019 to unity in 2070 for those countries that are below the first quartile in terms of expenditure of LTC as a proportion of GDP. This scenario is the point of reference for comparisons with the 2018 Ageing Report and is used in the multilateral budgetary surveillance at EU level.

Table II.3.12: **AWG reference scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	4.3	2.1	97%
BG	0.3	0.4	0.1	46%
CZ	1.5	3.2	1.7	110%
DK	3.5	6.9	3.4	100%
DE	1.6	1.8	0.2	14%
EE	0.4	0.7	0.3	80%
IE	1.3	3.2	1.9	150%
EL	0.2	0.2	0.0	-8%
ES	0.7	1.5	0.8	105%
FR	1.9	2.7	0.8	45%
HR	0.4	0.6	0.2	42%
IT	1.7	2.6	1.0	58%
CY	0.3	0.6	0.3	81%
LV	0.5	0.6	0.2	39%
LT	1.0	1.8	0.8	78%
LU	1.0	2.5	1.4	137%
HU	0.6	1.2	0.7	119%
MT	1.1	3.0	1.9	168%
NL	3.7	6.3	2.7	73%
AT	1.8	3.5	1.8	99%
PL	0.8	2.4	1.6	209%
PT	0.4	0.8	0.4	98%
RO	0.4	0.8	0.4	118%
SI	1.0	2.2	1.3	132%
SK	0.8	2.9	2.1	249%
FI	2.0	4.1	2.1	104%
SE	3.3	5.5	2.2	67%
NO	4.0	8.0	3.9	97%
EA	1.7	2.6	0.9	55%
EU	1.7	2.8	1.1	64%

Source: Commission services, EPC.

In this scenario, public long-term expenditure is thus driven by the combination of changes in the population structure and a moderately positive evolution of the health (non-disability) status. The joint impact of those factors is a projected increase in spending of about 1.1 pps. of GDP in the EU by 2070 (Table II.3.12).

The *"Total Factor Productivity (TFP) risk scenario"* gives the same results as the AWG reference scenario (same results at first decimal point, with the exception of countries that apply country-specific indexation assumptions), thus a separate table is not reported.

3.4.6. AWG risk scenario

The ***"AWG risk scenario"*** keeps the assumption that half of the future gains in life expectancy are spent with no care-demanding disability, as in the *"AWG reference scenario"*. In addition, it combines the *"cost and coverage convergence scenario"* by assuming convergence of both total average cost and coverage to the EU average for those below it. In comparison to the *"AWG reference scenario"*, this scenario thus captures the impact of additional cost drivers to demography and health status, i.e. the possible effect of a cost and coverage convergence. Income elasticity however remains at unity for the projection period, since convergence in LTC expenditure is already covered by the coverage and cost convergence assumptions.

The joint impact of the drivers in this scenario is a projected increase in spending of 3.1 pps. of GDP in the EU by 2070 (Table II.3.13).

3.4.7. Sensitivity tests

In addition to the alternative scenarios already presented, a number of additional sensitivity tests are performed around the AWG reference scenario. These sensitivity tests are defined in Chapter 3 of the report, and are applied consistently for other ageing expenditure items. In particular, Table II.3.15 shows the results of modifying the *"AWG reference scenario"* by making alternative assumptions on factors such as migration, fertility, employment rate, TFP and life expectancy (see Chapter 3).

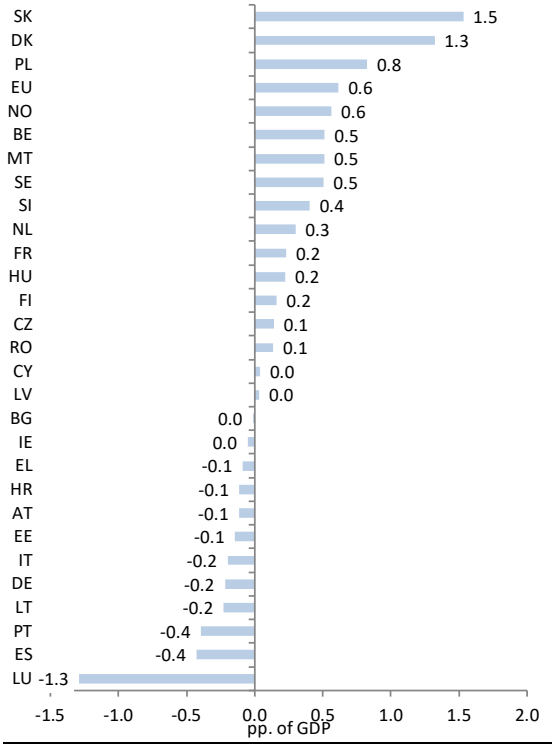
As can be seen, these assumptions can have a sizable impact on the projections. The EU long-term care expenditure-to-GDP projections are more responsive to changes in the size of the working population (fertility, migration, employment rate) than those affecting life expectancy or productivity. Therefore, the largest impact on the projected increase in public expenditure on long-term care as a share of GDP is due to lower fertility, while higher employment rates and increases in net migration can lead to lower expenditure to GDP growth on health care. The COVID-19 scenarios have a relatively small impact, as they only model the potential GDP impact of the pandemic above the COVID-19 related expenditure that has been already taken into account in the projections. It should also be noted that the impact of GDP changes on the projections is ambiguous, as these changes affect both denominator and the numerator.

Table II.3.13: **AWG risk scenario, projected public expenditure on long-term care as % of GDP**

	2019	2070	Change 2019-2070	
			pp.	In %
BE	2.2	5.7	3.5	160%
BG	0.3	1.6	1.3	434%
CZ	1.5	3.9	2.4	160%
DK	3.5	7.7	4.3	123%
DE	1.6	3.3	1.8	115%
EE	0.4	5.5	5.1	1326%
IE	1.3	5.0	3.7	295%
EL	0.2	2.6	2.4	1388%
ES	0.7	3.5	2.8	374%
FR	1.9	5.2	3.3	176%
HR	0.4	2.8	2.3	520%
IT	1.7	3.7	2.0	120%
CY	0.3	3.2	2.8	807%
LV	0.5	4.4	3.9	842%
LT	1.0	6.4	5.4	549%
LU	1.0	4.6	3.5	338%
HU	0.6	4.4	3.8	685%
MT	1.1	5.7	4.6	417%
NL	3.7	7.8	4.1	111%
AT	1.8	4.7	2.9	162%
PL	0.8	6.6	5.8	748%
PT	0.4	8.2	7.8	1816%
RO	0.4	4.2	3.9	1064%
SI	1.0	5.5	4.5	472%
SK	0.8	6.4	5.5	657%
FI	2.0	6.1	4.1	203%
SE	3.3	9.4	6.1	183%
NO	4.0	8.7	4.7	116%
EA	1.7	4.5	2.8	168%
EU	1.7	4.8	3.1	186%

Source: Commission services, EPC.

Graph II.3.11: **AWG reference scenario: Differences in the projected increase in public expenditure on long-term care over 2019-2070 between the 2021 and 2018 Ageing Report, as pps. of GDP**



(1) Please note that the 2018 Ageing Report figures are as published in the report, without taking into account the impact of later pension peer-reviews.
Source: European Commission, EPC.

Table II.3.14: **Comparison between public long-term care spending as % of GDP in the 2021 and the 2018 Ageing Reports, in the base year (i.e. 2019) of current projections**

	2021 Ageing Report	2018 Ageing Report	Difference AR 2021 - AR 2018	
BE	2.2	2.4	-0.2	BE
BG	0.3	0.4	-0.1	BG
CZ	1.5	1.4	0.1	CZ
DK	3.5	2.6	0.9	DK
DE	1.6	1.5	0.1	DE
EE	0.4	0.9	-0.5	EE
IE	1.3	1.3	-0.1	IE
EL	0.2	0.1	0.1	EL
ES	0.7	1.0	-0.3	ES
FR	1.9	1.8	0.1	FR
HR	0.4	0.9	-0.5	HR
IT	1.7	1.8	-0.1	IT
CY	0.3	0.3	0.0	CY
LV	0.5	0.4	0.0	LV
LT	1.0	1.0	0.0	LT
LU	1.0	1.4	-0.3	LU
HU	0.6	0.7	-0.1	HU
MT	1.1	0.9	0.2	MT
NL	3.7	3.6	0.0	NL
AT	1.8	1.9	-0.2	AT
PL	0.8	0.5	0.3	PL
PT	0.4	0.6	-0.2	PT
RO	0.4	0.3	0.1	RO
SI	1.0	1.0	0.0	SI
SK	0.8	0.9	-0.1	SK
FI	2.0	2.3	-0.3	FI
SE	3.3	3.2	0.1	SE
NO	4.0	3.8	0.2	NO
EA	1.7	1.7	0.0	EA
EU	1.7	1.4	0.3	EU

Notes: The 2018 Ageing Report column values refer to the AWG Reference Scenario) LTC expenditure projection for 2019 in that projection exercise. Please note that the 2018 Ageing Report figures are as published in the report, without taking into account the impact of later pension peer-reviews.
Source: European Commission, EPC

3.5. COMPARISON WITH THE 2018 AGEING REPORT

As in the case of health care projections, the differences observed between the 2018 Ageing Report and the current projections result from a set of factors. They include i) a different initial spending level; ii) a different base-year for starting the projections; iii) updated macroeconomic assumptions resulting in different GDP per capita growth rates and GDP levels for the period under analysis; iv) updated population projections; v) updated age-gender expenditure profiles; vi) changes in scenario assumptions, methodology and quantified policy reforms.

As shown in Graph II.3.11**, the differences in results are pronounced for a number of countries, and are related to different reasons**. Representing 0.7 pps. of GDP for the EU, revisions in projected LTC expenditure range from -0.8 pps. of GDP in Norway and Luxembourg to more than 1 pps. of GDP in Slovakia and Denmark.

Firstly, the age-cost profiles have been updated, leading to different dynamics of ageing costs for many countries. In several cases, (Slovakia, Ireland and Greece), country-specific profiles have now replaced imputed profiles used in the previous

Table II.3.15: **Sensitivity scenarios - change in spending as % of GDP 2019-2070**

	LTC expenditure	AWG reference scenario	High life expectancy scenario	Lower net migration	Higher net migration	Lower fertility	Higher employment rate older workers	Higher TFP growth	Lower TFP growth	COVID-19 Lagged recovery scenario	COVID-19 Structural crisis scenario	
	% of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	pp. of GDP	
	2019	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	CH 19-70	
BE	2.2	2.1	2.6	2.4	1.9	2.7	1.9	2.1	2.1	2.2	2.2	BE
BG	0.3	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	BG
CZ	1.5	1.7	1.9	1.8	1.5	2.0	1.6	1.7	1.6	1.7	1.7	CZ
DK	3.5	3.4	4.1	3.7	3.2	4.4	3.1	3.4	3.4	3.5	3.6	DK
DE	1.6	0.2	0.4	0.3	0.1	0.4	0.2	0.1	0.3	0.2	0.4	DE
EE	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	EE
IE	1.3	1.9	2.1	2.0	1.8	2.3	1.8	1.9	1.9	1.9	2.0	IE
EL	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	EL
ES	0.7	0.8	0.9	0.9	0.7	0.9	0.7	0.8	0.8	0.8	0.8	ES
FR	1.9	0.8	1.0	0.9	0.8	1.1	0.7	0.8	0.9	0.9	0.9	FR
HR	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	HR
IT	1.7	1.0	1.1	1.1	0.8	1.2	0.9	1.0	1.0	1.0	1.0	IT
CY	0.3	0.3	0.3	0.4	0.2	0.3	0.3	0.3	0.3	0.3	0.3	CY
LV	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	LV
LT	1.0	0.8	0.9	0.7	0.8	1.0	0.7	0.8	0.8	0.8	0.8	LT
LU	1.0	1.4	1.7	1.7	1.2	1.7	1.3	1.4	1.4	1.4	1.5	LU
HU	0.6	0.7	0.8	0.7	0.6	0.8	0.6	0.7	0.7	0.7	0.7	HU
MT	1.1	1.9	2.4	2.2	1.6	2.1	1.7	1.9	1.8	1.9	1.9	MT
NL	3.7	2.7	3.1	3.0	2.4	3.4	2.5	2.7	2.7	2.7	2.7	NL
AT	1.8	1.8	2.1	2.1	1.5	2.2	1.7	1.8	1.8	1.8	1.8	AT
PL	0.8	1.6	1.8	1.7	1.6	1.9	1.6	1.6	1.6	1.6	1.6	PL
PT	0.4	0.4	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	PT
RO	0.4	0.4	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.5	RO
SI	1.0	1.3	1.5	1.4	1.2	1.5	1.2	1.3	1.3	1.3	1.3	SI
SK	0.8	2.1	2.4	2.2	2.0	2.5	2.0	2.1	2.1	2.1	2.1	SK
FI	2.0	2.1	2.4	2.3	1.9	2.6	1.9	2.1	2.1	2.1	2.2	FI
SE	3.3	2.2	2.7	2.6	1.9	2.9	2.0	2.2	2.2	2.2	2.3	SE
NO	4.0	3.9	4.6	4.6	3.4	4.7	3.6	3.9	3.9	4.0	4.1	NO
EA	**1.7**	**0.9**	**1.1**	**1.1**	**0.8**	**1.2**	**0.8**	**0.9**	**0.9**	**0.9**	**1.0**	**EA**
EU	**1.7**	**1.1**	**1.3**	**1.2**	**1.0**	**1.4**	**1.0**	**1.1**	**1.1**	**1.1**	**1.2**	**EU**

Note: The "High-life expectancy scenario" presented here is based on the "base case" scenario.
Source: Commission services, EPC.

Ageing Report. In other cases, the calculation methodology of the profile has been updated, leading to significant differences in the age-cost profiles. This implies different dynamics of projected spending changes according to the types of care (and the associated costs), which impact the projection results.

Secondly, the 2019 level of public expenditure on long-term care in the EU is, for the EU average, 0.3 pp of GDP higher than in the 2018 projections (Table II.3.15). However, this masks large differences for specific countries. This is partly due to new policy reforms and partly to better data availability and quality assurance. The new base data uses an improved methodology for generating a proxy for those countries that do not report LTC (social) spending (SHA variable HC.R.1). There have also been improvements in the methodology used to assign LTC expenditure to different care settings. A significant revision impact is that of Denmark, where improvements in reporting have led to an increase of 0.9 pps. of GDP in expenditure in 2019.

Thirdly, GDP and population projections have been updated. The impact is discussed below.

Finally, revisions in LTC spending projections have been triggered by legislated policy reforms, including those related to the COVID-19 pandemic, as discussed in previous sections.

A quantitative decomposition of drivers is proposed in Table II.3.16. This decomposition aims at quantifying which factors are driving the differences in projected spending between the 2018 and the 2021 projection exercises in the AWG reference scenario. The considered drivers are the age-cost profiles, the coverage of beneficiaries by formal care service, the disability rates, GDP per hours worked, the population projections, an interaction term and a base-year effect. Basically, departing from the level of expenditure in 2019 each driver's impact is estimated by replacing ceteris paribus its current value with the 2018 Ageing Report data.

Table II.3.16: **Decomposing the impact of drivers on differences in spending growth (2019-2070) between the 2021 and the 2018 Ageing Reports- based on the AWG reference scenario, in pps. of GDP**

	Difference in spending growth between the 2021 and 2018 Ageing Reports	Due to:							
		Change in age-cost profiles	Change in coverage	Change in disability rate	Change related to GDP growth	Change in demographic projections	Interaction effect*	Base-year effect**	
BE	0.5	0.1	0.2	0.0	0.5	-0.3	0.0	0.0	**BE**
BG	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	**BG**
CZ	0.1	0.1	0.0	0.0	-0.3	-0.1	0.1	0.4	**CZ**
DK	1.3	-0.1	1.1	0.0	-0.1	-0.5	0.0	1.0	**DK**
DE	-0.2	0.1	0.0	0.1	-0.1	0.1	-0.3	0.0	**DE**
EE	-0.1	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	**EE**
IE	0.0	-0.4	-0.2	0.1	0.0	0.3	0.2	0.1	**IE**
EL	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.1	**EL**
ES	-0.4	0.0	-0.4	0.0	0.1	0.1	0.0	-0.2	**ES**
FR	0.2	-0.1	0.0	0.0	0.3	-0.1	0.0	0.2	**FR**
HR	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0	-0.1	**HR**
IT	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	**IT**
CY	0.0	0.0	0.1	0.0	-0.1	-0.1	0.1	0.1	**CY**
LV	0.0	0.1	-0.1	0.0	0.0	-0.1	0.0	0.1	**LV**
LT	-0.2	-0.2	0.1	0.0	-0.1	0.1	0.0	-0.2	**LT**
LU	-1.3	-0.1	-0.1	0.0	0.0	-0.4	-0.1	-0.5	**LU**
HU	0.2	0.0	0.3	0.0	-0.2	0.0	0.1	0.0	**HU**
MT	0.5	-0.3	0.0	-0.1	-0.5	0.6	0.3	0.5	**MT**
NL	0.3	-0.3	0.3	0.0	0.4	-0.1	-0.1	0.0	**NL**
AT	-0.1	0.0	0.2	0.0	-0.1	-0.2	0.0	-0.1	**AT**
PL	0.8	0.1	-0.3	0.0	-0.2	0.0	1.0	0.2	**PL**
PT	-0.4	0.0	0.0	0.0	-0.1	0.0	0.0	-0.2	**PT**
RO	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	**RO**
SI	0.4	0.2	-0.1	0.0	-0.1	0.0	0.1	0.3	**SI**
SK	1.5	1.0	0.7	0.0	0.2	-0.1	-0.7	0.4	**SK**
FI	0.2	0.0	0.0	0.0	0.3	-0.1	0.0	-0.1	**FI**
SE	0.5	0.0	0.7	0.0	0.1	0.0	-0.1	-0.1	**SE**
NO	0.6	0.0	0.0	-0.1	0.5	-0.2	0.0	0.3	**NO**
EA	-0.1	0.0	0.0	0.0	0.1	0.0	-0.1	0.0	**EA**
EU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**EU**

Notes:
Please note that the 2018 Ageing Report figures are as published in the report, without taking into account the impact of later pension peer-reviews.
* The interaction effect is the unexplained difference between replacing the current data with the 2018 Ageing Report data for all drivers at once and replacing the 2021 Ageing Report data one driver at a time.
** The base-year effect is the difference between column 1 and the sum of columns 2 to 8. As such, it reflects any further changes, including methodology changes and policy reforms.
Source: Commission services, EPC.

Overall, changes in projected expenditure levels were very small, with revised GDP growth rates having an upward impact and other factors having a varied impact across countries. However, these overall impacts mask some of the country-level impact due to specific drivers when comparing between the two Ageing Reports. As such, Slovakia has overall steeper age-cost profiles than in the 2018 Ageing Report, which means that the ageing of the population has a greater impact. In contrast, the age-cost profiles for Ireland are now flatter than in the 2018 Ageing Report and therefore the expenditure increase over the projection period is now lower. It should be noted that in both cases, the age-cost profiles are now based on actual national data, whereas in the 2018 Ageing Report they were imputed based respectively on the NMS and EU15 average cost profiles. Changes in coverage data have increased expenditure the most for Denmark and decreased it the most for Spain, in both cases due to improvements in data availability. Belgium and France were most strongly affected by revisions to GDP projections increasing projected expenditure growth. Changes in the demographic projections, although neutral overall, lead to changes in the projections ranging from the largest increasing impact for Malta and the largest decreasing impact for Denmark. Finally, the base year changes (including both changes to base year expenditure, methodology and policy reforms) have a particularly strong impact on the expenditure for Denmark and Luxembourg. It should be noted that changes in disability rates seem to be a minor driver of changes in projected expenditure, reflecting their relative stability between reports.

Table II.3.17: **Overview of results across scenarios – Change in spending as % over GDP 2019-2070**

	AWG reference scenario	AWG risk scenario	Demographic scenario	Base case scenario	High life expectancy scenario	Healthy Ageing scenario*	Shift to formal care scenario	Coverage convergence scenario	Cost convergence scenario	Cost and coverage convergence scenario	
BE	2.1	3.5	1.0	2.4	3.1	1.9	2.7	2.4	3.9	3.9	**BE**
BG	0.1	1.3	0.4	0.2	0.2	0.1	0.4	0.8	0.5	1.5	**BG**
CZ	1.7	2.4	0.9	1.7	2.1	1.3	2.3	1.7	2.7	2.7	**CZ**
DK	3.4	4.3	1.2	3.9	5.0	3.1	4.5	4.7	3.9	4.8	**DK**
DE	0.2	1.8	0.5	1.0	1.2	0.7	1.4	1.3	1.6	2.0	**DE**
EE	0.3	5.1	0.7	0.3	0.4	0.2	0.4	0.3	5.4	5.5	**EE**
IE	1.9	3.7	1.1	1.9	2.3	1.6	2.5	4.0	1.9	4.0	**IE**
EL	0.0	2.4	0.1	0.0	0.0	0.0	0.0	0.2	1.1	2.6	**EL**
ES	0.8	2.8	1.0	0.8	1.0	0.7	1.1	2.4	1.2	2.9	**ES**
FR	0.8	3.3	0.5	1.0	1.3	0.8	1.6	2.7	1.6	3.5	**FR**
HR	0.2	2.3	0.4	0.2	0.3	0.1	0.5	0.5	1.6	2.5	**HR**
IT	1.0	2.0	0.6	1.1	1.3	0.7	1.4	1.3	1.9	2.2	**IT**
CY	0.3	2.8	0.9	0.3	0.4	0.2	0.4	0.3	3.0	3.1	**CY**
LV	0.2	3.9	0.3	0.2	0.2	0.1	0.5	1.6	1.0	4.2	**LV**
LT	0.8	5.4	0.7	0.8	1.0	0.6	0.9	0.8	6.0	6.0	**LT**
LU	1.4	3.5	1.6	1.5	1.8	1.3	2.1	3.5	1.7	3.8	**LU**
HU	0.7	3.8	1.1	0.7	0.9	0.5	1.2	3.7	0.8	4.2	**HU**
MT	1.9	4.6	1.3	1.9	2.6	1.5	2.2	3.7	2.9	5.0	**MT**
NL	2.7	4.1	0.7	3.2	3.9	2.3	3.5	3.2	4.6	4.7	**NL**
AT	1.8	2.9	1.0	1.9	2.4	1.6	2.7	2.0	3.2	3.2	**AT**
PL	1.6	5.8	2.0	1.6	1.9	1.4	1.9	2.0	5.4	6.3	**PL**
PT	0.4	7.8	0.9	0.4	0.5	0.3	1.5	8.0	0.5	8.2	**PT**
RO	0.4	3.9	0.9	0.4	0.5	0.3	0.6	1.1	2.2	4.3	**RO**
SI	1.3	4.5	1.2	1.4	1.7	1.1	1.8	1.5	4.4	4.8	**SI**
SK	2.1	5.5	1.9	2.2	2.5	1.8	2.6	2.2	6.0	6.0	**SK**
FI	2.1	4.1	1.1	2.3	2.8	1.9	2.8	2.4	4.4	4.5	**FI**
SE	2.2	6.1	0.7	2.6	3.3	1.9	3.2	6.6	2.6	6.7	**SE**
NO	3.9	4.7	0.9	4.5	5.5	3.5	5.1	4.5	5.3	5.3	**NO**
EA	0.9	2.8	0.7	1.2	1.6	0.9	1.7	2.1	2.0	3.1	**EA**
EU	1.1	3.1	0.7	1.4	1.7	1.0	1.8	2.4	2.3	3.4	**EU**

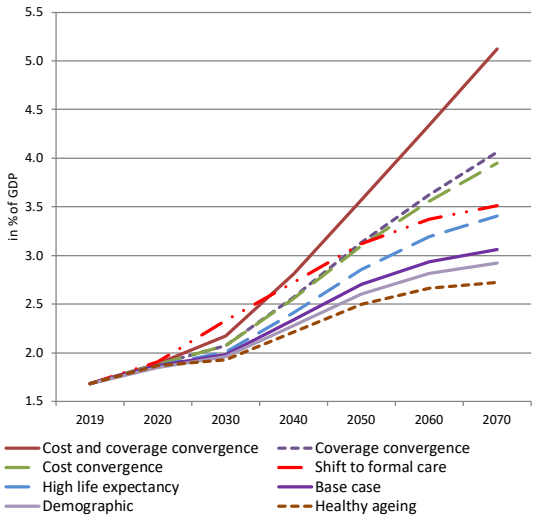
Source: Commission services, EPC.

3.6. CONCLUSIONS

LTC systems are likely to face increasing demand over the next half century. This is set to increase financing needs for formal LTC services that are to a high degree financed by public payers. The increase in LTC expenditure can therefore have a significant impact on the public finances.

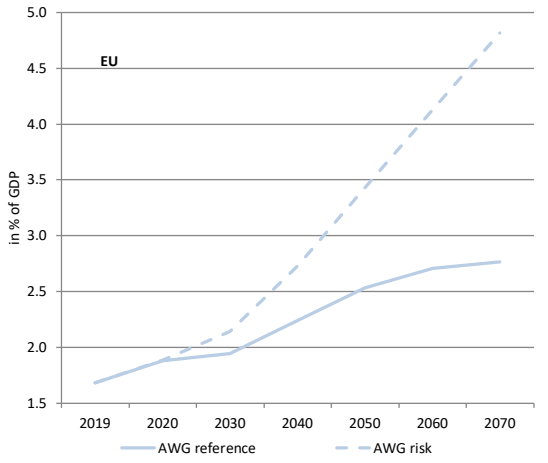
This chapter has presented the expected effects of various demographic and non-demographic drivers on LTC expenditure over a range of plausible scenarios. The range of results is relatively wide (Graph II.3.12 and Table II.3.17), and the risks vary to a large extent for each country and scenario, reflecting the implicit uncertainty surrounding the evolution of key variables in the long-term projections.

Graph II.3.12: **Projected expenditure in different LTC scenarios for the EU in % of GDP**



Source: Commission services, EPC.

Graph II.3.13: **Projected expenditure in LTC AWG reference and risk scenarios, for the EU in % of GDP**



Source: Commission services, EPC.

The *AWG reference scenario* assumes that one half of future gains in life expectancy will be spent in good health and the other half in disability. According to this scenario, used as baseline in the multilateral budgetary surveillance at EU level public LTC expenditure in the EU is projected to increase from 1.7% of GDP to 2.8% of GDP, i.e. an increase of 64% until 2070 ([149]).

If to these basic assumptions we add the additional assumption that by 2070 EU countries will have equal coverage rates of LTC dependents and equal costs per dependent, reflecting an underlying convergence process of EU economies (as in the *AWG risk scenario*), expenditure is expected to increase up to 3.1% (by 186%) of GDP in the EU (Graph II.3.13).

The *AWG reference scenario* reflects a plausible combination of developments in ageing and health status. In common with the base case scenario, it also reflects the fact that supply side bottlenecks may increase fiscal pressure, if labour costs of LTC personnel increase due to insufficient availability of health personnel.

However, the *AWG reference scenario* may underestimate expenditure if, due to higher life expectancy (*high life expectancy scenario*) people remain longer in disability, or if the assumed improvements in health status do not materialise (*base case scenario*) (Graph II.3.14). The underestimation would be slightly smaller is the unit cost was updated with the GDP per capita (*demographic scenario*).

On the other hand, if health status improvements match fully increases in life expectancy, the projected expenditure increase will turn out to be less pronounced (*healthy ageing scenario*).

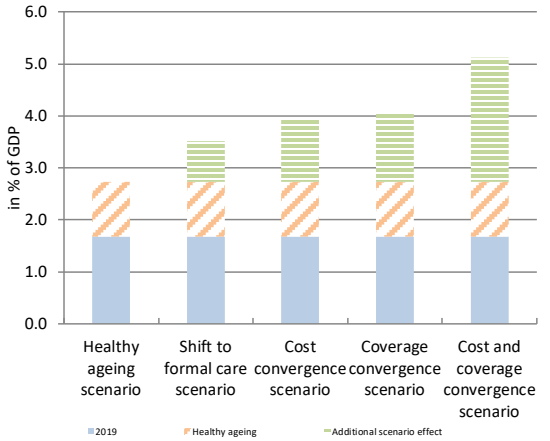
Graph II.3.14: **Range of results for scenarios with mainly demographic sensitivity analysis (no policy change scenarios). EU in % of GDP**

Source: Commission services, EPC.

Cost implications for the EU of changes in the demand for publicly funded long-term care may be substantial (Graph II.3.15). The shift of informal to formal care (*shift to formal care scenario*) and a convergence process, in terms of coverage and costs of LTC for those countries which are below EU average levels of care in this respect, imply a substantial additional fiscal risk (*cost and convergence related scenarios*).

([149]) It should be noted that this scenario also includes specific assumptions such as country-specific indexation assumptions for France, Germany and Slovenia as well as income elasticity of expenditure above unity for those Member States that are below the top quartile of expenditure in 2019. This explains some of the additional differences between this and the other scenarios.

Graph II.3.15: **Range of results for scenarios with mainly cost and coverage sensitivity analysis (policy change scenarios), EU in % of GDP**



Source: Commission services, EPC.

The less pronounced ageing effect as from 2050 only translates into a limited moderation of LTC spending dynamic. From 2050 to 2070, there is an easing of ageing in the Eurostat population projections. The previous chapters describe the impact of this on pension and health care projections. However, as can be seen on Graphs II.3.12 and II.3.13, the impact on public LTC spending as a proportion of GDP is relatively subdued, showing slower but still positive expenditure growth from 2050 to 2070 for all scenarios. This is due to the complex link between ageing and public expenditure on LTC, where, for instance, although dependency rates increase with age, age-cost profiles are not necessarily highest for older age groups. Similarly, LTC demand factors, such as the decrease in availability of informal carers or the fact that richer societies are likely to demand higher standards of care, are cost drivers that are not directly linked to the ageing of the population.

It may be therefore concluded that ageing and non-demographic drivers of long-term care expenditure are likely to exert a continuous pressure on public finances in the long-run, extending even beyond the current trends in population ageing. The clear need for a broadening of formalised coverage of the European population with long-term care services will thus have to be balanced with the need to ensure the sustainability of public finances.

4. EDUCATION

4.1. INTRODUCTION

Government expenditure on education largely reflects demographic developments, as well as other drivers. Indeed, many factors have also an important bearing on government education expenditure, such as the involvement of the general government in the education system, the duration of mandatory education, progress in increasing enrolment rates in upper secondary and tertiary education, relative wages in the education sector, the average size of classes, as well as policies such as discretionary saving measures to curb expenditure trends.

Consistently with other ageing costs' items projected in this report, education projections are carried out under the assumption of "no-policy-change". They mainly aim at assessing the impact of demographic changes (per se) on general government education expenditure ([150]). The methodology used is highly stylised and thus, it can not "capture" the full complexities of Member States' education systems. It has been set out with a view to use harmonised datasets, ([151]) secure equal treatment across countries, and be consistent with the projected labour market developments, particularly on participation rates ([152]).

The baseline scenario focuses on the impact of demographic factors. The key assumption underpinning the baseline scenario is a constant students-to-staff ratio, implying an instantaneous adjustment in the number of teaching staff to student levels.

However, given the inherent uncertainty of the assumptions underpinning any long-run projections, a set of sensitivity scenarios has been carried out, to quantify the responsiveness of projection results to changes in key underlying assumptions. A first sensitivity test ([153]) assumes a gradual upward convergence (to be completed by 2045) of enrolment rates (for ISCED levels 3-4 and 5-8) towards the average of the three best performers in the EU27 plus Norway; namely Finland, Belgium and Greece (Graph II.4.6). Moreover, additional scenarios are considered. Consistently with other ageing costs' items, the additional scenarios simulate a shock to key variables underpinning the baseline projection (i.e. higher life expectancy, higher/lower migration, lower fertility, higher older workers employment rate, higher TFP growth, TFP risk scenario, policy scenario, lagged recovery and structural adverse scenarios). More information can be found in Part I-Chapter 3 of this report ([154]).

4.2. GENERAL CHARACTERISTICS OF NATIONAL EDUCATION SYSTEMS

The methodology used to project future education expenditure is based on a highly stylised framework that abstracts from country specificities. Yet, it also considers major aspects of education systems. These include enrolment rates by age and education level, as well as expenditure categories by education level and type. A detailed breakdown of education systems (by age and education level) aims at improving the quality of model calibrations.

4.2.1. Enrolment rates in EU countries

The institutional structure of education systems varies considerably across Member States. Although the configuration between compulsory and non-compulsory education is, in general, similar across countries (mandatory education starting between ages 5 to 7 and ending between ages 13 to 16), education pathways of young people differ across countries. Differences in

([150]) See "The 2021 Ageing Report – Underlying Assumptions and Projection Methodologies", European Economy, No. 142/2020, European Commission, Part II, Chapter 4".

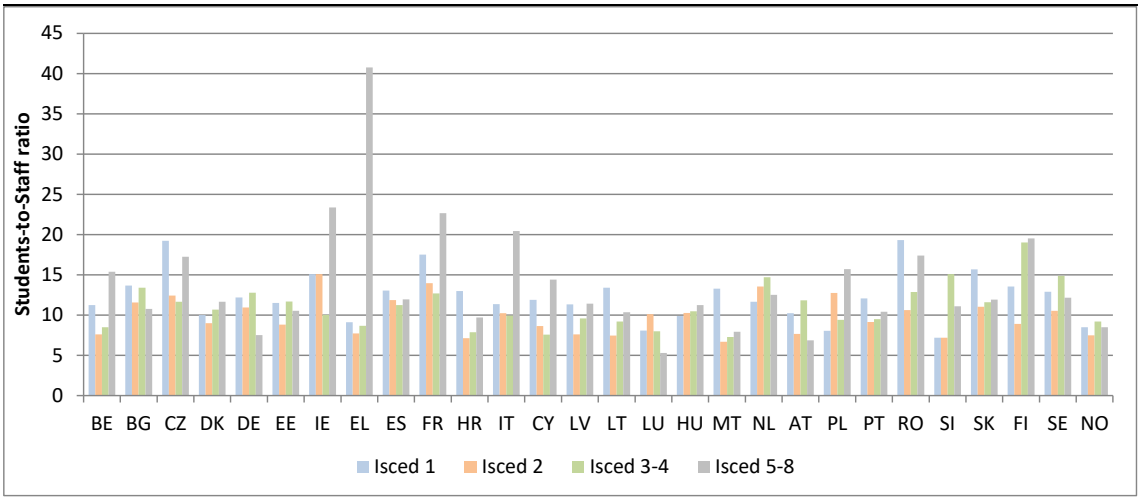
([151]) UNESCO-UIS/OECD/EUROSTAT (UOE) data collection on Education Statistics, LFS data, and macroeconomic variables from "The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy, No. 142/2020, European Commission.

([152]) See Annex V for details on the methodology used. The base year is constructed using the average of the two latest available years (2016 and 2017, UOE data), uprated to the base year (2019) using COFOG data. For HR, the two latest available years correspond to 2013 and 2014 (UOE data). For DK, the two latest available years correspond to 2017 and 2018 (Statistics Denmark data).

([153]) Hereafter referred to as "High Enrolment Scenario".

([154]) See also "The 2021 Ageing Report – Underlying Assumptions and Projection Methodologies, ", European Economy, No. 142/2020, European Commission, Part II, Chapter 4" for detailed explanations.

Graph II.4.1: **Students-to-Staff ratio across ISCED levels (Base Year 2019)**



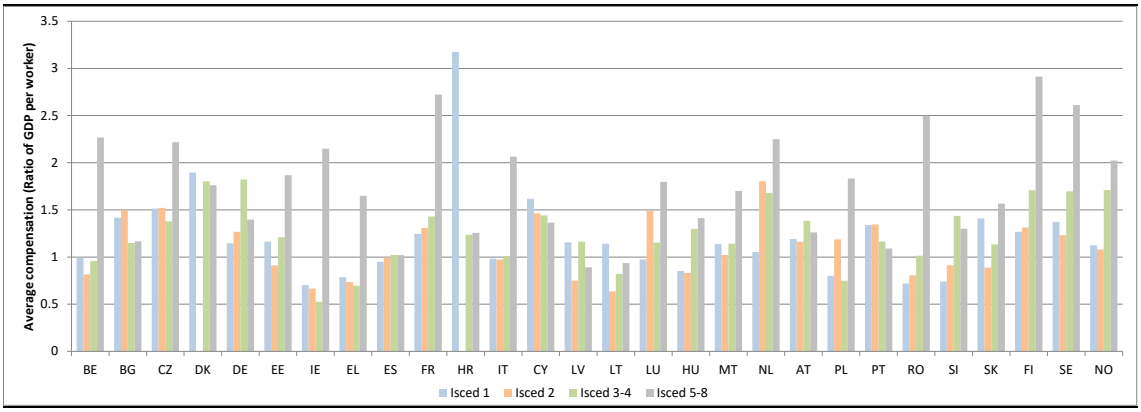
(1) Students over Total Staff in education, by ISCED (UOE dataset)
Source: European Commission, EPC

"statutory" age bands for a person attending a particular level of education are reflected in cross-country differences in the distribution of "actual" enrolment ages, raising the issue of cross-country comparability. Country diversity is clearly visible in Table II.AV.1 in the Statistical Annex for education, which presents average enrolment rates in the base year 2019 by country, age and level of education.

4.2.2. Students-to-Staff ratio (average class size)

Average class sizes vary significantly both across countries and level of education, reflecting specific organisational features of education systems. The size of primary education classes is on average slightly larger than that of secondary education (both lower and upper). In most countries, average class size is largest in tertiary (i.e., university-level) education (see Graph II.4.1), reflecting teaching methods relying more on individual research and library work. The latter difference is particularly marked for some countries such as Greece, Ireland, Italy and France.

Graph II.4.2: **Average compensation per member of staff as ratio of GDP per worker (Base Year 2019)**

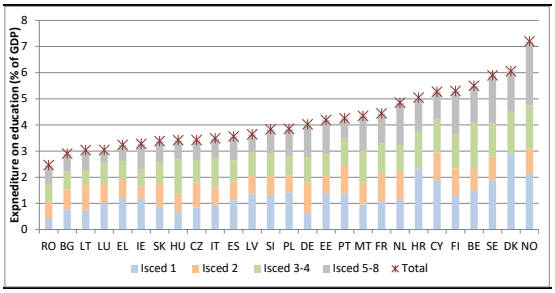


(1) Compensation per public employee in the education sector to GDP per worker, by ISCED level (UOE dataset). The ISCED1 category for DK includes both ISCED1 and ISCED2. The ISCED2 category is not reported for HR, due to missing values.
Source: European Commission, EPC

4.2.3. Staff compensation in the education sector

There is also considerable variation across Member States in the wages paid in the education sector. Graph II.4.2 plots average data for the base year 2019 for the compensation per public employee in the education sector to GDP per worker. Both the wage distribution and the structure of employment in the education sector (i.e. the relative importance of different professional categories, such as professors, assistants and non-teaching staff) play a role in explaining these differences. As expected, on average, wages are highest in the tertiary level of education, reflecting the higher qualifications required of the staff. Graph II.4.3 presents average total public expenditure in education, in year 2019, for the four levels of education and for total expenditure. Total public expenditure ranges from 2.5 % of GDP (Romania) to 7.2 % (Norway) (for more details see Tables II.AV.2 and II.AV.3 in Annex V).

Graph II.4.3: **Structure of public expenditure on education as a percentage of GDP (Base Year 2019)**



Source: European Commission, EPC

4.3. PROJECTION RESULTS

4.3.1. Baseline scenario projections

The baseline scenario is based on a "no-policy change assumption", and captures the impact of demographic factors over the long-term. A simple macro-simulation model is used to project expenditure on education over the long-term ([155]). Assuming "no-policy-change" in the provision of education, the baseline scenario captures the "pure" impact of demographic changes on government education expenditure for the 28 countries considered in the projections. In particular, the baseline scenario assumes a fixed students-to-teaching staff ratio. Yet, assuming that staff levels in the education sector adjust instantaneously to student levels might prove a strong assumption and may in fact imply some discretionary action to change staff levels.

([155]) For details see Annex V.

Alternatively, some lag or inertia in the adjustment could be assumed. However, any mechanism chosen to adjust staff to the number of students would essentially be arbitrary. For this reason, the assumption of a constant student-to-teaching staff ratio is preferred.

Over the baseline, government spending on education is projected to remain broadly stable at EU aggregate level. Table II.4.1 shows the projected change in education expenditure for the baseline scenario, between 2019 (start year) and 2070 (final year) ([156]). In the baseline scenario, government expenditure is expected to nearly stabilise at 4.0% and 3.9% of GDP in 2070, respectively, in the EU and euro area. Government expenditure on education increases in 5 countries and falls in 21 countries. However, the impact varies across individual countries ranging from a decline of 0.9 pps. in Finland to a 0.6 pps. increase in Czechia.

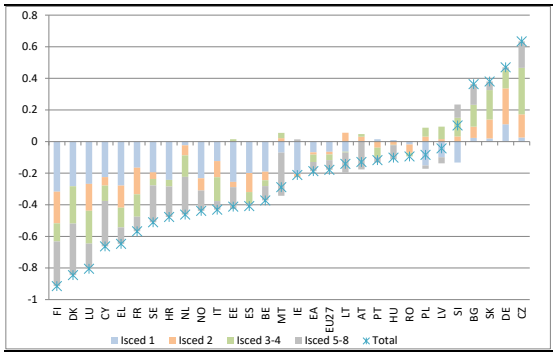
Projections are further decomposed between education level. In particular, Graph II.4.4 shows the projected changes in expenditure to GDP ratios between 2019 and 2070 by country, total expenditure, and ISCED level in the baseline scenario. In those countries for which a reduction in total expenditure between 2019 and 2070 is projected, it is common that primary and secondary education (ISCED levels 1 to 4) contribute the most to the projected fall in total expenditure. At the same time, in Member States where total education expenditure is projected to rise between 2019 and 2070, tertiary education tends to positively contribute to the overall increase in expenditure.

Table II.4.1: **Government expenditure on education, baseline scenario, % of GDP**

	2019	2070	Change 2070-2019
BE	5.5	5.1	-0.4
BG	2.9	3.3	0.4
CZ	3.4	4.1	0.6
DK	6.1	5.2	-0.8
DE	4.0	4.5	0.5
EE	4.2	3.8	-0.4
IE	3.3	3.2	-0.1
EL	3.2	2.6	-0.6
ES	3.6	3.2	-0.4
FR	4.4	3.9	-0.6
HR	5.0	4.6	-0.5
IT	3.5	3.1	-0.4
CY	5.3	4.6	-0.7
LV	3.6	3.6	0.0
LT	3.0	2.9	-0.1
LU	3.0	2.2	-0.8
HU	3.4	3.3	-0.1
MT	4.3	4.1	-0.3
NL	4.9	4.4	-0.5
AT	4.7	4.5	-0.1
PL	3.8	3.8	-0.1
PT	4.3	4.1	-0.1
RO	2.5	2.4	-0.1
SI	3.8	3.9	0.1
SK	3.4	3.8	0.4
FI	5.3	4.4	-0.9
SE	5.9	5.4	-0.5
NO	7.2	6.7	-0.6
EA	4.1	3.9	-0.2
EU	4.1	4.0	-0.2

Source: European Commission, EPC

Graph II.4.4: **Changes in government expenditure by ISCED level between 2019 and 2070**



Source: European Commission, EPC

4.3.2. Drivers of education expenditure

The projected change of education spending can be broken down between a student and an employment effect. Table II.4.2 illustrates a

([156]) See Table II.AV.4 in Annex V for projections over the entire horizon.

Table II.4.2: **Breakdown of total variation in expenditure between 2019 and 2070 - Baseline scenario**

	Expenditure to GDP ratio		Change 2070-2019 in %	Students effect	Employment effect	Discrepancy
	2019	2070	(3) = (2)-(1)			
	(1)	(2)	(3) = (4)-(5)+(6)	(4)	(5)	(6)=(3)-(4)+(5)
BE	5.5	5.1	-0.4	-0.5	-0.1	0.0
BG	2.9	3.3	0.4	-0.8	-1.1	0.1
CZ	3.4	4.1	0.6	-0.1	-0.6	0.2
DK	6.1	5.2	-0.8	-0.4	0.5	0.1
DE	4.0	4.5	0.5	0.1	-0.4	0.0
EE	4.2	3.8	-0.4	-0.9	-0.6	-0.1
IE	3.3	3.2	-0.1	0.2	0.5	0.2
EL	3.2	2.6	-0.6	-1.0	-0.5	-0.1
ES	3.6	3.2	-0.4	-0.5	-0.1	0.0
FR	4.4	3.9	-0.6	-0.5	0.1	0.0
HR	5.0	4.6	-0.5	-1.9	-1.6	-0.2
IT	3.5	3.1	-0.4	-0.8	-0.4	0.0
CY	5.3	4.6	-0.7	0.3	1.3	0.3
LV	3.6	3.6	0.0	-1.6	-1.6	0.0
LT	3.0	2.9	-0.1	-1.3	-1.2	-0.1
LU	3.0	2.2	-0.8	0.1	1.2	0.3
HU	3.4	3.3	-0.1	-0.5	-0.4	0.0
MT	4.3	4.1	-0.3	0.9	1.2	0.0
NL	4.9	4.4	-0.5	-0.6	-0.2	-0.1
AT	4.7	4.5	-0.1	-0.1	0.0	0.0
PL	3.8	3.8	-0.1	-1.3	-1.3	0.0
PT	4.3	4.1	-0.1	-1.1	-1.0	0.0
RO	2.5	2.4	-0.1	-1.0	-0.9	0.0
SI	3.8	3.9	0.1	-0.5	-0.6	0.0
SK	3.4	3.8	0.4	-0.8	-1.0	0.1
FI	5.3	4.4	-0.9	-1.5	-0.7	-0.1
SE	5.9	5.4	-0.5	0.9	1.5	0.1
NO	7.2	6.7	-0.6	0.2	0.8	0.1
EA	4.1	3.8	-0.3	-0.5	-0.3	-0.1
EU	4.1	3.8	-0.3	-0.6	-0.4	-0.1

(1) Students and Employment effects are computed as growth rates, between 2019 and 2070, of the number of students and employed, respectively (and weighted by the expenditure-to-GDP ratio in 2019).
Source: European Commission, EPC

breakdown, according to students and employment effects, for the changes in the GDP ratio of public expenditure on education between 2019 and 2070. In line with the underlying assumptions, this decomposition allows showing the impact of a change in the number of students and of the number of employed (in the economy) on the evolution of the expenditure-to-GDP ratio ([157]).

In countries projected to have the largest decrease in education spending, the projected decrease of the number of students is often an important driver. The countries with the largest expected reduction appear to be Finland, Denmark, and Luxembourg respectively. Results for Finland and Denmark are in line with the intuition of our model. A decrease in the number of students turns out in lower education expenditure levels. In Luxembourg, and to a lower extent in Denmark, the employment effect (with a significant expected increase in employment levels) drives the projected decrease in education spending (see Table II.4.2**)**.

([157]) Students and Employment effects are computed as growth rates, between 2019 and 2070, of the number of students and employed, respectively (and then weighted by the expenditure-to-GDP ratio in 2019).

Table II.4.3: **Breakdown of revisions in expenditure-to-GDP ratio (2021 AR round minus 2018 AR round) - Values for the Baseline scenario in 2070.**

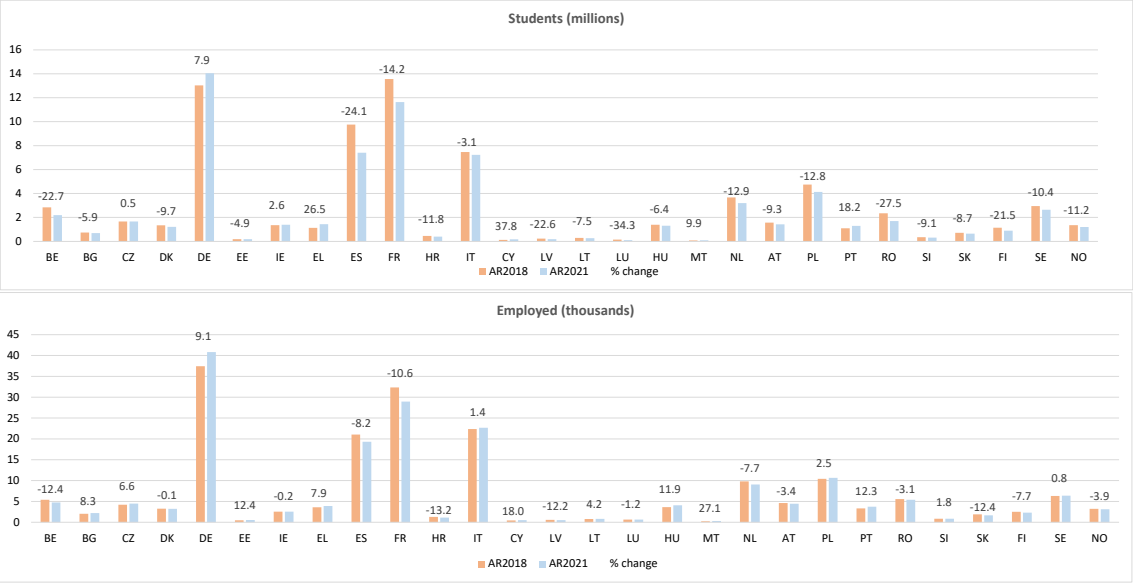
	Expenditure to GDP ratio		Revisions				
	2018 AR (1)	2021 AR (2)	Expenditure (3) = (2)-(1) (3) = (4)+(5)-(6)+(7)	Base (4)	Student Index Index % change*Exp ratio in 2018 AR (5)	Employment Index (6)	Discrepancy (7) = (3)-(4)-(5)+(6)
BE	5.8	5.1	-0.7	-0.3	-1.2	-0.8	0.0
BG	3.7	3.3	-0.4	-0.2	-0.1	0.3	0.1
CZ	4.0	4.1	0.1	0.3	0.0	0.2	0.0
DK	6.6	5.2	-1.4	-1.0	-0.7	-0.1	0.2
DE	4.5	4.5	0.0	0.1	0.4	0.4	0.0
EE	5.0	3.8	-1.2	-0.4	-0.2	0.6	0.0
IE	3.3	3.2	-0.2	-0.2	0.0	0.0	0.0
EL	2.4	2.6	0.2	0.2	0.4	0.1	-0.2
ES	3.9	3.2	-0.8	-0.1	-0.9	-0.3	0.0
FR	4.4	3.9	-0.5	-0.3	-0.6	-0.5	-0.1
HR	3.2	4.6	1.4	1.4	-0.4	-0.4	0.1
IT	3.3	3.1	-0.2	0.0	-0.1	0.0	-0.1
CY	4.2	4.6	0.4	-0.1	1.5	0.6	-0.4
LV	5.0	3.6	-1.4	-0.7	-1.2	-0.6	-0.2
LT	3.8	2.9	-0.9	-0.4	-0.3	0.2	0.0
LU	3.4	2.2	-1.2	-0.1	-1.1	-0.1	0.0
HU	3.8	3.3	-0.5	0.0	-0.2	0.4	0.1
MT	5.2	4.1	-1.2	-0.5	0.4	1.2	0.2
NL	4.7	4.4	-0.4	-0.1	-0.6	-0.4	0.0
AT	4.9	4.5	-0.4	0.0	-0.5	-0.2	-0.1
PL	4.7	3.8	-0.9	-0.3	-0.7	0.1	0.2
PT	3.9	4.1	0.2	0.0	0.7	0.4	0.0
RO	2.8	2.4	-0.4	0.1	-0.6	-0.1	0.0
SI	4.6	3.9	-0.7	-0.2	-0.5	0.0	0.0
SK	3.7	3.8	0.1	-0.1	-0.3	-0.5	0.0
FI	5.5	4.4	-1.1	-0.5	-1.2	-0.5	0.0
SE	6.2	5.4	-0.8	0.2	-0.7	0.0	-0.3
NO	7.3	6.7	-0.6	-0.1	-0.8	-0.2	0.0
EA	4.3	3.8	-0.5	-0.2	-0.3	0.0	-0.1
EU	4.3	3.8	-0.5	-0.1	-0.3	0.0	0.0

(1) Base is the difference, between the 2021 AR and 2018 AR, of the total expenditure-to-GDP ratio in year 2019. Students (Employment) Index is given by the ratio of the number of students (employed) at time t and in the base period 0.
(2) EA and EU aggregates are computed as simple averages.
(3) The 2018 AR education expenditure projection results are as published in the 2018 Ageing Report, and do not take into account the impact of pension peer-reviews conducted between the 2018 AR and 2021 AR.
Source: European Commission, EPC

In countries projected to have the largest increases in education expenditure, the projected decrease of employment is an important driver. The countries showing the highest increase in expenditure appear to be Czechia, immediately followed by Germany and Slovakia. In the case of Czechia and Slovakia, a decline in the number of students (which would justify a decrease in expenditure) is offset by a large reduction in the amount of employed. In Germany, a decrease in the number of employed, and a minor change in the amount of students, engender higher education costs.

Projected education expenditure has been revised downward in this report compared with the Ageing Report 2018 for the EU as a whole. Table II.4.3 compares the evolution of public expenditure on education between the 2018 and 2021 Ageing Report projection exercises, and provides a breakdown between a base year effect, as well as a student and employment effects, the latter components representing the revision of the projected number of students and employed between the two reports.

Graph II.4.5: **Comparison of students and employed between the 2018 AR and the 2021 AR - Values for Baseline scenario in 2070.**



Source: European Commission, EPC

In particular, the following formula is used: ([158])

$$\frac{\frac{EDU_t^{1\_8}}{GDP_t}}{\frac{EDU_0^{1\_8}}{GDP_0}} = \frac{\bar{IS}_t}{IE_t} \qquad 4.1$$

Equivalently, equation 4.1 can be rewritten as:

$$\frac{EDU_t^{1\_8}}{GDP_t} = \frac{EDU_0^{1\_8}}{GDP_0} * \frac{\bar{IS}_t}{IE_t} \qquad 4.2$$

That is, the expenditure in education-to-GDP ratio at time *t*, for ISCED levels 1-8, can be expressed as a function of base period ratios, and of the ratio between the (average) student and employment indexes at time *t* ([159]).

Table II.4.3 shows that, despite considerable cross-country variations, the expenditure-to-GDP ratio for 2070 at EU level is, on average, revised downwards by about 0.5 pps. between the 2018 and the 2021 AR. This largely reflects a downward revision of 0.1 pps. in base period values, together with a 0.3 pps. reduction in the number of projected students (compared with the 2018 AR).

Cross-country results show an important variability in terms of revisions. A country-level investigation highlights a remarkable downward revision of the expenditure-to-GDP ratio in Denmark (-1.4 pps.) and Latvia (-1.4 pps.). Such results are upheld by Graph II.4.5, that provides a comparison of the number of students and employed between the current and previous Ageing Report. For Denmark, the downward effect can be explained by a decline in base period values of the expenditure-to-GDP ratio (-1 pps.). An additional impact is ascribable to the change in the projected number of students (-0.7 pps.), as supported by our graphical evidence. Concerning Latvia, results in Table II.4.3 confirm the intuition of Graph II.4.5. That is, the substantial decline in the projected number of students in 2070 (-1.2 pps.) is the major driver behind the overall downward revision; although

([158]) The formula is obtained from Equation (4.6) of "The 2021 Ageing Report – Underlying Assumptions and Projection Methodologies", European Economy, No. 142/2020, European Commission, Part II, Chapter 4.

([159]) Assuming a constant students-to-staff ratio (i.e. $\overline{IT}_i = \bar{IS}_i$). Student and Employment indexes are averaged across all ISCED levels.

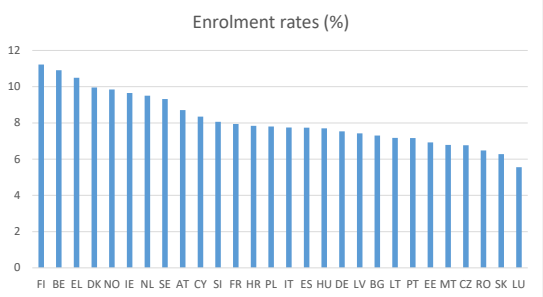
accompanied by a non-negligible reduction in base year values (-0.7 pps.).

4.4. SENSITIVITY TESTS

4.4.1. The High Enrolment Rate Scenario

Different sensitivity scenarios are considered in the 2021 Ageing Report, including a higher enrolment rate scenario. In line with the 2018 AR, a first sensitivity test assumes a convergence of enrolment rates towards best performers in the EU. This scenario can be interpreted as a demand shock that raises enrolment rates in ISCED levels 3-4 and 5-8 to the average of the three best performing countries is assumed. In the base period 2019, the three countries with the highest enrolment rates in ISCED levels 3-4 and 5-8 are Finland, Belgium and Greece (Graph II.4.6). By age bracket (15 years and older) and ISCED level (3-4 and 5-8), countries are assumed to converge linearly from 2019 until 2045 to the average enrolment rate in Finland, Belgium and Greece. Higher enrolment rates are then kept constant (although still considering the impact of participation rates) between 2046 and 2070. From 2045 onwards, a country keeps its initial enrolment rate break (by ISCED and age) only if the latter is higher than the target average.

Graph II.4.6: **Enrolment rates at base period- ISCED 3-4 & ISCED 5-8**



(1) Enrolment rates are computed as a ratio between the total number of students enrolled in ISCED 3-4 and 5-8 and the total population.
Source: European Commission, EP
Source:

Higher enrolment rates would imply an increase of education expenditure over the long-term in the EU, against a slight reduction in the baseline scenario. In 2070, the additional budgetary cost due to higher enrolment rates would imply that spending on education would increase by around +0.6 pps., on average, both in the EU and the euro area (Tables II.4.4., II.AV.5). Across countries, the projected increase in education expenditure varies considerably, ranging from +0.2 pps. in Belgium, Ireland, and Italy to +1.5 pps. in Slovakia. Notice that even in best performing countries expenditure increases occur, reflecting the fact that while the rank of best performing countries is determined by averaging across all ISCED levels (3-4 and 5-8) and ages, convergence will occur at single combinations of ISCED and age (for every outcome below best performing outcomes/targets).

4.4.2. Additional Sensitivity Tests

Alongside the high enrolment scenario, the 2021 AR includes additional sensitivity tests. Namely, consistently with other ageing costs' items, a uniform shock to the baseline projection (i.e. higher life expectancy, higher/lower migration, lower fertility, higher older workers employment rate, higher TFP growth, TFP risk scenario, policy scenario, lagged recovery and adverse structural scenario) has been applied, each time, to all Member States. More details can be found in Part I Chapter 3 of the report.

Sensitivity tests on demographic variables have a significant impact on the baseline projections. Table II.4.4 illustrates the differences, between 2019 and 2070, of each alternative sensitivity scenario with respect to the baseline projections. In addition, Table II.4.5 highlights the differences, in year 2070, between the alternative sensitivity scenarios and the baseline projections. There are no differences with respect to baseline projections whenever scenarios affecting productivity are considered (as no change in the number of students or population is assumed). On the contrary, significant and heterogeneous impacts occur in the remaining scenarios (with a direct impact on population).

As expected, the lower fertility scenario is found to have the largest decreasing impact on the projected education expenditure. In this sensitivity test, the fertility rate is assumed to be 20% lower compared to the baseline scenario over the entire projection horizon. This assumption generates a reduction in expenditure compared

Table II.4.4: **Baseline and Sensitivity Scenarios (Public Expenditure-to-GDP ratio) - Difference between 2019 and 2070**

	2019	2070	Difference 2019-2070											
	Baseline		Baseline	Lower Migration	Higher Migration	Lower fertility	Older Emp.	HLE	Higher TFP	TFP risk	Policy Scenario	Lagged Recovery	Adverse Structural	High Enrolment
BE	5.5	5.1	-0.4	-0.4	-0.3	-1.1	-0.6	-0.4	-0.4	-0.4	-0.7	-0.4	-0.3	0.2
BG	2.9	3.3	0.4	0.4	0.4	-0.3	0.2	0.4	0.4	0.4	0.1	0.4	0.4	0.9
CZ	3.4	4.1	0.6	0.6	0.7	-0.1	0.5	0.6	0.6	0.6	0.4	0.6	0.7	1.4
DK	6.1	5.2	-0.8	-0.9	-0.8	-1.7	-1.1	-0.9	-0.8	-0.8	-0.8	-0.8	-0.7	0.0
DE	4.0	4.5	0.5	0.4	0.5	-0.2	0.3	0.5	0.5	0.5	0.2	0.5	0.5	1.4
EE	4.2	3.8	-0.4	-0.4	-0.4	-1.1	-0.6	-0.5	-0.4	-0.4	-0.4	-0.4	-0.3	0.4
IE	3.3	3.2	-0.1	-0.2	-0.2	-0.7	-0.3	-0.2	-0.2	-0.2	-0.4	-0.2	-0.1	0.2
EL	3.2	2.6	-0.6	-0.7	-0.6	-1.1	-0.8	-0.7	-0.6	-0.6	-0.6	-0.7	-0.6	-0.4
ES	3.6	3.2	-0.4	-0.5	-0.4	-0.9	-0.6	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.1
FR	4.4	3.9	-0.6	-0.6	-0.5	-1.3	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	0.3
HR	5.0	4.6	-0.5	-0.5	-0.5	-1.4	-0.8	-0.5	-0.5	-0.5	-0.8	-0.5	-0.4	0.5
IT	3.5	3.1	-0.4	-0.4	-0.4	-1.0	-0.6	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4	0.2
CY	5.3	4.6	-0.7	-0.7	-0.6	-1.5	-0.9	-0.8	-0.7	-0.7	-0.7	-0.7	-0.6	0.4
LV	3.6	3.6	0.0	-0.1	0.0	-0.7	-0.2	-0.1	0.0	0.0	-0.3	0.0	0.0	0.5
LT	3.0	2.9	-0.1	-0.1	-0.2	-0.8	-0.3	-0.1	-0.1	-0.1	-0.4	-0.1	-0.1	0.5
LU	3.0	2.2	-0.8	-0.8	-0.8	-1.2	-0.9	-0.8	-0.8	-0.8	-1.0	-0.8	-0.8	0.6
HU	3.4	3.3	-0.1	-0.1	-0.1	-0.7	-0.3	-0.1	-0.1	-0.1	-0.3	-0.1	0.0	0.6
MT	4.3	4.1	-0.3	-0.2	-0.3	-0.9	-0.5	-0.3	-0.3	-0.3	-0.5	-0.3	-0.1	1.1
NL	4.9	4.4	-0.5	-0.5	-0.4	-1.1	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5	-0.4	0.0
AT	4.7	4.5	-0.1	-0.1	-0.1	-0.8	-0.3	-0.1	-0.1	-0.1	-0.4	-0.1	0.0	0.5
PL	3.8	3.8	-0.1	-0.1	-0.1	-0.8	-0.3	-0.1	-0.1	-0.1	-0.4	-0.1	0.0	0.5
PT	4.3	4.1	-0.1	-0.2	0.0	-0.9	-0.4	-0.2	-0.1	-0.1	-0.3	-0.1	0.0	0.5
RO	2.5	2.4	-0.1	-0.1	-0.1	-0.6	-0.2	-0.1	-0.1	-0.1	-0.3	-0.1	0.0	1.0
SI	3.8	3.9	0.1	0.1	0.1	-0.6	-0.1	0.1	0.1	0.1	-0.1	0.1	0.2	0.6
SK	3.4	3.8	0.4	0.3	0.4	-0.3	0.2	0.4	0.4	0.4	0.0	0.4	0.5	1.5
FI	5.3	4.4	-0.9	-0.9	-0.9	-1.5	-1.2	-1.0	-0.9	-0.9	-0.9	-0.9	-0.8	-0.5
SE	5.9	5.4	-0.5	-0.5	-0.5	-1.2	-0.7	-0.5	-0.5	-0.5	-0.9	-0.5	-0.4	0.3
NO	7.2	6.7	-0.6	-0.6	-0.5	-1.4	-0.8	-0.5	-0.6	-0.6	-0.9	-0.5	-0.4	0.4
EA	4.1	3.9	-0.2	-0.2	-0.2	-0.8	-0.4	-0.2	-0.2	-0.2	-0.3	-0.2	-0.1	0.5
EU	4.1	4.0	-0.2	-0.2	-0.1	-0.8	-0.4	-0.2	-0.2	-0.2	-0.3	-0.2	-0.1	0.6

Source: European Commission, EPC

with the baseline (-0.7 pps. and -0.6 pps. for the EU and euro area, respectively), due to a fall in the number of future students.

A scenario assuming a higher employment rate of older workers would also lead to a lower projected change in education expenditure. In particular, results from Table II.4.5 show that, when a contraction in the amount of inactive population (by raising the employment rate of older workers for the age group 55-74) is assumed, projected expenditure is reduced compared with the baseline (an average impact of -0.2 pps. for the EU and euro area aggregates), ranging from -0.1 pps. (Romania) to -0.3 pps. (Croatia).

Under higher and lower migration hypotheses, results are once again in line with our assumptions. A higher and a lower overall population (due to higher and lower net migration flows) engender, respectively, a modest positive and negative variation in education expenditure compared with the baseline (+0.03 and -0.04 pps. at EU-level and +0.03 and -0.05 pps. for the euro area). Similarly, the impacts of a higher life expectancy also appear quite limited.

In the policy scenario, which adopts an automatic mechanism revising the retirement age with the evolution of life expectancy, projected education expenditure would also be reduced thanks to favourable employment and GDP effects. In this scenario, we observe a widespread reduction in expenditure to GDP ratios across countries with respect to the baseline (-0.2 pps. at the EU-level and -0.1 pps. for the euro area), mainly explained by an increment of people engaged in employment activities, which is positively reflected on GDP (i.e., denominator effect).

Table II.4.5: **Alternative sensitivity scenarios - Difference from the Baseline in 2070**

	Difference from the Baseline in 2070								
	Lower Migration	Higher Migration	Lower fertility	Older Emp.	HLE	Policy Scenario	Lagged Recovery	Adverse Structural	High Enrolment
BE	-0.06	0.05	-0.77	-0.25	0.00	-0.29	0.02	0.10	0.56
BG	-0.01	0.01	-0.63	-0.18	0.00	-0.30	0.01	0.07	0.52
CZ	-0.02	0.02	-0.73	-0.17	0.00	-0.26	0.01	0.09	0.77
DK	-0.05	0.05	-0.85	-0.23	-0.05	0.00	0.01	0.11	0.84
DE	-0.05	0.04	-0.69	-0.20	-0.01	-0.24	0.01	0.07	0.98
EE	-0.01	0.01	-0.67	-0.16	-0.05	0.00	0.01	0.12	0.78
IE	-0.12	-0.07	-0.53	-0.23	-0.09	-0.23	-0.09	-0.01	0.29
EL	-0.06	0.05	-0.44	-0.15	-0.06	0.00	-0.01	0.00	0.23
ES	-0.06	0.05	-0.47	-0.17	0.00	-0.03	-0.02	0.00	0.36
FR	-0.06	0.05	-0.70	-0.16	-0.01	-0.06	0.01	0.06	0.89
HR	0.01	-0.01	-0.90	-0.29	-0.01	-0.37	0.01	0.07	0.98
IT	-0.01	0.01	-0.56	-0.17	-0.08	0.00	0.00	0.03	0.59
CY	-0.06	0.05	-0.82	-0.20	-0.09	0.00	0.01	0.10	1.08
LV	-0.03	0.04	-0.70	-0.16	-0.01	-0.28	0.00	0.08	0.52
LT	0.05	-0.06	-0.62	-0.14	-0.01	-0.22	0.01	0.08	0.60
LU	0.01	-0.01	-0.37	-0.12	0.00	-0.18	0.00	0.05	1.45
HU	0.02	-0.01	-0.59	-0.21	0.00	-0.23	0.01	0.10	0.68
MT	0.05	-0.03	-0.64	-0.22	0.00	-0.23	0.01	0.15	1.42
NL	-0.05	0.05	-0.66	-0.20	-0.10	-0.06	0.01	0.07	0.48
AT	-0.02	0.01	-0.67	-0.22	0.00	-0.26	0.01	0.08	0.59
PL	0.00	0.00	-0.68	-0.23	-0.01	-0.35	0.00	0.11	0.62
PT	-0.08	0.07	-0.74	-0.26	-0.09	-0.14	0.01	0.08	0.60
RO	0.04	-0.04	-0.50	-0.14	-0.01	-0.24	0.00	0.08	1.05
SI	-0.003	0.002	-0.69	-0.18	-0.01	-0.25	0.01	0.12	0.49
SK	-0.03	0.03	-0.68	-0.20	0.00	-0.36	0.00	0.08	1.15
FI	-0.03	0.03	-0.55	-0.28	-0.08	0.00	0.01	0.09	0.39
SE	-0.03	0.02	-0.66	-0.18	0.01	-0.39	0.01	0.14	0.82
NO	-0.05	0.04	-0.90	-0.28	0.00	-0.39	0.02	0.14	0.91
EA	-0.05	0.03	-0.64	-0.19	-0.03	-0.12	0.00	0.05	0.72
EU	-0.04	0.03	-0.65	-0.19	-0.03	-0.15	0.00	0.06	0.73

(1) The sensitivity scenarios on productivity development (Higher TFP and TFP risk) are the same as the baseline, and are not reported here.
Source: European Commission, EPC

In the case of the structural adverse scenario (assuming permanent negative effects of the COVID-19 crisis), the projected change in education spending would be higher than compared with the baseline. In particular, slightly higher education expenditure to GDP ratios are projected across countries (+0.06 and +0.05 for the EU and euro area, respectively) ([160]). The lagged recovery scenario shows almost no change compared to the baseline due to the temporary GDP effects assumed in this case.

([160]) For a description of the lagged recovery and structural adverse scenarios, see the "The 2021 Ageing Report – Underlying Assumptions and Projection Methodologies", European Economy, No. 142/2020, European Commission, Part I, Chapter 5.

ANNEX I

Pension questionnaire

Table II.AI.1: **Pension projection reporting sheet: blocks common to all schemes**

European Commission
DG ECFIN Unit C2
2021 Ageing Report: reporting framework on pensions (expenditure, pensioners, contributions and taxes)

Country
Scenario
Pension system type
Reporting of variable on voluntary basis
Variable calculated by formula

	A. Fixed table	**2000**	**2019**	**2030**	**2040**	**2050**	**2060**	**2070**
1	GDP (used in projections, in current prices - billion EUR)							
2	GDP deflator							
3	Economy-wide gross wage total (current prices - billion EUR)							
4	Average gross wage (current prices - 1000 EUR)							
5	Consumer price inflation							
	0 - AVERAGE GROSS WAGE AT RETIREMENT							
6	Average gross wage at retirement (current prices - 1000 EUR)							
	1 - PENSION EXPENDITURE (gross, million EUR, current prices)							
7	**Public pensions scheme, gross (8+9+10+11+12+13) and (14+22+24+26)**							
	Of which							
8	*aged -54*							
9	*aged 55-59*							
10	*aged 60-64*							
11	*aged 65-69*							
12	*aged 70-74*							
13	*aged 75+*							
14	Old-age and early pensions (16+18+20)							
15	*Of which new pensions (17+19+21)*							
16	*Of which flat component (basic pension)*							
17	*Of which new pensions (161*162*163)*							
18	*Of which earnings-related pensions*							
19	*Of which new pensions (DB/NDC: 155*156*157*158*159*160; PS: 155*176*177*159*178*160)*							
20	*Of which minimum pensions (non-contributory, i.e. minimum income guarantees for retired people)*							
21	*Of which new pensions*							
22	Disability pensions							
23	*Of which new pensions*							
24	Survivors' pensions							
25	*Of which new pensions*							
26	Other pensions							
27	*Of which new pensions*							
28	**Private occupational schemes, gross**							
29	*Of which new pensions (179*180*181*182*183*184)*							
30	**Private individual mandatory schemes, gross**							
31	*Of which new pensions (185*186*187*188*189*190)*							
32	**Private individual non-mandatory schemes, gross**							
33	*Of which new pensions (191*192*193*194*195*196)*							
34	**Total pension expenditure, gross (35+36+37+38+39+40) and (7+28+30+32)**							
	Of which							
35	*aged -54*							
36	*aged 55-59*							
37	*aged 60-64*							
38	*aged 65-69*							
39	*aged 70-74*							
40	*aged 75+*							
	2 - TAXES ON PENSIONS & NET PENSION EXPENDITURES (million EUR, current prices)							
41	**Public pension scheme, tax revenues (including compulsory social security contributions paid by pensioners)**							
42	**Private occupational schemes, tax revenues**							
43	**Private individual mandatory schemes, tax revenues**							
44	**Private individual non-mandatory schemes, tax revenues**							
45	Total revenues from taxes on pensions (41+42+43+44)							
46	Public pensions scheme, net of taxes on pensions (7-41)							
47	*Of which minimum pensions (non-contributory, i.e. minimum income guarantees for retired people)*							
48	Private occupational schemes, net of taxes on pensions (28-42)							
49	Private individual mandatory schemes, net of taxes on pensions (30-43)							
50	Private individual non-mandatory schemes, net of taxes on pensions (32-44)							
51	**Total pension expenditure, net of taxes on pensions (34-45) and (46+48+49+50)**							
	3 - BENEFIT RATIO							
52	**Public pensions (7/86)/4**							
53	*Of which old-age earnings-related pensions (including the flat component) ((16+18)/100)/4*							
54	Private occupational schemes (28/105)/4							
55	Private individual mandatory schemes (30/106)/4							
56	Private individual non-mandatory schemes (32/107)/4							
57	**Total benefit ratio (34/108)/4**							
	4 - GROSS AVERAGE REPLACEMENT RATES (at retirement)							
58	**Public pensions: old-age earnings-related pensions (including the flat component)**							
59	Private occupational schemes (29/179)/6							

(Continued on the next page)

Table (continued)

60	Private individual mandatory schemes (31/185)/6							
61	Private individual non-mandatory schemes (33/191)/6							
62	**Total replacement rate**							
5 - NUMBER OF PENSIONS (in 1000)								
63	**Public pensions (64+65+66+67+68+69) and (70+73+74+75)**							
	Of which							
64	*aged -54*							
65	*aged 55-59*							
66	*aged 60-64*							
67	*aged 65-69*							
68	*aged 70-74*							
69	*aged 75+*							
70	Old-age and early pensions (71+72)							
71	*Of which earnings-related pensions and the flat component*							
72	*Of which minimum pensions (non-contributory, i.e.minimum income guarantees for retired people)*							
73	Disability pensions							
74	Survivors' pensions							
75	Other pensions							
76	**Private occupational schemes**							
77	**Private individual mandatory schemes**							
78	**Private individual non-mandatory schemes**							
79	**All pensions (63+76+77+78) and (80+81+82+83+84+85)**							
	Of which							
80	*aged -54*							
81	*aged 55-59*							
82	*aged 60-64*							
83	*aged 65-69*							
84	*aged 70-74*							
85	*aged 75+*							
6 - NUMBER OF PENSIONERS (in 1000)								
86	**Public pensioners (87+89+91+93+95+97) and (99+102+103+104)**							
	Of which							
87	*aged -54*							
88	*Of which female*							
89	*aged 55-59*							
90	*Of which female*							
91	*aged 60-64*							
92	*Of which female*							
93	*aged 65-69*							
94	*Of which female*							
95	*aged 70-74*							
96	*Of which female*							
97	*aged 75+*							
98	*Of which female*							
99	Old-age and early pensions (100+101)							
100	*Of which earnings-related pensions or flat component*							
101	*Of which minimum pensions (non-contributory, i.e.minimum income guarantees for retired people)*							
102	Disability							
103	Survivors pensions							
104	Other pensions							
105	**Private occupational schemes**							
106	**Private individual mandatory schemes**							
107	**Private individual non-mandatory schemes**							
108	**All pensioners (109+111+113+115+117+119)**							
	Of which							
109	*aged -54*							
110	*Of which female*							
111	*aged 55-59*							
112	*Of which female*							
113	*aged 60-64*							
114	*Of which female*							
115	*aged 65-69*							
116	*Of which female*							
117	*aged 70-74*							
118	*Of which female*							
119	*aged 75+*							
120	*Of which female*							
7 - CONTRIBUTIONS (million EUR, current prices)								
121	Public pensions (122+123+124+125)							
122	*Of which employer*							
123	*Of which employee*							
124	*Of which state (only if contribution is legislated)*							
125	*Of which other revenues, i.e. private pension funds, nuisance charges (only if legislated)*							
126	Private occupational schemes (total contributions)							
127	Private individual mandatory schemes (total contributions)							
128	Private individual non-mandatory schemes (total contributions)							
129	Total pension contributions (121+126+127+128)							

(Continued on the next page)

Table (continued)

8 - NUMBER OF CONTRIBUTORS (employees, in 1000)								
130	Public pensions							
131	Private occupational schemes							
132	Private individual mandatory schemes							
133	Private individual non-mandatory schemes							
9 - INDEXATION FACTORS (percentage)								
134	Indexation factor earnings-related pensions							
135	Indexation factor flat component							
136	Indexation factor minimum pensions							
10 - BREAKDOWN OF NEW PENSION EXPENDITURES								
	PUBLIC PENSIONS							
	PRIVATE OCCUPATIONAL SCHEMES - TOTAL (calculated in line 29)							
179	Number of new pensions (in 1000)							
180	Average contributory period (in years)							
181	Average accrual rate							
182	Monthly average pensionable earning							
183	Adjustment factors (1 if not applicable)							
184	Average number of months paid the first year							
	PRIVATE INDIVIDUAL MANDATORY SCHEMES - TOTAL (calculated in line 31)							
185	Number of new pensions (in 1000)							
186	Average contributory period (in years)							
187	Average accrual rate							
188	Monthly average pensionable earning							
189	Adjustment factors (1 if not applicable)							
190	Average number of months paid the first year							
	PRIVATE INDIVIDUAL NON-MANDATORY SCHEMES - TOTAL (calculated in line 33)							
191	Number of new pensions (in 1000)							
192	Average contributory period (in years)							
193	Average accrual rate							
194	Monthly average pensionable earning							
195	Adjustment factors (1 if not applicable)							
196	Average number of months paid the first year							
11 - ASSETS AND RESERVES & RETURN (million EUR, current prices)								
197	**Public pension scheme: assets and reserves**							
198	Public pension scheme: average return (%)							
199	**Private occupational schemes: assets and reserves**							
200	Private occupational schemes: average return (%)							
201	**Private individual mandatory schemes: assets and reserves**							
202	Private individual mandatory schemes: average return (%)							
203	**Private individual non-mandatory schemes: assets and reserves**							
204	Private individual non-mandatory schemes: average return (%)							
B. Additional information								
205								
206								
207								

Source: European Commission, EPC.

Table II.AI.2: **Pension projections reporting sheet: disaggregation of new public pensions expenditure – earnings-related for defined benefit (DB) schemes**

10 - BREAKDOWN OF NEW PENSION EXPENDITURES		**2000**	**2019**	**2030**	**2040**	**2050**	**2060**	**2070**
	PUBLIC PENSIONS **- DEFINED BENEFIT**							
	TOTAL - Earnings-related pension (calculated in line 19)							
155	Number of new pensions (in 1000)							
156	Average contributory period (in years)							
157	Average accrual rate (contributory only)							
158	Monthly average pensionable earning (in 1000 EUR)							
159	Sustainability/adjustment factors (1 if not applicable)							
160	Average number of months paid the first year							
	TOTAL - Flat component (basic pension) (calculated in line 17)							
161	Number of new pensions (in 1000)							
162	Average monthly new pension (EUR)							
163	Average number of months paid the first year							

Data to be provided also by gender.
Source: European Commission, EPC.

Table II.AI.3: **Pension projection reporting sheet: disaggregation of new public pension expenditure - earnings-related for notional defined contribution (NDC) schemes**

	10 - BREAKDOWN OF NEW PENSION EXPENDITURES	2000	2019	2030	2040	2050	2060	2070
	PUBLIC PENSIONS - **NOTIONAL DEFINED CONTRIBUTION**							
	TOTAL - Earnings-related pension (calculated in line 19)							
155	Number of new pensions (in 1000)							
156	Average contributory period (in years)							
157	Average accrual rate (c/A)							
168	*Notional-accounts contribution rate (c)*							
169	*Annuity factor (A)*							
158	Monthly average pensionable earning							
159	Sustainability/adjustment factors (1 if not applicable)							
160	Average number of months paid the first year							
	TOTAL - Flat component (basic pension) (calculated in line 17)							
161	Number of new pensions (in 1000)							
162	Average monthly new pension (EUR)							
163	Average number of months paid the first year							

Data to be provided also by gender.
Source: European Commission, EPC.

Table II.AI.4: **Pension projection reporting sheet: disaggregation of new public pension expenditure - earnings-related for point systems (PS)**

	10 - BREAKDOWN OF NEW PENSION EXPENDITURES	2000	2019	2030	2040	2050	2060	2070
	PUBLIC PENSIONS - **POINT SYSTEM**							
	TOTAL - Earnings-related pension (calculated in line 19)							
155	Number of new pensions (in 1000)							
176	Point value (EUR/month)							
157	Average accrual rate (points/year; 177/156)							
177	*Total pension points at retirement*							
156	*Average contributory period (years)*							
159	Sustainability/adjustment factors (1 if not applicable)							
178	Correction coefficient (1 if not applicable)							
160	Average number of months paid the first year							
	TOTAL - Flat component (basic pension) (calculated in line 17)							
161	Number of new pensions (in 1000)							
162	Average monthly new pension (EUR)							
163	Average number of months paid the first year							

Data to be provided also by gender.
Source: European Commission, EPC.

Table II.AI.5: **Reporting sheet for special pension schemes (voluntary reporting)**

Are special pension schemes included in the projections? (SELECT) YES/NO
Where they included in the previous projections? YES/NO

		2009	2019	2030	2040	2050	2060	2070
	1 - Special public pension schemes: expenditure (million EUR)							
1	Total (4+5+6)							
2	*Of which new pensions*							
3	Total (%GDP)							
4	Difficult conditions							
5	Security and defence							
6	Other (7+8+9+10+11+12+13)							
7	of which self-employed							
8	of which merit and deprived							
9	of which judicial staff							
10	of which railway staff							
11	of which teachers							
12	of which civil servants (not included in the above categories)							
13	of which atypical (all other)							
	2 - Special public pension schemes: number of pensioners (in 1000)							
14	Total (17+18+19)							
15	*Of which new pensioners*							
16	Total (% of public pensioners)							
17	Difficult conditions							
18	Security and defence							
19	Other (20+21+22+23+24+25+26)							
20	of which self-employed							
21	of which merit and deprived							
22	of which judicial staff							
23	of which railway staff							
24	of which teachers							
25	of which civil servants (not included in the above categories)							
26	of which atypical (all other)							

Source: European Commission, EPC.

ANNEX II
Additional information on pension systems and projections

Table II.All.1: **Pension schemes in EU Member States and projection coverage**

		Public pensions[3]					Private pension scheme		
	Pension scheme type	Minimum Pension[4]	Old-age pensions	Early retirement pensions	Disability pensions	Survivors' pensions	Occupational pension scheme	Mandatory private individual	Voluntary private individual
BE	DB	MT - SA	ER	ER	ER priv FR self-	ER	M* priv V* self-emp	X	Yes*
BG	DB	MT - SA	ER	ER	ER	ER	V*	Yes*	Yes*
CZ	DB	X	ER	ER	ER	ER	X	X	Yes*
DK	Flat rate + DB	FR & MT suppl.	FR & MT suppl.	V	FR	FR	Quasi M	X	Yes
DE	PS	MT - SA*	ER	ER	ER	ER	V*	X	Yes*
EE	PS	MT - SA	ER	ER	ER	ER	M*	Yes	Yes*
IE	Flat rate + DB	MT - FR & SA	FR	X	FR - MT	FR - MT	M pub V* priv	X	Yes*
EL[1]	Flat rate + DB + NDC	MT - FR	FR - ER	FR - ER	FR - ER	FR - ER	V*	X	Yes*
ES	DB	MT	ER	ER	ER	ER	V	X	Yes
FR[2]	DB + PS	MT - SA	ER	ER	ER	ER	V*	X	Yes*
HR	PS	ER	ER	ER	ER	ER	X	Yes	Yes*
IT	NDC	MT - SA	ER	ER	ER	ER	V*	X	Yes*
CY	PS	MT & ER	ER	ER	ER	ER	M* pub V* priv	X	Yes*
LV	NDC	FR - SA	ER	ER	ER	ER	X	Yes	Yes*
LT	PS	SA	ER	ER	ER	ER	X	Quasi M	Yes*
LU	DB	MT - SA*	ER	ER	ER	ER	V*	X	Yes*
HU	DB	MT - SA	ER	ER	ER	ER	V*	X	Yes*
MT	Flat rate + DB	MT - SA	FR & ER	X	FR & ER	FR & ER	V*	X	Yes*
NL	Flat rate + DB	SA	FR	X	ER	FR	M	X	Yes*
AT	DB	MT - SA	ER	ER	ER	ER	V*	X	Yes*
PL	NDC	ER	ER	ER	ER	ER	V*	Yes*	Yes*
PT	DB	MT - SA[5]	ER	ER	ER	ER	Quasi M	X	Yes*
RO	PS	SA	ER	ER	ER	ER	X	Yes	Yes
SI	DB	X	ER	ER	ER	ER	V*	X	Yes*
SK	PS	MT - SA	ER	ER	ER	ER	X	Quasi M*	Yes*
FI	DB	MT	ER	ER	ER	ER	V*	X	Yes*
SE	NDC	MT	ER	ER	ER	ER	Quasi M	Yes	Yes
NO	NDC	FR	ER	X	ER	ER	M*	X	Yes*

(1) The public supplementary pension fund is NDC since 2015.
(2) Point system refers to the ARRCO and AGIRC pension schemes.
(3) Public pension expenditure include all public expenditure on pension and equivalent cash benefits granted for a long period, see Annex 6 for details on the coverage of the public pension expenditure projections.
(4) Minimum pension corresponds to minimum pension and other social allowances for older people not included elsewhere.
(5) Includes all pensions of the non-earning-related scheme such as old-age, disability and survivors' pensions and the social supplement (equal to the difference between the guaranteed minimum amount and pension benefits calculated according to the rules) granted to the earning-related pensioners.

DB: Defined benefit system
NDC: Notional defined contribution system
PS: Point system

MT - Mean-tested
FR - Flat rate
ER – Earnings-related
SA - Social allowance/assistance
V - Voluntary
M - Mandatory
X - Does not exist
* Not covered in the projections
Source: European Commission, EPC.

Table II.AII.2: **Key indexation and valorisation parameters of pension system in Europe (old-age pensions)**

	Pensionable earnings reference	General valorisation variable(s)	General indexation variable(s)
BE	Full career	Prices	Prices and living standard
BG	Full career	Wages	Prices and wages
CZ	Full career	Wages	Prices and wages
DK	Years of residence	Not applicable	Wages
DE	Full career	Wages	Wages
EE	Full career	Prices and social taxes	Prices and social taxes
IE	Flat rate	Not applicable	No fixed rule
EL	Full career	Prices and wages	Prices and GDP (max 100% prices)
ES	Last 25 years	Prices	Index for pension revaluation
FR	25 best years (CNAVTS)	Prices	Prices
HR	Full career	Prices and wages	Prices and wages
IT	Full career	GDP	Prices
CY	Full career	Wages	Prices and wages
LV	Full career	Contribution wage sum index	Prices and wage sum
LT	Full career	Wage sum	Wage sum
LU	Full career	Prices and wages	Prices and wages
HU	Full career	Wages	Prices
MT	10 best of last 41 years	Cost of living	Prices and wages
NL	Years of residence	Not applicable	Wages
AT	Full career	Wages	Prices
PL	Full career	NDC 1st: Wages, NDC 2nd: GDP	Prices and wages
PT	Full career up to a limit of 40 years	Prices	Prices and GDP
RO	Full career	Prices and wages	Prices and wages
SI	Best consecutive 24 years	Wages	Prices and wages
SK	Full career	Wages	Prices
FI	Full career	Prices and wages	Prices and wages
SE	Full career	Wages	Wages
NO	Full career	Wages	Wages

BG - Pensionable earnings reference is full career back to 2000.
CZ - Pensionable earnings reference is full career back to 1986.
IE - A price and wage indexation rule has been assumed in the projections.
EL - Pensionable earnings reference is full career, taking into account wages/income from 2002 onwards.
ES - Pensionable earnings reference is last 25 years as of 2022. The IPR is established annually at a level consistent with a balanced budget of the Social Security system over the medium run. Depending on the balance of the system, the indexation will be less than price (budget deficit) or price + 0.5% (budget balance). It has been suspended since 2018 and is expected to remain suspended during the 2021 fiscal year.
FR - The pensionable earnings reference is full career in AGIRC (Association générale des institutions de retraite des cadres) and ARRCO (Association pour le régime de retraite complémentaire des salariés); CNAVTS: Caisse nationale de l'assurance vieillesse des travailleurs salariés. Valorisation rule and indexation of 1% in both AGIRC and ARRCO.
LT - Pensionable earnings reference is full career back to 1994. Pensions are indexed to the seven-year average of the wage sum growth over the current, previous three and next three years. The index is applied in case of a balanced budget of the Pension Social Security System in two consecutive years and contingent on positive GDP or wage sum growth.
LU - Indexation rule is wages if sufficient financial resources are available, otherwise only cost of living indexation.
HU - Pensionable earnings reference is full career back to 1988.
MT - Pensionable earnings reference rule applies to people born as of 1969.
PT - Pensionable earnings reference is full career as of 2002. Price and wage valorisation rule applies to earnings registered between 2002 and 2011.
SK - Pensionable earnings reference is full career back to 1984.
SE - Indexation rule is wage growth minus 1.6 pps.
NO - Indexation rule is wage growth minus 0.75 pps.
Source: European Commission, EPC.

ANNEX III

Input data used to project health care expenditure

Data collection

The data required to run long-term public expenditure projections in the field of health care ([161]) includes:

- per capita public expenditure on health care by age and sex cohorts (age/sex specific expenditure profiles) ([162]);
- sex specific per capita public expenditure on health care borne by decedents and survivors decomposed by the number of remaining years of life required to run the "death-related costs scenario";
- total public expenditure on health care; and
- fiscal impact of recently legislated policy reforms and COVID-19 related expenditure in the health care area.

The data collection procedure has taken two steps. First, Commission Services (DG ECFIN) pre-filled data on the basis of existing international databases managed by international organisations (Eurostat, OECD). The questionnaire was then circulated to the Member States and Norway, to endorse the pre-filled figures and complement these with data from national sources if no data was available from international sources. The completed data questionnaires were used for conducting the projections.

Age/sex specific per capita public expenditure on health care and sex specific per capita public expenditure on health care borne by decedents and survivors decomposed by the number of remaining years of life are not available in any common international databases. Therefore, they were provided exclusively by AWG delegates and are based on national sources.

Table II.AIII.1 presents an overview of the available data. It shows that most of the countries have provided the full data necessary to run the projection exercise. The only missing health care age-gender specific cost profiles, for Romania, have been replaced by the simple average of individual countries' health care age-gender specific expenditure profiles expressed as % of GDP per capita and as calculated for NMS aggregates; the averages have been calculated using all available data.

Table II.AIII.1: **Overview of the health care data provided for and used in the 2021 Ageing Report**

AR 2021 - Health Care data provided and used					
Country	**Source expenditure data**	**Age-cost profiles**	**Death-related age-cost profiles**	**Quantified non-COVID legislated measures**	**COVID-19 related measures**
Belgium	SHA(1) & COFOG(2)	by single age	X	X	X
Bulgaria	SHA(1) & COFOG(2)	by 5-year age group	X		X
Czechia	SHA(1) & COFOG(2)	by single age	X		X
Denmark	SHA(1) & COFOG(2)	by single age	X		
Germany	SHA(1) & COFOG(2)	by single age	X		
Estonia	SHA(1) & COFOG(2)	by 5-year age group			
Ireland	SHA(1) & COFOG(2)	by 5-year age group			
Greece	SHA(1) & COFOG(2)	by 5-year age group			X
Spain	SHA(1) & COFOG(2)	by 5-year age group	X		
France	SHA(1) & COFOG(2)	by single age	X	X	X
Croatia	SHA(1) & COFOG(2)	by single age			X
Italy	SHA(1) & COFOG(2)	by 5-year age group	X	X	X
Cyprus	SHA(1) & COFOG(2)	by 5-year age group			
Latvia	SHA(1) & COFOG(2)	by single age	X	X	X
Lithuania	SHA(1) & COFOG(2)	by single age			
Luxembourg	SHA(1) & COFOG(2)	by single age			X
Hungary	SHA(1) & COFOG(2)	by single age	X		X
Malta	SHA(1) & COFOG(2)	by 5-year age group			X
Netherlands	SHA(1) & COFOG(2)	by 5-year age group	X		
Austria	SHA(1) & COFOG(2)	by 5-year age group	X		
Poland	SHA(1) & COFOG(2)	by single age	X	X	
Portugal	SHA(1) & COFOG(2)	by single age			X
Romania	SHA(1) & COFOG(2)	imputed			X
Slovenia	SHA(1) & COFOG(2)	by 5-year age group	X	X	X
Slovakia	SHA(1) & COFOG(2)	by single age	X	X	X
Finland	SHA(1) & COFOG(2)	by single age	X		
Sweden	SHA(1) & COFOG(2)	by single age	X		X
Norway	SHA(1) & COFOG(2)	by single age			
Total		**27 country-specific profiles**	**17 country-specific profiles**	**7 countries**	**16 countries**

Notes: (1) Total current public health expenditure excluding LTC (health); (2) Public expenditure on capital formation excluding capital formation for R&D health.
Source: Commission services, EPC.

Moreover, the age-gender expenditure profiles were adjusted to the total public expenditure provided according to System of Health Accounts 2011 (SHA 2011) / COFOG, i.e. upward or downward adjustment without modifying the age specific distribution.

Data used for calculating total public expenditure on health care

In order to calculate total public expenditure on health care, the sum of the following two components is used:

1) Public current expenditure on health care – computed as the sum of all "core" health care SHA 2011 functions/expenditure categories HC.1 to HC.9, excluding HC.3 (Long-Term Care (health)). In more detail, the following SHA categories have been used to calculate public current expenditure

([161]) As explained below, this definition of healthcare excludes SHA expenditure category HC.3, which is included in the long-term care expenditure category.

([162]) The age-gender cost profiles are accepted for use based on a plausible description of the underlying national methodology.

on health care: Inpatient curative care (HC.1); and Rehabilitative care (HC.2); Ancillary services (HC.4); Medical goods (HC.5); Preventive care (HC.6); Governance, and health system and financing administration (HC.7); Other health care services not elsewhere classified (HC.9).

2) Public expenditure on capital formation in health – computed from COFOG's gross capital formation for the GF07 "Health" function excluding the GF0705 "R&D Health" category. In order to smooth the volatility inherent to capital formation, the average value for the last four years is used.

Data used for calculating the sector-specific composite indexation

In the "*sector-specific composite indexation scenario*" the importance and evolution of various components to health care provision is captured. This scenario looks at each of these components separately and indexes each of them in a separate way, creating a sort of composite indexation for "unit cost development".

The components are: (1) inpatient care, (2) outpatient care and ancillary services, (3) pharmaceuticals and therapeutic appliances, (4) preventive care, (5) governance and administration, and (6) capital investment. They broadly reflect the different sectors of the health system and correspond to the categories of the System of Health Accounts (SHA).

As shown in Table II.AIII.2 the respective share in public expenditure on health care of each component is calculated with SHA data for the latest year available, except for the capital formation component, for which COFOG data on gross capital formation on health excluding R&D health is used. These shares are then applied to the age-specific per capita expenditure and by so doing each age-specific per capita expenditure is divided into six sub-items of expenditure.

Next, the past evolution of public expenditure on each of those components is calculated as average annual growth rate for the past 10 years. Due to current data limitations for building 10-year time series from data based on the SHA 2011 classification, data from COFOG categories in correspondence to the SHA 2011 health care functions are used for the calculation of the average annual expenditure growth rate for each component.

Lastly, the ratio of each of these growth rates to the growth rate of GDP ([163]) is built. Due to high volatility in the relative growth rates for prevention, capital formation and governance and administration, these items were excluded from the indexation. Moreover, similarly to the approach undertaken in the 2018 Ageing Report, the relative

Table II.AIII.2: **Data sources for the health care sector-specific indexation components**

Sector-specific indexation component		Inpatient care (curative and rehabilitative care)	Outpatient care (curative and rehabilitative care) + Ancillary services	Medical goods (pharmaceuticals and therapeutic appliances)	Preventive care	Governance and administration	Capital formation
Latest available share of public expenditure	Classification	SHA	SHA	SHA	SHA	SHA	COFOG
	Categories	HC.1.1 + HC.1.2 + HC.2.1 + HC.2.2	(HC.1.3 + HC.1.4 + HC.2.3 + HC.2.4) + HC.4	HC.5	HC.6	HF.7 + HF.9	Gross capital formation P5 for GF 07 05 "R&D Health"
	Data source	Eurostat or OECD	Eurostat or OECD	Eurostat or OECD	Eurostat or OECD	Eurostat or OECD	Eurostat
Average annual growth rate over the last 10 years (in EUR)	Classification	COFOG	COFOG	COFOG	COFOG	COFOG	COFOG
	Categories	Total general government expenditure TE excluding gross capital formation P5 for GF 07 03 "Hospital services"	Total general government expenditure TE excluding gross capital formation P5 for GF 07 02 "Outpatient services"	Total general government expenditure TE excluding gross capital formation P5 for GF 07 01 "Medical products, appliances and equipment"	Total general government expenditure TE excluding gross capital formation P5 for GF 07 04 "Public health services"	Total general government expenditure TE excluding gross capital formation P5 for GF 07 06 "Health n.e.c."	Gross capital formation P5 for GF 07 05 "R&D Health"
	Data source	Eurostat	Eurostat	Eurostat	Eurostat	Eurostat	Eurostat

Notes: (1) COFOG categories from the GF07 "Health" function in correspondence with the respective SHA 2011 functions are used for building the 10-year time series for the six components (2009-2018). (2) The relative average growth rates are calculated as a ratio of the average annual growth rates to the average GDP growth rates.
Source: Commission services.

([163]) In previous Ageing Report GDP per capita was used instead.

growth rates of the other three components (hospitals, outpatient care and medical goods) were capped at their respective 25th and 75th percentiles.

Interpolation of health care expenditure levels for years 2020 and 2021

The health expenditure levels in euro for years 2020 and 2021 were interpolated for the majority of the countries. This was necessary to correct for the observed significant drop on the projected health care expenditure levels in euro in 2020 and 2021. This fall is the result of the methodology used to project health care expenditure, namely GDP per capita growth rates, which considerably fell in a moment of an important economic crisis. This resulted in significant reductions in projected health care expenditure levels in 2020 and 2021 that are not logical in the current COVID-19 crisis situation. This is why, the following adjustments were implemented for all countries and scenarios:

- First, a linear interpolation between expenditure euro levels in the year 2019 and the year 2022 was calculated.
- Then, the interpolated values were compared with the projected values by the model.
- If the projected value was below the interpolated value in 2020 or 2021, the projected value was substituted by the interpolated value.
- If the projected value was above interpolated value in 2020 and 2021, the projected value was kept in place.
- Once the final value for the expenditure in euro in 2020 and 2021 is available, to recalculate the figures for expenditure as % of GDP.

ANNEX IV

Input data used to project long-term care expenditure

Table II.AIV.1: **Combinations of data sources for estimating long-term care expenditure**

I. Preferred solution: SHA, when data is available (all countries except those listed below, please note national data is used for SK, collected according to the SHA methodology)

LTC (health)	LTC (social)	LTC (institutional care)	LTC (home care)	LTC (cash benefits)
SHA: HC.3	**SHA**: HCR.1	**SHA**: (HC.3+HCR.1) institutional care share according to **ESSPROS**, **SHA**, **ESSPROS+SHA** or **national data**	**SHA**: (HC.3+HCR.1) home care share according to **ESSPROS**, **SHA**, **ESSPROS+SHA** or **national data**	**SHA**: (HC.3+HCR.1) cash benefits share according to **ESSPROS**, **SHA**, **ESSPROS+SHA** or **national data**

II. Alternative: When data on LTC (social) HCR.1 is not available from SHA, a proxy is constructed based on ESSPROS data (BE, BG, IE, EL, HR, IT, CY, HU, MT, AT and PL)

LTC (health)	LTC (social)	LTC (institutional care)	LTC (home care)	LTC (cash benefits)
SHA: HC.3	**ESSPROS**: proxy based on cash and in-kind benefits according to Disability and Old age functions, including "Accommodation", "Home help", "Periodic care allowance", and in the Disability function "Lump sum care allowance". Adjusted to reduce potential double counting with expenditure already included within HC.3 in SHA.	(HC.3 + Proxy) *Institutional care share according to **ESSPROS**, **SHA**, **ESSPROS+SHA** or **national data**	(HC.3 + Proxy) *Home care share according to **ESSPROS**, **SHA**, **ESSPROS+SHA** or **national data**	(HC.3 + Proxy) *Cash benefits share according to **ESSPROS**, **SHA**, **ESSPROS+SHA** or **national data**

Source: European Commission, EPC,

The most important data required to successfully run this projection exercise in the field of LTC include:

- public expenditure on LTC;
- per user (also called beneficiary or recipient) public expenditure on LTC by gender and single age or five-year age cohorts (so-called "age-related expenditure profiles");
- disaggregation of total public spending on LTC into spending on services in kind and spending on cash benefits for LTC, by gender and single age or five-year age cohorts;
- disaggregation of total public spending on services in kind into spending on services provided in the institutions and services provided at home, by gender and single age or five-year age cohorts;

Table II.AIV.2: **LTC expenditure in base year according to data source used**

Countries	LTC (health) HC.3	LTC (social) HC.R.1	LTC (social) proxy	LTC Total
Belgium	2.1		0.1	2.2
Bulgaria	0.0		0.3	0.3
Czechia	1.1	0.4		1.5
Denmark	2.3	1.1		3.5
Germany	1.5	0.0		1.6
Estonia	0.3	0.0		0.4
Ireland	1.3		0.0	1.3
Greece	0.2		0.0	0.2
Spain	0.7	0.1		0.7
France	1.3	0.6		1.9
Croatia	0.2		0.3	0.4
Italy	0.7		1.0	1.7
Cyprus	0.1		0.2	0.3
Latvia	0.3	0.2		0.5
Lithuania	0.5	0.5		1.0
Luxembourg	0.9	0.2		1.0
Hungary	0.2	0.3		0.6
Malta	1.0		0.1	1.1
Netherlands	2.5	1.2		3.7
Austria	1.1		0.7	1.8
Poland	0.4		0.4	0.8
Portugal	0.2	0.2		0.4
Romania	0.3	0.1		0.4
Slovenia	0.8	0.1		1.0
Slovakia	0.0		0.8	0.8
Finland	1.3	0.7		2.0
Sweden	2.8	0.5		3.3
Norway	3.3	0.7		4.0

(1) These figures have been adjusted to match the base year, reforms reported by Member States have been included and any overlaps identified have been corrected. Therefore, the variables HC.3 and HC.R.1 reported here may differ from the published values.
Source: European Commission, EPC

- number of beneficiaries of LTC services provided a) at home and b) in institutions, and recipients of cash benefits for LTC, by gender and single age or five-year age cohorts;

- information on the possible overlapping between the recipients of cash benefits related to LTC and the recipients of LTC services (legal possibility and numbers);

- EU-SILC dependency rates by gender and five-year age cohorts (as a measure of demand for LTC);and

- Policy reforms in the LTC area.

The EU Member States and Norway were invited to complete the data questionnaire. Outstanding issues were discussed with the Commission on a bilateral basis and were accepted for use in the report on the basis of a plausible explanation of national methodology. Table II.AIV.3 below presents an overview of the available data. It first shows the expenditure data sources for in-kind long-term care and cash benefits, as well as whether member states supplied quantified estimates of the effects of specific COVID-19 measures and other legislated reforms. It then shows whether cost-profiles by age of recipient were available, or whether, in their absence the profile of expenditure by age has been assumed to be in line with other EU14 or NMS Member States. The table shows how data has been used

according to availability. Next, it describes the availability of expenditure and recipient data for home care, institutional care and cash benefits. Finally, the availability of cost-profiles in the Ageing Reports 2021 and 2018 is reported.It is useful to recall that the AWG has decided to define viable solutions for important data limitations regarding reporting of LTC expenditure. This concerns both in-kind and cash benefit expenditure. Several countries using SHA accounting do not report expenditure on social services of LTC, which may lead to underreporting of expenditure. Second, the split of LTC public expenditure into institutional care, home care and cash benefits is not always fully available in SHA data (cash benefits breakdown is not available for HC.3, the LTC (health) variable and at the moment no breakdown at all is available for HC.R.1, the LTC (social) variable). The breakdown across care settings according to ESSPROS can be used as an alternative, although the derived split is not always consistent with national data and SHA breakdowns ([164]). The AWG agreed thus, to preserve the accounting methodology from the 2018 Ageing Report of calculating a proxy for LTC (social) for those countries who did not report this category in the System of Health Accounts, defined so as to minimise any issues of double-counting of expenditure, which may arise in this case. The methodology to calculate the proxy was updated and it was agreed to base the split by care setting on national-level data, supplemented where necessary by the breakdowns derived from the System of Health and ESSPROS. These estimates were then validated bi-laterally by the AWG Delegates for each Member State. (Table II.AIV.1). As a result of this accounting exercise, the reported levels of spending represent total LTC public expenditure and may deviate from the partial LTC expenditure figures derived from the System of Health accounts, as reported by EUROSTAT or OECD. The resulting spending levels are depicted by the source of expenditure in Table II.AIV.3.

All countries based their questionnaires primarily on SHA data, while 11 countries used ESSPROS data to provide the LTC social data missing in SHA 2011. 22 country-specific age-cost profiles were agreed upon for usage, one more than in 2018. In addition, 6 countries provided information regarding the budgetary effects of COVID-19 measures and 6 provided information regarding other policy reforms on public long-term care spending.

As Table II.AIV.3 shows, only a few countries have provided the full data necessary to run the projection exercise. The close links between health care and long-term care make it difficult to separate the two types of services as well as the two strands of expenditure and recipients. Additionally, the provision and financing of LTC has traditionally been fragmented, which leads to difficulties in compiling data that includes all aspects of expenditure and recipients of all services. As a result, only 22 countries out of 27 have information on the number of recipients and expenditure for at least one type of care. However, even having data for every type of benefit does not necessarily mean that the authorities are aware of overlaps between in-kind benefits and cash benefits. It should be noted that only 10 countries out of 27 have reported overlaps in expenditure across between in-kind and cash benefits, whereas, if we look at the characteristics of EU LTC systems, it is very likely that overlaps may be greater, since cash and in-kind benefits are often aimed at the same recipients ([165]).

([164]) See Annex 8 of "The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies", EPC-AWG, European Commission (2020) for a more in-depth discussion of this issue. https://ec.europa.eu/info/publications/2021-ageing-report-underlying-assumptions-and-projection-methodologies_en

([165]) European Commission (EFCIN) and EPC (Ageing Working Group) (2016) "Joint Report on Health Care and Long-Term Care systems & Fiscal sustainability. Volume 2 country Documents", Institutional Paper 037, October 2016.

Table II.AIV.3: **Availability of input data for long-term care expenditure projections**

AR 2021 - Long-term care data provided and used													AR 2021	AR 2018
Country	Source expenditure data	Care setting expenditure breakdown	Non-Covid Reforms	COVID-19 spending	Detailed expenditure by type of care				Detailed numbers of recipients by type of care				Age cost profiles	Age cost profiles
					LTC services ("in-kind") expenditure	LTC services in institutions expenditure	LTC services at home expenditure	LTC-related cash benefits expenditure	LTC services ("in-kind") recipients	In institutions recipients	At home recipients	Cash benefits recipients	Ageing Report 2021	Ageing Report 2018
			6 countries	7 countries									22 country specific profiles	21 country specific
Austria	SHA & ESSPROS	National data						X	X	X	X	X	X	Imputed
Belgium	SHA & ESSPROS	National data			X	X	X	X	X	X	X		X	X
Bulgaria	SHA & ESSPROS	National data			X	X	X	X	X	X	X	X	X	X
Croatia	SHA & ESSPROS	National data		X					X	X	X	X	X	X
Cyprus	SHA & ESSPROS	SHA + ESSPROS											Imputed	Imputed
Czechia	SHA	National data			X			X	X	X	X	X	X	X
Denmark	SHA	National data			X	X	X		X	X	X		X	X
Estonia	SHA	National data			X	X	X		X	X	X	X	X	X
Finland	SHA	National data			X	X	X	X	X	X	X	X	X	X
France	SHA	National data	X	X	X	X	X	X	X	X	X	X	X	X
Germany	SHA	National data		X				X	X	X	X	X	X	X
Greece	SHA & ESSPROS	SHA				X							Imputed	Imputed
Hungary	SHA	National data			X	X	X		X	X	X		X	X
Ireland	SHA & ESSPROS	SHA			X				X				X	Imputed
Italy	SHA & ESSPROS	SHA/ESSPROS/Nat	X		X	X	X	X	X	X	X	X	X	X
Latvia	SHA	National data							X	X	X	X	Imputed	X
Lithuania	SHA	National data			X	X	X	X	X	X	X	X	X	X
Luxembourg	SHA	National data			X	X	X	X	X	X	X	X	X	X
Malta	SHA & ESSPROS	National data		X					X	X	X	X	Imputed	X
Netherlands	SHA	National data			X	X	X	X	X	X	X	X	X	X
Poland	SHA & ESSPROS	National data			X	X	X	X	X	X	X	X	X	X
Portugal	SHA	National data		X	X	X	X		X	X	X	X	X	X
Romania	SHA	ESSPROS											Imputed	Imputed
Slovakia	National data	National data	X		X	X	X	X	X	X	X	X	X	Imputed
Slovenia	SHA	National data	X	X	X	X	X	X	X	X	X	X	X	X
Spain	SHA	ESSPROS/Nat	X		X	X	X	X	X	X	X	X	X	X
Sweden	SHA	ESSPROS	X		X	X	X	X	X	X	X	X	X	X
Norway	SHA	National data			X	X	X	X	X	X	X	X	X	X

Source: European Commission, EPC

Missing data has been replaced in a number of ways. In particular:

1. when the number of users of institutional and home care and the number of cash beneficiaries were not available by age and sex group but only in total, they have been computed by age and sex on the basis of the share of dependents (EU-SILC dependency rates) by respective age and sex group;

2. when a country provided the total number of users of home care by age and sex but only the total number of users of institutional care, the allocation of institutional care users to each age and sex group was done on the basis of the distribution of home care users;

3. missing LTC age-gender specific cost profiles have been replaced by the simple average of individual countries' LTC age-gender specific expenditure profiles expressed as % of GDP per capita and as calculated for either EU14 or NMS aggregates; the averages have been calculated using all available data;

4. missing LTC age-gender specific number of recipients of either home, institutional care or cash benefits have been replaced by the corresponding simple average of individual countries' LTC age-gender specific number of recipients expressed as % of disabled for either EU14 or NMS aggregates; the averages have been calculated using all available data; and

5. missing detailed spending in home, institutional care and cash benefits has been proxied by the average share of those items in total LTC spending.

The average LTC age-gender specific expenditure profile (as calculated in point 3 just above) was also used when a country: 1) provided aggregate expenditure but 2) no information on recipients of institutional and home care, 3) no information on age-gender expenditure profile per user and 4) only age-gender specific expenditure per capita (total public expenditure on long-term care for each age-gender cohort divided by the number of population in a given age-gender cohort). Using per capita rather than per user creates a pattern of age-gender profiles, which is not coherent with the pattern of age-gender profiles of the countries providing data per user. Indeed, the per capita profiles show a strongly increasing (exponential) shape. The methodology for running these projections required expenditure per user (also called beneficiary or recipient).

Moreover, the age-gender expenditure profiles were adjusted to the total public expenditure provided according to SHA/ESSPROS i.e. upward or downward adjustment without modifying the age specific distribution. This is the same procedure followed in the case of health care projections.

Dependency rates

As defined in EU-SILC, dependency does increase by age (and, on average, is more prevalent among women than among men). Table II.AIV.5 shows the dependency rates per age group, for each Member State and Norway.

The age-specific dependency rates vary markedly across EU Member states (and Norway). Given the limited comparability of the data concerning self-perceived disability, the dependency rates in Table II.AIV.4 do not necessarily represent the real country-specific health status. As already mentioned, they may diverge noticeably from other national statistics.

Table II.AIV.4: **Dependency rates, based on EU-SILC**

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Belgium	2.0	2.1	2.9	3.0	4.5	6.5	6.9	10.0	11.8	12.0	10.5	13.4	18.5	22.7	30.3
Bulgaria	0.5	1.3	1.0	1.1	1.4	1.4	1.7	2.4	4.1	5.0	5.1	7.7	11.3	15.0	27.7
Czechia	1.4	0.7	1.9	2.0	2.3	3.5	4.6	6.7	7.1	8.4	8.2	10.5	15.1	23.3	33.0
Denmark	2.1	3.3	3.9	3.9	5.1	5.3	6.6	8.3	6.3	8.8	5.5	7.7	8.9	10.9	12.9
Germany	1.5	1.7	2.0	1.9	3.5	3.5	6.1	7.7	7.2	10.9	9.7	9.9	11.3	18.4	32.5
Estonia	2.1	3.0	3.8	3.0	4.2	3.2	4.8	8.4	10.5	13.1	14.0	19.6	25.3	37.6	48.2
Ireland	1.7	1.6	1.8	1.9	2.5	3.6	4.8	5.5	5.2	8.0	8.2	8.9	11.8	16.7	25.3
Greece	0.9	1.5	2.4	2.7	2.6	4.3	4.8	6.5	10.7	12.5	16.8	19.6	26.1	37.9	54.6
Spain	0.5	0.9	0.9	1.1	1.6	1.7	2.4	3.4	4.5	5.1	5.7	6.7	11.0	17.2	27.4
France	1.5	2.3	2.8	3.0	3.7	4.4	6.8	8.7	9.0	10.2	11.5	14.9	20.6	26.2	42.1
Croatia	1.5	1.5	1.5	2.4	2.6	4.2	5.9	7.6	10.2	11.7	15.3	22.5	31.1	36.6	46.7
Italy	0.4	1.3	1.2	1.4	1.4	1.7	2.6	2.7	5.4	5.3	6.6	8.6	12.5	18.6	30.2
Cyprus	1.5	1.4	2.2	3.2	3.2	3.4	5.0	6.9	6.7	9.6	11.7	13.9	21.0	32.1	44.4
Latvia	1.5	1.3	1.9	2.2	2.8	3.2	4.1	6.4	9.7	11.1	14.7	19.1	27.3	35.1	46.2
Lithuania	0.9	1.6	1.3	1.4	2.2	2.2	2.9	3.5	6.7	7.0	9.6	13.5	17.7	25.9	41.7
Luxembourg	3.9	2.8	4.4	3.8	4.0	5.0	10.0	10.2	9.0	11.3	12.3	16.3	22.8	24.3	39.5
Hungary	1.1	1.5	1.5	2.1	2.1	2.7	3.2	6.4	7.5	10.6	11.3	14.3	21.6	31.0	37.6
Malta	0.3	0.6	0.7	0.8	1.2	1.3	2.0	2.4	2.8	3.9	4.4	4.1	6.6	10.4	22.1
Netherlands	1.5	2.3	3.0	2.8	2.5	3.7	5.5	6.7	5.9	9.7	6.7	6.9	11.2	12.9	17.8
Austria	1.5	2.1	2.4	3.8	3.8	4.3	6.9	8.4	9.2	11.6	12.6	15.2	21.2	32.0	45.9
Poland	1.7	1.8	2.1	2.0	2.7	3.6	4.0	5.8	7.3	9.4	10.7	14.4	20.1	27.5	35.9
Portugal	1.3	2.1	2.8	3.1	2.7	3.8	4.7	6.2	8.7	11.0	11.6	16.8	21.4	26.5	39.4
Romania	0.7	0.8	0.8	1.5	1.4	1.5	2.4	4.3	6.2	8.8	8.4	11.9	19.0	29.0	41.2
Slovenia	2.0	2.8	2.6	2.9	4.0	4.4	7.3	10.8	9.3	11.6	13.9	16.6	20.7	30.0	34.7
Slovakia	1.5	2.4	1.9	2.5	2.7	3.8	5.8	6.0	9.0	13.5	16.0	22.0	31.1	44.7	58.5
Finland	1.8	2.5	2.9	3.7	3.7	4.1	4.9	6.4	7.4	7.9	7.0	11.8	16.9	23.8	32.0
Sweden	0.9	1.2	1.7	1.9	1.9	2.3	3.8	4.5	4.1	6.1	5.1	4.9	6.0	9.3	17.6
Norway	1.8	2.4	2.3	4.3	4.3	4.6	5.5	5.6	5.1	6.2	5.9	5.5	8.1	10.4	17.3

Source: European Commission, EPC.

Coverage rates

Bearing this in mind, the calculated coverage rates, for both types of formal LTC services are presented for each country in Table II.AIV.5. They result from the comparison between the number of "dependents", such as defined by EU-SILC with the addition of recipients of institutional LTC (who are dependent and who do not receive the EU-SILC survey), and the number of total recipients of LTC services as provided by the Member States (or, when missing, as measured by the correspondent EU15 or NMS average). Of course, the limitations in estimating the real number of recipients covered by the system as well as those inherent to using EU-SILC survey to estimate the overall dependent population have consequences for the construction of coverage rates, which may be considerably under- or overestimated. A first limitation is that EU-SILC is self-reported and, although the questions in the survey are defined so as to elicit the information in the most accurate way, it may still differ from an objective analysis of dependency status. This would in principle would not be biased towards under or over-estimating the real disability rates. A second limitation is that our definition focuses on severe disability. However, very comprehensive LTC systems would cover not only severe disability but also lower levels of disability, for example people who only have IADL needs. This biases our estimates of coverage upwards as it means that we are underestimating the dependent population. Finally, of the countries 23 where there are cash benefits (every Member State except for DK, IE, EL, HU and RO) only 10 are able to identify overlaps between cash benefits and in-kind benefits (BG, DE, SI, ES, LU, SK, MT, PL, FI and SE). Therefore in order to compare coverage across Member States it is better to compare in-kind coverage (home care plus institutional care) and cash benefits coverage separately, as aggregating in-kind benefits and cash benefits will overestimate coverage for those countries with cash benefits who are not able to identify the overlaps.

In nearly all countries, overall coverage rates are projected to increase between 2019 and 2070even in the "base case scenario". This reflects the fact that the ageing of the population shifts the composition of the dependent population towards higher ages, where coverage rates are higher. It should be however noted that in cases where specific care settings are aimed mostly at younger disabled recipients coverage may actually fall as the population ages.

Table II.AIV.5: **Coverage rates (as % of estimated dependent population) in the base case scenario**

	Coverage Home care		Coverage Institutional Care		Coverage Cash benefits	
	2019	2070	2019	2070	2019	2070
BE	58%	64%	15%	23%	25%	30%
BG	9%	8%	4%	4%	31%	30%
CZ	15%	24%	17%	24%	52%	72%
DK	52%	77%	15%	27%	0%	0%
DE	13%	15%	15%	19%	41%	48%
EE	54%	60%	25%	28%	8%	9%
IE	35%	49%	13%	21%	0%	0%
EL	28%	35%	1%	1%	0%	0%
ES	23%	29%	8%	10%	30%	36%
FR	21%	24%	19%	22%	7%	5%
HR	4%	4%	8%	8%	27%	27%
IT	21%	27%	19%	21%	59%	67%
CY	19%	23%	15%	19%	32%	39%
LV	10%	9%	8%	8%	9%	7%
LT	34%	47%	39%	39%	49%	66%
LU	16%	22%	10%	18%	3%	3%
HU	8%	11%	10%	14%	0%	0%
MT	50%	57%	25%	37%	23%	11%
NL	82%	104%	23%	35%	8%	9%
AT	12%	17%	9%	14%	60%	79%
PL	11%	16%	9%	13%	99%	183%
PT	2%	3%	4%	5%	2%	2%
RO	24%	29%	19%	23%	0%	0%
SI	18%	26%	18%	26%	23%	29%
SK	14%	25%	15%	23%	27%	31%
FI	51%	74%	7%	11%	72%	83%
SE	62%	75%	15%	22%	62%	75%
NO	73%	88%	16%	27%	34%	43%
EA	25%	31%	15%	19%	31%	35%
EU	26%	33%	15%	20%	33%	41%
EA s	29%	37%	15%	20%	25%	29%

Source: European Commission, EPC.

ANNEX V
Input data used to project education expenditure

AV.1. METHODOLOGY

Expenditure data are presented in terms of GDP ratios and 2019 is the base year for the projections, using data for enrolment rates and education expenditure. ([166])

Besides requiring the definition of a base period, the methodology used to project education expenditure requires calculating indexes for students, education staff, and employment, together with participation rate data by single age.

Total expenditure on education is broken down into four components: i) expenditure on staff compensation (i.e. gross wages and salaries of teaching and non-teaching staff); ii) other current expenditure; iii) capital expenditure; and iv) transfers (e.g. scholarships and public subsidies to private education institutions). ([167])

For details on the projection methodology, see the first volume of the 2021 Ageing Report ([168]).

AV.2. DATA

Tables II.AV.1 to II.AV.6 provide useful complementary results to the projections presented in Part II, Chapter 4. Respectively, they illustrate: enrolment rates (by country, age and ISCED level) for each country in base year 2019; expenditure-to-GDP ratios in the base period (broken down by expenditure component and ISCED level); expenditure-to-GDP ratios in the Baseline and High enrolment scenarios; total expenditure on education (in levels and as percentage of GDP) for both data sources of reference (COFOG and UOE).

([166]) The base year is constructed using the average of the two latest available years (2016 and 2017, UOE data), uprated to the base year (2019) using COFOG data. For HR, the two latest available years correspond to 2013 and 2014 (UOE data). For DK, the two latest available years correspond to 2017 and 2018 (Statistics Denmark data).

([167]) For a more detailed presentation of the methodology see: "The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy, No. 142/2020, European Commission.

([168]) See Part II, Chapter 4, in "The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy, No. 142/2020, European Commission.

Table II.AV.1: **Base enrolment rates by country, age and ISCED level**

	Ages	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	NO
ISCED 1	0-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.01	0.00	0.00	0.02	0.00	0.00	1.03	0.00	0.00	0.01	0.00	0.08	0.01	0.00	0.00	0.05	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.95	0.05	0.49	0.94	0.62	0.01	1.05	0.92	0.98	1.01	0.20	0.97	0.89	0.04	0.03	0.91	0.28	0.98	1.00	0.57	0.06	0.89	0.85	0.89	0.49	0.00	0.01	0.99
	7	0.99	0.91	0.99	1.03	1.00	0.78	1.03	0.98	0.99	1.02	0.96	0.98	0.99	0.91	1.02	0.98	0.93	0.96	1.01	0.97	0.99	0.99	0.94	1.00	0.90	0.98	1.00	1.00
	8	0.98	0.96	0.98	0.99	0.98	0.97	1.02	0.98	0.99	1.00	0.98	0.98	0.97	1.03	1.05	0.96	0.98	1.00	1.00	0.97	0.97	0.97	0.92	0.97	0.96	0.97	0.97	1.00
	9	0.99	0.91	0.98	1.01	0.99	0.98	1.02	0.98	1.00	1.01	0.97	0.98	0.98	1.03	1.02	0.97	0.97	0.99	1.00	0.99	0.95	1.01	0.90	0.99	0.93	0.97	0.98	0.98
	10	0.97	0.85	0.95	0.99	0.44	0.97	1.00	0.97	0.95	0.97	0.76	0.89	0.99	0.97	0.96	0.92	0.67	0.96	0.99	0.48	0.92	0.98	0.82	0.94	0.47	0.98	0.98	0.98
	11	0.96	0.03	0.49	1.00	0.05	0.95	0.98	0.98	0.96	0.09	0.03	0.03	1.02	0.96	0.03	0.80	0.08	0.04	0.98	0.06	0.93	1.00	0.15	0.96	0.09	0.99	0.99	0.99
	12	0.20	0.01	0.05	0.97	0.00	0.95	0.64	0.05	0.13	0.01	0.00	0.00	0.07	0.92	0.00	0.19	0.02	0.00	0.29	0.00	0.76	0.23	0.03	0.10	0.03	0.98	0.96	0.98
	13	0.02	0.00	0.01	0.14	0.00	0.22	0.03	0.02	0.01	0.01	0.00	0.00	0.01	0.12	0.00	0.02	0.00	0.00	0.01	0.00	0.04	0.08	0.01	0.02	0.02	0.06	0.03	0.00
	14	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.01	0.01	0.02	0.00	0.00
	Ages	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	NO
ISCED 2	10	0.00	0.07	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.03	0.30	0.09	0.00	0.00	0.05	0.05	0.28	0.00	0.00	0.50	0.00	0.00	0.07	0.00	0.46	0.00	0.00	0.00
	11	0.02	0.89	0.45	0.00	0.92	0.00	0.00	0.00	0.00	0.91	1.03	0.94	0.02	0.00	1.00	0.15	0.88	0.94	0.02	0.94	0.00	0.01	0.74	0.00	0.86	0.00	0.00	0.00
	12	0.77	0.90	0.93	0.02	0.99	0.01	0.34	0.90	0.82	0.98	1.06	0.97	0.93	0.05	1.02	0.77	0.92	0.98	0.70	0.98	0.15	0.78	0.87	0.87	0.92	0.00	0.01	0.00
	13	0.94	0.83	0.97	0.86	0.99	0.74	0.99	0.94	0.95	0.98	1.01	0.90	1.01	0.83	1.02	0.92	0.94	0.98	0.99	0.99	0.93	0.91	0.87	0.96	0.93	0.93	0.95	0.99
	14	0.30	0.08	0.98	0.99	0.98	0.94	1.01	0.95	0.95	0.95	0.78	0.09	0.94	0.98	1.02	0.86	0.75	0.06	1.00	0.50	0.92	0.97	0.72	0.95	0.90	0.96	0.98	0.99
	15	0.10	0.03	0.53	0.97	0.81	0.96	0.66	0.08	0.29	0.19	0.05	0.02	0.09	0.93	1.01	0.40	0.13	0.01	0.69	0.10	0.94	0.33	0.12	0.08	0.48	0.98	0.97	0.99
	16	0.05	0.01	0.04	0.58	0.45	0.25	0.05	0.03	0.11	0.01	0.00	0.01	0.01	0.16	0.96	0.17	0.04	0.02	0.36	0.02	0.08	0.18	0.04	0.01	0.09	0.10	0.06	0.00
	17	0.05	0.01	0.01	0.13	0.19	0.04	0.02	0.02	0.03	0.00	0.00	0.01	0.00	0.05	0.08	0.06	0.01	0.02	0.13	0.00	0.04	0.08	0.01	0.00	0.04	0.01	0.01	0.00
	18	0.04	0.00	0.01	0.01	0.08	0.02	0.01	0.01	0.05	0.00	0.00	0.01	0.00	0.02	0.03	0.03	0.01	0.01	0.04	0.00	0.02	0.03	0.00	0.00	0.02	0.01	0.00	0.00
	Ages	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	NO
ISCED 3-4	14	0.67	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.21	0.89	0.02	0.00	0.00	0.09	0.23	0.95	0.01	0.47	0.00	0.01	0.18	0.00	0.02	0.00	0.00	0.00
	15	0.88	0.81	0.46	0.01	0.18	0.02	0.37	0.86	0.65	0.79	0.96	0.95	0.87	0.06	0.00	0.54	0.85	0.96	0.30	0.86	0.02	0.66	0.72	0.90	0.48	0.00	0.02	0.00
	16	0.94	0.82	0.92	0.38	0.50	0.70	0.94	0.88	0.84	0.94	1.00	0.95	0.93	0.82	0.08	0.75	0.90	0.82	0.63	0.87	0.89	0.81	0.79	0.96	0.83	0.87	0.92	0.95
	17	0.93	0.84	0.94	0.79	0.75	0.90	0.90	0.90	0.86	0.90	0.95	0.91	0.89	0.93	0.95	0.77	0.85	0.76	0.77	0.75	0.92	0.93	0.78	0.97	0.87	0.95	1.01	0.95
	18	0.48	0.76	0.86	0.84	0.64	0.84	0.58	0.23	0.35	0.33	0.63	0.78	0.18	0.83	0.90	0.65	0.69	0.30	0.57	0.44	0.92	0.46	0.57	0.89	0.81	0.95	0.98	0.90
	19	0.28	0.06	0.48	0.55	0.46	0.35	0.21	0.20	0.19	0.12	0.07	0.20	0.03	0.36	0.25	0.40	0.41	0.15	0.38	0.21	0.47	0.23	0.14	0.31	0.39	0.33	0.30	0.39
	20	0.15	0.03	0.13	0.26	0.34	0.17	0.11	0.14	0.12	0.05	0.01	0.07	0.01	0.15	0.11	0.25	0.23	0.08	0.25	0.11	0.17	0.11	0.08	0.16	0.09	0.18	0.18	0.21
	21	0.09	0.02	0.06	0.18	0.24	0.11	0.08	0.10	0.08	0.03	0.00	0.02	0.01	0.07	0.06	0.13	0.12	0.04	0.16	0.07	0.11	0.05	0.06	0.12	0.03	0.16	0.16	0.10
	22	0.06	0.01	0.04	0.14	0.16	0.07	0.06	0.07	0.06	0.02	0.00	0.01	0.00	0.06	0.05	0.08	0.07	0.02	0.11	0.05	0.07	0.03	0.04	0.11	0.02	0.15	0.14	0.07
	23	0.05	0.01	0.03	0.12	0.11	0.06	0.05	0.05	0.05	0.02	0.00	0.01	0.00	0.04	0.04	0.05	0.04	0.01	0.07	0.03	0.06	0.03	0.03	0.13	0.01	0.13	0.11	0.05
	24	0.05	0.01	0.02	0.09	0.08	0.05	0.05	0.04	0.04	0.01	0.00	0.01	0.00	0.03	0.03	0.04	0.03	0.01	0.06	0.02	0.07	0.02	0.02	0.11	0.01	0.12	0.09	0.04
	25	0.04	0.01	0.01	0.08	0.05	0.04	0.04	0.03	0.03	0.01	0.00	0.01	0.00	0.03	0.03	0.03	0.03	0.01	0.04	0.02	0.03	0.02	0.02	0.09	0.01	0.11	0.08	0.03
	Ages	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	NO
ISCED 5-8	17	0.01	0.00	0.00	0.00	0.01	0.00	0.03	0.01	0.00	0.03	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.08	0.14	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
	18	0.38	0.04	0.01	0.01	0.08	0.01	0.27	0.48	0.39	0.45	0.11	0.04	0.25	0.05	0.07	0.01	0.05	0.29	0.25	0.29	0.03	0.31	0.09	0.01	0.01	0.00	0.01	0.00
	19	0.52	0.44	0.24	0.06	0.21	0.26	0.54	0.55	0.48	0.54	0.46	0.36	0.36	0.37	0.48	0.02	0.23	0.37	0.39	0.32	0.35	0.41	0.33	0.55	0.21	0.14	0.14	0.19
	20	0.56	0.47	0.42	0.20	0.29	0.35	0.56	0.56	0.52	0.50	0.48	0.40	0.34	0.48	0.54	0.07	0.31	0.38	0.45	0.32	0.47	0.44	0.36	0.57	0.34	0.26	0.22	0.36
	21	0.51	0.47	0.41	0.35	0.31	0.37	0.51	0.55	0.50	0.43	0.45	0.40	0.35	0.49	0.55	0.09	0.32	0.31	0.45	0.33	0.47	0.40	0.35	0.54	0.32	0.35	0.28	0.43
	22	0.42	0.43	0.39	0.45	0.31	0.31	0.36	0.47	0.41	0.36	0.41	0.34	0.28	0.45	0.46	0.10	0.29	0.22	0.42	0.30	0.44	0.32	0.32	0.47	0.32	0.40	0.30	0.41
	23	0.29	0.30	0.35	0.46	0.31	0.27	0.21	0.39	0.34	0.27	0.37	0.31	0.26	0.35	0.29	0.08	0.23	0.15	0.37	0.29	0.40	0.23	0.27	0.37	0.30	0.40	0.30	0.37
	24	0.19	0.21	0.29	0.41	0.29	0.21	0.15	0.33	0.25	0.19	0.29	0.25	0.21	0.27	0.24	0.08	0.19	0.10	0.29	0.26	0.27	0.17	0.18	0.30	0.21	0.35	0.26	0.30
	25	0.13	0.14	0.19	0.35	0.25	0.17	0.12	0.30	0.20	0.13	0.18	0.19	0.17	0.22	0.16	0.07	0.14	0.07	0.22	0.23	0.17	0.12	0.10	0.22	0.11	0.30	0.21	0.25
	26	0.09	0.09	0.11	0.26	0.21	0.13	0.10	0.22	0.15	0.09	0.13	0.14	0.15	0.16	0.11	0.06	0.10	0.06	0.17	0.19	0.11	0.09	0.07	0.13	0.07	0.24	0.17	0.19
	27	0.07	0.08	0.07	0.20	0.18	0.11	0.09	0.18	0.12	0.06	0.09	0.11	0.12	0.13	0.09	0.04	0.07	0.05	0.13	0.16	0.08	0.07	0.05	0.08	0.05	0.20	0.14	0.16
	28	0.05	0.06	0.05	0.16	0.14	0.09	0.07	0.16	0.10	0.05	0.07	0.08	0.11	0.11	0.07	0.04	0.06	0.05	0.09	0.14	0.06	0.06	0.04	0.05	0.03	0.17	0.12	0.13
	29	0.04	0.05	0.04	0.12	0.11	0.08	0.06	0.14	0.08	0.04	0.06	0.07	0.09	0.10	0.06	0.03	0.05	0.03	0.08	0.12	0.05	0.05	0.03	0.04	0.03	0.14	0.10	0.11
	30-34	0.03	0.04	0.03	0.08	0.06	0.06	0.04	0.12	0.05	0.02	0.03	0.04	0.07	0.07	0.04	0.02	0.03	0.02	0.05	0.07	0.03	0.03	0.00	0.02	0.02	0.10	0.07	0.08
	35-39	0.01	0.03	0.02	0.05	0.02	0.04	0.03	0.06	0.03	0.01	0.01	0.01	0.05	0.04	0.03	0.01	0.02	0.02	0.03	0.04	0.02	0.02	0.00	0.02	0.01	0.07	0.05	0.05
	40+	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01

Source: European Commission, EPC

Table II.AV.2: **Expenditure-to-GDP ratio in the base period - Breakdown by component**

	Capital expenditure	Staff	Other current expenditure	Transfers	Total
	(1)	(2)	(3)	(4)	(5)=(1)+(2)+(3)+(4)
BE	0.2	2.1	0.5	2.7	5.5
BG	0.1	2.0	0.2	0.6	2.9
CZ	0.3	2.5	0.5	0.2	3.4
DK	0.4	3.2	1.1	1.4	6.1
DE	0.1	2.6	0.6	0.7	4.0
EE	0.0	3.2	0.4	0.6	4.2
IE	0.2	2.5	0.0	0.5	3.3
EL	0.4	2.5	0.3	0.0	3.2
ES	0.2	2.5	0.3	0.6	3.6
FR	0.3	2.9	0.6	0.6	4.4
HR	0.1	4.5	0.1	0.3	5.0
IT	0.1	2.7	0.4	0.3	3.5
CY	0.4	4.5	0.2	0.2	5.3
LV	0.3	2.5	0.2	0.6	3.6
LT	0.2	2.4	0.3	0.2	3.0
LU	0.3	2.2	0.4	0.2	3.0
HU	0.2	2.2	0.4	0.6	3.4
MT	0.5	2.7	0.3	0.8	4.3
NL	0.0	3.6	0.5	0.7	4.9
AT	0.3	3.4	0.6	0.4	4.7
PL	0.1	3.1	0.3	0.4	3.8
PT	0.1	3.5	0.2	0.4	4.3
RO	0.1	2.2	0.0	0.2	2.5
SI	0.2	3.0	0.4	0.3	3.8
SK	0.1	2.2	0.7	0.4	3.4
FI	0.4	3.2	0.9	0.8	5.3
SE	0.2	3.4	1.0	1.2	5.9
NO	0.8	4.4	0.9	1.1	7.2

(1) For the definition of the variables, see Part II, Chapter 4
Source: Commission services, EPC

Table II.AV.3: **Expenditure-to-GDP ratio in the base period - Breakdown by ISCED levels**

	ISCED 1	ISCED 2	ISCED 3-4	ISCED 5-8	ISCED 1-8
BE	1.5	0.8	1.7	1.4	5.5
BG	0.8	0.8	0.7	0.7	2.9
CZ	0.8	1.0	0.9	0.8	3.4
DK	2.9	0.0	1.6	1.6	6.1
DE	0.6	1.2	1.0	1.3	4.0
EE	1.4	0.7	0.8	1.3	4.2
IE	1.2	0.5	0.7	1.0	3.3
EL	1.2	0.7	0.7	0.6	3.2
ES	1.1	0.7	0.8	0.9	3.6
FR	1.1	1.1	1.1	1.1	4.4
HR	2.3	0.0	1.4	1.3	5.0
IT	1.0	0.7	1.1	0.7	3.5
CY	1.9	1.1	1.3	1.1	5.3
LV	1.4	0.6	0.9	0.7	3.6
LT	0.7	1.0	0.5	0.8	3.0
LU	1.0	0.7	0.8	0.5	3.0
HU	0.7	0.7	1.3	0.7	3.4
MT	1.0	0.8	1.2	1.3	4.3
NL	1.1	1.1	1.0	1.6	4.9
AT	0.9	1.2	0.9	1.7	4.7
PL	1.4	0.7	0.7	1.0	3.8
PT	1.4	1.1	1.0	0.8	4.3
RO	0.4	0.6	0.7	0.8	2.5
SI	1.3	0.7	0.9	0.9	3.8
SK	0.9	0.9	0.8	0.8	3.4
FI	1.3	1.0	1.3	1.7	5.3
SE	1.9	0.9	1.3	1.8	5.9
NO	2.1	1.0	1.7	2.4	7.2

Source: Commission services, EPC

Table II.AV.4: **Results of the Baseline scenario (Public education expenditure as percentage of GDP)**

	2019	2020	2030	2040	2050	2060	2070
BE	5.5	5.5	5.2	5.0	5.1	5.2	5.1
BG	2.9	2.9	3.1	3.0	3.2	3.4	3.3
CZ	3.4	3.5	3.8	3.8	3.9	4.2	4.1
DK	6.1	5.9	5.5	5.5	5.3	5.2	5.2
DE	4.0	4.0	4.2	4.3	4.3	4.4	4.5
EE	4.2	4.1	4.1	3.7	3.8	3.9	3.8
IE	3.3	3.3	3.2	3.0	3.1	3.1	3.1
EL	3.2	3.2	2.9	2.6	2.7	2.7	2.6
ES	3.6	3.6	3.3	3.0	3.1	3.2	3.2
FR	4.4	4.4	4.2	4.0	4.0	3.9	3.9
HR	5.0	4.9	4.6	4.4	4.4	4.5	4.6
IT	3.5	3.5	3.1	3.0	3.1	3.1	3.1
CY	5.3	5.2	4.7	4.7	4.5	4.5	4.6
LV	3.6	3.6	3.8	3.5	3.5	3.8	3.6
LT	3.0	3.0	3.0	2.9	2.7	2.9	2.9
LU	3.0	2.9	2.5	2.3	2.2	2.2	2.2
HU	3.4	3.4	3.0	3.1	3.2	3.3	3.3
MT	4.3	4.2	3.9	3.7	3.6	3.9	4.1
NL	4.9	4.8	4.4	4.5	4.5	4.4	4.4
AT	4.7	4.6	4.5	4.4	4.4	4.5	4.5
PL	3.8	3.8	3.8	3.5	3.6	3.8	3.8
PT	4.3	4.2	3.8	4.0	4.2	4.1	4.1
RO	2.5	2.5	2.4	2.3	2.3	2.4	2.4
SI	3.8	3.8	3.9	3.6	3.9	4.1	3.9
SK	3.4	3.3	3.6	3.5	3.6	3.8	3.8
FI	5.3	5.3	4.9	4.5	4.5	4.4	4.4
SE	5.9	5.8	5.5	5.4	5.3	5.4	5.4
NO	7.2	7.2	6.8	6.6	6.6	6.6	6.7
EA	4.1	4.1	3.9	3.9	3.9	3.9	3.9
EU	4.1	4.1	4.0	3.9	3.9	4.0	4.0

Source: Commission services, EPC

Table II.AV.5: **Results of the High Enrolment Rate scenario (Public education expenditure as percentage of GDP)**

	2019	2020	2030	2040	2050	2060	2070
BE	5.5	5.5	5.4	5.4	5.7	5.7	5.7
BG	2.9	2.9	3.2	3.4	3.7	3.9	3.8
CZ	3.4	3.5	4.1	4.3	4.7	5.0	4.8
DK	6.1	5.9	5.8	6.2	6.2	6.1	6.1
DE	4.0	4.0	4.5	5.1	5.2	5.4	5.5
EE	4.2	4.1	4.4	4.3	4.5	4.7	4.6
IE	3.3	3.3	3.3	3.3	3.5	3.5	3.4
EL	3.2	3.2	3.0	2.8	2.9	2.9	2.8
ES	3.6	3.6	3.4	3.3	3.5	3.6	3.5
FR	4.4	4.4	4.5	4.6	4.9	4.8	4.8
HR	5.0	5.0	5.0	5.1	5.4	5.5	5.5
IT	3.5	3.5	3.4	3.5	3.7	3.7	3.6
CY	5.3	5.2	5.2	5.6	5.6	5.6	5.7
LV	3.6	3.6	4.1	3.9	4.0	4.3	4.1
LT	3.0	3.0	3.3	3.3	3.3	3.5	3.5
LU	3.0	3.0	3.1	3.4	3.7	3.7	3.7
HU	3.4	3.4	3.3	3.5	3.9	4.0	4.0
MT	4.3	4.3	4.5	4.7	5.0	5.3	5.5
NL	4.9	4.8	4.6	4.9	5.0	4.9	4.9
AT	4.7	4.6	4.7	4.9	5.0	5.1	5.1
PL	3.8	3.8	4.1	4.0	4.2	4.4	4.4
PT	4.3	4.2	4.1	4.4	4.8	4.7	4.7
RO	2.5	2.5	2.8	3.1	3.4	3.4	3.4
SI	3.8	3.9	4.1	4.0	4.4	4.5	4.4
SK	3.4	3.4	4.0	4.3	4.7	5.0	4.9
FI	5.3	5.3	5.1	4.8	4.9	4.9	4.8
SE	5.9	5.9	5.9	6.0	6.1	6.3	6.2
NO	7.2	7.3	7.2	7.3	7.5	7.5	7.6
EA	4.1	4.1	4.2	4.4	4.6	4.6	4.6
EU	4.1	4.1	4.3	4.5	4.7	4.7	4.7

Source: Commission services, EPC

Table II.AV.6: **Total expenditure on education, in levels (million euros) and as % of GDP**

	Education expenditure					
	UOE			COFOG data		
		Level	As % of GDP		Level	As % of GDP
BE	2016 & 2017	24,608.5	5.2%	2019	26,044.5	5.5%
BG	2016 & 2017	1,525.6	2.5%	2019	1,763.5	2.9%
CZ	2016 & 2017	5,816.3	2.6%	2019	7,536.6	3.4%
DK	2017 & 2018	18,259.6	5.9%	2019	18,841.1	6.1%
DE	2016 & 2017	128,760.5	3.7%	2019	138,252.8	4.0%
EE	2016 & 2017	916.3	3.3%	2019	1,173.7	4.2%
IE	2016 & 2017	9,812.1	2.8%	2019	11,379.5	3.3%
EL	2016 & 2017	5,715.2	3.0%	2019	6,066.0	3.2%
ES	2016 & 2017	41,341.7	3.3%	2019	44,342.7	3.6%
FR	2016 & 2017	107,336.0	4.4%	2019	107,392.6	4.4%
HR	2013 & 2014	1,586.9	2.9%	2019	2,722.3	5.0%
IT	2016 & 2017	59,601.4	3.3%	2019	62,314.8	3.5%
CY	2016 & 2017	1,072.1	4.9%	2019	1,156.1	5.3%
LV	2016 & 2017	969.3	3.2%	2019	1,109.4	3.6%
LT	2016 & 2017	1,276.9	2.6%	2019	1,467.7	3.0%
LU	2016 & 2017	1,709.8	2.7%	2019	1,931.7	3.0%
HU	2016 & 2017	4,293.9	3.0%	2019	4,919.1	3.4%
MT	2016 & 2017	464.9	3.5%	2019	574.0	4.3%
NL	2016 & 2017	36,014.2	4.4%	2019	39,403.7	4.9%
AT	2016 & 2017	17,512.1	4.4%	2019	18,634.0	4.7%
PL	2016 & 2017	17,629.4	3.3%	2019	20,362.6	3.8%
PT	2016 & 2017	8,427.7	4.0%	2019	9,035.6	4.3%
RO	2016 & 2017	4,161.8	1.9%	2019	5,506.4	2.5%
SI	2016 & 2017	1,655.7	3.4%	2019	1,839.7	3.8%
SK	2016 & 2017	2,810.8	3.0%	2019	3,185.4	3.4%
FI	2016 & 2017	12,291.5	5.1%	2019	12,722.2	5.3%
SE	2016 & 2017	27,566.0	5.8%	2019	27,993.3	5.9%
NO	2016 & 2017	21,514.7	7.0%	2019	22,214.2	7.2%

Source: Commission services, EPC
(1) UOE; UNESCO/OECD/EUROSTAT
(2) COFOG: Classification of the functions of the government
(3) The base year is constructed using the average of the two latest available years (2016 and 2017, UOE data), uprated to the base year (2019) using COFOG data. For HR, the two latest available years correspond to 2013 and 2014 (UOE data). For DK, the two latest available years correspond to 2017 and 2018 (Statistics Denmark data).

Part III

Statistical Annex – CROSS-COUNTRY TABLES

1. TABLES

Main demographic and macroeconomic assumptions

Pension expenditure projections

Health care

Long-term care

Education

Total cost of ageing

Country-specific notes

DE: Under current rules in Germany, both in-kind and cash long-term care benefits are indexed to prices. With contribution rates indexed by inflation, long-term care expenditure shares would be almost unchanged until 2070.

EL: 1) The values of the gross replacement rate at retirement, the average accrual rate and the average contributory period are for 2020. 2) The average accrual rate and the average contributory period concern only the main pension provision and include both contributory and flat rate components.

IE: 1) The gross public pensions expenditure projections include the Public Social Security (PSS) scheme that provides flat rate Social Insurance and Social Assistance pensions, as well as the Private Occupational Public Service (POPS) scheme that are pensions for public servants. Earnings and non-earnings-related pension expenditure projections are based on PSS expenditure only, while gross private occupational expenditure projections relate to POPS expenditure only (and not to other private occupation pension schemes of private sector employees). 2) The projections of the number of pensioners refer only to private Social Security pension recipients (i.e they do not include pensioners under the POPS scheme). 3) The impact of the sensitivity tests relate to Private Social Security expenditure projections only.

MT: The values of the gross replacement rate at retirement, the average accrual rate and the average contributory period are for 2020.

AT: Other pensions include the Ausgleichszulage and Rehabilitationsgeld.

EE: Disability pensions include the work ability allowance.

Table III.1.1: Fertility rate

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7
BG	0.1	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
CZ	0.1	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
DK	0.1	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8
DE	0.1	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7
EE	0.2	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
IE	0.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
EL	0.2	1.3	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5
ES	0.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
FR	0.0	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
HR	0.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6
IT	0.2	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5
CY	0.2	1.3	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5
LV	0.1	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
LT	0.1	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
LU	0.2	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6
HU	0.2	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
MT	0.3	1.1	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.5
NL	0.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
AT	0.1	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6
PL	0.2	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6
PT	0.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6
RO	0.1	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
SI	0.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
SK	0.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7
FI	0.2	1.3	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5
SE	0.1	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
NO	0.1	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
EA	0.1	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
EU	0.1	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7

Table III.1.2: Life expectancy at birth - Men

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.5	79.8	80.4	81.2	81.9	82.6	83.3	83.9	84.6	85.2	85.8	86.3
BG	11.4	71.5	73.0	74.3	75.5	76.7	77.9	79.0	80.0	81.0	82.0	82.9
CZ	8.3	76.5	77.5	78.4	79.3	80.2	81.0	81.8	82.6	83.4	84.1	84.8
DK	6.6	79.5	80.2	81.0	81.7	82.4	83.1	83.7	84.3	84.9	85.5	86.1
DE	6.9	79.1	79.9	80.6	81.4	82.1	82.8	83.5	84.2	84.8	85.4	86.0
EE	9.4	74.9	75.6	76.7	77.8	78.9	79.9	80.8	81.7	82.6	83.5	84.3
IE	5.7	81.1	81.4	82.1	82.8	83.4	84.0	84.6	85.2	85.7	86.2	86.8
EL	7.4	79.0	80.0	80.8	81.6	82.4	83.1	83.8	84.5	85.2	85.8	86.4
ES	5.9	81.2	81.8	82.4	83.1	83.7	84.3	84.9	85.5	86.0	86.6	87.1
FR	6.6	80.1	80.8	81.6	82.3	83.0	83.7	84.3	85.0	85.6	86.1	86.7
HR	9.0	75.3	76.3	77.3	78.3	79.3	80.2	81.1	81.9	82.7	83.5	84.3
IT	5.7	81.3	81.9	82.6	83.2	83.8	84.3	84.9	85.4	86.0	86.5	87.0
CY	5.8	80.8	81.4	82.1	82.7	83.3	83.9	84.5	85.0	85.6	86.1	86.6
LV	12.0	70.6	71.9	73.3	74.6	75.9	77.2	78.4	79.5	80.6	81.7	82.6
LT	11.6	71.3	72.5	73.8	75.2	76.4	77.6	78.8	79.9	80.9	82.0	82.9
LU	6.3	80.3	81.0	81.7	82.4	83.1	83.7	84.4	85.0	85.5	86.1	86.6
HU	10.7	72.9	74.2	75.4	76.6	77.7	78.8	79.8	80.8	81.8	82.7	83.6
MT	6.3	80.5	81.2	82.0	82.7	83.3	84.0	84.6	85.2	85.7	86.3	86.8
NL	5.9	80.7	81.2	81.9	82.6	83.2	83.8	84.4	84.9	85.5	86.0	86.6
AT	6.5	79.8	80.5	81.2	81.9	82.6	83.3	83.9	84.6	85.2	85.7	86.3
PL	10.2	74.1	75.4	76.5	77.6	78.7	79.7	80.7	81.7	82.6	83.4	84.3
PT	7.1	78.6	79.4	80.2	81.0	81.7	82.5	83.2	83.8	84.5	85.1	85.7
RO	11.6	71.9	73.4	74.7	76.0	77.2	78.4	79.5	80.6	81.6	82.6	83.5
SI	7.2	78.7	79.5	80.3	81.1	81.8	82.6	83.3	83.9	84.6	85.2	85.9
SK	9.7	74.4	75.4	76.5	77.6	78.6	79.6	80.6	81.5	82.4	83.3	84.1
FI	6.6	79.5	80.1	80.9	81.6	82.3	83.0	83.7	84.3	85.0	85.6	86.1
SE	5.4	81.4	81.9	82.5	83.1	83.7	84.2	84.8	85.3	85.8	86.3	86.8
NO	5.5	81.4	81.9	82.5	83.1	83.7	84.3	84.8	85.4	85.9	86.4	86.9
EA	6.6	79.9	80.6	81.4	82.1	82.8	83.4	84.1	84.7	85.3	85.9	86.5
EU	7.4	78.7	79.6	80.4	81.2	82.0	82.7	83.5	84.2	84.8	85.4	86.1

Table III.1.3: Life expectancy at birth - Women

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.0	84.3	85.0	85.7	86.3	87.0	87.6	88.2	88.7	89.3	89.8	90.3
BG	8.9	78.8	79.9	80.9	81.9	82.8	83.7	84.6	85.4	86.2	87.0	87.7
CZ	6.9	82.3	83.1	83.9	84.6	85.4	86.1	86.7	87.4	88.0	88.7	89.2
DK	6.5	83.3	84.0	84.8	85.5	86.2	86.8	87.5	88.1	88.7	89.2	89.8
DE	6.2	83.7	84.4	85.1	85.8	86.4	87.1	87.7	88.3	88.9	89.4	89.9
EE	6.5	83.4	83.9	84.7	85.4	86.1	86.8	87.5	88.1	88.7	89.3	89.9
IE	5.6	84.8	85.1	85.8	86.4	87.1	87.7	88.3	88.8	89.4	89.9	90.4
EL	6.0	84.3	85.0	85.7	86.3	86.9	87.5	88.1	88.7	89.3	89.8	90.3
ES	4.6	86.8	87.2	87.7	88.2	88.7	89.2	89.7	90.1	90.6	91.0	91.4
FR	5.1	86.3	86.8	87.4	88.0	88.6	89.1	89.6	90.1	90.6	91.0	91.4
HR	7.2	81.6	82.4	83.2	84.0	84.7	85.5	86.2	86.9	87.5	88.2	88.8
IT	5.2	85.7	86.3	86.9	87.4	88.0	88.5	89.0	89.5	90.0	90.5	90.9
CY	5.1	85.1	85.6	86.1	86.7	87.2	87.8	88.3	88.8	89.3	89.7	90.2
LV	8.3	80.2	81.1	82.1	83.0	83.9	84.7	85.6	86.4	87.1	87.8	88.5
LT	7.7	81.1	81.9	82.8	83.6	84.4	85.2	86.0	86.7	87.4	88.1	88.8
LU	5.8	85.0	85.6	86.3	86.9	87.5	88.1	88.7	89.2	89.8	90.3	90.8
HU	8.7	79.8	80.9	81.8	82.8	83.7	84.6	85.4	86.2	87.0	87.8	88.5
MT	6.1	84.5	85.2	85.9	86.6	87.2	87.8	88.4	89.0	89.5	90.1	90.6
NL	6.3	83.6	84.4	85.1	85.7	86.4	87.0	87.6	88.2	88.8	89.3	89.9
AT	5.9	84.3	85.0	85.7	86.3	86.9	87.5	88.1	88.6	89.2	89.7	90.2
PL	7.5	82.0	83.0	83.8	84.7	85.4	86.2	86.9	87.6	88.3	88.9	89.5
PT	5.6	84.8	85.4	86.0	86.6	87.2	87.8	88.3	88.8	89.4	89.9	90.4
RO	9.0	79.5	80.6	81.6	82.6	83.5	84.4	85.3	86.2	87.0	87.7	88.5
SI	5.9	84.5	85.2	85.8	86.5	87.1	87.7	88.2	88.8	89.4	89.9	90.4
SK	7.8	81.2	82.0	82.9	83.8	84.6	85.4	86.2	86.9	87.6	88.3	89.0
FI	5.6	84.8	85.4	86.0	86.7	87.3	87.8	88.4	88.9	89.4	89.9	90.4
SE	5.6	84.7	85.3	85.9	86.5	87.1	87.7	88.2	88.8	89.3	89.8	90.3
NO	5.7	84.6	85.3	85.9	86.5	87.1	87.7	88.2	88.8	89.3	89.8	90.3
EA	5.6	85.0	85.6	86.3	86.9	87.5	88.1	88.6	89.2	89.7	90.2	90.6
EU	6.1	84.2	84.9	85.6	86.3	86.9	87.6	88.2	88.8	89.3	89.8	90.3

Table III.1.4: Life expectancy at 65 - Men

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.7	18.9	19.4	19.9	20.4	20.9	21.4	21.8	22.3	22.7	23.2	23.6
BG	7.2	14.2	15.1	15.9	16.6	17.4	18.1	18.8	19.5	20.1	20.8	21.4
CZ	6.0	16.5	17.1	17.8	18.4	19.1	19.7	20.3	20.8	21.4	22.0	22.5
DK	4.8	18.5	18.9	19.5	20.0	20.5	21.0	21.5	21.9	22.4	22.8	23.3
DE	5.0	18.4	18.9	19.5	20.0	20.5	21.0	21.5	22.0	22.5	22.9	23.4
EE	6.1	16.5	16.9	17.6	18.3	18.9	19.6	20.2	20.8	21.4	22.0	22.6
IE	4.2	19.6	19.8	20.3	20.7	21.2	21.7	22.1	22.6	23.0	23.4	23.8
EL	5.1	18.8	19.5	20.0	20.5	21.1	21.6	22.1	22.5	23.0	23.5	23.9
ES	4.2	19.9	20.2	20.7	21.2	21.6	22.1	22.5	22.9	23.3	23.7	24.1
FR	4.2	20.0	20.4	20.9	21.3	21.8	22.2	22.6	23.1	23.5	23.8	24.2
HR	6.3	15.8	16.5	17.2	17.8	18.5	19.1	19.7	20.3	20.9	21.5	22.1
IT	4.3	19.6	20.1	20.5	21.0	21.4	21.9	22.3	22.7	23.1	23.5	23.9
CY	4.3	19.2	19.6	20.1	20.5	21.0	21.4	21.9	22.3	22.7	23.1	23.5
LV	7.2	14.5	15.2	16.0	16.8	17.6	18.3	19.0	19.7	20.4	21.1	21.7
LT	6.9	15.0	15.6	16.4	17.1	17.9	18.6	19.3	20.0	20.6	21.3	21.9
LU	4.6	19.1	19.6	20.1	20.6	21.1	21.5	22.0	22.4	22.9	23.3	23.7
HU	7.1	14.8	15.6	16.4	17.1	17.9	18.6	19.3	20.0	20.6	21.3	21.9
MT	4.3	19.6	20.0	20.5	20.9	21.4	21.8	22.3	22.7	23.1	23.5	23.9
NL	4.5	19.0	19.4	19.9	20.4	20.9	21.3	21.8	22.2	22.7	23.1	23.5
AT	4.8	18.8	19.3	19.8	20.3	20.8	21.3	21.8	22.2	22.7	23.1	23.6
PL	6.5	16.1	16.9	17.6	18.3	18.9	19.6	20.2	20.8	21.4	22.0	22.6
PT	4.8	18.4	18.9	19.4	19.9	20.4	20.9	21.4	21.9	22.3	22.8	23.2
RO	7.2	14.9	15.7	16.5	17.3	18.0	18.7	19.5	20.1	20.8	21.5	22.1
SI	5.1	18.1	18.6	19.2	19.7	20.3	20.8	21.3	21.8	22.3	22.8	23.2
SK	6.5	15.6	16.3	17.0	17.7	18.4	19.1	19.7	20.3	21.0	21.6	22.1
FI	4.6	18.9	19.3	19.8	20.3	20.8	21.3	21.7	22.2	22.7	23.1	23.5
SE	4.0	19.7	20.0	20.4	20.9	21.3	21.7	22.2	22.6	23.0	23.4	23.7
NO	4.1	19.7	20.0	20.5	20.9	21.4	21.8	22.2	22.6	23.0	23.4	23.8
EA	4.6	19.1	19.6	20.1	20.6	21.1	21.6	22.0	22.5	22.9	23.3	23.7
EU	5.1	18.4	19.0	19.5	20.1	20.6	21.1	21.6	22.1	22.6	23.0	23.5

Table III.1.5: Life expectancy at 65 - Women

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.6	22.2	22.7	23.2	23.7	24.2	24.7	25.1	25.6	26.0	26.4	26.8
BG	6.6	18.1	18.9	19.6	20.3	20.9	21.6	22.3	22.9	23.5	24.1	24.7
CZ	5.7	20.0	20.7	21.3	21.9	22.5	23.1	23.6	24.2	24.7	25.2	25.7
DK	5.2	21.1	21.6	22.2	22.8	23.3	23.8	24.4	24.9	25.3	25.8	26.3
DE	5.0	21.4	22.0	22.5	23.1	23.6	24.1	24.6	25.0	25.5	25.9	26.4
EE	5.0	21.5	21.8	22.4	23.0	23.5	24.1	24.6	25.1	25.6	26.0	26.5
IE	4.6	22.1	22.4	22.9	23.4	23.9	24.4	24.9	25.4	25.8	26.3	26.7
EL	4.9	21.8	22.4	22.9	23.4	23.9	24.4	24.9	25.4	25.8	26.3	26.7
ES	3.8	23.9	24.2	24.6	25.0	25.5	25.8	26.2	26.6	27.0	27.3	27.7
FR	3.8	24.1	24.5	24.9	25.3	25.7	26.1	26.5	26.8	27.2	27.6	27.9
HR	5.9	19.4	20.0	20.7	21.3	21.9	22.5	23.1	23.7	24.2	24.8	25.3
IT	4.3	22.9	23.4	23.8	24.3	24.7	25.2	25.6	26.0	26.4	26.8	27.2
CY	4.3	22.1	22.5	22.9	23.4	23.8	24.3	24.7	25.1	25.6	26.0	26.4
LV	6.1	19.4	20.1	20.7	21.4	22.0	22.7	23.3	23.9	24.4	25.0	25.5
LT	5.7	20.0	20.5	21.2	21.8	22.4	23.0	23.5	24.1	24.6	25.1	25.7
LU	4.6	22.5	23.0	23.5	24.0	24.5	24.9	25.4	25.9	26.3	26.7	27.1
HU	6.7	18.7	19.5	20.2	20.9	21.6	22.3	23.0	23.6	24.2	24.8	25.4
MT	4.6	22.4	22.9	23.4	23.9	24.4	24.8	25.3	25.7	26.2	26.6	27.0
NL	4.9	21.4	21.9	22.5	23.0	23.5	24.0	24.5	25.0	25.4	25.9	26.3
AT	4.8	21.8	22.4	22.9	23.4	23.9	24.3	24.8	25.3	25.7	26.1	26.6
PL	5.7	20.5	21.2	21.8	22.4	23.0	23.6	24.2	24.7	25.2	25.7	26.2
PT	4.5	22.2	22.7	23.2	23.6	24.1	24.6	25.0	25.4	25.9	26.3	26.7
RO	6.8	18.6	19.4	20.1	20.8	21.6	22.2	22.9	23.6	24.2	24.8	25.4
SI	4.8	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5	25.9	26.3	26.8
SK	6.1	19.6	20.2	20.8	21.5	22.1	22.8	23.4	24.0	24.6	25.1	25.7
FI	4.5	22.3	22.8	23.3	23.7	24.2	24.7	25.1	25.6	26.0	26.4	26.8
SE	4.6	22.0	22.4	22.9	23.4	23.9	24.4	24.8	25.3	25.7	26.2	26.6
NO	4.7	21.9	22.4	22.9	23.4	23.9	24.4	24.8	25.3	25.7	26.2	26.6
EA	4.5	22.6	23.1	23.5	24.0	24.5	25.0	25.4	25.8	26.3	26.7	27.1
EU	4.8	22.0	22.5	23.0	23.6	24.1	24.6	25.1	25.5	25.9	26.4	26.8

Table III.1.6: Net migration (thousand)

Country	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	45.0	21.1	20.5	19.6	19.2	19.4	19.8	20.2	20.4	20.5	20.5
BG	-3.9	-0.4	0.8	1.9	3.1	4.3	5.5	6.6	7.7	8.8	10.0
CZ	44.2	16.4	16.3	16.5	16.6	17.0	17.5	17.8	18.0	18.0	18.2
DK	-1.6	12.3	12.4	12.7	12.5	11.8	11.3	11.1	11.0	11.1	11.0
DE	277.4	247.9	248.2	246.6	240.7	233.2	227.0	223.4	221.4	218.6	214.2
EE	6.6	1.8	1.8	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6
IE	32.7	22.3	19.3	17.0	16.1	15.4	14.4	13.3	12.1	11.2	10.5
EL	13.7	9.4	11.6	13.6	16.0	18.3	20.7	22.5	23.8	24.9	26.0
ES	438.5	189.2	185.4	180.6	178.2	178.2	178.7	178.0	175.7	172.4	169.0
FR	38.1	72.9	68.3	69.8	73.9	75.4	75.2	74.5	74.6	76.8	80.2
HR	-3.8	-2.3	-1.2	-0.2	0.8	1.7	2.6	3.5	4.4	5.2	6.0
IT	134.7	228.4	224.0	219.9	217.2	215.7	214.3	212.6	210.5	208.4	206.6
CY	7.8	3.8	3.4	3.2	3.0	2.9	2.7	2.6	2.4	2.4	2.3
LV	-3.9	-9.1	-7.3	-5.9	-4.7	-3.5	-2.3	-1.4	-0.6	0.1	0.7
LT	10.1	-13.0	-9.5	-7.1	-5.2	-3.5	-1.9	-0.5	0.7	1.7	2.6
LU	10.2	4.8	4.2	3.8	3.5	3.2	3.0	2.8	2.7	2.6	2.5
HU	36.3	23.4	23.5	23.4	23.3	23.2	23.2	23.2	23.3	23.4	23.5
MT	12.8	6.4	6.0	5.7	5.3	5.0	4.7	4.4	4.2	4.0	3.8
NL	105.4	33.9	33.3	33.5	34.0	34.0	33.4	32.9	32.8	32.9	33.2
AT	44.3	32.2	31.3	30.5	29.4	28.1	27.2	26.7	26.4	26.0	25.5
PL	3.3	19.0	25.4	31.9	37.5	42.5	47.6	53.9	60.4	66.6	72.4
PT	40.1	8.7	9.9	11.2	12.3	13.2	14.3	15.3	16.3	17.5	18.6
RO	-73.5	-52.6	-40.0	-29.5	-20.2	-10.7	-2.0	4.7	10.4	15.6	21.0
SI	15.7	4.3	4.5	4.6	4.6	4.7	4.9	5.1	5.2	5.2	5.2
SK	3.4	4.3	4.5	4.8	5.0	5.2	5.4	5.8	6.3	6.8	7.4
FI	17.6	11.4	11.3	11.3	11.5	11.8	12.2	12.5	12.7	13.0	13.2
SE	66.7	55.0	52.1	48.8	45.5	42.4	39.8	37.4	35.1	32.7	30.3
NO	25.3	28.0	27.2	26.4	25.9	25.6	25.2	24.8	24.4	23.9	23.4
EA	1249.9	880.6	870.8	864.5	861.9	858.8	855.9	853.0	850.1	847.3	844.5
EU	1317.5	951.4	960.0	970.1	980.8	991.1	1001.3	1011.2	1020.4	1028.6	1036.8

Table III.1.7: Net migration as % of population

Country	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
BG	-0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
CZ	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
DK	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
DE	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
EE	0.5	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
IE	0.7	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
EL	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
ES	0.9	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
FR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HR	-0.1	-0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2
IT	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
CY	0.9	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
LV	-0.2	-0.5	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	0.0	0.0	0.1
LT	0.4	-0.5	-0.4	-0.3	-0.2	-0.2	-0.1	0.0	0.0	0.1	0.1
LU	1.6	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3
HU	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
MT	2.6	1.1	1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.6	0.5
NL	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
AT	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
PL	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
PT	0.4	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
RO	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	0.0	0.0	0.1	0.1	0.2
SI	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
SK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
FI	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
SE	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2
NO	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3
EA	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
EU	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Table III.1.8: Population (million)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.4	11.5	11.7	11.8	11.8	11.9	11.9	11.9	11.9	11.9	11.8	11.8
BG	-1.9	7.0	6.7	6.4	6.2	6.0	5.8	5.6	5.5	5.3	5.2	5.0
CZ	-0.5	10.7	10.8	10.8	10.7	10.6	10.6	10.5	10.5	10.4	10.3	10.2
DK	0.3	5.8	5.9	6.0	6.0	6.1	6.1	6.1	6.1	6.1	6.1	6.2
DE	-1.4	83.1	83.5	83.4	83.3	83.2	83.0	82.6	82.2	81.8	81.6	81.7
EE	-0.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2
IE	1.6	4.9	5.3	5.5	5.7	5.9	6.1	6.2	6.3	6.4	6.5	6.5
EL	-2.1	10.7	10.5	10.3	10.1	9.9	9.7	9.5	9.3	9.0	8.8	8.6
ES	-0.1	47.1	48.4	48.8	49.1	49.4	49.5	49.3	48.9	48.3	47.7	47.0
FR	2.3	67.1	68.1	68.8	69.4	69.8	70.0	70.0	69.9	69.7	69.5	69.4
HR	-1.0	4.1	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.0
IT	-6.4	60.3	60.1	59.9	59.7	59.3	58.8	58.0	57.0	55.9	54.8	53.9
CY	0.2	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1
LV	-0.7	1.9	1.8	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.2	1.2
LT	-1.0	2.8	2.7	2.6	2.4	2.3	2.2	2.1	2.0	2.0	1.9	1.8
LU	0.2	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8
HU	-0.9	9.8	9.7	9.6	9.5	9.4	9.3	9.3	9.2	9.1	9.0	8.9
MT	0.2	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
NL	0.6	17.3	17.8	18.0	18.1	18.2	18.2	18.1	18.1	18.0	18.0	18.0
AT	0.4	8.9	9.0	9.2	9.2	9.3	9.3	9.3	9.3	9.3	9.3	9.2
PL	-7.1	38.0	37.5	37.0	36.3	35.6	34.8	34.0	33.2	32.4	31.6	30.8
PT	-1.8	10.3	10.2	10.1	9.9	9.8	9.6	9.4	9.1	8.9	8.7	8.5
RO	-5.7	19.3	18.4	17.7	17.1	16.5	16.0	15.5	15.0	14.5	14.0	13.7
SI	-0.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	1.9
SK	-0.7	5.5	5.5	5.4	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7
FI	-0.5	5.5	5.5	5.5	5.5	5.4	5.4	5.3	5.2	5.1	5.1	5.0
SE	2.8	10.3	10.8	11.1	11.4	11.7	12.0	12.3	12.5	12.7	12.9	13.1
NO	1.4	5.3	5.6	5.8	6.0	6.1	6.2	6.4	6.5	6.6	6.6	6.7
EA	-9.2	342.4	345.6	346.6	347.1	347.0	346.1	344.2	341.4	338.2	335.3	333.1
EU	-23.2	447.2	449.3	449.1	448.1	446.6	444.2	440.8	436.6	432.0	427.7	424.0

Table III.1.9: Young population (0-14) as % of total population

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-2.9	22.4	21.9	21.1	20.3	20.1	20.1	20.1	20.1	19.9	19.7	19.5
BG	-0.6	18.9	19.2	18.7	18.1	17.8	17.9	18.2	18.4	18.3	18.2	18.2
CZ	-0.4	20.4	21.2	20.5	20.0	19.6	19.6	19.9	20.3	20.3	20.1	20.0
DK	-1.6	22.4	21.9	21.6	21.7	21.6	21.3	21.0	20.9	20.8	20.8	20.7
DE	1.1	18.4	18.9	19.1	19.1	18.8	18.7	18.8	19.2	19.5	19.6	19.5
EE	-2.8	21.1	21.0	19.8	18.9	18.3	18.5	18.8	18.9	18.7	18.4	18.2
IE	-6.3	26.9	25.2	23.6	22.5	22.2	22.1	22.0	21.6	21.2	20.8	20.6
EL	-2.5	19.4	18.6	17.5	16.7	16.3	16.5	16.7	16.8	16.8	16.7	16.9
ES	-2.9	19.7	18.6	17.2	16.4	16.3	16.5	16.7	16.8	16.7	16.6	16.8
FR	-3.3	24.1	23.2	22.3	21.7	21.6	21.5	21.5	21.3	21.1	20.9	20.8
HR	-2.7	19.3	18.7	18.0	17.4	17.1	16.9	16.9	16.8	16.7	16.7	16.7
IT	-2.1	17.9	16.8	15.9	15.3	15.4	15.5	15.6	15.6	15.6	15.7	15.8
CY	-2.3	21.6	21.2	21.0	20.8	20.6	20.2	19.8	19.6	19.5	19.4	19.4
LV	-2.3	20.6	20.9	20.1	19.1	18.1	18.0	18.3	18.6	18.6	18.4	18.3
LT	-2.6	19.9	20.0	19.6	18.6	17.5	17.1	17.1	17.4	17.5	17.4	17.3
LU	-3.9	21.4	20.5	19.8	19.0	18.5	18.1	17.9	17.8	17.7	17.6	17.5
HU	-0.9	19.6	19.5	19.2	19.1	18.8	18.8	18.7	18.7	18.7	18.7	18.7
MT	-2.6	18.1	18.0	17.8	17.2	16.4	16.0	15.7	15.7	15.7	15.7	15.6
NL	-2.2	21.8	20.8	20.4	20.3	20.3	20.2	19.9	19.7	19.6	19.6	19.7
AT	-1.0	19.4	19.4	19.3	18.9	18.5	18.2	18.2	18.3	18.5	18.5	18.4
PL	-4.3	20.1	19.8	18.6	17.5	16.5	16.2	16.4	16.4	16.3	16.0	15.9
PT	-1.2	19.0	18.0	17.5	17.4	17.4	17.3	17.3	17.2	17.3	17.5	17.7
RO	-3.3	21.0	20.3	19.3	18.7	18.0	17.9	18.0	17.9	17.8	17.7	17.8
SI	-1.8	19.6	19.5	18.6	17.6	17.2	17.5	17.9	18.1	18.0	17.8	17.8
SK	-2.5	20.6	20.7	20.2	19.3	18.4	18.0	18.1	18.3	18.3	18.2	18.1
FI	-4.7	21.2	20.0	18.8	17.6	17.4	17.5	17.5	17.3	16.9	16.6	16.5
SE	-2.4	23.3	23.4	22.8	22.2	21.8	21.8	21.8	21.7	21.5	21.2	20.9
NO	-4.3	23.4	22.3	21.3	20.6	20.4	20.2	20.0	19.7	19.5	19.3	19.2
EA	-1.7	20.3	19.7	19.1	18.6	18.4	18.4	18.5	18.6	18.6	18.6	18.6
EU	-1.9	20.3	19.9	19.2	18.7	18.4	18.4	18.5	18.5	18.5	18.5	18.5

Table III.1.10: Prime-age population (25-54) as % of total population

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-4.7	39.5	38.2	37.5	37.3	37.1	36.6	36.1	35.8	35.7	35.2	34.8
BG	-8.5	41.6	39.4	37.2	35.4	34.3	32.9	32.5	33.0	33.3	33.2	33.1
CZ	-8.4	43.0	41.0	38.2	36.1	35.1	34.4	34.0	34.3	34.6	34.4	34.6
DK	-4.3	38.8	37.6	36.6	36.5	36.4	36.1	35.4	35.1	35.0	34.7	34.6
DE	-4.6	39.6	37.1	36.6	36.3	35.8	35.3	35.2	35.1	35.2	35.2	35.1
EE	-7.6	41.1	39.7	38.3	37.8	36.7	35.1	34.3	34.2	34.2	33.7	33.5
IE	-7.4	41.8	41.0	40.0	38.9	37.8	37.0	36.4	35.8	35.3	34.7	34.3
EL	-7.4	40.2	37.9	36.2	34.8	33.8	33.6	33.4	33.3	33.1	32.9	32.9
ES	-9.3	42.8	40.0	37.8	36.0	35.2	34.7	34.4	34.2	33.9	33.6	33.5
FR	-4.2	37.5	36.0	35.1	35.0	34.6	34.1	34.0	33.9	33.8	33.5	33.3
HR	-6.3	39.4	38.9	38.0	37.1	36.1	35.5	34.9	34.1	33.8	33.4	33.1
IT	-7.1	40.3	37.6	35.8	35.1	34.9	34.5	34.1	33.8	33.6	33.3	33.1
CY	-6.5	43.2	43.4	43.0	42.5	41.7	40.5	39.4	38.6	38.0	37.3	36.7
LV	-7.8	40.4	37.8	35.8	34.9	33.7	32.4	31.8	32.3	32.6	32.6	32.6
LT	-7.0	39.9	38.5	36.3	35.1	34.5	33.5	32.6	32.4	32.7	32.9	32.8
LU	-10.4	45.8	44.5	43.2	41.9	40.6	39.1	37.8	37.0	36.5	35.9	35.4
HU	-8.0	42.4	41.6	39.7	37.5	36.6	36.1	35.1	34.7	34.6	34.3	34.4
MT	-9.5	44.4	46.3	45.5	44.2	42.6	40.6	38.4	37.1	36.3	35.6	34.9
NL	-4.3	39.0	37.5	37.0	37.0	36.9	36.4	35.9	35.5	35.2	35.0	34.7
AT	-6.9	41.9	39.4	38.3	37.8	37.1	36.5	35.9	35.6	35.5	35.3	35.1
PL	-10.3	42.9	42.4	40.9	39.2	37.0	35.6	34.3	33.7	33.5	32.9	32.6
PT	-7.5	40.0	38.2	36.2	34.3	33.0	32.7	32.5	32.2	32.1	32.2	32.5
RO	-9.2	42.6	40.0	38.0	36.0	34.9	33.8	33.5	33.4	33.4	33.3	33.4
SI	-7.5	41.4	39.2	37.4	36.0	35.0	34.4	34.1	34.1	34.2	34.1	33.9
SK	-11.3	44.4	42.9	40.4	37.8	35.7	34.4	33.4	33.2	33.3	33.2	33.1
FI	-4.5	37.7	37.4	37.8	38.0	38.0	37.3	36.1	35.5	34.9	34.1	33.3
SE	-4.3	39.6	38.3	37.7	37.9	38.1	37.4	36.5	36.4	36.1	35.7	35.3
NO	-5.4	40.9	40.1	39.4	39.4	39.3	38.5	37.7	37.0	36.6	36.0	35.5
EA	-6.0	39.9	37.8	36.6	35.9	35.4	34.9	34.6	34.4	34.3	34.1	33.9
EU	-6.6	40.4	38.5	37.2	36.3	35.6	35.0	34.6	34.4	34.3	34.0	33.9

Table III.1.11: Working-age population (20-64) as % of total population

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-6.1	58.6	57.2	56.2	55.5	54.7	54.1	53.5	53.1	52.8	52.7	52.5
BG	-8.8	59.6	57.6	57.0	56.2	54.7	52.7	51.0	49.3	49.2	50.1	50.8
CZ	-7.8	59.8	57.7	57.3	56.9	55.4	53.2	51.7	50.5	50.1	51.1	52.1
DK	-6.4	57.9	56.7	55.4	54.0	53.2	53.1	53.4	53.1	52.4	51.9	51.6
DE	-7.8	59.9	57.8	55.2	53.3	53.4	53.4	53.1	52.4	52.2	52.0	52.1
EE	-7.7	59.0	57.2	56.9	56.7	56.0	54.6	52.8	50.8	50.3	50.9	51.3
IE	-6.9	58.8	58.7	58.6	58.1	56.6	54.8	53.3	52.7	52.6	52.3	51.9
EL	-8.1	58.4	57.2	56.5	54.8	53.0	50.9	49.5	49.4	49.8	50.2	50.3
ES	-9.6	60.8	59.8	58.7	56.9	54.3	51.8	50.6	50.4	50.8	51.2	51.2
FR	-5.1	55.6	54.5	53.6	52.8	51.7	51.2	50.7	50.4	50.6	50.7	50.5
HR	-9.2	59.8	57.8	56.7	55.9	55.2	54.0	52.9	52.1	51.6	50.8	50.6
IT	-8.3	59.1	58.3	56.8	54.7	52.4	51.1	50.7	50.7	51.0	51.1	50.8
CY	-8.6	62.1	60.6	59.4	58.8	58.5	58.3	57.8	56.8	55.4	54.2	53.5
LV	-9.0	59.0	56.3	54.8	54.0	53.2	52.1	50.3	48.4	48.0	49.1	50.0
LT	-10.4	60.2	57.8	55.3	53.9	52.9	52.2	51.3	50.0	49.0	49.1	49.8
LU	-11.3	64.2	63.3	61.9	60.4	59.2	57.8	56.4	55.0	53.8	53.2	52.9
HU	-9.2	60.8	59.2	59.2	58.1	56.6	54.3	53.5	52.6	51.8	51.6	51.7
MT	-11.1	63.1	62.0	61.2	61.4	61.3	60.3	58.7	56.3	53.9	52.5	52.0
NL	-7.1	58.8	57.7	55.9	54.2	53.4	53.5	53.6	53.5	53.1	52.4	51.8
AT	-9.4	61.7	59.8	57.5	55.7	55.0	54.7	54.0	53.3	52.7	52.4	52.3
PL	-11.8	61.9	58.9	58.6	58.7	58.1	56.0	53.3	51.1	49.8	49.7	50.1
PT	-9.8	59.0	57.8	56.1	54.1	51.8	49.8	49.0	49.1	49.3	49.3	49.2
RO	-9.5	60.2	58.5	58.8	56.7	55.1	52.7	51.3	49.9	50.0	50.5	50.7
SI	-8.6	60.4	57.9	56.7	55.9	54.9	52.9	51.3	50.5	50.7	51.3	51.8
SK	-12.9	63.1	60.1	58.7	58.2	57.0	54.7	52.3	50.2	49.1	49.4	50.2
FI	-5.3	56.7	55.7	55.3	55.5	55.7	55.0	54.2	53.4	52.5	52.0	51.4
SE	-4.0	56.8	56.0	55.7	55.6	55.4	55.2	54.7	53.7	52.9	52.9	52.8
NO	-6.1	59.2	58.5	58.1	57.3	56.4	55.9	55.5	54.9	54.2	53.6	53.0
EA	-7.7	58.9	57.6	56.0	54.5	53.3	52.3	51.7	51.4	51.3	51.4	51.2
EU	-8.0	59.3	57.7	56.5	55.1	53.9	52.8	52.0	51.4	51.2	51.2	51.2

Table III.1.12: Elderly population (65 and over) as % of total population

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	8.9	19.0	20.9	22.8	24.2	25.2	25.8	26.4	26.9	27.4	27.7	28.0
BG	9.4	21.5	23.2	24.3	25.7	27.5	29.4	30.8	32.3	32.5	31.7	30.9
CZ	8.2	19.8	21.1	22.1	23.0	25.0	27.3	28.3	29.3	29.6	28.8	27.9
DK	8.0	19.7	21.4	22.9	24.3	25.2	25.6	25.6	26.0	26.8	27.3	27.7
DE	6.8	21.7	23.3	25.6	27.5	27.9	27.9	28.1	28.4	28.3	28.4	28.4
EE	10.5	19.9	21.9	23.3	24.4	25.8	27.0	28.4	30.3	30.9	30.7	30.5
IE	13.2	14.3	16.1	17.8	19.4	21.2	23.1	24.8	25.7	26.3	26.9	27.5
EL	10.6	22.2	24.2	26.0	28.5	30.6	32.6	33.8	33.8	33.5	33.1	32.8
ES	12.5	19.5	21.6	24.0	26.7	29.4	31.7	32.7	32.8	32.5	32.1	32.0
FR	8.4	20.3	22.3	24.1	25.6	26.8	27.2	27.8	28.2	28.3	28.4	28.7
HR	11.9	20.8	23.4	25.3	26.7	27.8	29.0	30.3	31.1	31.7	32.6	32.7
IT	10.4	23.0	24.9	27.3	29.9	32.2	33.4	33.7	33.6	33.4	33.2	33.3
CY	10.9	16.2	18.2	19.6	20.4	20.9	21.4	22.4	23.7	25.1	26.4	27.1
LV	11.4	20.4	22.8	25.0	26.8	28.7	29.9	31.3	32.9	33.4	32.5	31.8
LT	13.0	19.8	22.2	25.1	27.5	29.6	30.7	31.6	32.6	33.5	33.5	32.9
LU	15.2	14.5	16.2	18.3	20.5	22.4	24.1	25.7	27.2	28.5	29.2	29.7
HU	10.0	19.6	21.3	21.7	22.8	24.6	26.9	27.8	28.6	29.5	29.7	29.6
MT	13.7	18.7	20.1	21.0	21.5	22.3	23.7	25.6	28.0	30.4	31.8	32.4
NL	9.2	19.3	21.6	23.7	25.5	26.3	26.4	26.4	26.8	27.3	27.9	28.6
AT	10.3	18.9	20.8	23.2	25.4	26.5	27.1	27.8	28.4	28.9	29.1	29.3
PL	16.0	17.9	21.3	22.8	23.9	25.5	27.7	30.4	32.5	33.9	34.3	34.0
PT	11.1	22.0	24.2	26.5	28.5	30.9	32.8	33.7	33.7	33.4	33.3	33.1
RO	12.8	18.7	21.2	21.8	24.6	26.9	29.3	30.7	32.2	32.2	31.8	31.5
SI	10.4	20.0	22.5	24.7	26.5	28.0	29.6	30.8	31.4	31.3	30.9	30.4
SK	15.4	16.3	19.2	21.1	22.5	24.6	27.3	29.6	31.5	32.6	32.4	31.7
FI	10.0	22.1	24.3	25.9	26.9	27.0	27.5	28.3	29.3	30.6	31.4	32.1
SE	6.3	20.0	20.6	21.4	22.2	22.8	23.1	23.5	24.5	25.6	25.9	26.3
NO	10.4	17.4	19.2	20.6	22.1	23.3	23.8	24.5	25.4	26.3	27.1	27.8
EA	9.4	20.8	22.8	24.9	26.9	28.3	29.2	29.8	30.1	30.1	30.1	30.2
EU	9.9	20.4	22.4	24.4	26.2	27.7	28.8	29.6	30.1	30.3	30.3	30.3

Table III.1.13: Very elderly population (80 and over) as % of total population

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.0	5.7	5.8	6.7	7.6	8.6	9.6	10.3	10.6	10.9	11.2	11.7
BG	9.1	4.9	5.4	6.6	7.6	8.3	8.9	9.7	11.0	12.4	13.2	14.0
CZ	8.5	4.1	5.1	6.6	7.7	8.0	8.2	8.7	10.3	11.9	12.4	12.6
DK	6.3	4.6	6.0	7.2	7.8	8.3	9.1	9.9	10.5	10.6	10.5	10.9
DE	5.3	6.7	7.4	7.4	8.1	9.2	10.9	11.9	11.5	11.1	11.3	11.9
EE	8.1	5.7	6.1	6.8	7.8	8.8	9.6	10.0	10.8	11.6	12.6	13.9
IE	8.1	3.4	4.0	4.9	5.7	6.4	7.3	8.1	9.1	10.3	11.2	11.5
EL	8.1	7.2	7.5	8.4	9.3	10.4	11.6	13.1	14.3	15.4	15.7	15.2
ES	8.5	6.1	6.5	7.3	8.2	9.4	10.9	12.4	13.9	15.1	15.1	14.6
FR	6.5	6.2	6.3	7.7	8.9	9.9	10.6	11.2	11.8	11.9	12.3	12.6
HR	8.1	5.4	5.7	6.5	7.8	9.2	10.1	10.7	11.2	12.0	13.0	13.5
IT	7.2	7.3	7.9	8.8	9.5	10.5	12.1	13.8	15.1	15.3	14.9	14.5
CY	6.8	3.7	4.5	5.5	6.4	7.2	7.8	8.0	8.2	8.6	9.5	10.5
LV	9.2	5.7	6.4	7.0	7.9	9.4	10.7	11.5	12.3	12.9	13.8	14.9
LT	8.5	5.8	6.2	6.7	7.6	9.4	11.2	12.3	13.0	13.1	13.5	14.3
LU	8.3	4.0	4.2	4.8	5.5	6.5	7.8	9.0	9.8	10.6	11.4	12.3
HU	7.7	4.5	5.1	5.9	7.2	7.8	7.8	8.6	10.0	11.6	11.9	12.2
MT	9.0	4.3	4.9	6.4	7.2	7.9	8.3	8.4	9.0	10.1	11.5	13.2
NL	6.6	4.7	5.5	6.9	7.9	8.8	9.9	10.8	11.0	10.7	10.8	11.3
AT	7.0	5.2	6.2	6.7	7.2	8.3	9.9	11.1	11.4	11.3	11.6	12.2
PL	11.3	4.4	4.5	5.8	7.7	9.2	9.6	9.8	10.7	12.5	14.5	15.7
PT	8.2	6.5	7.1	8.0	9.1	10.3	11.6	12.8	14.1	15.2	15.3	14.7
RO	9.6	4.7	4.9	5.8	7.2	8.4	8.4	10.2	11.7	13.2	13.7	14.3
SI	8.4	5.4	5.9	6.8	8.3	9.5	10.5	11.2	11.9	12.9	13.6	13.8
SK	11.3	3.3	3.9	5.0	6.5	7.7	8.5	9.0	10.3	12.2	13.7	14.6
FI	7.8	5.6	6.4	8.4	9.7	10.4	10.9	11.2	11.1	11.6	12.5	13.4
SE	5.5	5.2	6.2	7.2	7.5	7.7	8.2	8.8	9.2	9.5	9.8	10.6
NO	6.7	4.3	5.0	6.2	7.0	7.6	8.2	9.1	9.7	10.0	10.3	10.9
EA	6.8	6.3	6.8	7.6	8.5	9.5	10.8	11.9	12.5	12.8	12.9	13.1
EU	7.3	5.9	6.4	7.3	8.3	9.3	10.4	11.4	12.1	12.6	12.9	13.2

Table III.1.14: Very elderly population (80 and over) as % of elderly population

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	11.9	29.8	27.7	29.3	31.2	34.2	37.3	39.1	39.6	39.7	40.5	41.7
BG	22.7	22.6	23.2	27.3	29.7	30.3	30.3	31.5	34.1	38.1	41.7	45.2
CZ	24.3	20.7	23.9	29.6	33.2	31.8	30.2	30.7	35.0	40.1	42.9	45.0
DK	15.9	23.4	27.8	31.5	32.1	32.9	35.7	38.9	40.3	39.5	38.3	39.3
DE	11.3	30.8	31.8	28.9	29.2	33.0	38.9	42.4	40.6	39.2	39.7	42.0
EE	16.7	28.8	28.1	29.4	32.1	34.3	35.4	35.3	35.6	37.4	41.0	45.6
IE	18.1	23.8	25.0	27.4	29.2	30.5	31.5	32.7	35.5	39.2	41.7	41.9
EL	14.1	32.3	31.0	32.1	32.5	34.1	35.5	38.7	42.3	45.9	47.5	46.4
ES	14.4	31.2	30.3	30.5	30.6	32.1	34.4	38.0	42.3	46.3	47.1	45.6
FR	13.5	30.3	28.3	32.1	34.9	36.8	39.1	40.5	41.8	42.2	43.2	43.9
HR	15.4	26.0	24.4	25.7	29.4	33.1	34.9	35.4	36.0	37.9	39.9	41.4
IT	11.8	31.7	31.6	32.2	31.7	32.6	36.3	41.0	44.8	45.8	44.8	43.5
CY	15.8	22.9	24.7	28.2	31.4	34.5	36.4	35.8	34.7	34.4	36.0	38.7
LV	19.0	28.0	28.1	27.8	29.5	32.9	35.9	36.7	37.4	38.6	42.5	47.0
LT	14.1	29.4	28.0	26.6	27.6	31.9	36.5	39.0	39.8	39.2	40.2	43.5
LU	14.0	27.5	26.1	26.2	26.9	29.2	32.3	34.9	36.0	37.2	39.0	41.5
HU	18.3	22.7	24.0	27.3	31.7	31.8	29.1	30.8	34.8	39.3	40.2	41.0
MT	18.0	22.7	24.5	30.7	33.7	35.6	34.9	32.8	32.1	33.3	36.2	40.7
NL	15.2	24.2	25.4	29.2	30.8	33.4	37.4	40.8	41.1	39.4	38.5	39.4
AT	14.4	27.3	30.0	29.0	28.4	31.3	36.5	40.0	40.2	39.1	40.0	41.7
PL	21.7	24.5	21.2	25.6	32.2	36.3	34.7	32.2	32.9	36.8	42.3	46.3
PT	15.0	29.5	29.4	30.4	32.0	33.4	35.5	37.9	42.0	45.4	45.9	44.5
RO	20.2	25.2	23.2	26.6	29.4	31.0	28.7	33.3	36.4	41.0	43.1	45.4
SI	18.6	26.9	26.2	27.4	31.2	33.9	35.4	36.5	37.8	41.2	44.0	45.4
SK	25.7	20.4	20.4	23.5	29.0	31.4	31.1	30.4	32.7	37.4	42.2	46.1
FI	16.5	25.2	26.5	32.5	35.9	38.4	39.6	39.4	37.8	38.0	39.9	41.7
SE	14.6	25.8	29.9	33.7	33.9	33.8	35.3	37.2	37.6	36.9	37.9	40.4
NO	14.7	24.5	26.1	30.1	31.4	32.7	34.6	37.1	38.3	37.8	37.9	39.3
EA	13.2	30.1	29.8	30.5	31.4	33.6	37.1	40.1	41.6	42.4	42.9	43.3
EU	14.7	28.8	28.5	29.9	31.5	33.6	36.1	38.6	40.2	41.5	42.6	43.5

Table III.1.15: Very elderly population (80 and over) as % of working-age population

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	12.5	9.7	10.1	11.9	13.7	15.7	17.8	19.2	20.0	20.6	21.2	22.2
BG	19.4	8.1	9.3	11.7	13.5	15.2	16.9	19.1	22.4	25.2	26.3	27.5
CZ	17.3	6.8	8.8	11.4	13.4	14.4	15.5	16.8	20.3	23.7	24.2	24.1
DK	13.2	8.0	10.5	13.1	14.4	15.6	17.2	18.6	19.7	20.2	20.2	21.1
DE	11.8	11.1	12.8	13.4	15.1	17.2	20.3	22.4	22.0	21.3	21.7	22.9
EE	17.3	9.7	10.7	12.0	13.8	15.8	17.5	19.0	21.2	23.0	24.7	27.0
IE	16.4	5.8	6.8	8.3	9.7	11.4	13.3	15.2	17.3	19.6	21.5	22.2
EL	18.0	12.2	13.1	14.8	16.9	19.7	22.7	26.4	28.9	30.9	31.4	30.3
ES	18.5	10.0	10.9	12.5	14.4	17.3	21.1	24.6	27.5	29.7	29.6	28.5
FR	13.9	11.1	11.6	14.4	16.9	19.1	20.8	22.2	23.4	23.6	24.2	25.0
HR	17.7	9.0	9.9	11.4	14.0	16.7	18.7	20.2	21.5	23.3	25.6	26.7
IT	16.2	12.3	13.5	15.5	17.3	20.0	23.7	27.3	29.7	30.0	29.1	28.5
CY	13.7	6.0	7.4	9.3	10.9	12.3	13.4	13.9	14.4	15.6	17.5	19.6
LV	20.2	9.7	11.4	12.7	14.6	17.7	20.6	22.9	25.4	26.8	28.1	29.9
LT	19.0	9.7	10.8	12.1	14.1	17.8	21.5	24.0	26.0	26.8	27.4	28.7
LU	17.1	6.2	6.7	7.7	9.1	11.0	13.4	15.9	17.8	19.7	21.4	23.3
HU	16.2	7.3	8.6	10.0	12.4	13.8	14.4	16.0	18.9	22.4	23.1	23.5
MT	18.7	6.8	7.9	10.5	11.8	12.9	13.7	14.3	16.0	18.8	22.0	25.4
NL	13.8	7.9	9.5	12.4	14.5	16.5	18.5	20.1	20.6	20.3	20.5	21.7
AT	14.9	8.4	10.4	11.7	13.0	15.1	18.1	20.6	21.4	21.4	22.2	23.3
PL	24.3	7.1	7.7	9.9	13.1	15.9	17.2	18.3	21.0	25.1	29.2	31.4
PT	19.0	11.0	12.3	14.4	16.9	19.9	23.4	26.1	28.8	30.8	31.0	30.0
RO	20.4	7.8	8.4	9.9	12.8	15.2	15.9	19.9	23.5	26.4	27.1	28.2
SI	17.8	8.9	10.2	11.9	14.8	17.3	19.8	21.9	23.5	25.4	26.5	26.7
SK	23.8	5.3	6.5	8.5	11.2	13.5	15.5	17.2	20.5	24.8	27.7	29.1
FI	16.2	9.8	11.6	15.2	17.4	18.6	19.8	20.6	20.7	22.1	24.1	26.1
SE	11.0	9.1	11.0	13.0	13.6	13.9	14.8	16.0	17.2	17.9	18.5	20.1
NO	13.4	7.2	8.5	10.6	12.1	13.5	14.7	16.4	17.7	18.4	19.2	20.6
EA	14.9	10.6	11.8	13.5	15.5	17.9	20.7	23.1	24.4	24.9	25.1	25.5
EU	15.8	9.9	11.1	12.9	15.0	17.3	19.7	21.9	23.5	24.6	25.2	25.7

Table III.1.16: Potential real GDP (growth rate)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	1.5	0.9	0.9	1.1	1.3	1.3	1.3	1.3	1.4	1.4	1.4
BG	1.2	2.2	1.3	1.2	1.3	1.2	1.1	1.0	1.1	1.3	1.3	1.2
CZ	1.6	2.6	2.1	1.9	1.6	1.3	1.4	1.3	1.5	1.7	1.7	1.5
DK	1.7	2.3	2.0	1.5	1.4	1.6	1.7	1.7	1.7	1.6	1.5	1.6
DE	1.2	1.2	0.9	0.7	1.1	1.4	1.4	1.3	1.3	1.4	1.5	1.6
EE	1.9	3.9	2.7	2.5	2.1	1.6	1.4	1.3	1.3	1.4	1.5	1.5
IE	1.8	5.6	2.2	1.4	1.8	1.7	1.6	1.6	1.7	1.7	1.6	1.5
EL	1.2	-0.4	0.4	0.7	1.5	1.7	1.6	1.6	1.5	1.5	1.4	1.3
ES	1.4	1.7	1.6	1.6	1.6	1.4	1.3	1.4	1.4	1.5	1.5	1.3
FR	1.3	1.1	0.9	1.0	1.3	1.6	1.5	1.5	1.5	1.5	1.5	1.4
HR	1.1	1.8	0.6	0.7	1.3	1.5	1.4	1.2	1.1	1.0	1.0	0.9
IT	1.0	0.6	0.5	0.3	0.9	1.1	1.3	1.5	1.5	1.4	1.4	1.3
CY	1.9	1.9	1.8	1.7	2.1	2.4	2.3	2.1	1.8	1.6	1.6	1.5
LV	1.2	2.7	1.7	1.9	1.3	1.0	0.8	0.6	0.6	1.0	1.2	1.1
LT	1.2	3.8	1.8	1.4	1.2	1.0	1.0	0.7	0.6	0.8	1.1	1.1
LU	1.8	2.1	2.2	1.8	2.1	2.1	1.9	1.7	1.6	1.6	1.5	1.3
HU	1.8	3.9	2.6	2.4	1.9	1.4	1.5	1.6	1.5	1.4	1.4	1.3
MT	2.2	4.5	3.8	3.9	2.8	2.1	1.7	1.3	1.1	1.2	1.4	1.4
NL	1.3	1.8	0.9	0.7	1.0	1.5	1.6	1.6	1.5	1.4	1.4	1.4
AT	1.3	1.3	1.3	1.2	1.4	1.5	1.4	1.3	1.3	1.4	1.4	1.4
PL	1.5	3.5	2.6	2.3	1.9	1.4	1.0	0.9	0.9	1.1	1.1	1.0
PT	1.2	1.8	0.9	0.7	1.0	1.2	1.2	1.3	1.4	1.4	1.3	1.2
RO	1.7	4.6	2.9	2.8	1.7	1.2	1.1	1.1	1.2	1.2	1.2	1.1
SI	1.6	2.4	2.8	2.2	1.7	1.2	1.0	1.1	1.3	1.5	1.5	1.3
SK	1.3	2.3	1.6	1.7	1.6	1.2	1.1	1.0	1.0	1.3	1.4	1.2
FI	1.2	1.2	0.9	1.3	1.4	1.4	1.2	1.2	1.2	1.2	1.2	1.2
SE	1.8	1.8	1.9	2.2	1.9	1.9	1.9	1.7	1.6	1.7	1.7	1.7
NO	1.7	1.8	1.8	1.6	1.8	1.8	1.8	1.7	1.6	1.6	1.6	1.5
EA	1.3	1.4	1.0	0.9	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4
EU	1.3	1.6	1.2	1.1	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4

Table III.1.17: Employment 15-74 (growth rate)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.0	1.0	0.4	0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
BG	-0.9	0.2	-1.2	-1.3	-1.1	-1.1	-1.2	-1.2	-0.9	-0.5	-0.4	-0.4
CZ	-0.3	0.7	-0.3	-0.3	-0.5	-0.7	-0.7	-0.6	-0.4	0.0	0.1	0.0
DK	0.2	0.9	0.4	0.3	0.0	0.1	0.2	0.2	0.1	0.0	0.0	0.0
DE	-0.2	0.6	-0.3	-0.7	-0.3	-0.1	-0.1	-0.2	-0.3	-0.1	-0.1	0.0
EE	-0.3	1.0	-0.3	-0.5	-0.2	-0.3	-0.5	-0.5	-0.5	-0.3	0.0	0.0
IE	0.2	2.1	0.5	0.3	0.5	0.1	0.0	0.1	0.1	0.1	0.0	-0.1
EL	-0.3	-0.6	0.0	-0.1	-0.2	-0.4	-0.5	-0.5	-0.4	-0.3	-0.2	-0.3
ES	0.0	1.2	0.6	0.4	0.0	-0.3	-0.4	-0.3	-0.2	-0.1	-0.1	-0.3
FR	0.1	0.5	0.2	0.2	0.0	0.1	0.0	-0.1	-0.1	0.0	-0.1	-0.1
HR	-0.7	0.7	-0.8	-0.7	-0.7	-0.8	-0.9	-0.9	-0.9	-0.8	-0.7	-0.6
IT	-0.2	0.7	0.1	-0.4	-0.4	-0.6	-0.4	-0.2	-0.2	-0.2	-0.2	-0.2
CY	0.4	1.6	1.0	0.9	0.6	0.5	0.5	0.3	0.1	-0.1	-0.1	0.0
LV	-1.1	-0.1	-1.8	-1.2	-1.2	-1.2	-1.3	-1.5	-1.3	-0.8	-0.5	-0.4
LT	-1.0	1.4	-1.2	-1.7	-1.2	-1.1	-1.1	-1.3	-1.3	-0.9	-0.6	-0.4
LU	0.7	2.9	2.0	1.1	0.8	0.6	0.3	0.1	0.0	0.0	-0.1	-0.2
HU	-0.2	1.1	0.8	0.1	-0.5	-0.9	-0.7	-0.5	-0.5	-0.4	-0.3	-0.2
MT	0.5	3.7	1.8	1.8	0.9	0.5	0.1	-0.3	-0.5	-0.3	-0.2	-0.1
NL	0.0	1.2	0.0	-0.3	-0.3	-0.1	0.1	0.1	0.0	-0.1	-0.1	-0.1
AT	0.0	0.7	0.5	0.1	0.0	0.0	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1
PL	-0.8	0.4	-0.7	-0.9	-0.7	-0.9	-1.2	-1.2	-1.0	-0.7	-0.6	-0.6
PT	-0.5	1.4	-0.4	-0.7	-0.9	-0.9	-0.9	-0.6	-0.4	-0.4	-0.4	-0.4
RO	-0.9	-0.3	-1.0	-0.8	-1.2	-1.1	-1.2	-1.1	-0.8	-0.6	-0.5	-0.5
SI	-0.3	1.0	0.1	-0.5	-0.4	-0.6	-0.7	-0.6	-0.4	-0.2	-0.1	-0.2
SK	-0.7	0.9	-0.8	-0.8	-0.8	-1.0	-1.0	-1.1	-0.9	-0.5	-0.3	-0.4
FI	-0.2	0.6	-0.4	0.0	0.0	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3
SE	0.4	1.1	1.0	1.1	0.5	0.4	0.3	0.2	0.1	0.2	0.2	0.1
NO	0.2	1.7	0.9	0.5	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0
EA	-0.1	0.8	0.0	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
EU	-0.2	0.7	0.0	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.1	-0.2

Table III.1.18: Labour input: hours worked (growth rate)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.0	1.1	0.4	0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
BG	-0.9	0.2	-1.2	-1.3	-1.1	-1.1	-1.2	-1.2	-0.9	-0.5	-0.4	-0.4
CZ	-0.3	0.6	-0.3	-0.3	-0.5	-0.7	-0.7	-0.6	-0.4	0.0	0.1	0.0
DK	0.2	0.4	0.4	0.3	0.0	0.1	0.2	0.2	0.2	0.1	0.0	0.0
DE	-0.2	0.5	-0.4	-0.7	-0.3	-0.1	-0.1	-0.2	-0.3	-0.1	-0.1	0.0
EE	-0.3	0.3	-0.6	-0.6	-0.2	-0.3	-0.5	-0.5	-0.5	-0.3	-0.1	0.0
IE	0.2	2.1	0.5	0.3	0.5	0.2	0.0	0.1	0.1	0.1	0.0	-0.1
EL	-0.3	-0.6	0.1	-0.1	-0.2	-0.4	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2
ES	0.0	1.1	0.6	0.4	0.0	-0.3	-0.4	-0.3	-0.3	-0.1	-0.1	-0.3
FR	0.1	0.4	0.2	0.2	0.0	0.1	0.0	-0.1	-0.1	0.0	-0.1	-0.1
HR	-0.7	0.7	-0.9	-0.7	-0.7	-0.8	-0.9	-0.9	-0.9	-0.8	-0.7	-0.6
IT	-0.2	0.6	0.1	-0.4	-0.4	-0.6	-0.4	-0.2	-0.2	-0.2	-0.2	-0.2
CY	0.4	1.4	1.0	0.9	0.6	0.5	0.4	0.3	0.1	-0.1	0.0	0.0
LV	-1.1	-0.6	-1.9	-1.2	-1.2	-1.2	-1.3	-1.4	-1.3	-0.8	-0.5	-0.4
LT	-1.0	1.3	-1.2	-1.7	-1.2	-1.1	-1.1	-1.3	-1.2	-0.9	-0.6	-0.4
LU	0.7	2.9	2.0	1.1	0.8	0.5	0.3	0.1	0.1	0.0	-0.1	-0.2
HU	-0.3	0.9	0.7	0.1	-0.5	-0.8	-0.7	-0.5	-0.5	-0.4	-0.3	-0.2
MT	0.4	2.8	1.4	1.7	0.8	0.4	0.1	-0.3	-0.5	-0.3	-0.2	-0.1
NL	0.0	1.2	0.0	-0.3	-0.3	-0.1	0.1	0.1	0.0	-0.1	-0.1	-0.1
AT	0.0	0.6	0.3	0.1	0.0	-0.1	-0.2	-0.2	-0.3	-0.2	-0.1	-0.1
PL	-0.8	0.3	-0.7	-0.9	-0.7	-0.9	-1.2	-1.2	-1.0	-0.7	-0.6	-0.6
PT	-0.5	1.3	-0.4	-0.7	-0.9	-0.9	-0.9	-0.6	-0.4	-0.4	-0.4	-0.3
RO	-0.9	-0.4	-1.1	-0.8	-1.2	-1.1	-1.2	-1.1	-0.8	-0.6	-0.5	-0.5
SI	-0.3	0.5	0.2	-0.5	-0.4	-0.6	-0.7	-0.6	-0.4	-0.2	-0.1	-0.2
SK	-0.7	0.4	-1.0	-0.8	-0.8	-1.0	-1.0	-1.1	-0.9	-0.5	-0.3	-0.4
FI	-0.3	0.3	-0.5	0.0	0.0	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3
SE	0.4	0.8	1.0	1.1	0.5	0.4	0.3	0.2	0.1	0.2	0.2	0.1
NO	0.2	1.7	0.8	0.2	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.0
EA	-0.1	0.7	0.0	-0.2	-0.2	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1
EU	-0.2	0.6	-0.1	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2

Table III.1.19: Labour productivity per hour (growth rate)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	0.4	0.5	0.7	1.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5
BG	2.1	1.9	2.5	2.5	2.3	2.3	2.3	2.2	2.0	1.8	1.7	1.5
CZ	2.0	2.0	2.3	2.2	2.2	2.1	2.1	1.9	1.8	1.7	1.6	1.5
DK	1.5	1.8	1.5	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
DE	1.4	0.8	1.2	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
EE	2.2	3.5	3.2	3.0	2.3	1.9	1.9	1.8	1.7	1.7	1.6	1.5
IE	1.5	3.4	1.7	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
EL	1.5	0.2	0.3	0.9	1.7	2.2	2.1	2.0	1.9	1.8	1.7	1.5
ES	1.5	0.6	1.0	1.1	1.6	1.8	1.8	1.7	1.7	1.6	1.6	1.5
FR	1.3	0.7	0.7	0.8	1.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5
HR	1.8	1.0	1.5	1.4	1.9	2.3	2.3	2.2	2.0	1.9	1.7	1.5
IT	1.3	0.0	0.4	0.7	1.3	1.7	1.7	1.7	1.7	1.6	1.6	1.5
CY	1.5	0.5	0.8	0.8	1.5	1.9	1.9	1.8	1.8	1.7	1.6	1.5
LV	2.3	3.3	3.7	3.1	2.5	2.2	2.1	2.0	1.9	1.8	1.7	1.5
LT	2.2	2.4	3.1	3.0	2.4	2.1	2.1	2.0	1.9	1.8	1.7	1.5
LU	1.1	-0.8	0.2	0.7	1.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5
HU	2.1	2.9	1.9	2.3	2.4	2.3	2.2	2.1	1.9	1.8	1.7	1.5
MT	1.8	1.7	2.3	2.1	2.0	1.7	1.6	1.6	1.6	1.6	1.6	1.5
NL	1.3	0.6	0.9	1.0	1.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5
AT	1.4	0.7	0.9	1.1	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
PL	2.3	3.2	3.3	3.2	2.6	2.2	2.2	2.1	1.9	1.8	1.7	1.5
PT	1.7	0.5	1.3	1.4	1.8	2.1	2.1	2.0	1.9	1.8	1.6	1.5
RO	2.6	4.9	4.0	3.7	2.9	2.3	2.3	2.2	2.0	1.9	1.7	1.5
SI	1.9	1.8	2.5	2.7	2.1	1.8	1.8	1.7	1.7	1.6	1.6	1.5
SK	2.1	1.9	2.6	2.5	2.3	2.2	2.2	2.0	1.9	1.8	1.7	1.5
FI	1.5	0.8	1.4	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SE	1.4	1.0	0.9	1.1	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
NO	1.5	0.1	1.0	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
EA	1.4	0.7	1.0	1.1	1.5	1.7	1.7	1.6	1.6	1.6	1.6	1.6
EU	1.6	1.0	1.3	1.4	1.6	1.8	1.8	1.8	1.7	1.7	1.6	1.6

Table III.1.20: TFP (growth rate)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.8	0.1	0.3	0.5	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
BG	1.3	1.3	1.3	1.3	1.4	1.5	1.5	1.4	1.3	1.2	1.1	1.0
CZ	1.3	1.5	1.5	1.5	1.4	1.3	1.3	1.3	1.2	1.1	1.1	1.0
DK	1.0	1.2	1.1	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
DE	0.9	0.5	0.7	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EE	1.4	2.1	1.9	1.9	1.4	1.2	1.2	1.2	1.1	1.1	1.0	1.0
IE	1.1	1.6	1.5	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EL	1.0	0.3	0.5	0.7	1.2	1.4	1.4	1.3	1.2	1.2	1.1	1.0
ES	1.0	0.5	0.7	0.8	1.0	1.2	1.1	1.1	1.1	1.1	1.0	1.0
FR	0.8	0.3	0.4	0.5	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HR	1.1	0.3	0.6	0.7	1.3	1.5	1.5	1.4	1.3	1.2	1.1	1.0
IT	0.8	0.1	0.3	0.4	0.9	1.1	1.1	1.1	1.1	1.1	1.0	1.0
CY	0.9	0.0	0.2	0.4	1.0	1.2	1.2	1.2	1.1	1.1	1.0	1.0
LV	1.4	1.9	1.9	1.9	1.6	1.4	1.4	1.3	1.2	1.1	1.1	1.0
LT	1.3	1.1	1.7	1.8	1.5	1.4	1.4	1.3	1.2	1.1	1.1	1.0
LU	0.7	-0.7	0.1	0.5	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HU	1.3	1.2	1.3	1.5	1.5	1.5	1.4	1.4	1.3	1.2	1.1	1.0
MT	1.2	1.3	1.5	1.5	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0
NL	0.9	0.4	0.5	0.6	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
AT	0.9	0.3	0.5	0.7	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
PL	1.5	1.8	1.9	2.0	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.0
PT	1.1	0.8	0.8	0.9	1.2	1.4	1.4	1.3	1.2	1.1	1.1	1.0
RO	1.6	3.1	2.4	2.3	1.7	1.5	1.5	1.4	1.3	1.2	1.1	1.0
SI	1.3	1.9	1.9	1.8	1.4	1.2	1.1	1.1	1.1	1.1	1.0	1.0
SK	1.3	0.9	1.4	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.0
FI	0.9	0.4	0.7	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
SE	0.9	0.5	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
NO	0.9	-0.2	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EA	0.9	0.5	0.6	0.7	1.0	1.1	1.1	1.1	1.0	1.0	1.0	1.0
EU	1.0	0.6	0.8	0.9	1.1	1.2	1.2	1.1	1.1	1.1	1.0	1.0

Table III.1.21: Capital deepening (contribution to labour productivity growth)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.4	0.3	0.2	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BG	0.8	0.7	1.2	1.1	0.9	0.8	0.8	0.8	0.7	0.6	0.6	0.5
CZ	0.7	0.5	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5
DK	0.5	0.7	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
DE	0.5	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
EE	0.8	1.5	1.3	1.2	0.9	0.7	0.7	0.6	0.6	0.6	0.6	0.5
IE	0.5	1.8	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
EL	0.4	-0.1	-0.2	0.2	0.5	0.8	0.8	0.7	0.7	0.6	0.6	0.5
ES	0.5	0.1	0.3	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5
FR	0.5	0.4	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
HR	0.7	0.7	0.9	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.6	0.5
IT	0.4	-0.2	0.1	0.2	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.5
CY	0.6	0.5	0.6	0.4	0.5	0.7	0.7	0.6	0.6	0.6	0.6	0.5
LV	0.9	1.4	1.7	1.2	1.0	0.8	0.7	0.7	0.7	0.6	0.6	0.5
LT	0.9	1.3	1.4	1.3	0.9	0.8	0.7	0.7	0.7	0.6	0.6	0.5
LU	0.4	-0.2	0.1	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
HU	0.7	1.7	0.7	0.8	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5
MT	0.6	0.4	0.9	0.7	0.8	0.6	0.6	0.6	0.6	0.6	0.5	0.5
NL	0.5	0.2	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
AT	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
PL	0.9	1.3	1.3	1.2	1.0	0.8	0.8	0.7	0.7	0.6	0.6	0.5
PT	0.6	-0.3	0.5	0.5	0.6	0.7	0.7	0.7	0.7	0.6	0.6	0.5
RO	0.9	1.9	1.6	1.3	1.1	0.8	0.8	0.8	0.7	0.7	0.6	0.5
SI	0.6	-0.1	0.6	0.9	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.5
SK	0.8	1.0	1.2	0.9	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.5
FI	0.5	0.5	0.7	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SE	0.5	0.5	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NO	0.5	0.3	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
EA	0.5	0.2	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.5
EU	0.5	0.3	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6

Table III.1.22: Potential real GDP per capita (growth rate)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	1.0	0.7	0.7	1.0	1.2	1.3	1.3	1.4	1.5	1.5	1.4
BG	1.9	2.9	2.0	1.9	2.0	1.9	1.7	1.6	1.7	1.9	1.9	1.7
CZ	1.7	2.2	2.1	2.0	1.8	1.5	1.5	1.4	1.6	1.9	1.9	1.7
DK	1.6	2.0	1.7	1.3	1.3	1.5	1.6	1.7	1.7	1.6	1.5	1.5
DE	1.3	1.0	0.8	0.7	1.1	1.5	1.5	1.4	1.4	1.5	1.5	1.5
EE	2.1	3.5	2.9	2.7	2.4	1.8	1.6	1.5	1.5	1.7	1.8	1.8
IE	1.2	4.1	1.2	0.6	1.1	1.1	1.0	1.2	1.4	1.4	1.4	1.4
EL	1.6	-0.2	0.8	1.1	1.9	2.1	2.1	2.0	2.0	2.1	1.9	1.7
ES	1.4	1.0	1.4	1.4	1.5	1.4	1.3	1.5	1.6	1.8	1.7	1.5
FR	1.3	0.9	0.6	0.8	1.1	1.5	1.5	1.5	1.5	1.6	1.5	1.4
HR	1.7	2.4	1.2	0.9	1.5	1.8	2.0	2.1	2.1	2.0	1.9	1.8
IT	1.3	0.7	0.5	0.4	1.0	1.3	1.5	1.8	1.9	1.8	1.8	1.6
CY	1.4	0.6	0.9	1.0	1.6	2.0	2.0	1.8	1.5	1.4	1.3	1.3
LV	2.2	3.4	3.0	3.1	2.5	2.0	1.7	1.5	1.5	1.9	1.9	1.8
LT	2.1	4.0	2.9	2.4	2.2	1.9	1.9	1.6	1.5	1.6	1.8	1.7
LU	1.3	0.1	1.1	1.0	1.4	1.6	1.5	1.4	1.4	1.5	1.4	1.3
HU	2.0	3.9	2.8	2.6	2.1	1.6	1.7	1.8	1.7	1.6	1.6	1.5
MT	1.5	1.2	2.5	2.9	2.1	1.5	1.2	0.9	0.8	0.9	1.2	1.3
NL	1.2	1.2	0.6	0.5	0.9	1.4	1.6	1.7	1.6	1.5	1.4	1.4
AT	1.2	0.9	1.0	1.0	1.2	1.4	1.3	1.3	1.3	1.4	1.5	1.5
PL	2.0	3.5	2.8	2.7	2.3	1.8	1.5	1.3	1.4	1.5	1.6	1.5
PT	1.6	1.8	1.1	1.0	1.3	1.5	1.7	1.8	2.0	1.9	1.8	1.6
RO	2.4	5.3	3.7	3.6	2.4	1.9	1.8	1.7	1.9	1.9	1.8	1.6
SI	1.8	1.7	2.8	2.3	1.9	1.3	1.2	1.3	1.6	1.7	1.7	1.6
SK	1.6	2.2	1.7	1.9	1.8	1.5	1.4	1.3	1.4	1.7	1.9	1.7
FI	1.4	1.0	1.0	1.4	1.6	1.6	1.5	1.4	1.4	1.4	1.4	1.4
SE	1.3	0.8	1.2	1.6	1.4	1.4	1.4	1.3	1.3	1.4	1.4	1.4
NO	1.2	1.1	1.1	1.0	1.2	1.3	1.3	1.4	1.3	1.3	1.3	1.3
EA	1.3	1.1	0.9	0.9	1.2	1.5	1.5	1.5	1.6	1.6	1.6	1.5
EU	1.4	1.4	1.1	1.1	1.4	1.5	1.6	1.6	1.6	1.7	1.6	1.6

Table III.1.23: Potential real GDP per worker (growth rate)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	0.5	0.5	0.7	1.3	1.6	1.5	1.5	1.5	1.5	1.5	1.5
BG	2.1	2.0	2.5	2.5	2.4	2.3	2.3	2.2	2.0	1.9	1.7	1.5
CZ	2.0	1.9	2.4	2.2	2.2	2.1	2.1	2.0	1.9	1.7	1.6	1.5
DK	1.5	1.4	1.5	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
DE	1.4	0.6	1.1	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
EE	2.1	2.9	3.0	3.0	2.3	1.9	1.9	1.8	1.7	1.7	1.6	1.5
IE	1.5	3.5	1.7	1.2	1.4	1.5	1.6	1.5	1.5	1.5	1.5	1.6
EL	1.5	0.2	0.4	0.9	1.7	2.2	2.2	2.0	1.9	1.8	1.7	1.5
ES	1.5	0.5	1.0	1.1	1.6	1.8	1.8	1.7	1.7	1.6	1.6	1.5
FR	1.3	0.6	0.7	0.8	1.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5
HR	1.9	1.0	1.5	1.0	1.6	2.0	2.3	2.4	2.4	2.3	2.1	1.9
IT	1.3	-0.1	0.3	0.7	1.3	1.7	1.7	1.7	1.7	1.6	1.6	1.5
CY	1.4	0.3	0.8	0.8	1.5	1.9	1.9	1.8	1.8	1.7	1.6	1.5
LV	2.3	2.8	3.6	3.2	2.6	2.2	2.1	2.0	1.9	1.8	1.7	1.5
LT	2.2	2.4	3.0	3.1	2.5	2.2	2.1	2.0	1.9	1.8	1.7	1.5
LU	1.1	-0.9	0.2	0.7	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5
HU	2.0	2.7	1.8	2.3	2.4	2.3	2.2	2.1	2.0	1.8	1.7	1.5
MT	1.7	0.8	1.9	2.1	1.9	1.7	1.6	1.6	1.6	1.6	1.6	1.5
NL	1.3	0.6	0.9	1.0	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
AT	1.3	0.6	0.8	1.1	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
PL	2.3	3.1	3.3	3.2	2.6	2.3	2.2	2.1	2.0	1.8	1.7	1.6
PT	1.7	0.4	1.3	1.4	1.9	2.1	2.1	2.0	1.9	1.8	1.7	1.6
RO	2.6	5.0	3.9	3.7	2.9	2.3	2.4	2.2	2.0	1.9	1.7	1.5
SI	1.9	1.3	2.7	2.7	2.2	1.8	1.8	1.7	1.7	1.6	1.6	1.5
SK	2.0	1.3	2.5	2.5	2.3	2.2	2.2	2.1	1.9	1.8	1.7	1.5
FI	1.4	0.6	1.4	1.3	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.5
SE	1.3	0.7	0.9	1.0	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
NO	1.5	0.1	0.9	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
EA	1.4	0.6	0.9	1.1	1.5	1.7	1.7	1.6	1.6	1.6	1.6	1.6
EU	1.5	0.9	1.2	1.4	1.6	1.8	1.8	1.7	1.7	1.6	1.6	1.6

Table III.1.24: Working-age population (20-64) (in thousands)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-513	6,723	6,675	6,611	6,568	6,515	6,454	6,386	6,314	6,261	6,239	6,210
BG	-1,600	4,159	3,841	3,660	3,487	3,282	3,061	2,874	2,699	2,613	2,591	2,559
CZ	-1,075	6,386	6,223	6,168	6,082	5,882	5,617	5,444	5,288	5,212	5,265	5,312
DK	-191	3,364	3,340	3,310	3,252	3,223	3,229	3,257	3,246	3,207	3,183	3,174
DE	-7,230	49,766	48,254	46,080	44,420	44,388	44,334	43,883	43,108	42,675	42,444	42,536
EE	-171	783	755	744	733	717	692	662	630	616	615	612
IE	471	2,904	3,109	3,241	3,332	3,353	3,335	3,315	3,335	3,366	3,377	3,374
EL	-1,939	6,259	6,005	5,810	5,527	5,245	4,937	4,697	4,572	4,486	4,407	4,320
ES	-4,574	28,662	28,933	28,646	27,948	26,846	25,619	24,943	24,671	24,538	24,406	24,088
FR	-2,276	37,327	37,122	36,906	36,630	36,102	35,884	35,511	35,233	35,255	35,246	35,051
HR	-900	2,433	2,271	2,165	2,074	1,986	1,887	1,788	1,710	1,643	1,576	1,533
IT	-8,285	35,660	35,023	34,053	32,665	31,117	30,032	29,402	28,935	28,495	27,994	27,375
CY	40	548	565	574	584	594	602	606	603	596	590	588
LV	-540	1,129	1,016	934	870	814	758	699	642	610	599	589
LT	-776	1,683	1,557	1,417	1,316	1,232	1,162	1,092	1,017	956	923	907
LU	18	398	422	431	435	438	438	435	428	422	418	416
HU	-1,337	5,944	5,733	5,687	5,538	5,336	5,075	4,953	4,838	4,715	4,651	4,607
MT	52	316	348	362	378	390	395	393	385	374	369	368
NL	-893	10,205	10,252	10,055	9,831	9,709	9,722	9,729	9,668	9,557	9,432	9,312
AT	-640	5,478	5,405	5,268	5,144	5,115	5,108	5,047	4,969	4,892	4,854	4,838
PL	-8,061	23,506	22,106	21,666	21,291	20,665	19,500	18,122	16,965	16,150	15,726	15,445
PT	-1,908	6,070	5,897	5,648	5,370	5,058	4,769	4,581	4,476	4,379	4,268	4,162
RO	-4,728	11,654	10,781	10,439	9,694	9,103	8,421	7,932	7,469	7,252	7,089	6,927
SI	-258	1,261	1,225	1,195	1,171	1,141	1,092	1,048	1,017	1,007	1,005	1,002
SK	-1,073	3,441	3,284	3,193	3,130	3,025	2,858	2,688	2,534	2,427	2,386	2,367
FI	-546	3,131	3,082	3,053	3,041	3,018	2,947	2,863	2,784	2,701	2,644	2,585
SE	1,075	5,833	6,039	6,205	6,352	6,489	6,625	6,716	6,726	6,730	6,831	6,908
NO	398	3,164	3,271	3,360	3,411	3,444	3,493	3,532	3,548	3,554	3,558	3,562
EA	-31,044	201,743	198,927	194,220	189,094	184,817	181,137	177,979	175,321	173,612	172,215	170,699
EU	-47,860	265,024	259,261	253,521	246,863	240,781	234,551	229,065	224,262	221,135	219,127	217,163

Table III.1.25: Population growth (working-age: 20-64)

Country	Avg 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.1	0.2	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1
BG	-1.0	-1.4	-1.2	-0.8	-1.1	-1.4	-1.3	-1.3	-1.2	-0.3	-0.3	-0.3
CZ	-0.4	-0.5	-0.2	-0.2	-0.3	-1.0	-0.8	-0.6	-0.5	0.0	0.2	0.1
DK	-0.1	0.0	-0.1	-0.3	-0.2	-0.2	0.1	0.1	-0.2	-0.3	-0.1	-0.1
DE	-0.3	-0.1	-0.8	-1.0	-0.4	0.1	-0.1	-0.2	-0.4	-0.1	-0.1	0.1
EE	-0.5	-0.2	-0.6	-0.1	-0.4	-0.6	-0.7	-0.9	-1.0	-0.2	0.0	-0.2
IE	0.3	1.4	0.9	0.8	0.3	0.0	-0.3	0.0	0.2	0.2	0.0	-0.1
EL	-0.7	-0.6	-0.8	-0.7	-1.1	-1.1	-1.2	-0.7	-0.5	-0.3	-0.4	-0.4
ES	-0.3	0.5	-0.1	-0.3	-0.6	-1.0	-0.8	-0.4	-0.2	-0.1	-0.2	-0.3
FR	-0.1	-0.2	-0.1	-0.1	-0.2	-0.1	-0.2	-0.2	-0.1	0.1	-0.1	-0.1
HR	-0.9	-1.0	-1.1	-0.9	-0.8	-0.9	-1.1	-1.0	-0.8	-0.8	-0.7	-0.6
IT	-0.5	-0.4	-0.3	-0.7	-0.9	-1.0	-0.5	-0.4	-0.3	-0.3	-0.4	-0.5
CY	0.2	1.2	0.3	0.4	0.3	0.4	0.2	0.0	-0.2	-0.2	-0.1	-0.1
LV	-1.3	-1.4	-2.1	-1.6	-1.2	-1.4	-1.4	-1.7	-1.5	-0.6	-0.3	-0.4
LT	-1.2	-0.3	-2.2	-1.6	-1.4	-1.2	-1.1	-1.4	-1.4	-0.9	-0.6	-0.3
LU	0.1	2.1	0.7	0.3	0.2	0.1	-0.1	-0.2	-0.4	-0.2	-0.1	-0.1
HU	-0.5	-0.8	-0.3	-0.2	-0.6	-1.2	-0.8	-0.4	-0.5	-0.5	-0.2	-0.2
MT	0.4	3.7	0.8	0.9	0.8	0.4	0.1	-0.2	-0.6	-0.4	-0.2	-0.1
NL	-0.2	0.5	-0.2	-0.4	-0.5	-0.1	0.0	0.0	-0.2	-0.2	-0.3	-0.2
AT	-0.2	0.3	-0.3	-0.6	-0.3	-0.1	-0.1	-0.3	-0.3	-0.2	-0.1	-0.1
PL	-0.8	-1.0	-0.9	-0.2	-0.4	-0.8	-1.3	-1.5	-1.2	-0.8	-0.4	-0.4
PT	-0.7	-0.2	-0.7	-0.9	-1.1	-1.3	-1.0	-0.6	-0.4	-0.4	-0.6	-0.5
RO	-1.0	-1.3	-1.0	-0.5	-1.5	-1.5	-1.5	-1.2	-1.0	-0.5	-0.5	-0.5
SI	-0.4	-0.1	-0.7	-0.4	-0.3	-0.7	-0.9	-0.7	-0.4	-0.1	0.0	-0.1
SK	-0.7	-0.7	-0.6	-0.5	-0.5	-0.9	-1.2	-1.3	-1.1	-0.6	-0.3	-0.2
FI	-0.4	-0.3	-0.2	-0.1	0.0	-0.4	-0.5	-0.6	-0.6	-0.6	-0.4	-0.5
SE	0.3	0.7	0.6	0.4	0.5	0.4	0.3	0.2	-0.1	0.1	0.3	0.1
NO	0.2	0.6	0.6	0.5	0.2	0.2	0.3	0.2	0.0	0.0	0.0	0.0
EA	-0.3	0.0	-0.4	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.1	-0.2	-0.2
EU	-0.4	-0.2	-0.4	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.2	-0.2	-0.2

Table III.1.26: Labour force 15-64 (thousands)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-316	5,088	5,187	5,131	5,089	5,041	4,984	4,924	4,863	4,823	4,802	4,772
BG	-1,284	3,282	3,009	2,849	2,697	2,532	2,370	2,228	2,111	2,057	2,032	1,998
CZ	-914	5,268	5,123	5,078	4,977	4,757	4,573	4,443	4,335	4,308	4,345	4,354
DK	-120	2,939	2,920	2,875	2,847	2,834	2,847	2,871	2,866	2,839	2,824	2,818
DE	-5,549	42,586	41,142	39,608	38,591	38,545	38,417	37,995	37,411	37,100	36,966	37,038
EE	-119	666	650	644	638	626	607	585	560	550	550	547
IE	431	2,363	2,552	2,668	2,741	2,761	2,753	2,753	2,776	2,797	2,802	2,795
EL	-1,078	4,650	4,603	4,525	4,367	4,194	4,010	3,865	3,776	3,704	3,640	3,573
ES	-2,960	22,917	23,725	23,695	23,196	22,313	21,326	20,772	20,520	20,381	20,237	19,958
FR	-1,165	29,717	29,774	29,670	29,508	29,333	29,218	28,960	28,806	28,795	28,733	28,551
HR	-603	1,762	1,687	1,624	1,565	1,499	1,423	1,353	1,294	1,240	1,195	1,159
IT	-4,696	25,349	25,546	24,999	24,164	23,222	22,542	22,084	21,731	21,398	21,058	20,652
CY	62	450	474	487	498	508	515	520	520	516	513	512
LV	-451	945	844	775	723	676	630	581	539	516	506	495
LT	-629	1,419	1,310	1,207	1,127	1,062	1,004	943	881	833	806	790
LU	18	311	333	341	346	348	347	343	338	334	332	329
HU	-710	4,674	4,832	4,852	4,743	4,561	4,361	4,261	4,162	4,060	4,005	3,964
MT	66	257	298	317	333	343	346	343	335	328	325	323
NL	-639	9,108	9,129	8,968	8,786	8,739	8,776	8,784	8,735	8,645	8,549	8,469
AT	-385	4,562	4,491	4,426	4,411	4,411	4,387	4,332	4,268	4,219	4,195	4,176
PL	-6,109	17,909	17,215	16,779	16,300	15,593	14,678	13,732	12,966	12,442	12,114	11,799
PT	-1,390	4,993	4,892	4,729	4,515	4,265	4,054	3,923	3,843	3,766	3,681	3,603
RO	-3,376	8,715	8,259	7,868	7,330	6,854	6,418	6,069	5,786	5,623	5,479	5,338
SI	-175	1,018	1,020	999	977	949	912	881	861	853	849	843
SK	-877	2,699	2,583	2,502	2,412	2,289	2,160	2,039	1,937	1,877	1,849	1,822
FI	-405	2,684	2,655	2,638	2,637	2,615	2,563	2,502	2,443	2,378	2,330	2,279
SE	982	5,312	5,536	5,680	5,808	5,926	6,041	6,112	6,126	6,156	6,241	6,294
NO	298	2,725	2,814	2,869	2,904	2,932	2,974	3,003	3,015	3,019	3,021	3,023
EA	-20,234	161,783	161,210	158,341	155,080	152,261	149,572	147,150	145,164	143,836	142,744	141,549
EU	-32,369	211,644	209,792	205,946	201,348	196,818	192,283	188,219	184,811	182,561	180,978	179,276

Table III.1.27: Labour force 20-64 (thousands)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-312	5,011	5,105	5,047	5,011	4,967	4,910	4,850	4,788	4,748	4,728	4,699
BG	-1,280	3,264	2,991	2,830	2,679	2,516	2,355	2,214	2,097	2,042	2,018	1,984
CZ	-919	5,239	5,088	5,042	4,941	4,721	4,540	4,411	4,302	4,274	4,310	4,320
DK	-113	2,768	2,749	2,716	2,683	2,666	2,677	2,704	2,702	2,677	2,662	2,655
DE	-5,590	41,389	39,990	38,428	37,303	37,294	37,196	36,807	36,232	35,902	35,739	35,800
EE	-118	657	638	632	627	616	598	576	551	541	540	538
IE	425	2,287	2,467	2,580	2,661	2,683	2,674	2,671	2,692	2,712	2,718	2,712
EL	-1,070	4,622	4,574	4,496	4,340	4,170	3,988	3,843	3,754	3,683	3,618	3,552
ES	-2,934	22,639	23,408	23,389	22,915	22,059	21,075	20,517	20,257	20,115	19,976	19,705
FR	-1,103	29,127	29,181	29,076	28,957	28,789	28,681	28,417	28,256	28,246	28,195	28,024
HR	-593	1,737	1,663	1,601	1,544	1,479	1,404	1,335	1,276	1,223	1,178	1,143
IT	-4,649	25,139	25,335	24,795	23,982	23,051	22,372	21,912	21,557	21,226	20,890	20,490
CY	62	443	467	480	492	501	508	513	513	509	506	505
LV	-448	936	834	766	712	667	622	575	533	510	499	489
LT	-624	1,407	1,299	1,196	1,116	1,052	995	935	873	825	798	783
LU	17	305	327	335	340	342	341	337	332	328	326	323
HU	-705	4,634	4,790	4,813	4,702	4,523	4,323	4,224	4,125	4,023	3,969	3,928
MT	65	251	292	311	326	336	339	336	328	321	318	316
NL	-559	8,435	8,484	8,342	8,180	8,121	8,145	8,156	8,120	8,042	7,954	7,875
AT	-388	4,399	4,325	4,256	4,235	4,239	4,218	4,168	4,106	4,054	4,029	4,010
PL	-6,079	17,798	17,102	16,662	16,186	15,493	14,588	13,647	12,881	12,356	12,029	11,719
PT	-1,374	4,942	4,846	4,685	4,475	4,226	4,015	3,884	3,805	3,729	3,646	3,568
RO	-3,330	8,594	8,140	7,760	7,221	6,762	6,332	5,985	5,704	5,542	5,402	5,264
SI	-175	1,007	1,008	986	964	938	902	871	850	841	838	832
SK	-875	2,683	2,567	2,484	2,395	2,273	2,145	2,025	1,924	1,863	1,835	1,809
FI	-377	2,572	2,537	2,520	2,535	2,523	2,472	2,412	2,351	2,288	2,243	2,196
SE	921	5,094	5,284	5,414	5,541	5,664	5,780	5,850	5,856	5,877	5,959	6,015
NO	294	2,599	2,683	2,737	2,777	2,809	2,847	2,874	2,884	2,888	2,891	2,893
EA	-20,003	158,252	157,689	154,819	151,586	148,869	146,220	143,826	141,842	140,505	139,418	138,249
EU	-32,100	207,378	205,494	201,657	197,082	192,693	188,220	184,197	180,785	178,519	176,944	175,278

Table III.1.28: Participation rate (20-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.1	74.5	76.5	76.4	76.3	76.2	76.1	76.0	75.8	75.8	75.8	75.7
BG	-0.9	78.5	77.9	77.3	76.8	76.7	77.0	77.0	77.7	78.1	77.9	77.5
CZ	-0.7	82.0	81.8	81.7	81.2	80.3	80.8	81.0	81.4	82.0	81.9	81.3
DK	1.4	82.3	82.3	82.0	82.5	82.7	82.9	83.0	83.2	83.5	83.6	83.7
DE	1.0	83.2	82.9	83.4	84.0	84.0	83.9	83.9	84.0	84.1	84.2	84.2
EE	4.1	83.8	84.4	84.9	85.5	86.0	86.4	86.9	87.5	87.8	87.9	88.0
IE	1.6	78.8	79.3	79.6	79.9	80.0	80.2	80.6	80.7	80.6	80.5	80.4
EL	8.4	73.8	76.2	77.4	78.5	79.5	80.8	81.8	82.1	82.1	82.1	82.2
ES	2.8	79.0	80.9	81.7	82.0	82.2	82.3	82.3	82.1	82.0	81.8	81.8
FR	1.9	78.0	78.6	78.8	79.1	79.7	79.9	80.0	80.2	80.1	80.0	80.0
HR	3.2	71.4	73.3	73.9	74.4	74.5	74.4	74.6	74.6	74.4	74.7	74.6
IT	4.4	70.5	72.3	72.8	73.4	74.1	74.5	74.5	74.5	74.5	74.6	74.9
CY	4.9	80.9	82.8	83.7	84.2	84.4	84.4	84.6	85.0	85.4	85.7	85.9
LV	0.1	82.9	82.1	82.0	81.9	82.0	82.1	82.2	83.0	83.6	83.3	83.0
LT	2.8	83.6	83.4	84.4	84.8	85.4	85.6	85.6	85.8	86.3	86.5	86.4
LU	0.8	76.8	77.6	77.7	78.2	78.1	77.8	77.5	77.7	77.9	77.8	77.5
HU	7.3	77.9	83.6	84.6	84.9	84.8	85.2	85.3	85.3	85.3	85.3	85.3
MT	6.4	79.7	84.0	85.9	86.3	86.2	85.9	85.6	85.4	85.8	86.1	86.0
NL	1.9	82.6	82.8	83.0	83.2	83.7	83.8	83.8	84.0	84.1	84.3	84.6
AT	2.6	80.3	80.0	80.8	82.3	82.9	82.6	82.6	82.6	82.9	83.0	82.9
PL	0.2	75.7	77.4	76.9	76.0	75.0	74.8	75.3	75.9	76.5	76.5	75.9
PT	4.3	81.4	82.2	83.0	83.3	83.5	84.2	84.8	85.0	85.2	85.4	85.7
RO	2.2	73.7	75.5	74.3	74.5	74.3	75.2	75.5	76.4	76.4	76.2	76.0
SI	3.1	79.9	82.3	82.5	82.3	82.2	82.6	83.1	83.6	83.5	83.4	83.0
SK	-1.6	78.0	78.2	77.8	76.5	75.1	75.0	75.3	75.9	76.8	76.9	76.4
FI	2.8	82.2	82.3	82.6	83.4	83.6	83.9	84.2	84.5	84.7	84.9	85.0
SE	-0.3	87.3	87.5	87.2	87.2	87.3	87.2	87.1	87.1	87.3	87.2	87.1
NO	-0.9	82.1	82.0	81.5	81.4	81.6	81.5	81.4	81.3	81.3	81.3	81.2
EA	2.5	78.4	79.3	79.7	80.2	80.5	80.7	80.8	80.9	80.9	81.0	81.0
EU	2.5	78.2	79.3	79.5	79.8	80.0	80.2	80.4	80.6	80.7	80.7	80.7

Table III.1.29: Participation rate (20-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.2	64.2	65.2	65.0	64.9	65.0	65.1	64.8	64.5	64.3	64.3	64.4
BG	-0.2	66.7	66.6	66.1	65.3	64.3	63.6	63.3	63.6	64.5	66.1	66.5
CZ	0.1	70.2	70.2	70.6	70.1	68.0	66.5	66.6	67.6	68.4	69.7	70.3
DK	4.2	71.4	71.7	71.2	71.2	71.8	72.9	73.9	74.6	74.6	74.8	75.5
DE	-0.5	73.1	71.4	70.7	70.2	71.4	72.9	72.6	72.0	71.9	72.3	72.6
EE	4.2	75.5	73.9	73.9	74.7	75.1	75.2	75.4	75.5	76.3	78.4	79.7
IE	-2.2	71.1	71.1	70.8	70.5	69.9	69.1	68.7	69.1	69.6	69.4	69.0
EL	7.9	63.5	64.7	65.1	65.6	65.8	66.6	67.5	69.2	70.6	71.1	71.4
ES	1.7	68.6	70.3	70.5	70.1	69.4	68.6	68.8	70.0	70.6	70.6	70.3
FR	2.0	66.2	66.4	66.5	66.7	67.2	67.9	68.2	68.0	68.3	68.5	68.2
HR	0.2	60.8	60.8	61.1	61.8	61.9	61.5	61.0	60.9	61.0	61.0	61.0
IT	5.6	60.7	62.5	62.5	62.0	62.2	62.9	64.3	65.4	65.8	66.0	66.3
CY	3.2	72.1	73.0	73.6	74.4	75.2	75.3	75.1	74.8	74.6	74.7	75.4
LV	-2.9	73.6	70.3	68.8	68.5	68.4	68.1	67.6	66.9	67.7	69.7	70.7
LT	-2.4	74.2	71.0	69.5	69.4	69.9	70.4	70.6	69.8	69.4	70.4	71.8
LU	-4.5	68.7	68.5	67.4	66.7	66.2	65.6	64.8	64.2	64.0	64.2	64.2
HU	4.9	66.8	70.5	73.2	73.5	71.6	70.1	70.3	71.4	71.1	71.1	71.7
MT	2.0	68.8	72.5	74.3	75.4	75.2	73.7	72.0	70.3	69.4	69.8	70.8
NL	2.2	71.8	72.2	71.6	71.2	71.7	73.0	73.8	73.8	73.6	73.7	74.0
AT	-0.7	70.6	69.3	68.1	68.3	69.3	70.2	70.0	69.4	69.3	69.5	69.9
PL	-1.9	65.7	65.7	66.0	66.2	64.8	62.9	61.6	61.4	62.2	63.3	63.9
PT	2.1	70.9	70.4	70.1	69.9	69.5	69.3	70.2	71.7	72.7	72.9	73.0
RO	0.5	64.7	65.0	65.1	64.4	62.6	62.7	62.8	63.7	64.3	65.3	65.1
SI	1.5	68.4	68.8	68.9	68.7	68.4	67.8	67.5	68.2	69.2	69.9	69.9
SK	-4.4	68.2	66.5	66.1	65.2	63.2	61.1	60.0	60.2	61.3	62.9	63.8
FI	4.0	69.2	69.5	69.8	70.8	71.9	72.3	71.8	71.8	72.0	72.4	73.2
SE	-0.6	76.2	77.1	76.6	76.2	76.1	76.3	76.2	75.4	74.8	75.2	75.6
NO	-3.1	73.1	72.9	72.2	71.5	71.2	71.3	71.4	70.8	70.2	70.0	70.0
EA	1.9	68.0	68.2	68.0	67.7	68.1	68.7	69.0	69.2	69.5	69.8	69.9
EU	1.7	67.8	68.1	68.0	67.8	67.8	68.1	68.3	68.6	68.9	69.3	69.5

Table III.1.30: Participation rate (20-24)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.0	49.7	52.6	52.4	52.9	53.0	52.7	52.7	52.6	52.6	52.7	52.8
BG	0.2	44.2	44.1	43.8	44.3	44.5	44.5	44.4	44.2	44.2	44.3	44.4
CZ	0.9	52.5	53.1	52.9	53.4	53.3	53.7	53.6	53.4	53.3	53.4	53.5
DK	2.4	72.3	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7
DE	0.2	71.1	71.4	71.3	71.2	71.3	71.3	71.3	71.3	71.3	71.3	71.3
EE	2.0	72.3	73.8	73.8	74.3	74.4	74.3	74.2	74.1	74.0	74.1	74.3
IE	0.6	72.3	72.8	72.6	73.1	73.0	72.9	72.8	72.8	72.8	72.9	72.9
EL	3.5	42.4	45.7	45.4	46.1	46.1	45.9	45.7	45.7	45.7	45.7	45.8
ES	0.7	55.5	55.8	56.0	56.3	56.6	56.2	56.1	56.0	56.0	56.1	56.2
FR	1.0	62.6	63.5	63.4	63.6	63.5	63.6	63.5	63.5	63.5	63.6	63.6
HR	3.1	52.4	55.6	55.3	55.6	55.5	55.5	55.5	55.5	55.5	55.5	55.5
IT	0.6	44.7	45.3	45.3	45.5	45.5	45.3	45.3	45.3	45.3	45.3	45.4
CY	4.4	62.5	67.4	66.8	67.3	67.0	66.9	67.0	67.0	67.0	66.9	66.9
LV	3.8	66.2	69.4	69.6	68.9	70.4	70.1	70.0	69.7	69.7	69.8	69.9
LT	2.6	63.1	65.9	64.6	65.2	65.8	65.7	65.9	65.7	65.5	65.5	65.7
LU	2.6	51.9	54.7	54.4	54.5	54.6	54.5	54.6	54.5	54.4	54.5	54.5
HU	3.0	54.4	57.4	57.5	57.2	57.5	57.4	57.4	57.4	57.3	57.4	57.4
MT	1.5	77.7	79.6	79.2	79.3	79.4	79.3	79.4	79.4	79.3	79.2	79.2
NL	2.8	75.7	78.3	78.5	78.6	78.5	78.5	78.5	78.5	78.5	78.5	78.5
AT	1.0	74.0	75.1	75.1	75.0	75.1	75.1	75.1	75.1	75.0	75.0	75.0
PL	0.3	61.3	61.5	60.9	61.7	61.7	61.8	61.7	61.5	61.4	61.5	61.6
PT	0.5	58.3	58.9	58.8	59.3	58.6	58.8	58.7	58.7	58.8	58.8	58.8
RO	1.6	48.4	49.6	49.6	49.5	49.8	50.0	49.9	49.8	49.8	49.9	49.9
SI	0.3	59.3	59.4	58.8	59.6	59.7	59.7	59.5	59.3	59.3	59.4	59.5
SK	1.9	50.4	52.2	51.9	52.4	52.3	52.6	52.5	52.3	52.2	52.2	52.3
FI	3.9	70.7	74.5	74.5	74.6	74.7	74.6	74.6	74.6	74.6	74.6	74.6
SE	3.6	71.5	75.1	75.1	75.2	75.2	75.2	75.2	75.2	75.2	75.2	75.2
NO	1.6	70.7	72.3	72.2	72.4	72.4	72.3	72.3	72.3	72.3	72.3	72.3
EA	1.5	61.0	61.6	61.4	61.9	62.4	62.4	62.4	62.2	62.2	62.3	62.4
EU	1.7	60.3	61.1	60.9	61.4	61.8	61.9	61.9	61.8	61.8	61.9	62.0

Table III.1.31: Participation rate (25-54)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.5	84.8	84.4	83.8	83.4	83.4	83.3	83.3	83.3	83.2	83.2	83.3
BG	0.6	85.8	86.4	86.2	86.1	86.1	86.2	86.5	86.6	86.6	86.5	86.4
CZ	0.4	89.1	89.7	89.8	89.5	89.3	89.2	89.3	89.5	89.6	89.5	89.4
DK	-0.7	86.5	86.2	85.9	85.8	85.7	85.7	85.7	85.7	85.7	85.7	85.7
DE	0.8	88.0	88.4	88.6	88.7	88.8	88.8	88.8	88.8	88.9	88.9	88.8
EE	2.4	87.8	88.7	89.4	89.6	89.8	90.1	90.2	90.3	90.2	90.2	90.2
IE	2.5	83.5	84.5	85.0	85.4	85.7	86.0	86.0	86.0	86.0	86.0	86.0
EL	2.8	85.4	86.6	87.0	87.5	88.0	88.3	88.4	88.3	88.2	88.2	88.2
ES	-0.1	87.0	87.4	87.4	87.1	87.0	87.0	87.0	86.9	86.9	86.9	86.9
FR	-0.3	87.4	87.2	87.1	86.9	87.0	87.2	87.2	87.2	87.1	87.1	87.2
HR	1.4	83.6	84.5	84.8	84.8	85.0	85.0	85.0	85.1	85.0	85.0	85.0
IT	0.3	78.2	78.4	78.3	78.2	78.4	78.7	78.7	78.6	78.5	78.5	78.5
CY	2.2	88.3	89.5	89.7	89.8	90.1	90.3	90.3	90.4	90.4	90.5	90.5
LV	1.7	88.4	88.9	89.1	89.3	89.5	90.2	90.4	90.3	90.2	90.2	90.1
LT	3.7	90.1	91.6	92.6	93.1	93.3	93.6	93.8	93.9	93.9	93.9	93.8
LU	3.7	88.5	90.4	91.3	91.7	91.9	92.2	92.3	92.3	92.3	92.2	92.2
HU	2.9	87.1	88.9	89.4	89.7	90.0	90.0	90.0	90.0	90.0	90.0	90.0
MT	5.4	87.5	90.4	91.6	92.3	92.7	92.9	93.0	93.0	93.0	93.0	93.0
NL	0.1	87.4	87.4	87.4	87.3	87.3	87.4	87.4	87.5	87.5	87.5	87.5
AT	1.5	89.0	89.7	90.0	90.2	90.3	90.5	90.6	90.6	90.6	90.6	90.6
PL	0.8	85.3	85.6	85.2	85.1	85.5	86.0	86.3	86.4	86.2	86.2	86.1
PT	2.1	90.3	91.2	91.7	91.9	92.2	92.3	92.3	92.3	92.3	92.3	92.4
RO	2.7	84.1	85.3	85.7	86.0	86.4	86.7	87.0	87.0	86.9	86.9	86.8
SI	1.1	92.4	92.9	93.0	93.0	93.2	93.6	93.7	93.7	93.6	93.5	93.5
SK	-0.4	86.6	86.5	86.1	85.9	86.0	86.0	86.1	86.3	86.4	86.3	86.2
FI	0.2	87.6	87.9	87.8	87.8	87.7	87.9	87.9	88.0	88.0	87.9	87.8
SE	0.5	91.2	91.7	91.7	91.7	91.7	91.7	91.8	91.8	91.8	91.8	91.7
NO	0.0	86.3	86.2	86.1	86.2	86.2	86.4	86.3	86.3	86.3	86.3	86.3
EA	0.6	85.8	86.1	86.2	86.2	86.2	86.4	86.4	86.4	86.4	86.4	86.4
EU	0.8	85.9	86.3	86.4	86.4	86.5	86.6	86.7	86.7	86.7	86.7	86.7

Table III.1.32: Participation rate (55-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	9.4	54.6	64.0	65.9	65.9	65.0	64.5	64.3	63.8	64.0	64.4	64.0
BG	0.6	67.1	64.5	66.5	66.8	66.5	67.0	65.8	66.1	67.8	68.3	67.7
CZ	2.3	68.4	65.8	71.0	71.5	69.0	70.1	69.8	68.9	70.8	72.0	70.7
DK	7.3	74.4	74.5	74.4	76.2	77.0	78.1	79.2	80.0	80.9	81.4	81.7
DE	1.4	74.6	73.5	73.9	75.2	75.7	75.6	75.3	75.6	75.6	75.9	76.0
EE	11.9	75.7	75.0	76.7	78.4	80.5	81.3	83.0	85.0	86.5	87.3	87.6
IE	3.6	64.1	64.6	65.5	66.6	66.8	66.0	67.0	68.0	67.9	68.0	67.7
EL	30.4	50.4	59.6	65.8	68.9	71.2	73.6	77.2	79.0	79.8	80.4	80.8
ES	16.6	61.7	72.3	77.1	79.0	79.0	78.7	78.5	78.4	78.5	78.5	78.3
FR	10.1	56.9	61.0	62.9	63.6	65.8	66.4	66.4	67.1	67.3	67.2	67.0
HR	8.6	45.8	48.3	50.3	53.3	54.2	53.8	54.2	54.7	53.8	54.8	54.5
IT	18.4	57.5	66.7	69.4	71.1	72.2	73.0	73.3	73.8	74.4	75.1	75.9
CY	14.8	65.3	64.8	68.6	70.6	72.0	73.0	75.0	76.6	77.7	79.0	80.1
LV	-3.1	72.5	67.9	68.3	68.3	68.8	68.3	67.5	67.6	69.4	69.8	69.4
LT	0.7	73.8	67.4	70.2	70.9	72.4	73.4	73.1	72.7	73.4	74.3	74.5
LU	0.0	45.2	44.0	42.9	44.5	45.1	45.1	44.9	44.7	45.0	45.7	45.2
HU	25.5	58.2	76.7	81.5	82.5	81.7	82.7	83.5	83.4	83.6	83.8	83.7
MT	16.8	52.3	58.3	65.1	67.2	68.1	69.1	69.1	68.0	68.1	69.1	69.2
NL	6.5	72.0	72.3	72.4	72.5	74.1	74.9	75.6	76.5	77.1	77.7	78.5
AT	7.4	56.5	56.4	57.6	61.6	64.1	63.4	63.5	63.1	63.4	64.0	63.9
PL	4.0	51.1	54.1	56.3	56.3	54.8	53.5	53.6	53.7	54.6	56.1	55.1
PT	14.0	64.5	66.9	69.9	71.3	71.6	72.4	74.5	76.0	76.9	77.6	78.4
RO	8.2	49.0	56.3	55.2	56.0	54.9	56.3	55.2	56.9	57.6	57.8	57.2
SI	14.3	50.3	60.5	63.6	64.5	63.7	62.9	62.9	63.8	64.1	65.0	64.6
SK	-0.9	60.5	59.6	62.4	61.4	58.5	58.0	57.6	56.9	58.3	60.0	59.6
FI	9.9	71.5	69.3	69.6	73.3	74.8	75.9	77.7	78.6	79.6	80.8	81.4
SE	-2.8	81.7	80.1	79.4	79.0	78.9	79.1	78.9	78.0	78.9	79.2	78.9
NO	-3.6	73.9	73.2	71.5	70.1	70.0	70.2	70.3	70.3	70.2	70.4	70.3
EA	10.0	63.7	67.8	69.9	71.2	72.1	72.3	72.5	72.9	73.3	73.6	73.7
EU	9.6	62.3	66.7	68.6	69.6	69.8	70.0	70.3	70.9	71.6	72.0	71.9

Table III.1.33: Participation rate (65-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.5	4.3	5.9	10.5	10.9	11.0	11.1	10.9	11.0	10.7	10.6	10.8
BG	4.9	11.0	14.7	14.9	14.2	15.3	15.8	15.4	15.7	14.9	15.0	15.9
CZ	1.6	10.9	10.7	10.9	11.7	13.6	12.7	11.8	12.3	11.9	11.6	12.5
DK	23.9	14.6	15.0	18.1	19.6	22.6	25.0	27.4	31.6	34.4	36.0	38.4
DE	4.6	13.9	15.7	18.3	18.0	17.1	18.7	19.0	19.1	18.3	18.6	18.5
EE	12.7	28.1	21.1	20.3	21.4	23.6	25.8	28.4	31.5	32.9	36.3	40.9
IE	-1.0	16.7	15.9	15.8	15.6	15.9	16.0	15.4	14.9	15.6	15.9	15.7
EL	17.7	8.0	8.8	10.1	13.4	14.8	16.2	16.9	18.7	21.7	23.9	25.7
ES	16.7	4.5	12.0	17.5	19.4	20.2	20.1	19.0	19.4	20.1	20.6	21.2
FR	9.0	5.5	6.8	9.1	10.5	11.8	13.3	14.4	14.2	14.0	14.5	14.6
HR	3.1	5.0	5.9	6.6	7.2	7.8	8.5	8.4	8.2	8.3	8.4	8.1
IT	23.5	9.1	14.3	18.8	20.0	21.0	21.4	24.1	27.3	29.5	31.0	32.6
CY	11.1	13.8	12.9	13.5	15.2	17.2	19.5	21.1	22.0	23.4	24.0	24.9
LV	-7.1	20.7	15.3	13.8	13.3	13.7	13.3	13.7	13.4	12.5	12.4	13.6
LT	-6.7	17.5	11.0	9.9	10.1	10.4	10.4	11.1	11.3	10.9	10.5	10.7
LU	1.0	2.9	3.7	4.1	3.9	3.8	3.9	3.9	3.9	3.9	3.9	3.9
HU	4.5	7.1	6.2	9.6	12.2	12.6	11.8	10.6	11.7	11.8	11.2	11.5
MT	-1.0	8.7	4.8	5.7	7.1	8.1	8.2	8.2	8.4	8.0	7.6	7.7
NL	13.5	14.4	18.2	19.4	19.2	18.5	19.9	22.6	24.4	25.6	26.8	27.9
AT	3.2	7.1	8.8	9.3	9.1	9.5	10.1	10.5	10.3	10.3	10.1	10.3
PL	4.1	8.5	10.9	11.9	12.5	13.3	13.2	12.8	12.4	12.3	12.3	12.6
PT	7.0	16.1	14.6	15.4	16.8	18.8	19.3	18.9	19.6	21.1	22.4	23.1
RO	4.5	13.4	14.2	15.5	17.8	17.4	17.4	16.9	17.4	17.0	17.6	17.9
SI	4.8	4.6	5.5	8.0	9.2	9.5	9.7	9.3	9.0	9.1	9.3	9.4
SK	-1.2	7.0	5.8	5.6	6.0	6.5	6.3	5.9	5.8	5.6	5.6	5.8
FI	13.3	11.5	11.0	11.5	11.9	13.3	15.6	16.9	18.5	20.7	22.1	24.8
SE	-0.4	17.8	17.4	17.8	17.9	17.5	17.3	17.5	17.8	17.3	16.8	17.4
NO	-0.8	19.0	19.6	19.9	19.5	18.5	18.0	18.6	18.8	18.5	18.3	18.2
EA	11.5	9.5	12.3	15.4	16.4	16.9	17.7	18.3	19.0	19.5	20.3	21.0
EU	10.1	9.8	12.2	14.9	16.0	16.5	17.0	17.4	18.0	18.4	19.1	19.9

Table III.1.34: Participation rate (20-64) - Women

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.0	70.0	72.7	72.7	72.8	72.6	72.4	72.2	72.1	72.1	72.1	71.9
BG	-1.1	73.7	72.8	72.5	72.1	71.9	72.1	72.0	72.7	73.2	73.0	72.6
CZ	0.4	74.5	74.6	75.3	75.0	73.7	74.1	74.3	74.8	75.6	75.5	74.9
DK	1.1	78.7	78.4	78.0	78.6	78.8	78.9	79.1	79.3	79.6	79.7	79.8
DE	2.8	78.6	79.0	79.9	80.8	81.0	81.0	81.0	81.2	81.3	81.4	81.4
EE	4.3	80.3	80.7	81.3	81.8	82.3	82.7	83.3	84.2	84.5	84.6	84.6
IE	2.7	72.1	73.2	73.9	74.4	74.5	74.6	75.0	75.2	75.1	75.0	74.8
EL	13.3	65.4	69.3	71.6	73.5	75.2	76.8	78.1	78.5	78.5	78.6	78.7
ES	5.1	73.8	76.9	78.3	79.0	79.3	79.4	79.3	79.1	79.0	78.9	78.9
FR	3.1	74.1	75.0	75.5	76.1	76.9	77.1	77.3	77.6	77.5	77.4	77.3
HR	4.5	66.1	68.4	69.4	70.0	70.2	70.3	70.6	70.7	70.5	70.8	70.6
IT	6.8	60.5	63.4	64.6	65.5	66.3	66.7	66.9	67.0	67.1	67.1	67.3
CY	6.6	75.7	78.3	79.7	80.4	80.6	80.6	80.9	81.3	81.6	82.0	82.2
LV	0.9	80.4	79.7	79.7	79.6	79.8	80.0	80.3	81.2	81.9	81.6	81.2
LT	2.6	82.1	81.3	82.7	83.0	83.6	83.8	83.8	84.0	84.6	84.9	84.7
LU	4.8	71.8	74.5	75.7	76.7	76.8	76.6	76.4	76.7	77.0	76.9	76.6
HU	10.1	70.0	77.8	79.3	79.7	79.4	79.9	80.1	80.2	80.2	80.2	80.1
MT	13.0	68.8	75.5	79.1	80.6	81.1	81.3	81.1	81.0	81.5	81.9	81.8
NL	4.0	77.8	78.5	79.0	79.7	80.5	80.9	81.1	81.2	81.3	81.5	81.8
AT	5.4	75.6	75.9	77.5	79.9	80.8	80.5	80.6	80.6	80.9	81.1	81.0
PL	0.6	68.0	70.1	69.6	68.5	67.2	66.9	67.6	68.5	69.3	69.3	68.5
PT	6.3	78.3	79.6	80.7	81.3	81.8	82.7	83.5	83.8	84.0	84.2	84.5
RO	2.5	63.3	65.3	64.1	64.0	63.6	64.5	65.0	66.0	66.2	66.0	65.8
SI	4.4	76.6	79.8	80.0	79.9	79.8	80.4	81.0	81.7	81.6	81.4	81.0
SK	-2.7	71.3	71.6	71.0	69.4	67.7	67.3	67.3	67.9	68.9	69.1	68.6
FI	3.1	80.1	80.3	80.5	81.4	81.8	82.2	82.7	83.0	83.2	83.2	83.2
SE	0.4	84.8	85.0	85.0	85.0	85.2	85.2	85.1	85.0	85.4	85.3	85.1
NO	0.3	79.1	79.3	78.9	79.0	79.3	79.5	79.5	79.5	79.5	79.5	79.4
EA	4.6	72.8	74.4	75.4	76.2	76.7	77.0	77.2	77.3	77.4	77.4	77.4
EU	4.4	72.2	74.0	74.7	75.2	75.6	75.9	76.1	76.4	76.6	76.7	76.6

Table III.1.35: Participation rate (20-74) - Women

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.3	59.7	61.5	61.6	61.5	61.8	61.7	61.4	61.0	60.8	60.9	61.0
BG	1.0	60.7	60.8	60.7	59.9	59.2	58.6	58.4	58.7	59.6	61.3	61.8
CZ	2.2	62.4	63.1	64.2	64.0	62.0	60.5	60.7	61.9	62.8	64.1	64.6
DK	4.8	66.8	67.6	67.1	67.1	67.8	68.8	69.9	70.6	70.6	70.9	71.6
DE	1.7	68.1	67.2	66.8	66.6	68.0	69.5	69.3	68.8	68.8	69.4	69.8
EE	5.7	71.0	69.4	69.5	70.3	70.9	71.2	71.7	72.2	73.3	75.5	76.7
IE	-1.3	64.5	64.9	64.9	64.9	64.3	63.3	62.8	63.2	63.8	63.7	63.1
EL	12.6	55.5	57.8	59.0	60.1	60.9	62.1	63.4	65.3	67.0	67.8	68.1
ES	4.0	63.5	66.3	67.1	67.0	66.6	66.0	66.0	67.1	67.7	67.8	67.5
FR	3.3	62.3	62.8	63.2	63.7	64.5	65.2	65.5	65.4	65.6	65.9	65.6
HR	2.3	55.2	55.6	56.2	57.1	57.5	57.4	57.0	57.1	57.5	57.5	57.6
IT	8.6	51.3	54.2	54.9	54.9	55.3	56.1	57.5	58.6	59.2	59.5	59.9
CY	4.7	66.5	68.8	69.9	71.0	71.6	71.6	71.3	70.8	70.5	70.5	71.2
LV	-0.4	69.7	66.7	65.4	65.2	65.4	65.4	65.4	65.0	66.0	68.2	69.3
LT	-1.1	71.0	66.6	65.3	65.3	66.1	67.0	67.7	67.3	67.1	68.2	69.8
LU	-0.6	63.9	65.4	65.4	65.3	65.0	64.5	63.6	63.0	62.9	63.2	63.3
HU	8.5	58.4	63.7	67.1	67.8	66.0	64.6	65.0	66.4	66.2	66.4	67.0
MT	8.8	58.4	64.3	67.6	69.7	70.2	69.2	67.8	66.3	65.5	66.1	67.2
NL	4.0	66.7	67.7	67.5	67.4	68.1	69.5	70.5	70.5	70.3	70.4	70.8
AT	2.1	65.6	64.7	64.4	65.2	66.6	67.6	67.5	66.9	66.9	67.2	67.7
PL	-0.9	57.7	57.9	58.4	58.6	57.0	55.0	53.9	53.9	55.1	56.3	56.8
PT	4.8	66.7	67.5	67.6	67.6	67.4	67.4	68.4	70.1	71.2	71.4	71.5
RO	1.1	54.6	54.7	54.9	54.2	52.4	52.5	52.8	53.9	54.8	55.8	55.8
SI	3.9	64.5	65.5	65.7	65.7	65.7	65.5	65.5	66.4	67.6	68.5	68.4
SK	-4.2	61.1	59.7	59.2	58.3	56.1	54.0	52.9	53.2	54.3	55.9	56.9
FI	4.9	66.2	66.5	66.9	68.0	69.3	69.9	69.6	69.7	69.9	70.3	71.1
SE	0.1	73.2	73.9	73.7	73.4	73.3	73.7	73.6	72.9	72.4	72.8	73.4
NO	-2.0	69.6	69.7	69.1	68.6	68.4	68.7	69.0	68.5	67.9	67.7	67.6
EA	4.2	62.3	63.3	63.5	63.6	64.3	64.9	65.3	65.6	66.0	66.3	66.5
EU	3.9	61.7	62.6	63.0	63.1	63.3	63.7	64.0	64.4	64.8	65.4	65.6

Table III.1.36: Participation rate (20-24) - Women

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.1	46.9	50.8	50.7	51.1	51.2	51.0	50.9	50.9	50.8	50.9	51.0
BG	-0.1	38.0	37.6	37.3	37.8	38.0	38.0	37.9	37.7	37.7	37.8	37.9
CZ	1.4	44.9	46.0	45.8	46.3	46.2	46.5	46.4	46.2	46.1	46.2	46.3
DK	2.0	70.7	72.8	72.8	72.8	72.8	72.8	72.8	72.8	72.8	72.8	72.8
DE	0.5	68.3	68.9	68.8	68.7	68.9	68.9	68.9	68.9	68.8	68.8	68.8
EE	1.4	67.8	68.7	68.7	69.3	69.3	69.3	69.2	69.0	69.0	69.1	69.2
IE	0.6	69.6	70.2	69.9	70.5	70.4	70.3	70.2	70.1	70.1	70.2	70.2
EL	1.5	40.8	42.1	41.7	42.6	42.6	42.4	42.2	42.1	42.1	42.3	42.3
ES	0.5	52.1	52.1	52.4	52.7	52.9	52.5	52.4	52.3	52.4	52.4	52.5
FR	1.5	58.1	59.5	59.4	59.7	59.6	59.6	59.5	59.5	59.5	59.6	59.6
HR	2.7	44.4	47.1	46.8	47.2	47.0	47.1	47.1	47.1	47.0	47.1	47.1
IT	0.6	38.5	39.0	39.0	39.2	39.2	39.0	39.0	39.0	39.0	39.1	39.1
CY	2.5	64.0	67.1	66.4	67.2	66.6	66.5	66.6	66.7	66.6	66.6	66.5
LV	4.4	61.4	65.4	65.6	64.8	66.2	66.0	65.9	65.6	65.6	65.7	65.8
LT	2.0	60.1	62.2	60.9	61.5	62.2	62.1	62.3	62.1	61.8	61.9	62.0
LU	4.2	46.5	51.1	50.6	50.8	50.9	50.7	50.8	50.8	50.7	50.7	50.7
HU	3.4	46.4	49.9	50.0	49.6	49.9	49.8	49.9	49.9	49.8	49.8	49.8
MT	0.3	77.3	78.0	77.4	77.7	77.8	77.6	77.8	77.7	77.6	77.5	77.6
NL	3.1	75.3	78.3	78.3	78.4	78.4	78.3	78.3	78.4	78.4	78.4	78.4
AT	0.0	71.6	71.6	71.6	71.5	71.6	71.6	71.6	71.6	71.6	71.6	71.6
PL	0.9	54.3	55.1	54.4	55.2	55.2	55.3	55.2	55.0	54.9	55.0	55.2
PT	0.6	55.3	56.0	55.9	56.6	55.8	55.9	55.8	55.9	55.9	56.0	55.9
RO	1.8	38.5	39.9	39.9	39.8	40.2	40.3	40.2	40.1	40.1	40.2	40.3
SI	0.4	53.5	53.7	53.3	54.0	54.1	54.0	53.9	53.7	53.7	53.8	53.9
SK	2.9	37.4	40.1	39.9	40.4	40.2	40.5	40.4	40.3	40.2	40.2	40.3
FI	4.7	67.9	72.6	72.6	72.7	72.8	72.6	72.6	72.6	72.6	72.6	72.6
SE	5.2	68.7	73.9	73.9	74.0	74.0	74.0	74.0	74.0	74.0	74.0	74.0
NO	1.7	69.1	70.8	70.7	70.9	71.0	70.8	70.8	70.8	70.8	70.8	70.8
EA	1.7	57.2	58.0	57.8	58.3	58.9	58.9	58.9	58.7	58.6	58.7	58.9
EU	2.2	55.8	56.9	56.6	57.2	57.6	57.9	57.9	57.8	57.7	57.8	58.0

Table III.1.37: Participation rate (25-54) - Women

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.4	80.3	80.3	79.7	79.2	79.1	79.0	79.0	78.9	78.9	78.9	78.9
BG	-0.4	81.4	82.0	81.6	81.1	80.8	80.7	81.0	81.2	81.3	81.1	81.0
CZ	0.5	81.8	82.8	83.2	82.7	82.1	81.8	81.9	82.3	82.7	82.6	82.4
DK	-1.3	82.8	82.2	81.7	81.5	81.4	81.4	81.4	81.4	81.4	81.5	81.5
DE	2.3	83.3	84.1	84.8	85.2	85.4	85.4	85.4	85.4	85.5	85.5	85.5
EE	3.5	82.7	84.3	85.6	85.8	85.7	86.0	86.2	86.4	86.5	86.4	86.3
IE	3.3	76.7	78.4	79.1	79.4	79.5	79.9	80.0	80.0	80.0	80.0	80.0
EL	7.0	77.8	80.5	82.0	83.3	84.3	84.8	84.9	84.9	84.8	84.8	84.8
ES	0.9	82.3	83.5	83.9	83.5	83.4	83.2	83.3	83.3	83.2	83.2	83.2
FR	1.4	83.1	83.6	83.8	84.0	84.3	84.6	84.6	84.6	84.6	84.6	84.6
HR	1.5	80.3	80.7	81.4	81.4	81.6	81.7	81.8	81.8	81.7	81.8	81.8
IT	2.1	67.8	69.0	69.3	69.4	69.7	70.1	70.1	70.1	70.0	69.9	69.9
CY	3.3	83.5	85.5	85.8	86.1	86.4	86.6	86.6	86.7	86.7	86.7	86.7
LV	3.1	85.5	86.6	86.9	87.3	87.9	88.6	88.8	88.8	88.7	88.6	88.6
LT	3.1	89.0	90.1	90.9	91.3	91.6	91.8	92.0	92.1	92.2	92.2	92.1
LU	7.9	84.0	88.0	90.1	90.9	91.3	91.8	91.9	91.9	91.9	91.8	91.8
HU	4.0	80.5	83.0	83.7	84.1	84.4	84.6	84.5	84.5	84.6	84.5	84.5
MT	11.8	77.1	83.0	85.5	87.4	88.3	88.8	88.9	88.9	88.9	88.9	88.9
NL	1.8	83.3	83.9	84.3	84.6	84.9	85.0	85.0	85.0	85.1	85.1	85.1
AT	2.4	85.7	86.6	87.2	87.6	87.8	87.9	88.0	88.0	88.1	88.1	88.1
PL	1.4	79.0	79.2	79.0	78.9	79.3	80.0	80.5	80.6	80.5	80.5	80.4
PT	3.9	88.0	89.6	90.5	91.1	91.5	91.8	91.8	91.8	91.8	91.9	91.9
RO	2.4	74.6	75.5	75.6	75.9	76.2	76.7	77.1	77.2	77.1	77.1	77.0
SI	1.4	90.4	90.8	90.9	91.0	91.3	91.9	92.0	92.0	91.9	91.8	91.8
SK	-1.3	79.6	79.7	79.3	78.9	78.4	78.0	77.9	78.2	78.5	78.6	78.3
FI	0.7	84.8	85.0	85.2	85.3	85.4	85.5	85.7	85.8	85.8	85.6	85.5
SE	1.3	88.7	89.4	89.7	89.7	89.9	90.0	90.0	90.1	90.1	90.1	90.0
NO	1.7	83.5	83.8	84.0	84.6	84.9	85.2	85.2	85.2	85.2	85.2	85.2
EA	2.2	80.3	81.3	81.8	82.0	82.1	82.3	82.4	82.4	82.4	82.4	82.5
EU	2.2	80.2	81.1	81.5	81.7	81.9	82.2	82.3	82.3	82.4	82.4	82.4

Table III.1.38: Participation rate (55-64) - Women

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	12.0	49.2	60.0	62.5	63.3	62.7	62.0	61.4	60.9	61.1	61.5	61.2
BG	2.2	62.4	58.6	62.3	63.5	63.7	64.2	62.7	62.8	64.7	65.2	64.6
CZ	5.7	60.5	58.3	65.7	67.1	64.4	65.4	65.2	64.3	66.4	67.8	66.3
DK	7.8	70.2	70.3	70.0	72.5	73.2	74.0	75.2	76.3	77.1	77.7	78.0
DE	4.9	70.0	70.0	70.9	72.7	73.9	74.0	73.9	74.3	74.4	74.7	74.9
EE	8.9	77.6	74.7	74.8	76.3	78.5	79.1	81.0	83.8	85.3	86.2	86.5
IE	6.6	55.9	56.4	58.9	61.3	62.1	60.7	61.3	62.7	62.7	62.8	62.5
EL	39.2	38.0	50.1	57.9	62.3	65.9	69.0	72.9	75.3	76.2	76.8	77.3
ES	22.8	54.5	67.9	73.9	77.2	78.2	78.1	77.8	77.4	77.5	77.5	77.3
FR	10.2	54.6	57.8	59.7	60.8	62.9	63.5	63.9	64.8	65.1	65.0	64.8
HR	12.8	37.6	43.3	45.5	48.5	49.8	49.4	49.8	50.5	49.8	50.8	50.4
IT	23.3	47.0	58.0	62.3	64.9	66.3	67.0	67.8	68.8	69.3	69.8	70.2
CY	21.3	53.9	55.1	61.0	63.9	65.5	67.0	69.6	71.2	72.4	73.9	75.2
LV	-3.9	72.2	66.9	67.5	66.8	66.4	66.2	66.0	66.3	68.3	68.7	68.2
LT	1.0	72.7	66.3	70.6	71.1	71.6	72.4	72.0	71.5	72.4	73.4	73.7
LU	5.2	38.4	37.9	37.9	41.5	42.8	42.9	43.1	43.1	43.4	44.1	43.6
HU	33.2	47.4	72.5	78.5	79.2	77.8	78.9	80.2	80.3	80.5	80.8	80.6
MT	27.1	36.4	43.8	54.2	57.8	60.1	62.2	62.9	62.1	62.4	63.4	63.5
NL	10.5	63.1	63.9	64.4	65.1	67.0	69.0	70.8	71.6	72.0	72.6	73.6
AT	17.2	47.4	49.6	53.5	60.8	64.3	63.8	63.9	63.6	64.0	64.6	64.6
PL	3.7	40.3	44.6	46.3	45.8	43.7	41.8	41.8	42.1	43.3	45.2	44.0
PT	16.9	58.7	61.5	65.4	67.0	67.7	68.8	71.5	73.3	74.3	75.0	75.6
RO	9.0	37.2	45.7	45.4	45.9	44.3	45.0	43.9	45.7	46.6	46.8	46.3
SI	17.6	45.6	59.3	62.0	62.6	61.8	60.9	61.0	62.3	62.8	63.7	63.2
SK	-3.9	57.7	56.6	58.2	56.5	53.2	52.5	51.8	50.8	52.3	54.2	53.8
FI	9.2	72.1	70.0	70.0	73.3	74.6	76.2	78.4	79.3	80.0	80.9	81.3
SE	-3.3	79.1	76.0	76.1	75.7	75.3	75.7	75.7	74.7	75.8	76.2	75.9
NO	-2.9	69.4	68.6	66.8	64.7	64.3	65.1	66.0	66.5	66.4	66.6	66.5
EA	13.6	57.5	62.7	65.5	67.7	69.0	69.4	69.8	70.4	70.8	71.0	71.1
EU	12.9	55.4	61.0	63.6	65.1	65.6	65.9	66.5	67.3	68.1	68.5	68.4

Table III.1.39: Participation rate (65-74) - Women

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.5	2.9	5.2	9.7	10.2	10.5	10.7	10.6	10.6	10.2	10.1	10.3
BG	6.5	7.8	12.8	12.6	11.2	12.9	14.2	13.9	14.2	13.4	13.5	14.3
CZ	3.4	8.4	9.3	9.1	10.2	12.6	11.9	10.9	11.4	11.1	10.9	11.7
DK	27.6	7.4	12.2	15.0	16.3	20.0	22.2	24.0	27.6	30.3	32.1	35.0
DE	6.0	10.5	13.6	15.9	15.6	14.8	16.5	16.9	17.0	16.3	16.5	16.5
EE	12.6	27.5	22.0	20.5	20.3	22.0	24.2	26.5	29.5	31.6	35.5	40.1
IE	-0.3	10.0	9.2	9.0	9.0	9.6	10.0	9.5	8.9	9.4	9.8	9.6
EL	19.4	5.2	6.5	8.0	11.4	12.8	14.7	15.8	17.6	20.5	22.8	24.6
ES	17.2	3.5	10.6	16.2	18.3	19.4	19.7	18.8	19.2	19.8	20.3	20.7
FR	9.7	4.3	6.1	8.1	9.6	11.2	12.7	13.7	13.5	13.3	13.9	14.0
HR	4.0	3.8	4.7	5.8	6.8	7.3	7.9	8.0	7.7	7.9	8.0	7.8
IT	25.8	5.7	11.8	16.5	18.4	20.1	20.9	23.1	26.0	28.0	29.5	31.5
CY	14.0	6.9	9.8	10.6	12.6	14.7	16.4	17.8	18.6	19.6	20.1	20.9
LV	-4.0	19.3	16.2	15.1	14.6	15.0	14.6	14.9	14.8	14.1	14.0	15.3
LT	-6.6	15.4	8.4	7.8	8.5	8.8	8.6	9.0	9.2	8.9	8.6	8.8
LU	1.7	1.7	2.8	3.2	3.1	3.1	3.4	3.5	3.5	3.5	3.4	3.5
HU	5.2	5.1	4.2	8.1	10.8	11.2	10.4	9.2	10.3	10.5	10.0	10.3
MT	1.2	5.2	3.4	3.7	5.1	6.3	6.5	6.7	6.9	6.7	6.3	6.4
NL	14.3	9.1	13.6	14.9	14.8	14.0	14.5	16.9	19.3	21.0	22.3	23.4
AT	3.8	4.8	5.4	6.1	6.3	7.4	8.3	8.9	8.7	8.6	8.5	8.6
PL	2.8	5.5	6.7	8.1	8.7	9.1	9.0	8.5	8.1	8.0	8.1	8.4
PT	13.1	9.5	13.2	14.2	15.8	17.8	18.3	18.0	18.6	20.3	21.8	22.7
RO	1.9	12.1	10.8	12.0	14.0	14.0	13.9	13.3	13.5	13.2	13.8	14.1
SI	6.4	3.0	4.4	8.0	9.1	9.4	9.5	9.1	8.8	8.9	9.2	9.4
SK	-1.0	5.4	4.8	4.7	4.8	5.1	4.8	4.5	4.4	4.3	4.2	4.4
FI	13.9	8.2	7.9	8.3	8.9	10.1	12.0	13.2	15.0	17.5	19.1	22.2
SE	-1.3	14.8	13.2	13.4	13.9	13.6	13.4	13.4	13.8	13.4	12.7	13.5
NO	-1.0	14.9	15.1	15.1	14.8	14.0	13.2	13.8	14.2	14.1	13.9	13.9
EA	12.8	6.8	10.4	13.4	14.6	15.4	16.5	17.0	17.6	18.0	18.8	19.5
EU	11.0	7.1	10.0	12.7	13.9	14.6	15.3	15.6	16.1	16.5	17.3	18.1

Table III.1.40: Participation rate (20-64) - Men

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.3	79.1	80.2	79.9	79.8	79.8	79.7	79.7	79.5	79.5	79.4	79.3
BG	-0.9	83.2	82.8	82.0	81.4	81.2	81.7	81.9	82.5	82.9	82.6	82.3
CZ	-1.9	89.3	88.5	87.8	87.1	86.4	87.1	87.3	87.5	88.0	87.9	87.4
DK	1.7	85.8	86.1	86.0	86.3	86.6	86.7	86.8	87.0	87.3	87.4	87.5
DE	-0.8	87.6	86.7	86.8	87.1	86.9	86.7	86.7	86.8	86.9	86.9	86.8
EE	3.8	87.4	88.0	88.4	88.9	89.4	89.9	90.2	90.7	90.9	91.0	91.1
IE	0.5	85.5	85.6	85.4	85.5	85.7	86.0	86.4	86.4	86.2	86.1	86.0
EL	3.0	82.5	83.1	83.1	83.4	83.6	84.5	85.3	85.4	85.3	85.3	85.5
ES	0.6	84.2	84.9	85.1	85.0	85.0	85.2	85.3	85.1	85.0	84.8	84.8
FR	0.6	82.1	82.3	82.2	82.2	82.8	82.9	82.8	82.9	82.8	82.7	82.7
HR	1.7	76.6	77.9	78.2	78.6	78.4	78.3	78.4	78.3	78.1	78.4	78.3
IT	1.3	80.6	81.1	80.8	81.0	81.5	81.8	81.6	81.4	81.4	81.6	81.9
CY	3.3	86.5	87.5	88.1	88.4	88.6	88.6	88.8	89.1	89.4	89.7	89.8
LV	-0.9	85.6	84.5	84.3	84.1	84.2	84.1	84.0	84.6	85.1	84.9	84.7
LT	2.7	85.2	85.5	86.1	86.5	87.0	87.3	87.2	87.5	87.9	88.0	87.9
LU	-3.1	81.5	80.5	79.6	79.6	79.3	78.9	78.5	78.6	78.8	78.7	78.4
HU	4.2	85.9	89.2	89.8	89.9	89.8	90.2	90.1	90.1	90.2	90.1	90.1
MT	0.2	89.4	91.2	91.5	91.0	90.4	89.9	89.3	89.1	89.4	89.7	89.6
NL	-0.1	87.4	87.0	86.9	86.7	86.8	86.7	86.6	86.8	87.0	87.1	87.3
AT	-0.2	84.9	84.1	84.0	84.7	84.9	84.6	84.6	84.6	84.8	84.9	84.7
PL	-0.6	83.5	84.5	84.1	83.4	82.6	82.5	82.8	83.1	83.4	83.3	82.9
PT	2.2	84.9	85.1	85.4	85.5	85.5	85.8	86.2	86.3	86.5	86.7	87.1
RO	1.2	83.9	85.2	84.0	84.3	84.1	84.8	84.8	85.5	85.5	85.2	85.1
SI	1.8	83.0	84.6	84.8	84.5	84.2	84.4	84.8	85.2	85.2	85.1	84.8
SK	-0.8	84.6	84.6	84.4	83.3	82.3	82.5	83.0	83.5	84.2	84.3	83.9
FI	2.4	84.2	84.3	84.5	85.2	85.4	85.5	85.7	85.8	86.2	86.4	86.6
SE	-0.9	89.8	89.9	89.4	89.3	89.3	89.2	89.0	89.0	89.1	89.0	88.9
NO	-2.1	85.0	84.6	83.9	83.7	83.7	83.4	83.1	83.0	82.9	82.9	82.9
EA	0.4	84.1	84.1	84.0	84.1	84.3	84.4	84.4	84.4	84.4	84.5	84.5
EU	0.5	84.2	84.5	84.3	84.4	84.4	84.6	84.6	84.7	84.7	84.7	84.7

Table III.1.41: Participation rate (20-74) - Men

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.0	68.7	68.9	68.5	68.2	68.3	68.4	68.2	68.0	67.7	67.8	67.8
BG	-1.7	72.9	72.5	71.6	70.7	69.4	68.5	68.2	68.4	69.2	70.7	71.1
CZ	-2.3	77.9	77.2	76.8	75.9	73.8	72.2	72.3	73.1	73.7	75.0	75.7
DK	3.5	75.9	75.7	75.4	75.2	75.8	76.8	77.9	78.5	78.5	78.7	79.4
DE	-2.6	78.0	75.7	74.5	73.9	74.9	76.1	75.8	75.2	74.9	75.2	75.4
EE	2.4	80.2	78.4	78.4	78.9	79.1	79.0	78.9	78.7	79.2	81.2	82.6
IE	-2.9	77.9	77.5	76.9	76.4	75.8	75.1	74.9	75.3	75.6	75.4	75.0
EL	2.5	71.8	71.8	71.4	71.1	70.7	71.0	71.5	72.9	74.0	74.2	74.3
ES	-0.6	73.8	74.5	74.1	73.2	72.2	71.4	71.7	72.9	73.5	73.5	73.2
FR	0.6	70.3	70.2	70.0	69.8	70.1	70.8	71.1	70.9	71.0	71.2	70.9
HR	-2.2	66.4	65.9	66.0	66.3	66.2	65.5	64.7	64.4	64.3	64.2	64.3
IT	2.0	70.3	70.9	70.0	69.1	68.9	69.5	70.9	71.8	72.0	72.1	72.3
CY	1.9	78.1	77.5	77.5	78.2	79.1	79.4	79.3	79.3	79.3	79.4	79.9
LV	-6.0	78.0	74.1	72.4	71.8	71.5	70.8	69.8	68.8	69.3	71.1	72.0
LT	-4.2	77.8	75.6	73.9	73.4	73.6	73.6	73.2	72.1	71.5	72.3	73.6
LU	-8.2	73.4	71.4	69.3	68.0	67.3	66.8	65.9	65.3	65.0	65.1	65.1
HU	0.6	75.6	77.6	79.4	79.2	77.2	75.5	75.5	76.3	75.7	75.7	76.2
MT	-4.6	78.4	79.7	80.2	80.3	79.4	77.5	75.6	73.7	72.6	72.9	73.8
NL	0.4	76.9	76.7	75.8	75.0	75.3	76.6	77.2	77.1	77.0	77.1	77.3
AT	-3.6	75.6	73.9	72.0	71.3	72.1	72.7	72.5	71.8	71.7	71.8	72.0
PL	-3.4	74.1	73.7	73.8	74.0	72.7	70.8	69.2	68.7	69.2	70.1	70.7
PT	-0.8	75.6	73.6	73.0	72.5	72.0	71.6	72.2	73.6	74.4	74.6	74.7
RO	-1.3	74.8	75.3	75.1	74.3	72.3	72.3	72.2	72.7	73.0	73.8	73.5
SI	-0.8	72.1	71.9	71.9	71.5	70.8	69.9	69.3	69.7	70.5	71.2	71.3
SK	-4.9	75.5	73.4	72.9	72.1	70.2	68.0	67.0	67.1	68.1	69.5	70.5
FI	3.0	72.2	72.4	72.7	73.5	74.4	74.6	74.0	73.8	74.0	74.5	75.3
SE	-1.3	79.1	80.1	79.4	78.8	78.6	78.8	78.6	77.8	77.2	77.4	77.8
NO	-4.2	76.4	76.1	75.2	74.4	73.8	73.8	73.7	73.0	72.5	72.2	72.2
EA	-0.5	73.8	73.1	72.5	71.9	72.0	72.4	72.7	72.9	73.0	73.2	73.3
EU	-0.7	74.0	73.6	73.1	72.5	72.4	72.5	72.6	72.7	72.9	73.2	73.4

Table III.1.42: Participation rate (20-24) - Men

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.0	52.5	54.2	54.1	54.6	54.7	54.4	54.4	54.3	54.3	54.4	54.5
BG	0.6	49.9	50.2	49.9	50.4	50.6	50.6	50.5	50.3	50.3	50.4	50.5
CZ	0.5	59.8	59.9	59.7	60.2	60.1	60.5	60.4	60.1	60.0	60.1	60.2
DK	2.7	73.9	76.5	76.5	76.6	76.5	76.5	76.5	76.5	76.5	76.5	76.5
DE	0.0	73.6	73.7	73.6	73.5	73.6	73.6	73.6	73.6	73.6	73.6	73.6
EE	2.5	76.6	78.7	78.7	79.2	79.3	79.2	79.1	78.9	78.9	79.0	79.1
IE	0.6	74.9	75.4	75.2	75.6	75.6	75.5	75.4	75.4	75.4	75.4	75.5
EL	5.3	43.8	49.0	48.7	49.3	49.3	49.2	49.0	48.9	48.9	49.0	49.1
ES	0.9	58.8	59.3	59.5	59.8	60.0	59.7	59.6	59.5	59.5	59.6	59.7
FR	0.6	67.0	67.5	67.3	67.6	67.4	67.5	67.4	67.4	67.4	67.5	67.6
HR	3.5	59.9	63.4	63.3	63.5	63.4	63.4	63.4	63.4	63.4	63.4	63.4
IT	0.7	50.4	51.0	51.0	51.3	51.2	51.1	51.0	51.0	51.0	51.1	51.1
CY	6.5	60.8	67.7	67.3	67.5	67.4	67.3	67.4	67.4	67.3	67.3	67.3
LV	3.2	70.6	73.2	73.5	72.7	74.2	74.0	73.9	73.6	73.5	73.6	73.8
LT	3.2	65.8	69.3	68.1	68.6	69.2	69.1	69.2	69.1	68.9	68.9	69.0
LU	1.1	56.9	58.1	57.9	58.0	58.2	58.0	58.1	58.0	57.9	58.0	58.0
HU	2.7	61.8	64.5	64.6	64.3	64.5	64.5	64.5	64.5	64.4	64.4	64.5
MT	2.6	78.0	81.0	80.7	80.6	80.9	80.7	80.8	80.8	80.7	80.7	80.7
NL	2.6	76.1	78.3	78.7	78.7	78.7	78.6	78.7	78.7	78.7	78.7	78.7
AT	2.0	76.2	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3
PL	-0.3	68.0	67.7	67.1	67.8	67.8	67.9	67.8	67.6	67.6	67.7	67.8
PT	0.4	61.2	61.7	61.6	62.1	61.5	61.6	61.5	61.6	61.6	61.7	61.6
RO	1.1	57.7	58.6	58.5	58.5	58.8	58.9	58.8	58.7	58.7	58.8	58.8
SI	0.3	64.4	64.6	63.9	64.8	64.8	64.8	64.7	64.5	64.4	64.6	64.7
SK	0.9	62.9	63.5	63.3	63.8	63.7	64.0	63.9	63.7	63.6	63.6	63.7
FI	3.2	73.3	76.4	76.3	76.5	76.6	76.4	76.4	76.4	76.4	76.4	76.5
SE	2.2	74.1	76.2	76.3	76.3	76.4	76.3	76.4	76.3	76.3	76.3	76.3
NO	1.5	72.2	73.7	73.7	73.8	73.8	73.7	73.7	73.7	73.7	73.7	73.7
EA	1.3	64.5	65.0	64.9	65.3	65.7	65.8	65.7	65.6	65.5	65.6	65.8
EU	1.4	64.5	65.1	64.9	65.4	65.7	65.8	65.8	65.7	65.6	65.7	65.9

Table III.1.43: Participation rate (25-54) - Men

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.7	89.3	88.5	87.8	87.6	87.7	87.6	87.6	87.6	87.5	87.5	87.6
BG	1.5	90.1	90.6	90.6	90.8	91.1	91.4	91.7	91.7	91.6	91.5	91.5
CZ	0.1	95.9	96.1	95.9	95.9	96.0	96.1	96.2	96.2	96.1	96.1	96.1
DK	-0.2	90.1	90.2	90.0	89.9	89.9	89.9	89.9	89.9	89.9	89.9	89.9
DE	-0.5	92.6	92.4	92.2	92.0	92.0	92.1	92.1	92.2	92.2	92.1	92.1
EE	1.4	92.5	92.8	93.0	93.1	93.5	94.0	94.0	93.9	93.8	93.8	93.9
IE	1.6	90.6	90.8	91.2	91.6	92.1	92.3	92.3	92.2	92.2	92.2	92.2
EL	-1.9	93.3	92.6	91.8	91.5	91.5	91.5	91.5	91.4	91.3	91.3	91.4
ES	-1.1	91.7	91.3	90.9	90.6	90.7	90.7	90.7	90.6	90.6	90.6	90.6
FR	-2.0	91.9	91.1	90.5	90.0	89.9	89.9	89.8	89.8	89.8	89.8	89.8
HR	1.3	86.8	88.0	88.1	87.9	88.1	88.0	88.0	88.1	88.0	88.0	88.1
IT	-2.1	88.5	87.5	86.8	86.5	86.4	86.5	86.5	86.4	86.3	86.3	86.4
CY	1.2	93.3	93.9	94.0	94.0	94.2	94.4	94.4	94.5	94.5	94.5	94.5
LV	0.3	91.3	91.0	91.2	91.1	91.0	91.6	91.9	91.8	91.6	91.6	91.6
LT	4.1	91.3	93.0	94.1	94.7	94.8	95.2	95.4	95.5	95.5	95.4	95.4
LU	-0.3	92.9	92.7	92.5	92.5	92.5	92.6	92.7	92.7	92.6	92.6	92.6
HU	1.7	93.4	94.5	94.9	95.0	95.1	95.1	95.2	95.2	95.2	95.2	95.2
MT	-0.3	96.7	96.7	96.6	96.4	96.3	96.3	96.4	96.5	96.5	96.4	96.4
NL	-1.6	91.5	90.8	90.4	90.0	89.7	89.8	89.8	89.9	89.9	89.9	89.9
AT	0.6	92.4	92.7	92.7	92.7	92.7	92.9	93.0	93.0	93.0	93.0	93.0
PL	0.0	91.6	91.7	91.3	91.1	91.4	91.7	91.9	91.9	91.6	91.6	91.6
PT	0.2	92.7	92.9	92.9	92.8	92.9	92.9	92.9	92.9	92.8	92.9	92.9
RO	2.4	93.0	94.3	94.8	95.1	95.2	95.4	95.5	95.5	95.5	95.5	95.4
SI	0.7	94.3	94.7	94.7	94.7	94.9	95.1	95.1	95.1	95.0	95.0	95.0
SK	0.4	93.2	93.0	92.7	92.7	93.2	93.6	93.9	93.9	93.8	93.6	93.6
FI	-0.3	90.3	90.6	90.4	90.2	90.0	90.1	90.1	90.1	90.0	90.0	90.0
SE	-0.3	93.7	93.8	93.6	93.5	93.3	93.3	93.4	93.4	93.4	93.4	93.3
NO	-1.6	89.0	88.4	88.1	87.7	87.5	87.4	87.4	87.4	87.3	87.4	87.4
EA	-1.1	91.4	90.9	90.6	90.3	90.2	90.3	90.3	90.3	90.3	90.3	90.3
EU	-0.7	91.6	91.4	91.1	90.9	90.8	90.9	91.0	90.9	90.9	90.9	90.9

Table III.1.44: Participation rate (55-64) - Men

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.8	60.1	67.9	69.1	68.5	67.4	67.1	67.1	66.7	67.0	67.2	66.9
BG	-1.4	72.2	70.6	70.9	70.1	69.3	69.9	69.0	69.3	70.9	71.3	70.7
CZ	-1.7	76.5	73.3	76.1	75.6	73.4	74.6	74.2	73.1	74.9	76.0	74.8
DK	6.6	78.7	78.6	78.7	79.9	80.7	82.0	83.0	83.7	84.5	85.1	85.3
DE	-2.2	79.4	77.1	77.0	77.7	77.7	77.2	76.8	77.0	76.9	77.1	77.2
EE	15.1	73.6	75.4	78.6	80.5	82.3	83.5	84.7	86.2	87.5	88.4	88.7
IE	0.8	72.5	73.0	72.3	72.2	71.8	71.7	72.9	73.6	73.5	73.6	73.3
EL	19.7	64.5	70.3	74.6	76.0	76.7	78.4	81.4	82.5	83.2	83.7	84.1
ES	10.1	69.1	76.8	80.4	80.9	79.8	79.3	79.3	79.4	79.6	79.6	79.3
FR	10.1	59.3	64.3	66.2	66.6	68.9	69.6	69.2	69.4	69.6	69.6	69.4
HR	3.6	54.8	53.5	55.1	58.1	58.4	58.0	58.3	58.6	57.6	58.6	58.4
IT	12.6	68.7	75.9	76.9	77.7	78.5	79.1	78.7	78.6	79.1	80.2	81.3
CY	8.8	77.0	74.7	76.6	78.0	79.3	79.9	81.6	83.0	83.9	85.0	85.8
LV	-2.3	73.0	69.0	69.1	69.8	71.2	70.5	68.9	68.9	70.5	70.9	70.6
LT	0.1	75.1	68.7	69.6	70.6	73.2	74.3	74.0	73.8	74.2	75.0	75.2
LU	-4.9	51.6	49.6	47.5	47.4	47.3	47.2	46.7	46.3	46.6	47.1	46.7
HU	15.9	70.7	81.3	84.7	85.9	85.6	86.5	86.6	86.3	86.5	86.7	86.6
MT	6.0	67.8	71.5	74.7	75.4	74.9	74.9	74.2	72.9	72.7	73.7	73.8
NL	2.6	81.0	80.7	80.6	80.0	81.2	80.7	80.5	81.5	82.3	82.9	83.5
AT	-2.6	65.9	63.3	61.9	62.5	63.9	62.9	63.0	62.6	62.9	63.4	63.3
PL	3.0	63.0	64.3	66.8	67.2	66.3	65.4	65.4	65.1	65.7	66.8	66.1
PT	10.6	71.0	73.0	75.2	76.3	76.1	76.6	78.0	79.1	79.9	80.7	81.7
RO	5.2	61.9	67.3	65.3	66.3	65.7	67.3	65.8	67.1	67.6	67.7	67.1
SI	10.8	54.9	61.7	65.1	66.1	65.3	64.7	64.5	65.1	65.2	66.1	65.7
SK	1.7	63.5	62.8	66.7	66.4	63.9	63.4	63.2	62.8	64.1	65.5	65.3
FI	10.7	70.8	68.6	69.1	73.3	75.0	75.6	76.9	77.9	79.3	80.6	81.5
SE	-2.5	84.3	84.0	82.6	82.3	82.4	82.4	81.9	81.2	81.7	82.0	81.8
NO	-4.5	78.3	77.6	76.0	75.3	75.4	74.9	74.2	73.9	73.8	74.0	73.9
EA	6.1	70.2	73.2	74.4	75.0	75.3	75.3	75.2	75.4	75.8	76.1	76.3
EU	5.8	69.7	72.6	73.8	74.2	74.2	74.3	74.2	74.6	75.0	75.5	75.5

Table III.1.45: Participation rate (65-74) - Men

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	5.4	5.9	6.6	11.3	11.7	11.4	11.5	11.3	11.5	11.2	11.1	11.3
BG	2.3	15.3	17.3	17.7	17.9	18.1	17.5	17.1	17.3	16.6	16.7	17.6
CZ	-0.6	13.9	12.2	12.9	13.2	14.6	13.5	12.6	13.1	12.7	12.3	13.2
DK	19.7	22.2	18.1	21.3	22.9	25.4	27.9	30.9	35.5	38.5	39.9	41.9
DE	3.0	17.6	18.2	20.9	20.7	19.6	21.1	21.3	21.3	20.5	20.7	20.6
EE	12.5	29.2	19.8	20.0	22.6	25.4	27.5	30.4	33.5	34.1	37.1	41.7
IE	-1.3	23.6	22.8	22.8	22.6	22.4	22.4	21.8	21.5	22.2	22.5	22.3
EL	15.4	11.3	11.5	12.7	15.8	17.1	18.0	18.0	19.7	22.9	25.0	26.7
ES	16.1	5.5	13.5	18.9	20.6	21.1	20.5	19.2	19.7	20.5	21.0	21.6
FR	8.2	6.9	7.7	10.3	11.6	12.6	14.0	15.2	14.9	14.7	15.1	15.2
HR	2.0	6.4	7.3	7.6	7.6	8.4	9.0	8.9	8.6	8.8	8.8	8.4
IT	20.9	12.9	17.1	21.2	21.8	22.1	21.9	25.1	28.7	31.0	32.5	33.7
CY	8.3	21.4	16.3	16.4	18.0	19.8	22.9	24.8	26.1	28.0	28.8	29.7
LV	-11.0	22.8	14.0	12.0	11.6	11.9	11.8	12.3	11.8	10.8	10.8	11.8
LT	-8.3	20.8	14.9	12.9	12.2	12.4	12.4	13.2	13.3	12.8	12.4	12.5
LU	0.2	4.1	4.7	5.0	4.6	4.4	4.4	4.4	4.4	4.3	4.3	4.3
HU	3.0	9.8	8.9	11.6	13.9	14.3	13.4	12.0	13.2	13.1	12.5	12.8
MT	-3.7	12.4	6.3	7.7	9.0	9.7	9.8	9.6	9.6	9.1	8.7	8.7
NL	12.8	19.8	22.9	24.0	23.7	23.1	25.5	28.5	29.6	30.5	31.5	32.6
AT	2.3	9.7	12.6	12.7	12.2	11.8	12.0	12.3	12.1	12.1	11.9	12.0
PL	4.6	12.3	16.1	16.5	17.0	18.1	18.1	17.6	17.0	16.8	16.6	17.0
PT	-0.4	24.0	16.3	16.9	18.0	20.0	20.5	20.0	20.8	22.0	23.1	23.6
RO	6.6	15.1	18.7	20.0	22.2	21.4	21.3	20.9	21.5	20.9	21.3	21.6
SI	3.0	6.4	6.6	7.9	9.3	9.6	9.8	9.4	9.3	9.2	9.3	9.4
SK	-1.8	9.0	7.1	6.6	7.3	8.1	7.8	7.3	7.2	7.1	7.0	7.3
FI	12.4	15.1	14.3	15.0	15.2	16.7	19.4	20.8	22.0	23.9	25.0	27.5
SE	0.2	20.9	21.8	22.3	21.9	21.4	21.2	21.5	21.7	21.2	20.6	21.2
NO	-0.9	23.2	24.3	24.6	24.1	23.1	22.7	23.3	23.2	22.7	22.4	22.3
EA	10.0	12.5	14.5	17.6	18.3	18.5	19.1	19.8	20.5	21.1	21.9	22.4
EU	8.8	12.9	14.8	17.5	18.3	18.5	18.8	19.3	20.0	20.4	21.0	21.7

Table III.1.46: Average effective labour market exit age (Total)

Country	Ch 20-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.9	63.4	63.9	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
BG	0.5	63.9	63.9	64.1	64.2	64.4	64.4	64.4	64.4	64.4	64.4	64.4
CZ	1.4	62.4	63.1	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
DK	4.8	64.5	65.2	65.8	66.3	66.9	67.4	67.8	68.3	68.7	69.0	69.3
DE	0.9	64.6	65.2	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
EE	4.3	65.1	65.6	66.0	66.4	66.8	67.3	67.8	68.2	68.7	69.1	69.4
IE	0.0	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7
EL	4.7	62.9	64.3	64.8	65.3	65.8	66.2	66.6	66.8	67.1	67.4	67.6
ES	2.0	64.2	64.6	65.3	65.8	66.0	66.3	66.4	66.3	66.2	66.2	66.2
FR	2.2	62.3	63.2	63.5	63.8	64.3	64.5	64.5	64.5	64.5	64.5	64.5
HR	0.9	62.0	62.4	62.7	62.8	63.0	63.0	63.0	63.0	63.0	63.0	63.0
IT	3.4	65.5	66.2	66.4	66.7	67.0	67.3	67.6	68.0	68.3	68.6	68.9
CY	3.4	63.9	64.3	64.7	65.2	65.5	65.9	66.2	66.5	66.8	67.1	67.3
LV	0.9	63.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5
LT	1.4	62.7	63.8	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
LU	0.0	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2	60.2
HU	2.3	62.8	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1
MT	0.9	62.4	63.0	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3
NL	2.8	64.9	65.7	65.8	65.8	66.2	66.5	66.7	67.0	67.3	67.5	67.7
AT	0.9	62.3	62.4	62.9	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2
PL	0.0	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
PT	2.1	64.3	64.6	64.8	65.0	65.2	65.4	65.6	65.8	65.9	66.2	66.4
RO	0.0	63.4	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3
SI	0.9	62.0	62.7	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
SK	0.5	61.7	62.0	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2
FI	3.4	63.7	63.9	64.4	64.7	65.1	65.4	65.8	66.1	66.4	66.7	67.1
SE	0.1	65.0	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1
NO	0.0	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4
EA	2.1	63.9	64.8	65.1	65.3	65.5	65.6	65.7	65.8	65.9	66.0	66.0
EU	1.8	63.8	64.5	64.8	64.9	65.1	65.2	65.3	65.4	65.5	65.5	65.6

Table III.1.47: Average effective labour market exit age (Men)

Country	Ch 20-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.0	63.3	63.8	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
BG	0.0	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7
CZ	0.7	63.5	63.8	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2
DK	4.5	65.0	65.7	66.1	66.6	67.2	67.6	68.0	68.5	69.0	69.2	69.5
DE	1.0	64.7	65.3	65.7	65.7	65.7	65.7	65.7	65.7	65.7	65.7	65.7
EE	4.2	65.2	65.6	66.1	66.6	67.0	67.4	67.9	68.3	68.8	69.1	69.4
IE	0.0	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
EL	4.6	63.0	64.4	64.8	65.3	65.8	66.2	66.6	66.9	67.1	67.4	67.6
ES	2.3	63.8	64.4	65.3	65.7	65.9	66.2	66.4	66.2	66.2	66.1	66.1
FR	2.4	62.3	63.3	63.6	63.9	64.5	64.7	64.7	64.7	64.7	64.7	64.7
HR	0.6	62.7	62.8	62.9	63.1	63.2	63.2	63.2	63.2	63.2	63.2	63.2
IT	3.2	65.2	65.6	66.0	66.2	66.4	66.8	67.0	67.4	67.8	68.2	68.5
CY	3.3	64.4	64.8	65.3	65.7	66.1	66.4	66.7	67.0	67.3	67.6	67.7
LV	1.1	63.2	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
LT	1.0	63.4	64.2	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4
LU	0.0	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4
HU	2.1	63.2	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
MT	1.1	62.8	63.5	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9	63.9
NL	2.7	65.8	66.5	66.6	66.6	67.0	67.4	67.6	67.9	68.1	68.3	68.5
AT	0.0	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2
PL	0.0	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5
PT	2.0	64.6	64.8	65.1	65.3	65.5	65.7	65.8	66.0	66.1	66.3	66.6
RO	0.0	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1	64.1
SI	0.9	62.1	62.7	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
SK	0.7	62.0	62.4	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7
FI	3.5	63.9	64.1	64.7	65.0	65.4	65.7	66.1	66.4	66.7	67.0	67.4
SE	0.0	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6
NO	0.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
EA	2.1	64.0	64.8	65.2	65.3	65.5	65.6	65.7	65.8	65.9	66.0	66.1
EU	1.8	64.0	64.8	65.0	65.2	65.3	65.4	65.5	65.6	65.7	65.8	65.8

Table III.1.48: Average effective labour market exit age (Women)

Country	Ch 20-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.8	63.5	63.9	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
BG	0.9	63.2	63.1	63.6	63.8	64.1	64.1	64.1	64.1	64.1	64.1	64.1
CZ	2.0	61.4	62.3	63.4	63.4	63.4	63.4	63.4	63.4	63.4	63.4	63.4
DK	5.1	64.1	64.8	65.5	66.1	66.7	67.2	67.6	68.0	68.5	68.8	69.2
DE	0.7	64.5	65.0	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
EE	4.4	65.0	65.5	65.9	66.3	66.7	67.1	67.6	68.1	68.7	69.0	69.3
IE	0.1	63.9	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
EL	4.8	62.9	64.2	64.8	65.3	65.8	66.2	66.6	66.8	67.1	67.4	67.6
ES	1.7	64.6	64.7	65.4	65.9	66.0	66.3	66.5	66.3	66.3	66.2	66.2
FR	2.1	62.2	63.0	63.3	63.7	64.1	64.3	64.3	64.3	64.3	64.3	64.3
HR	1.3	61.4	61.9	62.4	62.6	62.7	62.7	62.7	62.7	62.7	62.7	62.7
IT	3.5	65.8	66.7	66.9	67.2	67.6	67.8	68.2	68.5	68.8	69.1	69.3
CY	3.4	63.4	63.8	64.2	64.7	65.1	65.4	65.8	66.0	66.3	66.6	66.8
LV	0.8	63.8	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6
LT	1.6	62.1	63.5	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
LU	0.0	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1
HU	2.5	62.4	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
MT	0.8	61.9	62.4	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7
NL	3.0	64.0	64.8	65.0	65.1	65.4	65.6	65.9	66.1	66.4	66.7	67.0
AT	1.8	61.4	61.7	62.6	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2
PL	0.0	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3	61.3
PT	2.2	64.1	64.4	64.6	64.8	65.0	65.2	65.4	65.6	65.8	66.0	66.2
RO	-0.1	62.7	62.5	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6
SI	0.8	62.0	62.6	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8
SK	0.3	61.4	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7	61.7
FI	3.3	63.5	63.6	64.1	64.4	64.8	65.1	65.5	65.8	66.1	66.5	66.8
SE	0.1	64.5	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6
NO	0.0	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7
EA	2.1	63.9	64.8	65.1	65.2	65.4	65.6	65.7	65.7	65.8	65.9	66.0
EU	1.9	63.5	64.3	64.6	64.7	64.9	65.0	65.1	65.2	65.3	65.3	65.4

Table III.1.49: Employment rate (15-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.1	65.4	66.2	65.8	66.0	66.1	66.0	65.8	65.6	65.5	65.6	65.5
BG	-2.7	70.2	68.7	67.5	67.1	67.2	67.4	67.3	67.4	67.7	67.6	67.5
CZ	-3.5	75.2	72.8	72.6	71.8	71.2	71.8	71.9	71.8	72.1	72.0	71.8
DK	2.4	75.2	75.9	76.4	76.6	76.7	76.9	77.1	77.3	77.5	77.6	77.6
DE	-0.8	76.7	76.2	75.7	75.8	75.9	75.9	75.9	76.0	76.0	75.9	75.9
EE	1.3	75.2	73.7	73.8	74.2	75.3	75.7	75.9	76.0	76.0	76.2	76.5
IE	0.4	69.6	68.5	68.5	69.3	69.6	69.8	70.0	70.0	69.9	69.9	69.9
EL	14.3	56.3	61.1	62.7	64.7	66.7	68.7	70.2	70.4	70.3	70.4	70.6
ES	7.5	63.4	63.5	65.3	67.3	68.9	70.2	71.2	71.0	70.9	70.9	70.9
FR	3.0	65.5	65.7	66.2	67.0	67.8	68.3	68.4	68.5	68.5	68.5	68.6
HR	2.4	62.4	63.3	63.4	64.1	64.5	64.6	64.9	64.9	64.6	64.9	64.8
IT	5.8	59.1	61.0	61.7	62.9	63.7	64.3	64.6	64.5	64.5	64.7	64.9
CY	4.3	69.7	70.2	71.3	72.1	72.3	72.5	73.2	73.6	73.8	74.0	74.1
LV	-1.3	72.5	69.4	68.5	68.6	69.8	70.6	70.9	71.2	71.4	71.3	71.3
LT	1.2	73.0	72.7	72.2	72.4	73.2	73.9	74.1	74.1	74.2	74.2	74.3
LU	1.2	68.0	68.9	69.4	70.0	69.9	69.6	69.4	69.4	69.5	69.5	69.2
HU	5.2	70.2	73.6	75.5	75.4	75.4	75.6	75.6	75.5	75.4	75.4	75.4
MT	4.5	73.5	76.6	78.1	78.4	78.4	78.3	78.1	77.8	78.0	78.1	78.0
NL	0.5	78.2	77.6	77.4	77.6	77.9	78.0	78.0	78.2	78.4	78.5	78.7
AT	2.0	73.5	73.1	73.9	75.1	75.6	75.4	75.5	75.5	75.6	75.6	75.5
PL	-1.6	68.4	68.3	67.5	66.7	66.4	66.4	66.7	66.9	67.1	67.1	66.8
PT	3.7	70.4	72.1	72.4	72.5	72.5	72.9	73.2	73.4	73.6	73.8	74.1
RO	1.3	65.9	66.1	65.9	65.7	66.0	66.8	66.8	67.4	67.4	67.3	67.2
SI	0.8	71.8	72.0	71.9	72.0	72.3	72.7	72.9	72.9	72.7	72.7	72.6
SK	-3.3	68.6	67.1	66.0	64.8	64.2	64.5	64.9	65.1	65.5	65.6	65.3
FI	2.8	72.9	72.9	73.0	74.3	74.7	74.8	75.1	75.1	75.3	75.5	75.7
SE	0.8	77.2	77.4	77.9	78.0	78.2	78.3	78.2	78.0	78.1	78.1	78.0
NO	-0.4	75.2	74.8	74.8	75.0	75.2	75.1	75.0	74.9	74.9	74.9	74.9
EA	3.2	68.0	68.3	68.7	69.5	70.3	70.8	71.1	71.1	71.1	71.1	71.2
EU	2.7	68.4	68.7	69.0	69.5	70.1	70.6	70.9	71.0	71.0	71.1	71.1

Table III.1.50: Employment rate (20-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.3	70.6	72.0	71.6	71.5	71.5	71.3	71.2	71.1	71.1	71.1	70.9
BG	-1.7	75.2	74.4	73.3	72.8	72.6	72.9	73.0	73.6	74.0	73.8	73.5
CZ	-1.9	80.4	79.3	78.9	78.4	77.5	78.0	78.2	78.5	79.1	79.0	78.5
DK	2.5	78.4	79.1	79.3	79.8	80.0	80.2	80.3	80.5	80.7	80.9	80.9
DE	0.2	80.6	80.2	80.0	80.6	80.6	80.5	80.4	80.6	80.7	80.8	80.7
EE	2.3	80.2	79.9	79.7	80.2	80.6	81.0	81.5	82.1	82.4	82.4	82.5
IE	0.1	75.1	74.5	74.2	74.4	74.7	75.0	75.4	75.6	75.4	75.3	75.2
EL	15.6	60.9	66.5	68.0	70.0	71.9	74.1	76.0	76.4	76.4	76.4	76.5
ES	8.2	68.1	68.7	70.4	72.1	73.7	75.2	76.5	76.5	76.4	76.3	76.2
FR	2.9	71.6	71.9	72.4	72.9	73.8	74.2	74.6	74.8	74.7	74.6	74.5
HR	2.8	66.8	68.1	68.2	68.9	69.1	69.3	69.6	69.6	69.5	69.8	69.6
IT	6.2	63.6	65.8	66.3	67.2	68.2	69.0	69.4	69.4	69.4	69.6	69.8
CY	5.0	75.1	75.7	76.8	77.5	78.1	78.4	78.9	79.3	79.6	79.9	80.1
LV	-0.2	77.6	75.3	74.7	75.0	75.5	76.0	76.6	77.3	77.9	77.6	77.4
LT	2.2	78.3	78.2	78.5	78.8	79.4	79.7	79.7	79.9	80.4	80.6	80.4
LU	1.4	72.7	73.6	74.2	74.7	74.6	74.3	74.0	74.2	74.4	74.3	74.1
HU	6.5	75.4	79.6	81.2	81.6	81.4	81.8	81.9	81.9	82.0	82.0	81.9
MT	5.5	77.3	80.6	82.5	82.9	82.8	82.6	82.3	82.1	82.5	82.8	82.7
NL	0.6	80.2	79.4	79.2	79.4	79.9	80.0	80.1	80.2	80.3	80.5	80.7
AT	2.7	76.8	76.5	77.5	79.0	79.5	79.2	79.2	79.2	79.5	79.6	79.5
PL	-1.2	73.3	74.1	73.1	72.2	71.2	71.1	71.5	72.1	72.7	72.7	72.1
PT	4.2	76.2	77.8	77.8	78.1	78.3	78.9	79.5	79.7	79.9	80.1	80.4
RO	1.7	71.0	71.7	71.1	71.3	71.0	71.9	72.2	73.0	73.1	72.9	72.7
SI	1.9	76.4	77.7	77.9	77.7	77.5	77.9	78.4	78.8	78.8	78.7	78.3
SK	-2.3	73.6	72.6	71.8	70.7	69.7	69.8	70.3	70.8	71.6	71.8	71.3
FI	2.6	77.1	77.5	77.6	78.2	78.4	78.7	79.1	79.3	79.5	79.6	79.7
SE	0.8	82.1	82.7	83.1	83.1	83.2	83.1	83.0	83.0	83.2	83.1	83.0
NO	-0.7	79.4	79.1	78.9	78.9	79.0	79.0	78.9	78.8	78.7	78.8	78.7
EA	3.7	72.6	73.2	73.6	74.4	75.1	75.7	76.1	76.2	76.2	76.2	76.3
EU	3.1	73.1	73.8	74.0	74.5	75.0	75.5	75.9	76.1	76.3	76.3	76.2

Table III.1.51: Employment rate (20-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.4	60.9	61.4	61.1	60.9	61.0	61.1	60.9	60.5	60.3	60.4	60.4
BG	-0.9	63.9	63.7	62.7	61.9	61.0	60.3	60.0	60.3	61.1	62.6	63.1
CZ	-0.9	68.8	68.1	68.2	67.6	65.7	64.2	64.4	65.3	66.1	67.3	67.9
DK	5.1	68.1	69.0	69.0	68.9	69.6	70.6	71.6	72.3	72.3	72.5	73.2
DE	-1.1	70.9	69.2	67.9	67.5	68.6	70.0	69.7	69.2	69.1	69.5	69.7
EE	2.7	72.3	70.0	69.5	70.1	70.5	70.6	70.9	71.0	71.8	73.8	75.0
IE	-3.2	67.9	66.8	66.1	65.8	65.3	64.7	64.5	64.8	65.3	65.1	64.7
EL	14.1	52.5	56.6	57.3	58.6	59.6	61.2	62.9	64.5	65.9	66.3	66.5
ES	6.5	59.2	59.9	61.1	61.9	62.5	63.0	64.2	65.4	65.9	66.0	65.7
FR	2.9	60.8	60.8	61.2	61.6	62.3	63.2	63.7	63.6	63.8	64.0	63.7
HR	0.1	57.0	56.6	56.5	57.2	57.6	57.4	57.0	56.9	57.0	57.0	57.1
IT	7.3	54.8	57.0	57.1	57.1	57.6	58.5	60.1	61.2	61.6	61.9	62.1
CY	3.5	67.0	66.9	67.7	68.7	69.7	70.1	70.2	69.9	69.8	70.0	70.5
LV	-3.0	69.0	64.6	62.8	62.9	63.2	63.2	63.1	62.5	63.2	65.1	66.0
LT	-2.6	69.6	66.7	64.8	64.6	65.2	65.7	65.8	65.1	64.8	65.7	67.0
LU	-3.7	65.1	65.0	64.3	63.7	63.2	62.7	61.9	61.3	61.1	61.3	61.4
HU	4.3	64.6	67.2	70.3	70.6	68.8	67.4	67.6	68.7	68.3	68.4	68.9
MT	1.3	66.8	69.7	71.5	72.6	72.3	70.9	69.3	67.7	66.8	67.2	68.2
NL	1.0	69.7	69.2	68.4	67.9	68.4	69.7	70.4	70.4	70.2	70.3	70.6
AT	-0.5	67.5	66.3	65.4	65.5	66.5	67.3	67.2	66.6	66.5	66.8	67.1
PL	-2.9	63.6	63.0	62.8	63.0	61.6	59.9	58.6	58.4	59.2	60.2	60.8
PT	2.2	66.4	66.6	65.9	65.6	65.3	65.2	66.0	67.4	68.3	68.5	68.6
RO	0.1	62.3	61.9	62.3	61.8	60.0	60.1	60.2	61.1	61.7	62.6	62.4
SI	0.6	65.5	65.0	65.1	65.0	64.6	64.1	63.8	64.4	65.4	66.1	66.1
SK	-4.8	64.4	61.9	61.0	60.4	58.7	56.9	56.1	56.3	57.3	58.7	59.6
FI	3.8	65.1	65.5	65.7	66.5	67.6	68.0	67.5	67.5	67.7	68.1	68.9
SE	0.4	71.8	72.9	73.1	72.7	72.6	72.8	72.7	72.0	71.4	71.7	72.2
NO	-2.9	70.7	70.4	69.9	69.4	69.0	69.2	69.2	68.7	68.1	67.9	67.9
EA	3.0	63.0	63.0	62.9	63.0	63.6	64.5	65.1	65.3	65.6	65.9	66.0
EU	2.4	63.4	63.5	63.4	63.4	63.7	64.2	64.6	64.9	65.2	65.6	65.8

Table III.1.52: Unemployment rate (15-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.0	5.4	6.1	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
BG	1.1	4.3	4.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
CZ	1.6	2.1	3.2	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
DK	-1.6	5.1	4.3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
DE	1.0	3.2	3.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
EE	2.0	4.6	5.7	6.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
IE	1.9	5.1	6.8	7.6	7.5	7.3	7.2	7.0	7.0	7.0	7.0	7.0
EL	-10.6	17.6	12.8	12.2	11.0	9.6	8.3	7.2	7.0	7.0	7.0	7.0
ES	-7.2	14.2	15.5	14.2	12.4	10.6	8.8	7.2	7.0	7.0	7.0	7.0
FR	-1.6	8.6	8.8	8.4	8.1	7.7	7.4	7.0	7.0	7.0	7.0	7.0
HR	0.3	6.7	7.3	8.1	7.9	7.6	7.3	7.0	7.0	7.0	7.0	7.0
IT	-3.2	10.2	9.4	9.2	8.7	8.1	7.6	7.1	7.0	7.0	7.0	7.0
CY	-0.5	7.5	8.8	8.5	8.2	7.8	7.4	7.0	7.0	7.0	7.0	7.0
LV	0.4	6.6	8.5	9.2	8.7	8.1	7.6	7.1	7.0	7.0	7.0	7.0
LT	0.5	6.5	6.3	7.2	7.2	7.1	7.1	7.0	7.0	7.0	7.0	7.0
LU	-0.9	5.7	5.5	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
HU	0.7	3.5	5.0	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
MT	1.0	3.4	4.4	4.4	4.3	4.4	4.3	4.3	4.3	4.3	4.3	4.4
NL	1.7	3.4	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
AT	-0.3	4.6	4.7	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
PL	1.8	3.3	4.3	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
PT	-0.2	6.7	5.6	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
RO	0.7	4.0	5.4	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
SI	1.3	4.5	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
SK	1.2	5.8	7.4	8.2	7.9	7.6	7.3	7.0	7.0	7.0	7.0	7.0
FI	0.0	6.9	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
SE	-1.4	7.0	6.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
NO	-0.2	3.8	4.1	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
EA	-1.7	7.7	7.9	7.9	7.5	7.0	6.5	6.1	6.0	6.0	6.0	6.0
EU	-1.0	6.8	7.2	7.2	6.9	6.5	6.1	5.8	5.8	5.8	5.8	5.8

Table III.1.53: Unemployment rate (20-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.0	5.2	5.9	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
BG	1.1	4.2	4.4	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
CZ	1.5	2.0	3.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
DK	-1.4	4.7	3.9	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
DE	1.0	3.1	3.3	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
EE	1.8	4.4	5.4	6.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
IE	1.8	4.6	6.1	6.8	6.8	6.7	6.5	6.4	6.4	6.4	6.4	6.4
EL	-10.5	17.5	12.7	12.1	10.9	9.6	8.3	7.1	6.9	6.9	6.9	6.9
ES	-7.0	13.8	15.0	13.8	12.1	10.3	8.6	7.0	6.8	6.8	6.8	6.8
FR	-1.5	8.2	8.5	8.1	7.8	7.4	7.1	6.8	6.8	6.8	6.8	6.8
HR	0.3	6.4	7.0	7.7	7.5	7.2	6.9	6.7	6.7	6.7	6.7	6.7
IT	-3.1	9.8	9.1	8.9	8.4	7.9	7.3	6.9	6.8	6.8	6.8	6.8
CY	-0.5	7.2	8.5	8.2	7.9	7.5	7.1	6.8	6.7	6.7	6.7	6.7
LV	0.4	6.4	8.3	8.9	8.4	7.9	7.4	6.9	6.8	6.8	6.8	6.8
LT	0.5	6.4	6.2	7.0	7.0	7.0	6.9	6.9	6.9	6.9	6.9	6.9
LU	-0.8	5.3	5.1	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
HU	0.7	3.3	4.8	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9
MT	0.8	3.0	3.9	3.9	3.8	3.9	3.9	3.9	3.9	3.8	3.8	3.8
NL	1.5	3.0	4.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
AT	-0.3	4.4	4.4	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
PL	1.8	3.2	4.2	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
PT	-0.2	6.4	5.4	6.2	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2
RO	0.7	3.7	5.0	4.4	4.3	4.4	4.4	4.4	4.3	4.3	4.4	4.4
SI	1.3	4.4	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.6	5.6	5.7
SK	1.1	5.6	7.1	7.8	7.5	7.3	7.0	6.7	6.7	6.7	6.7	6.7
FI	0.1	6.1	5.9	6.0	6.1	6.2	6.2	6.2	6.1	6.1	6.2	6.2
SE	-1.2	5.9	5.5	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
NO	-0.2	3.3	3.5	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
EA	-1.7	7.5	7.7	7.7	7.2	6.8	6.3	5.9	5.8	5.8	5.8	5.8
EU	-1.0	6.6	6.9	7.0	6.6	6.3	5.9	5.6	5.5	5.5	5.5	5.5

Table III.1.54: Unemployment rate (20-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.9	5.2	5.8	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
BG	1.0	4.2	4.4	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
CZ	1.5	1.9	3.0	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
DK	-1.5	4.6	3.8	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1
DE	0.9	3.1	3.2	3.9	3.9	4.0	4.0	4.0	4.0	4.0	3.9	4.0
EE	1.7	4.3	5.2	6.0	6.1	6.1	6.1	6.0	6.0	5.9	6.0	6.0
IE	1.7	4.5	6.0	6.7	6.6	6.5	6.3	6.2	6.2	6.2	6.2	6.2
EL	-10.6	17.3	12.6	12.0	10.7	9.4	8.1	6.9	6.8	6.8	6.8	6.7
ES	-7.1	13.7	14.8	13.5	11.7	10.0	8.3	6.8	6.6	6.6	6.6	6.6
FR	-1.6	8.2	8.4	8.0	7.6	7.3	7.0	6.6	6.6	6.6	6.6	6.6
HR	0.2	6.3	6.9	7.5	7.3	7.1	6.8	6.5	6.5	6.5	6.5	6.5
IT	-3.4	9.7	8.8	8.6	8.0	7.5	6.9	6.5	6.4	6.3	6.3	6.3
CY	-0.6	7.1	8.3	8.0	7.7	7.3	6.9	6.5	6.5	6.4	6.4	6.4
LV	0.4	6.2	8.0	8.7	8.2	7.7	7.2	6.7	6.6	6.6	6.6	6.7
LT	0.5	6.2	6.1	6.9	6.8	6.8	6.8	6.7	6.7	6.7	6.7	6.7
LU	-0.8	5.3	5.1	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
HU	0.6	3.3	4.7	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
MT	0.8	2.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
NL	1.6	3.0	4.1	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
AT	-0.3	4.3	4.4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
PL	1.7	3.2	4.1	4.8	4.9	4.9	4.9	4.8	4.8	4.8	4.8	4.9
PT	-0.3	6.3	5.3	6.1	6.1	6.1	6.0	6.0	6.0	6.0	6.0	6.0
RO	0.6	3.6	4.8	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
SI	1.2	4.3	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
SK	1.1	5.5	7.0	7.7	7.4	7.1	6.8	6.6	6.5	6.5	6.5	6.6
FI	-0.1	6.0	5.8	5.9	6.0	6.1	6.0	6.0	5.9	5.9	5.9	5.9
SE	-1.2	5.8	5.3	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
NO	-0.2	3.2	3.4	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
EA	-1.7	7.4	7.5	7.5	7.0	6.6	6.1	5.7	5.6	5.6	5.6	5.6
EU	-1.1	6.5	6.8	6.8	6.5	6.1	5.7	5.4	5.4	5.4	5.4	5.4

Table III.1.55: Employment (20-64) (in millions)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.3	4.7	4.8	4.7	4.7	4.7	4.6	4.5	4.5	4.5	4.4	4.4
BG	-1.2	3.1	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.9	1.9	1.9
CZ	-1.0	5.1	4.9	4.9	4.8	4.6	4.4	4.3	4.2	4.1	4.2	4.2
DK	-0.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
DE	-5.8	40.1	38.7	36.9	35.8	35.8	35.7	35.3	34.8	34.4	34.3	34.3
EE	-0.1	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
IE	0.4	2.2	2.3	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
EL	-0.5	3.8	4.0	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.4	3.3
ES	-1.2	19.5	19.9	20.2	20.1	19.8	19.3	19.1	18.9	18.7	18.6	18.4
FR	-0.6	26.7	26.7	26.7	26.7	26.6	26.6	26.5	26.3	26.3	26.3	26.1
HR	-0.6	1.6	1.5	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.1	1.1
IT	-3.6	22.7	23.0	22.6	22.0	21.2	20.7	20.4	20.1	19.8	19.5	19.1
CY	0.1	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LV	-0.4	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5
LT	-0.6	1.3	1.2	1.1	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7
LU	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
HU	-0.7	4.5	4.6	4.6	4.5	4.3	4.2	4.1	4.0	3.9	3.8	3.8
MT	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NL	-0.7	8.2	8.1	8.0	7.8	7.8	7.8	7.8	7.8	7.7	7.6	7.5
AT	-0.4	4.2	4.1	4.1	4.1	4.1	4.0	4.0	3.9	3.9	3.9	3.8
PL	-6.1	17.2	16.4	15.8	15.4	14.7	13.9	13.0	12.2	11.7	11.4	11.1
PT	-1.3	4.6	4.6	4.4	4.2	4.0	3.8	3.6	3.6	3.5	3.4	3.3
RO	-3.2	8.3	7.7	7.4	6.9	6.5	6.1	5.7	5.5	5.3	5.2	5.0
SI	-0.2	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
SK	-0.8	2.5	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.7	1.7	1.7
FI	-0.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.2	2.1	2.1	2.1
SE	0.9	4.8	5.0	5.2	5.3	5.4	5.5	5.6	5.6	5.6	5.7	5.7
NO	0.3	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8
EA	-16.2	146.4	145.6	142.9	140.6	138.8	137.0	135.4	133.6	132.3	131.3	130.2
EU	-28.2	193.7	191.3	187.6	184.0	180.6	177.1	173.9	170.8	168.6	167.1	165.6

Table III.1.56: Employment (20-74) (in millions)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.3	4.8	4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5
BG	-1.3	3.2	3.0	2.8	2.6	2.5	2.4	2.2	2.1	2.0	2.0	2.0
CZ	-1.0	5.3	5.1	5.0	4.9	4.7	4.6	4.4	4.3	4.3	4.3	4.3
DK	0.1	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8
DE	-5.3	41.3	40.2	38.9	37.9	37.5	37.3	37.0	36.6	36.2	36.0	36.0
EE	-0.1	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
IE	0.4	2.2	2.4	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.7
EL	-0.3	3.9	4.1	4.1	4.0	4.0	3.9	3.8	3.7	3.6	3.6	3.6
ES	-0.2	19.7	20.5	21.1	21.4	21.1	20.7	20.3	20.0	19.8	19.7	19.5
FR	0.1	27.1	27.2	27.4	27.5	27.6	27.7	27.6	27.4	27.4	27.3	27.2
HR	-0.6	1.6	1.6	1.5	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1
IT	-1.9	23.3	24.0	24.1	23.7	23.1	22.5	22.2	22.0	21.8	21.6	21.3
CY	0.1	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LV	-0.4	0.9	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5
LT	-0.6	1.4	1.3	1.1	1.1	1.0	1.0	0.9	0.8	0.8	0.8	0.8
LU	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
HU	-0.7	4.6	4.6	4.7	4.6	4.5	4.3	4.2	4.1	4.0	3.9	3.9
MT	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NL	-0.4	8.4	8.5	8.4	8.2	8.1	8.1	8.2	8.2	8.2	8.1	8.1
AT	-0.3	4.3	4.2	4.2	4.2	4.2	4.2	4.1	4.1	4.0	4.0	4.0
PL	-6.0	17.6	16.9	16.3	15.9	15.3	14.5	13.6	12.9	12.3	11.9	11.6
PT	-1.2	4.8	4.8	4.6	4.4	4.2	4.0	3.9	3.8	3.7	3.6	3.6
RO	-3.2	8.6	8.1	7.7	7.3	6.9	6.5	6.1	5.8	5.6	5.5	5.3
SI	-0.2	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
SK	-0.9	2.6	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.8	1.7	1.7
FI	-0.3	2.5	2.5	2.4	2.5	2.4	2.4	2.4	2.3	2.3	2.2	2.2
SE	1.0	5.0	5.2	5.4	5.5	5.6	5.7	5.8	5.8	5.9	5.9	6.0
NO	0.3	2.6	2.7	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9
EA	-11.6	149.8	150.4	149.4	147.9	146.2	144.4	142.8	141.1	139.9	139.0	138.2
EU	-23.2	198.3	197.5	195.6	192.9	189.8	186.4	183.2	180.2	178.0	176.5	175.1

Table III.1.57: Share of young (20-24) in employment (20-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.2	6.0%	6.1%	6.5%	6.5%	6.2%	6.0%	6.0%	6.1%	6.2%	6.3%	6.2%
BG	1.3	3.9%	4.1%	4.7%	5.0%	5.0%	4.8%	4.8%	4.9%	5.2%	5.3%	5.2%
CZ	1.7	4.7%	4.8%	5.8%	5.8%	6.2%	6.1%	5.9%	5.9%	6.2%	6.4%	6.4%
DK	-1.0	9.3%	8.8%	9.0%	8.4%	8.7%	8.8%	8.7%	8.5%	8.4%	8.3%	8.3%
DE	0.7	7.5%	7.2%	7.3%	7.7%	8.2%	8.0%	7.9%	7.8%	7.9%	8.0%	8.2%
EE	0.7	6.3%	6.7%	7.8%	7.6%	7.5%	6.6%	6.4%	6.6%	7.0%	7.2%	7.0%
IE	-0.3	8.8%	8.9%	9.2%	8.8%	8.1%	8.0%	8.1%	8.3%	8.5%	8.5%	8.4%
EL	0.7	4.0%	4.7%	4.9%	4.8%	4.8%	4.5%	4.5%	4.6%	4.7%	4.8%	4.7%
ES	1.1	4.6%	4.9%	5.3%	5.2%	5.0%	5.0%	5.3%	5.5%	5.7%	5.7%	5.7%
FR	0.3	7.1%	7.4%	7.6%	7.6%	7.2%	7.1%	7.2%	7.3%	7.4%	7.4%	7.3%
HR	-0.5	6.6%	6.0%	6.2%	6.1%	5.9%	5.8%	5.9%	5.9%	6.0%	6.1%	6.1%
IT	0.0	4.3%	4.4%	4.4%	4.3%	4.1%	4.1%	4.2%	4.3%	4.3%	4.3%	4.3%
CY	-1.2	7.9%	7.3%	7.1%	7.0%	6.8%	7.0%	7.1%	6.9%	6.8%	6.8%	6.8%
LV	2.3	5.5%	6.3%	7.4%	7.6%	8.2%	7.4%	7.1%	7.2%	7.6%	7.9%	7.8%
LT	0.2	6.4%	5.7%	6.0%	6.7%	7.0%	6.6%	6.3%	6.1%	6.3%	6.6%	6.6%
LU	-0.1	5.8%	5.5%	5.6%	5.6%	5.5%	5.5%	5.5%	5.5%	5.6%	5.7%	5.7%
HU	0.0	6.0%	5.4%	5.6%	5.3%	5.7%	5.6%	5.7%	5.7%	5.8%	5.9%	5.9%
MT	-2.0	9.3%	6.9%	6.6%	6.8%	7.0%	6.8%	6.8%	6.7%	6.9%	7.1%	7.3%
NL	-0.7	9.2%	9.4%	8.9%	8.8%	8.6%	8.7%	8.8%	8.8%	8.6%	8.5%	8.5%
AT	0.1	8.4%	8.0%	8.2%	8.4%	8.6%	8.4%	8.3%	8.2%	8.3%	8.4%	8.5%
PL	-0.1	6.6%	5.7%	6.4%	6.4%	6.6%	6.0%	5.8%	5.8%	6.2%	6.4%	6.5%
PT	0.1	5.5%	5.8%	5.5%	5.3%	5.4%	5.5%	5.6%	5.7%	5.7%	5.7%	5.6%
RO	0.4	4.9%	4.9%	5.3%	5.1%	5.5%	5.0%	5.0%	5.1%	5.3%	5.3%	5.3%
SI	0.9	5.8%	5.6%	6.4%	6.8%	6.6%	6.1%	6.0%	6.2%	6.6%	6.8%	6.7%
SK	1.0	5.1%	4.7%	5.1%	5.5%	5.9%	5.8%	5.6%	5.6%	5.8%	6.0%	6.1%
FI	-0.8	7.8%	8.0%	8.5%	8.4%	7.2%	6.7%	6.8%	6.9%	7.1%	7.1%	6.9%
SE	1.0	7.3%	7.8%	8.6%	8.7%	8.5%	8.2%	8.0%	8.0%	8.2%	8.4%	8.3%
NO	-0.6	8.5%	8.3%	8.6%	8.4%	7.9%	7.8%	7.9%	7.9%	8.0%	8.0%	7.9%
EA	0.4	6.4%	6.4%	6.6%	6.6%	6.6%	6.5%	6.6%	6.6%	6.7%	6.8%	6.8%
EU	0.4	6.3%	6.3%	6.5%	6.6%	6.6%	6.5%	6.5%	6.5%	6.7%	6.7%	6.7%

Table III.1.58: Share of prime-age (25-54) in employment (20-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-5.1	76.5%	73.1%	71.6%	71.8%	72.4%	72.4%	72.2%	72.4%	72.4%	71.8%	71.3%
BG	-4.7	74.1%	73.0%	70.0%	67.9%	67.0%	66.3%	67.7%	70.4%	71.3%	70.4%	69.4%
CZ	-4.9	76.1%	76.2%	71.6%	68.2%	68.0%	68.7%	69.8%	72.2%	73.1%	71.8%	71.2%
DK	-5.8	68.2%	67.2%	66.2%	66.7%	66.9%	66.1%	64.3%	63.3%	62.8%	62.4%	62.4%
DE	-0.2	68.1%	65.9%	66.8%	68.0%	67.7%	67.0%	67.0%	67.3%	67.9%	68.1%	67.9%
EE	-7.9	69.0%	69.8%	67.9%	66.9%	65.1%	63.2%	62.6%	63.5%	63.9%	62.4%	61.1%
IE	-5.2	73.4%	72.5%	71.0%	69.6%	69.2%	69.8%	70.3%	69.8%	69.2%	68.5%	68.2%
EL	-13.1	78.2%	73.5%	70.0%	67.8%	67.0%	68.2%	68.8%	68.3%	67.3%	65.8%	65.1%
ES	-11.9	77.5%	71.0%	66.4%	64.0%	64.6%	66.5%	67.8%	68.1%	67.3%	66.0%	65.6%
FR	-5.5	75.0%	72.7%	71.2%	71.2%	71.0%	70.3%	70.6%	70.7%	70.3%	69.7%	69.5%
HR	-3.7	76.2%	76.1%	75.3%	74.0%	72.8%	72.8%	72.8%	72.3%	72.7%	72.6%	72.5%
IT	-12.6	73.6%	66.7%	63.4%	63.1%	64.5%	65.6%	65.3%	64.2%	63.0%	61.7%	61.0%
CY	-6.0	74.4%	76.1%	76.1%	75.4%	74.1%	72.0%	70.0%	69.0%	69.0%	68.8%	68.4%
LV	-1.3	70.1%	70.2%	68.5%	68.0%	66.6%	65.9%	66.8%	69.5%	70.5%	69.6%	68.8%
LT	0.6	69.3%	71.5%	70.2%	69.7%	69.3%	68.4%	67.6%	68.6%	70.3%	70.6%	69.9%
LU	-3.2	82.4%	81.9%	81.7%	81.1%	80.5%	79.8%	79.3%	79.6%	79.8%	79.4%	79.2%
HU	-8.4	76.7%	74.0%	69.7%	66.5%	66.7%	67.9%	67.4%	67.7%	68.4%	68.2%	68.3%
MT	-4.7	76.0%	79.8%	78.5%	76.2%	73.9%	71.6%	69.8%	70.3%	71.4%	71.6%	71.2%
NL	-3.3	68.3%	66.3%	66.9%	68.5%	69.2%	68.2%	66.8%	65.8%	65.2%	65.0%	65.0%
AT	-3.1	74.5%	72.5%	72.4%	72.5%	71.6%	71.3%	70.9%	71.3%	71.7%	71.6%	71.3%
PL	-5.5	76.8%	77.6%	75.3%	73.0%	70.5%	70.2%	70.6%	71.9%	72.9%	71.9%	71.3%
PT	-5.9	73.0%	71.1%	68.9%	67.0%	66.7%	67.8%	68.3%	67.8%	67.1%	66.8%	67.1%
RO	-6.8	78.4%	74.7%	71.9%	70.1%	69.6%	69.6%	71.1%	72.0%	72.1%	71.6%	71.5%
SI	-6.5	78.6%	75.5%	73.0%	71.0%	70.7%	71.6%	72.9%	73.7%	73.9%	72.9%	72.1%
SK	-3.8	77.3%	78.1%	75.6%	72.2%	70.8%	70.7%	71.6%	73.8%	75.2%	74.5%	73.5%
FI	-6.4	69.5%	70.4%	71.2%	70.6%	70.0%	68.9%	67.1%	66.3%	65.7%	64.4%	63.1%
SE	-2.5	70.5%	69.6%	68.8%	69.4%	69.9%	69.1%	68.1%	68.9%	69.2%	68.5%	68.0%
NO	-2.2	70.0%	69.2%	68.6%	69.8%	70.5%	70.0%	69.0%	68.4%	68.3%	67.9%	67.8%
EA	-5.9	72.7%	69.4%	67.9%	67.7%	67.8%	67.9%	68.1%	68.0%	67.7%	67.1%	66.8%
EU	-6.0	73.5%	70.7%	68.9%	68.3%	68.1%	68.2%	68.3%	68.5%	68.4%	67.8%	67.4%

Table III.1.59: Share of older workers (55-64) in employment (20-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.9	16.5%	19.3%	19.0%	18.5%	18.3%	18.6%	18.8%	18.5%	18.3%	19.0%	19.4%
BG	1.9	19.1%	18.9%	21.2%	23.0%	23.0%	23.4%	21.9%	19.0%	18.4%	20.0%	21.0%
CZ	2.9	16.6%	16.5%	20.2%	23.3%	22.0%	21.1%	20.6%	18.2%	17.2%	18.9%	19.5%
DK	0.9	19.1%	20.6%	20.4%	19.8%	18.6%	19.1%	20.7%	21.0%	20.3%	20.3%	20.0%
DE	-2.2	21.5%	23.0%	20.7%	18.8%	19.4%	20.5%	20.4%	19.8%	19.3%	19.1%	19.3%
EE	3.7	18.9%	18.7%	19.5%	20.6%	21.8%	23.7%	23.3%	20.7%	19.9%	21.7%	22.6%
IE	4.3	14.9%	15.6%	16.6%	18.2%	18.9%	18.0%	17.4%	17.9%	18.4%	18.9%	19.2%
EL	7.4	15.6%	19.3%	22.1%	23.2%	23.3%	21.8%	21.0%	21.4%	22.0%	22.9%	23.1%
ES	5.9	16.9%	21.3%	23.7%	25.1%	24.0%	21.7%	20.8%	20.9%	21.6%	22.7%	22.8%
FR	2.7	16.5%	18.1%	18.6%	18.2%	18.4%	18.8%	18.3%	18.0%	18.5%	19.0%	19.2%
HR	2.7	15.8%	16.0%	16.3%	17.6%	18.8%	18.6%	18.3%	18.9%	18.3%	18.3%	18.5%
IT	4.7	19.6%	24.7%	26.1%	25.3%	23.5%	22.5%	22.5%	23.0%	23.6%	24.3%	24.3%
CY	3.9	15.0%	14.0%	14.0%	14.5%	15.8%	17.1%	18.5%	19.0%	18.5%	18.5%	18.8%
LV	-0.1	20.0%	19.4%	19.9%	20.3%	21.0%	22.5%	21.6%	18.5%	17.6%	19.0%	19.9%
LT	-0.3	20.7%	20.0%	20.7%	20.4%	20.4%	21.9%	22.8%	21.6%	19.7%	19.5%	20.4%
LU	2.6	11.3%	11.9%	11.8%	12.4%	13.1%	13.7%	14.1%	13.7%	13.5%	13.8%	13.9%
HU	7.1	15.6%	19.1%	22.7%	25.5%	24.4%	23.0%	23.9%	23.4%	22.5%	22.8%	22.7%
MT	6.5	12.8%	12.3%	13.7%	15.7%	17.6%	19.8%	21.3%	20.6%	19.2%	19.0%	19.3%
NL	0.2	19.4%	20.2%	19.4%	17.7%	17.5%	18.5%	19.4%	19.9%	20.0%	19.8%	19.6%
AT	1.7	15.7%	17.5%	16.9%	16.4%	17.2%	17.8%	18.1%	17.7%	17.1%	17.2%	17.5%
PL	3.7	14.7%	13.7%	15.1%	17.7%	19.4%	19.6%	18.9%	17.5%	16.4%	17.6%	18.3%
PT	3.0	17.7%	19.4%	21.3%	22.8%	21.9%	20.2%	19.9%	20.7%	21.3%	21.2%	20.7%
RO	4.3	13.5%	16.4%	18.9%	19.7%	18.9%	19.1%	17.9%	16.7%	17.0%	17.8%	17.8%
SI	4.1	14.5%	17.4%	18.4%	19.5%	19.9%	19.2%	18.0%	17.1%	16.8%	17.8%	18.7%
SK	2.5	16.1%	15.7%	17.8%	20.7%	21.4%	21.2%	20.5%	18.3%	16.9%	17.6%	18.7%
FI	3.6	19.5%	18.6%	17.3%	17.9%	19.6%	20.5%	21.6%	21.6%	21.3%	22.2%	23.1%
SE	1.4	18.4%	19.1%	18.9%	18.1%	17.8%	19.0%	20.1%	19.0%	18.3%	19.2%	19.8%
NO	1.9	17.7%	18.6%	18.5%	17.4%	17.1%	18.1%	18.9%	19.2%	19.0%	19.3%	19.5%
EA	2.1	18.6%	21.0%	21.2%	20.7%	20.5%	20.4%	20.2%	20.0%	20.2%	20.5%	20.7%
EU	2.5	17.9%	19.9%	20.5%	20.5%	20.4%	20.3%	20.1%	19.7%	19.7%	20.2%	20.4%

Table III.1.60: Share of old (65-74) in employment (20-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.0	1.0%	1.5%	2.9%	3.1%	3.0%	3.0%	3.0%	3.1%	3.1%	3.0%	3.0%
BG	1.4	2.9%	4.0%	4.1%	4.1%	4.9%	5.5%	5.5%	5.7%	5.1%	4.4%	4.4%
CZ	0.3	2.6%	2.5%	2.5%	2.8%	3.8%	4.1%	3.8%	3.7%	3.5%	3.0%	2.9%
DK	5.9	3.4%	3.4%	4.4%	5.1%	5.8%	6.1%	6.2%	7.2%	8.5%	9.1%	9.3%
DE	1.8	2.8%	3.8%	5.2%	5.5%	4.6%	4.5%	4.7%	5.0%	4.9%	4.8%	4.6%
EE	3.5	5.7%	4.9%	4.8%	5.0%	5.6%	6.5%	7.6%	9.2%	9.2%	8.8%	9.2%
IE	1.2	3.0%	3.0%	3.2%	3.4%	3.7%	4.2%	4.2%	4.0%	3.9%	4.1%	4.2%
EL	5.0	2.2%	2.5%	3.0%	4.2%	5.0%	5.5%	5.7%	5.6%	6.0%	6.5%	7.1%
ES	4.9	1.0%	2.8%	4.6%	5.7%	6.4%	6.7%	6.1%	5.6%	5.5%	5.6%	5.9%
FR	2.6	1.4%	1.8%	2.5%	3.0%	3.4%	3.7%	4.0%	4.0%	3.8%	3.9%	4.0%
HR	1.5	1.4%	1.9%	2.2%	2.3%	2.5%	2.9%	3.0%	2.9%	2.9%	3.0%	2.9%
IT	7.9	2.6%	4.2%	6.1%	7.3%	8.0%	7.8%	8.0%	8.5%	9.1%	9.7%	10.5%
CY	3.3	2.7%	2.7%	2.8%	3.1%	3.3%	3.8%	4.5%	5.1%	5.7%	6.0%	6.0%
LV	-0.8	4.4%	4.1%	4.2%	4.1%	4.2%	4.2%	4.5%	4.8%	4.3%	3.6%	3.6%
LT	-0.5	3.5%	2.8%	3.0%	3.2%	3.3%	3.2%	3.4%	3.7%	3.7%	3.4%	3.1%
LU	0.7	0.5%	0.7%	0.9%	0.9%	0.9%	1.0%	1.1%	1.2%	1.2%	1.2%	1.1%
HU	1.3	1.7%	1.5%	2.0%	2.7%	3.3%	3.5%	3.1%	3.2%	3.3%	3.1%	3.0%
MT	0.2	2.0%	1.0%	1.1%	1.3%	1.6%	1.8%	2.1%	2.4%	2.5%	2.3%	2.2%
NL	3.8	3.1%	4.1%	4.7%	5.0%	4.7%	4.5%	4.9%	5.6%	6.2%	6.6%	6.9%
AT	1.3	1.4%	2.0%	2.5%	2.7%	2.6%	2.5%	2.7%	2.8%	2.9%	2.8%	2.7%
PL	1.9	2.0%	3.0%	3.1%	3.0%	3.5%	4.2%	4.8%	4.8%	4.6%	4.1%	3.9%
PT	2.8	3.8%	3.7%	4.3%	5.0%	6.0%	6.6%	6.2%	5.7%	5.9%	6.3%	6.6%
RO	2.1	3.2%	3.9%	3.9%	5.1%	6.0%	6.2%	6.0%	6.1%	5.6%	5.2%	5.4%
SI	1.5	1.1%	1.5%	2.2%	2.6%	2.8%	3.0%	3.1%	2.9%	2.7%	2.5%	2.5%
SK	0.2	1.5%	1.5%	1.5%	1.6%	1.9%	2.2%	2.3%	2.3%	2.1%	1.9%	1.7%
FI	3.7	3.2%	2.9%	3.1%	3.1%	3.2%	3.8%	4.5%	5.2%	5.9%	6.3%	6.9%
SE	0.0	3.9%	3.5%	3.7%	3.9%	3.8%	3.7%	3.7%	4.1%	4.3%	3.9%	3.9%
NO	0.9	3.8%	4.0%	4.2%	4.4%	4.4%	4.1%	4.2%	4.5%	4.7%	4.8%	4.7%
EA	3.5	2.2%	3.2%	4.3%	4.9%	5.0%	5.1%	5.2%	5.4%	5.4%	5.5%	5.7%
EU	3.1	2.3%	3.1%	4.1%	4.6%	4.8%	5.0%	5.1%	5.2%	5.3%	5.3%	5.4%

Table III.1.61: Share of older population (55-64) in population (20-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.8	22.5	23.1	22.4	21.9	21.9	22.3	22.6	22.4	22.1	22.7	23.3
BG	2.1	22.9	23.7	25.6	27.5	27.8	28.2	27.0	23.5	22.2	23.7	25.0
CZ	2.7	20.4	21.0	23.8	27.2	26.6	25.3	24.7	22.3	20.6	22.1	23.1
DK	0.9	21.6	23.3	23.3	22.4	21.1	21.4	23.0	23.3	22.7	22.7	22.4
DE	-2.3	24.6	26.9	24.5	22.1	22.5	23.7	23.7	23.1	22.5	22.1	22.3
EE	2.7	22.2	22.0	22.5	23.5	24.5	26.7	26.3	23.3	22.1	23.8	24.9
IE	4.8	18.6	19.4	20.5	22.2	23.2	22.5	21.5	21.8	22.3	23.0	23.4
EL	2.6	22.3	24.5	26.0	26.8	26.7	24.8	23.2	23.2	23.7	24.6	24.9
ES	3.5	21.6	24.2	25.9	27.3	26.4	24.1	23.1	23.0	23.6	24.8	25.1
FR	0.9	22.6	23.3	23.6	22.9	22.8	23.2	22.7	22.2	22.6	23.2	23.5
HR	1.0	24.3	23.9	23.6	24.3	25.5	25.6	25.2	25.7	25.2	24.9	25.3
IT	2.4	23.5	26.8	27.9	27.0	25.1	24.1	24.1	24.5	25.1	25.8	25.8
CY	2.4	18.9	18.1	17.3	17.6	19.0	20.4	21.6	22.0	21.4	21.1	21.3
LV	0.6	24.0	24.5	25.0	25.3	26.1	28.2	27.6	23.9	22.1	23.5	24.6
LT	0.0	24.5	25.5	25.8	25.3	25.0	26.4	27.7	26.5	24.2	23.6	24.5
LU	4.9	19.1	21.0	21.4	21.7	22.6	23.7	24.3	23.9	23.3	23.6	24.0
HU	2.5	21.0	20.8	23.7	26.6	25.8	24.2	24.8	24.4	23.4	23.6	23.6
MT	4.6	19.6	17.5	18.0	20.0	22.2	24.7	26.6	26.1	24.4	23.8	24.2
NL	-0.2	23.0	24.2	23.4	21.5	20.9	21.8	22.7	23.2	23.3	23.1	22.8
AT	0.6	22.4	25.0	24.1	22.3	22.5	23.5	23.9	23.5	22.8	22.7	23.0
PL	3.9	22.0	19.9	21.1	24.3	27.2	28.2	27.5	25.6	23.8	24.7	25.9
PT	0.9	23.2	24.7	26.3	27.9	27.1	25.0	24.1	24.5	25.0	24.9	24.1
RO	3.9	20.7	22.5	26.0	27.1	26.8	26.8	25.5	23.5	23.5	24.3	24.5
SI	1.3	23.4	24.1	24.5	25.7	26.5	26.0	24.5	23.2	22.6	23.5	24.7
SK	3.1	20.9	20.6	22.3	25.8	27.5	27.7	27.0	24.7	22.4	22.7	24.1
FI	2.7	23.3	22.9	21.2	21.2	22.8	23.8	24.6	24.7	24.2	25.0	26.0
SE	2.3	20.2	21.3	21.3	20.5	20.3	21.6	22.8	21.9	21.0	21.7	22.5
NO	3.2	20.0	21.3	21.7	20.8	20.5	21.5	22.5	22.8	22.7	23.0	23.3
EA	0.8	23.1	25.0	24.9	24.2	23.8	23.7	23.5	23.2	23.3	23.7	23.8
EU	1.3	22.7	24.1	24.4	24.4	24.3	24.2	23.9	23.4	23.2	23.6	24.0

Table III.1.62: Old-age dependency ratio (65+ / 20-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	20.8	32.5	36.6	40.5	43.7	46.0	47.7	49.2	50.6	51.8	52.5	53.3
BG	24.8	36.0	40.2	42.7	45.6	50.2	55.8	60.5	65.6	66.2	63.1	60.8
CZ	20.6	33.0	36.7	38.6	40.5	45.2	51.3	54.8	58.0	59.2	56.4	53.7
DK	19.7	34.1	37.8	41.4	45.0	47.4	48.2	47.9	49.0	51.2	52.7	53.8
DE	18.5	36.1	40.4	46.4	51.6	52.2	52.2	52.8	54.1	54.3	54.7	54.6
EE	25.6	33.8	38.2	40.9	43.0	46.1	49.5	53.8	59.6	61.5	60.3	59.4
IE	28.7	24.2	27.4	30.3	33.3	37.4	42.2	46.5	48.8	50.0	51.5	53.0
EL	27.3	37.9	42.2	46.1	52.0	57.8	64.0	68.2	68.4	67.3	66.0	65.2
ES	30.5	32.1	36.1	40.9	46.9	54.0	61.2	64.7	65.0	64.1	62.8	62.5
FR	20.4	36.5	41.0	44.9	48.4	51.7	53.1	54.8	56.0	55.9	56.0	56.9
HR	29.8	34.8	40.5	44.5	47.8	50.4	53.7	57.2	59.6	61.5	64.1	64.6
IT	26.7	38.9	42.7	48.0	54.7	61.4	65.4	66.5	66.3	65.5	65.0	65.6
CY	24.6	26.2	30.1	33.0	34.6	35.6	36.7	38.8	41.6	45.3	48.6	50.7
LV	29.0	34.6	40.5	45.7	49.7	53.8	57.4	62.3	68.0	69.5	66.2	63.6
LT	33.1	32.9	38.5	45.4	51.1	55.9	58.9	61.5	65.3	68.4	68.2	66.0
LU	33.6	22.6	25.6	29.6	34.0	37.8	41.6	45.5	49.6	52.8	54.8	56.1
HU	25.1	32.2	36.1	36.6	39.2	43.5	49.6	52.0	54.4	57.0	57.6	57.4
MT	32.7	29.7	32.4	34.4	35.0	36.4	39.3	43.5	49.8	56.5	60.6	62.4
NL	22.4	32.9	37.4	42.4	47.0	49.3	49.3	49.3	50.1	51.4	53.2	55.2
AT	25.2	30.7	34.8	40.3	45.6	48.2	49.5	51.5	53.3	54.8	55.5	55.9
PL	38.8	29.0	36.1	38.9	40.7	43.9	49.5	57.0	63.7	68.2	69.0	67.8
PT	30.0	37.3	41.9	47.2	52.8	59.6	65.9	68.8	68.6	67.9	67.6	67.3
RO	31.0	31.1	36.2	37.1	43.4	48.9	55.6	59.8	64.5	64.3	63.0	62.1
SI	25.5	33.2	38.9	43.5	47.3	51.0	55.9	59.9	62.2	61.7	60.3	58.8
SK	37.2	25.9	31.9	35.9	38.7	43.1	49.9	56.5	62.7	66.3	65.6	63.1
FI	23.6	38.9	43.7	46.8	48.4	48.4	49.9	52.3	54.9	58.2	60.4	62.5
SE	14.6	35.2	36.8	38.4	40.1	41.2	41.8	43.0	45.7	48.4	48.9	49.8
NO	23.0	29.4	32.7	35.4	38.6	41.3	42.6	44.1	46.2	48.5	50.6	52.4
EA	23.6	35.3	39.5	44.4	49.4	53.2	55.8	57.6	58.5	58.6	58.6	58.9
EU	24.7	34.4	38.9	43.1	47.6	51.4	54.6	56.9	58.6	59.2	59.1	59.2

Table III.1.63: Total dependency ratio ((0-19 & 65+) / (20-64))

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	19.8	70.8	74.9	78.0	80.3	82.6	84.8	86.7	88.4	89.5	89.8	90.5
BG	29.0	67.7	73.5	75.6	77.9	82.7	89.8	96.2	102.9	103.5	99.5	96.7
CZ	25.0	67.1	73.4	74.4	75.7	80.6	88.1	93.4	98.2	99.6	95.7	92.1
DK	21.3	72.7	76.5	80.4	85.2	88.0	88.3	87.3	88.3	90.9	92.8	94.0
DE	25.2	66.9	73.0	81.1	87.5	87.4	87.1	88.3	90.7	91.7	92.3	92.1
EE	25.4	69.5	74.9	75.6	76.3	78.7	83.3	89.4	96.9	98.7	96.4	94.9
IE	22.7	70.0	70.4	70.5	72.1	76.7	82.6	87.8	89.8	90.3	91.3	92.6
EL	27.6	71.1	74.7	77.0	82.5	88.6	96.3	101.8	102.4	100.9	99.4	98.7
ES	30.9	64.4	67.1	70.3	75.8	84.0	93.1	97.7	98.2	96.9	95.3	95.3
FR	18.3	79.8	83.5	86.5	89.5	93.4	95.1	97.1	98.3	97.6	97.2	98.1
HR	30.4	67.1	72.9	76.3	78.9	81.3	85.0	89.1	91.8	94.0	96.9	97.5
IT	27.6	69.2	71.5	76.0	82.7	90.7	95.8	97.4	97.1	96.1	95.7	96.8
CY	26.0	61.0	65.0	68.4	69.9	70.9	71.4	73.0	76.1	80.5	84.4	86.9
LV	30.7	69.5	77.7	82.3	85.1	87.9	92.0	98.7	106.5	108.2	103.7	100.2
LT	34.8	66.0	73.0	80.9	85.5	89.1	91.5	94.8	100.1	104.2	103.7	100.8
LU	33.4	55.9	57.9	61.5	65.5	69.0	72.9	77.2	81.9	85.7	87.8	89.2
HU	29.2	64.4	69.0	69.0	72.0	76.8	84.1	87.0	90.0	93.2	93.8	93.6
MT	33.9	58.5	61.4	63.4	63.0	63.3	65.7	70.3	77.7	85.7	90.5	92.3
NL	23.2	69.9	73.4	78.9	84.4	87.3	87.0	86.4	86.9	88.4	90.7	93.2
AT	29.0	62.1	67.3	73.8	79.6	81.8	82.8	85.2	87.7	89.9	90.8	91.1
PL	38.0	61.5	69.7	70.6	70.5	72.2	78.6	87.7	95.9	100.9	101.2	99.5
PT	33.9	69.4	73.1	78.4	85.0	93.1	100.7	104.1	103.8	103.0	103.0	103.3
RO	31.1	66.0	71.0	70.0	76.5	81.5	89.6	94.8	100.4	99.9	98.1	97.1
SI	27.5	65.7	72.6	76.2	78.8	82.3	88.9	94.8	98.0	97.3	95.1	93.2
SK	40.6	58.5	66.5	70.3	71.8	75.4	82.8	91.1	99.1	103.6	102.4	99.1
FI	18.3	76.4	79.6	80.7	80.1	79.6	81.7	84.6	87.2	90.5	92.4	94.7
SE	13.2	76.2	78.6	79.4	80.0	80.7	81.3	82.8	86.2	89.1	89.0	89.4
NO	19.6	69.0	70.8	72.1	74.7	77.4	78.8	80.1	82.2	84.4	86.6	88.6
EA	25.5	69.7	73.7	78.5	83.6	87.8	91.1	93.4	94.7	94.8	94.7	95.2
EU	26.5	68.8	73.3	77.1	81.5	85.5	89.4	92.5	94.7	95.4	95.2	95.3

Table III.1.64: Total economic dependency ratio (total inactive population / employment)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	21.1	139.3	139.2	141.4	144.3	147.9	151.3	154.4	156.8	158.3	159.1	160.4
BG	39.6	116.6	123.8	129.8	134.4	139.3	146.0	154.0	159.9	160.8	158.6	156.1
CZ	35.2	102.4	113.1	115.6	118.0	124.4	131.3	138.0	143.1	143.5	140.4	137.6
DK	4.6	112.7	115.5	117.4	120.3	121.2	120.5	118.7	117.0	116.3	116.8	117.3
DE	25.6	101.3	107.5	114.6	120.0	121.7	122.1	123.1	124.6	126.0	126.8	127.0
EE	15.1	99.3	108.1	109.7	109.0	109.1	111.6	114.8	117.8	118.9	117.4	114.5
IE	25.8	119.5	121.7	122.5	123.4	127.7	133.4	138.4	141.1	142.3	143.5	145.2
EL	-33.5	174.7	156.2	152.5	149.6	149.2	150.2	150.5	149.9	147.3	144.0	141.2
ES	1.9	139.1	136.2	130.7	130.1	133.8	139.5	142.8	144.6	143.7	141.8	141.1
FR	7.6	147.4	150.4	151.0	152.1	153.2	153.1	153.8	154.5	154.4	154.2	155.1
HR	28.9	146.6	148.9	152.6	153.7	155.9	159.5	163.4	167.3	170.9	173.7	175.6
IT	-6.7	159.3	150.0	149.1	151.9	157.1	161.5	161.7	159.7	156.7	154.0	152.6
CY	10.8	108.6	112.2	112.9	112.4	111.7	110.3	109.5	110.8	113.7	117.0	119.4
LV	40.7	108.8	126.2	133.9	136.8	138.2	141.9	147.8	154.2	155.8	152.9	149.5
LT	37.4	104.6	115.0	123.6	127.8	130.3	132.7	136.3	141.2	144.5	144.3	142.0
LU	39.2	113.4	113.0	115.8	119.6	124.6	130.5	136.8	142.5	146.7	149.8	152.6
HU	14.8	114.4	109.2	103.8	105.2	110.0	117.0	121.3	124.6	127.9	129.2	129.2
MT	26.5	101.0	98.1	95.7	93.9	94.0	96.9	102.8	111.3	119.4	124.6	127.5
NL	17.3	105.3	109.4	115.1	120.5	123.6	123.2	121.4	120.1	120.1	121.1	122.7
AT	25.7	108.2	114.4	118.8	121.4	122.7	124.9	127.4	130.2	132.0	133.0	133.9
PL	49.8	116.1	122.0	126.1	128.9	133.3	140.7	150.0	158.5	163.8	165.4	165.9
PT	22.2	114.0	114.4	119.4	125.0	131.7	137.5	140.9	141.0	139.3	137.5	136.2
RO	30.4	126.2	129.0	129.8	135.1	140.2	147.3	153.7	157.6	158.1	157.6	156.6
SI	25.9	114.5	118.9	121.3	124.0	128.7	135.1	140.9	143.9	143.6	141.6	140.4
SK	62.3	112.1	125.7	133.8	139.1	146.8	155.9	165.8	174.7	178.2	176.7	174.3
FI	6.1	121.4	125.1	125.8	123.0	121.6	122.0	122.9	124.0	125.3	126.4	127.5
SE	13.1	106.2	108.4	107.9	108.2	108.9	110.1	112.1	115.2	117.5	118.4	119.3
NO	23.7	104.6	107.3	109.0	111.7	114.7	117.0	118.7	120.8	123.2	125.6	128.3
EA	12.5	128.6	129.9	132.0	134.7	137.4	139.6	141.0	141.9	141.8	141.2	141.1
EU	16.6	125.5	127.5	129.6	132.3	135.3	138.3	140.6	142.3	142.7	142.3	142.2

Table III.1.65: Economic old-age dependency ratio (inactive population 65+ / employment 20-64)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	27.0	45.0	49.2	53.6	57.8	61.2	63.7	65.9	67.9	69.7	70.7	71.9
BG	33.3	44.8	49.7	53.9	58.3	63.8	70.5	76.8	82.9	83.9	80.9	78.1
CZ	27.0	38.4	43.6	46.4	48.8	54.4	61.4	66.2	70.0	71.1	68.3	65.3
DK	16.1	39.9	44.2	47.5	51.0	52.9	53.5	53.0	53.0	53.9	55.0	56.0
DE	20.8	41.9	46.3	52.4	58.2	59.8	60.1	60.7	61.7	62.1	62.6	62.7
EE	25.5	35.9	42.5	46.1	48.3	50.9	53.8	57.5	62.1	64.1	63.2	61.4
IE	36.7	29.1	33.6	37.4	41.2	46.1	51.9	57.2	60.3	62.1	64.0	65.9
EL	17.5	59.8	60.7	64.4	69.5	74.8	80.2	83.5	83.4	81.5	79.1	77.2
ES	29.5	46.1	49.3	53.0	58.8	66.2	73.9	77.9	78.9	77.9	76.2	75.6
FR	22.6	49.4	55.0	59.3	63.2	66.5	67.6	69.2	70.6	70.8	71.0	72.0
HR	39.1	50.6	57.5	63.0	66.9	70.3	74.6	79.0	82.5	85.5	88.7	89.8
IT	23.7	58.5	60.5	65.8	73.3	81.0	86.1	87.0	86.0	84.2	82.6	82.2
CY	24.8	32.0	36.9	40.0	41.4	42.2	42.8	44.4	47.1	50.8	54.4	56.9
LV	38.5	39.9	49.4	56.7	61.9	66.8	71.0	76.5	82.8	84.6	81.4	78.4
LT	40.5	38.4	46.3	54.8	61.4	67.0	70.6	73.7	77.9	81.2	81.1	78.9
LU	44.1	30.6	34.0	38.9	44.6	49.7	55.0	60.3	65.7	69.8	72.6	74.6
HU	25.9	41.0	43.7	42.9	45.2	50.0	56.8	60.2	63.1	66.1	67.0	66.9
MT	36.8	36.4	39.2	40.4	40.8	42.4	45.7	50.8	58.2	65.9	70.8	73.2
NL	22.9	37.6	42.6	48.2	53.5	56.5	56.6	56.0	56.2	57.0	58.5	60.5
AT	29.0	38.5	43.5	49.5	55.0	57.9	59.8	62.2	64.3	66.0	66.8	67.5
PL	52.4	37.5	45.6	49.9	53.2	57.9	65.3	74.7	83.2	89.0	90.6	90.0
PT	31.5	44.9	50.0	56.0	62.1	69.5	76.3	79.8	79.8	78.6	77.4	76.4
RO	39.3	40.5	46.4	48.1	55.6	62.5	70.7	76.5	81.8	82.0	81.0	79.8
SI	30.0	42.4	48.6	53.5	58.2	62.9	68.7	73.3	75.9	75.6	74.0	72.4
SK	53.1	33.6	42.4	48.5	53.0	59.9	69.1	78.1	86.1	90.4	89.5	86.7
FI	23.8	47.1	53.3	57.1	58.6	58.3	59.3	61.3	63.7	66.8	69.0	70.9
SE	17.2	38.7	40.8	42.3	44.1	45.5	46.4	47.9	50.7	53.6	54.7	55.9
NO	28.6	33.0	37.1	40.4	44.3	47.6	49.6	51.4	53.9	56.6	59.2	61.6
EA	24.6	46.3	50.7	55.7	61.1	65.4	68.3	70.1	71.0	71.1	70.8	71.0
EU	27.0	44.7	49.4	53.9	58.9	63.3	66.9	69.5	71.3	71.9	71.8	71.7

Table III.1.66: Economic old-age dependency ratio (inactive population 65+ / employment 20-74)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	25.2	44.5	48.5	52.0	56.1	59.4	61.8	64.0	65.8	67.5	68.6	69.8
BG	31.2	43.5	47.7	51.7	55.9	60.7	66.6	72.5	78.2	79.6	77.3	74.7
CZ	26.0	37.4	42.5	45.2	47.5	52.4	58.9	63.7	67.4	68.7	66.3	63.4
DK	12.3	38.5	42.7	45.5	48.4	49.8	50.3	49.7	49.2	49.3	50.1	50.8
DE	19.1	40.8	44.6	49.7	55.0	57.1	57.4	57.8	58.6	59.1	59.6	59.9
EE	21.9	33.9	40.5	43.9	45.9	48.1	50.3	53.1	56.4	58.2	57.7	55.8
IE	34.8	28.3	32.5	36.2	39.8	44.4	49.7	54.7	57.9	59.7	61.4	63.1
EL	13.3	58.5	59.2	62.5	66.6	71.1	75.8	78.8	78.7	76.6	73.9	71.7
ES	25.5	45.6	47.9	50.5	55.5	61.9	68.9	73.1	74.5	73.7	72.0	71.1
FR	20.5	48.7	54.0	57.8	61.3	64.2	65.1	66.4	67.8	68.1	68.2	69.2
HR	37.3	49.9	56.4	61.6	65.4	68.6	72.5	76.7	80.0	83.0	86.0	87.2
IT	16.7	56.9	58.0	61.7	67.9	74.5	79.4	80.1	78.7	76.5	74.6	73.6
CY	22.3	31.2	36.0	38.9	40.2	40.8	41.2	42.4	44.7	47.9	51.1	53.5
LV	37.5	38.1	47.4	54.3	59.4	64.0	68.0	73.1	78.8	80.9	78.5	75.6
LT	39.4	37.0	45.0	53.1	59.5	64.8	68.3	71.2	75.0	78.1	78.3	76.5
LU	43.4	30.4	33.8	38.6	44.2	49.2	54.4	59.7	64.9	69.0	71.7	73.8
HU	24.5	40.3	43.1	42.1	44.0	48.4	54.8	58.4	61.1	63.9	64.9	64.8
MT	35.9	35.7	38.8	40.0	40.3	41.7	44.8	49.8	56.8	64.2	69.2	71.6
NL	19.9	36.4	40.9	45.9	50.8	53.9	54.0	53.3	53.0	53.5	54.7	56.3
AT	27.7	38.0	42.6	48.3	53.5	56.4	58.3	60.5	62.5	64.1	65.0	65.7
PL	49.7	36.8	44.2	48.4	51.6	55.9	62.5	71.1	79.2	84.9	86.8	86.4
PT	28.1	43.2	48.1	53.6	59.0	65.3	71.2	74.9	75.2	74.0	72.5	71.3
RO	36.3	39.2	44.6	46.3	52.8	58.7	66.3	71.8	76.8	77.4	76.7	75.5
SI	28.7	41.9	47.9	52.4	56.7	61.2	66.6	71.1	73.7	73.5	72.1	70.6
SK	52.1	33.1	41.8	47.8	52.2	58.8	67.6	76.3	84.2	88.5	87.8	85.2
FI	20.4	45.6	51.7	55.4	56.8	56.4	57.0	58.5	60.4	62.8	64.6	66.0
SE	16.5	37.2	39.4	40.8	42.4	43.8	44.7	46.2	48.7	51.3	52.6	53.7
NO	27.0	31.7	35.6	38.7	42.3	45.5	47.5	49.3	51.5	54.0	56.4	58.7
EA	21.6	45.3	49.1	53.3	58.1	62.1	64.8	66.4	67.2	67.2	66.9	66.9
EU	24.2	43.7	47.9	51.7	56.2	60.2	63.5	66.0	67.6	68.2	68.0	67.8

Table III.1.67: Public pensions, gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.0	12.2	13.2	14.0	14.6	14.9	15.1	15.2	15.2	15.2	15.2	15.2
BG	1.4	8.3	8.6	8.5	8.5	8.6	8.9	9.3	9.7	9.8	9.7	9.7
CZ	2.9	8.0	8.8	8.8	9.1	9.8	10.7	11.4	11.8	11.8	11.3	10.9
DK	-2.0	9.3	8.9	8.5	8.3	8.1	7.8	7.6	7.4	7.2	7.2	7.3
DE	2.1	10.3	10.9	11.5	12.0	12.0	12.1	12.2	12.4	12.5	12.5	12.4
EE	-2.3	7.8	7.1	6.9	6.6	6.5	6.3	6.1	6.0	5.8	5.7	5.4
IE	3.0	4.6	5.3	5.9	6.4	6.9	7.2	7.5	7.5	7.5	7.5	7.6
EL	-3.8	15.7	14.2	13.8	13.7	14.0	13.7	13.6	12.7	12.0	11.7	11.9
ES	-2.1	12.3	12.7	12.3	12.5	12.8	13.2	13.0	12.5	11.7	10.9	10.3
FR	-2.2	14.8	15.4	15.6	15.5	15.2	14.6	14.3	13.8	13.4	12.9	12.6
HR	-0.7	10.2	10.9	11.0	10.8	10.4	10.1	9.9	9.7	9.7	9.6	9.5
IT	-1.8	15.4	16.2	17.3	17.9	17.8	17.3	16.2	15.0	14.1	13.7	13.6
CY	2.1	8.8	10.0	10.0	10.4	10.2	10.3	10.1	10.5	10.7	11.2	10.9
LV	-1.2	7.1	7.1	6.9	6.8	6.6	6.3	6.3	6.4	6.2	6.0	5.9
LT	0.4	7.1	7.5	7.9	8.2	8.4	8.3	8.2	8.2	8.1	7.8	7.5
LU	8.7	9.2	10.3	11.4	12.3	13.0	13.9	14.8	15.8	16.7	17.4	18.0
HU	4.1	8.3	8.6	8.3	8.8	9.7	10.8	11.2	11.5	11.9	12.2	12.4
MT	3.8	7.1	7.1	6.6	6.4	6.6	7.2	8.1	9.2	10.1	10.7	10.9
NL	2.3	6.8	7.3	8.1	8.8	9.1	9.0	8.9	8.8	8.9	9.0	9.1
AT	1.0	13.3	14.6	15.1	15.4	15.1	14.9	14.7	14.7	14.6	14.4	14.3
PL	-0.2	10.6	11.4	11.0	10.6	10.5	10.6	10.7	10.8	10.8	10.6	10.5
PT	-3.2	12.7	13.3	14.2	14.6	14.4	13.7	12.6	11.4	10.5	9.9	9.5
RO	3.8	8.1	13.1	12.9	13.6	14.2	14.7	14.8	14.4	13.6	12.8	11.9
SI	6.0	10.0	10.1	10.8	12.1	13.6	14.8	15.7	16.1	16.1	16.0	16.0
SK	5.9	8.3	9.7	10.2	10.7	11.6	12.5	13.4	14.2	14.5	14.4	14.2
FI	1.3	13.0	13.6	13.7	13.4	12.8	12.6	12.7	13.0	13.5	14.0	14.4
SE	-0.1	7.6	7.7	7.4	7.2	7.0	7.0	7.0	7.3	7.4	7.4	7.5
NO	2.6	11.0	11.7	12.3	12.6	12.6	12.6	12.7	13.0	13.2	13.4	13.6
EA	0.1	12.1	12.6	13.1	13.4	13.4	13.3	13.1	12.8	12.5	12.3	12.1
EU	0.1	11.6	12.2	12.5	12.8	12.8	12.7	12.6	12.3	12.1	11.9	11.7

Table III.1.68: Old-age and early pensions, gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.8	9.9	10.7	11.6	12.3	12.9	13.2	13.4	13.6	13.6	13.7	13.7
BG	1.5	6.8	6.9	6.8	6.8	7.0	7.4	7.8	8.3	8.4	8.3	8.3
CZ	2.8	6.7	7.5	7.4	7.7	8.5	9.4	10.1	10.5	10.4	10.0	9.5
DK	-2.3	7.4	7.0	6.7	6.4	6.1	5.8	5.6	5.3	5.1	5.1	5.1
DE	2.6	8.1	8.7	9.4	10.0	10.1	10.2	10.3	10.5	10.6	10.7	10.7
EE	-1.7	6.2	5.8	5.6	5.4	5.4	5.2	5.1	5.0	4.8	4.8	4.6
IE	3.1	1.9	2.3	2.7	3.0	3.4	3.9	4.3	4.6	4.7	4.9	5.0
EL	-2.0	11.2	10.6	10.2	10.1	10.5	10.4	10.5	9.7	9.2	9.0	9.2
ES	-0.9	9.0	9.5	9.4	9.7	10.2	10.7	10.6	10.0	9.3	8.6	8.1
FR	-1.4	12.1	12.8	13.1	13.0	12.8	12.4	12.1	11.7	11.4	10.9	10.7
HR	0.7	6.7	7.5	7.9	7.9	7.7	7.6	7.5	7.5	7.5	7.5	7.4
IT	-1.0	12.6	13.5	14.5	15.0	15.0	14.6	13.6	12.5	11.8	11.6	11.7
CY	1.6	7.4	8.2	8.2	8.4	8.3	8.3	8.3	8.8	8.9	9.4	9.0
LV	-1.1	6.4	6.4	6.3	6.2	6.0	5.7	5.8	5.8	5.7	5.4	5.3
LT	0.5	5.5	5.8	6.1	6.4	6.6	6.6	6.5	6.5	6.5	6.3	6.0
LU	7.7	7.0	7.9	8.8	9.5	10.2	10.9	11.8	12.7	13.5	14.2	14.8
HU	4.6	6.7	7.1	7.0	7.5	8.5	9.6	10.1	10.4	10.9	11.1	11.3
MT	4.7	4.6	5.0	4.7	4.8	5.1	5.7	6.5	7.6	8.6	9.1	9.3
NL	2.0	4.9	5.2	5.9	6.6	6.9	6.9	6.8	6.6	6.6	6.7	6.9
AT	1.9	10.9	12.2	12.8	13.2	13.0	12.8	12.8	12.8	12.9	12.8	12.8
PL	0.2	9.7	10.6	10.2	9.8	9.7	9.8	10.0	10.1	10.2	10.0	9.9
PT	-2.7	10.4	10.9	11.7	12.0	11.7	11.1	10.2	9.1	8.4	8.0	7.8
RO	3.9	5.9	10.5	10.4	11.1	11.7	12.2	12.3	12.0	11.4	10.6	9.8
SI	5.1	7.8	8.0	8.6	9.6	10.8	11.9	12.6	12.9	12.8	12.8	12.8
SK	4.9	6.5	7.3	7.5	7.8	8.6	9.5	10.4	11.3	11.6	11.5	11.4
FI	1.3	11.2	11.7	11.9	11.6	11.0	10.7	10.9	11.1	11.7	12.2	12.5
SE	0.1	6.7	6.8	6.5	6.3	6.2	6.1	6.2	6.4	6.6	6.6	6.7
NO	2.2	7.6	8.3	8.8	9.1	9.2	9.1	9.1	9.3	9.5	9.7	9.9
EA	0.7	9.6	10.1	10.6	11.0	11.1	11.0	10.9	10.6	10.4	10.3	10.2
EU	0.6	9.3	9.9	10.2	10.5	10.6	10.6	10.5	10.3	10.2	10.0	9.9

Table III.1.69: Disability pensions, gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.2	1.4	1.7	1.7	1.7	1.5	1.4	1.3	1.3	1.2	1.2	1.2
BG	-0.1	1.1	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.0
CZ	-0.1	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
DK	0.3	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.1	2.1
DE	-0.1	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
EE	-0.5	1.3	1.1	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7
IE	0.1	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
EL	-0.2	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
ES	-0.3	1.1	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
FR	-0.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	0.9	0.9	1.0
HR	-1.2	1.8	1.6	1.4	1.2	1.1	0.9	0.8	0.8	0.7	0.7	0.7
IT	-0.1	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
CY	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3
LV	-0.1	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5
LT	0.1	1.2	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3
LU	0.5	0.7	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
HU	-0.1	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
MT	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NL	0.3	1.9	2.0	2.1	2.1	2.0	2.0	2.1	2.2	2.2	2.2	2.2
AT	-0.2	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3
PL	-0.1	0.6	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5
PT	0.1	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.6	0.6
RO	0.1	0.5	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5
SI	0.5	1.1	1.1	1.1	1.2	1.4	1.5	1.6	1.6	1.6	1.6	1.6
SK	0.2	0.9	1.0	1.2	1.3	1.3	1.3	1.2	1.1	1.1	1.1	1.1
FI	0.2	1.1	1.2	1.2	1.1	1.2	1.3	1.3	1.3	1.4	1.3	1.4
SE	0.0	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
NO	0.4	3.3	3.4	3.5	3.5	3.4	3.5	3.6	3.6	3.6	3.7	3.7
EA	-0.1	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8
EU	-0.1	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8

Table III.1.70: Survivors' pensions, gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.7	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3
BG	-0.1	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2
CZ	0.2	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
DK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DE	-0.4	1.5	1.5	1.5	1.4	1.3	1.3	1.3	1.3	1.2	1.2	1.1
EE	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IE	0.3	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
EL	-0.6	2.2	2.4	2.5	2.5	2.3	2.2	2.0	1.9	1.8	1.7	1.6
ES	-0.9	2.2	2.1	2.0	1.9	1.8	1.7	1.7	1.6	1.5	1.4	1.3
FR	-0.6	1.5	1.5	1.5	1.4	1.4	1.3	1.2	1.1	1.1	1.0	0.9
HR	-0.3	1.7	1.7	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4
IT	-0.8	2.4	2.4	2.5	2.6	2.6	2.5	2.4	2.2	2.0	1.8	1.7
CY	0.3	1.2	1.5	1.7	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.5
LV	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LT	-0.1	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1
LU	0.5	1.5	1.6	1.7	1.7	1.8	1.9	1.9	2.0	2.0	2.0	2.1
HU	-0.4	0.9	0.8	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
MT	-0.3	1.2	1.1	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.8
NL	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
AT	-0.8	1.6	1.5	1.5	1.4	1.3	1.2	1.2	1.0	0.9	0.8	0.7
PL	-0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1
PT	-0.5	1.6	1.7	1.8	1.9	1.9	1.9	1.8	1.6	1.5	1.3	1.1
RO	0.1	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5
SI	0.5	1.1	1.1	1.1	1.2	1.4	1.5	1.5	1.6	1.6	1.6	1.6
SK	0.2	0.8	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0
FI	-0.2	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.5
SE	-0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NO	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA	-0.5	1.6	1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.1	1.0
EU	-0.5	1.4	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.0	1.0	0.9

Table III.1.71: Other pensions, gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BG	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
CZ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EE	-0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
IE	-0.1	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
EL	-1.0	1.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
ES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LT	-0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HU	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MT	-0.6	1.1	0.9	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5
NL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AT	0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
PL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PT	-0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0
RO	-0.3	1.3	1.3	1.1	1.2	1.3	1.3	1.3	1.2	1.2	1.1	1.0
SI	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SK	0.6	0.2	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.8	0.7
FI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
EU	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Table III.1.72: Earnings-related pensions (old-age and early pensions), gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.8	9.7	10.6	11.4	12.2	12.7	13.1	13.3	13.5	13.5	13.5	13.5
BG	1.5	6.8	6.9	6.8	6.8	7.0	7.4	7.8	8.2	8.4	8.3	8.3
CZ	2.3	5.0	5.8	5.8	6.0	6.5	7.3	7.8	8.1	8.0	7.6	7.3
DK	-1.3	1.3	1.1	0.9	0.6	0.4	0.2	0.1	0.0	0.0	0.0	0.0
DE	2.6	8.1	8.7	9.4	10.0	10.1	10.2	10.3	10.5	10.6	10.7	10.7
EE	-1.7	3.7	3.3	3.2	2.9	2.8	2.7	2.5	2.4	2.3	2.2	2.1
IE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EL	-0.4	7.2	6.8	6.4	6.3	6.6	6.6	6.8	6.4	6.2	6.3	6.8
ES	-1.0	8.9	9.4	9.2	9.5	10.0	10.4	10.3	9.8	9.1	8.4	7.9
FR	-1.5	12.0	12.6	12.8	12.8	12.5	12.1	11.8	11.5	11.1	10.7	10.5
HR	0.7	6.7	7.5	7.9	7.9	7.7	7.6	7.5	7.5	7.5	7.5	7.4
IT	-1.0	12.3	13.2	14.2	14.7	14.6	14.2	13.2	12.0	11.4	11.2	11.3
CY	1.9	7.1	7.9	7.9	8.1	8.0	8.1	8.1	8.6	8.8	9.2	8.9
LV	-1.1	6.4	6.4	6.3	6.2	6.0	5.7	5.8	5.8	5.7	5.4	5.3
LT	0.5	2.3	2.5	2.6	2.8	2.9	3.0	3.0	3.0	3.0	2.9	2.8
LU	7.7	7.0	7.9	8.8	9.5	10.2	10.9	11.8	12.7	13.5	14.2	14.8
HU	4.6	6.7	7.1	7.0	7.5	8.5	9.6	10.1	10.4	10.9	11.1	11.3
MT	4.7	4.2	4.6	4.4	4.4	4.8	5.4	6.2	7.2	8.2	8.7	8.9
NL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AT	1.9	10.9	12.2	12.8	13.2	13.0	12.8	12.8	12.8	12.9	12.8	12.8
PL	0.6	8.5	9.5	9.2	8.9	8.8	8.8	9.0	9.2	9.3	9.2	9.1
PT	-2.7	10.1	10.7	11.4	11.7	11.4	10.8	9.8	8.7	8.0	7.6	7.4
RO	3.7	5.9	10.4	10.3	11.0	11.6	12.0	12.1	11.9	11.2	10.4	9.6
SI	5.1	7.8	8.0	8.6	9.6	10.8	11.9	12.6	12.9	12.8	12.8	12.8
SK	4.2	6.5	7.2	7.3	7.5	8.2	9.0	9.8	10.6	10.9	10.8	10.7
FI	1.2	10.6	11.1	11.3	11.0	10.4	10.2	10.3	10.5	11.0	11.4	11.7
SE	-0.5	6.2	6.3	6.0	5.8	5.6	5.4	5.4	5.6	5.7	5.7	5.7
NO	4.2	5.0	5.9	6.9	7.6	8.1	8.3	8.5	8.7	8.9	9.0	9.2
EA	0.4	9.0	9.5	9.9	10.2	10.3	10.2	10.0	9.8	9.6	9.4	9.4
EU	0.4	8.5	9.1	9.4	9.6	9.7	9.7	9.5	9.4	9.2	9.0	8.9

Table III.1.73: Private occupational pensions, gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	:	:	:	:	:	:	:	:	:
CZ	:	:	:	:	:	:	:	:	:	:	:	:
DK	1.3	4.8	5.0	5.0	5.4	5.7	5.9	5.9	5.8	5.8	5.9	6.0
DE	:	:	:	:	:	:	:	:	:	:	:	:
EE	:	:	:	:	:	:	:	:	:	:	:	:
IE	-0.4	1.0	1.3	1.4	1.6	1.6	1.6	1.4	1.1	0.9	0.8	0.6
EL	:	:	:	:	:	:	:	:	:	:	:	:
ES	0.0	0.3	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3
FR	:	:	:	:	:	:	:	:	:	:	:	:
HR	:	:	:	:	:	:	:	:	:	:	:	:
IT	:	:	:	:	:	:	:	:	:	:	:	:
CY	:	:	:	:	:	:	:	:	:	:	:	:
LV	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	:	:	:	:	:	:	:	:	:	:
LU	:	:	:	:	:	:	:	:	:	:	:	:
HU	:	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:
NL	1.5	5.1	5.0	5.7	6.4	7.1	7.1	6.8	6.5	6.5	6.5	6.6
AT	:	:	:	:	:	:	:	:	:	:	:	:
PL	:	:	:	:	:	:	:	:	:	:	:	:
PT	-0.1	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
RO	:	:	:	:	:	:	:	:	:	:	:	:
SI	:	:	:	:	:	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:	:	:	:	:	:
FI	:	:	:	:	:	:	:	:	:	:	:	:
SE	-2.1	3.3	2.9	2.6	2.2	2.0	1.8	1.7	1.5	1.3	1.2	1.2
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	:	:	:	:	:	:	:	:	:	:	:	:
EU	:	:	:	:	:	:	:	:	:	:	:	:

Table III.1.74: Private individual pensions, gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	:	:	:	:	:	:	:	:	:
CZ	:	:	:	:	:	:	:	:	:	:	:	:
DK	:	:	:	:	:	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:	:	:	:	:	:
EE	1.8	0.1	0.1	0.3	0.4	0.6	0.8	1.0	1.3	1.5	1.8	1.9
IE	:	:	:	:	:	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:	:	:	:	:	:
ES	0.1	0.2	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4
FR	:	:	:	:	:	:	:	:	:	:	:	:
HR	0.4	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4
IT	:	:	:	:	:	:	:	:	:	:	:	:
CY	:	:	:	:	:	:	:	:	:	:	:	:
LV	2.2	0.0	0.1	0.2	0.3	0.4	0.6	1.0	1.4	1.7	2.0	2.2
LT	1.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	0.9	1.0
LU	:	:	:	:	:	:	:	:	:	:	:	:
HU	:	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:
NL	:	:	:	:	:	:	:	:	:	:	:	:
AT	:	:	:	:	:	:	:	:	:	:	:	:
PL	:	:	:	:	:	:	:	:	:	:	:	:
PT	:	:	:	:	:	:	:	:	:	:	:	:
RO	1.1	0.0	0.0	0.0	0.2	0.3	0.6	0.7	0.9	1.0	1.1	1.1
SI	:	:	:	:	:	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:	:	:	:	:	:
FI	:	:	:	:	:	:	:	:	:	:	:	:
SE	0.5	0.7	0.8	0.8	0.8	0.9	1.0	1.1	1.2	1.2	1.2	1.2
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	:	:	:	:	:	:	:	:	:	:	:	:
EU	:	:	:	:	:	:	:	:	:	:	:	:

Table III.1.75: New pensions (old-age and early pensions), gross as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.1	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
BG	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
CZ	0.1	0.3	0.3	0.4	0.5	0.6	0.6	0.5	0.5	0.4	0.4	0.4
DK	:	:	:	:	:	:	:	:	:	:	:	:
DE	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EE	-0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
IE	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EL	0.1	0.5	0.4	0.5	0.6	0.7	0.6	0.6	0.4	0.5	0.6	0.5
ES	-0.1	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.2
FR	0.1	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4
HR	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
IT	0.0	0.6	0.6	0.8	0.7	0.7	0.6	0.5	0.5	0.6	0.6	0.6
CY	0.1	0.2	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.3
LV	-0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LT	-0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
LU	0.1	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
HU	0.0	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
MT	0.0	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.4	0.4	0.4
NL	0.1	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3
AT	0.0	0.6	0.5	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.6
PL	-0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
PT	-0.1	0.3	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2
RO	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
SI	0.0	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2
SK	0.0	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
FI	0.0	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
SE	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NO	-0.1	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
EA	0.0	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
EU	0.0	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3

Table III.1.76: Public pensions, net as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	10.4	11.2	11.9	12.4	12.7	12.8	12.8	12.9	12.9	12.9	12.8
BG	:	:	:	:	:	:	:	:	:	:	:	:
CZ	:	:	:	:	:	:	:	:	:	:	:	:
DK	-2.3	4.6	3.9	3.6	3.3	3.0	2.8	2.6	2.5	2.4	2.4	2.3
DE	1.4	8.5	8.9	9.3	9.6	9.6	9.6	9.7	9.8	9.9	10.0	9.9
EE	:	:	:	:	:	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:	:	:	:	:	:
EL	-3.3	13.8	12.5	12.1	12.0	12.2	12.0	11.9	11.1	10.6	10.3	10.4
ES	-2.0	11.4	11.7	11.3	11.5	11.8	12.1	11.9	11.4	10.7	10.0	9.4
FR	-1.9	12.8	13.3	13.5	13.4	13.2	12.7	12.4	12.0	11.6	11.2	10.9
HR	-0.7	10.1	10.7	10.9	10.7	10.3	10.0	9.8	9.6	9.6	9.5	9.4
IT	-1.5	12.5	13.1	14.0	14.5	14.4	14.0	13.1	12.1	11.4	11.1	11.0
CY	:	:	:	:	:	:	:	:	:	:	:	:
LV	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	:	:	:	:	:	:	:	:	:	:
LU	7.4	7.8	8.7	9.7	10.4	11.0	11.7	12.6	13.4	14.1	14.7	15.2
HU	:	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:
NL	2.0	5.8	6.1	6.9	7.5	7.8	7.7	7.6	7.5	7.6	7.7	7.8
AT	:	:	:	:	:	:	:	:	:	:	:	:
PL	-0.1	9.0	9.7	9.3	9.0	8.9	9.0	9.1	9.2	9.2	9.0	8.9
PT	-2.9	11.7	12.2	13.0	13.4	13.2	12.6	11.6	10.5	9.6	9.1	8.7
RO	3.7	8.0	12.9	12.7	13.4	14.0	14.5	14.6	14.2	13.4	12.6	11.7
SI	5.9	9.9	10.0	10.7	12.0	13.4	14.7	15.5	15.9	15.9	15.9	15.8
SK	:	:	:	:	:	:	:	:	:	:	:	:
FI	1.0	10.3	10.7	10.9	10.6	10.2	10.0	10.1	10.3	10.7	11.1	11.4
SE	0.2	5.8	5.9	5.6	5.5	5.5	5.4	5.5	5.7	5.9	5.9	6.0
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	:	:	:	:	:	:	:	:	:	:	:	:
EU	:	:	:	:	:	:	:	:	:	:	:	:

Table III.1.77: Public pensions, contributions as % of GDP

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	:	:	:	:	:	:	:	:	:	:	:	:
BG	0.4	5.0	5.0	5.0	5.2	5.3	5.4	5.4	5.4	5.4	5.4	5.4
CZ	0.0	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
DK	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DE	2.0	10.1	10.6	11.1	11.5	11.7	11.7	11.8	12.0	12.1	12.2	12.2
EE	-1.0	6.5	5.9	5.8	5.7	5.7	5.7	5.6	5.6	5.5	5.5	5.5
IE	2.6	2.6	2.7	2.7	3.1	3.5	4.0	4.4	4.7	4.9	5.1	5.3
EL	-2.0	13.3	13.3	13.4	13.3	13.3	13.1	12.9	12.4	12.0	11.6	11.4
ES	0.0	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
FR	-0.2	11.8	11.6	11.5	11.5	11.5	11.5	11.5	11.6	11.6	11.5	11.6
HR	1.1	6.0	6.9	7.1	7.2	7.2	7.2	7.1	7.1	7.1	7.1	7.1
IT	0.2	10.7	10.9	11.0	11.0	11.0	11.0	11.1	11.1	11.1	11.1	11.0
CY	1.6	8.4	8.9	9.2	9.7	10.1	10.1	10.1	10.1	10.0	10.0	10.0
LV	-1.6	8.4	7.6	7.3	7.1	7.0	6.9	6.7	6.6	6.6	6.7	6.8
LT	-0.2	7.2	7.0	7.2	7.3	7.4	7.4	7.4	7.3	7.2	7.1	6.9
LU	0.0	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
HU	-0.3	7.7	7.4	7.4	7.4	7.4	7.4	7.4	7.3	7.4	7.4	7.4
MT	-0.9	7.9	8.8	8.5	8.2	8.0	7.8	7.7	7.5	7.4	7.2	7.0
NL	2.2	6.5	6.9	7.7	8.5	8.8	8.7	8.6	8.4	8.4	8.5	8.7
AT	-0.4	9.4	9.2	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
PL	0.3	8.4	8.4	8.6	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
PT	-3.7	13.3	13.8	14.1	13.9	13.3	12.5	11.6	10.8	10.2	9.8	9.6
RO	-0.3	6.8	6.8	6.8	6.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5
SI	0.0	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
SK	0.0	7.4	7.0	7.0	7.1	7.2	7.3	7.4	7.4	7.5	7.5	7.5
FI	-7.8	21.7	12.8	12.8	12.9	12.9	13.1	13.2	13.3	13.5	13.7	13.9
SE	0.3	5.7	6.0	5.9	5.9	5.9	6.0	6.0	6.0	6.0	6.0	6.1
NO	2.6	11.0	11.7	12.3	12.6	12.6	12.6	12.7	13.0	13.2	13.4	13.6
EA	0.5	10.1	10.1	10.2	10.4	10.5	10.5	10.5	10.6	10.6	10.6	10.6
EU	0.3	9.5	9.5	9.6	9.7	9.8	9.8	9.8	9.8	9.8	9.8	9.8

Table III.1.78: Public pensions, net/gross, %

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.6	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
BG	:	:	:	:	:	:	:	:	:	:	:	:
CZ	:	:	:	:	:	:	:	:	:	:	:	:
DK	-18.0	50%	44%	42%	40%	37%	35%	35%	34%	33%	33%	32%
DE	-2.8	82%	81%	81%	81%	80%	80%	80%	80%	80%	79%	79%
EE	:	:	:	:	:	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:	:	:	:	:	:
EL	0.0	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%
ES	-0.3	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%
FR	0.0	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%
HR	0.0	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
IT	0.0	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%
CY	:	:	:	:	:	:	:	:	:	:	:	:
LV	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	:	:	:	:	:	:	:	:	:	:
LU	0.0	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
HU	:	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:
NL	0.7	85%	85%	85%	85%	86%	86%	85%	85%	85%	85%	85%
AT	:	:	:	:	:	:	:	:	:	:	:	:
PL	0.6	84%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
PT	0.0	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%	92%
RO	-0.7	99%	99%	99%	99%	99%	99%	98%	98%	98%	98%	98%
SI	0.0	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
SK	:	:	:	:	:	:	:	:	:	:	:	:
FI	0.0	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%	79%
SE	3.5	76%	76%	76%	77%	78%	78%	79%	79%	79%	79%	80%
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	:	:	:	:	:	:	:	:	:	:	:	:
EU	:	:	:	:	:	:	:	:	:	:	:	:

Table III.1.79: Pensioners (public, in thousands)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	962	2,951	3,222	3,410	3,543	3,640	3,699	3,750	3,793	3,836	3,871	3,912
BG	-412	2,145	2,063	2,030	1,976	1,929	1,904	1,893	1,880	1,844	1,784	1,733
CZ	374	2,898	2,906	2,931	3,004	3,146	3,292	3,396	3,460	3,449	3,364	3,271
DK	-8	1,305	1,294	1,308	1,328	1,333	1,324	1,326	1,301	1,281	1,284	1,296
DE	4,266	22,890	24,414	25,821	27,100	27,388	27,354	27,338	27,324	27,178	27,120	27,156
EE	-12	418	414	422	419	423	421	418	418	413	414	406
IE	1,163	998	1,163	1,313	1,460	1,612	1,751	1,874	1,978	2,051	2,113	2,161
EL	209	2,506	2,514	2,562	2,648	2,867	2,961	3,036	2,927	2,834	2,744	2,715
ES	6,206	9,961	10,678	11,529	12,835	14,272	15,611	16,496	16,852	16,822	16,531	16,167
FR	6,856	24,080	25,810	27,326	28,603	29,694	30,291	30,748	30,953	30,926	30,820	30,936
HR	-175	1,241	1,242	1,239	1,224	1,202	1,176	1,149	1,122	1,103	1,086	1,067
IT	619	14,796	15,194	15,900	16,766	17,504	17,922	17,747	17,183	16,605	15,932	15,415
CY	155	160	187	202	225	242	264	282	310	319	328	315
LV	-115	557	536	538	535	532	521	514	507	489	460	441
LT	-144	900	879	906	918	917	897	873	851	825	792	756
LU	447	207	258	313	367	420	472	524	571	609	636	654
HU	529	2,631	2,647	2,700	2,824	2,970	3,089	3,138	3,185	3,218	3,198	3,160
MT	137	92	106	115	126	138	152	170	189	207	220	229
NL	1,263	3,957	4,303	4,670	4,948	5,157	5,149	5,099	5,032	5,061	5,120	5,220
AT	781	2,437	2,695	2,859	3,024	3,106	3,162	3,200	3,213	3,209	3,204	3,218
PL	2,323	9,638	10,191	10,473	10,850	11,384	11,964	12,414	12,639	12,591	12,302	11,961
PT	78	2,659	2,730	2,834	2,968	3,070	3,128	3,093	3,031	2,947	2,838	2,737
RO	-280	5,139	5,338	5,532	5,822	5,961	5,970	5,870	5,684	5,413	5,132	4,859
SI	121	623	653	688	726	758	781	789	785	771	756	743
SK	455	1,390	1,555	1,637	1,720	1,825	1,914	1,974	2,002	1,980	1,918	1,844
FI	267	1,556	1,647	1,706	1,722	1,712	1,719	1,732	1,754	1,792	1,814	1,823
SE	1,866	2,638	2,864	3,068	3,237	3,396	3,536	3,738	4,006	4,219	4,352	4,504
NO	1,597	1,325	1,563	1,788	1,971	2,119	2,261	2,422	2,604	2,765	2,856	2,922
EA	23,711	93,137	98,959	104,750	110,655	115,279	118,168	119,657	119,674	118,874	117,630	116,848
EU	27,928	120,771	127,504	134,031	140,920	146,601	150,424	152,580	152,950	151,991	150,131	148,699

Table III.1.80: Public pensioners aged 65+ (in thousands)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1174.0	2,165	2,383	2,619	2,825	2,984	3,081	3,156	3,214	3,271	3,304	3,339
BG	-71.8	1,540	1,536	1,525	1,507	1,507	1,532	1,552	1,592	1,590	1,528	1,468
CZ	647.0	2,076	2,201	2,273	2,335	2,480	2,691	2,815	2,906	2,933	2,840	2,723
DK	61.9	1,070	1,096	1,128	1,154	1,160	1,151	1,151	1,129	1,113	1,119	1,132
DE	4989.6	19,799	21,350	22,982	24,579	24,914	24,802	24,761	24,835	24,735	24,737	24,789
EE	37.4	278	294	305	308	317	320	322	326	323	324	316
IE	1087.6	653	790	921	1,052	1,195	1,339	1,470	1,571	1,637	1,695	1,741
EL	619.8	1,977	2,125	2,259	2,416	2,648	2,760	2,823	2,751	2,684	2,609	2,597
ES	6509.3	8,069	8,817	9,668	10,995	12,519	14,052	15,034	15,373	15,297	14,951	14,579
FR	6301.7	14,067	15,575	17,045	18,189	19,105	19,528	19,895	20,133	20,204	20,206	20,369
HR	32.6	914	1,007	1,047	1,062	1,050	1,031	1,013	991	972	965	946
IT	2077.5	12,680	13,263	14,228	15,366	16,422	16,991	16,918	16,398	15,851	15,222	14,757
CY	159.4	142	173	189	211	227	248	266	295	305	314	301
LV	-41.7	409	416	425	429	434	430	429	430	417	388	368
LT	14.6	612	635	679	706	725	718	705	697	686	660	627
LU	391.1	149	187	229	278	325	368	411	452	490	519	540
HU	743.5	1,924	2,019	2,044	2,155	2,330	2,527	2,592	2,653	2,713	2,701	2,667
MT	134.3	74	90	100	109	119	131	147	166	186	200	208
NL	1271.4	3,149	3,497	3,861	4,140	4,351	4,344	4,296	4,231	4,262	4,320	4,421
AT	:	:	:	:	:	:	:	:	:	:	:	:
PL	3568.9	6,881	8,084	8,488	8,727	9,161	9,776	10,463	10,922	11,089	10,878	10,450
PT	323.6	2,232	2,380	2,509	2,654	2,786	2,887	2,878	2,823	2,745	2,645	2,556
RO	456.1	3,390	3,849	3,901	4,239	4,447	4,612	4,599	4,580	4,367	4,106	3,846
SI	176.6	478	535	579	619	649	678	695	698	687	672	655
SK	655.6	866	1,043	1,154	1,226	1,329	1,456	1,553	1,620	1,641	1,595	1,522
FI	422.0	1,252	1,404	1,492	1,523	1,514	1,527	1,552	1,582	1,632	1,660	1,674
SE	1829.5	2,239	2,481	2,670	2,849	3,013	3,141	3,317	3,573	3,818	3,935	4,069
NO	1465.3	938	1,126	1,315	1,496	1,652	1,781	1,924	2,093	2,247	2,343	2,403
EA	26303.6	69,054	74,954	81,244	87,625	92,562	95,662	97,311	97,594	97,051	96,020	95,357
EU	33571.2	89,088	97,227	104,321	111,652	117,710	122,123	124,814	125,940	125,647	124,091	122,659

Table III.1.81: Share of public pensioners below age 65 as % of all public pensioners

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-12.0	27%	26%	23%	20%	18%	17%	16%	15%	15%	15%	15%
BG	-12.9	28%	26%	25%	24%	22%	20%	18%	15%	14%	14%	15%
CZ	-11.6	28%	24%	22%	22%	21%	18%	17%	16%	15%	16%	17%
DK	-5.3	18%	15%	14%	13%	13%	13%	13%	13%	13%	13%	13%
DE	-4.8	14%	13%	11%	9%	9%	9%	9%	9%	9%	9%	9%
EE	-11.2	33%	29%	28%	27%	25%	24%	23%	22%	22%	22%	22%
IE	-15.1	35%	32%	30%	28%	26%	24%	22%	21%	20%	20%	19%
EL	-16.8	21%	15%	12%	9%	8%	7%	7%	6%	5%	5%	4%
ES	-9.2	19%	17%	16%	14%	12%	10%	9%	9%	9%	10%	10%
FR	-7.4	42%	40%	38%	36%	36%	36%	35%	35%	35%	34%	34%
HR	-15.1	26%	19%	15%	13%	13%	12%	12%	12%	12%	11%	11%
IT	-10.0	14%	13%	11%	8%	6%	5%	5%	5%	5%	4%	4%
CY	-6.8	11%	8%	7%	6%	6%	6%	6%	5%	4%	4%	4%
LV	-9.8	26%	22%	21%	20%	18%	17%	16%	15%	15%	16%	17%
LT	-14.9	32%	28%	25%	23%	21%	20%	19%	18%	17%	17%	17%
LU	-10.8	28%	28%	27%	24%	23%	22%	22%	21%	20%	18%	17%
HU	-11.3	27%	24%	24%	24%	22%	18%	17%	17%	16%	16%	16%
MT	-10.6	19%	16%	13%	13%	14%	14%	14%	12%	10%	9%	9%
NL	-5.1	20%	19%	17%	16%	16%	16%	16%	16%	16%	16%	15%
AT	:	:	:	:	:	:	:	:	:	:	:	:
PL	-16.0	29%	21%	19%	20%	20%	18%	16%	14%	12%	12%	13%
PT	-9.4	16%	13%	11%	11%	9%	8%	7%	7%	7%	7%	7%
RO	-13.2	34%	28%	29%	27%	25%	23%	22%	19%	19%	20%	21%
SI	-11.3	23%	18%	16%	15%	14%	13%	12%	11%	11%	11%	12%
SK	-20.2	38%	33%	29%	29%	27%	24%	21%	19%	17%	17%	17%
FI	-11.4	20%	15%	13%	12%	12%	11%	10%	10%	9%	8%	8%
SE	-5.5	15%	13%	13%	12%	11%	11%	11%	11%	9%	10%	10%
NO	-11.5	29%	28%	26%	24%	22%	21%	21%	20%	19%	18%	18%
EA	-7.5	26%	24%	22%	21%	20%	19%	19%	18%	18%	18%	18%
EU	-8.7	26%	24%	22%	21%	20%	19%	18%	18%	17%	17%	18%

Table III.1.82: Benefit ratio (total public pensions, %)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-3.2	45.0	46.7	47.4	47.5	46.8	46.0	45.0	44.2	43.3	42.6	41.9
BG	-3.2	26.7	26.7	25.1	24.4	24.0	23.7	23.5	23.4	23.2	23.3	23.5
CZ	-1.2	38.5	40.5	39.3	38.7	38.5	38.8	38.8	38.5	38.1	37.7	37.3
DK	-6.7	42.8	41.8	40.6	39.1	37.9	37.1	36.5	36.3	36.4	36.3	36.1
DE	-2.8	41.8	41.9	40.3	39.6	39.0	39.1	39.1	39.1	39.3	39.4	39.1
EE	-11.1	28.8	26.1	24.2	23.0	22.1	21.1	20.1	19.2	18.4	18.0	17.7
IE	0.1	28.1	28.0	28.0	28.0	28.0	28.0	28.0	28.1	28.1	28.2	28.2
EL	-22.0	65.4	64.7	61.7	58.6	54.1	50.3	47.4	44.7	43.3	43.0	43.5
ES	-30.7	60.0	58.1	53.6	49.2	45.0	41.3	38.0	35.1	32.7	30.9	29.4
FR	-13.0	40.9	40.5	39.4	37.5	35.5	33.6	32.2	30.8	29.8	28.8	27.9
HR	-9.4	31.2	30.7	29.9	28.8	27.3	25.9	24.7	23.8	23.1	22.4	21.8
IT	-15.2	60.8	63.2	63.8	61.4	57.0	52.7	49.1	46.4	45.0	45.0	45.6
CY	-15.4	59.5	58.5	57.3	54.8	51.9	48.7	45.8	43.7	43.1	43.5	44.1
LV	-9.5	23.0	22.0	19.8	18.4	16.8	15.4	14.7	13.9	13.5	13.4	13.5
LT	-5.8	26.7	29.8	27.9	26.7	25.7	24.7	23.6	22.6	21.7	21.1	20.8
LU	-7.5	52.6	54.6	53.6	51.7	49.4	47.8	46.7	45.9	45.4	45.2	45.0
HU	2.0	37.5	39.1	37.8	37.4	38.0	38.9	38.7	38.4	38.5	39.0	39.6
MT	-11.9	44.9	40.9	38.0	36.2	35.2	35.0	35.0	34.8	34.4	33.8	33.0
NL	-2.0	37.2	35.6	36.0	36.6	35.7	35.6	35.8	35.9	35.8	35.5	35.3
AT	-11.1	53.6	54.1	53.3	51.6	49.2	47.2	45.6	44.6	43.9	43.2	42.5
PL	-20.9	43.8	43.3	38.7	34.8	31.6	28.7	26.4	24.8	23.8	23.1	22.8
PT	-26.4	58.9	60.4	60.1	56.7	51.4	46.0	41.2	37.1	34.5	33.2	32.5
RO	-1.6	32.5	45.6	41.8	39.8	38.7	37.5	36.3	34.8	33.5	32.2	30.8
SI	3.4	30.8	29.9	29.7	30.8	32.2	32.9	33.3	33.5	33.6	34.0	34.2
SK	-4.7	37.0	37.3	35.4	34.2	33.3	32.6	32.0	31.9	31.9	32.0	32.4
FI	-10.7	52.2	48.7	47.3	45.8	43.7	42.2	41.5	41.2	41.2	41.4	41.6
SE	-10.7	35.5	33.8	31.9	30.3	29.0	28.0	27.1	26.3	25.7	25.2	24.8
NO	-21.9	56.0	50.7	47.7	44.8	42.3	40.1	38.1	36.3	34.9	34.3	34.1
EA	-10.0	42.4	42.0	40.8	39.4	37.6	36.0	34.7	33.6	32.9	32.6	32.4
EU	-9.3	42.1	42.3	40.8	39.3	37.7	36.3	35.0	34.0	33.4	33.0	32.8

Table III.1.83: Gross replacement rate at retirement (old-age earnings-related public pensions, %)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.9	35.1	37.9	39.1	37.9	36.7	36.0	35.3	34.8	33.9	33.8	33.2
BG	-6.7	36.2	30.9	31.3	31.6	31.1	30.1	30.0	30.0	29.9	29.7	29.5
CZ	-2.2	45.1	44.4	46.5	45.3	45.7	47.3	45.2	43.5	44.3	43.9	42.9
DK	-7.6	35.6	34.8	33.5	31.9	30.5	29.4	28.8	28.4	28.3	28.2	28.0
DE	-2.6	39.8	39.9	38.4	37.7	37.2	37.3	37.2	37.3	37.4	37.5	37.2
EE	-13.9	39.8	35.7	33.6	32.0	30.9	29.7	28.1	27.0	26.3	25.9	25.8
IE	-0.7	36.7	35.2	35.2	35.4	35.6	35.8	36.0	36.0	36.0	36.0	36.0
EL	-12.8	69.0	62.9	63.4	62.1	59.4	58.7	57.4	56.0	55.2	56.2	56.2
ES	-35.7	77.0	74.1	66.7	62.5	59.9	56.1	52.6	49.3	46.5	43.8	41.3
FR	-19.7	54.4	47.1	49.8	42.4	39.6	42.0	41.5	34.7	36.7	39.0	34.7
HR	-9.7	32.5	30.4	29.2	28.2	27.1	26.2	25.4	24.6	23.9	23.3	22.8
IT	-15.4	66.9	57.8	55.2	49.2	46.4	45.2	45.4	47.5	48.8	51.2	51.5
CY	8.7	35.7	46.2	46.1	44.3	42.6	40.5	38.8	41.1	44.1	43.1	44.4
LV	-34.7	54.8	45.8	38.9	33.5	28.1	25.9	23.6	21.7	21.0	20.5	20.0
LT	-10.4	31.7	33.9	31.0	29.0	27.4	26.0	24.7	23.6	22.6	21.8	21.2
LU	-7.0	67.1	59.7	55.7	54.8	55.8	55.0	55.3	56.4	58.6	59.6	60.1
HU	3.3	44.8	47.9	48.7	47.0	47.9	47.4	47.3	47.9	47.6	48.3	48.2
MT	8.7	48.4	48.3	50.7	50.5	51.3	51.9	52.3	53.1	54.1	55.5	57.1
NL	-1.6	30.9	29.5	29.9	30.3	29.6	29.5	29.7	29.8	29.7	29.5	29.2
AT	-3.3	55.4	54.6	55.7	56.0	55.4	55.2	55.0	54.7	53.9	52.8	52.1
PL	-28.9	54.1	52.5	43.9	35.3	29.5	26.2	25.2	25.1	25.1	25.2	25.1
PT	-32.7	74.0	84.9	81.1	66.1	54.5	48.2	43.5	42.9	43.0	41.0	41.4
RO	0.5	27.1	43.5	42.1	40.4	38.7	36.8	34.8	32.8	30.7	29.0	27.6
SI	4.3	33.2	37.4	37.4	37.5	37.6	37.6	37.5	37.5	37.5	37.5	37.5
SK	1.6	41.6	44.4	44.1	43.8	43.6	43.3	43.3	43.2	43.2	43.2	43.2
FI	-8.5	45.9	39.6	36.8	35.9	35.2	35.2	36.4	36.3	36.0	37.0	37.3
SE	-4.4	34.2	34.8	35.3	33.7	33.8	33.0	32.8	32.2	31.4	30.7	29.9
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	-8.9	46.9	45.7	44.4	42.1	40.3	39.5	38.7	38.1	38.2	38.2	38.0
EU	-8.7	46.2	45.7	44.4	42.0	40.4	39.5	38.6	38.0	38.0	37.9	37.5

Table III.1.84: Average accrual rate (new earnings-related public pensions, %)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
BG	0.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
CZ	0.0	1.5	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5
DK	:	:	:	:	:	:	:	:	:	:	:	:
DE	0.1	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9
EE	-0.1	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
IE	:	:	:	:	:	:	:	:	:	:	:	:
EL	0.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2
ES	-1.0	2.4	2.3	2.1	2.0	1.9	1.8	1.7	1.6	1.6	1.5	1.4
FR	0.0	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.1	1.0
HR	-0.2	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
IT	-0.2	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
CY	-0.1	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2
LV	-0.5	1.1	1.1	1.0	0.9	0.8	0.7	0.7	0.7	0.6	0.6	0.6
LT	0.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
LU	-0.2	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
HU	-0.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
MT	-0.3	2.0	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
NL	:	:	:	:	:	:	:	:	:	:	:	:
AT	0.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
PL	-0.2	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7
PT	0.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
RO	0.1	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9
SI	0.2	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
SK	-0.2	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9
FI	-0.1	1.7	1.6	1.5	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6
SE	-0.1	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
NO	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8
EA	:	:	:	:	:	:	:	:	:	:	:	:
EU	:	:	:	:	:	:	:	:	:	:	:	:

Table III.1.85: Average contributory period (new earnings-related public pensions, years)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.1	37.5	40.6	40.5	39.8	39.8	39.8	39.7	39.6	39.5	39.5	39.6
BG	1.5	34.8	36.2	37.0	37.5	37.4	37.2	37.1	37.0	36.8	36.6	36.4
CZ	-2.0	44.1	45.5	47.0	47.0	47.0	46.0	43.0	42.0	42.0	42.0	42.0
DK	:	:	:	:	:	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:	:	:	:	:	:
EE	:	:	:	:	:	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:	:	:	:	:	:
EL	6.6	31.2	31.1	32.3	31.4	32.9	34.4	35.1	35.5	36.1	37.7	37.8
ES	3.7	38.9	39.2	39.5	39.9	40.2	40.6	41.0	41.4	41.8	42.2	42.6
FR	0.0	33.0	31.9	31.1	31.3	32.8	31.9	32.7	32.2	32.8	33.0	33.0
HR	1.7	32.0	32.4	32.9	33.4	33.6	33.7	33.7	33.7	33.7	33.7	33.7
IT	1.9	36.2	34.0	35.2	34.4	35.3	35.0	35.1	35.7	36.6	37.7	38.1
CY	:	:	:	:	:	:	:	:	:	:	:	:
LV	0.9	36.1	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
LT	2.0	40.7	42.2	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7
LU	7.4	27.7	27.9	27.4	27.6	29.0	29.9	31.3	32.7	33.9	34.6	35.2
HU	3.6	34.6	36.3	37.8	38.2	38.1	38.1	37.7	38.0	38.5	38.3	38.1
MT	1.6	36.0	36.7	36.9	36.9	37.0	37.0	37.1	37.1	37.3	37.4	37.6
NL	:	:	:	:	:	:	:	:	:	:	:	:
AT	1.0	37.3	37.4	38.1	38.4	38.2	38.2	38.3	38.4	38.4	38.3	38.3
PL	0.9	34.9	35.8	35.8	36.0	35.9	35.3	35.4	35.6	36.0	35.9	35.8
PT	3.4	30.3	31.5	32.3	32.6	32.9	33.1	33.2	33.5	33.6	33.6	33.7
RO	2.4	32.0	34.4	34.4	34.4	34.3	34.4	34.4	34.5	34.5	34.4	34.4
SI	0.5	38.8	39.0	39.0	39.3	39.3	39.2	39.2	39.2	39.3	39.3	39.3
SK	0.3	39.3	40.0	39.9	39.8	39.7	39.7	39.6	39.6	39.6	39.6	39.6
FI	2.4	34.7	35.0	35.1	35.6	34.9	35.0	35.9	36.0	35.8	36.5	37.1
SE	1.0	40.5	40.4	40.6	40.0	38.5	39.2	40.2	41.2	40.7	40.8	41.5
NO	-8.4	38.6	35.9	33.5	32.3	30.3	28.6	27.9	27.5	27.9	29.8	30.2
EA	:	:	:	:	:	:	:	:	:	:	:	:
EU	:	:	:	:	:	:	:	:	:	:	:	:

Table III.1.86: Contributors (public pensions, in thousands)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-259.1	4,861	4,946	4,941	4,910	4,861	4,805	4,747	4,693	4,653	4,630	4,602
BG	-885.7	2,861	2,716	2,621	2,546	2,474	2,373	2,231	2,117	2,050	2,009	1,976
CZ	-985.5	5,305	5,090	5,016	4,929	4,760	4,594	4,445	4,335	4,298	4,312	4,320
DK	-173.8	361	253	215	203	200	201	194	195	194	191	187
DE	-4896.1	36,694	35,791	34,301	33,436	33,100	32,936	32,647	32,257	31,934	31,788	31,798
EE	-98.3	661	644	632	627	619	606	591	576	566	562	563
IE	445.3	2,571	2,728	2,833	2,920	2,956	2,966	2,972	2,989	3,010	3,021	3,016
EL	-410.1	4,843	5,096	5,071	5,032	4,941	4,824	4,714	4,611	4,540	4,487	4,433
ES	-1977.8	23,124	24,353	24,741	24,469	23,726	22,772	22,047	21,672	21,497	21,368	21,146
FR	675.1	28,322	28,601	28,960	29,181	29,269	29,383	29,236	29,172	29,125	29,009	28,998
HR	-481.4	1,558	1,546	1,480	1,432	1,378	1,317	1,258	1,202	1,152	1,111	1,077
IT	-2257.1	23,823	24,431	24,430	23,994	23,369	22,809	22,604	22,526	22,293	22,019	21,566
CY	66.9	518	548	572	594	608	618	626	620	608	595	585
LV	-478.3	977	849	775	723	676	629	582	539	515	505	499
LT	-568.2	1,263	1,156	1,058	990	934	883	831	779	737	710	694
LU	189.7	487	565	606	637	659	673	680	682	683	682	677
HU	-550.5	4,468	4,659	4,744	4,669	4,518	4,332	4,213	4,118	4,023	3,960	3,917
MT	72.2	248	288	309	326	336	341	339	333	326	322	320
NL	-43.9	9,921	10,152	10,139	10,048	10,018	10,076	10,122	10,150	10,113	9,998	9,877
AT	-273.5	4,301	4,235	4,198	4,195	4,199	4,182	4,145	4,097	4,060	4,041	4,028
PL	-5992.8	17,380	16,763	16,300	15,858	15,250	14,437	13,557	12,783	12,207	11,783	11,387
PT	-1486.5	5,072	5,007	4,767	4,510	4,256	4,038	3,885	3,789	3,717	3,651	3,586
RO	-1782.9	5,632	5,893	5,727	5,312	4,968	4,617	4,364	4,160	4,050	3,947	3,849
SI	-165.0	961	954	941	923	898	866	837	816	806	802	796
SK	-776.6	2,367	2,230	2,143	2,074	1,982	1,884	1,786	1,699	1,645	1,616	1,591
FI	-231.6	2,353	2,366	2,362	2,370	2,356	2,320	2,276	2,234	2,191	2,155	2,122
SE	1069.9	5,848	6,032	6,183	6,334	6,474	6,608	6,692	6,701	6,738	6,845	6,918
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	-12472.8	153,367	154,940	153,778	151,957	149,765	147,612	145,666	144,234	143,020	141,961	140,894
EU	-22255.5	196,780	197,890	196,065	193,240	189,786	186,090	182,619	179,845	177,731	176,119	174,525

Table III.1.87: Support ratio (contributors/100 pensioners, public pensions)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-47.1	164.7	153.5	144.9	138.6	133.5	129.9	126.6	123.7	121.3	119.6	117.6
BG	-19.4	133.4	131.6	129.1	128.9	128.2	124.6	117.9	112.6	111.1	112.6	114.0
CZ	-51.0	183.1	175.1	171.2	164.1	151.3	139.5	130.9	125.3	124.6	128.2	132.1
DK	-13.2	27.6	19.5	16.5	15.3	15.0	15.2	14.7	15.0	15.1	14.8	14.4
DE	-43.2	160.3	146.6	132.8	123.4	120.9	120.4	119.4	118.1	117.5	117.2	117.1
EE	-19.6	158.3	155.3	149.8	149.4	146.3	144.1	141.3	137.8	136.9	135.7	138.7
IE	-117.9	257.5	234.5	215.9	199.9	183.4	169.4	158.6	151.1	146.7	143.0	139.6
EL	-30.0	193.2	202.7	197.9	190.0	172.3	162.9	155.3	157.5	160.2	163.5	163.3
ES	-101.3	232.1	228.1	214.6	190.7	166.2	145.9	133.7	128.6	127.8	129.3	130.8
FR	-23.9	117.6	110.8	106.0	102.0	98.6	97.0	95.1	94.2	94.2	94.1	93.7
HR	-24.6	125.5	124.5	119.5	117.0	114.6	112.0	109.5	107.1	104.5	102.3	100.9
IT	-21.1	161.0	160.8	153.7	143.1	133.5	127.3	127.4	131.1	134.3	138.2	139.9
CY	-138.7	324.4	292.8	283.0	263.3	251.7	234.3	221.9	199.9	190.7	181.4	185.8
LV	-62.5	175.5	158.5	144.2	135.0	127.1	120.8	113.2	106.3	105.4	109.7	113.0
LT	-48.5	140.3	131.5	116.8	107.8	101.8	98.4	95.2	91.5	89.3	89.7	91.8
LU	-131.6	235.2	218.7	193.7	173.8	157.0	142.6	129.7	119.4	112.1	107.3	103.5
HU	-45.8	169.8	176.0	175.7	165.3	152.1	140.2	134.3	129.3	125.0	123.8	124.0
MT	-129.5	269.6	270.7	268.1	259.1	244.3	223.9	200.1	175.9	157.4	146.4	140.1
NL	-61.5	250.7	235.9	217.1	203.1	194.2	195.7	198.5	201.7	199.8	195.3	189.2
AT	-51.3	176.5	157.1	146.8	138.7	135.2	132.3	129.6	127.5	126.5	126.1	125.2
PL	-85.1	180.3	164.5	155.6	146.2	134.0	120.7	109.2	101.1	97.0	95.8	95.2
PT	-59.7	190.7	183.4	168.2	151.9	138.6	129.1	125.6	125.0	126.1	128.6	131.0
RO	-30.4	109.6	110.4	103.5	91.2	83.3	77.3	74.3	73.2	74.8	76.9	79.2
SI	-47.2	154.3	146.0	136.7	127.3	118.5	110.9	106.0	104.0	104.6	106.1	107.1
SK	-84.1	170.4	143.5	130.9	120.6	108.6	98.4	90.4	84.8	83.1	84.3	86.3
FI	-34.9	151.2	143.7	138.4	137.6	137.6	135.0	131.4	127.4	122.3	118.8	116.4
SE	-68.1	221.7	210.6	201.5	195.7	190.6	186.9	179.0	167.3	159.7	157.3	153.6
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	-44.1	164.7	156.6	146.8	137.3	129.9	124.9	121.7	120.5	120.3	120.7	120.6
EU	-45.6	162.9	155.2	146.3	137.1	129.5	123.7	119.7	117.6	116.9	117.3	117.4

Table III.1.88: Public pensions, gross as % of GDP - High life expectancy (+2 years)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.8	12.2	13.2	14.1	14.7	15.1	15.4	15.6	15.8	15.8	15.9	16.0
BG	1.9	8.3	8.6	8.6	8.6	8.8	9.2	9.6	10.1	10.2	10.2	10.2
CZ	3.6	8.0	8.9	8.9	9.2	10.0	11.0	11.8	12.3	12.3	11.9	11.6
DK	-1.8	9.3	8.9	8.6	8.4	8.2	8.0	7.8	7.6	7.4	7.4	7.4
DE	2.5	10.3	10.9	11.6	12.1	12.2	12.3	12.4	12.6	12.8	12.8	12.8
EE	-1.9	7.8	7.1	7.0	6.8	6.7	6.5	6.4	6.3	6.1	6.1	5.9
IE	3.4	4.6	5.3	5.9	6.4	6.9	7.3	7.6	7.7	7.7	7.8	8.0
EL	-3.9	15.7	14.3	13.6	13.8	13.6	13.5	13.4	12.6	11.8	11.8	11.8
ES	-2.0	12.3	12.7	12.4	12.5	12.9	13.2	13.0	12.5	11.7	11.0	10.3
FR	-1.5	14.8	15.4	15.8	15.8	15.5	15.0	14.7	14.3	13.8	13.4	13.2
HR	0.0	10.2	10.9	11.1	11.0	10.8	10.6	10.4	10.3	10.3	10.3	10.2
IT	-1.6	15.4	16.2	17.3	17.8	17.8	17.3	16.4	15.2	14.3	13.9	13.8
CY	2.4	8.8	9.7	10.2	10.1	10.3	10.0	10.1	10.4	10.8	11.4	11.1
LV	-1.1	7.1	7.1	6.9	6.8	6.6	6.3	6.4	6.4	6.3	6.1	6.1
LT	0.8	7.1	7.6	8.0	8.3	8.5	8.5	8.5	8.5	8.4	8.2	8.0
LU	9.2	9.2	10.3	11.4	12.3	13.1	14.0	15.1	16.1	17.0	17.8	18.4
HU	4.5	8.3	8.6	8.4	8.8	9.8	10.9	11.4	11.8	12.3	12.6	12.8
MT	4.3	7.1	7.2	6.6	6.5	6.7	7.3	8.2	9.4	10.4	11.1	11.4
NL	2.4	6.8	7.3	8.0	8.9	9.1	9.1	9.0	9.0	9.0	9.1	9.2
AT	1.7	13.3	14.6	15.2	15.6	15.4	15.2	15.2	15.2	15.2	15.1	15.0
PL	0.1	10.6	11.4	11.0	10.6	10.6	10.7	10.9	11.0	11.0	10.8	10.8
PT	-3.2	12.7	13.4	14.2	14.6	14.5	13.8	12.7	11.5	10.6	9.9	9.5
RO	4.5	8.1	13.1	12.9	13.7	14.4	15.0	15.2	15.0	14.3	13.5	12.6
SI	7.0	10.0	10.2	10.9	12.2	13.8	15.2	16.2	16.7	16.8	16.9	17.0
SK	6.5	8.3	9.8	10.2	10.8	11.7	12.7	13.7	14.6	15.0	14.9	14.8
FI	1.4	13.0	13.6	13.8	13.5	12.9	12.7	12.8	13.1	13.6	14.1	14.5
SE	0.1	7.6	7.8	7.4	7.2	7.2	7.1	7.2	7.4	7.6	7.6	7.7
NO	2.8	11.0	11.8	12.4	12.7	12.8	12.8	12.9	13.1	13.4	13.5	13.7
EA	0.4	12.1	12.7	13.2	13.5	13.6	13.5	13.3	13.1	12.8	12.6	12.5
EU	0.4	11.6	12.2	12.6	12.9	12.9	12.9	12.8	12.6	12.4	12.2	12.1

Table III.1.89: Public pensions, gross as % of GDP - Lower fertility (-20%)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.7	12.2	13.2	14.0	14.6	14.9	15.3	15.7	16.0	16.3	16.6	16.9
BG	2.8	8.3	8.6	8.5	8.5	8.7	9.1	9.7	10.3	10.6	10.8	11.1
CZ	4.4	8.0	8.8	8.8	9.1	9.8	10.9	11.8	12.5	12.7	12.5	12.4
DK	-1.1	9.3	8.9	8.5	8.4	8.2	8.0	8.0	7.8	7.8	7.9	8.1
DE	3.1	10.3	10.9	11.5	12.0	12.2	12.3	12.6	12.8	13.1	13.3	13.4
EE	-2.2	7.8	7.1	6.9	6.7	6.6	6.4	6.2	6.0	5.8	5.7	5.5
IE	4.0	4.6	5.3	5.9	6.4	6.9	7.4	7.7	7.9	8.1	8.3	8.5
EL	-2.7	15.7	14.2	13.8	13.7	14.0	13.9	13.9	13.2	12.8	12.7	13.0
ES	-1.1	12.3	12.7	12.3	12.5	12.9	13.3	13.4	13.0	12.4	11.8	11.3
FR	-0.4	14.8	15.4	15.6	15.5	15.4	15.0	14.9	14.7	14.5	14.3	14.4
HR	0.8	10.2	10.9	11.0	10.8	10.5	10.3	10.3	10.4	10.6	10.8	10.9
IT	-0.8	15.4	16.2	17.3	17.9	17.9	17.5	16.6	15.5	14.8	14.5	14.5
CY	3.3	8.8	10.0	10.0	10.4	10.3	10.4	10.5	11.1	11.5	12.1	12.1
LV	-0.9	7.1	7.1	6.9	6.8	6.5	6.3	6.4	6.5	6.4	6.3	6.3
LT	0.5	7.1	7.5	7.9	8.2	8.4	8.3	8.3	8.2	8.1	7.9	7.6
LU	10.9	9.2	10.3	11.4	12.3	13.1	14.1	15.4	16.7	17.9	19.0	20.1
HU	5.5	8.3	8.6	8.3	8.7	9.7	10.9	11.5	12.1	12.8	13.4	13.8
MT	4.9	7.1	7.1	6.6	6.4	6.7	7.3	8.3	9.6	10.7	11.4	11.9
NL	3.6	6.8	7.3	8.1	8.9	9.2	9.3	9.4	9.5	9.7	10.0	10.4
AT	1.6	13.3	14.6	15.1	15.4	15.1	15.0	14.9	14.9	14.9	14.8	14.9
PL	1.0	10.6	11.4	11.0	10.6	10.5	10.7	11.1	11.4	11.6	11.5	11.6
PT	-1.9	12.7	13.4	14.2	14.6	14.4	13.9	13.1	12.1	11.3	10.9	10.8
RO	5.7	8.1	13.1	12.9	13.6	14.2	15.0	15.4	15.4	14.9	14.4	13.8
SI	8.1	10.0	10.1	10.8	12.1	13.6	15.1	16.2	17.0	17.3	17.7	18.0
SK	8.0	8.3	9.7	10.2	10.7	11.6	12.7	13.9	15.1	15.8	16.0	16.3
FI	2.9	13.0	13.6	13.7	13.4	12.9	12.9	13.2	13.7	14.5	15.2	16.0
SE	0.8	7.6	7.7	7.4	7.2	7.1	7.2	7.3	7.7	8.0	8.2	8.5
NO	4.0	11.0	11.7	12.3	12.6	12.8	13.0	13.2	13.7	14.1	14.5	15.0
EA	1.3	12.1	12.6	13.1	13.4	13.5	13.6	13.5	13.4	13.3	13.3	13.4
EU	1.3	11.6	12.2	12.5	12.8	12.9	13.0	13.0	12.9	12.9	12.8	12.9

Table III.1.90: Public pensions, gross as % of GDP - Higher TFP growth (+0.2 pps)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.9	12.2	13.1	13.8	14.3	14.5	14.5	14.4	14.4	14.3	14.2	14.1
BG	1.1	8.3	8.6	8.4	8.4	8.5	8.8	9.1	9.5	9.6	9.4	9.4
CZ	2.6	8.0	8.8	8.8	9.0	9.7	10.5	11.2	11.6	11.5	11.1	10.6
DK	-1.9	9.3	8.9	8.5	8.3	8.1	7.8	7.7	7.4	7.3	7.3	7.3
DE	2.1	10.3	10.9	11.5	12.0	12.0	12.1	12.2	12.4	12.5	12.5	12.4
EE	-2.4	7.8	7.1	6.9	6.6	6.5	6.3	6.1	5.9	5.7	5.6	5.3
IE	3.0	4.6	5.3	5.9	6.3	6.8	7.1	7.4	7.4	7.4	7.4	7.5
EL	-4.5	15.7	14.1	13.6	13.3	13.5	13.2	13.0	12.0	11.4	11.1	11.2
ES	-3.0	12.3	12.7	12.2	12.2	12.5	12.7	12.4	11.7	10.9	10.0	9.3
FR	-3.2	14.7	15.3	15.5	15.1	14.6	14.0	13.4	12.8	12.3	11.8	11.6
HR	-1.1	10.2	10.8	10.9	10.7	10.3	9.9	9.6	9.5	9.3	9.2	9.0
IT	-2.4	15.4	16.1	17.0	17.4	17.3	16.7	15.5	14.3	13.5	13.1	13.0
CY	2.0	8.8	9.9	9.9	10.2	10.1	10.1	10.0	10.4	10.6	11.0	10.7
LV	-1.3	7.1	7.1	6.9	6.8	6.5	6.2	6.2	6.2	6.1	5.9	5.8
LT	0.3	7.1	7.6	8.0	8.2	8.3	8.3	8.2	8.1	8.0	7.8	7.5
LU	7.9	9.2	10.3	11.4	12.2	12.8	13.5	14.3	15.2	15.9	16.5	17.1
HU	3.6	8.3	8.6	8.3	8.7	9.6	10.5	10.9	11.1	11.5	11.7	11.9
MT	3.2	7.1	7.1	6.6	6.4	6.5	7.0	7.8	8.8	9.6	10.1	10.2
NL	2.3	6.8	7.3	8.1	8.9	9.1	9.0	9.0	8.9	8.9	9.0	9.2
AT	0.6	13.3	14.6	15.2	15.5	15.1	14.8	14.5	14.4	14.3	14.1	13.9
PL	-0.5	10.6	11.4	11.0	10.6	10.4	10.4	10.4	10.5	10.5	10.2	10.1
PT	-4.0	12.7	13.3	14.0	14.1	13.7	12.9	11.8	10.6	9.7	9.1	8.8
RO	3.3	8.1	13.2	13.2	13.9	14.5	14.8	14.8	14.2	13.3	12.3	11.4
SI	5.6	10.0	10.1	10.8	12.0	13.4	14.6	15.4	15.7	15.7	15.6	15.6
SK	5.4	8.3	9.8	10.2	10.7	11.5	12.3	13.1	13.8	14.1	13.9	13.7
FI	0.8	13.0	13.6	13.7	13.4	12.7	12.3	12.4	12.6	13.1	13.5	13.8
SE	-0.1	7.6	7.7	7.4	7.2	7.0	6.9	7.0	7.3	7.4	7.4	7.5
NO	2.6	11.0	11.7	12.3	12.6	12.6	12.6	12.7	13.0	13.2	13.4	13.6
EA	-0.5	12.1	12.6	13.0	13.2	13.2	13.0	12.7	12.3	12.0	11.8	11.6
EU	-0.4	11.6	12.2	12.5	12.6	12.6	12.4	12.2	11.9	11.7	11.4	11.2

Table III.1.91: Public pensions, gross as % of GDP - TFP risk scenario (-0.2 pps)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.0	12.2	13.2	13.9	14.6	15.1	15.4	15.6	15.8	16.0	16.1	16.2
BG	2.4	8.3	8.6	8.4	8.4	8.6	9.0	9.6	10.2	10.5	10.6	10.7
CZ	3.2	8.0	8.9	8.9	9.2	9.9	10.9	11.6	12.1	12.0	11.6	11.2
DK	-2.1	9.3	8.9	8.5	8.3	8.1	7.8	7.6	7.3	7.2	7.2	7.2
DE	2.2	10.3	10.9	11.5	12.0	12.1	12.1	12.2	12.4	12.5	12.5	12.5
EE	-2.1	7.8	7.1	6.9	6.7	6.6	6.4	6.2	6.1	5.9	5.8	5.6
IE	3.1	4.6	5.3	5.9	6.3	6.9	7.3	7.5	7.6	7.6	7.6	7.6
EL	-3.1	15.7	14.2	13.7	13.6	14.1	14.0	14.0	13.2	12.6	12.4	12.6
ES	-1.2	12.3	12.7	12.3	12.5	13.0	13.5	13.5	13.1	12.4	11.7	11.2
FR	-1.2	14.8	15.4	15.6	15.5	15.4	15.1	14.8	14.5	14.1	13.8	13.6
HR	-0.5	10.2	10.8	10.9	10.8	10.4	10.2	10.0	9.9	9.8	9.8	9.7
IT	-1.2	15.4	16.2	17.2	17.9	18.1	17.8	16.8	15.6	14.8	14.4	14.2
CY	2.4	8.8	10.0	10.0	10.3	10.3	10.4	10.3	10.8	11.0	11.5	11.2
LV	-1.1	7.1	7.1	7.0	6.9	6.6	6.4	6.4	6.5	6.4	6.1	6.0
LT	0.5	7.1	7.6	8.0	8.3	8.4	8.4	8.3	8.2	8.1	7.9	7.6
LU	9.5	9.2	10.3	11.5	12.5	13.3	14.2	15.3	16.4	17.3	18.0	18.7
HU	4.6	8.3	8.6	8.4	8.9	9.9	11.1	11.5	11.9	12.4	12.7	12.9
MT	4.5	7.1	7.2	6.6	6.5	6.8	7.4	8.3	9.5	10.5	11.2	11.5
NL	2.3	6.8	7.2	8.0	8.7	9.0	8.9	8.8	8.7	8.8	8.9	9.1
AT	1.4	13.3	14.5	15.0	15.4	15.2	15.0	14.9	14.9	14.9	14.8	14.7
PL	0.2	10.6	11.4	11.1	10.9	10.8	10.9	11.1	11.2	11.2	11.0	10.8
PT	-2.4	12.7	13.3	14.1	14.5	14.4	14.0	13.1	12.0	11.1	10.6	10.3
RO	4.6	8.1	13.2	13.2	14.1	14.9	15.5	15.6	15.3	14.5	13.6	12.7
SI	6.2	10.0	10.1	10.9	12.1	13.6	14.9	15.8	16.2	16.2	16.2	16.2
SK	6.2	8.3	9.8	10.3	10.9	11.8	12.7	13.6	14.4	14.8	14.7	14.5
FI	1.9	13.0	13.6	13.8	13.6	13.1	13.0	13.1	13.5	14.0	14.5	14.9
SE	-0.1	7.6	7.7	7.4	7.2	7.1	7.0	7.0	7.3	7.4	7.4	7.5
NO	2.6	11.0	11.7	12.3	12.6	12.6	12.6	12.7	13.0	13.2	13.4	13.6
EA	0.5	12.1	12.6	13.1	13.4	13.6	13.6	13.4	13.2	13.0	12.8	12.6
EU	0.5	11.6	12.2	12.5	12.8	12.9	13.0	12.9	12.7	12.5	12.3	12.2

Table III.1.92: Public pensions, gross as % of GDP - Higher employment rate of older workers (+10 pps)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.1	12.2	12.7	12.9	13.4	13.8	14.1	14.2	14.2	14.2	14.4	14.3
BG	1.0	8.3	8.4	8.1	7.9	7.9	8.2	8.5	9.0	9.3	9.4	9.3
CZ	3.1	8.0	8.7	8.4	8.6	9.0	9.7	10.5	11.2	11.5	11.5	11.1
DK	-2.3	9.3	8.8	8.4	8.1	7.9	7.6	7.5	7.2	7.0	7.0	7.0
DE	1.9	10.3	10.8	11.2	11.6	11.8	11.9	11.9	12.1	12.2	12.3	12.3
EE	-2.2	7.8	7.0	6.9	6.7	6.6	6.4	6.2	6.1	5.9	5.8	5.6
IE	2.7	4.6	5.3	5.7	6.2	6.6	6.9	7.1	7.2	7.2	7.3	7.3
EL	-4.0	15.7	14.1	13.4	13.1	13.2	12.9	12.9	12.2	11.7	11.5	11.7
ES	-3.5	12.3	12.2	10.9	10.3	10.3	10.3	10.3	10.1	9.7	9.1	8.8
FR	-2.5	14.8	15.2	15.2	15.0	14.7	14.2	13.8	13.4	13.0	12.6	12.3
HR	-1.5	10.2	10.5	10.4	10.2	9.8	9.4	9.2	9.0	8.9	8.8	8.7
IT	-1.6	15.4	15.6	15.5	16.2	16.6	16.7	16.2	15.3	14.5	13.9	13.8
CY	1.9	8.8	9.8	9.8	10.1	10.1	10.0	9.8	10.2	10.3	10.8	10.7
LV	-1.1	7.1	7.0	6.8	6.7	6.5	6.4	6.4	6.4	6.3	6.1	6.1
LT	0.4	7.1	7.5	7.9	8.2	8.4	8.3	8.2	8.2	8.0	7.8	7.5
LU	8.6	9.2	10.3	11.1	11.9	12.6	13.4	14.2	15.1	16.1	17.1	17.8
HU	3.3	8.3	8.6	8.2	8.5	9.1	10.1	10.6	10.8	11.2	11.5	11.7
MT	3.5	7.1	7.1	6.5	6.3	6.5	7.1	7.8	8.7	9.6	10.3	10.6
NL	2.1	6.8	7.2	7.8	8.5	8.8	8.9	8.8	8.7	8.7	8.8	8.9
AT	0.7	13.3	14.2	13.9	14.4	14.4	14.2	14.1	14.1	14.1	14.1	14.0
PL	-0.5	10.6	11.2	10.7	10.4	10.3	10.1	10.2	10.3	10.3	10.3	10.1
PT	-3.5	12.7	13.2	13.9	14.0	13.6	13.0	12.0	11.1	10.2	9.6	9.2
RO	3.4	8.1	13.1	12.4	12.9	13.4	13.9	13.8	13.7	13.0	12.4	11.6
SI	4.6	10.0	9.7	9.8	10.8	12.0	13.1	13.8	14.3	14.5	14.7	14.5
SK	5.4	8.3	9.6	9.9	10.3	11.0	11.7	12.5	13.3	13.8	13.9	13.8
FI	1.1	13.0	13.3	13.2	12.9	12.5	12.3	12.4	12.7	13.2	13.8	14.2
SE	-0.4	7.6	7.7	7.2	6.9	6.8	6.8	6.8	7.0	7.2	7.2	7.3
NO	2.0	11.0	11.7	12.0	12.1	12.2	12.3	12.3	12.5	12.7	12.9	13.0
EA	-0.3	12.1	12.4	12.4	12.6	12.7	12.6	12.5	12.3	12.1	11.9	11.8
EU	-0.3	11.6	12.0	11.9	12.1	12.1	12.1	12.0	11.8	11.7	11.5	11.4

Table III.1.93: Public pensions, gross as % of GDP - Higher migration (+33%)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	12.2	13.1	13.9	14.4	14.7	14.8	14.8	14.8	14.7	14.7	14.7
BG	1.2	8.3	8.6	8.5	8.5	8.7	9.0	9.4	9.7	9.8	9.6	9.6
CZ	2.6	8.0	8.8	8.7	9.0	9.6	10.4	11.0	11.4	11.4	11.0	10.6
DK	-2.2	9.3	8.8	8.5	8.3	8.0	7.7	7.5	7.2	7.1	7.0	7.0
DE	1.8	10.3	10.9	11.4	11.8	11.9	11.9	11.9	12.0	12.1	12.2	12.1
EE	-2.2	7.8	7.1	6.9	6.7	6.6	6.4	6.2	6.0	5.8	5.8	5.6
IE	2.9	4.6	5.2	5.8	6.2	6.7	7.0	7.2	7.3	7.3	7.4	7.5
EL	-4.3	15.7	14.3	13.8	13.7	13.9	13.6	13.4	12.4	11.7	11.3	11.4
ES	-2.6	12.3	12.6	12.1	12.2	12.4	12.6	12.3	11.8	11.0	10.3	9.7
FR	-2.4	14.8	15.3	15.7	15.5	15.1	14.6	14.2	13.7	13.2	12.8	12.4
HR	-0.9	10.2	10.9	11.0	10.8	10.4	10.1	9.8	9.6	9.5	9.4	9.3
IT	-2.3	15.4	16.1	17.1	17.6	17.4	16.8	15.6	14.3	13.5	13.1	13.1
CY	1.3	8.8	9.9	9.8	10.1	9.9	9.8	9.5	9.8	9.9	10.3	10.0
LV	-1.2	7.1	7.1	7.0	6.9	6.6	6.4	6.4	6.5	6.3	6.1	6.0
LT	0.1	7.1	7.5	7.9	8.2	8.3	8.3	8.2	8.1	7.9	7.6	7.3
LU	7.6	9.2	10.1	11.0	11.7	12.3	12.9	13.7	14.6	15.4	16.2	16.9
HU	3.6	8.3	8.6	8.3	8.7	9.5	10.5	10.9	11.2	11.6	11.8	11.9
MT	3.0	7.1	6.9	6.3	6.1	6.3	6.7	7.5	8.4	9.2	9.7	10.1
NL	2.0	6.8	7.2	8.0	8.7	8.9	8.8	8.7	8.6	8.6	8.7	8.8
AT	0.4	13.3	14.5	14.9	15.3	14.9	14.6	14.4	14.3	14.1	13.8	13.7
PL	-0.3	10.6	11.4	10.9	10.6	10.5	10.5	10.6	10.7	10.6	10.4	10.3
PT	-3.5	12.7	13.3	14.2	14.6	14.2	13.5	12.4	11.2	10.3	9.6	9.2
RO	4.2	8.1	13.2	13.1	13.9	14.6	15.1	15.3	14.9	14.1	13.3	12.3
SI	5.6	10.0	10.0	10.7	11.9	13.3	14.4	15.2	15.5	15.5	15.5	15.6
SK	5.7	8.3	9.7	10.1	10.7	11.5	12.4	13.3	14.1	14.4	14.2	14.0
FI	0.7	13.0	13.5	13.6	13.3	12.6	12.3	12.4	12.6	13.0	13.5	13.8
SE	-0.4	7.6	7.6	7.2	7.0	6.8	6.7	6.7	6.9	7.0	7.1	7.2
NO	1.9	11.0	11.6	12.1	12.2	12.2	12.1	12.1	12.3	12.5	12.7	12.9
EA	-0.3	12.1	12.6	13.0	13.3	13.2	13.0	12.8	12.4	12.2	11.9	11.8
EU	-0.2	11.6	12.2	12.5	12.6	12.6	12.5	12.3	12.0	11.7	11.5	11.4

Table III.1.94: Public pensions, gross as % of GDP - Lower migration (-33%)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.7	12.2	13.2	14.1	14.8	15.2	15.5	15.7	15.8	15.9	15.9	15.8
BG	1.5	8.3	8.6	8.5	8.5	8.6	8.9	9.3	9.7	9.8	9.7	9.8
CZ	3.2	8.0	8.9	8.9	9.2	10.0	11.0	11.8	12.3	12.2	11.7	11.2
DK	-1.8	9.3	8.9	8.6	8.4	8.2	7.9	7.8	7.5	7.4	7.4	7.5
DE	2.5	10.3	11.0	11.6	12.1	12.2	12.4	12.5	12.7	12.9	12.9	12.8
EE	-2.3	7.8	7.1	6.9	6.7	6.6	6.4	6.2	6.0	5.8	5.7	5.4
IE	3.2	4.6	5.3	5.9	6.5	7.0	7.4	7.7	7.8	7.7	7.7	7.7
EL	-3.3	15.7	14.2	13.8	13.7	14.0	13.9	13.8	12.9	12.4	12.2	12.4
ES	-1.4	12.3	12.8	12.5	12.8	13.3	13.8	13.7	13.3	12.5	11.6	10.9
FR	-1.9	14.8	15.5	15.8	15.7	15.3	14.9	14.5	13.9	13.5	13.1	12.8
HR	-0.5	10.2	10.8	10.9	10.8	10.4	10.1	10.0	9.9	9.8	9.8	9.7
IT	-1.1	15.4	16.3	17.5	18.3	18.3	18.0	16.9	15.7	14.9	14.4	14.2
CY	3.1	8.8	10.1	10.2	10.7	10.7	10.8	10.8	11.4	11.7	12.3	11.9
LV	-1.2	7.1	7.1	6.9	6.7	6.5	6.2	6.2	6.3	6.2	6.0	5.9
LT	0.6	7.1	7.5	7.9	8.2	8.4	8.4	8.3	8.3	8.2	8.0	7.8
LU	10.2	9.2	10.5	11.8	12.9	13.9	14.9	16.2	17.3	18.2	18.9	19.4
HU	4.2	8.3	8.6	8.4	8.8	9.8	11.0	11.4	11.8	12.2	12.5	12.5
MT	5.1	7.1	7.4	6.8	6.8	7.1	7.8	8.9	10.3	11.4	12.0	12.1
NL	2.7	6.8	7.3	8.1	8.9	9.2	9.2	9.2	9.1	9.2	9.3	9.5
AT	1.7	13.3	14.6	15.2	15.6	15.4	15.1	15.0	15.1	15.1	15.0	15.0
PL	0.0	10.6	11.4	11.0	10.6	10.5	10.6	10.8	11.0	11.0	10.8	10.7
PT	-3.0	12.7	13.4	14.3	14.7	14.5	13.8	12.8	11.6	10.7	10.1	9.7
RO	3.4	8.1	13.0	12.7	13.3	13.9	14.3	14.4	14.0	13.2	12.4	11.6
SI	6.5	10.0	10.2	11.0	12.3	13.9	15.3	16.2	16.7	16.7	16.6	16.4
SK	6.1	8.3	9.8	10.2	10.7	11.6	12.6	13.5	14.4	14.7	14.6	14.4
FI	2.0	13.0	13.6	13.8	13.6	13.1	12.9	13.1	13.5	14.1	14.6	15.0
SE	0.3	7.6	7.8	7.5	7.4	7.3	7.3	7.4	7.7	7.9	7.8	7.9
NO	3.5	11.0	11.9	12.6	13.0	13.2	13.3	13.5	13.8	14.1	14.3	14.5
EA	0.5	12.1	12.7	13.2	13.6	13.7	13.6	13.5	13.2	13.0	12.7	12.6
EU	0.5	11.6	12.3	12.6	12.9	13.0	13.0	12.9	12.7	12.5	12.3	12.1

Table III.1.95: Public pensions, gross as % of GDP - Policy scenario linking retirement age to increases in life expectancy

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.7	12.2	13.1	14.0	14.6	14.7	14.7	14.6	14.5	14.3	14.1	13.9
BG	0.5	8.3	8.5	8.3	8.2	8.2	8.4	8.7	9.0	9.1	8.9	8.8
CZ	1.5	8.0	8.8	8.8	8.9	9.4	10.1	10.5	10.7	10.6	10.1	9.5
DK	-2.0	9.3	8.9	8.5	8.3	8.1	7.8	7.6	7.4	7.2	7.2	7.3
DE	1.2	10.3	10.9	11.5	11.8	11.8	11.8	11.8	11.8	11.8	11.7	11.5
EE	-2.3	7.8	7.1	6.9	6.6	6.5	6.3	6.1	6.0	5.8	5.7	5.4
IE	2.0	4.6	5.3	5.8	6.2	6.6	6.8	6.9	6.9	6.8	6.7	6.6
EL	-3.8	15.7	14.2	13.8	13.7	14.0	13.7	13.6	12.7	12.0	11.7	11.9
ES	-3.2	12.3	12.5	11.9	11.8	12.0	12.2	11.9	11.3	10.6	9.8	9.2
FR	-4.8	14.8	14.7	14.5	14.0	13.3	12.7	11.9	11.5	11.0	10.4	10.0
HR	-1.9	10.2	10.8	10.9	10.6	10.1	9.7	9.3	9.0	8.7	8.6	8.3
IT	-1.8	15.4	16.2	17.3	17.9	17.8	17.3	16.2	15.0	14.1	13.7	13.6
CY	2.1	8.8	10.0	10.0	10.4	10.2	10.3	10.1	10.5	10.7	11.2	10.9
LV	-1.2	7.1	7.1	6.8	6.6	6.2	6.0	5.8	5.8	5.8	5.9	6.0
LT	-0.2	7.1	7.5	7.8	8.0	8.0	7.9	7.7	7.5	7.4	7.2	6.9
LU	7.1	9.2	10.1	10.9	11.8	12.2	13.0	13.8	14.5	15.2	15.7	16.4
HU	1.8	8.3	8.5	8.1	8.2	8.7	9.6	10.2	10.2	10.2	10.3	10.1
MT	3.4	7.1	7.1	6.6	6.4	6.6	7.1	7.9	8.9	9.8	10.3	10.5
NL	1.9	6.8	7.3	8.0	8.7	8.9	8.8	8.7	8.6	8.5	8.6	8.7
AT	-0.5	13.3	14.4	14.8	15.0	14.6	14.2	13.9	13.6	13.3	13.1	12.8
PL	-0.9	10.6	11.1	10.4	10.0	9.8	9.8	10.0	10.2	10.3	10.0	9.8
PT	-3.5	12.7	13.3	14.2	14.5	14.3	13.5	12.4	11.2	10.2	9.6	9.2
RO	2.7	8.1	12.9	12.6	12.9	13.3	13.7	13.7	13.3	12.6	11.7	10.8
SI	4.1	10.0	10.1	10.8	12.0	13.2	14.2	14.7	14.9	14.7	14.5	14.1
SK	3.6	8.3	9.6	10.0	10.1	10.5	10.9	11.5	12.1	12.5	12.4	12.0
FI	1.3	13.0	13.6	13.7	13.4	12.8	12.6	12.7	13.0	13.5	14.0	14.4
SE	-0.8	7.6	7.7	7.1	6.8	6.7	6.6	6.7	6.6	6.9	7.0	6.8
NO	2.2	11.0	11.7	12.2	12.4	12.5	12.4	12.5	12.6	12.8	13.0	13.2
EA	-1.1	12.1	12.5	12.8	13.0	12.8	12.6	12.2	11.9	11.6	11.3	11.0
EU	-1.0	11.6	12.0	12.2	12.3	12.2	12.0	11.7	11.4	11.2	10.9	10.6

Table III.1.96: Public pensions, gross as % of GDP - Lagged recovery

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.0	12.2	13.8	14.1	14.7	15.0	15.1	15.2	15.3	15.2	15.2	15.2
BG	1.3	8.3	9.0	8.5	8.5	8.6	8.9	9.3	9.7	9.7	9.6	9.6
CZ	3.0	8.0	9.1	8.9	9.1	9.9	10.8	11.5	11.9	11.8	11.4	10.9
DK	-2.0	9.3	9.1	8.6	8.4	8.1	7.8	7.6	7.4	7.3	7.3	7.3
DE	2.3	10.3	11.4	11.7	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.6
EE	-2.0	7.8	7.4	7.2	7.0	6.8	6.6	6.4	6.3	6.1	6.0	5.7
IE	3.0	4.6	5.5	5.9	6.4	6.9	7.3	7.5	7.5	7.5	7.5	7.6
EL	-4.0	15.7	15.1	13.9	13.8	14.0	13.7	13.6	12.7	12.1	11.7	11.7
ES	-2.2	12.3	13.4	12.4	12.6	12.9	13.1	12.9	12.4	11.6	10.8	10.2
FR	-2.2	14.8	16.2	15.8	15.6	15.2	14.7	14.3	13.8	13.2	12.7	12.5
HR	-0.7	10.2	11.4	11.1	10.9	10.5	10.2	10.0	9.8	9.7	9.6	9.5
IT	-1.5	15.4	17.1	17.4	18.0	17.9	17.4	16.3	15.2	14.5	14.1	13.9
CY	2.0	8.8	10.4	10.1	10.4	10.3	10.3	10.1	10.5	10.7	11.1	10.8
LV	-1.0	7.1	7.5	7.2	7.1	6.9	6.6	6.6	6.6	6.5	6.2	6.1
LT	0.6	7.1	7.7	8.1	8.5	8.6	8.6	8.5	8.4	8.3	8.0	7.7
LU	8.8	9.2	10.6	11.5	12.3	13.1	13.9	14.8	15.8	16.6	17.3	18.0
HU	4.2	8.3	8.9	8.4	8.8	9.7	10.8	11.3	11.6	12.1	12.3	12.5
MT	4.0	7.1	7.4	6.6	6.4	6.6	7.2	8.1	9.3	10.2	10.8	11.1
NL	2.4	6.8	7.5	8.1	8.9	9.1	9.0	9.0	8.9	8.9	9.0	9.2
AT	1.0	13.3	15.0	15.1	15.5	15.2	14.9	14.8	14.7	14.6	14.4	14.3
PL	-0.1	10.6	11.6	11.0	10.7	10.6	10.7	10.8	10.9	10.9	10.7	10.5
PT	-3.2	12.7	14.0	14.5	14.8	14.4	13.7	12.6	11.4	10.5	9.9	9.5
RO	3.7	8.1	13.7	13.1	13.9	14.5	15.0	15.0	14.6	13.7	12.8	11.8
SI	6.0	10.0	10.5	10.9	12.1	13.6	14.8	15.7	16.1	16.1	16.0	15.9
SK	5.9	8.3	10.1	10.2	10.7	11.6	12.5	13.4	14.2	14.5	14.4	14.2
FI	1.3	13.0	14.0	13.7	13.4	12.8	12.6	12.7	13.0	13.5	13.9	14.3
SE	-0.1	7.6	8.0	7.4	7.2	7.1	7.0	7.1	7.3	7.5	7.5	7.5
NO	2.6	11.0	12.0	12.4	12.6	12.7	12.7	12.8	13.0	13.2	13.4	13.6
EA	0.1	12.1	13.2	13.2	13.5	13.5	13.4	13.2	12.9	12.6	12.4	12.2
EU	0.1	11.6	12.8	12.6	12.9	12.9	12.8	12.6	12.4	12.1	11.9	11.8

Table III.1.97: Public pensions, gross as % of GDP - Adverse structural

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	5.0	12.2	13.8	14.3	15.0	15.6	16.0	16.3	16.6	16.8	17.0	17.2
BG	1.8	8.3	8.9	8.7	8.7	8.9	9.3	9.7	10.1	10.2	10.1	10.1
CZ	3.6	8.0	9.2	9.1	9.4	10.2	11.3	12.0	12.5	12.5	12.1	11.6
DK	-2.0	9.3	9.0	8.7	8.5	8.3	7.9	7.7	7.5	7.3	7.3	7.3
DE	2.4	10.3	11.4	11.8	12.3	12.4	12.4	12.5	12.7	12.8	12.8	12.8
EE	-1.8	7.8	7.4	7.1	7.0	6.9	6.7	6.5	6.4	6.2	6.1	5.9
IE	3.4	4.6	5.6	6.1	6.6	7.1	7.6	7.8	7.9	7.8	7.9	7.9
EL	-3.0	15.7	15.2	14.0	14.1	14.5	14.3	14.2	13.5	12.9	12.6	12.7
ES	-0.7	12.3	13.4	12.7	13.1	13.5	13.9	13.8	13.4	12.8	12.2	11.7
FR	-0.6	14.7	16.2	16.0	16.1	15.9	15.6	15.4	15.1	14.8	14.4	14.2
HR	0.1	10.2	11.4	11.3	11.1	10.8	10.6	10.5	10.4	10.4	10.4	10.3
IT	-0.2	15.4	17.2	17.5	18.5	18.7	18.5	17.5	16.4	15.7	15.3	15.1
CY	2.4	8.8	10.4	10.3	10.7	10.7	10.7	10.6	11.0	11.2	11.5	11.1
LV	-0.7	7.1	7.5	7.3	7.2	7.0	6.8	6.9	6.9	6.7	6.5	6.4
LT	0.8	7.1	7.7	8.1	8.5	8.7	8.7	8.6	8.6	8.4	8.2	7.9
LU	10.0	9.2	10.7	11.8	12.7	13.7	14.7	15.9	16.9	17.8	18.6	19.3
HU	5.4	8.3	9.0	8.6	9.1	10.3	11.6	12.1	12.6	13.2	13.5	13.7
MT	5.3	7.1	7.4	6.9	6.8	7.1	7.8	8.8	10.1	11.2	12.0	12.4
NL	2.5	6.8	7.4	8.2	9.0	9.2	9.1	9.1	9.0	9.0	9.1	9.3
AT	1.7	13.3	15.0	15.2	15.5	15.3	15.2	15.1	15.1	15.1	15.0	15.0
PL	0.7	10.6	11.7	11.4	11.0	11.1	11.2	11.5	11.7	11.7	11.5	11.3
PT	-1.8	12.7	14.0	14.5	15.1	15.1	14.6	13.7	12.6	11.8	11.2	10.9
RO	5.3	8.1	13.7	13.5	14.3	15.1	15.8	16.1	15.8	15.1	14.3	13.4
SI	7.0	10.0	10.6	11.2	12.6	14.2	15.5	16.5	17.0	17.0	17.0	17.0
SK	6.9	8.3	10.2	10.5	11.1	12.1	13.2	14.1	15.1	15.5	15.4	15.2
FI	2.3	13.0	14.1	14.0	13.8	13.3	13.2	13.4	13.8	14.4	14.9	15.3
SE	0.1	7.6	8.0	7.6	7.4	7.3	7.2	7.3	7.5	7.7	7.7	7.8
NO	3.0	11.0	12.1	12.7	12.9	13.0	13.0	13.1	13.3	13.5	13.7	13.9
EA	1.1	12.1	13.3	13.4	13.8	14.0	14.0	13.8	13.6	13.4	13.2	13.1
EU	1.0	11.6	12.8	12.8	13.2	13.3	13.4	13.3	13.1	13.0	12.8	12.7

Table III.1.98: Public pensions, gross as % of GDP - Offset declining pension benefit ratio

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	:	:	:	:	:	:	:	:	:	:	:	:
BG	1.7	8.3	8.6	8.5	8.5	8.6	8.9	9.5	10.0	10.2	10.1	10.0
CZ	2.9	8.0	8.8	8.8	9.1	9.8	10.7	11.4	11.8	11.8	11.3	10.9
DK	-1.5	9.3	8.2	8.1	8.2	8.2	8.1	8.0	7.8	7.7	7.7	7.7
DE	2.1	10.3	10.9	11.5	12.0	12.0	12.1	12.2	12.4	12.5	12.5	12.4
EE	0.4	7.8	7.1	7.4	7.5	7.7	7.8	8.0	8.2	8.3	8.4	8.2
IE	:	:	:	:	:	:	:	:	:	:	:	:
EL	0.3	15.7	14.2	13.8	13.7	15.2	16.1	16.8	16.6	16.3	15.9	16.0
ES	6.2	12.3	12.7	12.5	13.6	15.3	17.1	18.4	19.1	19.0	18.8	18.6
FR	1.2	14.8	15.4	15.6	15.5	15.8	15.9	16.0	16.1	16.0	15.9	16.0
HR	1.7	10.2	10.9	11.0	10.8	10.6	10.7	10.9	11.1	11.4	11.7	11.9
IT	0.9	15.4	16.2	17.3	17.9	17.8	18.0	18.1	17.6	17.2	16.7	16.3
CY	6.1	8.8	10.0	10.2	11.0	11.5	12.4	13.1	14.3	14.8	15.4	14.9
LV	2.1	7.1	7.1	7.2	7.7	8.1	8.5	9.1	9.7	9.8	9.4	9.2
LT	2.1	7.1	7.5	7.9	8.2	8.4	8.5	8.9	9.2	9.6	9.5	9.3
LU	10.7	9.2	10.3	11.4	12.3	13.1	14.4	15.8	17.2	18.3	19.2	19.9
HU	:	:	:	:	:	:	:	:	:	:	:	:
MT	5.0	7.1	7.1	6.6	6.5	6.8	7.4	8.3	9.5	10.7	11.5	12.1
NL	:	:	:	:	:	:	:	:	:	:	:	:
AT	2.9	13.3	14.6	15.1	15.4	15.1	15.2	15.6	15.8	16.0	16.1	16.2
PL	6.5	10.6	11.4	11.0	11.7	12.7	14.0	15.3	16.5	17.1	17.2	17.1
PT	2.4	12.7	13.3	14.2	14.7	15.4	16.1	16.3	16.1	15.7	15.3	15.1
RO	3.8	8.1	13.1	12.9	13.6	14.2	14.7	14.8	14.4	13.6	12.8	11.9
SI	:	:	:	:	:	:	:	:	:	:	:	:
SK	7.1	8.3	9.7	10.2	11.1	12.4	13.6	14.8	15.7	16.1	15.9	15.5
FI	3.2	13.0	13.6	13.7	13.8	13.8	14.1	14.4	14.8	15.4	15.9	16.2
SE	3.3	7.6	7.7	7.6	7.8	8.2	8.6	9.1	9.7	10.2	10.6	10.9
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	:	:	:	:	:	:	:	:	:	:	:	:
EU	:	:	:	:	:	:	:	:	:	:	:	:

Table III.1.99: Public pensions, gross as % of GDP - Unchanged retirement age

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.3	12.2	13.3	14.3	15.1	15.3	15.5	15.5	15.6	15.5	15.5	15.4
BG	1.7	8.3	8.6	8.5	8.6	8.9	9.2	9.7	10.1	10.1	10.0	10.0
CZ	5.1	8.0	9.3	9.6	10.2	11.2	12.2	13.0	13.6	13.6	13.3	13.1
DK	0.3	9.2	9.2	9.2	9.3	9.3	9.2	9.1	9.1	9.2	9.4	9.5
DE	2.6	10.3	11.1	12.0	12.5	12.5	12.6	12.7	12.9	13.0	13.0	12.9
EE	-1.5	7.8	7.1	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.5	6.3
IE	3.0	4.6	5.3	5.9	6.4	6.9	7.2	7.5	7.5	7.5	7.5	7.6
EL	-2.4	15.7	14.7	14.5	15.0	15.3	15.4	15.0	14.2	13.7	13.6	13.3
ES	-0.6	12.3	13.8	14.6	15.4	16.0	16.2	15.5	14.5	13.5	12.5	11.8
FR	0.0	14.8	16.4	16.0	16.3	16.1	15.7	15.5	15.3	15.0	14.8	14.8
HR	-0.5	10.2	10.9	11.1	11.0	10.7	10.4	10.2	10.0	9.9	9.8	9.7
IT	-1.4	15.4	16.9	18.4	19.0	18.8	17.9	16.6	15.4	14.7	14.3	14.0
CY	4.3	8.8	10.0	10.1	10.5	10.7	11.0	11.5	12.2	12.9	13.3	13.1
LV	-1.2	7.1	7.7	7.3	7.1	6.7	6.3	6.4	6.4	6.1	5.9	5.9
LT	0.6	7.1	8.1	8.5	8.8	8.8	8.7	8.7	8.6	8.4	8.0	7.7
LU	8.7	9.2	10.3	11.4	12.3	13.0	13.9	14.8	15.8	16.7	17.4	18.0
HU	4.8	8.3	9.0	8.8	9.3	10.4	11.4	11.8	12.2	12.6	12.9	13.1
MT	4.0	7.1	7.2	6.6	6.5	6.7	7.3	8.2	9.4	10.3	10.8	11.1
NL	3.5	6.8	7.5	8.4	9.3	9.6	9.6	9.6	9.7	9.9	10.1	10.4
AT	1.3	13.3	14.8	15.7	16.0	15.6	15.4	15.2	15.1	14.9	14.7	14.6
PL	-0.2	10.6	11.4	11.0	10.6	10.5	10.6	10.7	10.8	10.8	10.6	10.5
PT	-2.6	12.7	13.6	14.5	14.9	14.8	14.3	13.4	12.2	11.2	10.5	10.1
RO	3.9	8.1	13.2	13.2	13.8	14.5	14.9	15.0	14.6	13.8	13.0	12.0
SI	6.5	10.0	10.4	11.3	12.7	14.2	15.5	16.3	16.6	16.5	16.4	16.4
SK	6.5	8.3	10.0	10.7	11.3	12.4	13.3	14.1	14.9	15.1	14.9	14.8
FI	3.2	13.0	13.8	14.1	14.0	13.6	13.6	13.9	14.5	15.2	15.7	16.3
SE	-0.1	7.6	7.7	7.4	7.2	7.1	7.0	7.0	7.3	7.4	7.4	7.5
NO	2.6	11.0	11.7	12.3	12.6	12.6	12.6	12.7	13.0	13.2	13.4	13.6
EA	1.0	12.1	13.1	13.8	14.3	14.3	14.2	13.9	13.7	13.4	13.2	13.1
EU	1.0	11.6	12.6	13.2	13.5	13.6	13.5	13.3	13.1	12.9	12.7	12.6

Table III.1.100: Public pensions, gross as % of GDP - pps change from 2019 (Baseline scenario)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.0		1.0	1.8	2.4	2.7	2.9	3.0	3.0	3.0	3.0	3.0
BG	1.4		0.3	0.2	0.2	0.3	0.6	1.0	1.4	1.5	1.4	1.4
CZ	2.9		0.9	0.8	1.1	1.8	2.7	3.4	3.8	3.8	3.3	2.9
DK	-2.0		-0.4	-0.7	-0.9	-1.2	-1.5	-1.6	-1.9	-2.0	-2.0	-2.0
DE	2.1		0.6	1.2	1.6	1.7	1.8	1.9	2.0	2.2	2.2	2.1
EE	-2.3		-0.7	-0.9	-1.2	-1.3	-1.5	-1.7	-1.8	-2.0	-2.1	-2.3
IE	3.0		0.7	1.3	1.8	2.3	2.7	2.9	3.0	2.9	3.0	3.0
EL	-3.8		-1.5	-1.9	-2.0	-1.7	-2.0	-2.1	-3.1	-3.7	-4.0	-3.8
ES	-2.1		0.4	0.0	0.1	0.5	0.8	0.7	0.1	-0.6	-1.4	-2.1
FR	-2.2		0.6	0.8	0.7	0.4	-0.2	-0.5	-1.0	-1.4	-1.9	-2.2
HR	-0.7		0.7	0.8	0.6	0.2	-0.1	-0.3	-0.4	-0.5	-0.6	-0.7
IT	-1.8		0.8	1.9	2.6	2.4	1.9	0.8	-0.4	-1.3	-1.7	-1.8
CY	2.1		1.2	1.3	1.6	1.5	1.5	1.3	1.8	1.9	2.4	2.1
LV	-1.2		0.0	-0.2	-0.3	-0.6	-0.9	-0.8	-0.8	-0.9	-1.1	-1.2
LT	0.4		0.4	0.8	1.1	1.2	1.2	1.1	1.0	0.9	0.7	0.4
LU	8.7		1.1	2.2	3.1	3.8	4.6	5.6	6.6	7.4	8.1	8.7
HU	4.1		0.3	0.0	0.4	1.4	2.4	2.9	3.2	3.6	3.9	4.1
MT	3.8		0.1	-0.5	-0.6	-0.4	0.1	1.0	2.1	3.0	3.6	3.8
NL	2.3		0.5	1.3	2.0	2.3	2.2	2.1	2.0	2.1	2.2	2.3
AT	1.0		1.3	1.8	2.1	1.8	1.6	1.4	1.3	1.2	1.1	1.0
PL	-0.2		0.8	0.3	0.0	-0.1	-0.1	0.1	0.2	0.2	0.0	-0.2
PT	-3.2		0.6	1.5	1.9	1.6	1.0	-0.1	-1.3	-2.2	-2.8	-3.2
RO	3.8		5.0	4.7	5.4	6.1	6.6	6.7	6.3	5.5	4.7	3.8
SI	6.0		0.2	0.9	2.1	3.6	4.8	5.7	6.1	6.1	6.1	6.0
SK	5.9		1.4	1.8	2.4	3.2	4.2	5.0	5.9	6.2	6.1	5.9
FI	1.3		0.5	0.7	0.4	-0.2	-0.4	-0.3	0.0	0.5	1.0	1.3
SE	-0.1		0.1	-0.3	-0.5	-0.6	-0.7	-0.6	-0.4	-0.2	-0.2	-0.1
NO	2.6		0.8	1.4	1.6	1.7	1.7	1.8	2.0	2.2	2.4	2.6
EA	0.1		0.6	1.0	1.3	1.3	1.2	1.0	0.7	0.4	0.2	0.1
EU	0.1		0.6	0.9	1.1	1.2	1.1	0.9	0.7	0.5	0.2	0.1

Table III.1.101: Public pensions, gross as % of GDP - pps change from 2019 due to dependency ratio (Baseline scenario)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.2		1.6	3.0	4.1	4.9	5.5	5.9	6.4	6.7	6.9	7.2
BG	4.8		1.1	1.6	2.2	3.0	4.0	4.7	5.5	5.6	5.2	4.8
CZ	4.8		1.0	1.5	1.9	2.9	4.3	5.0	5.7	5.9	5.3	4.8
DK	4.0		1.0	1.9	2.6	3.1	3.2	3.2	3.3	3.7	3.9	4.0
DE	4.9		1.3	2.9	4.2	4.3	4.3	4.5	4.8	4.8	4.9	4.9
EE	4.1		1.1	1.6	2.0	2.4	2.9	3.5	4.1	4.3	4.2	4.1
IE	4.0		0.5	0.9	1.4	1.9	2.6	3.2	3.5	3.7	3.9	4.0
EL	8.4		2.0	3.3	5.0	6.6	8.1	9.0	9.0	8.8	8.6	8.4
ES	9.2		1.7	3.4	5.2	7.1	8.8	9.6	9.6	9.4	9.2	9.2
FR	7.1		1.9	3.4	4.6	5.7	6.1	6.6	6.9	6.9	6.9	7.1
HR	6.8		1.8	2.9	3.7	4.3	5.0	5.6	6.0	6.4	6.8	6.8
IT	9.5		1.7	3.7	6.1	8.3	9.4	9.7	9.7	9.5	9.4	9.5
CY	7.1		1.5	2.4	2.9	3.2	3.6	4.1	4.9	5.8	6.6	7.1
LV	4.6		1.4	2.3	2.9	3.4	3.9	4.4	5.0	5.1	4.8	4.6
LT	5.9		1.4	2.7	3.7	4.5	4.9	5.3	5.8	6.2	6.2	5.9
LU	12.1		1.3	3.0	4.7	6.0	7.4	8.6	10.0	11.0	11.6	12.1
HU	5.7		1.0	1.1	1.7	2.7	4.0	4.6	5.1	5.6	5.8	5.7
MT	6.2		0.7	1.1	1.2	1.5	2.0	2.8	4.0	5.2	5.9	6.2
NL	4.3		1.0	2.0	2.9	3.3	3.3	3.3	3.4	3.7	4.0	4.3
AT	9.3		1.9	4.2	6.2	7.1	7.5	8.1	8.6	9.0	9.2	9.3
PL	9.9		2.8	3.7	4.2	5.0	6.4	8.0	9.2	10.0	10.1	9.9
PT	8.8		1.7	3.4	5.0	6.9	8.4	9.1	9.0	8.9	8.8	8.8
RO	9.4		1.5	1.8	4.0	5.7	7.7	8.8	9.9	9.9	9.6	9.4
SI	7.0		1.8	3.0	4.0	4.9	6.2	7.3	7.8	7.7	7.4	7.0
SK	10.4		2.1	3.3	4.1	5.3	7.1	8.8	10.3	11.1	10.9	10.4
FI	6.5		1.7	2.7	3.1	3.1	3.5	4.1	4.8	5.5	6.1	6.5
SE	2.6		0.4	0.7	1.0	1.2	1.3	1.6	2.0	2.4	2.5	2.6
NO	7.4		1.3	2.3	3.4	4.2	4.6	5.1	5.7	6.3	6.9	7.4
EA	7.0		1.5	3.1	4.6	5.6	6.3	6.7	6.9	6.9	6.9	7.0
EU	6.4		1.5	2.7	3.9	4.8	5.5	6.0	6.3	6.4	6.4	6.4

Table III.1.102: Public pensions, gross as % of GDP - pps change from 2019 due to coverage ratio (Baseline scenario)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.8		-0.3	-0.8	-1.2	-1.4	-1.6	-1.7	-1.8	-1.8	-1.8	-1.8
BG	-2.1		-0.6	-0.9	-1.2	-1.7	-2.1	-2.4	-2.6	-2.5	-2.3	-2.1
CZ	-1.6		-0.7	-1.0	-1.1	-1.3	-1.7	-1.7	-1.8	-1.9	-1.8	-1.6
DK	-3.4		-1.0	-1.6	-2.0	-2.3	-2.5	-2.5	-2.8	-3.2	-3.3	-3.4
DE	-0.9		-0.2	-0.6	-0.8	-0.8	-0.8	-0.8	-0.9	-0.9	-0.9	-0.9
EE	-2.4		-0.8	-1.0	-1.3	-1.5	-1.8	-2.1	-2.4	-2.5	-2.4	-2.4
IE	-0.7		-0.1	-0.2	-0.3	-0.4	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7
EL	-1.5		-1.1	-1.6	-2.1	-1.7	-1.9	-1.7	-1.9	-1.8	-1.8	-1.5
ES	-0.1		-0.8	-1.3	-1.3	-1.3	-1.1	-0.7	-0.4	-0.2	-0.1	-0.1
FR	-2.0		-0.7	-1.1	-1.4	-1.7	-1.7	-1.7	-1.8	-1.9	-1.9	-2.0
HR	-3.2		-0.9	-1.4	-1.8	-2.2	-2.5	-2.8	-3.0	-3.1	-3.3	-3.2
IT	-3.5		-0.8	-1.5	-2.1	-2.5	-2.6	-2.7	-2.9	-3.0	-3.3	-3.5
CY	-0.6		-0.1	-0.4	0.0	0.3	0.7	0.8	1.1	0.6	0.3	-0.6
LV	-1.4		-0.7	-0.9	-1.0	-1.2	-1.3	-1.4	-1.5	-1.5	-1.5	-1.4
LT	-1.9		-0.8	-1.1	-1.3	-1.5	-1.6	-1.7	-1.8	-2.0	-2.0	-1.9
LU	2.5		0.4	0.7	0.8	1.0	1.3	1.6	1.9	2.1	2.3	2.5
HU	-1.3		-0.6	-0.5	-0.5	-0.6	-1.0	-1.1	-1.1	-1.3	-1.3	-1.3
MT	0.1		-0.3	-0.4	-0.3	-0.1	0.0	0.0	0.0	-0.1	0.0	0.1
NL	-1.2		-0.4	-0.5	-0.7	-0.7	-0.7	-0.8	-1.0	-1.1	-1.2	-1.2
AT	-2.9		-0.2	-1.1	-1.7	-2.0	-2.2	-2.4	-2.6	-2.8	-2.9	-2.9
PL	-2.4		-1.2	-1.5	-1.4	-1.4	-1.5	-1.8	-2.1	-2.3	-2.4	-2.4
PT	-2.5		-0.8	-1.3	-1.5	-1.9	-2.3	-2.5	-2.4	-2.3	-2.4	-2.5
RO	-3.0		-0.3	0.3	-0.2	-0.6	-1.3	-1.7	-2.4	-2.6	-2.8	-3.0
SI	-1.8		-0.8	-1.2	-1.3	-1.4	-1.6	-1.9	-2.1	-2.1	-2.0	-1.8
SK	-2.6		-0.5	-0.8	-0.9	-1.0	-1.5	-1.9	-2.3	-2.7	-2.7	-2.6
FI	-1.7		-0.6	-0.9	-1.2	-1.2	-1.2	-1.3	-1.4	-1.5	-1.6	-1.7
SE	0.1		0.0	0.0	-0.1	-0.1	-0.1	0.0	0.1	0.1	0.1	0.1
NO	1.1		0.3	0.6	0.6	0.5	0.8	1.1	1.3	1.5	1.3	1.1
EA	-1.5		-0.5	-0.9	-1.2	-1.4	-1.4	-1.4	-1.5	-1.4	-1.5	-1.5
EU	-1.5		-0.5	-0.9	-1.1	-1.2	-1.3	-1.4	-1.4	-1.5	-1.5	-1.5

Table III.1.103: Public pensions, gross as % of GDP - pps change from 2019 due to benefit ratio (Baseline scenario)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.8		0.0	0.0	0.0	-0.2	-0.4	-0.7	-1.0	-1.3	-1.6	-1.8
BG	-1.1		-0.1	-0.6	-0.8	-0.9	-1.0	-1.1	-1.2	-1.2	-1.2	-1.1
CZ	-0.3		0.5	0.2	0.1	0.1	0.1	0.1	0.0	-0.1	-0.2	-0.3
DK	-1.7		-0.3	-0.7	-1.0	-1.3	-1.5	-1.6	-1.6	-1.6	-1.6	-1.7
DE	-1.4		-0.4	-0.8	-1.2	-1.4	-1.3	-1.3	-1.3	-1.3	-1.3	-1.4
EE	-3.4		-1.0	-1.5	-1.8	-2.0	-2.3	-2.6	-2.9	-3.1	-3.3	-3.4
IE	0.2		0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EL	-6.2		-0.9	-1.6	-2.3	-3.4	-4.4	-5.1	-5.9	-6.3	-6.4	-6.2
ES	-8.3		-0.1	-1.0	-2.0	-3.1	-4.2	-5.2	-6.2	-7.1	-7.7	-8.3
FR	-5.9		-0.4	-1.0	-1.7	-2.6	-3.4	-4.0	-4.6	-5.0	-5.5	-5.9
HR	-3.3		0.2	-0.2	-0.6	-1.1	-1.7	-2.1	-2.5	-2.8	-3.1	-3.3
IT	-4.3		0.9	1.2	0.7	-0.6	-2.0	-3.2	-4.1	-4.5	-4.5	-4.3
CY	-3.0		0.0	-0.3	-0.8	-1.4	-2.0	-2.6	-3.1	-3.2	-3.1	-3.0
LV	-4.1		-0.7	-1.6	-2.1	-2.7	-3.2	-3.5	-3.9	-4.1	-4.1	-4.1
LT	-2.9		-0.1	-0.6	-0.9	-1.2	-1.6	-1.9	-2.3	-2.6	-2.8	-2.9
LU	-5.1		-0.4	-1.0	-1.7	-2.6	-3.3	-4.0	-4.5	-4.8	-5.0	-5.1
HU	0.6		0.4	0.1	0.0	0.1	0.4	0.3	0.2	0.2	0.4	0.6
MT	-1.9		-0.1	-0.7	-1.1	-1.3	-1.3	-1.3	-1.4	-1.5	-1.7	-1.9
NL	-0.3		-0.1	-0.1	0.0	-0.2	-0.2	-0.2	-0.1	-0.2	-0.2	-0.3
AT	-4.2		-0.3	-0.8	-1.4	-2.1	-2.7	-3.1	-3.5	-3.7	-3.9	-4.2
PL	-6.8		-0.3	-1.4	-2.4	-3.4	-4.4	-5.2	-5.9	-6.3	-6.6	-6.8
PT	-7.8		0.1	0.0	-0.8	-2.2	-3.7	-5.1	-6.4	-7.2	-7.6	-7.8
RO	-1.7		3.8	2.6	1.9	1.5	1.1	0.6	0.0	-0.6	-1.1	-1.7
SI	1.4		-0.4	-0.4	0.0	0.6	0.9	1.0	1.1	1.2	1.4	1.4
SK	-1.6		-0.2	-0.7	-1.0	-1.2	-1.5	-1.7	-1.8	-1.8	-1.7	-1.6
FI	-2.4		-0.4	-0.8	-1.2	-1.7	-2.2	-2.4	-2.5	-2.5	-2.5	-2.4
SE	-2.7		-0.3	-0.9	-1.3	-1.6	-1.8	-2.1	-2.3	-2.5	-2.6	-2.7
NO	-5.5		-0.7	-1.4	-2.1	-2.8	-3.5	-4.1	-4.7	-5.2	-5.4	-5.5
EA	-3.9		-0.2	-0.5	-1.1	-1.8	-2.4	-2.9	-3.3	-3.6	-3.8	-3.9
EU	-3.7		-0.1	-0.5	-1.0	-1.6	-2.2	-2.7	-3.2	-3.4	-3.6	-3.7

Table III.1.104: Public pensions, gross as % of GDP - pps change from 2019 due to labour market ratio (Baseline scenario)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.3		-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
BG	0.1		0.0	0.1	0.2	0.1	0.0	0.0	-0.1	-0.1	0.0	0.1
CZ	0.2		0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.2
DK	-0.8		-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.6	-0.7	-0.8	-0.8
DE	-0.2		0.0	-0.2	-0.3	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
EE	-0.4		0.1	0.1	0.0	0.0	-0.1	-0.2	-0.4	-0.4	-0.4	-0.4
IE	-0.1		0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
EL	-4.1		-1.5	-1.9	-2.5	-2.9	-3.4	-3.8	-3.9	-3.9	-4.0	-4.1
ES	-2.1		-0.4	-0.9	-1.3	-1.7	-2.0	-2.1	-2.1	-2.0	-2.0	-2.1
FR	-1.0		-0.1	-0.3	-0.5	-0.8	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0
HR	-0.6		-0.3	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.7	-0.6
IT	-2.9		-0.8	-1.3	-1.8	-2.2	-2.3	-2.5	-2.6	-2.7	-2.8	-2.9
CY	-1.0		-0.1	-0.2	-0.3	-0.4	-0.5	-0.7	-0.8	-0.9	-1.0	-1.0
LV	0.1		0.2	0.3	0.3	0.2	0.2	0.1	0.0	0.0	0.1	0.1
LT	-0.2		0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2
LU	-0.2		-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	-0.2	-0.3	-0.3	-0.2
HU	-0.8		-0.4	-0.7	-0.7	-0.8	-0.9	-0.8	-0.8	-0.8	-0.8	-0.8
MT	-0.5		-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	-0.5	-0.5	-0.5
NL	-0.4		0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4
AT	-0.7		0.0	-0.3	-0.6	-0.6	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7
PL	-0.1		-0.3	-0.1	0.0	0.1	0.0	-0.1	-0.2	-0.2	-0.2	-0.1
PT	-1.1		-0.3	-0.3	-0.5	-0.7	-0.9	-0.9	-0.9	-0.9	-1.0	-1.1
RO	-0.6		-0.2	0.0	-0.2	-0.3	-0.5	-0.6	-0.8	-0.7	-0.6	-0.6
SI	-0.4		-0.2	-0.3	-0.3	-0.3	-0.4	-0.5	-0.6	-0.6	-0.5	-0.4
SK	0.2		0.1	0.2	0.4	0.5	0.4	0.3	0.2	0.1	0.1	0.2
FI	-1.0		0.0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.8	-0.9	-1.0
SE	-0.1		0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
NO	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA	-1.1		-0.2	-0.5	-0.7	-0.8	-0.9	-1.0	-1.0	-1.0	-1.1	-1.1
EU	-0.8		-0.2	-0.3	-0.5	-0.6	-0.6	-0.7	-0.8	-0.8	-0.8	-0.8

Table III.1.105: Public pensions, gross as % of GDP - pps change from 2019 due to interaction effect (residual) (Baseline scenario)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.2		-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
BG	-0.3		0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3
CZ	-0.1		0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
DK	-0.2		-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
DE	-0.3		-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
EE	-0.2		0.0	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
IE	-0.4		0.3	0.4	0.5	0.6	0.5	0.3	0.0	-0.2	-0.3	-0.4
EL	-0.4		0.1	0.0	-0.1	-0.3	-0.4	-0.5	-0.4	-0.4	-0.4	-0.4
ES	-0.8		-0.1	-0.2	-0.4	-0.6	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8
FR	-0.4		-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4
HR	-0.4		-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4
IT	-0.6		0.0	-0.2	-0.3	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
CY	-0.5		-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5
LV	-0.5		-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5
LT	-0.5		-0.1	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5
LU	-0.6		-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6
HU	-0.1		-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
MT	-0.1		0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
NL	-0.1		-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
AT	-0.6		-0.1	-0.3	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6
PL	-0.9		-0.3	-0.3	-0.4	-0.5	-0.6	-0.8	-0.9	-0.9	-0.9	-0.9
PT	-0.7		-0.1	-0.2	-0.3	-0.5	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7
RO	-0.4		0.1	0.1	-0.1	-0.2	-0.4	-0.4	-0.5	-0.5	-0.5	-0.4
SI	-0.2		-0.1	-0.2	-0.2	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
SK	-0.6		-0.1	-0.2	-0.3	-0.3	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6
FI	-0.2		-0.1	-0.1	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
SE	-0.1		0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
NO	-0.4		-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4
EA	-0.4		-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4
EU	-0.3		0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3

Table III.1.106: Health care spending as % of GDP - AWG reference scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.6	5.7	5.8	5.9	6.0	6.1	6.2	6.2	6.3	6.3	6.3	6.3
BG	0.2	4.6	4.7	4.8	4.8	4.9	5.0	5.0	5.0	4.9	4.8	4.8
CZ	0.9	5.6	5.8	6.0	6.2	6.3	6.4	6.6	6.7	6.7	6.7	6.6
DK	0.9	6.7	6.9	7.1	7.2	7.3	7.4	7.4	7.5	7.5	7.5	7.5
DE	0.4	7.4	7.5	7.5	7.6	7.7	7.8	7.9	7.8	7.8	7.8	7.8
EE	0.8	4.9	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.7	5.7	5.7
IE	1.4	4.1	4.2	4.4	4.6	4.8	4.9	5.1	5.2	5.3	5.4	5.5
EL	0.8	4.4	4.6	4.7	4.9	5.0	5.2	5.2	5.3	5.3	5.3	5.2
ES	1.3	5.7	5.9	6.2	6.5	6.7	6.9	7.0	7.1	7.1	7.1	7.0
FR	1.1	8.4	8.9	9.0	9.2	9.3	9.4	9.4	9.4	9.5	9.5	9.5
HR	0.7	5.9	6.0	6.1	6.3	6.4	6.4	6.5	6.6	6.6	6.6	6.6
IT	1.2	5.9	6.3	6.5	6.7	6.9	7.1	7.2	7.2	7.2	7.1	7.1
CY	0.3	2.9	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.2	3.2	3.2
LV	0.4	4.6	4.9	5.0	5.1	5.2	5.2	5.2	5.2	5.2	5.1	5.1
LT	0.6	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.8	4.8	4.8	4.7
LU	1.1	3.6	3.7	3.8	4.0	4.1	4.3	4.4	4.5	4.5	4.6	4.6
HU	0.9	4.8	5.0	5.1	5.2	5.3	5.5	5.6	5.6	5.7	5.7	5.6
MT	2.6	5.4	5.6	5.9	6.2	6.4	6.6	6.8	7.0	7.3	7.7	8.0
NL	0.8	5.7	5.9	6.0	6.1	6.3	6.3	6.4	6.4	6.4	6.5	6.5
AT	1.2	6.9	7.2	7.4	7.6	7.8	7.9	8.0	8.1	8.1	8.1	8.1
PL	2.6	4.9	6.0	6.3	6.5	6.7	6.9	7.0	7.2	7.4	7.5	7.4
PT	1.6	5.7	6.0	6.3	6.5	6.8	7.0	7.2	7.4	7.4	7.4	7.3
RO	0.9	3.9	4.1	4.3	4.5	4.6	4.7	4.8	4.9	4.9	4.9	4.9
SI	1.5	5.9	6.4	6.7	7.0	7.1	7.3	7.4	7.5	7.5	7.5	7.4
SK	2.5	5.7	6.5	6.9	7.2	7.5	7.7	7.9	8.1	8.2	8.3	8.2
FI	0.8	6.1	6.3	6.5	6.6	6.7	6.7	6.7	6.8	6.8	6.9	7.0
SE	0.8	7.2	7.3	7.4	7.5	7.6	7.7	7.7	7.8	7.9	7.9	8.0
NO	1.1	7.0	7.3	7.4	7.6	7.7	7.8	7.9	8.0	8.0	8.1	8.2
EA	0.9	6.7	7.0	7.1	7.3	7.4	7.5	7.6	7.6	7.6	7.6	7.6
EU	0.9	6.6	6.8	7.0	7.1	7.3	7.4	7.5	7.5	7.5	7.5	7.5

Table III.1.107: Health care spending as % of GDP - AWG risk scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	5.7	5.9	6.0	6.2	6.4	6.6	6.7	6.8	6.9	6.9	6.9
BG	1.1	4.6	4.8	5.1	5.3	5.5	5.7	5.8	5.8	5.8	5.7	5.7
CZ	2.1	5.6	6.0	6.4	6.7	7.0	7.3	7.5	7.7	7.8	7.8	7.7
DK	2.1	6.7	7.2	7.5	7.7	8.0	8.2	8.4	8.5	8.6	8.7	8.7
DE	1.3	7.4	7.6	7.7	7.9	8.2	8.4	8.5	8.6	8.6	8.6	8.7
EE	2.0	4.9	5.3	5.7	6.0	6.3	6.5	6.7	6.8	6.9	7.0	7.0
IE	2.0	4.1	4.3	4.5	4.8	5.0	5.2	5.5	5.7	5.8	6.0	6.0
EL	1.6	4.4	4.7	4.9	5.2	5.5	5.7	5.9	6.0	6.1	6.1	6.1
ES	2.2	5.7	5.9	6.3	6.8	7.2	7.5	7.7	7.9	8.0	7.9	7.9
FR	2.1	8.4	8.9	9.2	9.5	9.8	10.0	10.2	10.3	10.4	10.5	10.5
HR	1.7	5.9	6.1	6.3	6.6	6.9	7.1	7.3	7.5	7.6	7.6	7.6
IT	1.9	5.9	6.4	6.6	6.9	7.2	7.5	7.7	7.8	7.8	7.8	7.8
CY	0.7	2.9	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.5	3.5	3.6
LV	1.7	4.6	5.1	5.5	5.8	6.1	6.2	6.3	6.4	6.4	6.4	6.3
LT	1.6	4.2	4.5	4.8	5.1	5.3	5.5	5.7	5.8	5.8	5.8	5.8
LU	1.6	3.6	3.7	3.9	4.1	4.4	4.6	4.8	4.9	5.0	5.1	5.2
HU	2.1	4.8	5.2	5.5	5.9	6.1	6.4	6.6	6.8	6.8	6.9	6.8
MT	3.9	5.4	5.7	6.3	6.8	7.1	7.4	7.7	8.1	8.4	8.9	9.3
NL	1.4	5.7	5.9	6.1	6.3	6.5	6.7	6.8	6.9	7.0	7.1	7.1
AT	2.1	6.9	7.2	7.5	7.9	8.2	8.5	8.7	8.8	8.9	9.0	9.0
PL	4.2	4.9	6.3	6.9	7.4	7.8	8.1	8.4	8.7	9.0	9.1	9.1
PT	2.6	5.7	6.1	6.5	6.9	7.3	7.7	8.0	8.2	8.3	8.3	8.2
RO	2.4	3.9	4.4	4.9	5.3	5.6	5.9	6.1	6.2	6.3	6.4	6.3
SI	2.9	5.9	6.7	7.2	7.7	8.1	8.3	8.6	8.7	8.8	8.9	8.8
SK	3.7	5.7	6.7	7.2	7.8	8.2	8.6	9.0	9.3	9.5	9.6	9.5
FI	1.8	6.1	6.4	6.7	7.0	7.2	7.4	7.4	7.6	7.7	7.8	7.9
SE	1.7	7.2	7.4	7.7	8.0	8.2	8.3	8.5	8.7	8.8	8.9	9.0
NO	2.1	7.0	7.4	7.7	8.0	8.2	8.4	8.6	8.8	8.9	9.1	9.1
EA	1.7	6.7	7.0	7.3	7.5	7.8	8.1	8.2	8.4	8.4	8.4	8.5
EU	1.8	6.6	6.9	7.2	7.4	7.7	8.0	8.2	8.3	8.4	8.4	8.4

Table III.1.108: Health care spending as % of GDP - TFP risk scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.6	5.7	5.8	5.9	6.0	6.1	6.2	6.2	6.3	6.3	6.3	6.3
BG	0.2	4.6	4.7	4.8	4.8	4.9	5.0	5.0	5.0	4.9	4.8	4.7
CZ	0.9	5.6	5.8	6.0	6.2	6.3	6.4	6.5	6.6	6.7	6.6	6.5
DK	0.8	6.7	6.9	7.1	7.2	7.3	7.3	7.4	7.4	7.5	7.5	7.5
DE	0.4	7.4	7.5	7.5	7.6	7.7	7.8	7.8	7.8	7.8	7.8	7.8
EE	0.7	4.9	5.1	5.2	5.3	5.4	5.5	5.6	5.6	5.7	5.7	5.7
IE	1.4	4.1	4.2	4.4	4.6	4.8	4.9	5.1	5.2	5.3	5.4	5.5
EL	0.8	4.4	4.6	4.7	4.9	5.0	5.2	5.2	5.3	5.3	5.3	5.2
ES	1.3	5.7	5.9	6.2	6.5	6.7	6.9	7.0	7.1	7.1	7.1	7.0
FR	1.1	8.4	8.9	9.0	9.2	9.3	9.4	9.4	9.4	9.4	9.4	9.4
HR	0.7	5.9	6.0	6.1	6.3	6.4	6.4	6.5	6.5	6.6	6.6	6.6
IT	1.2	5.9	6.3	6.5	6.7	6.9	7.1	7.2	7.2	7.2	7.1	7.1
CY	0.3	2.9	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.2
LV	0.4	4.6	4.9	5.0	5.1	5.1	5.2	5.2	5.2	5.2	5.1	5.0
LT	0.5	4.2	4.3	4.4	4.5	4.6	4.7	4.7	4.7	4.7	4.7	4.7
LU	1.0	3.6	3.7	3.8	3.9	4.1	4.2	4.4	4.4	4.5	4.6	4.6
HU	0.8	4.8	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.6	5.6
MT	2.6	5.4	5.6	5.9	6.2	6.4	6.5	6.7	7.0	7.3	7.6	7.9
NL	0.8	5.7	5.9	6.0	6.1	6.2	6.3	6.4	6.4	6.4	6.4	6.5
AT	1.1	6.9	7.2	7.3	7.5	7.8	7.9	8.0	8.0	8.0	8.1	8.1
PL	2.5	4.9	6.0	6.3	6.5	6.7	6.8	7.0	7.2	7.4	7.4	7.4
PT	1.6	5.7	6.0	6.3	6.6	6.8	7.0	7.2	7.3	7.4	7.3	7.2
RO	0.9	3.9	4.1	4.3	4.5	4.6	4.7	4.8	4.9	4.9	4.9	4.9
SI	1.4	5.9	6.4	6.7	6.9	7.1	7.3	7.4	7.4	7.4	7.4	7.4
SK	2.4	5.7	6.5	6.9	7.2	7.4	7.7	7.9	8.1	8.2	8.2	8.1
FI	0.8	6.1	6.3	6.5	6.6	6.7	6.7	6.7	6.7	6.8	6.9	6.9
SE	0.7	7.2	7.3	7.4	7.5	7.6	7.6	7.7	7.8	7.8	7.9	7.9
NO	1.1	7.0	7.2	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.0	8.1
EA	0.9	6.7	7.0	7.1	7.3	7.4	7.5	7.6	7.6	7.6	7.6	7.6
EU	0.9	6.6	6.8	7.0	7.1	7.3	7.4	7.4	7.5	7.5	7.5	7.5

Table III.1.109: Health care spending as % of GDP - Demographic scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.0	5.7	5.9	6.0	6.2	6.3	6.5	6.5	6.6	6.6	6.7	6.7
BG	0.4	4.6	4.7	4.8	4.9	5.0	5.0	5.1	5.1	5.0	5.0	4.9
CZ	1.2	5.6	5.9	6.1	6.3	6.4	6.6	6.7	6.9	6.9	6.9	6.9
DK	1.0	6.7	6.9	7.1	7.2	7.3	7.4	7.4	7.5	7.5	7.6	7.7
DE	0.7	7.4	7.5	7.6	7.7	7.8	8.0	8.0	8.0	8.0	8.0	8.1
EE	0.8	4.9	5.0	5.1	5.3	5.4	5.5	5.6	5.7	5.7	5.7	5.7
IE	1.7	4.1	4.3	4.5	4.7	4.9	5.0	5.2	5.4	5.5	5.6	5.7
EL	0.9	4.4	4.6	4.8	4.9	5.1	5.2	5.3	5.3	5.4	5.4	5.4
ES	1.5	5.7	5.9	6.2	6.5	6.8	7.0	7.1	7.2	7.2	7.2	7.2
FR	1.3	8.4	8.9	9.1	9.3	9.4	9.5	9.5	9.6	9.6	9.7	9.7
HR	1.0	5.9	6.1	6.2	6.4	6.5	6.6	6.7	6.7	6.8	6.8	6.9
IT	1.4	5.9	6.4	6.6	6.8	7.0	7.2	7.3	7.3	7.3	7.3	7.3
CY	0.3	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.2	3.2	3.2
LV	0.9	4.6	4.9	5.1	5.2	5.3	5.4	5.5	5.5	5.5	5.5	5.5
LT	0.7	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.8	4.8	4.8	4.8
LU	1.3	3.6	3.7	3.9	4.0	4.2	4.4	4.5	4.6	4.7	4.8	4.9
HU	1.2	4.8	5.0	5.2	5.3	5.5	5.6	5.8	5.9	6.0	6.0	6.0
MT	2.9	5.4	5.6	5.9	6.2	6.4	6.6	6.9	7.2	7.5	7.9	8.3
NL	1.0	5.7	5.9	6.1	6.2	6.3	6.4	6.5	6.5	6.6	6.6	6.7
AT	1.4	6.9	7.2	7.4	7.6	7.9	8.1	8.2	8.2	8.3	8.3	8.4
PL	2.8	4.9	6.0	6.3	6.5	6.7	6.9	7.1	7.4	7.5	7.6	7.6
PT	1.9	5.7	6.0	6.3	6.6	6.9	7.2	7.4	7.5	7.6	7.6	7.5
RO	1.0	3.9	4.1	4.3	4.4	4.6	4.7	4.8	4.9	5.0	5.0	5.0
SI	1.6	5.9	6.4	6.7	6.9	7.1	7.3	7.4	7.5	7.5	7.5	7.5
SK	2.9	5.7	6.6	7.0	7.3	7.6	7.9	8.2	8.5	8.6	8.7	8.7
FI	1.2	6.1	6.4	6.6	6.7	6.8	6.9	6.9	7.0	7.1	7.2	7.3
SE	0.9	7.2	7.3	7.5	7.6	7.6	7.7	7.8	7.9	8.0	8.0	8.1
NO	1.4	7.0	7.3	7.5	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4
EA	1.2	6.7	7.0	7.2	7.3	7.5	7.7	7.7	7.8	7.8	7.8	7.9
EU	1.2	6.6	6.9	7.0	7.2	7.4	7.5	7.6	7.6	7.7	7.7	7.7

Table III.1.110: Health care spending as % of GDP - High life expectancy scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	5.7	5.9	6.1	6.2	6.4	6.5	6.6	6.7	6.8	6.8	6.9
BG	0.3	4.6	4.7	4.7	4.8	4.9	5.0	5.0	5.0	5.0	4.9	4.9
CZ	1.4	5.6	5.9	6.0	6.2	6.4	6.6	6.8	6.9	7.0	7.0	7.0
DK	1.1	6.7	6.9	7.0	7.1	7.3	7.4	7.5	7.5	7.6	7.7	7.8
DE	0.9	7.4	7.5	7.6	7.7	7.9	8.0	8.1	8.1	8.2	8.2	8.3
EE	0.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.7	5.7
IE	1.8	4.1	4.2	4.4	4.7	4.9	5.1	5.3	5.4	5.6	5.8	5.9
EL	1.0	4.4	4.6	4.8	4.9	5.1	5.2	5.3	5.4	5.5	5.5	5.5
ES	1.7	5.7	5.9	6.2	6.5	6.8	7.0	7.2	7.3	7.4	7.4	7.4
FR	1.5	8.4	8.9	9.1	9.3	9.4	9.5	9.6	9.7	9.7	9.8	9.8
HR	1.1	5.9	6.0	6.2	6.4	6.5	6.6	6.7	6.8	6.9	6.9	7.0
IT	1.5	5.9	6.4	6.6	6.9	7.1	7.3	7.4	7.4	7.4	7.4	7.5
CY	0.3	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.2	3.2	3.2
LV	0.9	4.6	4.9	5.0	5.1	5.3	5.4	5.4	5.5	5.5	5.5	5.5
LT	0.7	4.2	4.2	4.3	4.5	4.6	4.7	4.8	4.8	4.8	4.9	4.9
LU	1.4	3.6	3.7	3.9	4.0	4.2	4.4	4.6	4.7	4.8	4.9	5.0
HU	1.3	4.8	5.0	5.2	5.3	5.5	5.7	5.8	5.9	6.0	6.1	6.1
MT	3.2	5.4	5.6	5.9	6.2	6.5	6.7	7.0	7.3	7.7	8.2	8.6
NL	1.2	5.7	5.9	6.1	6.3	6.4	6.5	6.6	6.7	6.7	6.8	6.9
AT	1.6	6.9	7.2	7.4	7.7	7.9	8.1	8.3	8.3	8.4	8.5	8.6
PL	2.9	4.9	6.0	6.3	6.5	6.7	6.9	7.2	7.4	7.6	7.7	7.7
PT	2.2	5.7	6.0	6.3	6.7	7.0	7.3	7.6	7.7	7.9	7.9	7.9
RO	1.1	3.9	4.1	4.2	4.4	4.6	4.7	4.9	5.0	5.0	5.0	5.0
SI	1.8	5.9	6.4	6.7	6.9	7.1	7.3	7.5	7.6	7.6	7.7	7.7
SK	3.1	5.7	6.6	7.0	7.3	7.7	8.0	8.3	8.6	8.7	8.8	8.8
FI	1.3	6.1	6.4	6.6	6.7	6.8	6.9	6.9	7.0	7.1	7.3	7.4
SE	1.1	7.2	7.3	7.5	7.6	7.7	7.7	7.8	8.0	8.1	8.2	8.3
NO	1.5	7.0	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.3	8.5	8.6
EA	1.3	6.7	7.0	7.2	7.4	7.6	7.7	7.8	7.9	7.9	8.0	8.0
EU	1.3	6.6	6.9	7.0	7.2	7.4	7.5	7.7	7.7	7.8	7.8	7.9

Table III.1.111: Health care spending as % of GDP - Healthy ageing scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.1	5.7	5.7	5.8	5.8	5.9	5.9	5.9	5.9	5.8	5.8	5.8
BG	-0.3	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.5	4.5	4.3	4.2
CZ	0.3	5.6	5.7	5.8	5.9	5.9	6.0	6.0	6.1	6.1	6.0	5.9
DK	0.2	6.7	6.8	6.9	6.9	6.9	6.9	7.0	6.9	6.9	6.9	6.9
DE	-0.2	7.4	7.4	7.3	7.4	7.4	7.5	7.4	7.4	7.3	7.2	7.2
EE	0.2	4.9	5.0	5.0	5.0	5.1	5.1	5.1	5.2	5.2	5.1	5.1
IE	1.0	4.1	4.2	4.3	4.5	4.6	4.7	4.8	4.9	5.0	5.0	5.1
EL	0.3	4.4	4.5	4.6	4.7	4.8	4.9	4.9	4.9	4.9	4.8	4.8
ES	0.8	5.7	5.9	6.1	6.3	6.4	6.6	6.7	6.7	6.7	6.6	6.5
FR	0.4	8.4	8.8	8.9	8.9	9.0	9.0	8.9	8.9	8.9	8.8	8.8
HR	0.1	5.9	5.9	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.9
IT	0.7	5.9	6.3	6.4	6.6	6.7	6.8	6.9	6.8	6.8	6.7	6.6
CY	0.1	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
LV	-0.6	4.6	4.7	4.7	4.7	4.7	4.6	4.5	4.4	4.3	4.2	4.0
LT	0.1	4.2	4.2	4.2	4.3	4.3	4.3	4.4	4.3	4.3	4.3	4.2
LU	0.7	3.6	3.6	3.7	3.8	3.9	4.0	4.1	4.1	4.2	4.2	4.2
HU	0.1	4.8	4.8	4.9	4.9	4.9	4.9	5.0	5.0	5.0	4.9	4.9
MT	1.8	5.4	5.5	5.7	5.9	6.0	6.1	6.2	6.4	6.6	6.9	7.1
NL	0.4	5.7	5.8	5.9	6.0	6.1	6.1	6.1	6.1	6.1	6.0	6.0
AT	0.5	6.9	7.1	7.2	7.3	7.4	7.5	7.6	7.6	7.5	7.5	7.5
PL	1.8	4.9	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.7
PT	0.9	5.7	5.9	6.1	6.3	6.5	6.6	6.7	6.8	6.8	6.7	6.6
RO	0.3	3.9	4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.4	4.3	4.3
SI	0.8	5.9	6.3	6.5	6.6	6.7	6.8	6.9	6.9	6.9	6.8	6.7
SK	1.5	5.7	6.4	6.6	6.8	6.9	7.0	7.2	7.3	7.4	7.4	7.2
FI	0.2	6.1	6.3	6.3	6.4	6.4	6.4	6.3	6.3	6.3	6.3	6.4
SE	0.2	7.2	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.4	7.4	7.4
NO	0.5	7.0	7.2	7.3	7.3	7.4	7.4	7.4	7.5	7.5	7.5	7.5
EA	0.3	6.7	6.9	7.0	7.0	7.1	7.2	7.2	7.2	7.1	7.1	7.1
EU	0.3	6.6	6.8	6.8	6.9	7.0	7.0	7.0	7.0	7.0	6.9	6.9

Table III.1.112: Health care spending as % of GDP - Death-related cost scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.7	5.7	5.9	6.0	6.1	6.2	6.3	6.3	6.4	6.4	6.4	6.4
BG	0.4	4.6	4.7	4.8	4.9	5.0	5.1	5.1	5.1	5.1	5.0	5.0
CZ	0.8	5.6	5.8	6.0	6.1	6.3	6.4	6.5	6.5	6.5	6.5	6.4
DK	0.8	6.7	6.9	7.0	7.1	7.2	7.2	7.3	7.3	7.4	7.4	7.4
DE	0.3	7.4	7.5	7.5	7.6	7.7	7.8	7.8	7.7	7.7	7.7	7.7
EE	:	:	:	:	:	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:	:	:	:	:	:
ES	1.4	5.7	5.9	6.2	6.5	6.7	6.9	7.1	7.1	7.1	7.1	7.1
FR	1.2	8.4	8.9	9.1	9.2	9.3	9.4	9.4	9.5	9.5	9.5	9.5
HR	:	:	:	:	:	:	:	:	:	:	:	:
IT	1.3	5.9	6.4	6.6	6.8	7.0	7.2	7.3	7.3	7.3	7.3	7.3
CY	:	:	:	:	:	:	:	:	:	:	:	:
LV	0.9	4.6	4.9	5.1	5.2	5.3	5.4	5.4	5.5	5.5	5.5	5.5
LT	:	:	:	:	:	:	:	:	:	:	:	:
LU	:	:	:	:	:	:	:	:	:	:	:	:
HU	0.8	4.8	5.0	5.1	5.2	5.4	5.5	5.6	5.6	5.6	5.6	5.6
MT	:	:	:	:	:	:	:	:	:	:	:	:
NL	0.8	5.7	5.9	6.0	6.2	6.3	6.3	6.4	6.4	6.4	6.4	6.5
AT	1.2	6.9	7.2	7.4	7.6	7.8	7.9	8.0	8.0	8.0	8.1	8.1
PL	2.6	4.9	6.1	6.3	6.5	6.7	6.9	7.1	7.2	7.4	7.4	7.4
PT	:	:	:	:	:	:	:	:	:	:	:	:
RO	:	:	:	:	:	:	:	:	:	:	:	:
SI	1.3	5.9	6.4	6.7	6.9	7.0	7.2	7.2	7.3	7.3	7.3	7.3
SK	2.4	5.7	6.6	6.9	7.2	7.5	7.7	7.9	8.1	8.2	8.2	8.1
FI	1.0	6.1	6.4	6.5	6.7	6.7	6.8	6.8	6.9	6.9	7.0	7.1
SE	0.7	7.2	7.3	7.4	7.5	7.6	7.6	7.7	7.7	7.8	7.9	7.9
NO	:	:	:	:	:	:	:	:	:	:	:	:
EA	:	:	:	:	:	:	:	:	:	:	:	:
EU	:	:	:	:	:	:	:	:	:	:	:	:

Table III.1.113: Health care spending as % of GDP - Income elasticity scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	5.7	5.9	6.1	6.3	6.4	6.6	6.6	6.7	6.8	6.8	6.9
BG	0.6	4.6	4.7	4.9	5.0	5.1	5.2	5.3	5.3	5.2	5.2	5.2
CZ	1.5	5.6	5.9	6.2	6.4	6.6	6.8	7.0	7.1	7.2	7.2	7.1
DK	1.3	6.7	7.0	7.2	7.3	7.4	7.6	7.7	7.8	7.8	7.9	7.9
DE	0.9	7.4	7.5	7.6	7.8	8.0	8.1	8.2	8.2	8.2	8.2	8.3
EE	1.1	4.9	5.1	5.3	5.4	5.6	5.7	5.8	5.9	6.0	6.0	6.0
IE	1.8	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.6	5.8	5.8
EL	1.1	4.4	4.6	4.8	5.0	5.2	5.3	5.5	5.5	5.6	5.6	5.6
ES	1.7	5.7	6.0	6.3	6.6	6.9	7.1	7.3	7.4	7.4	7.4	7.4
FR	1.6	8.4	8.9	9.1	9.3	9.5	9.6	9.7	9.8	9.9	9.9	9.9
HR	1.3	5.9	6.1	6.3	6.5	6.6	6.8	6.9	7.0	7.0	7.1	7.1
IT	1.5	5.9	6.4	6.6	6.9	7.1	7.3	7.4	7.5	7.5	7.5	7.5
CY	0.4	2.9	2.9	3.0	3.0	3.1	3.1	3.2	3.2	3.2	3.3	3.3
LV	1.2	4.6	5.0	5.2	5.4	5.5	5.6	5.7	5.8	5.8	5.8	5.8
LT	0.9	4.2	4.3	4.5	4.6	4.8	4.9	5.0	5.0	5.1	5.1	5.1
LU	1.4	3.6	3.7	3.9	4.1	4.3	4.5	4.6	4.7	4.8	4.9	5.0
HU	1.5	4.8	5.1	5.3	5.5	5.7	5.9	6.0	6.2	6.2	6.3	6.3
MT	3.3	5.4	5.6	6.0	6.3	6.6	6.8	7.1	7.4	7.8	8.2	8.6
NL	1.1	5.7	5.9	6.1	6.3	6.4	6.5	6.6	6.7	6.7	6.8	6.8
AT	1.7	6.9	7.2	7.5	7.7	8.0	8.2	8.3	8.4	8.5	8.5	8.6
PL	3.2	4.9	6.1	6.4	6.7	7.0	7.2	7.5	7.7	7.9	8.0	8.0
PT	2.1	5.7	6.0	6.4	6.7	7.1	7.3	7.6	7.8	7.9	7.9	7.8
RO	1.4	3.9	4.2	4.4	4.6	4.8	5.0	5.1	5.2	5.3	5.3	5.3
SI	1.9	5.9	6.5	6.8	7.1	7.3	7.5	7.7	7.8	7.8	7.9	7.9
SK	3.3	5.7	6.6	7.1	7.5	7.8	8.2	8.5	8.8	8.9	9.0	9.0
FI	1.4	6.1	6.4	6.6	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5
SE	1.2	7.2	7.4	7.5	7.7	7.8	7.9	8.0	8.1	8.2	8.3	8.4
NO	1.7	7.0	7.3	7.5	7.8	7.9	8.1	8.2	8.3	8.5	8.6	8.7
EA	1.4	6.7	7.0	7.2	7.4	7.6	7.8	7.9	8.0	8.0	8.0	8.1
EU	1.4	6.6	6.9	7.1	7.3	7.5	7.6	7.8	7.8	7.9	7.9	8.0

Table III.1.114: Health care spending as % of GDP - EU cost convergence scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.1	5.7	5.9	6.1	6.2	6.4	6.5	6.6	6.6	6.7	6.8	6.8
BG	2.0	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6
CZ	1.3	5.6	5.9	6.1	6.3	6.5	6.6	6.8	6.9	7.0	7.0	7.0
DK	1.0	6.7	6.9	7.1	7.2	7.3	7.4	7.5	7.5	7.6	7.6	7.7
DE	0.7	7.4	7.5	7.6	7.7	7.9	8.0	8.0	8.0	8.0	8.1	8.1
EE	1.8	4.9	5.1	5.3	5.5	5.7	5.8	6.0	6.2	6.4	6.5	6.7
IE	2.5	4.1	4.3	4.6	4.9	5.2	5.4	5.7	5.9	6.1	6.3	6.5
EL	2.3	4.4	4.7	5.0	5.3	5.6	5.8	6.1	6.3	6.5	6.6	6.8
ES	1.6	5.7	6.0	6.2	6.5	6.8	7.0	7.2	7.3	7.3	7.3	7.3
FR	1.3	8.4	8.9	9.1	9.3	9.4	9.5	9.5	9.6	9.6	9.7	9.7
HR	1.4	5.9	6.1	6.3	6.4	6.6	6.7	6.9	7.0	7.1	7.2	7.3
IT	1.5	5.9	6.4	6.6	6.9	7.1	7.3	7.4	7.4	7.4	7.4	7.4
CY	3.1	2.9	3.1	3.3	3.6	3.8	4.1	4.4	4.7	5.1	5.6	6.0
LV	2.3	4.6	5.0	5.2	5.5	5.7	6.0	6.2	6.4	6.6	6.8	6.9
LT	2.6	4.2	4.4	4.6	4.9	5.2	5.5	5.8	6.0	6.3	6.5	6.8
LU	2.9	3.6	3.9	4.1	4.4	4.7	5.1	5.4	5.6	5.9	6.2	6.4
HU	2.0	4.8	5.1	5.3	5.5	5.8	6.0	6.2	6.4	6.5	6.7	6.8
MT	3.5	5.4	5.7	6.0	6.4	6.7	6.9	7.2	7.6	8.0	8.5	8.9
NL	1.2	5.7	5.9	6.1	6.3	6.4	6.5	6.6	6.7	6.7	6.8	6.9
AT	1.5	6.9	7.2	7.4	7.7	7.9	8.1	8.2	8.2	8.3	8.3	8.4
PL	3.6	4.9	6.1	6.4	6.7	7.0	7.3	7.5	7.8	8.1	8.3	8.4
PT	2.5	5.7	6.1	6.4	6.8	7.2	7.5	7.7	7.9	8.1	8.2	8.2
RO	2.7	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.0	6.2	6.4	6.6
SI	1.6	5.9	6.4	6.7	6.9	7.1	7.3	7.4	7.5	7.6	7.6	7.6
SK	3.1	5.7	6.6	7.0	7.4	7.7	8.0	8.3	8.6	8.8	8.9	8.9
FI	1.5	6.1	6.4	6.6	6.8	6.9	7.0	7.1	7.2	7.3	7.5	7.6
SE	0.9	7.2	7.3	7.5	7.6	7.6	7.7	7.8	7.9	8.0	8.1	8.2
NO	1.4	7.0	7.3	7.5	7.7	7.8	7.9	8.0	8.1	8.3	8.4	8.5
EA	1.3	6.7	7.0	7.2	7.4	7.6	7.7	7.8	7.9	7.9	8.0	8.0
EU	1.4	6.6	6.9	7.1	7.2	7.4	7.6	7.7	7.8	7.8	7.9	8.0

Table III.1.115: Health care spending as % of GDP - Labour intensity scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.5	5.7	5.8	6.0	6.2	6.4	6.6	6.8	6.9	7.0	7.1	7.2
BG	1.1	4.6	4.7	4.9	5.2	5.4	5.6	5.8	5.9	5.9	5.8	5.7
CZ	2.4	5.6	6.1	6.4	6.7	7.1	7.5	7.9	8.2	8.3	8.2	8.0
DK	0.9	6.7	6.9	7.0	7.1	7.3	7.3	7.4	7.4	7.4	7.4	7.5
DE	1.7	7.4	7.6	7.9	8.2	8.5	8.7	8.8	8.9	8.9	9.0	9.1
EE	1.3	4.9	5.2	5.4	5.5	5.7	5.9	6.0	6.2	6.3	6.3	6.2
IE	2.9	4.1	4.5	4.9	5.2	5.5	5.8	6.1	6.4	6.6	6.8	6.9
EL	0.3	4.4	4.3	4.4	4.5	4.6	4.7	4.8	4.9	4.8	4.8	4.7
ES	1.8	5.7	6.1	6.2	6.5	6.9	7.3	7.5	7.7	7.7	7.6	7.5
FR	1.5	8.4	9.0	9.1	9.3	9.5	9.6	9.7	9.7	9.8	9.8	9.9
HR	1.8	5.9	6.1	6.3	6.5	6.7	6.9	7.1	7.3	7.4	7.6	7.6
IT	1.5	5.9	6.3	6.6	6.9	7.3	7.6	7.7	7.6	7.5	7.4	7.4
CY	0.5	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.3	3.4
LV	1.5	4.6	5.1	5.3	5.5	5.7	5.8	6.1	6.3	6.3	6.2	6.1
LT	1.3	4.2	4.3	4.5	4.7	4.9	5.1	5.2	5.4	5.5	5.5	5.4
LU	0.9	3.6	3.5	3.5	3.6	3.8	3.9	4.1	4.2	4.3	4.4	4.5
HU	1.7	4.8	4.9	4.9	5.1	5.4	5.7	6.0	6.2	6.3	6.4	6.4
MT	4.8	5.4	6.2	6.2	6.4	6.7	7.0	7.5	8.2	8.9	9.6	10.2
NL	1.6	5.7	6.1	6.4	6.7	6.9	7.0	7.1	7.1	7.1	7.2	7.3
AT	2.1	6.9	7.2	7.5	7.8	8.1	8.3	8.6	8.7	8.8	8.9	9.0
PL	4.7	4.9	6.2	6.6	7.0	7.4	7.8	8.4	8.9	9.3	9.5	9.5
PT	2.5	5.7	5.9	6.4	6.9	7.4	7.8	8.2	8.3	8.4	8.3	8.2
RO	1.7	3.9	4.2	4.4	4.6	4.9	5.2	5.4	5.6	5.7	5.7	5.6
SI	2.4	5.9	6.4	6.8	7.1	7.5	7.9	8.2	8.4	8.4	8.4	8.3
SK	5.5	5.7	7.0	7.7	8.3	8.9	9.6	10.3	11.0	11.4	11.4	11.2
FI	1.5	6.1	6.6	6.8	6.9	7.0	7.0	7.1	7.2	7.4	7.5	7.7
SE	1.1	7.2	7.4	7.3	7.4	7.5	7.6	7.7	7.9	8.1	8.2	8.4
NO	2.5	7.0	7.4	7.7	8.0	8.3	8.5	8.7	8.9	9.1	9.3	9.6
EA	1.7	6.7	7.1	7.3	7.6	7.9	8.1	8.2	8.3	8.3	8.4	8.4
EU	1.7	6.6	6.9	7.2	7.4	7.7	7.9	8.1	8.2	8.2	8.3	8.3

Table III.1.116: Health care spending as % of GDP - Sector-specific composite indexation scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	5.7	5.9	6.1	6.2	6.4	6.5	6.6	6.7	6.8	6.8	6.9
BG	1.5	4.6	4.8	5.1	5.4	5.7	5.9	6.0	6.1	6.1	6.1	6.1
CZ	2.2	5.6	6.0	6.4	6.7	7.0	7.3	7.5	7.7	7.8	7.9	7.8
DK	1.8	6.7	7.1	7.4	7.6	7.8	8.0	8.1	8.2	8.3	8.4	8.5
DE	1.4	7.4	7.6	7.7	7.9	8.2	8.4	8.6	8.6	8.7	8.7	8.8
EE	1.4	4.9	5.1	5.4	5.6	5.8	5.9	6.1	6.2	6.2	6.3	6.3
IE	1.7	4.1	4.3	4.5	4.7	4.9	5.0	5.2	5.4	5.5	5.7	5.7
EL	1.9	4.4	4.7	4.9	5.3	5.6	5.9	6.1	6.3	6.4	6.4	6.4
ES	2.2	5.7	6.0	6.4	6.8	7.1	7.5	7.7	7.9	7.9	8.0	7.9
FR	2.4	8.4	9.0	9.3	9.6	9.9	10.1	10.3	10.5	10.6	10.7	10.8
HR	2.4	5.9	6.2	6.5	6.8	7.2	7.5	7.7	7.9	8.1	8.2	8.2
IT	1.5	5.9	6.4	6.6	6.8	7.1	7.2	7.4	7.4	7.4	7.4	7.4
CY	0.4	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.2	3.3
LV	1.6	4.6	5.0	5.3	5.6	5.8	6.0	6.1	6.2	6.2	6.2	6.2
LT	0.6	4.2	4.3	4.3	4.4	4.5	4.6	4.7	4.7	4.7	4.7	4.7
LU	1.1	3.6	3.7	3.8	4.0	4.1	4.3	4.4	4.5	4.6	4.6	4.7
HU	1.9	4.8	5.1	5.4	5.6	5.9	6.1	6.3	6.5	6.6	6.6	6.7
MT	3.1	5.4	5.6	6.0	6.3	6.5	6.7	7.0	7.3	7.7	8.1	8.5
NL	1.7	5.7	5.9	6.1	6.4	6.6	6.8	7.0	7.1	7.2	7.3	7.4
AT	2.1	6.9	7.2	7.5	7.9	8.2	8.5	8.6	8.7	8.8	8.9	9.0
PL	2.8	4.9	6.0	6.3	6.5	6.7	7.0	7.2	7.4	7.6	7.7	7.7
PT	1.7	5.7	6.0	6.3	6.6	6.9	7.1	7.3	7.4	7.5	7.5	7.4
RO	3.1	3.9	4.5	5.1	5.6	6.0	6.3	6.6	6.8	7.0	7.0	7.0
SI	2.6	5.9	6.6	7.1	7.5	7.8	8.1	8.2	8.4	8.5	8.6	8.6
SK	3.9	5.7	6.7	7.2	7.7	8.2	8.6	9.0	9.3	9.5	9.6	9.6
FI	2.1	6.1	6.4	6.8	7.1	7.3	7.5	7.7	7.8	8.0	8.1	8.3
SE	1.1	7.2	7.4	7.5	7.7	7.7	7.8	7.9	8.1	8.1	8.2	8.3
NO	2.7	7.0	7.4	7.8	8.2	8.5	8.7	9.0	9.2	9.4	9.6	9.7
EA	1.8	6.7	7.0	7.3	7.5	7.8	8.1	8.2	8.3	8.4	8.5	8.5
EU	1.8	6.6	6.9	7.2	7.4	7.7	7.9	8.1	8.2	8.3	8.3	8.4

Table III.1.117: Health care spending as % of GDP - Non-demographic determinants scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.4	5.7	5.9	6.2	6.5	6.8	7.1	7.4	7.6	7.8	8.0	8.1
BG	2.2	4.6	4.9	5.2	5.5	5.9	6.2	6.4	6.6	6.7	6.8	6.8
CZ	3.5	5.6	6.1	6.6	7.1	7.5	7.9	8.3	8.7	9.0	9.2	9.2
DK	3.4	6.7	7.2	7.6	8.0	8.4	8.7	9.1	9.4	9.7	9.9	10.1
DE	2.5	7.4	7.6	7.8	8.1	8.5	8.9	9.2	9.4	9.6	9.8	9.9
EE	3.3	4.9	5.3	5.8	6.3	6.7	7.1	7.4	7.7	7.9	8.1	8.2
IE	2.8	4.1	4.3	4.6	4.9	5.2	5.6	5.9	6.2	6.5	6.7	6.9
EL	2.8	4.4	4.7	5.0	5.3	5.8	6.1	6.5	6.8	7.0	7.2	7.2
ES	3.3	5.7	6.0	6.5	7.0	7.5	7.9	8.3	8.6	8.9	9.0	9.0
FR	3.5	8.4	9.0	9.3	9.7	10.2	10.6	10.9	11.2	11.6	11.8	11.9
HR	3.2	5.9	6.2	6.5	6.9	7.3	7.8	8.2	8.5	8.8	9.0	9.1
IT	3.0	5.9	6.4	6.7	7.0	7.5	7.8	8.2	8.5	8.7	8.8	8.9
CY	1.1	2.9	2.9	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.0	4.0
LV	3.5	4.6	5.2	5.8	6.3	6.7	7.1	7.4	7.6	7.9	8.0	8.1
LT	2.7	4.2	4.5	4.9	5.3	5.7	6.0	6.3	6.5	6.7	6.8	6.9
LU	2.5	3.6	3.8	4.0	4.3	4.6	5.0	5.3	5.5	5.7	5.9	6.1
HU	3.7	4.8	5.3	5.8	6.3	6.7	7.1	7.6	7.9	8.2	8.4	8.4
MT	5.4	5.4	5.7	6.4	7.1	7.6	8.1	8.5	9.0	9.6	10.2	10.8
NL	2.4	5.7	5.9	6.2	6.4	6.7	7.0	7.3	7.6	7.8	8.0	8.1
AT	3.3	6.9	7.3	7.7	8.1	8.6	9.0	9.4	9.7	9.9	10.1	10.3
PL	5.9	4.9	6.4	7.1	7.8	8.4	8.9	9.4	9.9	10.4	10.7	10.8
PT	4.0	5.7	6.1	6.6	7.1	7.7	8.2	8.7	9.2	9.5	9.7	9.7
RO	3.7	3.9	4.5	5.1	5.6	6.1	6.5	6.9	7.2	7.5	7.6	7.7
SI	4.3	5.9	6.8	7.4	8.0	8.5	8.9	9.3	9.6	9.9	10.1	10.2
SK	5.6	5.7	6.8	7.5	8.2	8.8	9.5	10.0	10.6	11.0	11.3	11.3
FI	3.1	6.1	6.5	6.9	7.2	7.6	7.9	8.2	8.4	8.7	9.0	9.2
SE	3.0	7.2	7.5	7.8	8.2	8.5	8.8	9.2	9.5	9.8	10.0	10.2
NO	3.4	7.0	7.5	7.9	8.2	8.6	9.0	9.3	9.7	10.0	10.3	10.4
EA	3.0	6.7	7.1	7.4	7.8	8.2	8.6	8.9	9.2	9.4	9.6	9.7
EU	3.1	6.6	7.0	7.3	7.7	8.1	8.5	8.8	9.1	9.4	9.6	9.7

Table III.1.118: Long-term care spending as % of GDP - AWG reference scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.1	2.2	2.4	2.5	2.8	3.1	3.4	3.7	3.9	4.1	4.2	4.3
BG	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
CZ	1.7	1.5	1.7	1.9	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.2
DK	3.4	3.5	4.0	4.6	5.2	5.6	5.8	6.2	6.5	6.7	6.8	6.9
DE	0.2	1.6	1.6	1.7	1.7	1.8	1.9	1.9	1.9	1.9	1.8	1.8
EE	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7
IE	1.9	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
EL	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	0.8	0.7	0.8	0.9	0.9	1.0	1.1	1.3	1.4	1.5	1.5	1.5
FR	0.8	1.9	2.0	2.1	2.2	2.4	2.5	2.6	2.6	2.7	2.7	2.7
HR	0.2	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
IT	1.0	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.7	2.8	2.7	2.6
CY	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
LV	0.2	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.6
LT	0.8	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.7	1.8	1.8
LU	1.4	1.0	1.1	1.1	1.2	1.4	1.6	1.8	2.0	2.2	2.3	2.5
HU	0.7	0.6	0.6	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.2
MT	1.9	1.1	1.4	1.5	1.6	1.8	1.9	2.0	2.1	2.4	2.6	3.0
NL	2.7	3.7	4.1	4.5	5.0	5.4	5.7	6.0	6.2	6.3	6.3	6.3
AT	1.8	1.8	2.0	2.2	2.3	2.5	2.8	3.2	3.4	3.4	3.4	3.5
PL	1.6	0.8	0.9	1.1	1.4	1.5	1.6	1.7	1.9	2.1	2.3	2.4
PT	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.8
RO	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.8
SI	1.3	1.0	1.1	1.2	1.4	1.6	1.8	1.9	2.0	2.1	2.2	2.2
SK	2.1	0.8	1.1	1.2	1.5	1.7	1.9	2.1	2.3	2.5	2.8	2.9
FI	2.1	2.0	2.4	2.7	3.1	3.3	3.4	3.5	3.6	3.7	3.9	4.1
SE	2.2	3.3	3.6	3.9	4.1	4.3	4.4	4.6	4.9	5.1	5.3	5.5
NO	3.9	4.0	4.4	4.9	5.4	5.9	6.2	6.6	7.0	7.4	7.7	8.0
EA	0.9	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.6	2.6
EU	1.1	1.7	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.7	2.7	2.8

Table III.1.119: Long-term care spending as % of GDP - AWG risk scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.5	2.2	2.4	2.7	3.0	3.5	3.9	4.4	4.7	5.0	5.3	5.7
BG	1.3	0.3	0.4	0.4	0.5	0.6	0.7	0.8	1.0	1.2	1.4	1.6
CZ	2.4	1.5	1.8	2.0	2.2	2.5	2.7	2.9	3.2	3.5	3.8	3.9
DK	4.3	3.5	4.1	4.7	5.4	5.8	6.2	6.6	7.0	7.3	7.5	7.7
DE	1.8	1.6	1.7	1.9	2.0	2.2	2.5	2.8	2.9	3.0	3.1	3.3
EE	5.1	0.4	0.5	0.7	1.0	1.2	1.6	2.1	2.7	3.4	4.3	5.5
IE	3.7	1.3	1.6	1.8	2.1	2.4	2.8	3.2	3.6	4.1	4.5	5.0
EL	2.4	0.2	0.2	0.2	0.3	0.3	0.5	0.6	0.9	1.3	1.9	2.6
ES	2.8	0.7	0.9	1.0	1.2	1.5	1.8	2.1	2.5	2.9	3.2	3.5
FR	3.3	1.9	2.2	2.3	2.7	3.0	3.4	3.7	4.1	4.4	4.8	5.2
HR	2.3	0.4	0.5	0.6	0.8	0.9	1.1	1.3	1.6	1.9	2.3	2.8
IT	2.0	1.7	1.8	2.0	2.2	2.5	2.8	3.1	3.4	3.5	3.6	3.7
CY	2.8	0.3	0.5	0.6	0.7	0.8	1.0	1.2	1.5	1.8	2.4	3.2
LV	3.9	0.5	0.6	0.7	0.8	1.0	1.3	1.7	2.1	2.7	3.4	4.4
LT	5.4	1.0	1.2	1.5	1.8	2.2	2.7	3.3	4.0	4.7	5.5	6.4
LU	3.5	1.0	1.2	1.3	1.5	1.8	2.2	2.6	3.1	3.5	4.0	4.6
HU	3.8	0.6	0.7	0.8	1.0	1.3	1.6	2.0	2.4	3.1	3.7	4.4
MT	4.6	1.1	1.5	1.7	1.9	2.2	2.5	2.8	3.3	3.9	4.7	5.7
NL	4.1	3.7	4.2	4.7	5.3	5.8	6.2	6.7	7.1	7.3	7.5	7.8
AT	2.9	1.8	2.0	2.3	2.5	2.8	3.3	3.7	4.1	4.2	4.4	4.7
PL	5.8	0.8	1.0	1.4	1.9	2.2	2.6	3.1	3.8	4.8	5.7	6.6
PT	7.8	0.4	0.6	0.8	1.2	1.6	2.2	3.0	4.0	5.2	6.6	8.2
RO	3.9	0.4	0.5	0.6	0.8	1.0	1.3	1.7	2.2	2.8	3.5	4.2
SI	4.5	1.0	1.3	1.6	1.9	2.3	2.8	3.3	3.9	4.4	4.9	5.5
SK	5.5	0.8	1.2	1.5	1.8	2.3	2.7	3.3	3.9	4.7	5.6	6.4
FI	4.1	2.0	2.5	2.9	3.4	3.7	4.0	4.3	4.6	4.9	5.5	6.1
SE	6.1	3.3	3.8	4.3	4.8	5.2	5.7	6.3	7.0	7.7	8.5	9.4
NO	4.7	4.0	4.5	5.0	5.5	6.1	6.5	7.0	7.4	7.9	8.3	8.7
EA	2.8	1.7	1.9	2.1	2.3	2.6	3.0	3.3	3.6	3.9	4.1	4.5
EU	3.1	1.7	1.9	2.1	2.4	2.7	3.1	3.4	3.8	4.1	4.4	4.8

Table III.1.120: Long-term care spending as % of GDP - TFP risk scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.1	2.2	2.4	2.5	2.8	3.1	3.4	3.7	3.9	4.1	4.2	4.3
BG	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
CZ	1.6	1.5	1.7	1.9	2.1	2.3	2.4	2.6	2.8	3.0	3.1	3.1
DK	3.4	3.5	4.0	4.6	5.2	5.6	5.8	6.2	6.5	6.7	6.8	6.9
DE	0.3	1.6	1.6	1.7	1.7	1.8	1.9	2.0	2.0	1.9	1.9	1.9
EE	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7
IE	1.9	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.1
EL	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	0.8	0.7	0.8	0.9	0.9	1.0	1.1	1.3	1.4	1.5	1.5	1.5
FR	0.9	1.9	2.0	2.1	2.2	2.4	2.5	2.6	2.6	2.7	2.7	2.7
HR	0.2	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
IT	1.0	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.7	2.8	2.7	2.6
CY	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
LV	0.2	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
LT	0.8	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.7	1.7	1.7
LU	1.4	1.0	1.1	1.1	1.2	1.4	1.6	1.8	2.0	2.1	2.3	2.5
HU	0.7	0.6	0.6	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.2
MT	1.8	1.1	1.4	1.5	1.6	1.8	1.9	2.0	2.1	2.3	2.6	2.9
NL	2.7	3.7	4.1	4.5	5.0	5.4	5.7	6.0	6.2	6.3	6.3	6.3
AT	1.8	1.8	2.0	2.2	2.3	2.5	2.8	3.2	3.4	3.4	3.4	3.5
PL	1.6	0.8	0.9	1.1	1.4	1.5	1.6	1.7	1.9	2.1	2.3	2.4
PT	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.8
RO	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.8
SI	1.3	1.0	1.1	1.2	1.4	1.6	1.7	1.9	2.0	2.1	2.2	2.2
SK	2.1	0.8	1.1	1.2	1.4	1.7	1.9	2.1	2.3	2.5	2.8	2.9
FI	2.1	2.0	2.4	2.7	3.1	3.3	3.4	3.5	3.6	3.7	3.9	4.1
SE	2.2	3.3	3.6	3.9	4.1	4.3	4.4	4.6	4.9	5.1	5.3	5.5
NO	3.9	4.0	4.4	4.9	5.4	5.9	6.2	6.6	7.0	7.4	7.7	8.0
EA	0.9	1.7	1.8	1.9	2.0	2.2	2.3	2.5	2.6	2.6	2.6	2.6
EU	1.1	1.7	1.8	1.9	2.1	2.3	2.4	2.5	2.7	2.7	2.7	2.8

Table III.1.121: Long-term care spending as % of GDP - Demographic scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.1	2.2	2.4	2.6	2.8	3.2	3.4	3.7	3.9	4.0	4.1	4.3
BG	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
CZ	1.4	1.5	1.7	1.9	2.0	2.2	2.2	2.3	2.5	2.7	2.8	2.9
DK	4.0	3.5	4.1	4.7	5.3	5.7	6.1	6.5	7.0	7.2	7.4	7.5
DE	0.8	1.6	1.7	1.7	1.8	1.9	2.1	2.2	2.3	2.3	2.3	2.3
EE	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7
IE	1.4	1.3	1.4	1.5	1.6	1.8	1.9	2.0	2.2	2.4	2.5	2.6
EL	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	0.7	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5
FR	1.0	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	2.8	2.8
HR	0.2	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
IT	1.0	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.7	2.8	2.8	2.7
CY	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
LV	0.2	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
LT	0.7	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.7
LU	1.7	1.0	1.2	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.7
HU	0.6	0.6	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2
MT	1.4	1.1	1.3	1.4	1.6	1.7	1.8	1.8	1.9	2.1	2.3	2.5
NL	2.7	3.7	4.1	4.4	4.8	5.2	5.6	5.9	6.2	6.3	6.3	6.4
AT	1.8	1.8	2.0	2.2	2.3	2.5	2.9	3.2	3.4	3.4	3.4	3.6
PL	1.5	0.8	0.9	1.1	1.3	1.5	1.5	1.6	1.8	2.0	2.2	2.3
PT	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8
RO	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7
SI	1.2	1.0	1.2	1.3	1.4	1.6	1.7	1.8	1.9	2.0	2.1	2.1
SK	1.6	0.8	1.0	1.2	1.3	1.5	1.7	1.8	1.9	2.1	2.3	2.5
FI	2.1	2.0	2.3	2.7	3.0	3.3	3.4	3.5	3.6	3.7	3.9	4.2
SE	2.4	3.3	3.6	4.0	4.3	4.5	4.6	4.8	5.1	5.3	5.5	5.7
NO	3.5	4.0	4.4	4.8	5.3	5.7	6.0	6.4	6.8	7.1	7.3	7.5
EA	1.1	1.7	1.8	1.9	2.0	2.2	2.4	2.5	2.6	2.7	2.7	2.8
EU	1.2	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.8	2.9	2.9

Table III.1.122: Long-term care spending as % of GDP - Base case scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.4	2.2	2.4	2.5	2.8	3.2	3.5	3.9	4.1	4.3	4.4	4.6
BG	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
CZ	1.7	1.5	1.7	1.9	2.1	2.3	2.5	2.6	2.8	3.0	3.2	3.2
DK	3.9	3.5	4.1	4.6	5.3	5.7	6.0	6.4	6.8	7.1	7.2	7.4
DE	1.0	1.6	1.7	1.8	1.8	2.0	2.2	2.4	2.4	2.4	2.4	2.5
EE	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7
IE	1.9	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
EL	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	0.8	0.7	0.8	0.9	0.9	1.0	1.2	1.3	1.4	1.5	1.5	1.5
FR	1.0	1.9	2.0	2.1	2.3	2.5	2.6	2.7	2.8	2.8	2.8	2.9
HR	0.2	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7
IT	1.1	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.8	2.8	2.8	2.7
CY	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7
LV	0.2	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
LT	0.8	1.0	1.1	1.2	1.2	1.4	1.5	1.6	1.7	1.8	1.8	1.8
LU	1.5	1.0	1.1	1.1	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.5
HU	0.7	0.6	0.6	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.2
MT	1.9	1.1	1.4	1.5	1.6	1.8	1.9	2.0	2.2	2.4	2.7	3.0
NL	3.2	3.7	4.2	4.6	5.1	5.6	6.0	6.3	6.6	6.7	6.7	6.8
AT	1.9	1.8	2.0	2.2	2.4	2.6	2.9	3.3	3.5	3.6	3.6	3.7
PL	1.6	0.8	0.9	1.1	1.4	1.5	1.6	1.7	1.9	2.1	2.3	2.4
PT	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9	0.9	0.9
RO	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.8
SI	1.4	1.0	1.2	1.3	1.4	1.6	1.8	2.0	2.1	2.2	2.3	2.3
SK	2.2	0.8	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.6	2.8	3.0
FI	2.3	2.0	2.4	2.8	3.1	3.4	3.5	3.6	3.7	3.9	4.1	4.4
SE	2.6	3.3	3.7	3.9	4.2	4.4	4.5	4.8	5.1	5.4	5.6	5.9
NO	4.5	4.0	4.5	4.9	5.5	6.1	6.5	6.9	7.4	7.8	8.1	8.5
EA	1.2	1.7	1.8	1.9	2.1	2.3	2.5	2.6	2.8	2.8	2.8	2.9
EU	1.4	1.7	1.9	2.0	2.2	2.3	2.5	2.7	2.8	2.9	3.0	3.1

Table III.1.123: Long-term care spending as % of GDP - High life expectancy scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.1	2.2	2.4	2.6	2.9	3.3	3.7	4.2	4.5	4.8	5.0	5.2
BG	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
CZ	2.1	1.5	1.7	2.0	2.2	2.4	2.6	2.8	3.0	3.3	3.5	3.6
DK	5.0	3.5	4.1	4.7	5.4	6.0	6.4	7.0	7.5	7.9	8.2	8.5
DE	1.2	1.6	1.7	1.8	1.9	2.1	2.3	2.5	2.6	2.7	2.7	2.8
EE	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8
IE	2.3	1.3	1.5	1.6	1.8	2.1	2.3	2.5	2.8	3.1	3.3	3.6
EL	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	1.0	0.7	0.8	0.9	1.0	1.1	1.2	1.4	1.5	1.6	1.7	1.7
FR	1.3	1.9	2.0	2.1	2.3	2.5	2.7	2.8	2.9	3.0	3.1	3.2
HR	0.3	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7
IT	1.3	1.7	1.8	1.9	2.1	2.3	2.5	2.7	2.9	3.0	3.0	3.0
CY	0.4	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7
LV	0.2	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
LT	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.7	1.8	1.9	1.9	2.0
LU	1.8	1.0	1.1	1.2	1.3	1.5	1.7	1.9	2.2	2.4	2.6	2.9
HU	0.9	0.6	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.4	1.4
MT	2.6	1.1	1.4	1.5	1.7	2.0	2.1	2.3	2.5	2.8	3.3	3.8
NL	3.9	3.7	4.2	4.7	5.2	5.8	6.2	6.7	7.1	7.3	7.4	7.6
AT	2.4	1.8	2.0	2.2	2.4	2.7	3.1	3.5	3.8	3.9	4.0	4.2
PL	1.9	0.8	0.9	1.2	1.4	1.5	1.6	1.8	2.0	2.3	2.5	2.6
PT	0.5	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9	0.9	0.9	1.0
RO	0.5	0.4	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9
SI	1.7	1.0	1.2	1.3	1.5	1.7	1.9	2.1	2.3	2.4	2.5	2.6
SK	2.5	0.8	1.1	1.3	1.5	1.7	2.0	2.2	2.5	2.8	3.1	3.4
FI	2.8	2.0	2.4	2.8	3.2	3.5	3.7	3.9	4.0	4.2	4.5	4.8
SE	3.3	3.3	3.7	4.0	4.3	4.5	4.8	5.1	5.5	5.9	6.2	6.6
NO	5.5	4.0	4.5	5.0	5.6	6.3	6.8	7.4	8.0	8.6	9.1	9.6
EA	1.6	1.7	1.8	2.0	2.1	2.3	2.6	2.8	3.0	3.1	3.1	3.2
EU	1.7	1.7	1.9	2.0	2.2	2.4	2.6	2.9	3.1	3.2	3.3	3.4

Table III.1.124: Long-term care spending as % of GDP - Healthy ageing scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.9	2.2	2.4	2.5	2.7	3.0	3.3	3.6	3.8	3.9	4.0	4.1
BG	0.1	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
CZ	1.3	1.5	1.7	1.9	2.0	2.2	2.3	2.4	2.5	2.7	2.8	2.8
DK	3.1	3.5	4.0	4.5	5.1	5.4	5.6	5.9	6.2	6.4	6.5	6.5
DE	0.7	1.6	1.7	1.7	1.8	1.9	2.0	2.2	2.2	2.2	2.2	2.2
EE	0.2	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
IE	1.6	1.3	1.5	1.6	1.7	1.9	2.1	2.2	2.4	2.6	2.8	2.9
EL	0.0	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1
ES	0.7	0.7	0.8	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.4	1.4
FR	0.8	1.9	2.0	2.1	2.2	2.4	2.4	2.5	2.6	2.6	2.6	2.7
HR	0.1	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6
IT	0.7	1.7	1.8	1.8	2.0	2.1	2.3	2.4	2.5	2.6	2.5	2.4
CY	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6
LV	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
LT	0.6	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.5	1.6	1.6	1.6
LU	1.3	1.0	1.1	1.1	1.2	1.3	1.5	1.7	1.9	2.0	2.2	2.3
HU	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9	1.0	1.1	1.1
MT	1.5	1.1	1.3	1.4	1.5	1.7	1.7	1.8	1.9	2.1	2.4	2.6
NL	2.3	3.7	4.1	4.5	4.9	5.3	5.5	5.7	5.9	6.0	5.9	5.9
AT	1.6	1.8	2.0	2.1	2.3	2.5	2.7	3.0	3.3	3.3	3.3	3.4
PL	1.4	0.8	0.9	1.1	1.3	1.4	1.5	1.5	1.7	1.9	2.0	2.1
PT	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8
RO	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7
SI	1.1	1.0	1.2	1.3	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.1
SK	1.8	0.8	1.1	1.2	1.4	1.5	1.7	1.9	2.1	2.3	2.5	2.6
FI	1.9	2.0	2.4	2.7	3.0	3.2	3.3	3.4	3.5	3.6	3.7	3.9
SE	1.9	3.3	3.6	3.8	4.0	4.2	4.3	4.4	4.7	4.9	5.0	5.2
NO	3.5	4.0	4.4	4.8	5.3	5.7	6.0	6.4	6.7	7.0	7.3	7.5
EA	0.9	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.6	2.6
EU	1.0	1.7	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.7	2.7	2.7

Table III.1.125: Long-term care spending as % of GDP - Shift to formal care scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.7	2.2	2.5	2.8	3.1	3.5	3.8	4.2	4.5	4.6	4.7	4.9
BG	0.4	0.3	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7
CZ	2.3	1.5	2.0	2.4	2.7	2.9	3.0	3.2	3.4	3.7	3.8	3.9
DK	4.5	3.5	4.4	5.2	5.8	6.3	6.6	7.0	7.4	7.7	7.8	8.0
DE	1.4	1.6	1.9	2.1	2.2	2.4	2.6	2.8	2.9	2.9	2.9	3.0
EE	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8
IE	2.5	1.3	1.7	2.0	2.2	2.4	2.6	2.9	3.1	3.3	3.6	3.7
EL	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	1.1	0.7	0.9	1.1	1.2	1.3	1.4	1.6	1.7	1.8	1.9	1.8
FR	1.6	1.9	2.3	2.6	2.8	3.0	3.1	3.2	3.3	3.4	3.4	3.5
HR	0.5	0.4	0.6	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.9
IT	1.4	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.1	3.1	3.0
CY	0.4	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7
LV	0.5	0.5	0.6	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0
LT	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.9	1.9
LU	2.1	1.0	1.3	1.5	1.7	1.8	2.1	2.3	2.5	2.7	2.9	3.1
HU	1.2	0.6	0.8	1.0	1.0	1.2	1.3	1.3	1.4	1.6	1.7	1.7
MT	2.2	1.1	1.4	1.6	1.8	1.9	2.1	2.2	2.4	2.6	3.0	3.3
NL	3.5	3.7	4.3	4.9	5.4	5.9	6.3	6.6	6.9	7.1	7.1	7.2
AT	2.7	1.8	2.3	2.7	2.9	3.2	3.5	3.9	4.2	4.3	4.3	4.4
PL	1.9	0.8	1.0	1.3	1.5	1.6	1.7	1.9	2.1	2.3	2.5	2.6
PT	1.5	0.4	0.9	1.4	1.5	1.6	1.8	1.9	2.0	2.0	2.0	2.0
RO	0.6	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.0
SI	1.8	1.0	1.3	1.6	1.8	2.0	2.2	2.3	2.5	2.6	2.7	2.7
SK	2.6	0.8	1.2	1.5	1.7	2.0	2.2	2.5	2.7	3.0	3.3	3.5
FI	2.8	2.0	2.6	3.1	3.5	3.7	3.9	4.0	4.1	4.3	4.5	4.8
SE	3.2	3.3	4.0	4.4	4.7	4.9	5.1	5.4	5.7	6.0	6.2	6.5
NO	5.1	4.0	4.7	5.4	6.0	6.6	7.0	7.5	8.0	8.4	8.8	9.2
EA	1.7	1.7	2.0	2.3	2.5	2.7	2.9	3.1	3.2	3.3	3.3	3.4
EU	1.8	1.7	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.4	3.4	3.5

Table III.1.126: Long-term care spending as % of GDP - Coverage convergence scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.4	2.2	2.4	2.5	2.8	3.2	3.5	3.9	4.1	4.3	4.4	4.6
BG	0.8	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.8	0.9	1.0	1.1
CZ	1.7	1.5	1.7	1.9	2.1	2.3	2.5	2.6	2.8	3.0	3.2	3.2
DK	4.7	3.5	4.1	4.8	5.5	6.0	6.4	6.8	7.3	7.6	7.9	8.2
DE	1.3	1.6	1.7	1.8	1.9	2.1	2.3	2.5	2.6	2.7	2.7	2.8
EE	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7
IE	4.0	1.3	1.6	1.8	2.1	2.5	2.9	3.3	3.8	4.3	4.8	5.3
EL	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4
ES	2.4	0.7	0.9	1.0	1.2	1.4	1.7	2.0	2.3	2.6	2.9	3.1
FR	2.7	1.9	2.1	2.3	2.6	2.9	3.2	3.5	3.8	4.0	4.3	4.6
HR	0.5	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	1.0
IT	1.3	1.7	1.8	1.9	2.1	2.3	2.5	2.8	2.9	3.0	3.0	3.0
CY	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7
LV	1.6	0.5	0.5	0.6	0.7	0.8	0.9	1.1	1.3	1.5	1.8	2.1
LT	0.8	1.0	1.1	1.2	1.2	1.4	1.5	1.6	1.7	1.8	1.8	1.8
LU	3.5	1.0	1.2	1.3	1.5	1.8	2.2	2.6	3.1	3.5	4.0	4.6
HU	3.7	0.6	0.7	0.8	1.0	1.3	1.6	2.0	2.4	3.0	3.7	4.3
MT	3.7	1.1	1.4	1.6	1.9	2.1	2.3	2.6	2.9	3.4	4.1	4.8
NL	3.2	3.7	4.2	4.6	5.1	5.6	6.0	6.3	6.6	6.8	6.8	6.9
AT	2.0	1.8	2.0	2.2	2.4	2.6	2.9	3.3	3.5	3.6	3.6	3.7
PL	2.0	0.8	0.9	1.2	1.4	1.6	1.7	1.8	2.1	2.4	2.6	2.8
PT	8.0	0.4	0.6	0.8	1.2	1.6	2.3	3.1	4.1	5.4	6.8	8.5
RO	1.1	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.4	1.5
SI	1.5	1.0	1.2	1.3	1.5	1.7	1.9	2.1	2.2	2.3	2.4	2.5
SK	2.2	0.8	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.6	2.8	3.0
FI	2.4	2.0	2.4	2.8	3.1	3.4	3.6	3.7	3.8	3.9	4.2	4.5
SE	6.6	3.3	3.9	4.3	4.8	5.3	5.8	6.5	7.3	8.1	8.9	9.9
NO	4.5	4.0	4.5	4.9	5.5	6.1	6.5	6.9	7.4	7.8	8.2	8.5
EA	2.1	1.7	1.9	2.0	2.2	2.5	2.8	3.0	3.3	3.4	3.6	3.8
EU	2.4	1.7	1.9	2.1	2.3	2.6	2.8	3.1	3.4	3.6	3.8	4.1

Table III.1.127: Long-term care spending as % of GDP - Cost convergence scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.9	2.2	2.5	2.7	3.1	3.6	4.0	4.5	4.9	5.3	5.6	6.0
BG	0.5	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8
CZ	2.7	1.5	1.8	2.0	2.3	2.6	2.8	3.0	3.4	3.7	4.0	4.2
DK	3.9	3.5	4.1	4.7	5.3	5.7	6.0	6.4	6.8	7.1	7.3	7.4
DE	1.6	1.6	1.7	1.9	2.0	2.2	2.5	2.7	2.9	2.9	3.0	3.2
EE	5.4	0.4	0.5	0.7	1.0	1.3	1.7	2.1	2.8	3.6	4.6	5.8
IE	1.9	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2
EL	1.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.9	1.2
ES	1.2	0.7	0.8	0.9	1.0	1.1	1.3	1.5	1.6	1.8	1.9	1.9
FR	1.6	1.9	2.1	2.2	2.4	2.6	2.8	3.0	3.1	3.2	3.3	3.4
HR	1.6	0.4	0.5	0.6	0.7	0.9	1.0	1.2	1.3	1.6	1.8	2.0
IT	1.9	1.7	1.8	2.0	2.2	2.4	2.7	3.1	3.3	3.5	3.5	3.6
CY	3.0	0.3	0.5	0.6	0.7	0.9	1.0	1.2	1.5	1.9	2.5	3.4
LV	1.0	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.3	1.4	1.5
LT	6.0	1.0	1.2	1.5	1.8	2.3	2.9	3.5	4.3	5.1	5.9	7.0
LU	1.7	1.0	1.1	1.2	1.3	1.4	1.6	1.9	2.1	2.3	2.5	2.7
HU	0.8	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3
MT	2.9	1.1	1.4	1.5	1.7	1.9	2.1	2.3	2.6	2.9	3.4	4.0
NL	4.6	3.7	4.2	4.8	5.4	6.0	6.5	7.0	7.4	7.7	7.9	8.3
AT	3.2	1.8	2.1	2.3	2.6	2.9	3.4	3.9	4.2	4.4	4.6	4.9
PL	5.4	0.8	1.0	1.4	1.8	2.2	2.5	3.0	3.7	4.6	5.5	6.2
PT	0.5	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.9	0.9	0.9	0.9
RO	2.2	0.4	0.5	0.6	0.7	0.9	1.1	1.3	1.6	1.9	2.3	2.6
SI	4.4	1.0	1.3	1.6	1.9	2.3	2.8	3.3	3.8	4.3	4.9	5.4
SK	6.0	0.8	1.2	1.5	1.9	2.4	2.9	3.4	4.2	5.0	6.0	6.8
FI	4.4	2.0	2.5	2.9	3.4	3.8	4.1	4.4	4.7	5.1	5.7	6.4
SE	2.6	3.3	3.7	3.9	4.2	4.4	4.5	4.8	5.1	5.4	5.6	5.9
NO	5.3	4.0	4.5	5.0	5.7	6.2	6.7	7.2	7.8	8.3	8.8	9.3
EA	2.0	1.7	1.9	2.0	2.2	2.5	2.7	3.0	3.2	3.4	3.5	3.7
EU	2.3	1.7	1.9	2.1	2.3	2.6	2.8	3.1	3.4	3.6	3.7	3.9

Table III.1.128: Long-term care spending as % of GDP - Cost and coverage convergence scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.9	2.2	2.5	2.7	3.1	3.6	4.0	4.5	4.9	5.3	5.6	6.0
BG	1.5	0.3	0.4	0.4	0.5	0.6	0.7	0.8	1.0	1.3	1.5	1.8
CZ	2.7	1.5	1.8	2.0	2.3	2.6	2.8	3.0	3.4	3.7	4.1	4.2
DK	4.8	3.5	4.1	4.8	5.5	6.0	6.4	6.8	7.3	7.7	7.9	8.2
DE	2.0	1.6	1.7	1.9	2.1	2.3	2.6	2.9	3.1	3.2	3.3	3.6
EE	5.5	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.8	3.6	4.7	5.9
IE	4.0	1.3	1.6	1.8	2.1	2.5	2.9	3.3	3.8	4.3	4.8	5.3
EL	2.6	0.2	0.2	0.2	0.3	0.4	0.5	0.7	1.0	1.4	2.0	2.8
ES	2.9	0.7	0.9	1.0	1.2	1.5	1.8	2.2	2.6	3.0	3.4	3.7
FR	3.5	1.9	2.2	2.4	2.7	3.1	3.5	3.8	4.2	4.6	5.0	5.4
HR	2.5	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.7	2.0	2.5	3.0
IT	2.2	1.7	1.9	2.0	2.3	2.5	2.9	3.2	3.5	3.7	3.8	3.9
CY	3.1	0.3	0.5	0.6	0.7	0.9	1.0	1.3	1.5	2.0	2.6	3.4
LV	4.2	0.5	0.6	0.7	0.9	1.1	1.4	1.7	2.2	2.9	3.6	4.6
LT	6.0	1.0	1.2	1.5	1.8	2.3	2.9	3.5	4.3	5.1	5.9	7.0
LU	3.8	1.0	1.2	1.3	1.5	1.9	2.2	2.7	3.2	3.7	4.2	4.8
HU	4.2	0.6	0.7	0.9	1.1	1.4	1.7	2.1	2.6	3.3	4.0	4.7
MT	5.0	1.1	1.5	1.7	2.0	2.3	2.6	3.0	3.5	4.2	5.1	6.1
NL	4.7	3.7	4.3	4.8	5.4	6.0	6.5	7.0	7.5	7.8	8.0	8.4
AT	3.2	1.8	2.1	2.3	2.6	2.9	3.4	3.9	4.2	4.4	4.6	4.9
PL	6.3	0.8	1.1	1.5	1.9	2.3	2.7	3.2	4.0	5.1	6.1	7.1
PT	8.2	0.4	0.6	0.8	1.2	1.6	2.3	3.1	4.2	5.4	6.9	8.6
RO	4.3	0.4	0.5	0.6	0.8	1.1	1.4	1.8	2.4	3.1	3.8	4.6
SI	4.8	1.0	1.3	1.6	1.9	2.4	2.9	3.5	4.0	4.6	5.2	5.8
SK	6.0	0.8	1.2	1.5	1.9	2.4	2.9	3.5	4.2	5.0	6.0	6.9
FI	4.5	2.0	2.5	2.9	3.4	3.8	4.1	4.4	4.8	5.2	5.8	6.5
SE	6.7	3.3	3.9	4.3	4.9	5.4	5.8	6.5	7.3	8.1	9.0	10.0
NO	5.3	4.0	4.5	5.0	5.7	6.2	6.7	7.2	7.8	8.3	8.8	9.3
EA	3.1	1.7	1.9	2.1	2.4	2.7	3.1	3.4	3.8	4.1	4.4	4.7
EU	3.4	1.7	1.9	2.2	2.5	2.8	3.2	3.6	4.0	4.3	4.7	5.1

Table III.1.129: Number of dependent people (in thousands) - AWG reference scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	265	992	1,054	1,086	1,127	1,170	1,203	1,227	1,238	1,241	1,247	1,258
BG	5	259	262	264	268	269	268	268	270	271	270	263
CZ	200	707	764	807	839	850	851	861	882	906	918	907
DK	100	379	412	428	440	449	456	465	473	476	477	479
DE	679	5,795	6,054	6,020	6,031	6,196	6,426	6,595	6,580	6,437	6,382	6,473
EE	27	147	155	158	163	167	169	170	171	172	173	174
IE	234	245	281	308	335	360	384	407	428	449	467	479
EL	75	1,034	1,064	1,090	1,125	1,156	1,181	1,195	1,197	1,181	1,151	1,109
ES	951	2,007	2,178	2,316	2,470	2,622	2,776	2,916	3,018	3,066	3,045	2,958
FR	1,829	6,185	6,569	6,856	7,255	7,554	7,735	7,853	7,930	7,982	7,983	8,013
HR	-11	395	402	408	414	417	414	408	402	396	391	384
IT	681	3,395	3,582	3,717	3,884	4,038	4,206	4,360	4,428	4,376	4,230	4,076
CY	48	62	71	77	83	87	91	94	97	101	105	110
LV	-31	171	171	168	167	166	164	160	155	150	146	141
LT	-26	242	246	246	248	251	253	250	242	232	223	216
LU	44	56	64	69	74	79	84	89	92	95	98	100
HU	135	696	720	747	770	783	788	799	821	839	842	832
MT	24	16	20	22	25	27	29	31	32	34	37	40
NL	349	1,130	1,245	1,301	1,355	1,401	1,437	1,471	1,490	1,487	1,475	1,478
AT	259	781	833	871	905	947	994	1,030	1,041	1,034	1,030	1,040
PL	685	2,556	2,694	2,825	2,971	3,076	3,114	3,118	3,144	3,202	3,251	3,241
PT	61	831	878	905	934	957	970	976	971	955	929	892
RO	106	1,238	1,266	1,296	1,333	1,357	1,363	1,375	1,399	1,405	1,385	1,344
SI	38	209	223	232	241	249	252	253	253	252	250	247
SK	223	493	539	578	617	646	665	680	697	715	723	716
FI	76	384	415	434	450	457	456	452	449	449	454	460
SE	231	413	457	488	514	532	549	570	592	609	624	643
NO	171	276	305	327	349	368	384	400	415	427	436	446
EA	792	3,844	4,046	4,117	4,237	4,389	4,545	4,660	4,694	4,664	4,629	4,636
EU	641	3,448	3,609	3,656	3,751	3,880	4,009	4,105	4,136	4,113	4,085	4,089

Table III.1.130: Number of dependent people receiving institutional care (in thousands) - AWG reference scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	156	145	161	173	191	218	241	263	278	286	292	301
BG	0	11	11	12	12	12	12	12	12	12	12	12
CZ	101	123	138	152	166	176	181	186	197	210	222	225
DK	74	58	70	81	93	101	107	115	123	128	130	132
DE	417	858	924	958	970	1,038	1,138	1,234	1,284	1,264	1,236	1,275
EE	14	36	38	40	42	44	45	46	47	48	49	50
IE	76	31	37	43	50	58	65	74	82	91	100	107
EL	-3	11	11	10	10	9	9	9	9	9	8	8
ES	139	153	169	180	196	214	234	255	275	288	295	292
FR	593	1,150	1,205	1,252	1,394	1,506	1,580	1,639	1,683	1,714	1,718	1,743
HR	0	32	33	34	34	34	34	34	33	33	33	32
IT	221	645	681	704	744	783	834	891	930	934	904	865
CY	11	9	11	13	14	15	16	17	17	18	19	21
LV	-2	13	14	13	13	13	13	13	13	12	12	12
LT	-9	94	96	96	97	98	98	98	95	91	88	85
LU	13	5	6	7	8	10	11	13	15	16	18	19
HU	53	70	75	80	87	93	97	100	105	114	121	123
MT	11	4	5	6	8	9	9	10	11	12	13	15
NL	258	263	303	340	383	425	456	489	515	523	518	521
AT	77	70	79	89	96	105	119	134	142	143	142	147
PL	196	225	251	271	295	327	351	363	370	385	406	422
PT	15	33	36	39	42	44	47	49	50	50	50	48
RO	79	240	249	257	270	284	291	300	311	323	324	319
SI	29	37	41	45	49	54	58	61	63	64	66	66
SK	99	73	83	94	106	118	128	135	143	154	166	172
FI	23	27	31	35	39	43	44	45	45	46	47	50
SE	82	63	73	84	94	101	106	114	123	131	138	145
NO	77	45	52	60	71	80	88	96	105	112	117	123
EA	2,137	3,659	3,933	4,137	4,453	4,806	5,147	5,473	5,696	5,764	5,740	5,796
EU	2,722	4,483	4,832	5,106	5,503	5,934	6,326	6,696	6,971	7,100	7,125	7,205

Table III.1.131: Number of dependent people receiving home care (in thousands) - AWG reference scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	226	579	625	655	691	726	754	774	784	789	794	804
BG	-3	24	24	24	24	23	23	23	23	23	22	22
CZ	115	105	122	138	154	164	170	178	192	208	220	220
DK	177	195	234	265	290	307	322	339	356	363	367	372
DE	250	754	799	814	841	895	954	995	998	979	979	1,004
EE	26	79	84	87	91	94	96	98	99	101	103	105
IE	165	85	102	118	135	152	170	188	206	224	240	251
EL	103	290	304	315	333	352	371	389	403	409	405	392
ES	424	454	497	536	590	652	720	791	851	891	900	878
FR	652	1,286	1,373	1,466	1,610	1,719	1,790	1,844	1,883	1,908	1,917	1,937
HR	-1	17	17	18	18	18	18	17	17	17	17	16
IT	377	721	784	832	899	966	1,048	1,133	1,186	1,188	1,147	1,098
CY	15	12	14	16	17	19	20	21	22	23	24	26
LV	-5	17	17	17	16	16	15	15	14	14	13	12
LT	21	83	88	90	94	100	107	112	113	110	107	105
LU	14	9	10	11	13	15	16	18	20	21	22	23
HU	35	59	63	68	73	76	79	82	87	92	94	94
MT	15	8	10	12	13	14	15	16	17	19	21	23
NL	633	921	1,068	1,180	1,292	1,381	1,450	1,510	1,541	1,539	1,531	1,554
AT	83	94	106	116	125	136	152	166	172	172	172	177
PL	258	285	318	345	376	416	446	462	474	494	522	543
PT	9	17	19	20	22	23	25	26	27	27	27	27
RO	107	295	306	317	335	353	362	376	392	407	408	402
SI	28	38	42	45	50	55	58	61	63	64	66	66
SK	122	68	78	88	102	117	130	139	149	162	178	190
FI	150	195	222	250	279	301	309	313	316	319	328	345
SE	228	254	298	330	351	364	382	405	425	442	459	482
NO	192	200	229	254	279	299	318	337	354	368	379	392
EA	3,307	5,710	6,242	6,669	7,213	7,733	8,200	8,607	8,863	8,958	8,974	9,017
EU	4,224	6,945	7,625	8,174	8,832	9,454	10,002	10,490	10,829	11,004	11,083	11,169

Table III.1.132: Number of dependent people receiving cash benefits (in thousands) - AWG reference scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	136	245	264	280	301	323	343	358	366	370	374	382
BG	2	79	81	81	82	82	82	82	83	83	82	81
CZ	302	366	414	457	499	525	537	554	589	631	665	668
DK	0	0	0	0	0	0	0	0	0	0	0	0
DE	793	2,388	2,531	2,577	2,663	2,834	3,021	3,151	3,161	3,101	3,099	3,180
EE	4	11	12	13	13	14	14	14	15	15	15	15
IE	0	0	0	0	0	0	0	0	0	0	0	0
EL	0	0	0	0	0	0	0	0	0	0	0	0
ES	490	606	661	699	756	823	897	976	1,045	1,092	1,111	1,096
FR	-51	446	446	432	421	418	416	413	410	405	399	395
HR	-5	108	110	112	113	114	112	110	109	107	105	104
IT	762	2,006	2,135	2,232	2,367	2,503	2,679	2,869	2,991	2,993	2,891	2,768
CY	24	20	24	27	30	32	34	35	36	38	41	44
LV	-6	16	16	15	14	13	13	12	11	11	10	10
LT	30	119	125	128	132	139	148	156	158	156	152	149
LU	2	2	2	2	2	3	3	3	3	3	3	3
HU	0	0	0	0	0	0	0	0	0	0	0	0
MT	1	4	4	4	5	5	5	5	5	5	5	4
NL	51	90	99	104	110	119	125	132	139	143	142	141
AT	366	466	517	563	604	655	717	777	811	816	816	832
PL	3,571	2,532	2,987	3,697	4,331	4,544	4,548	4,713	5,130	5,671	6,028	6,103
PT	1	13	14	15	15	15	16	16	16	15	15	14
RO	0	0	0	0	0	0	0	0	0	0	0	0
SI	27	47	51	55	59	63	67	70	71	73	74	74
SK	92	131	145	157	170	182	191	197	204	213	221	223
FI	112	276	301	322	344	361	366	368	368	370	375	388
SE	228	254	298	330	351	364	382	405	425	442	459	482
NO	101	92	106	118	132	143	153	163	173	181	187	194
EA	2,833	6,888	7,348	7,624	8,005	8,503	9,053	9,552	9,811	9,818	9,745	9,720
EU	6,931	10,227	11,236	12,301	13,381	14,131	14,715	15,417	16,146	16,752	17,084	17,158

Table III.1.133: Education spending as % of GDP - Baseline

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.4	5.5	5.3	5.2	5.1	5.0	5.0	5.1	5.2	5.2	5.2	5.1
BG	0.4	2.9	3.0	3.1	3.0	3.0	3.1	3.2	3.3	3.4	3.3	3.3
CZ	0.6	3.4	3.7	3.8	3.8	3.8	3.8	3.9	4.1	4.2	4.1	4.1
DK	-0.8	6.1	5.6	5.5	5.5	5.5	5.4	5.3	5.3	5.2	5.2	5.2
DE	0.5	4.0	4.0	4.2	4.3	4.3	4.3	4.3	4.3	4.4	4.5	4.5
EE	-0.4	4.2	4.1	4.1	3.9	3.7	3.7	3.8	3.9	3.9	3.9	3.8
IE	-0.1	3.3	3.3	3.2	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.2
EL	-0.6	3.2	3.1	2.9	2.7	2.6	2.6	2.7	2.7	2.7	2.6	2.6
ES	-0.4	3.6	3.5	3.3	3.1	3.0	3.1	3.1	3.2	3.2	3.2	3.2
FR	-0.6	4.4	4.3	4.2	4.0	4.0	3.9	4.0	4.0	3.9	3.9	3.9
HR	-0.5	5.0	4.7	4.6	4.5	4.4	4.4	4.4	4.5	4.5	4.5	4.6
IT	-0.4	3.5	3.3	3.1	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1
CY	-0.7	5.3	4.9	4.7	4.7	4.7	4.6	4.5	4.5	4.5	4.6	4.6
LV	0.0	3.6	3.8	3.8	3.7	3.5	3.4	3.5	3.7	3.8	3.7	3.6
LT	-0.1	3.0	2.9	3.0	3.0	2.9	2.7	2.7	2.8	2.9	2.9	2.9
LU	-0.8	3.0	2.7	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2
HU	-0.1	3.4	3.2	3.0	3.0	3.1	3.1	3.2	3.2	3.3	3.3	3.3
MT	-0.3	4.3	4.1	3.9	3.8	3.7	3.6	3.6	3.7	3.9	4.0	4.1
NL	-0.5	4.9	4.5	4.4	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.4
AT	-0.1	4.7	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.5	4.5	4.5
PL	-0.1	3.8	3.8	3.8	3.7	3.5	3.5	3.6	3.7	3.8	3.8	3.8
PT	-0.1	4.3	3.9	3.8	3.9	4.0	4.1	4.2	4.2	4.1	4.1	4.1
RO	-0.1	2.5	2.4	2.4	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.4
SI	0.1	3.8	3.9	3.9	3.8	3.6	3.7	3.9	4.0	4.1	4.0	3.9
SK	0.4	3.4	3.4	3.6	3.6	3.5	3.5	3.6	3.7	3.8	3.8	3.8
FI	-0.9	5.3	5.2	4.9	4.7	4.5	4.5	4.5	4.5	4.4	4.4	4.4
SE	-0.5	5.9	5.7	5.5	5.4	5.4	5.3	5.3	5.4	5.4	5.4	5.4
NO	-0.6	7.2	7.0	6.8	6.7	6.6	6.6	6.6	6.6	6.6	6.6	6.7
EA	-0.2	4.1	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
EU	-0.2	4.1	4.0	4.0	3.9	3.9	3.9	3.9	4.0	4.0	4.0	4.0

Table III.1.134: Number of students (in thousands)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-222	2,418	2,426	2,377	2,308	2,264	2,256	2,263	2,264	2,248	2,219	2,196
BG	-281	972	963	925	863	809	778	766	756	737	713	691
CZ	-45	1,713	1,807	1,824	1,777	1,704	1,663	1,673	1,705	1,719	1,700	1,667
DK	-81	1,289	1,223	1,218	1,231	1,235	1,232	1,222	1,212	1,208	1,208	1,208
DE	418	13,631	13,832	14,087	14,188	14,031	13,808	13,702	13,778	13,942	14,051	14,050
EE	-50	229	228	220	206	194	189	190	191	189	184	179
IE	73	1,315	1,350	1,337	1,319	1,332	1,363	1,393	1,407	1,405	1,394	1,387
EL	-634	2,068	1,958	1,840	1,719	1,631	1,583	1,561	1,539	1,507	1,468	1,434
ES	-1,182	8,591	8,650	8,229	7,820	7,615	7,618	7,697	7,721	7,642	7,510	7,408
FR	-1,467	13,098	12,841	12,507	12,170	12,044	12,073	12,123	12,075	11,919	11,741	11,631
HR	-245	645	593	557	522	493	471	454	440	425	412	401
IT	-2,118	9,347	8,866	8,335	7,924	7,748	7,726	7,727	7,649	7,489	7,323	7,229
CY	9	159	156	158	163	166	166	165	165	165	167	169
LV	-141	321	312	294	267	237	218	209	204	198	190	181
LT	-206	476	448	431	398	358	325	306	297	290	281	269
LU	3	94	96	97	97	97	97	97	98	98	98	97
HU	-225	1,526	1,474	1,441	1,415	1,386	1,364	1,348	1,338	1,329	1,316	1,301
MT	15	74	80	84	86	85	84	84	86	88	89	89
NL	-410	3,608	3,406	3,328	3,321	3,339	3,338	3,305	3,255	3,216	3,199	3,198
AT	-41	1,462	1,462	1,473	1,469	1,449	1,427	1,418	1,421	1,427	1,427	1,421
PL	-2,198	6,336	6,184	5,979	5,551	5,078	4,741	4,605	4,555	4,470	4,314	4,137
PT	-441	1,738	1,623	1,545	1,498	1,471	1,446	1,416	1,377	1,339	1,312	1,296
RO	-1,122	2,821	2,681	2,488	2,280	2,106	2,001	1,942	1,888	1,822	1,753	1,699
SI	-47	362	376	370	349	329	322	325	330	329	322	315
SK	-187	837	844	844	809	755	712	696	694	689	672	650
FI	-337	1,230	1,183	1,115	1,051	1,012	989	976	958	936	912	893
SE	338	2,309	2,402	2,442	2,459	2,475	2,501	2,549	2,600	2,634	2,646	2,647
NO	28	1,172	1,167	1,155	1,149	1,156	1,171	1,185	1,192	1,193	1,194	1,199
EA	-6,965	61,057	60,136	58,672	57,162	56,157	55,740	55,650	55,511	55,117	54,560	54,093
EU	-10,824	78,669	77,463	75,546	73,259	71,442	70,489	70,208	70,006	69,461	68,622	67,845

Table III.1.135: Number of students as % of population 5-24

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.1	91.9	91.6	90.7	90.8	91.7	92.1	92.1	92.1	91.9	91.8	92.0
BG	-2.1	74.7	73.9	72.5	72.0	72.1	72.8	73.3	73.3	72.9	72.7	72.6
CZ	-2.3	81.7	80.7	79.2	79.9	78.8	79.1	79.9	80.3	80.0	79.6	79.4
DK	-1.0	93.8	92.8	92.3	93.3	92.6	92.4	92.5	92.7	92.8	92.9	92.8
DE	-0.5	85.3	85.5	85.5	85.1	84.4	84.9	85.0	85.1	85.1	84.9	84.8
EE	-4.2	83.8	81.0	79.2	79.3	79.0	80.1	80.3	80.4	80.0	79.7	79.6
IE	2.1	99.9	99.0	98.5	99.6	101.3	101.9	101.9	101.6	101.4	101.5	102.0
EL	-1.6	95.5	92.9	92.5	93.5	94.1	95.1	94.8	94.3	93.9	93.8	93.9
ES	-0.5	89.9	88.7	87.9	88.9	90.0	90.4	90.1	89.7	89.4	89.3	89.4
FR	-1.1	80.9	80.0	79.4	79.4	80.0	80.1	80.2	80.1	79.8	79.7	79.8
HR	-0.3	76.6	77.0	76.1	76.0	76.2	76.4	76.4	76.5	76.5	76.3	76.3
IT	-0.4	81.6	80.8	80.0	80.5	81.6	81.7	81.6	81.3	81.0	80.9	81.1
CY	-0.2	76.8	76.2	75.4	76.0	76.4	75.5	75.3	75.8	76.2	76.4	76.6
LV	-4.7	85.7	82.5	81.4	81.1	79.9	81.0	81.7	81.9	81.5	81.1	81.0
LT	-1.4	84.0	84.2	83.9	82.7	82.1	82.2	82.7	83.3	83.3	82.9	82.6
LU	0.1	68.6	69.1	68.5	68.4	68.5	68.5	68.7	69.0	68.9	68.7	68.6
HU	-0.9	76.5	75.4	74.9	75.4	74.9	75.4	75.4	75.6	75.7	75.6	75.6
MT	1.9	75.0	78.0	77.6	76.3	75.4	75.5	75.9	76.9	77.3	77.1	76.8
NL	-1.8	90.0	87.4	87.6	87.9	88.3	88.0	87.7	87.7	87.9	88.0	88.2
AT	-0.7	80.6	80.3	80.0	79.6	79.3	79.6	79.8	80.1	80.1	80.0	79.9
PL	-0.9	81.4	81.3	80.6	80.8	79.8	80.5	80.8	81.1	80.9	80.7	80.5
PT	-0.3	84.2	82.9	83.3	84.2	84.1	84.2	84.1	83.8	83.7	83.8	84.0
RO	-1.5	69.2	68.4	67.9	67.7	66.8	68.1	68.3	68.2	67.9	67.7	67.7
SI	-1.0	88.5	88.5	87.7	87.2	87.2	87.7	87.9	88.0	87.7	87.5	87.4
SK	-0.9	74.2	74.7	74.3	73.6	72.4	72.7	73.6	74.1	74.1	73.6	73.3
FI	2.6	100.0	99.9	98.8	99.7	102.8	102.8	101.8	101.3	101.4	101.9	102.6
SE	-2.9	97.0	94.4	92.7	92.8	93.7	94.1	94.2	94.2	93.9	93.8	94.1
NO	0.7	90.0	90.0	89.2	89.7	90.6	90.6	90.4	90.4	90.4	90.5	90.7
EA	-0.7	85.3	84.6	84.1	84.3	84.6	84.9	84.9	84.8	84.6	84.5	84.6
EU	-0.4	84.2	83.5	83.0	83.2	83.4	83.8	83.9	83.9	83.8	83.7	83.7

Table III.1.136: Education spending as % of GDP - High enrolment rate scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.6	0.0	0.1	0.2	0.3	0.4	0.6	0.6	0.5	0.6	0.6	0.6
BG	0.5	0.0	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
CZ	0.8	0.0	0.1	0.3	0.4	0.6	0.8	0.8	0.8	0.8	0.8	0.8
DK	0.8	0.0	0.2	0.4	0.5	0.7	0.9	0.9	0.9	0.8	0.8	0.8
DE	1.0	0.0	0.2	0.4	0.6	0.7	0.9	0.9	1.0	1.0	1.0	1.0
EE	0.8	0.0	0.2	0.3	0.5	0.6	0.8	0.8	0.8	0.8	0.8	0.8
IE	0.4	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
EL	0.2	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	0.4	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
FR	0.9	0.0	0.2	0.4	0.5	0.7	0.9	0.9	0.9	0.9	0.9	0.9
HR	1.0	0.0	0.2	0.4	0.6	0.7	1.0	1.0	1.0	1.0	1.0	1.0
IT	0.6	0.0	0.1	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6
CY	1.1	0.0	0.3	0.5	0.7	0.9	1.1	1.1	1.1	1.1	1.1	1.1
LV	0.5	0.0	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
LT	0.6	0.0	0.1	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6
LU	1.5	0.0	0.4	0.6	0.9	1.1	1.5	1.5	1.4	1.4	1.4	1.5
HU	0.7	0.0	0.1	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7
MT	1.4	0.0	0.4	0.6	0.8	1.0	1.4	1.4	1.4	1.4	1.4	1.4
NL	0.5	0.0	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
AT	0.6	0.0	0.1	0.2	0.3	0.5	0.6	0.6	0.6	0.6	0.6	0.6
PL	0.6	0.0	0.1	0.2	0.3	0.4	0.6	0.6	0.6	0.6	0.6	0.6
PT	0.6	0.0	0.1	0.2	0.3	0.4	0.6	0.6	0.6	0.6	0.6	0.6
RO	1.0	0.0	0.2	0.4	0.6	0.8	1.0	1.0	1.0	1.0	1.0	1.0
SI	0.5	0.0	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
SK	1.1	0.0	0.2	0.4	0.6	0.8	1.1	1.1	1.1	1.1	1.1	1.1
FI	0.4	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
SE	0.8	0.0	0.2	0.3	0.5	0.6	0.8	0.8	0.8	0.8	0.8	0.8
NO	0.9	0.0	0.2	0.4	0.5	0.7	0.9	0.9	0.9	0.9	0.9	0.9
EA	0.7	0.0	0.2	0.3	0.4	0.6	0.7	0.7	0.7	0.7	0.7	0.7
EU	0.7	0.0	0.2	0.3	0.4	0.6	0.7	0.7	0.7	0.7	0.7	0.7

Table III.1.137: Total cost of ageing as % of GDP - AWG reference scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	5.4	25.6	26.7	27.6	28.5	29.2	29.8	30.2	30.6	30.7	30.8	30.9
BG	2.1	16.1	16.6	16.6	16.7	16.9	17.4	18.0	18.5	18.5	18.3	18.1
CZ	6.1	18.6	20.1	20.6	21.2	22.2	23.4	24.5	25.4	25.6	25.3	24.7
DK	1.5	25.4	25.4	25.7	26.2	26.4	26.4	26.5	26.6	26.6	26.8	26.9
DE	3.3	23.3	24.0	24.8	25.6	25.9	26.1	26.3	26.5	26.5	26.6	26.5
EE	-1.6	17.2	16.7	16.6	16.3	16.2	16.1	16.1	16.1	16.0	15.9	15.6
IE	6.2	13.2	14.3	15.2	15.9	16.7	17.5	18.1	18.6	18.8	19.1	19.4
EL	-3.7	23.6	22.1	21.6	21.5	21.8	21.7	21.7	20.8	20.2	19.8	19.9
ES	-0.4	22.3	22.9	22.6	22.9	23.6	24.3	24.5	24.2	23.5	22.7	21.9
FR	-0.8	29.5	30.6	30.8	30.9	30.8	30.4	30.2	29.9	29.5	28.9	28.7
HR	-0.3	21.5	22.0	22.2	22.0	21.7	21.5	21.4	21.4	21.4	21.3	21.2
IT	-0.1	26.5	27.6	28.9	29.7	30.0	29.9	29.1	28.0	27.2	26.6	26.4
CY	2.0	17.3	18.2	18.2	18.6	18.5	18.5	18.2	18.7	18.9	19.5	19.3
LV	-0.6	15.8	16.3	16.3	16.1	15.8	15.5	15.7	15.9	15.8	15.5	15.2
LT	1.6	15.3	15.8	16.5	17.0	17.2	17.2	17.3	17.5	17.5	17.3	16.9
LU	10.4	16.9	17.7	18.8	19.8	20.8	21.9	23.2	24.5	25.6	26.5	27.3
HU	5.5	17.1	17.3	17.1	17.7	18.9	20.2	20.8	21.4	22.0	22.4	22.5
MT	8.0	17.9	18.2	17.8	18.0	18.5	19.2	20.4	22.0	23.7	25.0	25.9
NL	5.4	21.0	21.8	23.1	24.5	25.3	25.6	25.8	25.9	26.0	26.1	26.4
AT	3.8	26.7	28.2	29.1	29.8	29.8	30.0	30.3	30.5	30.6	30.5	30.5
PL	4.0	20.1	22.1	22.2	22.1	22.2	22.4	23.0	23.7	24.1	24.2	24.1
PT	-1.3	23.1	23.7	24.8	25.6	25.8	25.6	24.8	23.8	22.9	22.2	21.8
RO	5.1	14.9	20.1	20.0	20.9	21.7	22.3	22.6	22.5	21.8	20.9	20.0
SI	8.9	20.7	21.6	22.7	24.2	25.9	27.5	28.8	29.6	29.7	29.7	29.5
SK	10.8	18.3	20.8	21.9	22.9	24.2	25.5	26.9	28.4	29.2	29.3	29.1
FI	3.4	26.5	27.5	27.9	27.7	27.3	27.2	27.4	27.8	28.5	29.2	29.9
SE	2.3	24.1	24.4	24.2	24.2	24.3	24.3	24.7	25.4	25.8	26.0	26.4
NO	7.1	29.2	30.4	31.4	32.3	32.8	33.3	33.9	34.6	35.3	35.8	36.4
EA	1.7	24.6	25.4	26.0	26.6	26.9	27.0	27.0	26.9	26.7	26.4	26.3
EU	1.9	24.0	24.9	25.4	25.9	26.2	26.4	26.5	26.4	26.3	26.1	25.9

Table III.1.138: Total cost of ageing as % of GDP - AWG risk scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.3	25.6	26.8	27.9	28.9	29.8	30.6	31.3	31.9	32.3	32.6	32.9
BG	4.1	16.1	16.8	17.0	17.3	17.7	18.3	19.1	19.8	20.1	20.1	20.2
CZ	8.0	18.6	20.3	21.0	21.9	23.1	24.4	25.7	26.8	27.3	27.0	26.6
DK	3.5	25.4	25.7	26.2	26.9	27.4	27.6	27.9	28.2	28.4	28.6	28.9
DE	5.7	23.3	24.2	25.2	26.2	26.8	27.3	27.8	28.2	28.5	28.8	28.9
EE	4.4	17.2	17.0	17.3	17.5	17.7	18.1	18.6	19.3	20.0	20.8	21.7
IE	8.6	13.2	14.4	15.4	16.4	17.4	18.4	19.3	20.0	20.6	21.2	21.7
EL	-0.4	23.6	22.2	21.8	21.9	22.4	22.5	22.8	22.3	22.1	22.3	23.2
ES	2.4	22.3	23.0	22.9	23.5	24.4	25.5	26.0	26.1	25.8	25.2	24.8
FR	2.6	29.5	30.8	31.3	31.7	31.9	31.9	32.1	32.2	32.1	32.0	32.1
HR	2.9	21.5	22.2	22.5	22.6	22.6	22.7	23.0	23.2	23.6	24.0	24.4
IT	1.6	26.5	27.7	29.0	30.0	30.5	30.6	30.1	29.2	28.6	28.2	28.1
CY	4.9	17.3	18.3	18.3	18.9	19.0	19.2	19.2	19.9	20.6	21.6	22.2
LV	4.3	15.8	16.6	16.9	17.2	17.1	17.2	17.8	18.6	19.1	19.5	20.2
LT	7.3	15.3	16.1	17.2	18.1	18.7	19.3	20.0	20.8	21.5	22.1	22.6
LU	13.1	16.9	17.8	19.1	20.3	21.5	22.9	24.5	26.0	27.5	28.7	30.0
HU	9.8	17.1	17.6	17.7	18.7	20.2	21.9	22.9	23.9	25.1	26.1	26.9
MT	12.1	17.9	18.3	18.4	18.9	19.7	20.8	22.3	24.2	26.4	28.3	29.9
NL	7.4	21.0	21.9	23.3	24.9	25.9	26.5	26.9	27.3	27.6	27.9	28.4
AT	5.8	26.7	28.3	29.4	30.3	30.6	31.0	31.6	32.0	32.2	32.3	32.5
PL	9.8	20.1	22.5	23.1	23.5	24.0	24.7	25.8	27.1	28.4	29.2	29.9
PT	7.0	23.1	23.9	25.4	26.5	27.2	27.7	27.8	27.8	28.2	29.0	30.1
RO	9.9	14.9	20.4	20.8	22.0	23.1	24.2	24.9	25.3	25.2	25.1	24.8
SI	13.5	20.7	22.0	23.5	25.5	27.6	29.7	31.4	32.7	33.3	33.8	34.2
SK	15.5	18.3	21.0	22.4	23.8	25.6	27.3	29.2	31.1	32.5	33.3	33.8
FI	6.3	26.5	27.6	28.3	28.4	28.3	28.4	28.9	29.6	30.6	31.7	32.8
SE	7.2	24.1	24.7	24.9	25.3	25.8	26.3	27.1	28.3	29.4	30.2	31.2
NO	8.8	29.2	30.6	31.8	32.8	33.6	34.2	34.9	35.8	36.7	37.3	38.0
EA	4.4	24.6	25.5	26.4	27.2	27.7	28.2	28.5	28.7	28.8	28.8	29.0
EU	4.9	24.0	25.1	25.8	26.6	27.2	27.7	28.1	28.4	28.6	28.7	28.9

Table III.1.139: Total cost of ageing as % of GDP - TFP risk scenario

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.4	25.6	26.7	27.6	28.5	29.3	30.1	30.7	31.2	31.5	31.7	31.9
BG	3.1	16.1	16.5	16.5	16.6	16.9	17.4	18.2	18.9	19.2	19.2	19.2
CZ	6.3	18.6	20.1	20.6	21.3	22.3	23.5	24.7	25.6	25.9	25.5	24.9
DK	1.4	25.4	25.4	25.7	26.2	26.4	26.4	26.5	26.5	26.6	26.7	26.8
DE	3.4	23.3	24.0	24.9	25.6	25.9	26.2	26.4	26.6	26.6	26.7	26.6
EE	-1.5	17.2	16.6	16.6	16.4	16.3	16.2	16.2	16.2	16.1	16.0	15.7
IE	6.3	13.2	14.3	15.2	15.9	16.7	17.5	18.2	18.6	18.9	19.2	19.4
EL	-3.0	23.6	22.0	21.5	21.4	21.9	22.0	22.1	21.3	20.8	20.4	20.5
ES	0.5	22.3	22.9	22.6	23.0	23.8	24.6	24.9	24.8	24.2	23.5	22.8
FR	0.1	29.5	30.6	30.9	31.0	31.0	30.8	30.8	30.5	30.2	29.8	29.6
HR	0.0	21.5	22.0	22.2	22.0	21.7	21.5	21.5	21.5	21.6	21.6	21.5
IT	0.5	26.5	27.6	28.7	29.7	30.2	30.4	29.7	28.7	27.9	27.2	27.0
CY	2.3	17.3	18.2	18.1	18.6	18.6	18.7	18.5	18.9	19.2	19.8	19.6
LV	-0.5	15.8	16.3	16.3	16.2	15.8	15.5	15.8	16.0	15.9	15.6	15.3
LT	1.6	15.3	15.8	16.5	17.0	17.2	17.3	17.4	17.5	17.5	17.3	17.0
LU	11.1	16.9	17.7	18.9	20.0	21.1	22.3	23.7	25.0	26.2	27.1	28.0
HU	6.0	17.1	17.3	17.2	17.9	19.1	20.5	21.2	21.8	22.5	22.8	23.0
MT	8.6	17.9	18.2	17.9	18.1	18.6	19.4	20.7	22.3	24.1	25.5	26.5
NL	5.2	21.0	21.8	23.0	24.3	25.2	25.5	25.7	25.8	25.9	26.0	26.3
AT	4.2	26.7	28.1	29.0	29.7	29.9	30.1	30.5	30.8	30.8	30.8	30.9
PL	4.3	20.1	22.2	22.4	22.4	22.5	22.7	23.3	24.0	24.5	24.5	24.4
PT	-0.6	23.1	23.7	24.7	25.5	25.9	25.8	25.2	24.3	23.5	22.9	22.5
RO	5.8	14.9	20.2	20.4	21.4	22.4	23.1	23.4	23.3	22.6	21.6	20.7
SI	9.0	20.7	21.6	22.7	24.2	26.0	27.6	28.9	29.7	29.8	29.8	29.7
SK	11.0	18.3	20.8	22.0	23.1	24.4	25.7	27.1	28.5	29.3	29.5	29.3
FI	3.9	26.5	27.5	28.0	27.9	27.6	27.6	27.8	28.3	29.0	29.7	30.4
SE	2.3	24.1	24.4	24.2	24.2	24.3	24.3	24.7	25.3	25.8	26.0	26.4
NO	7.0	29.2	30.4	31.4	32.2	32.8	33.2	33.8	34.5	35.2	35.7	36.3
EA	2.2	24.6	25.4	26.0	26.6	27.0	27.3	27.4	27.3	27.1	26.9	26.8
EU	2.4	24.0	24.9	25.4	25.9	26.3	26.6	26.8	26.8	26.7	26.5	26.4

Table III.1.140: Total cost of ageing as % of GDP - High life expectancy (+2 years)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.7	25.6	26.7	27.7	28.6	29.5	30.2	30.9	31.4	31.7	32.0	32.2
BG	2.6	16.1	16.6	16.7	16.8	17.1	17.6	18.2	18.8	18.9	18.8	18.7
CZ	7.2	18.6	20.1	20.6	21.3	22.4	23.7	24.9	25.9	26.4	26.2	25.7
DK	2.3	25.4	25.4	25.8	26.4	26.7	26.9	27.1	27.3	27.4	27.6	27.8
DE	3.8	23.3	24.0	24.9	25.7	26.0	26.3	26.6	26.9	27.0	27.1	27.1
EE	-1.2	17.2	16.7	16.7	16.5	16.4	16.3	16.3	16.4	16.4	16.3	16.0
IE	6.8	13.2	14.3	15.1	15.9	16.8	17.6	18.3	18.8	19.2	19.6	20.0
EL	-3.8	23.6	22.1	21.4	21.5	21.4	21.4	21.4	20.7	19.9	19.9	19.8
ES	-0.1	22.3	22.9	22.6	23.0	23.6	24.4	24.6	24.3	23.7	22.9	22.2
FR	0.0	29.5	30.6	31.0	31.2	31.1	30.8	30.7	30.4	30.0	29.6	29.4
HR	0.5	21.5	22.1	22.3	22.3	22.0	21.9	21.9	22.0	22.0	22.1	22.0
IT	0.3	26.5	27.6	28.8	29.6	29.9	29.9	29.3	28.3	27.5	26.9	26.7
CY	2.2	17.3	18.0	18.3	18.3	18.5	18.2	18.2	18.4	19.0	19.6	19.5
LV	-0.5	15.8	16.3	16.2	16.1	15.7	15.5	15.7	16.0	15.9	15.6	15.3
LT	2.2	15.3	15.8	16.6	17.1	17.3	17.5	17.7	17.9	18.0	17.8	17.5
LU	11.2	16.9	17.7	18.9	19.9	20.9	22.1	23.5	24.9	26.1	27.1	28.1
HU	6.1	17.1	17.4	17.1	17.8	19.0	20.4	21.2	21.8	22.5	23.0	23.2
MT	9.2	17.9	18.2	17.9	18.2	18.7	19.6	20.9	22.6	24.4	25.9	27.0
NL	5.7	21.0	21.8	23.0	24.5	25.4	25.7	26.0	26.3	26.4	26.5	26.7
AT	5.0	26.7	28.2	29.1	29.9	30.1	30.4	30.9	31.3	31.5	31.5	31.7
PL	4.4	20.1	22.1	22.2	22.2	22.3	22.6	23.2	23.9	24.4	24.5	24.5
PT	-1.2	23.1	23.7	24.8	25.6	25.9	25.7	24.9	23.9	23.0	22.4	21.9
RO	5.9	14.9	20.1	20.1	21.0	21.9	22.7	23.1	23.0	22.4	21.7	20.8
SI	10.2	20.7	21.6	22.7	24.3	26.2	28.0	29.4	30.4	30.7	30.8	30.9
SK	11.8	18.3	20.8	21.9	23.0	24.3	25.8	27.3	28.8	29.8	30.1	30.1
FI	3.7	26.5	27.5	27.9	27.8	27.5	27.4	27.7	28.1	28.8	29.5	30.2
SE	3.0	24.1	24.5	24.3	24.4	24.5	24.6	25.1	25.8	26.3	26.6	27.1
NO	7.9	29.2	30.4	31.5	32.4	33.1	33.6	34.3	35.1	35.9	36.5	37.2
EA	2.3	24.6	25.4	26.1	26.7	27.0	27.2	27.4	27.3	27.1	26.9	26.8
EU	2.5	24.0	24.9	25.5	26.0	26.3	26.6	26.8	26.8	26.7	26.6	26.5

Table III.1.141: Total cost of ageing as % of GDP - Lower fertility (-20%)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.5	25.6	26.7	27.5	28.1	28.7	29.6	30.5	31.3	31.9	32.4	33.0
BG	3.3	16.1	16.6	16.5	16.4	16.6	17.1	18.0	18.7	19.1	19.1	19.4
CZ	7.8	18.6	20.1	20.5	20.9	21.9	23.3	24.7	25.9	26.6	26.6	26.4
DK	2.9	25.4	25.4	25.4	25.8	26.1	26.3	26.7	27.1	27.4	27.8	28.4
DE	4.3	23.3	24.0	24.8	25.4	25.6	26.0	26.4	26.8	27.1	27.3	27.6
EE	-1.8	17.2	16.7	16.5	16.1	15.9	15.8	15.8	15.9	15.8	15.7	15.5
IE	7.6	13.2	14.2	15.0	15.7	16.5	17.4	18.3	19.0	19.5	20.1	20.7
EL	-2.6	23.6	22.1	21.5	21.2	21.6	21.6	21.8	21.2	20.8	20.6	20.9
ES	0.8	22.3	22.9	22.5	22.8	23.4	24.2	24.7	24.6	24.2	23.6	23.1
FR	1.3	29.5	30.6	30.8	30.7	30.6	30.5	30.7	30.7	30.7	30.5	30.7
HR	0.9	21.5	22.0	21.8	21.6	21.2	21.2	21.4	21.6	21.9	22.2	22.4
IT	1.0	26.5	27.6	28.8	29.5	29.8	29.8	29.3	28.5	27.9	27.5	27.4
CY	2.6	17.3	18.2	17.9	18.0	17.9	18.0	18.0	18.7	19.1	19.9	19.9
LV	-0.4	15.8	16.3	16.1	15.8	15.3	15.1	15.5	15.8	15.8	15.5	15.4
LT	1.6	15.3	15.8	16.4	16.7	16.8	17.0	17.2	17.4	17.5	17.2	17.0
LU	12.8	16.9	17.7	18.8	19.6	20.6	22.0	23.6	25.3	26.9	28.3	29.7
HU	7.0	17.1	17.4	17.0	17.5	18.6	20.1	21.0	21.8	22.8	23.5	24.1
MT	9.2	17.9	18.2	17.7	17.7	18.1	19.1	20.4	22.3	24.1	25.8	27.0
NL	7.1	21.0	21.8	23.0	24.2	25.1	25.6	26.2	26.6	27.0	27.4	28.1
AT	4.7	26.7	28.2	28.9	29.4	29.5	29.8	30.3	30.8	31.0	31.1	31.5
PL	5.3	20.1	22.2	22.1	21.9	21.9	22.3	23.1	24.1	24.8	25.2	25.4
PT	0.1	23.1	23.8	24.7	25.3	25.4	25.4	25.0	24.3	23.7	23.3	23.1
RO	7.1	14.9	20.1	20.0	20.7	21.4	22.3	23.1	23.3	22.9	22.5	22.0
SI	11.0	20.7	21.6	22.5	23.9	25.6	27.4	29.1	30.3	30.8	31.2	31.7
SK	13.5	18.3	20.8	21.8	22.7	23.9	25.5	27.4	29.3	30.6	31.3	31.7
FI	5.3	26.5	27.5	27.8	27.5	27.2	27.2	27.7	28.4	29.5	30.6	31.8
SE	3.8	24.1	24.5	24.1	24.0	24.1	24.2	24.9	25.8	26.5	27.1	27.8
NO	8.9	29.2	30.4	31.3	31.9	32.5	33.1	34.0	35.1	36.2	37.1	38.2
EA	3.1	24.6	25.4	25.9	26.4	26.7	27.0	27.3	27.4	27.4	27.5	27.6
EU	3.3	24.0	24.9	25.3	25.7	26.0	26.3	26.7	26.9	27.1	27.1	27.3

Table III.1.142: Total cost of ageing as % of GDP - Higher TFP growth (+0.2 pps)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.3	25.6	26.6	27.5	28.2	28.7	29.2	29.6	29.8	29.9	29.8	29.9
BG	1.8	16.1	16.6	16.6	16.6	16.8	17.2	17.8	18.3	18.3	18.1	17.9
CZ	5.9	18.6	20.1	20.6	21.1	22.1	23.2	24.3	25.2	25.4	25.1	24.5
DK	1.6	25.4	25.4	25.7	26.2	26.5	26.5	26.6	26.7	26.8	26.9	27.0
DE	3.2	23.3	24.0	24.9	25.6	25.9	26.1	26.3	26.4	26.5	26.5	26.5
EE	-1.7	17.2	16.6	16.6	16.4	16.2	16.1	16.1	16.1	16.0	15.9	15.5
IE	6.2	13.2	14.3	15.2	15.9	16.7	17.4	18.1	18.5	18.8	19.1	19.4
EL	-4.3	23.6	22.0	21.4	21.1	21.3	21.1	21.1	20.2	19.6	19.2	19.2
ES	-1.3	22.3	22.9	22.5	22.7	23.2	23.8	23.9	23.5	22.7	21.8	21.0
FR	-1.8	29.4	30.5	30.7	30.6	30.3	29.8	29.4	28.9	28.5	27.9	27.7
HR	-0.6	21.5	22.0	22.1	21.9	21.6	21.3	21.2	21.1	21.1	21.0	20.9
IT	-0.6	26.5	27.5	28.6	29.2	29.4	29.3	28.5	27.4	26.6	26.1	25.9
CY	1.9	17.3	18.2	18.1	18.4	18.4	18.3	18.1	18.6	18.8	19.4	19.2
LV	-0.7	15.8	16.3	16.3	16.1	15.7	15.4	15.6	15.8	15.7	15.4	15.1
LT	1.6	15.3	15.8	16.5	17.0	17.2	17.2	17.3	17.5	17.5	17.2	16.9
LU	9.6	16.9	17.7	18.8	19.8	20.6	21.5	22.7	23.9	24.9	25.7	26.5
HU	5.0	17.1	17.3	17.1	17.7	18.8	20.0	20.6	21.0	21.6	21.9	22.1
MT	7.4	17.9	18.2	17.9	18.0	18.4	19.1	20.2	21.7	23.2	24.5	25.3
NL	5.4	21.0	21.8	23.1	24.5	25.4	25.6	25.9	25.9	26.1	26.1	26.4
AT	3.5	26.7	28.2	29.1	29.8	29.8	29.9	30.1	30.3	30.3	30.2	30.2
PL	3.6	20.1	22.1	22.3	22.2	22.1	22.3	22.8	23.4	23.8	23.8	23.8
PT	-2.0	23.1	23.7	24.6	25.1	25.2	24.8	24.0	23.0	22.1	21.5	21.1
RO	4.6	14.9	20.2	20.3	21.3	22.0	22.5	22.6	22.3	21.5	20.4	19.5
SI	8.5	20.7	21.6	22.7	24.1	25.8	27.3	28.6	29.3	29.4	29.3	29.2
SK	10.4	18.3	20.8	21.9	22.9	24.1	25.3	26.6	28.0	28.7	28.8	28.6
FI	2.9	26.5	27.5	27.9	27.7	27.2	27.0	27.1	27.5	28.1	28.7	29.4
SE	2.4	24.1	24.4	24.2	24.2	24.3	24.3	24.7	25.4	25.9	26.1	26.4
NO	7.1	29.2	30.4	31.4	32.2	32.8	33.3	33.8	34.6	35.3	35.8	36.3
EA	1.2	24.6	25.4	26.0	26.4	26.6	26.7	26.7	26.5	26.2	25.9	25.8
EU	1.5	24.0	24.9	25.4	25.8	26.0	26.1	26.1	26.0	25.9	25.6	25.5

Table III.1.143: Total cost of ageing as % of GDP - Higher employment rate of older workers (+10 pps)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.1	25.6	26.1	26.2	26.9	27.7	28.5	28.9	29.2	29.4	29.6	29.6
BG	1.6	16.1	16.3	16.1	15.9	16.0	16.4	16.8	17.4	17.8	17.8	17.6
CZ	6.1	18.6	19.9	20.1	20.6	21.1	22.0	23.3	24.4	25.1	25.2	24.6
DK	0.7	25.4	25.2	25.2	25.5	25.7	25.8	26.0	26.0	25.9	26.0	26.1
DE	2.8	23.3	23.8	24.2	24.9	25.4	25.7	25.8	25.9	26.0	26.1	26.1
EE	-1.7	17.2	16.5	16.4	16.2	16.1	16.0	15.9	15.9	15.9	15.9	15.6
IE	5.7	13.2	14.2	14.9	15.6	16.3	17.0	17.5	18.0	18.3	18.6	18.8
EL	-4.0	23.6	21.9	21.0	20.7	20.9	20.7	20.8	20.1	19.7	19.4	19.6
ES	-2.0	22.3	22.4	21.1	20.6	20.7	21.2	21.5	21.6	21.3	20.7	20.3
FR	-1.4	29.5	30.3	30.1	30.2	30.1	29.8	29.5	29.2	28.9	28.4	28.1
HR	-1.3	21.5	21.5	21.3	21.2	20.8	20.5	20.4	20.4	20.3	20.3	20.2
IT	-0.1	26.5	27.0	26.9	27.8	28.5	29.0	28.8	28.2	27.3	26.6	26.3
CY	1.6	17.3	18.0	17.8	18.2	18.2	18.1	17.8	18.1	18.3	18.9	18.9
LV	-0.6	15.8	16.1	15.9	15.7	15.5	15.3	15.4	15.6	15.7	15.4	15.2
LT	1.4	15.3	15.7	16.3	16.7	17.0	17.1	17.1	17.2	17.2	17.0	16.7
LU	10.1	16.9	17.6	18.4	19.3	20.2	21.3	22.4	23.6	24.8	26.0	26.9
HU	4.5	17.1	17.2	16.9	17.3	18.0	19.3	20.0	20.4	21.0	21.4	21.6
MT	7.4	17.9	18.0	17.6	17.8	18.2	19.0	20.0	21.3	22.8	24.3	25.2
NL	4.7	21.0	21.6	22.5	23.8	24.7	25.1	25.4	25.4	25.4	25.5	25.7
AT	3.2	26.7	27.7	27.6	28.4	28.8	29.1	29.4	29.6	29.8	29.8	29.9
PL	3.4	20.1	21.8	21.9	21.8	21.8	21.8	22.2	22.8	23.4	23.7	23.5
PT	-1.9	23.1	23.5	24.3	24.8	24.8	24.5	23.9	23.1	22.3	21.7	21.2
RO	4.5	14.9	20.1	19.4	20.1	20.6	21.3	21.4	21.5	21.0	20.3	19.4
SI	7.2	20.7	21.1	21.5	22.7	24.1	25.5	26.6	27.4	27.9	28.1	27.9
SK	10.1	18.3	20.5	21.4	22.3	23.4	24.5	25.7	27.0	28.0	28.5	28.4
FI	2.7	26.5	27.0	27.0	26.9	26.7	26.6	26.7	27.0	27.7	28.5	29.2
SE	1.7	24.1	24.3	23.7	23.7	23.8	23.9	24.2	24.7	25.2	25.5	25.8
NO	6.0	29.2	30.3	30.7	31.4	32.0	32.5	33.0	33.6	34.2	34.7	35.2
EA	1.1	24.6	25.0	25.1	25.5	25.9	26.1	26.2	26.1	26.0	25.8	25.7
EU	1.3	24.0	24.6	24.5	24.9	25.2	25.5	25.6	25.6	25.6	25.4	25.3

Table III.1.144: Total cost of ageing as % of GDP - Higher migration (+33%)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.5	25.6	26.6	27.5	28.2	28.8	29.3	29.7	29.9	29.9	30.0	30.1
BG	2.0	16.1	16.6	16.7	16.8	17.0	17.4	18.0	18.5	18.5	18.2	18.0
CZ	5.7	18.6	20.0	20.4	21.0	22.0	23.0	24.0	24.8	25.0	24.7	24.2
DK	1.0	25.4	25.4	25.6	26.1	26.2	26.2	26.3	26.3	26.3	26.3	26.4
DE	2.7	23.3	23.9	24.7	25.4	25.6	25.7	25.9	26.0	26.0	26.0	26.0
EE	-1.5	17.2	16.6	16.6	16.4	16.3	16.1	16.1	16.2	16.1	16.0	15.7
IE	6.0	13.2	14.2	15.0	15.7	16.5	17.2	17.8	18.2	18.5	18.8	19.1
EL	-4.3	23.6	22.1	21.7	21.5	21.7	21.5	21.4	20.5	19.8	19.3	19.3
ES	-1.1	22.3	22.8	22.4	22.6	23.1	23.6	23.6	23.3	22.6	21.8	21.2
FR	-1.0	29.4	30.5	30.9	30.9	30.8	30.4	30.1	29.8	29.3	28.8	28.5
HR	-0.5	21.5	22.0	22.2	22.0	21.7	21.5	21.3	21.2	21.2	21.1	21.0
IT	-0.8	26.5	27.5	28.6	29.3	29.4	29.2	28.3	27.1	26.3	25.8	25.6
CY	1.1	17.3	18.1	17.9	18.3	18.2	18.1	17.7	18.0	18.1	18.5	18.4
LV	-0.5	15.8	16.3	16.4	16.3	16.0	15.7	15.9	16.1	16.1	15.7	15.4
LT	1.4	15.3	15.8	16.5	16.9	17.2	17.3	17.4	17.5	17.4	17.1	16.8
LU	9.0	16.9	17.4	18.4	19.1	19.9	20.8	21.9	22.9	24.0	25.0	25.9
HU	4.9	17.1	17.3	17.0	17.6	18.7	19.9	20.5	21.0	21.5	21.8	22.0
MT	6.6	17.9	17.8	17.4	17.5	17.8	18.5	19.5	20.8	22.2	23.5	24.4
NL	4.7	21.0	21.7	23.0	24.3	25.0	25.3	25.4	25.4	25.4	25.5	25.7
AT	2.7	26.7	28.1	28.8	29.4	29.4	29.5	29.7	29.7	29.6	29.4	29.4
PL	3.7	20.1	22.1	22.2	22.1	22.1	22.3	22.8	23.4	23.9	23.9	23.8
PT	-1.7	23.1	23.7	24.8	25.6	25.7	25.4	24.6	23.5	22.6	21.9	21.4
RO	5.4	14.9	20.2	20.3	21.2	22.1	22.8	23.2	23.0	22.3	21.4	20.3
SI	8.2	20.7	21.5	22.5	23.9	25.5	27.0	28.1	28.8	28.9	29.0	28.9
SK	10.5	18.3	20.8	21.8	22.9	24.2	25.5	26.8	28.2	28.9	29.0	28.8
FI	2.5	26.5	27.4	27.7	27.5	27.1	26.8	26.9	27.2	27.8	28.4	29.0
SE	1.6	24.1	24.3	24.0	23.9	23.8	23.8	24.1	24.6	25.0	25.3	25.6
NO	5.8	29.2	30.2	31.1	31.7	32.1	32.4	32.8	33.4	34.0	34.5	35.0
EA	1.1	24.6	25.3	25.9	26.4	26.6	26.6	26.6	26.3	26.1	25.8	25.7
EU	1.4	24.0	24.8	25.3	25.7	25.9	26.0	26.0	25.9	25.7	25.5	25.4

Table III.1.145: Total cost of ageing as % of GDP - Lower migration (-33%)

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.4	25.6	26.8	27.8	28.7	29.6	30.3	30.9	31.5	31.7	31.9	32.0
BG	2.2	16.1	16.6	16.6	16.6	16.9	17.3	17.9	18.5	18.5	18.3	18.2
CZ	6.7	18.6	20.2	20.7	21.4	22.5	23.8	25.1	26.1	26.3	25.9	25.2
DK	2.0	25.4	25.4	25.7	26.3	26.6	26.6	26.8	26.9	27.0	27.2	27.5
DE	4.0	23.3	24.0	25.0	25.8	26.2	26.5	26.8	27.1	27.2	27.3	27.2
EE	-1.6	17.2	16.7	16.7	16.4	16.3	16.1	16.2	16.2	16.1	16.0	15.6
IE	6.5	13.2	14.4	15.3	16.1	17.0	17.8	18.5	19.0	19.3	19.5	19.7
EL	-3.1	23.6	22.1	21.6	21.4	21.8	21.8	21.9	21.1	20.6	20.3	20.5
ES	0.5	22.3	23.1	22.8	23.3	24.1	25.0	25.4	25.2	24.6	23.7	22.9
FR	-0.6	29.4	30.7	31.0	31.1	31.0	30.7	30.4	30.0	29.6	29.1	28.9
HR	0.0	21.5	22.0	22.2	22.0	21.7	21.6	21.5	21.5	21.6	21.6	21.5
IT	0.9	26.5	27.7	29.1	30.1	30.6	30.7	30.1	29.1	28.3	27.6	27.3
CY	3.1	17.3	18.4	18.5	18.9	18.9	18.9	18.8	19.5	20.0	20.7	20.4
LV	-0.7	15.8	16.3	16.2	16.0	15.6	15.3	15.5	15.8	15.7	15.3	15.1
LT	1.8	15.3	15.8	16.5	17.0	17.2	17.2	17.3	17.5	17.6	17.4	17.1
LU	12.4	16.9	18.0	19.4	20.6	21.9	23.3	24.9	26.4	27.6	28.5	29.3
HU	5.8	17.1	17.4	17.2	17.8	19.1	20.5	21.2	21.8	22.5	22.8	22.8
MT	10.1	17.9	18.6	18.4	18.7	19.3	20.2	21.7	23.7	25.7	27.1	28.0
NL	6.1	21.0	21.8	23.2	24.6	25.6	25.9	26.2	26.4	26.6	26.8	27.1
AT	5.1	26.7	28.3	29.3	30.1	30.3	30.5	31.0	31.4	31.7	31.7	31.8
PL	4.3	20.1	22.2	22.3	22.2	22.3	22.6	23.2	23.9	24.4	24.5	24.4
PT	-1.0	23.1	23.7	24.9	25.7	25.9	25.7	25.0	23.9	23.1	22.5	22.1
RO	4.7	14.9	19.9	19.8	20.6	21.3	21.9	22.2	22.0	21.3	20.5	19.6
SI	9.6	20.7	21.7	22.9	24.5	26.4	28.2	29.6	30.4	30.6	30.5	30.3
SK	11.1	18.3	20.8	21.9	22.9	24.3	25.6	27.1	28.6	29.4	29.6	29.4
FI	4.3	26.5	27.5	28.0	28.0	27.6	27.6	28.0	28.5	29.3	30.1	30.8
SE	3.2	24.1	24.6	24.5	24.6	24.8	24.9	25.4	26.2	26.8	27.0	27.3
NO	8.8	29.2	30.6	31.8	32.9	33.7	34.3	35.1	36.0	36.9	37.5	38.0
EA	2.4	24.6	25.5	26.2	26.8	27.2	27.5	27.6	27.5	27.3	27.1	27.0
EU	2.5	24.0	25.0	25.6	26.1	26.5	26.8	27.0	27.0	26.9	26.7	26.6

Table III.1.146: Total cost of ageing as % of GDP - Policy scenario linking retirement age to increases in life expectancy

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.6	25.6	26.7	27.6	28.4	28.9	29.2	29.5	29.6	29.5	29.3	29.1
BG	0.9	16.1	16.5	16.4	16.3	16.4	16.6	17.1	17.5	17.6	17.3	17.0
CZ	4.3	18.6	20.1	20.5	21.0	21.7	22.6	23.4	24.0	24.2	23.7	22.9
DK	1.5	25.4	25.4	25.7	26.2	26.4	26.4	26.5	26.6	26.6	26.8	26.9
DE	2.0	23.3	24.0	24.8	25.4	25.6	25.6	25.7	25.7	25.7	25.5	25.3
EE	-1.6	17.2	16.7	16.6	16.3	16.2	16.1	16.1	16.1	16.0	15.9	15.6
IE	4.9	13.2	14.3	15.1	15.7	16.4	17.0	17.4	17.7	17.9	18.0	18.0
EL	-3.7	23.6	22.1	21.6	21.5	21.8	21.7	21.7	20.8	20.2	19.8	19.9
ES	-1.5	22.3	22.7	22.2	22.3	22.7	23.3	23.3	23.0	22.4	21.5	20.8
FR	-3.5	29.4	29.9	29.7	29.4	29.0	28.5	27.9	27.6	27.1	26.4	25.9
HR	-1.8	21.5	22.0	22.0	21.8	21.3	20.9	20.6	20.4	20.2	20.0	19.7
IT	-0.1	26.5	27.6	28.9	29.7	30.0	29.9	29.1	28.0	27.2	26.6	26.4
CY	2.0	17.3	18.2	18.2	18.6	18.5	18.5	18.2	18.7	18.9	19.5	19.3
LV	-0.9	15.8	16.3	16.1	15.9	15.3	15.0	15.0	15.1	15.2	15.1	15.0
LT	0.7	15.3	15.8	16.4	16.7	16.8	16.8	16.7	16.6	16.6	16.4	16.0
LU	8.5	16.9	17.5	18.3	19.3	19.9	21.0	22.0	23.0	23.8	24.6	25.4
HU	2.9	17.1	17.2	16.9	17.2	17.9	19.0	19.8	19.9	20.1	20.2	20.0
MT	7.3	17.9	18.2	17.9	18.0	18.4	19.1	20.2	21.6	23.1	24.3	25.1
NL	4.8	21.0	21.8	23.0	24.4	25.1	25.4	25.5	25.6	25.6	25.6	25.8
AT	2.0	26.7	28.0	28.7	29.3	29.2	29.2	29.3	29.2	29.0	28.8	28.7
PL	2.9	20.1	21.8	21.6	21.4	21.4	21.5	22.0	22.7	23.3	23.3	23.0
PT	-1.8	23.1	23.7	24.8	25.5	25.7	25.3	24.5	23.4	22.5	21.8	21.3
RO	3.7	14.9	19.8	19.7	20.2	20.7	21.2	21.3	21.1	20.4	19.6	18.6
SI	6.7	20.7	21.6	22.7	24.1	25.5	26.8	27.7	28.1	28.1	27.8	27.3
SK	8.0	18.3	20.7	21.7	22.3	23.0	23.7	24.7	25.8	26.7	26.8	26.3
FI	3.4	26.5	27.5	27.9	27.7	27.3	27.2	27.4	27.8	28.5	29.2	29.9
SE	0.9	24.1	24.3	23.7	23.6	23.5	23.5	23.9	24.1	24.6	24.9	24.9
NO	5.9	29.2	30.3	31.3	31.9	32.4	32.8	33.2	33.7	34.3	34.7	35.1
EA	0.4	24.6	25.2	25.7	26.1	26.3	26.3	26.1	25.9	25.6	25.2	25.0
EU	0.6	24.0	24.7	25.1	25.4	25.6	25.6	25.5	25.4	25.2	24.9	24.6

Table III.1.147: Total cost of ageing as % of GDP - Lagged recovery

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	5.4	25.6	27.4	27.7	28.5	29.3	29.8	30.3	30.7	30.8	30.9	31.0
BG	2.0	16.1	17.0	16.7	16.7	16.9	17.3	17.9	18.4	18.5	18.2	18.1
CZ	6.2	18.6	20.4	20.6	21.2	22.3	23.5	24.6	25.4	25.7	25.3	24.8
DK	1.5	25.4	25.8	25.7	26.2	26.5	26.5	26.6	26.7	26.7	26.8	27.0
DE	3.4	23.3	24.5	25.0	25.8	26.1	26.3	26.5	26.7	26.7	26.7	26.7
EE	-1.4	17.2	16.9	16.9	16.7	16.5	16.4	16.4	16.5	16.4	16.2	15.9
IE	6.3	13.2	14.5	15.2	15.9	16.7	17.5	18.1	18.6	18.9	19.2	19.4
EL	-3.8	23.6	23.0	21.7	21.6	21.8	21.6	21.6	20.8	20.2	19.7	19.7
ES	-0.5	22.3	23.6	22.7	23.0	23.6	24.2	24.3	24.0	23.4	22.6	21.8
FR	-0.8	29.4	31.4	31.0	31.1	30.9	30.5	30.2	29.8	29.3	28.8	28.6
HR	-0.2	21.5	22.6	22.3	22.1	21.8	21.6	21.5	21.4	21.4	21.4	21.3
IT	0.2	26.5	28.5	28.9	29.8	30.1	30.0	29.2	28.2	27.5	27.0	26.7
CY	2.0	17.3	18.7	18.3	18.6	18.6	18.5	18.2	18.6	18.9	19.4	19.3
LV	-0.5	15.8	16.7	16.6	16.5	16.1	15.8	16.0	16.2	16.1	15.7	15.4
LT	1.8	15.3	16.0	16.7	17.2	17.5	17.5	17.6	17.7	17.7	17.5	17.1
LU	10.4	16.9	18.1	18.9	19.9	20.9	22.0	23.2	24.5	25.5	26.5	27.3
HU	5.6	17.1	17.7	17.1	17.8	18.9	20.3	20.9	21.5	22.1	22.5	22.7
MT	8.2	17.9	18.4	17.9	18.0	18.5	19.3	20.5	22.1	23.8	25.2	26.1
NL	5.4	21.0	22.1	23.1	24.5	25.4	25.6	25.9	25.9	26.1	26.1	26.4
AT	3.8	26.7	28.7	29.1	29.8	29.9	30.0	30.3	30.6	30.6	30.5	30.5
PL	4.0	20.1	22.4	22.3	22.2	22.3	22.6	23.1	23.8	24.2	24.3	24.1
PT	-1.3	23.1	24.4	25.1	25.8	25.9	25.6	24.8	23.7	22.9	22.2	21.8
RO	5.0	14.9	20.6	20.3	21.2	22.0	22.6	22.8	22.6	21.8	20.9	19.9
SI	8.8	20.7	22.0	22.7	24.2	26.0	27.6	28.8	29.6	29.7	29.6	29.5
SK	10.8	18.3	21.2	21.9	23.0	24.3	25.6	27.0	28.4	29.2	29.3	29.1
FI	3.3	26.5	28.0	27.9	27.7	27.3	27.2	27.4	27.8	28.5	29.2	29.8
SE	2.4	24.1	24.8	24.3	24.3	24.3	24.4	24.7	25.4	25.9	26.1	26.4
NO	7.2	29.2	30.8	31.5	32.3	32.9	33.4	33.9	34.7	35.3	35.9	36.4
EA	1.8	24.6	26.0	26.2	26.7	27.0	27.1	27.1	27.0	26.7	26.5	26.3
EU	2.0	24.0	25.5	25.5	26.0	26.3	26.5	26.5	26.5	26.3	26.1	26.0

Table III.1.148: Total cost of ageing as % of GDP - Adverse structural

Country	Ch 19-70	2019	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.5	25.6	27.4	28.0	29.0	30.0	30.8	31.5	32.1	32.5	32.7	33.0
BG	2.5	16.1	16.9	16.9	17.0	17.2	17.7	18.4	18.9	19.0	18.7	18.6
CZ	6.9	18.6	20.5	21.0	21.6	22.7	24.0	25.2	26.1	26.4	26.1	25.5
DK	1.7	25.4	25.7	26.1	26.6	26.8	26.8	26.9	26.9	26.9	27.0	27.2
DE	3.7	23.3	24.5	25.2	25.9	26.3	26.5	26.7	26.9	27.0	27.0	27.0
EE	-1.1	17.2	17.1	17.0	16.8	16.7	16.6	16.6	16.7	16.6	16.5	16.1
IE	6.7	13.2	14.6	15.5	16.2	17.1	17.9	18.6	19.0	19.3	19.6	19.8
EL	-2.9	23.6	23.1	21.8	21.9	22.3	22.2	22.3	21.6	21.0	20.6	20.7
ES	1.0	22.3	23.7	23.0	23.6	24.3	25.1	25.3	25.1	24.6	23.9	23.3
FR	0.9	29.4	31.5	31.3	31.6	31.6	31.5	31.4	31.2	30.9	30.4	30.3
HR	0.6	21.5	22.6	22.5	22.5	22.2	22.0	22.0	22.0	22.1	22.1	22.1
IT	1.4	26.5	28.6	29.1	30.3	30.9	31.1	30.4	29.5	28.7	28.2	27.9
CY	2.3	17.3	18.8	18.6	19.1	19.1	19.1	18.8	19.2	19.4	19.9	19.7
LV	-0.1	15.8	16.8	16.8	16.7	16.3	16.0	16.3	16.5	16.4	16.0	15.7
LT	2.0	15.3	16.0	16.8	17.3	17.6	17.7	17.8	17.9	17.9	17.7	17.3
LU	11.8	16.9	18.1	19.3	20.4	21.5	22.8	24.3	25.7	26.8	27.8	28.7
HU	6.9	17.1	17.8	17.5	18.2	19.5	21.1	21.9	22.6	23.3	23.8	24.0
MT	9.7	17.9	18.6	18.4	18.6	19.1	19.9	21.3	23.1	24.9	26.4	27.5
NL	5.6	21.0	22.0	23.3	24.7	25.5	25.8	26.0	26.1	26.2	26.3	26.6
AT	4.5	26.7	28.7	29.2	29.9	30.1	30.4	30.7	31.1	31.1	31.1	31.2
PL	4.8	20.1	22.5	22.7	22.7	22.8	23.2	23.8	24.5	25.0	25.1	25.0
PT	0.1	23.1	24.4	25.2	26.1	26.6	26.5	25.9	25.0	24.2	23.6	23.2
RO	6.6	14.9	20.7	20.8	21.7	22.6	23.5	24.0	23.9	23.2	22.4	21.5
SI	10.0	20.7	22.1	23.2	24.8	26.7	28.4	29.8	30.6	30.8	30.8	30.7
SK	11.9	18.3	21.3	22.2	23.4	24.8	26.3	27.7	29.3	30.1	30.3	30.1
FI	4.4	26.5	28.0	28.2	28.2	27.9	27.9	28.2	28.7	29.4	30.2	30.9
SE	2.8	24.1	24.8	24.6	24.7	24.7	24.7	25.1	25.8	26.3	26.5	26.8
NO	7.7	29.2	31.0	32.0	32.8	33.4	33.9	34.4	35.2	35.9	36.4	37.0
EA	2.8	24.6	26.1	26.4	27.1	27.5	27.8	27.8	27.8	27.6	27.4	27.3
EU	2.9	24.0	25.5	25.8	26.4	26.8	27.1	27.3	27.3	27.2	27.0	27.0

Part IV

Statistical Annex – COUNTRY FICHES

1. BELGIUM

Belgium							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.58	1.59	1.62	1.64	1.66	1.68
Life expectancy at birth							
males	6.5	79.8	81.2	82.6	83.9	85.2	86.3
females	6.0	84.3	85.7	87.0	88.2	89.3	90.3
Life expectancy at 65							
males	4.7	18.9	19.9	20.9	21.8	22.7	23.6
females	4.6	22.2	23.2	24.2	25.1	26.0	26.8
Net migration (thousand)	:	45.0	20.5	19.2	19.8	20.4	20.5
Net migration as % of population	:	0.4	0.2	0.2	0.2	0.2	0.2
Population (million)	0.4	11.5	11.8	11.9	11.9	11.9	11.8
Young population (0-19) as % of total population	-2.9	22.4	21.1	20.1	20.1	19.9	19.5
Prime-age population (25-54) as % of total population	-4.7	39.5	37.5	37.1	36.1	35.7	34.8
Working-age population (20-64) as % of total population	-6.1	58.6	56.2	54.7	53.5	52.8	52.5
Elderly population (65+) as % of total population	8.9	19.0	22.8	25.2	26.4	27.4	28.0
Very elderly population (80+) as % of total population	6.0	5.7	6.7	8.6	10.3	10.9	11.7
Very elderly population (80+) as % of elderly population	11.9	29.8	29.3	34.2	39.1	39.7	41.7
Very elderly population (80+) as % of working-age population	12.5	9.7	11.9	15.7	19.2	20.6	22.2
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.2	1.5	0.9	1.3	1.3	1.4	1.4
Employment (growth rate)	0.0	1.0	0.2	-0.2	-0.2	-0.1	-0.1
Labour input: hours worked (growth rate)	0.0	1.1	0.2	-0.2	-0.2	-0.1	-0.1
Labour productivity per hour (growth rate)	1.2	0.4	0.7	1.5	1.5	1.5	1.5
TFP (growth rate)	0.8	0.1	0.5	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.4	0.3	0.2	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.2	1.0	0.7	1.2	1.3	1.5	1.4
Potential GDP per worker (growth rate)	1.2	0.5	0.7	1.6	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-513	6,723	6,611	6,515	6,386	6,261	6,210
Population growth (20-64)	-0.3	0.2	-0.2	-0.1	-0.2	-0.1	-0.1
Labour force 15-64 (thousands)	-316	5,088	5,131	5,041	4,924	4,823	4,772
Labour force 20-64 (thousands)	-312	5,011	5,047	4,967	4,850	4,748	4,699
Participation rate (20-64)	1.1	74.5	76.4	76.2	76.0	75.8	75.7
Participation rate (20-74)	0.2	64.2	65.0	65.0	64.8	64.3	64.4
youngest (20-24)	3.0	49.7	52.4	53.0	52.7	52.6	52.8
prime-age (25-54)	-1.5	84.8	83.8	83.4	83.3	83.2	83.3
older (55-64)	9.4	54.6	65.9	65.0	64.3	64.0	64.0
very old (65-74)	6.5	4.3	10.5	11.0	10.9	10.7	10.8
Participation rate (20-64) - females	2.0	70.0	72.7	72.6	72.2	72.1	71.9
Participation rate (20-74) - females	1.3	59.7	61.6	61.8	61.4	60.8	61.0
youngest (20-24)	4.1	46.9	50.7	51.2	50.9	50.8	51.0
prime-age (25-54)	-1.4	80.3	79.7	79.1	79.0	78.9	78.9
older (55-64)	12.0	49.2	62.5	62.7	61.4	61.1	61.2
very old (65-74)	7.5	2.9	9.7	10.5	10.6	10.2	10.3
Participation rate (20-64) - males	0.3	79.1	79.9	79.8	79.7	79.5	79.3
Participation rate (20-74) - males	-1.0	68.7	68.5	68.3	68.2	67.7	67.8
youngest (20-24)	2.0	52.5	54.1	54.7	54.4	54.3	54.5
prime-age (25-54)	-1.7	89.3	87.8	87.7	87.6	87.5	87.6
older (55-64)	6.8	60.1	69.1	67.4	67.1	67.0	66.9
very old (65-74)	5.4	5.9	11.3	11.4	11.3	11.2	11.3
Average effective exit age - total (1)	0.9	63.4	64.3	64.3	64.3	64.3	64.3
males	1.0	63.3	64.3	64.3	64.3	64.3	64.3
females	0.8	63.5	64.3	64.3	64.3	64.3	64.3
Employment rate (15-64)	0.1	65.4	65.8	66.1	65.8	65.5	65.5
Employment rate (20-64)	0.3	70.6	71.6	71.5	71.2	71.1	70.9
Employment rate (20-74)	-0.4	60.9	61.1	61.0	60.9	60.3	60.4
Unemployment rate (15-64)	1.0	5.4	6.4	6.4	6.4	6.4	6.4
Unemployment rate (20-64)	1.0	5.2	6.2	6.2	6.2	6.2	6.2
Unemployment rate (20-74)	0.9	5.2	6.1	6.1	6.1	6.1	6.1
Employment (20-64) (in millions)	-0.3	4.7	4.7	4.7	4.5	4.5	4.4
Employment (20-74) (in millions)	-0.3	4.8	4.9	4.8	4.7	4.6	4.5
share of youngest (20-24)	0.2	6%	7%	6%	6%	6%	6%
share of prime-age (25-54)	-5.1	76%	72%	72%	72%	72%	71%
share of older (55-64)	2.9	17%	19%	18%	19%	18%	19%
share of very old (65-74)	2.0	1%	3%	3%	3%	3%	3%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.8	22.5	22.4	21.9	22.6	22.1	23.3
Old-age dependency ratio 20-64 (3)	20.8	32.5	40.5	46.0	49.2	51.8	53.3
Total dependency ratio (4)	19.8	70.8	78.0	82.6	86.7	89.5	90.5
Total economic dependency ratio (5)	21.1	139.3	141.4	147.9	154.4	158.3	160.4
Economic old-age dependency ratio (20-64) (6)	27.0	45.0	53.6	61.2	65.9	69.7	71.9
Economic old-age dependency ratio (20-74) (7)	25.2	44.5	52.0	59.4	64.0	67.5	69.8

Belgium

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	3.0	12.2	14.0	14.9	15.2	15.2	15.2
Of which : Old-age and early pensions	3.8	9.9	11.6	12.9	13.4	13.6	13.7
Disability pensions	-0.2	1.4	1.7	1.5	1.3	1.2	1.2
Survivors' pensions	-0.7	0.9	0.7	0.5	0.4	0.3	0.3
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	3.8	9.7	11.4	12.7	13.3	13.5	13.5
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.1	0.4	0.5	0.6	0.6	0.6	0.6
Public pensions, net	2.5	10.4	11.9	12.7	12.8	12.9	12.8
Public pensions, contributions	:	:	:	:	:	:	:
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	-0.6	85.3%	85.3%	85.0%	84.7%	84.7%	84.7%
Pensioners (public, 1000 persons)	962	2,951	3,410	3,640	3,750	3,836	3,912
Public pensioners aged 65+ (1000 persons)	1,174	2,165	2,619	2,984	3,156	3,271	3,339
Pensioners younger than 65 as % of all pensioners (public)	-12.0	27%	23%	18%	16%	15%	15%
Benefit ratio % (public pensions)	-3.2	45.0	47.4	46.8	45.0	43.3	41.9
Gross replacement rate at retirement % (old-age earnings-related)	-1.9	35.1	39.1	36.7	35.3	33.9	33.2
Average accrual rates % (new pensions, earnings-related)	0.0	1.4	1.4	1.4	1.4	1.4	1.4
Average contributory period, years (new pensions, earnings-related)	2.1	37.5	40.5	39.8	39.7	39.5	39.6
Contributors (public pensions, 1000 persons)	-259	4,861	4,941	4,861	4,747	4,653	4,602
Support ratio (contributors/100 pensioners, public pensions)	-47	165	145	134	127	121	118
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.8	0.0	0.1	0.2	0.4	0.6	0.8
Lower fertility (-20%)	1.8	0.0	0.0	0.0	0.5	1.1	1.8
Higher TFP growth (+0.2 pps)	-1.1	0.0	-0.1	-0.4	-0.7	-0.9	-1.1
TFP risk scenario (-0.2 pps)	1.0	0.0	0.0	0.2	0.5	0.8	1.0
Higher employment rate of older workers (+10 pps)	-0.9	0.0	-1.1	-1.1	-1.0	-0.9	-0.9
Higher migration (+33%)	-0.5	0.0	-0.1	-0.2	-0.4	-0.5	-0.5
Lower migration (-33%)	0.7	0.0	0.1	0.3	0.5	0.7	0.7
Policy scenario linking retirement age to life expectancy	-1.3	0.0	0.0	-0.2	-0.6	-0.9	-1.3
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.1	0.1	0.0	0.0
Adverse macroeconomic scenario - adverse structural	2.0	0.0	0.3	0.7	1.2	1.6	2.0
Offset declining pension benefit ratio	:	:	:	:	:	:	:
Unchanged retirement age	0.3	0.0	0.4	0.4	0.3	0.3	0.3
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	3.0	12.2	14.0	14.9	15.2	15.2	15.2
pps change from 2019 due to:	3.0		1.8	2.7	3.0	3.0	3.0
Dependency ratio	7.2		3.0	4.9	5.9	6.7	7.2
Coverage ratio	-1.8		-0.8	-1.4	-1.7	-1.8	-1.8
Of which: old-age	0.3		-0.2	0.1	0.2	0.3	0.3
early-age	-3.5		0.7	-1.6	-2.9	-3.5	-3.5
cohort effect	-6.4		-3.0	-4.9	-5.7	-6.4	-6.4
Benefit ratio	-1.8		0.0	-0.2	-0.7	-1.3	-1.8
Labour market ratio	-0.3		-0.4	-0.4	-0.3	-0.3	-0.3
Of which: employment rate	-0.1		-0.2	-0.2	-0.1	-0.1	-0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.3		-0.2	-0.3	-0.3	-0.3	-0.3
Interaction effect (residual)	-0.2		-0.1	-0.2	-0.2	-0.2	-0.2
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	3.0	12.2	1.8	0.9	0.2	0.0	0.0
Dependency ratio	7.2		3.0	1.9	1.0	0.8	0.4
Coverage ratio	-1.8		-0.8	-0.7	-0.3	-0.1	0.0
Of which: old-age	0.3		-0.2	0.3	0.1	0.1	0.0
early-age	-3.5		0.7	-2.3	-1.3	-0.6	0.0
cohort effect	-6.4		-3.0	-1.8	-0.8	-0.7	-0.1
Benefit ratio	-1.8		0.0	-0.2	-0.6	-0.6	-0.5
Labour market ratio	-0.3		-0.4	0.0	0.1	0.0	0.0
Of which: employment rate	-0.1		-0.2	0.0	0.1	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.3		-0.2	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.2		-0.1	-0.1	0.0	0.0	0.0

Belgium

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.6	5.7	5.9	6.1	6.2	6.3	6.3
AWG risk scenario	1.2	5.7	6.0	6.4	6.7	6.9	6.9
TFP risk scenario	0.6	5.7	5.9	6.1	6.2	6.3	6.3
Demographic scenario	1.0	5.7	6.0	6.3	6.5	6.6	6.7
High life expectancy scenario (variation of demogr. scenario)	1.2	5.7	6.1	6.4	6.6	6.8	6.9
Healthy ageing scenario	0.1	5.7	5.8	5.9	5.9	5.8	5.8
Death-related cost scenario	0.7	5.7	6.0	6.2	6.3	6.4	6.4
Income elasticity scenario	1.2	5.7	6.1	6.4	6.6	6.8	6.9
EU cost convergence scenario	1.1	5.7	6.1	6.4	6.6	6.7	6.8
Labour intensity scenario	1.5	5.7	6.0	6.4	6.8	7.0	7.2
Sector-specific composite indexation scenario	1.2	5.7	6.1	6.4	6.6	6.8	6.9
Non-demographic determinants scenario	2.4	5.7	6.2	6.8	7.4	7.8	8.1

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.1	2.2	2.5	3.1	3.7	4.1	4.3
AWG risk scenario	3.5	2.2	2.7	3.5	4.4	5.0	5.7
TFP risk scenario	2.1	2.2	2.5	3.1	3.7	4.1	4.3
Demographic scenario	2.1	2.2	2.6	3.2	3.7	4.0	4.3
Base case scenario	2.4	2.2	2.5	3.2	3.9	4.3	4.6
High life expectancy scenario (variation of base case)	3.1	2.2	2.6	3.3	4.2	4.8	5.2
Healthy ageing scenario	1.9	2.2	2.5	3.0	3.6	3.9	4.1
Shift to formal care scenario	2.7	2.2	2.8	3.5	4.2	4.6	4.9
Coverage convergence scenario	2.4	2.2	2.5	3.2	3.9	4.3	4.6
Cost convergence scenario	3.9	2.2	2.7	3.6	4.5	5.3	6.0
Cost and coverage convergence scenario	3.9	2.2	2.7	3.6	4.5	5.3	6.0
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	27%	992	1,086	1,170	1,227	1,241	1,258
Recipients: receiving institutional care	108%	145	173	218	263	286	301
receiving home care	39%	579	655	726	774	789	804
receiving cash benefits	55%	245	280	323	358	370	382

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.4	5.5	5.2	5.0	5.1	5.2	5.1
Number of students (in thousands)							
Total (students/staff in 2019 = 10)	-9.2%	2,418	2,377	2,264	2,263	2,248	2,196
as % of population 5-24	0.1	91.9	90.7	91.7	92.1	91.9	92.0
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.6	0.0	0.2	0.4	0.6	0.6	0.6

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	5.4	25.6	27.6	29.2	30.2	30.7	30.9
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.0	0.0	0.3	0.6	1.1	1.5	2.0
TFP risk scenario (-0.2 pps)	1.0	0.0	0.0	0.2	0.5	0.7	1.0
High life expectancy (+2 years) (8)	1.3	0.0	0.1	0.3	0.6	1.0	1.3
Lower fertility (-20%)	2.1	0.0	-0.1	-0.4	0.3	1.1	2.1
Higher TFP growth (+0.2 pps)	-1.1	0.0	-0.1	-0.4	-0.7	-0.9	-1.1
Higher employment rate of older workers (+10 pps)	-1.3	0.0	-1.5	-1.4	-1.4	-1.4	-1.3
Higher migration (+33%)	-0.8	0.0	-0.1	-0.3	-0.6	-0.8	-0.8
Lower migration (-33%)	1.1	0.0	0.2	0.4	0.7	1.0	1.1
Policy scenario linking retirement age to life expectancy	-1.8	0.0	0.0	-0.3	-0.8	-1.2	-1.8
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	2.1	0.0	0.4	0.8	1.3	1.7	2.1

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

2. BULGARIA

Bulgaria							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.58	1.65	1.68	1.70	1.71	1.71
Life expectancy at birth							
males	11.4	71.5	74.3	76.7	79.0	81.0	82.9
females	8.9	78.8	80.9	82.8	84.6	86.2	87.7
Life expectancy at 65							
males	7.2	14.2	15.9	17.4	18.8	20.1	21.4
females	6.6	18.1	19.6	20.9	22.3	23.5	24.7
Net migration (thousand)	:	-3.9	0.8	3.1	5.5	7.7	10.0
Net migration as % of population	:	-0.1	0.0	0.1	0.1	0.1	0.2
Population (million)	-1.9	7.0	6.4	6.0	5.6	5.3	5.0
Young population (0-19) as % of total population	-0.6	18.9	18.7	17.8	18.2	18.3	18.2
Prime-age population (25-54) as % of total population	-8.5	41.6	37.2	34.3	32.5	33.3	33.1
Working-age population (20-64) as % of total population	-8.8	59.6	57.0	54.7	51.0	49.2	50.8
Elderly population (65+) as % of total population	9.4	21.5	24.3	27.5	30.8	32.5	30.9
Very elderly population (80+) as % of total population	9.1	4.9	6.6	8.3	9.7	12.4	14.0
Very elderly population (80+) as % of elderly population	22.7	22.6	27.3	30.3	31.5	38.1	45.2
Very elderly population (80+) as % of working-age population	19.4	8.1	11.7	15.2	19.1	25.2	27.5
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.2	2.2	1.2	1.2	1.0	1.3	1.2
Employment (growth rate)	-0.9	0.2	-1.3	-1.1	-1.2	-0.5	-0.4
Labour input: hours worked (growth rate)	-0.9	0.2	-1.3	-1.1	-1.2	-0.5	-0.4
Labour productivity per hour (growth rate)	2.1	1.9	2.5	2.3	2.2	1.8	1.5
TFP (growth rate)	1.3	1.3	1.3	1.5	1.4	1.2	1.0
Capital deepening (contribution to labour productivity growth)	0.8	0.7	1.1	0.8	0.8	0.6	0.5
Potential GDP per capita (growth rate)	1.9	2.9	1.9	1.9	1.6	1.9	1.7
Potential GDP per worker (growth rate)	2.1	2.0	2.5	2.3	2.2	1.9	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-1,600	4,159	3,660	3,282	2,874	2,613	2,559
Population growth (20-64)	1.1	-1.4	-0.8	-1.4	-1.3	-0.3	-0.3
Labour force 15-64 (thousands)	-1,284	3,282	2,849	2,532	2,228	2,057	1,998
Labour force 20-64 (thousands)	-1,280	3,264	2,830	2,516	2,214	2,042	1,984
Participation rate (20-64)	-0.9	78.5	77.3	76.7	77.0	78.1	77.5
Participation rate (20-74)	-0.2	66.7	66.1	64.3	63.3	64.5	66.5
youngest (20-24)	0.2	44.2	43.8	44.5	44.4	44.2	44.4
prime-age (25-54)	0.6	85.8	86.2	86.1	86.5	86.6	86.4
older (55-64)	0.6	67.1	66.5	66.5	65.8	67.8	67.7
very old (65-74)	4.9	11.0	14.9	15.3	15.4	14.9	15.9
Participation rate (20-64) - females	-1.1	73.7	72.5	71.9	72.0	73.2	72.6
Participation rate (20-74) - females	1.0	60.7	60.7	59.2	58.4	59.6	61.8
youngest (20-24)	-0.1	38.0	37.3	38.0	37.9	37.7	37.9
prime-age (25-54)	-0.4	81.4	81.6	80.8	81.0	81.3	81.0
older (55-64)	2.2	62.4	62.3	63.7	62.7	64.7	64.6
very old (65-74)	6.5	7.8	12.6	12.9	13.9	13.4	14.3
Participation rate (20-64) - males	-0.9	83.2	82.0	81.2	81.9	82.9	82.3
Participation rate (20-74) - males	-1.7	72.9	71.6	69.4	68.2	69.2	71.1
youngest (20-24)	0.6	49.9	49.9	50.6	50.5	50.3	50.5
prime-age (25-54)	1.5	90.1	90.6	91.1	91.7	91.6	91.5
older (55-64)	-1.4	72.2	70.9	69.3	69.0	70.9	70.7
very old (65-74)	2.3	15.3	17.7	18.1	17.1	16.6	17.6
Average effective exit age - total (1)	0.5	63.9	64.1	64.4	64.4	64.4	64.4
males	0.0	64.7	64.7	64.7	64.7	64.7	64.7
females	0.9	63.2	63.6	64.1	64.1	64.1	64.1
Employment rate (15-64)	-2.7	70.2	67.5	67.2	67.3	67.7	67.5
Employment rate (20-64)	-1.7	75.2	73.3	72.6	73.0	74.0	73.5
Employment rate (20-74)	-0.9	63.9	62.7	61.0	60.0	61.1	63.1
Unemployment rate (15-64)	1.1	4.3	5.4	5.4	5.4	5.4	5.4
Unemployment rate (20-64)	1.1	4.2	5.2	5.3	5.3	5.3	5.3
Unemployment rate (20-74)	1.0	4.2	5.2	5.2	5.2	5.2	5.2
Employment (20-64) (in millions)	-1.2	3.1	2.7	2.4	2.1	1.9	1.9
Employment (20-74) (in millions)	-1.3	3.2	2.8	2.5	2.2	2.0	2.0
share of youngest (20-24)	1.3	4%	5%	5%	5%	5%	5%
share of prime-age (25-54)	-4.7	74%	70%	67%	68%	71%	69%
share of older (55-64)	1.9	19%	21%	23%	22%	18%	21%
share of very old (65-74)	1.4	3%	4%	5%	6%	5%	4%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.1	22.9	25.6	27.8	27.0	22.2	25.0
Old-age dependency ratio 20-64 (3)	24.8	36.0	42.7	50.2	60.5	66.2	60.8
Total dependency ratio (4)	29.0	67.7	75.6	82.7	96.2	103.5	96.7
Total economic dependency ratio (5)	39.6	116.6	129.8	139.3	154.0	160.8	156.1
Economic old-age dependency ratio (20-64) (6)	33.3	44.8	53.9	63.8	76.8	83.9	78.1
Economic old-age dependency ratio (20-74) (7)	31.2	43.5	51.7	60.7	72.5	79.6	74.7

Bulgaria							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	1.4	8.3	8.5	8.6	9.3	9.8	9.7
Of which : Old-age and early pensions	1.5	6.8	6.8	7.0	7.8	8.4	8.3
Disability pensions	-0.1	1.1	1.2	1.2	1.1	1.1	1.0
Survivors' pensions	-0.1	0.3	0.4	0.3	0.3	0.2	0.2
Other	0.0	0.1	0.1	0.1	0.1	0.1	0.2
Earnings-related pensions (old-age and early pensions), gross	1.5	6.8	6.8	7.0	7.8	8.4	8.3
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	0.4	5.0	5.0	5.3	5.4	5.4	5.4
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	-412	2,145	2,030	1,929	1,893	1,844	1,733
Public pensioners aged 65+ (1000 persons)	-72	1,540	1,525	1,507	1,552	1,590	1,468
Pensioners younger than 65 as % of all pensioners (public)	-12.9	28%	25%	22%	18%	14%	15%
Benefit ratio % (public pensions)	-3.2	26.7	25.1	24.0	23.5	23.2	23.5
Gross replacement rate at retirement % (old-age earnings-related)	-6.7	36.2	31.3	31.1	30.0	29.9	29.5
Average accrual rates % (new pensions, earnings-related)	0.0	1.2	1.2	1.2	1.2	1.2	1.2
Average contributory period, years (new pensions, earnings-related)	1.5	34.8	37.0	37.4	37.1	36.8	36.4
Contributors (public pensions, 1000 persons)	-886	2,861	2,621	2,474	2,231	2,050	1,976
Support ratio (contributors/100 pensioners, public pensions)	-19	133	129	128	118	111	114
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.5	0.0	0.1	0.2	0.3	0.4	0.5
Lower fertility (-20%)	1.5	0.0	0.0	0.0	0.3	0.8	1.5
Higher TFP growth (+0.2 pps)	-0.2	0.0	-0.1	-0.1	-0.2	-0.2	-0.2
TFP risk scenario (-0.2 pps)	1.0	0.0	-0.1	0.0	0.3	0.7	1.0
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.4	-0.7	-0.8	-0.5	-0.3
Higher migration (+33%)	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1
Lower migration (-33%)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Policy scenario linking retirement age to life expectancy	-0.8	0.0	-0.2	-0.4	-0.7	-0.7	-0.8
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Adverse macroeconomic scenario - adverse structural	0.4	0.0	0.2	0.3	0.4	0.4	0.4
Offset declining pension benefit ratio	0.4	0.0	0.0	0.0	0.1	0.4	0.4
Unchanged retirement age	0.3	0.0	0.0	0.3	0.3	0.3	0.3
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	1.4	8.3	8.5	8.6	9.3	9.8	9.7
pps change from 2019 due to:	1.4		0.2	0.3	1.0	1.5	1.4
Dependency ratio	4.8		1.6	3.0	4.7	5.6	4.8
Coverage ratio	-2.1		-0.9	-1.7	-2.4	-2.5	-2.1
Of which: old-age	-0.7		-0.5	-1.0	-1.2	-0.9	-0.7
early-age	-3.7		-1.7	-2.7	-2.4	-3.6	-3.7
cohort effect	-3.4		-0.3	-1.2	-3.6	-5.0	-3.4
Benefit ratio	-1.1		-0.6	-0.9	-1.1	-1.2	-1.1
Labour market ratio	0.1		0.1	0.1	0.0	-0.1	0.1
Of which: employment rate	0.2		0.2	0.3	0.2	0.1	0.2
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		-0.1	-0.2	-0.2	-0.2	-0.1
Interaction effect (residual)	-0.3		-0.1	-0.2	-0.2	-0.3	-0.3
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	1.4	8.3	0.2	0.1	0.7	0.5	-0.1
Dependency ratio	4.8		1.6	1.4	1.7	0.9	-0.8
Coverage ratio	-2.1		-0.9	-0.9	-0.6	-0.2	0.4
Of which: old-age	-0.7		-0.5	-0.5	-0.2	0.3	0.3
early-age	-3.7		-1.7	-1.0	0.2	-1.1	-0.1
cohort effect	-3.4		-0.3	-0.9	-2.4	-1.4	1.6
Benefit ratio	-1.1		-0.6	-0.4	-0.2	-0.1	0.1
Labour market ratio	0.1		0.1	0.0	-0.1	-0.1	0.2
Of which: employment rate	0.2		0.2	0.1	0.0	-0.1	0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		-0.1	-0.1	-0.1	0.0	0.1
Interaction effect (residual)	-0.3		-0.1	-0.1	-0.1	0.0	0.0

Bulgaria

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.2	4.6	4.8	4.9	5.0	4.9	4.8
AWG risk scenario	1.1	4.6	5.1	5.5	5.8	5.8	5.7
TFP risk scenario	0.2	4.6	4.8	4.9	5.0	4.9	4.7
Demographic scenario	0.4	4.6	4.8	5.0	5.1	5.0	4.9
High life expectancy scenario (variation of demogr. scenario)	0.3	4.6	4.7	4.9	5.0	5.0	4.9
Healthy ageing scenario	-0.3	4.6	4.6	4.6	4.6	4.5	4.2
Death-related cost scenario	0.4	4.6	4.8	5.0	5.1	5.1	5.0
Income elasticity scenario	0.6	4.6	4.9	5.1	5.3	5.2	5.2
EU cost convergence scenario	2.0	4.6	5.0	5.4	5.8	6.2	6.6
Labour intensity scenario	1.1	4.6	4.9	5.4	5.8	5.9	5.7
Sector-specific composite indexation scenario	1.5	4.6	5.1	5.7	6.0	6.1	6.1
Non-demographic determinants scenario	2.2	4.6	5.2	5.9	6.4	6.7	6.8

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.1	0.3	0.3	0.4	0.4	0.4	0.4
AWG risk scenario	1.3	0.3	0.4	0.6	0.8	1.2	1.6
TFP risk scenario	0.1	0.3	0.3	0.4	0.4	0.4	0.4
Demographic scenario	0.1	0.3	0.3	0.4	0.4	0.4	0.4
Base case scenario	0.2	0.3	0.3	0.4	0.4	0.4	0.5
High life expectancy scenario (variation of base case)	0.2	0.3	0.3	0.4	0.4	0.5	0.5
Healthy ageing scenario	0.1	0.3	0.3	0.3	0.4	0.4	0.4
Shift to formal care scenario	0.4	0.3	0.5	0.5	0.6	0.7	0.7
Coverage convergence scenario	0.8	0.3	0.4	0.5	0.6	0.9	1.1
Cost convergence scenario	0.5	0.3	0.4	0.5	0.6	0.7	0.8
Cost and coverage convergence scenario	1.5	0.3	0.4	0.6	0.8	1.3	1.8
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	2%	259	264	269	268	271	263
Recipients: receiving institutional care	2%	11	12	12	12	12	12
receiving home care	-10%	24	24	23	23	23	22
receiving cash benefits	2%	79	81	82	82	83	81

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.4	2.9	3.1	3.0	3.2	3.4	3.3
Number of students (in thousands)							
Total (students/staff in 2019 = 12.4)	-28.9%	972	925	809	766	737	691
as % of population 5-24	-2.1	74.7	72.5	72.1	73.3	72.9	72.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.5	0.0	0.2	0.4	0.5	0.5	0.5

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.1	16.1	16.6	16.9	18.0	18.5	18.1
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.0	0.0	0.4	0.8	1.2	1.6	2.0
TFP risk scenario (-0.2 pps)	1.0	0.0	-0.1	0.0	0.2	0.7	1.0
High life expectancy (+2 years) (8)	0.5	0.0	0.0	0.1	0.3	0.4	0.5
Lower fertility (-20%)	1.2	0.0	-0.1	-0.3	0.0	0.5	1.2
Higher TFP growth (+0.2 pps)	-0.2	0.0	0.0	-0.1	-0.2	-0.2	-0.2
Higher employment rate of older workers (+10 pps)	-0.5	0.0	-0.5	-0.9	-1.1	-0.8	-0.5
Higher migration (+33%)	-0.1	0.0	0.0	0.1	0.0	0.0	-0.1
Lower migration (-33%)	0.1	0.0	0.0	-0.1	0.0	0.0	0.1
Policy scenario linking retirement age to life expectancy	-1.1	0.0	-0.2	-0.6	-0.9	-1.0	-1.1
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Adverse macroeconomic scenario - adverse structural	0.5	0.0	0.3	0.3	0.4	0.5	0.5

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

3. CZECHIA

Czechia							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.71	1.75	1.77	1.78	1.78	1.78
Life expectancy at birth							
males	8.3	76.5	78.4	80.2	81.8	83.4	84.8
females	6.9	82.3	83.9	85.4	86.7	88.0	89.2
Life expectancy at 65							
males	6.0	16.5	17.8	19.1	20.3	21.4	22.5
females	5.7	20.0	21.3	22.5	23.6	24.7	25.7
Net migration (thousand)	:	44.2	16.3	16.6	17.5	18.0	18.2
Net migration as % of population	:	0.4	0.2	0.2	0.2	0.2	0.2
Population (million)	-0.5	10.7	10.8	10.6	10.5	10.4	10.2
Young population (0-19) as % of total population	-0.4	20.4	20.5	19.6	19.9	20.3	20.0
Prime-age population (25-54) as % of total population	-8.4	43.0	38.2	35.1	34.0	34.6	34.6
Working-age population (20-64) as % of total population	-7.8	59.8	57.3	55.4	51.7	50.1	52.1
Elderly population (65+) as % of total population	8.2	19.8	22.1	25.0	28.3	29.6	27.9
Very elderly population (80+) as % of total population	8.5	4.1	6.6	8.0	8.7	11.9	12.6
Very elderly population (80+) as % of elderly population	24.3	20.7	29.6	31.8	30.7	40.1	45.0
Very elderly population (80+) as % of working-age population	17.3	6.8	11.4	14.4	16.8	23.7	24.1
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.6	2.6	1.9	1.3	1.3	1.7	1.5
Employment (growth rate)	-0.3	0.7	-0.3	-0.7	-0.6	0.0	0.0
Labour input: hours worked (growth rate)	-0.3	0.6	-0.3	-0.7	-0.6	0.0	0.0
Labour productivity per hour (growth rate)	2.0	2.0	2.2	2.1	1.9	1.7	1.5
TFP (growth rate)	1.3	1.5	1.5	1.3	1.3	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.7	0.5	0.8	0.7	0.7	0.6	0.5
Potential GDP per capita (growth rate)	1.7	2.2	2.0	1.5	1.4	1.9	1.7
Potential GDP per worker (growth rate)	2.0	1.9	2.2	2.1	2.0	1.7	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-1,075	6,386	6,168	5,882	5,444	5,212	5,312
Population growth (20-64)	0.6	-0.5	-0.2	-1.0	-0.6	0.0	0.1
Labour force 15-64 (thousands)	-914	5,268	5,078	4,757	4,443	4,308	4,354
Labour force 20-64 (thousands)	-919	5,239	5,042	4,721	4,411	4,274	4,320
Participation rate (20-64)	-0.7	82.0	81.7	80.3	81.0	82.0	81.3
Participation rate (20-74)	0.1	70.2	70.6	68.0	66.6	68.4	70.3
youngest (20-24)	0.9	52.5	52.9	53.3	53.6	53.3	53.5
prime-age (25-54)	0.4	89.1	89.8	89.3	89.3	89.6	89.4
older (55-64)	2.3	68.4	71.0	69.0	69.8	70.8	70.7
very old (65-74)	1.6	10.9	10.9	13.6	11.8	11.9	12.5
Participation rate (20-64) - females	0.4	74.5	75.3	73.7	74.3	75.6	74.9
Participation rate (20-74) - females	2.2	62.4	64.2	62.0	60.7	62.8	64.6
youngest (20-24)	1.4	44.9	45.8	46.2	46.4	46.1	46.3
prime-age (25-54)	0.5	81.8	83.2	82.1	81.9	82.7	82.4
older (55-64)	5.7	60.5	65.7	64.4	65.2	66.4	66.3
very old (65-74)	3.4	8.4	9.1	12.6	10.9	11.1	11.7
Participation rate (20-64) - males	-1.9	89.3	87.8	86.4	87.3	88.0	87.4
Participation rate (20-74) - males	-2.3	77.9	76.8	73.8	72.3	73.7	75.7
youngest (20-24)	0.5	59.8	59.7	60.1	60.4	60.0	60.2
prime-age (25-54)	0.1	95.9	95.9	96.0	96.2	96.1	96.1
older (55-64)	-1.7	76.5	76.1	73.4	74.2	74.9	74.8
very old (65-74)	-0.6	13.9	12.9	14.6	12.6	12.7	13.2
Average effective exit age - total (1)	1.4	62.4	63.8	63.8	63.8	63.8	63.8
males	0.7	63.5	64.2	64.2	64.2	64.2	64.2
females	2.0	61.4	63.4	63.4	63.4	63.4	63.4
Employment rate (15-64)	-3.5	75.2	72.6	71.2	71.9	72.1	71.8
Employment rate (20-64)	-1.9	80.4	78.9	77.5	78.2	79.1	78.5
Employment rate (20-74)	-0.9	68.8	68.2	65.7	64.4	66.1	67.9
Unemployment rate (15-64)	1.6	2.1	3.7	3.7	3.7	3.7	3.7
Unemployment rate (20-64)	1.5	2.0	3.5	3.5	3.5	3.5	3.5
Unemployment rate (20-74)	1.5	1.9	3.4	3.4	3.4	3.4	3.4
Employment (20-64) (in millions)	-1.0	5.1	4.9	4.6	4.3	4.1	4.2
Employment (20-74) (in millions)	-1.0	5.3	5.0	4.7	4.4	4.3	4.3
share of youngest (20-24)	1.7	5%	6%	6%	6%	6%	6%
share of prime-age (25-54)	-4.9	76%	72%	68%	70%	73%	71%
share of older (55-64)	2.9	17%	20%	22%	21%	17%	20%
share of very old (65-74)	0.3	3%	2%	4%	4%	3%	3%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.7	20.4	23.8	26.6	24.7	20.6	23.1
Old-age dependency ratio 20-64 (3)	20.6	33.0	38.6	45.2	54.8	59.2	53.7
Total dependency ratio (4)	25.0	67.1	74.4	80.6	93.4	99.6	92.1
Total economic dependency ratio (5)	35.2	102.4	115.6	124.4	138.0	143.5	137.6
Economic old-age dependency ratio (20-64) (6)	27.0	38.4	46.4	54.4	66.2	71.1	65.3
Economic old-age dependency ratio (20-74) (7)	26.0	37.4	45.2	52.4	63.7	68.7	63.4

Czechia

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	2.9	8.0	8.8	9.8	11.4	11.8	10.9
Of which : Old-age and early pensions	2.8	6.7	7.4	8.5	10.1	10.4	9.5
Disability pensions	-0.1	0.8	0.8	0.7	0.7	0.7	0.7
Survivors' pensions	0.2	0.5	0.6	0.6	0.6	0.7	0.7
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	2.3	5.0	5.8	6.5	7.8	8.0	7.3
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.1	0.3	0.4	0.6	0.5	0.4	0.4
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	0.0	8.5	8.5	8.5	8.5	8.5	8.5
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	374	2,898	2,931	3,146	3,396	3,449	3,271
Public pensioners aged 65+ (1000 persons)	647	2,076	2,273	2,480	2,815	2,933	2,723
Pensioners younger than 65 as % of all pensioners (public)	-11.6	28%	22%	21%	17%	15%	17%
Benefit ratio % (public pensions)	-1.2	38.5	39.3	38.5	38.8	38.1	37.3
Gross replacement rate at retirement % (old-age earnings-related)	-2.2	45.1	46.5	45.7	45.2	44.3	42.9
Average accrual rates % (new pensions, earnings-related)	0.0	1.5	1.5	1.4	1.5	1.5	1.5
Average contributory period, years (new pensions, earnings-related)	-2.0	44.1	47.0	47.0	43.0	42.0	42.0
Contributors (public pensions, 1000 persons)	-986	5,305	5,016	4,760	4,445	4,298	4,320
Support ratio (contributors/100 pensioners, public pensions)	-51	183	171	151	131	125	132
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.7	0.0	0.1	0.2	0.3	0.5	0.7
Lower fertility (-20%)	1.5	0.0	0.0	0.0	0.4	0.9	1.5
Higher TFP growth (+0.2 pps)	-0.3	0.0	0.0	-0.1	-0.2	-0.3	-0.3
TFP risk scenario (-0.2 pps)	0.3	0.0	0.0	0.1	0.2	0.3	0.3
Higher employment rate of older workers (+10 pps)	0.2	0.0	-0.4	-0.8	-0.9	-0.3	0.2
Higher migration (+33%)	-0.3	0.0	-0.1	-0.2	-0.4	-0.4	-0.3
Lower migration (-33%)	0.3	0.0	0.1	0.2	0.4	0.5	0.3
Policy scenario linking retirement age to life expectancy	-1.4	0.0	0.0	-0.5	-0.9	-1.2	-1.4
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.7	0.0	0.3	0.4	0.6	0.7	0.7
Offset declining pension benefit ratio	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unchanged retirement age	2.2	0.0	0.8	1.4	1.6	1.8	2.2
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2.9	8.0	8.8	9.8	11.4	11.8	10.9
pps change from 2019 due to:	2.9		0.8	1.8	3.4	3.8	2.9
Dependency ratio	4.8		1.5	2.9	5.0	5.9	4.8
Coverage ratio	-1.6		-1.0	-1.3	-1.7	-1.9	-1.6
Of which: old-age	-0.2		-0.3	-0.5	-0.4	-0.3	-0.2
early-age	-2.7		-3.2	-2.9	-2.3	-2.5	-2.7
cohort effect	-3.1		0.4	-0.8	-3.6	-5.1	-3.1
Benefit ratio	-0.3		0.2	0.1	0.1	-0.1	-0.3
Labour market ratio	0.2		0.2	0.2	0.1	0.0	0.2
Of which: employment rate	0.2		0.1	0.3	0.2	0.1	0.2
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.0	-0.1	-0.1	-0.1	0.0
Interaction effect (residual)	-0.1		0.0	-0.1	-0.1	-0.1	-0.1
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	2.9	8.0	0.8	1.0	1.6	0.4	-0.9
Dependency ratio	4.8		1.5	1.5	2.1	0.9	-1.1
Coverage ratio	-1.6		-1.0	-0.3	-0.4	-0.2	0.3
Of which: old-age	-0.2		-0.3	-0.2	0.1	0.1	0.1
early-age	-2.7		-3.2	0.4	0.6	-0.2	-0.3
cohort effect	-3.1		0.4	-1.2	-2.9	-1.5	2.0
Benefit ratio	-0.3		0.2	-0.1	0.1	-0.2	-0.2
Labour market ratio	0.2		0.2	0.1	-0.1	-0.1	0.2
Of which: employment rate	0.2		0.1	0.2	-0.1	-0.1	0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.0	-0.1	0.0	0.0	0.1
Interaction effect (residual)	-0.1		0.0	0.0	-0.1	0.0	0.0

Czechia

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.9	5.6	6.0	6.3	6.6	6.7	6.6
AWG risk scenario	2.1	5.6	6.4	7.0	7.5	7.8	7.7
TFP risk scenario	0.9	5.6	6.0	6.3	6.5	6.7	6.5
Demographic scenario	1.2	5.6	6.1	6.4	6.7	6.9	6.9
High life expectancy scenario (variation of demogr. scenario)	1.4	5.6	6.0	6.4	6.8	7.0	7.0
Healthy ageing scenario	0.3	5.6	5.8	5.9	6.0	6.1	5.9
Death-related cost scenario	0.8	5.6	6.0	6.3	6.5	6.5	6.4
Income elasticity scenario	1.5	5.6	6.2	6.6	7.0	7.2	7.1
EU cost convergence scenario	1.3	5.6	6.1	6.5	6.8	7.0	7.0
Labour intensity scenario	2.4	5.6	6.4	7.1	7.9	8.3	8.0
Sector-specific composite indexation scenario	2.2	5.6	6.4	7.0	7.5	7.8	7.8
Non-demographic determinants scenario	3.5	5.6	6.6	7.5	8.3	9.0	9.2

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.7	1.5	1.9	2.3	2.6	3.0	3.2
AWG risk scenario	2.4	1.5	2.0	2.5	2.9	3.5	3.9
TFP risk scenario	1.6	1.5	1.9	2.3	2.6	3.0	3.1
Demographic scenario	1.4	1.5	1.9	2.2	2.3	2.7	2.9
Base case scenario	1.7	1.5	1.9	2.3	2.6	3.0	3.2
High life expectancy scenario (variation of base case)	2.1	1.5	2.0	2.4	2.8	3.3	3.6
Healthy ageing scenario	1.3	1.5	1.9	2.2	2.4	2.7	2.8
Shift to formal care scenario	2.3	1.5	2.4	2.9	3.2	3.7	3.9
Coverage convergence scenario	1.7	1.5	1.9	2.3	2.6	3.0	3.2
Cost convergence scenario	2.7	1.5	2.0	2.6	3.0	3.7	4.2
Cost and coverage convergence scenario	2.7	1.5	2.0	2.6	3.0	3.7	4.2
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	28%	707	807	850	861	906	907
Recipients: receiving institutional care	82%	123	152	176	186	210	225
receiving home care	109%	105	138	164	178	208	220
receiving cash benefits	83%	366	457	525	554	631	668

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.6	3.4	3.8	3.8	3.9	4.2	4.1
Number of students (in thousands)							
Total (students/staff in 2019 = 14.7)	-2.7%	1,713	1,824	1,704	1,673	1,719	1,667
as % of population 5-24	-2.3	81.7	79.2	78.8	79.9	80.0	79.4
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.8	0.0	0.3	0.6	0.8	0.8	0.8

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	6.1	18.6	20.6	22.2	24.5	25.6	24.7
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	1.9	0.0	0.4	0.9	1.2	1.6	1.9
TFP risk scenario (-0.2 pps)	0.2	0.0	0.0	0.1	0.2	0.2	0.2
High life expectancy (+2 years) (8)	1.0	0.0	0.0	0.2	0.4	0.7	1.0
Lower fertility (-20%)	1.7	0.0	-0.1	-0.3	0.2	0.9	1.7
Higher TFP growth (+0.2 pps)	-0.2	0.0	0.0	-0.1	-0.2	-0.2	-0.2
Higher employment rate of older workers (+10 pps)	-0.1	0.0	-0.5	-1.1	-1.2	-0.6	-0.1
Higher migration (+33%)	-0.5	0.0	-0.1	-0.3	-0.5	-0.6	-0.5
Lower migration (-33%)	0.5	0.0	0.1	0.3	0.6	0.7	0.5
Policy scenario linking retirement age to life expectancy	-1.8	0.0	-0.1	-0.5	-1.1	-1.5	-1.8
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.0	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.8	0.0	0.4	0.5	0.7	0.8	0.8

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

4. DENMARK

Denmark							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.72	1.74	1.75	1.76	1.77	1.77
Life expectancy at birth							
males	6.6	79.5	81.0	82.4	83.7	84.9	86.1
females	6.5	83.3	84.8	86.2	87.5	88.7	89.8
Life expectancy at 65							
males	4.8	18.5	19.5	20.5	21.5	22.4	23.3
females	5.2	21.1	22.2	23.3	24.4	25.3	26.3
Net migration (thousand)	:	-1.6	12.4	12.5	11.3	11.0	11.0
Net migration as % of population	:	0.0	0.2	0.2	0.2	0.2	0.2
Population (million)	0.3	5.8	6.0	6.1	6.1	6.1	6.2
Young population (0-19) as % of total population	-1.6	22.4	21.6	21.6	21.0	20.8	20.7
Prime-age population (25-54) as % of total population	-4.3	38.8	36.6	36.4	35.4	35.0	34.6
Working-age population (20-64) as % of total population	-6.4	57.9	55.4	53.2	53.4	52.4	51.6
Elderly population (65+) as % of total population	8.0	19.7	22.9	25.2	25.6	26.8	27.7
Very elderly population (80+) as % of total population	6.3	4.6	7.2	8.3	9.9	10.6	10.9
Very elderly population (80+) as % of elderly population	15.9	23.4	31.5	32.9	38.9	39.5	39.3
Very elderly population (80+) as % of working-age population	13.2	8.0	13.1	15.6	18.6	20.2	21.1
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.7	2.3	1.5	1.6	1.7	1.6	1.6
Employment (growth rate)	0.2	0.9	0.3	0.1	0.2	0.0	0.0
Labour input: hours worked (growth rate)	0.2	0.4	0.3	0.1	0.2	0.1	0.0
Labour productivity per hour (growth rate)	1.5	1.8	1.2	1.5	1.5	1.5	1.5
TFP (growth rate)	1.0	1.2	0.9	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.7	0.4	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.6	2.0	1.3	1.5	1.7	1.6	1.5
Potential GDP per worker (growth rate)	1.5	1.4	1.2	1.5	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-191	3,364	3,310	3,223	3,257	3,207	3,174
Population growth (20-64)	-0.1	0.0	-0.3	-0.2	0.1	-0.3	-0.1
Labour force 15-64 (thousands)	-120	2,939	2,875	2,834	2,871	2,839	2,818
Labour force 20-64 (thousands)	-113	2,768	2,716	2,666	2,704	2,677	2,655
Participation rate (20-64)	1.4	82.3	82.0	82.7	83.0	83.5	83.7
Participation rate (20-74)	4.2	71.4	71.2	71.8	73.9	74.6	75.5
youngest (20-24)	2.4	72.3	74.7	74.7	74.7	74.7	74.7
prime-age (25-54)	-0.7	86.5	85.9	85.7	85.7	85.7	85.7
older (55-64)	7.3	74.4	74.4	77.0	79.2	80.9	81.7
very old (65-74)	23.9	14.6	18.1	22.6	27.4	34.4	38.4
Participation rate (20-64) - females	1.1	78.7	78.0	78.8	79.1	79.6	79.8
Participation rate (20-74) - females	4.8	66.8	67.1	67.8	69.9	70.6	71.6
youngest (20-24)	2.0	70.7	72.8	72.8	72.8	72.8	72.8
prime-age (25-54)	-1.3	82.8	81.7	81.4	81.4	81.4	81.5
older (55-64)	7.8	70.2	70.0	73.2	75.2	77.1	78.0
very old (65-74)	27.6	7.4	15.0	20.0	24.0	30.3	35.0
Participation rate (20-64) - males	1.7	85.8	86.0	86.6	86.8	87.3	87.5
Participation rate (20-74) - males	3.5	75.9	75.4	75.8	77.9	78.5	79.4
youngest (20-24)	2.7	73.9	76.5	76.5	76.5	76.5	76.5
prime-age (25-54)	-0.2	90.1	90.0	89.9	89.9	89.9	89.9
older (55-64)	6.6	78.7	78.7	80.7	83.0	84.5	85.3
very old (65-74)	19.7	22.2	21.3	25.4	30.9	38.5	41.9
Average effective exit age - total (1)	4.8	64.5	65.8	66.9	67.8	68.7	69.3
males	4.5	65.0	66.1	67.2	68.0	69.0	69.5
females	5.1	64.1	65.5	66.7	67.6	68.5	69.2
Employment rate (15-64)	2.4	75.2	76.4	76.7	77.1	77.5	77.6
Employment rate (20-64)	2.5	78.4	79.3	80.0	80.3	80.7	80.9
Employment rate (20-74)	5.1	68.1	69.0	69.6	71.6	72.3	73.2
Unemployment rate (15-64)	-1.6	5.1	3.6	3.6	3.6	3.6	3.6
Unemployment rate (20-64)	-1.4	4.7	3.3	3.3	3.3	3.3	3.3
Unemployment rate (20-74)	-1.5	4.6	3.2	3.1	3.1	3.1	3.1
Employment (20-64) (in millions)	-0.1	2.6	2.6	2.6	2.6	2.6	2.6
Employment (20-74) (in millions)	0.1	2.7	2.7	2.7	2.8	2.8	2.8
share of youngest (20-24)	-1.0	9%	9%	9%	9%	8%	8%
share of prime-age (25-54)	-5.8	68%	66%	67%	64%	63%	62%
share of older (55-64)	0.9	19%	20%	19%	21%	20%	20%
share of very old (65-74)	5.9	3%	4%	6%	6%	9%	9%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.9	21.6	23.3	21.1	23.0	22.7	22.4
Old-age dependency ratio 20-64 (3)	19.7	34.1	41.4	47.4	47.9	51.2	53.8
Total dependency ratio (4)	21.3	72.7	80.4	88.0	87.3	90.9	94.0
Total economic dependency ratio (5)	4.6	112.7	117.4	121.2	118.7	116.3	117.3
Economic old-age dependency ratio (20-64) (6)	16.1	39.9	47.5	52.9	53.0	53.9	56.0
Economic old-age dependency ratio (20-74) (7)	12.3	38.5	45.5	49.8	49.7	49.3	50.8

Denmark							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-2.0	9.3	8.5	8.1	7.6	7.2	7.3
Of which : Old-age and early pensions	-2.3	7.4	6.7	6.1	5.6	5.1	5.1
Disability pensions	0.3	1.8	1.8	1.9	2.0	2.1	2.1
Survivors' pensions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	-1.3	1.3	0.9	0.4	0.1	0.0	0.0
Private occupational pensions, gross	1.3	4.8	5.0	5.7	5.9	5.8	6.0
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	:	:	:	:	:	:	:
Public pensions, net	-2.3	4.6	3.6	3.0	2.6	2.4	2.3
Public pensions, contributions	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	-18.0	49.8%	42.3%	37.3%	34.7%	33.1%	31.8%
Pensioners (public, 1000 persons)	-8	1,305	1,308	1,333	1,326	1,281	1,296
Public pensioners aged 65+ (1000 persons)	62	1,070	1,128	1,160	1,151	1,113	1,132
Pensioners younger than 65 as % of all pensioners (public)	-5.3	18%	14%	13%	13%	13%	13%
Benefit ratio % (public pensions)	-6.7	42.8	40.6	37.9	36.5	36.4	36.1
Gross replacement rate at retirement % (old-age earnings-related)	-7.6	35.6	33.5	30.5	28.8	28.3	28.0
Average accrual rates % (new pensions, earnings-related)	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:
Contributors (public pensions, 1000 persons)	-174	361	215	200	194	194	187
Support ratio (contributors/100 pensioners, public pensions)	-13	28	16	15	15	15	14
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.2	0.0	0.0	0.1	0.2	0.2	0.2
Lower fertility (-20%)	0.9	0.0	0.0	0.1	0.3	0.6	0.9
Higher TFP growth (+0.2 pps)	0.1	0.0	0.0	0.0	0.0	0.1	0.1
TFP risk scenario (-0.2 pps)	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.1	-0.2	-0.2	-0.2	-0.3
Higher migration (+33%)	-0.2	0.0	0.0	-0.1	-0.1	-0.2	-0.2
Lower migration (-33%)	0.2	0.0	0.0	0.1	0.1	0.2	0.2
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.0	0.0	0.2	0.2	0.1	0.1	0.0
Offset declining pension benefit ratio	0.5	0.0	-0.4	0.1	0.4	0.4	0.5
Unchanged retirement age	2.3	-0.1	0.7	1.2	1.4	2.0	2.2
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-2.0	9.3	8.5	8.1	7.6	7.2	7.3
pps change from 2019 due to:	-2.0		-0.7	-1.2	-1.6	-2.0	-2.0
Dependency ratio	4.0		1.9	3.1	3.2	3.7	4.0
Coverage ratio	-3.4		-1.6	-2.3	-2.5	-3.2	-3.4
Of which: old-age	-2.8		-1.1	-1.8	-2.0	-2.7	-2.8
early-age	-2.5		-2.3	-2.0	-2.4	-2.6	-2.5
cohort effect	-3.7		-1.6	-3.1	-2.7	-3.3	-3.7
Benefit ratio	-1.7		-0.7	-1.3	-1.6	-1.6	-1.7
Labour market ratio	-0.8		-0.2	-0.4	-0.5	-0.7	-0.8
Of which: employment rate	-0.3		-0.1	-0.2	-0.2	-0.3	-0.3
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.5		-0.1	-0.2	-0.3	-0.4	-0.5
Interaction effect (residual)	-0.2		-0.1	-0.2	-0.2	-0.2	-0.2
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-2.0	9.3	-0.7	-0.4	-0.5	-0.4	0.0
Dependency ratio	4.0		1.9	1.2	0.1	0.5	0.4
Coverage ratio	-3.4		-1.6	-0.7	-0.2	-0.6	-0.2
Of which: old-age	-2.8		-1.1	-0.7	-0.2	-0.6	-0.2
early-age	-2.5		-2.3	0.3	-0.5	-0.1	0.0
cohort effect	-3.7		-1.6	-1.5	0.4	-0.6	-0.5
Benefit ratio	-1.7		-0.7	-0.6	-0.3	0.0	-0.1
Labour market ratio	-0.8		-0.2	-0.2	-0.1	-0.2	-0.1
Of which: employment rate	-0.3		-0.1	-0.1	0.0	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.5		-0.1	-0.1	0.0	-0.2	-0.1
Interaction effect (residual)	-0.2		-0.1	-0.1	0.0	0.0	0.0

Denmark

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.9	6.7	7.1	7.3	7.4	7.5	7.5
AWG risk scenario	2.1	6.7	7.5	8.0	8.4	8.6	8.7
TFP risk scenario	0.8	6.7	7.1	7.3	7.4	7.5	7.5
Demographic scenario	1.0	6.7	7.1	7.3	7.4	7.5	7.7
High life expectancy scenario (variation of demogr. scenario)	1.1	6.7	7.0	7.3	7.5	7.6	7.8
Healthy ageing scenario	0.2	6.7	6.9	6.9	7.0	6.9	6.9
Death-related cost scenario	0.8	6.7	7.0	7.2	7.3	7.4	7.4
Income elasticity scenario	1.3	6.7	7.2	7.4	7.7	7.8	7.9
EU cost convergence scenario	1.0	6.7	7.1	7.3	7.5	7.6	7.7
Labour intensity scenario	0.9	6.7	7.0	7.3	7.4	7.4	7.5
Sector-specific composite indexation scenario	1.8	6.7	7.4	7.8	8.1	8.3	8.5
Non-demographic determinants scenario	3.4	6.7	7.6	8.4	9.1	9.7	10.1

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	3.4	3.5	4.6	5.6	6.2	6.7	6.9
AWG risk scenario	4.3	3.5	4.7	5.8	6.6	7.3	7.7
TFP risk scenario	3.4	3.5	4.6	5.6	6.2	6.7	6.9
Demographic scenario	4.0	3.5	4.7	5.7	6.5	7.2	7.5
Base case scenario	3.9	3.5	4.6	5.7	6.4	7.1	7.4
High life expectancy scenario (variation of base case)	5.0	3.5	4.7	6.0	7.0	7.9	8.5
Healthy ageing scenario	3.1	3.5	4.5	5.4	5.9	6.4	6.5
Shift to formal care scenario	4.5	3.5	5.2	6.3	7.0	7.7	8.0
Coverage convergence scenario	4.7	3.5	4.8	6.0	6.8	7.6	8.2
Cost convergence scenario	3.9	3.5	4.7	5.7	6.4	7.1	7.4
Cost and coverage convergence scenario	4.8	3.5	4.8	6.0	6.8	7.7	8.2
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	26%	379	428	449	465	476	479
Recipients: receiving institutional care	126%	58	81	101	115	128	132
receiving home care	91%	195	265	307	339	363	372
receiving cash benefits	:	0	0	0	0	0	0

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.8	6.1	5.5	5.5	5.3	5.2	5.2
Number of students (in thousands)							
Total (students/staff in 2019 = 10.3)	-6.3%	1,289	1,218	1,235	1,222	1,208	1,208
as % of population 5-24	-1.0	93.8	92.3	92.6	92.5	92.8	92.8
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.8	0.0	0.4	0.7	0.9	0.8	0.8

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.5	25.4	25.7	26.4	26.5	26.6	26.9
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.0	0.0	0.5	1.0	1.4	1.7	2.0
TFP risk scenario (-0.2 pps)	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1
High life expectancy (+2 years) (8)	0.8	0.0	0.1	0.3	0.5	0.7	0.8
Lower fertility (-20%)	1.4	0.0	-0.3	-0.3	0.2	0.7	1.4
Higher TFP growth (+0.2 pps)	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Higher employment rate of older workers (+10 pps)	-0.8	0.0	-0.5	-0.7	-0.5	-0.7	-0.8
Higher migration (+33%)	-0.5	0.0	0.0	-0.2	-0.3	-0.4	-0.5
Lower migration (-33%)	0.6	0.0	0.0	0.2	0.3	0.4	0.6
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.3	0.0	0.4	0.4	0.3	0.3	0.3

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

5. GERMANY

Germany							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.53	1.57	1.60	1.63	1.65	1.67
Life expectancy at birth							
males	6.9	79.1	80.6	82.1	83.5	84.8	86.0
females	6.2	83.7	85.1	86.4	87.7	88.9	89.9
Life expectancy at 65							
males	5.0	18.4	19.5	20.5	21.5	22.5	23.4
females	5.0	21.4	22.5	23.6	24.6	25.5	26.4
Net migration (thousand)	:	277.4	248.2	240.7	227.0	221.4	214.2
Net migration as % of population	:	0.3	0.3	0.3	0.3	0.3	0.3
Population (million)	-1.4	83.1	83.4	83.2	82.6	81.8	81.7
Young population (0-19) as % of total population	1.1	18.4	19.1	18.8	18.8	19.5	19.5
Prime-age population (25-54) as % of total population	-4.6	39.6	36.6	35.8	35.2	35.2	35.1
Working-age population (20-64) as % of total population	-7.8	59.9	55.2	53.4	53.1	52.2	52.1
Elderly population (65+) as % of total population	6.8	21.7	25.6	27.9	28.1	28.3	28.4
Very elderly population (80+) as % of total population	5.3	6.7	7.4	9.2	11.9	11.1	11.9
Very elderly population (80+) as % of elderly population	11.3	30.8	28.9	33.0	42.4	39.2	42.0
Very elderly population (80+) as % of working-age population	11.8	11.1	13.4	17.2	22.4	21.3	22.9
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.2	1.2	0.7	1.4	1.3	1.4	1.6
Employment (growth rate)	-0.2	0.6	-0.7	-0.1	-0.2	-0.1	0.0
Labour input: hours worked (growth rate)	-0.2	0.5	-0.7	-0.1	-0.2	-0.1	0.0
Labour productivity per hour (growth rate)	1.4	0.8	1.4	1.5	1.5	1.5	1.5
TFP (growth rate)	0.9	0.5	0.9	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.2	0.5	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.3	1.0	0.7	1.5	1.4	1.5	1.5
Potential GDP per worker (growth rate)	1.4	0.6	1.4	1.5	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-7,230	49,766	46,080	44,388	43,883	42,675	42,536
Population growth (20-64)	0.2	-0.1	-1.0	0.1	-0.2	-0.1	0.1
Labour force 15-64 (thousands)	-5,549	42,586	39,608	38,545	37,995	37,100	37,038
Labour force 20-64 (thousands)	-5,590	41,389	38,428	37,294	36,807	35,902	35,800
Participation rate (20-64)	1.0	83.2	83.4	84.0	83.9	84.1	84.2
Participation rate (20-74)	-0.5	73.1	70.7	71.4	72.6	71.9	72.6
youngest (20-24)	0.2	71.1	71.3	71.3	71.3	71.3	71.3
prime-age (25-54)	0.8	88.0	88.6	88.8	88.8	88.9	88.8
older (55-64)	1.4	74.6	73.9	75.7	75.3	75.6	76.0
very old (65-74)	4.6	13.9	18.3	17.1	19.0	18.3	18.5
Participation rate (20-64) - females	2.8	78.6	79.9	81.0	81.0	81.3	81.4
Participation rate (20-74) - females	1.7	68.1	66.8	68.0	69.3	68.8	69.8
youngest (20-24)	0.5	68.3	68.8	68.9	68.9	68.8	68.8
prime-age (25-54)	2.3	83.3	84.8	85.4	85.4	85.5	85.5
older (55-64)	4.9	70.0	70.9	73.9	73.9	74.4	74.9
very old (65-74)	6.0	10.5	15.9	14.8	16.9	16.3	16.5
Participation rate (20-64) - males	-0.8	87.6	86.8	86.9	86.7	86.9	86.8
Participation rate (20-74) - males	-2.6	78.0	74.5	74.9	75.8	74.9	75.4
youngest (20-24)	0.0	73.6	73.6	73.6	73.6	73.6	73.6
prime-age (25-54)	-0.5	92.6	92.2	92.0	92.1	92.2	92.1
older (55-64)	-2.2	79.4	77.0	77.7	76.8	76.9	77.2
very old (65-74)	3.0	17.6	20.9	19.6	21.3	20.5	20.6
Average effective exit age - total (1)	0.9	64.6	65.5	65.5	65.5	65.5	65.5
males	1.0	64.7	65.7	65.7	65.7	65.7	65.7
females	0.7	64.5	65.3	65.3	65.3	65.3	65.3
Employment rate (15-64)	-0.8	76.7	75.7	75.9	75.9	76.0	75.9
Employment rate (20-64)	0.2	80.6	80.0	80.6	80.4	80.7	80.7
Employment rate (20-74)	-1.1	70.9	67.9	68.6	69.7	69.1	69.7
Unemployment rate (15-64)	1.0	3.2	4.2	4.2	4.2	4.2	4.2
Unemployment rate (20-64)	1.0	3.1	4.0	4.1	4.1	4.1	4.1
Unemployment rate (20-74)	0.9	3.1	3.9	4.0	4.0	4.0	4.0
Employment (20-64) (in millions)	-5.8	40.1	36.9	35.8	35.3	34.4	34.3
Employment (20-74) (in millions)	-5.3	41.3	38.9	37.5	37.0	36.2	36.0
share of youngest (20-24)	0.7	8%	7%	8%	8%	8%	8%
share of prime-age (25-54)	-0.2	68%	67%	68%	67%	68%	68%
share of older (55-64)	-2.2	22%	21%	19%	20%	19%	19%
share of very old (65-74)	1.8	3%	5%	5%	5%	5%	5%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-2.3	24.6	24.5	22.5	23.7	22.5	22.3
Old-age dependency ratio 20-64 (3)	18.5	36.1	46.4	52.2	52.8	54.3	54.6
Total dependency ratio (4)	25.2	66.9	81.1	87.4	88.3	91.7	92.1
Total economic dependency ratio (5)	25.6	101.3	114.6	121.7	123.1	126.0	127.0
Economic old-age dependency ratio (20-64) (6)	20.8	41.9	52.4	59.8	60.7	62.1	62.7
Economic old-age dependency ratio (20-74) (7)	19.1	40.8	49.7	57.1	57.8	59.1	59.9

Germany							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	2.1	10.3	11.5	12.0	12.2	12.5	12.4
Of which : Old-age and early pensions	2.6	8.1	9.4	10.1	10.3	10.6	10.7
Disability pensions	-0.1	0.7	0.6	0.6	0.6	0.6	0.6
Survivors' pensions	-0.4	1.5	1.5	1.3	1.3	1.2	1.1
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	2.6	8.1	9.4	10.1	10.3	10.6	10.7
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Public pensions, net	1.4	8.5	9.3	9.6	9.7	9.9	9.9
Public pensions, contributions	2.0	10.1	11.1	11.7	11.8	12.1	12.2
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	-2.8	82.3%	81.1%	79.9%	79.6%	79.6%	79.5%
Pensioners (public, 1000 persons)	4,266	22,890	25,821	27,388	27,338	27,178	27,156
Public pensioners aged 65+ (1000 persons)	4,990	19,799	22,982	24,914	24,761	24,735	24,789
Pensioners younger than 65 as % of all pensioners (public)	-4.8	14%	11%	9%	9%	9%	9%
Benefit ratio % (public pensions)	-2.8	41.8	40.3	39.0	39.1	39.3	39.1
Gross replacement rate at retirement % (old-age earnings-related)	-2.6	39.8	38.4	37.2	37.2	37.4	37.2
Average accrual rates % (new pensions, earnings-related)	0.1	0.8	0.8	0.8	0.9	0.9	0.9
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:
Contributors (public pensions, 1000 persons)	-4,896	36,694	34,301	33,100	32,647	31,934	31,798
Support ratio (contributors/100 pensioners, public pensions)	-43	160	133	121	119	118	117
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.4	0.0	0.1	0.2	0.2	0.3	0.4
Lower fertility (-20%)	1.0	0.0	0.0	0.1	0.4	0.6	1.0
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TFP risk scenario (-0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate of older workers (+10 pps)	-0.2	0.0	-0.3	-0.2	-0.3	-0.3	-0.2
Higher migration (+33%)	-0.3	0.0	-0.1	-0.2	-0.3	-0.3	-0.3
Lower migration (-33%)	0.4	0.0	0.1	0.2	0.3	0.4	0.4
Policy scenario linking retirement age to life expectancy	-0.9	0.0	0.0	-0.2	-0.5	-0.6	-0.9
Adverse macroeconomic scenario - lagged recovery	0.2	0.0	0.2	0.2	0.2	0.2	0.2
Adverse macroeconomic scenario - adverse structural	0.3	0.0	0.3	0.3	0.3	0.3	0.3
Offset declining pension benefit ratio	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unchanged retirement age	0.5	0.0	0.5	0.5	0.5	0.5	0.5
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2.1	10.3	11.5	12.0	12.2	12.5	12.4
pps change from 2019 due to:	2.1		1.2	1.7	1.9	2.2	2.1
Dependency ratio	4.9		2.9	4.3	4.5	4.8	4.9
Coverage ratio	-0.9		-0.6	-0.8	-0.8	-0.9	-0.9
Of which: old-age	-0.3		-0.3	-0.3	-0.3	-0.3	-0.3
early-age	0.1		0.8	-0.2	0.4	0.6	0.1
cohort effect	-5.5		-3.3	-4.7	-4.8	-5.6	-5.5
Benefit ratio	-1.4		-0.8	-1.4	-1.3	-1.3	-1.4
Labour market ratio	-0.2		-0.2	-0.2	-0.2	-0.2	-0.2
Of which: employment rate	0.0		0.1	0.0	0.0	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.2		-0.3	-0.2	-0.2	-0.2	-0.2
Interaction effect (residual)	-0.3		-0.2	-0.3	-0.3	-0.3	-0.3
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	2.1	10.3	1.2	0.5	0.2	0.3	0.0
Dependency ratio	4.9		2.9	1.4	0.1	0.3	0.1
Coverage ratio	-0.9		-0.6	-0.2	0.0	-0.1	0.0
Of which: old-age	-0.3		-0.3	0.0	-0.1	0.0	0.0
early-age	0.1		0.8	-1.0	0.6	0.2	-0.5
cohort effect	-5.5		-3.3	-1.4	-0.1	-0.9	0.1
Benefit ratio	-1.4		-0.8	-0.6	0.0	0.0	-0.1
Labour market ratio	-0.2		-0.2	0.0	0.0	-0.1	0.0
Of which: employment rate	0.0		0.1	-0.1	0.0	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.2		-0.3	0.1	0.0	0.0	0.0
Interaction effect (residual)	-0.3		-0.2	-0.1	0.0	0.0	0.0

Germany

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.4	7.4	7.5	7.7	7.9	7.8	7.8
AWG risk scenario	1.3	7.4	7.7	8.2	8.5	8.6	8.7
TFP risk scenario	0.4	7.4	7.5	7.7	7.8	7.8	7.8
Demographic scenario	0.7	7.4	7.6	7.8	8.0	8.0	8.1
High life expectancy scenario (variation of demogr. scenario)	0.9	7.4	7.6	7.9	8.1	8.2	8.3
Healthy ageing scenario	-0.2	7.4	7.3	7.4	7.4	7.3	7.2
Death-related cost scenario	0.3	7.4	7.5	7.7	7.8	7.7	7.7
Income elasticity scenario	0.9	7.4	7.6	8.0	8.2	8.2	8.3
EU cost convergence scenario	0.7	7.4	7.6	7.9	8.0	8.0	8.1
Labour intensity scenario	1.7	7.4	7.9	8.5	8.8	8.9	9.1
Sector-specific composite indexation scenario	1.4	7.4	7.7	8.2	8.6	8.7	8.8
Non-demographic determinants scenario	2.5	7.4	7.8	8.5	9.2	9.6	9.9

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.2	1.6	1.7	1.8	1.9	1.9	1.8
AWG risk scenario	1.8	1.6	1.9	2.2	2.8	3.0	3.3
TFP risk scenario	0.3	1.6	1.7	1.8	2.0	1.9	1.9
Demographic scenario	0.8	1.6	1.7	1.9	2.2	2.3	2.3
Base case scenario	1.0	1.6	1.8	2.0	2.4	2.4	2.5
High life expectancy scenario (variation of base case)	1.2	1.6	1.8	2.1	2.5	2.7	2.8
Healthy ageing scenario	0.7	1.6	1.7	1.9	2.2	2.2	2.2
Shift to formal care scenario	1.4	1.6	2.1	2.4	2.8	2.9	3.0
Coverage convergence scenario	1.3	1.6	1.8	2.1	2.5	2.7	2.8
Cost convergence scenario	1.6	1.6	1.9	2.2	2.7	2.9	3.2
Cost and coverage convergence scenario	2.0	1.6	1.9	2.3	2.9	3.2	3.6
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	12%	5,795	6,020	6,196	6,595	6,437	6,473
Recipients: receiving institutional care	49%	858	958	1,038	1,234	1,264	1,275
receiving home care	33%	754	814	895	995	979	1,004
receiving cash benefits	33%	2,388	2,577	2,834	3,151	3,101	3,180

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.5	4.0	4.2	4.3	4.3	4.4	4.5
Number of students (in thousands)							
Total (students/staff in 2019 = 10.5)	3.1%	13,631	14,087	14,031	13,702	13,942	14,050
as % of population 5-24	-0.5	85.3	85.5	84.4	85.0	85.1	84.8
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	1.0	0.0	0.4	0.7	0.9	1.0	1.0

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	3.3	23.3	24.8	25.9	26.3	26.5	26.5
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.4	0.0	0.4	0.9	1.5	2.0	2.4
TFP risk scenario (-0.2 pps)	0.1	0.0	0.0	0.0	0.1	0.1	0.1
High life expectancy (+2 years) (8)	0.5	0.0	0.1	0.2	0.3	0.5	0.5
Lower fertility (-20%)	1.0	0.0	-0.1	-0.2	0.1	0.5	1.0
Higher TFP growth (+0.2 pps)	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1
Higher employment rate of older workers (+10 pps)	-0.4	0.0	-0.7	-0.5	-0.5	-0.6	-0.4
Higher migration (+33%)	-0.6	0.0	-0.1	-0.3	-0.4	-0.6	-0.6
Lower migration (-33%)	0.7	0.0	0.1	0.3	0.5	0.6	0.7
Policy scenario linking retirement age to life expectancy	-1.2	0.0	0.0	-0.3	-0.6	-0.9	-1.2
Adverse macroeconomic scenario - lagged recovery	0.2	0.0	0.2	0.2	0.2	0.2	0.2
Adverse macroeconomic scenario - adverse structural	0.5	0.0	0.3	0.4	0.4	0.5	0.5

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
Under current rules in Germany, both in-kind and cash long-term care benefits are indexed to prices. With contribution rates indexed by inflation, LTC expenditure shares would be almost unchanged until 2070.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

6. ESTONIA

Estonia							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.51	1.59	1.66	1.68	1.69	1.70
Life expectancy at birth							
males	9.4	74.9	76.7	78.9	80.8	82.6	84.3
females	6.5	83.4	84.7	86.1	87.5	88.7	89.9
Life expectancy at 65							
males	6.1	16.5	17.6	18.9	20.2	21.4	22.6
females	5.0	21.5	22.4	23.5	24.6	25.6	26.5
Net migration (thousand)	:	6.6	1.8	1.9	2.2	2.4	2.6
Net migration as % of population	:	0.5	0.1	0.1	0.2	0.2	0.2
Population (million)	-0.1	1.3	1.3	1.3	1.3	1.2	1.2
Young population (0-19) as % of total population	-2.8	21.1	19.8	18.3	18.8	18.7	18.2
Prime-age population (25-54) as % of total population	-7.6	41.1	38.3	36.7	34.3	34.2	33.5
Working-age population (20-64) as % of total population	-7.7	59.0	56.9	56.0	52.8	50.3	51.3
Elderly population (65+) as % of total population	10.5	19.9	23.3	25.8	28.4	30.9	30.5
Very elderly population (80+) as % of total population	8.1	5.7	6.8	8.8	10.0	11.6	13.9
Very elderly population (80+) as % of elderly population	16.7	28.8	29.4	34.3	35.3	37.4	45.6
Very elderly population (80+) as % of working-age population	17.3	9.7	12.0	15.8	19.0	23.0	27.0
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.9	3.9	2.5	1.6	1.3	1.4	1.5
Employment (growth rate)	-0.3	1.0	-0.5	-0.3	-0.5	-0.3	0.0
Labour input: hours worked (growth rate)	-0.3	0.3	-0.6	-0.3	-0.5	-0.3	0.0
Labour productivity per hour (growth rate)	2.2	3.5	3.0	1.9	1.8	1.7	1.5
TFP (growth rate)	1.4	2.1	1.9	1.2	1.2	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.8	1.5	1.2	0.7	0.6	0.6	0.5
Potential GDP per capita (growth rate)	2.1	3.5	2.7	1.8	1.5	1.7	1.8
Potential GDP per worker (growth rate)	2.1	2.9	3.0	1.9	1.8	1.7	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-171	783	744	717	662	616	612
Population growth (20-64)	0.0	-0.2	-0.1	-0.6	-0.9	-0.2	-0.2
Labour force 15-64 (thousands)	-119	666	644	626	585	550	547
Labour force 20-64 (thousands)	-118	657	632	616	576	541	538
Participation rate (20-64)	4.1	83.8	84.9	86.0	86.9	87.8	88.0
Participation rate (20-74)	4.2	75.5	73.9	75.1	75.4	76.3	79.7
youngest (20-24)	2.0	72.3	73.8	74.4	74.2	74.0	74.3
prime-age (25-54)	2.4	87.8	89.4	89.8	90.2	90.2	90.2
older (55-64)	11.9	75.7	76.7	80.5	83.0	86.5	87.6
very old (65-74)	12.7	28.1	20.3	23.6	28.4	32.9	40.9
Participation rate (20-64) - females	4.3	80.3	81.3	82.3	83.3	84.5	84.6
Participation rate (20-74) - females	5.7	71.0	69.5	70.9	71.7	73.3	76.7
youngest (20-24)	1.4	67.8	68.7	69.3	69.2	69.0	69.2
prime-age (25-54)	3.5	82.7	85.6	85.7	86.2	86.5	86.3
older (55-64)	8.9	77.6	74.8	78.5	81.0	85.3	86.5
very old (65-74)	12.6	27.5	20.5	22.0	26.5	31.6	40.1
Participation rate (20-64) - males	3.8	87.4	88.4	89.4	90.2	90.9	91.1
Participation rate (20-74) - males	2.4	80.2	78.4	79.1	78.9	79.2	82.6
youngest (20-24)	2.5	76.6	78.7	79.3	79.1	78.9	79.1
prime-age (25-54)	1.4	92.5	93.0	93.5	94.0	93.8	93.9
older (55-64)	15.1	73.6	78.6	82.3	84.7	87.5	88.7
very old (65-74)	12.5	29.2	20.0	25.4	30.4	34.1	41.7
Average effective exit age - total (1)	4.3	65.1	66.0	66.8	67.8	68.7	69.4
males	4.2	65.2	66.1	67.0	67.9	68.8	69.4
females	4.4	65.0	65.9	66.7	67.6	68.7	69.3
Employment rate (15-64)	1.3	75.2	73.8	75.3	75.9	76.0	76.5
Employment rate (20-64)	2.3	80.2	79.7	80.6	81.5	82.4	82.5
Employment rate (20-74)	2.7	72.3	69.5	70.5	70.9	71.8	75.0
Unemployment rate (15-64)	2.0	4.6	6.5	6.6	6.6	6.6	6.6
Unemployment rate (20-64)	1.8	4.4	6.1	6.2	6.2	6.2	6.2
Unemployment rate (20-74)	1.7	4.3	6.0	6.1	6.0	5.9	6.0
Employment (20-64) (in millions)	-0.1	0.6	0.6	0.6	0.5	0.5	0.5
Employment (20-74) (in millions)	-0.1	0.7	0.6	0.6	0.6	0.6	0.6
share of youngest (20-24)	0.7	6%	8%	7%	6%	7%	7%
share of prime-age (25-54)	-7.9	69%	68%	65%	63%	64%	61%
share of older (55-64)	3.7	19%	19%	22%	23%	20%	23%
share of very old (65-74)	3.5	6%	5%	6%	8%	9%	9%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.7	22.2	22.5	24.5	26.3	22.1	24.9
Old-age dependency ratio 20-64 (3)	25.6	33.8	40.9	46.1	53.8	61.5	59.4
Total dependency ratio (4)	25.4	69.5	75.6	78.7	89.4	98.7	94.9
Total economic dependency ratio (5)	15.1	99.3	109.7	109.1	114.8	118.9	114.5
Economic old-age dependency ratio (20-64) (6)	25.5	35.9	46.1	50.9	57.5	64.1	61.4
Economic old-age dependency ratio (20-74) (7)	21.9	33.9	43.9	48.1	53.1	58.2	55.8

Estonia							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-2.3	7.8	6.9	6.5	6.1	5.8	5.4
Of which : Old-age and early pensions	-1.7	6.2	5.6	5.4	5.1	4.8	4.6
Disability pensions	-0.5	1.3	1.0	0.9	0.8	0.8	0.7
Survivors' pensions	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Other	-0.1	0.2	0.2	0.2	0.1	0.1	0.1
Earnings-related pensions (old-age and early pensions), gross	-1.7	3.7	3.2	2.8	2.5	2.3	2.1
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	1.8	0.1	0.3	0.6	1.0	1.5	1.9
New pensions, gross (old-age and early pensions)	-0.1	0.2	0.1	0.1	0.1	0.1	0.1
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	-1.0	6.5	5.8	5.7	5.6	5.5	5.5
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	-12	418	422	423	418	413	406
Public pensioners aged 65+ (1000 persons)	37	278	305	317	322	323	316
Pensioners younger than 65 as % of all pensioners (public)	-11.2	33%	28%	25%	23%	22%	22%
Benefit ratio % (public pensions)	-11.1	28.8	24.2	22.1	20.1	18.4	17.7
Gross replacement rate at retirement % (old-age earnings-related)	-13.9	39.8	33.6	30.9	28.1	26.3	25.8
Average accrual rates % (new pensions, earnings-related)	-0.1	0.9	0.8	0.8	0.8	0.8	0.8
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:
Contributors (public pensions, 1000 persons)	-98	661	632	619	591	566	563
Support ratio (contributors/100 pensioners, public pensions)	-20	158	150	146	141	137	139
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.4	0.0	0.1	0.2	0.3	0.4	0.4
Lower fertility (-20%)	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Higher TFP growth (+0.2 pps)	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1
TFP risk scenario (-0.2 pps)	0.2	0.0	0.0	0.1	0.1	0.1	0.2
Higher employment rate of older workers (+10 pps)	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Higher migration (+33%)	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Lower migration (-33%)	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.3	0.0	0.3	0.4	0.3	0.3	0.3
Adverse macroeconomic scenario - adverse structural	0.5	0.0	0.3	0.4	0.4	0.4	0.5
Offset declining pension benefit ratio	2.7	0.0	0.5	1.2	1.9	2.5	2.7
Unchanged retirement age	0.8	0.0	0.0	0.4	0.7	1.0	0.8
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-2.3	7.8	6.9	6.5	6.1	5.8	5.4
pps change from 2019 due to:	-2.3		-0.9	-1.3	-1.7	-2.0	-2.3
Dependency ratio	4.1		1.6	2.4	3.5	4.3	4.1
Coverage ratio	-2.4		-1.0	-1.5	-2.1	-2.5	-2.4
Of which: old-age	-1.3		-0.4	-0.7	-1.1	-1.4	-1.3
early-age	-8.7		-5.1	-6.9	-8.2	-8.3	-8.7
cohort effect	-2.9		-1.1	-1.2	-2.4	-3.4	-2.9
Benefit ratio	-3.4		-1.5	-2.0	-2.6	-3.1	-3.4
Labour market ratio	-0.4		0.1	0.0	-0.2	-0.4	-0.4
Of which: employment rate	-0.2		0.0	-0.1	-0.1	-0.2	-0.2
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.2		0.1	0.0	-0.1	-0.2	-0.2
Interaction effect (residual)	-0.2		-0.1	-0.1	-0.2	-0.2	-0.2
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-2.3	7.8	-0.9	-0.4	-0.4	-0.3	-0.3
Dependency ratio	4.1		1.6	0.8	1.0	0.8	-0.2
Coverage ratio	-2.4		-1.0	-0.5	-0.6	-0.4	0.1
Of which: old-age	-1.3		-0.4	-0.3	-0.4	-0.3	0.1
early-age	-8.7		-5.1	-1.8	-1.2	-0.1	-0.4
cohort effect	-2.9		-1.1	-0.1	-1.2	-1.0	0.6
Benefit ratio	-3.4		-1.5	-0.6	-0.6	-0.5	-0.2
Labour market ratio	-0.4		0.1	-0.1	-0.2	-0.2	0.0
Of which: employment rate	-0.2		0.0	-0.1	-0.1	-0.1	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.2		0.1	-0.1	-0.1	-0.1	0.0
Interaction effect (residual)	-0.2		-0.1	0.0	-0.1	-0.1	0.0

Estonia

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.8	4.9	5.2	5.4	5.6	5.7	5.7
AWG risk scenario	2.0	4.9	5.7	6.3	6.7	6.9	7.0
TFP risk scenario	0.7	4.9	5.2	5.4	5.6	5.7	5.7
Demographic scenario	0.8	4.9	5.1	5.4	5.6	5.7	5.7
High life expectancy scenario (variation of demogr. scenario)	0.8	4.9	5.1	5.3	5.5	5.7	5.7
Healthy ageing scenario	0.2	4.9	5.0	5.1	5.1	5.2	5.1
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	1.1	4.9	5.3	5.6	5.8	6.0	6.0
EU cost convergence scenario	1.8	4.9	5.3	5.7	6.0	6.4	6.7
Labour intensity scenario	1.3	4.9	5.4	5.7	6.0	6.3	6.2
Sector-specific composite indexation scenario	1.4	4.9	5.4	5.8	6.1	6.2	6.3
Non-demographic determinants scenario	3.3	4.9	5.8	6.7	7.4	7.9	8.2

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.3	0.4	0.5	0.5	0.6	0.7	0.7
AWG risk scenario	5.1	0.4	0.7	1.2	2.1	3.4	5.5
TFP risk scenario	0.3	0.4	0.5	0.5	0.6	0.6	0.7
Demographic scenario	0.3	0.4	0.4	0.5	0.5	0.6	0.7
Base case scenario	0.3	0.4	0.5	0.5	0.6	0.7	0.7
High life expectancy scenario (variation of base case)	0.4	0.4	0.5	0.5	0.6	0.7	0.8
Healthy ageing scenario	0.2	0.4	0.4	0.5	0.5	0.6	0.6
Shift to formal care scenario	0.4	0.4	0.5	0.6	0.7	0.7	0.8
Coverage convergence scenario	0.3	0.4	0.5	0.5	0.6	0.7	0.7
Cost convergence scenario	5.4	0.4	0.7	1.3	2.1	3.6	5.8
Cost and coverage convergence scenario	5.5	0.4	0.7	1.3	2.2	3.6	5.9
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	18%	147	158	167	170	172	174
Recipients: receiving institutional care	38%	36	40	44	46	48	50
receiving home care	33%	79	87	94	98	101	105
receiving cash benefits	35%	11	13	14	14	15	15

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.4	4.2	4.1	3.7	3.8	3.9	3.8
Number of students (in thousands)							
Total (students/staff in 2019 = 10.7)	-21.9%	229	220	194	190	189	179
as % of population 5-24	-4.2	83.8	79.2	79.0	80.3	80.0	79.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.8	0.0	0.3	0.6	0.8	0.8	0.8

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	-1.6	17.2	16.6	16.2	16.1	16.0	15.6
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	6.1	0.0	0.7	1.6	2.6	4.0	6.1
TFP risk scenario (-0.2 pps)	0.1	0.0	0.0	0.1	0.1	0.1	0.1
High life expectancy (+2 years) (8)	0.4	0.0	0.1	0.2	0.3	0.4	0.4
Lower fertility (-20%)	-0.1	0.0	-0.1	-0.3	-0.2	-0.2	-0.1
Higher TFP growth (+0.2 pps)	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1
Higher employment rate of older workers (+10 pps)	0.0	0.0	-0.2	0.0	-0.2	-0.2	0.0
Higher migration (+33%)	0.1	0.0	0.0	0.1	0.1	0.0	0.1
Lower migration (-33%)	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.3	0.0	0.3	0.4	0.3	0.3	0.3
Adverse macroeconomic scenario - adverse structural	0.5	0.0	0.4	0.5	0.5	0.5	0.5

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
Disability pensions include the work ability allowance.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

7. IRELAND

Ireland							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.0	1.78	1.80	1.80	1.80	1.80	1.81
Life expectancy at birth							
males	5.7	81.1	82.1	83.4	84.6	85.7	86.8
females	5.6	84.8	85.8	87.1	88.3	89.4	90.4
Life expectancy at 65							
males	4.2	19.6	20.3	21.2	22.1	23.0	23.8
females	4.6	22.1	22.9	23.9	24.9	25.8	26.7
Net migration (thousand)	:	32.7	19.3	16.1	14.4	12.1	10.5
Net migration as % of population	:	0.7	0.3	0.3	0.2	0.2	0.2
Population (million)	1.6	4.9	5.5	5.9	6.2	6.4	6.5
Young population (0-19) as % of total population	-6.3	26.9	23.6	22.2	22.0	21.2	20.6
Prime-age population (25-54) as % of total population	-7.4	41.8	40.0	37.8	36.4	35.3	34.3
Working-age population (20-64) as % of total population	-6.9	58.8	58.6	56.6	53.3	52.6	51.9
Elderly population (65+) as % of total population	13.2	14.3	17.8	21.2	24.8	26.3	27.5
Very elderly population (80+) as % of total population	8.1	3.4	4.9	6.4	8.1	10.3	11.5
Very elderly population (80+) as % of elderly population	18.1	23.8	27.4	30.5	32.7	39.2	41.9
Very elderly population (80+) as % of working-age population	16.4	5.8	8.3	11.4	15.2	19.6	22.2
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.8	5.6	1.4	1.7	1.6	1.7	1.5
Employment (growth rate)	0.2	2.1	0.3	0.1	0.1	0.1	-0.1
Labour input: hours worked (growth rate)	0.2	2.1	0.3	0.2	0.1	0.1	-0.1
Labour productivity per hour (growth rate)	1.5	3.4	1.2	1.5	1.5	1.5	1.5
TFP (growth rate)	1.1	1.6	0.9	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	1.8	0.3	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.2	4.1	0.6	1.1	1.2	1.4	1.4
Potential GDP per worker (growth rate)	1.5	3.5	1.2	1.5	1.5	1.5	1.6
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	471	2,904	3,241	3,353	3,315	3,366	3,374
Population growth (20-64)	-1.4	1.4	0.8	0.0	0.0	0.2	-0.1
Labour force 15-64 (thousands)	431	2,363	2,668	2,761	2,753	2,797	2,795
Labour force 20-64 (thousands)	425	2,287	2,580	2,683	2,671	2,712	2,712
Participation rate (20-64)	1.6	78.8	79.6	80.0	80.6	80.6	80.4
Participation rate (20-74)	-2.2	71.1	70.8	69.9	68.7	69.6	69.0
youngest (20-24)	0.6	72.3	72.6	73.0	72.8	72.8	72.9
prime-age (25-54)	2.5	83.5	85.0	85.7	86.0	86.0	86.0
older (55-64)	3.6	64.1	65.5	66.8	67.0	67.9	67.7
very old (65-74)	-1.0	16.7	15.8	15.9	15.4	15.6	15.7
Participation rate (20-64) - females	2.7	72.1	73.9	74.5	75.0	75.1	74.8
Participation rate (20-74) - females	-1.3	64.5	64.9	64.3	62.8	63.8	63.1
youngest (20-24)	0.6	69.6	69.9	70.4	70.2	70.1	70.2
prime-age (25-54)	3.3	76.7	79.1	79.5	80.0	80.0	80.0
older (55-64)	6.6	55.9	58.9	62.1	61.3	62.7	62.5
very old (65-74)	-0.3	10.0	9.0	9.6	9.5	9.4	9.6
Participation rate (20-64) - males	0.5	85.5	85.4	85.7	86.4	86.2	86.0
Participation rate (20-74) - males	-2.9	77.9	76.9	75.8	74.9	75.6	75.0
youngest (20-24)	0.6	74.9	75.2	75.6	75.4	75.4	75.5
prime-age (25-54)	1.6	90.6	91.2	92.1	92.3	92.2	92.2
older (55-64)	0.8	72.5	72.3	71.8	72.9	73.5	73.3
very old (65-74)	-1.3	23.6	22.8	22.4	21.8	22.2	22.3
Average effective exit age - total (1)	0.0	64.7	64.7	64.7	64.7	64.7	64.7
males	0.0	65.5	65.5	65.5	65.5	65.5	65.5
females	0.1	63.9	64.0	64.0	64.0	64.0	64.0
Employment rate (15-64)	0.4	69.6	68.5	69.6	70.0	69.9	69.9
Employment rate (20-64)	0.1	75.1	74.2	74.7	75.4	75.4	75.2
Employment rate (20-74)	-3.2	67.9	66.1	65.3	64.5	65.3	64.7
Unemployment rate (15-64)	1.9	5.1	7.6	7.3	7.0	7.0	7.0
Unemployment rate (20-64)	1.8	4.6	6.8	6.7	6.4	6.4	6.4
Unemployment rate (20-74)	1.7	4.5	6.7	6.5	6.2	6.2	6.2
Employment (20-64) (in millions)	0.4	2.2	2.4	2.5	2.5	2.5	2.5
Employment (20-74) (in millions)	0.4	2.2	2.5	2.6	2.6	2.6	2.7
share of youngest (20-24)	-0.3	9%	9%	8%	8%	8%	8%
share of prime-age (25-54)	-5.2	73%	71%	69%	70%	69%	68%
share of older (55-64)	4.3	15%	17%	19%	17%	18%	19%
share of very old (65-74)	1.2	3%	3%	4%	4%	4%	4%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	4.8	18.6	20.5	23.2	21.5	22.3	23.4
Old-age dependency ratio 20-64 (3)	28.7	24.2	30.3	37.4	46.5	50.0	53.0
Total dependency ratio (4)	22.7	70.0	70.5	76.7	87.8	90.3	92.6
Total economic dependency ratio (5)	25.8	119.5	122.5	127.7	138.4	142.3	145.2
Economic old-age dependency ratio (20-64) (6)	36.7	29.1	37.4	46.1	57.2	62.1	65.9
Economic old-age dependency ratio (20-74) (7)	34.8	28.3	36.2	44.4	54.7	59.7	63.1

Ireland

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross (including POPS)	3.0	4.6	5.9	6.9	7.5	7.5	7.6
Of which : Old-age and early pensions	3.1	1.9	2.7	3.4	4.3	4.7	5.0
Disability pensions	0.1	0.7	0.8	0.8	0.8	0.8	0.8
Survivors' pensions	0.3	0.5	0.5	0.6	0.6	0.7	0.7
Other	-0.1	0.5	0.5	0.4	0.4	0.4	0.4
Earnings-related pensions (old-age and early pensions), gross	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Private occupational pensions, gross	-0.4	1.0	1.4	1.6	1.4	0.9	0.6
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	2.6	2.6	2.7	3.5	4.4	4.9	5.3
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	1,163	998	1,313	1,612	1,874	2,051	2,161
Public pensioners aged 65+ (1000 persons)	1,088	653	921	1,195	1,470	1,637	1,741
Pensioners younger than 65 as % of all pensioners (public)	-15.1	35%	30%	26%	22%	20%	19%
Benefit ratio % (public pensions)	0.1	28.1	28.0	28.0	28.0	28.1	28.2
Gross replacement rate at retirement % (old-age earnings-related)	-0.7	36.7	35.2	35.6	36.0	36.0	36.0
Average accrual rates % (new pensions, earnings-related)	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:
Contributors (public pensions, 1000 persons)	445	2,571	2,833	2,956	2,972	3,010	3,016
Support ratio (contributors/100 pensioners, public pensions)	-118	258	216	183	159	147	140
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.4	0.0	0.0	0.1	0.1	0.3	0.4
Lower fertility (-20%)	1.0	0.0	0.0	0.0	0.3	0.6	1.0
Higher TFP growth (+0.2 pps)	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1
TFP risk scenario (-0.2 pps)	0.1	0.0	0.0	0.0	0.0	0.1	0.1
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.1	-0.2	-0.3	-0.3	-0.3
Higher migration (+33%)	-0.1	0.0	-0.1	-0.2	-0.2	-0.2	-0.1
Lower migration (-33%)	0.1	0.0	0.1	0.2	0.3	0.2	0.1
Policy scenario linking retirement age to life expectancy	-1.0	0.0	0.0	-0.2	-0.5	-0.7	-1.0
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.3	0.0	0.2	0.3	0.3	0.3	0.3
Offset declining pension benefit ratio	:	:	:	:	:	:	:
Unchanged retirement age	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	3.0	4.6	5.9	6.9	7.5	7.5	7.6
pps change from 2019 due to:	3.0		1.3	2.3	2.9	2.9	3.0
Dependency ratio	4.0		0.9	1.9	3.2	3.7	4.0
Coverage ratio	-0.7		-0.2	-0.4	-0.7	-0.7	-0.7
Of which: old-age	0.3		0.1	0.1	0.1	0.2	0.3
early-age	-0.5		-0.4	-0.4	-0.3	-0.5	-0.5
cohort effect	-3.0		-0.4	-1.2	-2.5	-2.7	-3.0
Benefit ratio	0.2		0.2	0.2	0.2	0.2	0.2
Labour market ratio	-0.1		0.0	0.0	-0.1	-0.1	-0.1
Of which: employment rate	0.0		0.0	0.0	0.0	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		0.0	0.0	-0.1	0.0	-0.1
Interaction effect (residual)	-0.4		0.4	0.6	0.3	-0.2	-0.4
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	3.0	4.6	1.3	1.0	0.6	0.0	0.1
Dependency ratio	4.0		0.9	1.0	1.3	0.5	0.4
Coverage ratio	-0.7		-0.2	-0.2	-0.3	0.0	-0.1
Of which: old-age	0.3		0.1	0.1	0.0	0.1	0.0
early-age	-0.5		-0.4	-0.1	0.1	-0.2	0.0
cohort effect	-3.0		-0.4	-0.8	-1.3	-0.2	-0.3
Benefit ratio	0.2		0.2	0.0	0.0	0.0	0.0
Labour market ratio	-0.1		0.0	-0.1	-0.1	0.0	0.0
Of which: employment rate	0.0		0.0	0.0	-0.1	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		0.0	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.4		0.4	0.1	-0.3	-0.5	-0.3

Ireland

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.4	4.1	4.4	4.8	5.1	5.3	5.5
AWG risk scenario	2.0	4.1	4.5	5.0	5.5	5.8	6.0
TFP risk scenario	1.4	4.1	4.4	4.8	5.1	5.3	5.5
Demographic scenario	1.7	4.1	4.5	4.9	5.2	5.5	5.7
High life expectancy scenario (variation of demogr. scenario)	1.8	4.1	4.4	4.9	5.3	5.6	5.9
Healthy ageing scenario	1.0	4.1	4.3	4.6	4.8	5.0	5.1
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	1.8	4.1	4.5	4.9	5.3	5.6	5.8
EU cost convergence scenario	2.5	4.1	4.6	5.2	5.7	6.1	6.5
Labour intensity scenario	2.9	4.1	4.9	5.5	6.1	6.6	6.9
Sector-specific composite indexation scenario	1.7	4.1	4.5	4.9	5.2	5.5	5.7
Non-demographic determinants scenario	2.8	4.1	4.6	5.2	5.9	6.5	6.9

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.9	1.3	1.6	2.0	2.4	2.8	3.2
AWG risk scenario	3.7	1.3	1.8	2.4	3.2	4.1	5.0
TFP risk scenario	1.9	1.3	1.6	2.0	2.4	2.8	3.1
Demographic scenario	1.4	1.3	1.5	1.8	2.0	2.4	2.6
Base case scenario	1.9	1.3	1.6	2.0	2.4	2.8	3.2
High life expectancy scenario (variation of base case)	2.3	1.3	1.6	2.1	2.5	3.1	3.6
Healthy ageing scenario	1.6	1.3	1.6	1.9	2.2	2.6	2.9
Shift to formal care scenario	2.5	1.3	2.0	2.4	2.9	3.3	3.7
Coverage convergence scenario	4.0	1.3	1.8	2.5	3.3	4.3	5.3
Cost convergence scenario	1.9	1.3	1.6	2.0	2.4	2.8	3.2
Cost and coverage convergence scenario	4.0	1.3	1.8	2.5	3.3	4.3	5.3
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	95%	245	308	360	407	449	479
Recipients: receiving institutional care	248%	31	43	58	74	91	107
receiving home care	195%	85	118	152	188	224	251
receiving cash benefits	:	0	0	0	0	0	0

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.1	3.3	3.2	3.1	3.2	3.2	3.2
Number of students (in thousands)							
Total (students/staff in 2019 = 14.4)	5.5%	1,315	1,337	1,332	1,393	1,405	1,387
as % of population 5-24	2.1	99.9	98.5	101.3	101.9	101.4	102.0
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.4	0.0	0.2	0.3	0.4	0.4	0.4

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	6.2	13.2	15.2	16.7	18.1	18.8	19.4
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.4	0.0	0.3	0.7	1.2	1.8	2.4
TFP risk scenario (-0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High life expectancy (+2 years) (8)	0.6	0.0	0.0	0.0	0.2	0.4	0.6
Lower fertility (-20%)	1.3	0.0	-0.1	-0.2	0.1	0.7	1.3
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	-0.1	0.0	0.0
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.2	-0.4	-0.6	-0.5	-0.6
Higher migration (+33%)	-0.3	0.0	-0.1	-0.2	-0.4	-0.4	-0.3
Lower migration (-33%)	0.3	0.0	0.1	0.3	0.4	0.4	0.3
Policy scenario linking retirement age to life expectancy	-1.4	0.0	-0.1	-0.3	-0.7	-1.0	-1.4
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.4	0.0	0.3	0.4	0.4	0.4	0.4

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
The gross public pensions expenditure projections include the Public Social Security (PSS) scheme that provides flat rate Social Insurance and Social Assistance pensions, as well as the Private Occupational Public Service (POPS) scheme that are pensions for public servants. Earnings and non-earnings-related pension expenditure projections are based on PSS expenditure only, while gross private occupational expenditure projections relate to POPS expenditure only (and not to other private occupation pension schemes of private sector employees). The projections of the number of pensioners refer only to private Social Security pension recipients (i.e they do not include pensioners under the POPS scheme). The impact of the sensitivity tests relate to Private Social Security expenditure projections only.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

8. GREECE

Greece							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.34	1.39	1.43	1.47	1.50	1.54
Life expectancy at birth							
males	7.4	79.0	80.8	82.4	83.8	85.2	86.4
females	6.0	84.3	85.7	86.9	88.1	89.3	90.3
Life expectancy at 65							
males	5.1	18.8	20.0	21.1	22.1	23.0	23.9
females	4.9	21.8	22.9	23.9	24.9	25.8	26.7
Net migration (thousand)	:	13.7	11.6	16.0	20.7	23.8	26.0
Net migration as % of population	:	0.1	0.1	0.2	0.2	0.3	0.3
Population (million)	-2.1	10.7	10.3	9.9	9.5	9.0	8.6
Young population (0-19) as % of total population	-2.5	19.4	17.5	16.3	16.7	16.8	16.9
Prime-age population (25-54) as % of total population	-7.4	40.2	36.2	33.8	33.4	33.1	32.9
Working-age population (20-64) as % of total population	-8.1	58.4	56.5	53.0	49.5	49.8	50.3
Elderly population (65+) as % of total population	10.6	22.2	26.0	30.6	33.8	33.5	32.8
Very elderly population (80+) as % of total population	8.1	7.2	8.4	10.4	13.1	15.4	15.2
Very elderly population (80+) as % of elderly population	14.1	32.3	32.1	34.1	38.7	45.9	46.4
Very elderly population (80+) as % of working-age population	18.0	12.2	14.8	19.7	26.4	30.9	30.3
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.2	-0.4	0.7	1.7	1.6	1.5	1.3
Employment (growth rate)	-0.3	-0.6	-0.1	-0.4	-0.5	-0.3	-0.3
Labour input: hours worked (growth rate)	-0.3	-0.6	-0.1	-0.4	-0.5	-0.3	-0.2
Labour productivity per hour (growth rate)	1.5	0.2	0.9	2.2	2.0	1.8	1.5
TFP (growth rate)	1.0	0.3	0.7	1.4	1.3	1.2	1.0
Capital deepening (contribution to labour productivity growth)	0.4	-0.1	0.2	0.8	0.7	0.6	0.5
Potential GDP per capita (growth rate)	1.6	-0.2	1.1	2.1	2.0	2.1	1.7
Potential GDP per worker (growth rate)	1.5	0.2	0.9	2.2	2.0	1.8	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-1,939	6,259	5,810	5,245	4,697	4,486	4,320
Population growth (20-64)	0.2	-0.6	-0.7	-1.1	-0.7	-0.3	-0.4
Labour force 15-64 (thousands)	-1,078	4,650	4,525	4,194	3,865	3,704	3,573
Labour force 20-64 (thousands)	-1,070	4,622	4,496	4,170	3,843	3,683	3,552
Participation rate (20-64)	8.4	73.8	77.4	79.5	81.8	82.1	82.2
Participation rate (20-74)	7.9	63.5	65.1	65.8	67.5	70.6	71.4
youngest (20-24)	3.5	42.4	45.4	46.1	45.7	45.7	45.8
prime-age (25-54)	2.8	85.4	87.0	88.0	88.4	88.2	88.2
older (55-64)	30.4	50.4	65.8	71.2	77.2	79.8	80.8
very old (65-74)	17.7	8.0	10.1	14.8	16.9	21.7	25.7
Participation rate (20-64) - females	13.3	65.4	71.6	75.2	78.1	78.5	78.7
Participation rate (20-74) - females	12.6	55.5	59.0	60.9	63.4	67.0	68.1
youngest (20-24)	1.5	40.8	41.7	42.6	42.2	42.1	42.3
prime-age (25-54)	7.0	77.8	82.0	84.3	84.9	84.8	84.8
older (55-64)	39.2	38.0	57.9	65.9	72.9	76.2	77.3
very old (65-74)	19.4	5.2	8.0	12.8	15.8	20.5	24.6
Participation rate (20-64) - males	3.0	82.5	83.1	83.6	85.3	85.3	85.5
Participation rate (20-74) - males	2.5	71.8	71.4	70.7	71.5	74.0	74.3
youngest (20-24)	5.3	43.8	48.7	49.3	49.0	48.9	49.1
prime-age (25-54)	-1.9	93.3	91.8	91.5	91.5	91.3	91.4
older (55-64)	19.7	64.5	74.6	76.7	81.4	83.2	84.1
very old (65-74)	15.4	11.3	12.7	17.1	18.0	22.9	26.7
Average effective exit age - total (1)	4.7	62.9	64.8	65.8	66.6	67.1	67.6
males	4.6	63.0	64.8	65.8	66.6	67.1	67.6
females	4.8	62.9	64.8	65.8	66.6	67.1	67.6
Employment rate (15-64)	14.3	56.3	62.7	66.7	70.2	70.3	70.6
Employment rate (20-64)	15.6	60.9	68.0	71.9	76.0	76.4	76.5
Employment rate (20-74)	14.1	52.5	57.3	59.6	62.9	65.9	66.5
Unemployment rate (15-64)	-10.6	17.6	12.2	9.6	7.2	7.0	7.0
Unemployment rate (20-64)	-10.5	17.5	12.1	9.6	7.1	6.9	6.9
Unemployment rate (20-74)	-10.6	17.3	12.0	9.4	6.9	6.8	6.7
Employment (20-64) (in millions)	-0.5	3.8	4.0	3.8	3.6	3.4	3.3
Employment (20-74) (in millions)	-0.3	3.9	4.1	4.0	3.8	3.6	3.6
share of youngest (20-24)	0.7	4%	5%	5%	5%	5%	5%
share of prime-age (25-54)	-13.1	78%	70%	67%	69%	67%	65%
share of older (55-64)	7.4	16%	22%	23%	21%	22%	23%
share of very old (65-74)	5.0	2%	3%	5%	6%	6%	7%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.6	22.3	26.0	26.7	23.2	23.7	24.9
Old-age dependency ratio 20-64 (3)	27.3	37.9	46.1	57.8	68.2	67.3	65.2
Total dependency ratio (4)	27.6	71.1	77.0	88.6	101.8	100.9	98.7
Total economic dependency ratio (5)	-33.5	174.7	152.5	149.2	150.5	147.3	141.2
Economic old-age dependency ratio (20-64) (6)	17.5	59.8	64.4	74.8	83.5	81.5	77.2
Economic old-age dependency ratio (20-74) (7)	13.3	58.5	62.5	71.1	78.8	76.6	71.7

Greece							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-3.8	15.7	13.8	14.0	13.6	12.0	11.9
Of which : Old-age and early pensions	-2.0	11.2	10.2	10.5	10.5	9.2	9.2
Disability pensions	-0.2	1.0	0.9	0.9	0.8	0.8	0.8
Survivors' pensions	-0.6	2.2	2.5	2.3	2.0	1.8	1.6
Other	-1.0	1.3	0.3	0.3	0.3	0.3	0.3
Earnings-related pensions (old-age and early pensions), gross	-0.4	7.2	6.4	6.6	6.8	6.2	6.8
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.1	0.5	0.5	0.7	0.6	0.5	0.5
Public pensions, net	-3.3	13.8	12.1	12.2	11.9	10.6	10.4
Public pensions, contributions	-2.0	13.3	13.4	13.3	12.9	12.0	11.4
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.0	87.6%	87.6%	87.6%	87.6%	87.6%	87.6%
Pensioners (public, 1000 persons)	209	2,506	2,562	2,867	3,036	2,834	2,715
Public pensioners aged 65+ (1000 persons)	620	1,977	2,259	2,648	2,823	2,684	2,597
Pensioners younger than 65 as % of all pensioners (public)	-16.8	21%	12%	8%	7%	5%	4%
Benefit ratio % (public pensions)	-22.0	65.4	61.7	54.1	47.4	43.3	43.5
Gross replacement rate at retirement % (old-age earnings-related)	-12.8	69.0	63.4	59.4	57.4	55.2	56.2
Average accrual rates % (new pensions, earnings-related)	0.1	1.1	1.1	1.1	1.1	1.1	1.2
Average contributory period, years (new pensions, earnings-related)	6.6	31.2	32.3	32.9	35.1	36.1	37.8
Contributors (public pensions, 1000 persons)	-410	4,843	5,071	4,941	4,714	4,540	4,433
Support ratio (contributors/100 pensioners, public pensions)	-30	193	198	172	155	160	163
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	-0.1	0.0	-0.2	-0.3	-0.2	-0.2	-0.1
Lower fertility (-20%)	1.1	0.0	0.0	0.0	0.3	0.7	1.1
Higher TFP growth (+0.2 pps)	-0.7	0.0	-0.3	-0.5	-0.6	-0.7	-0.7
TFP risk scenario (-0.2 pps)	0.7	0.0	-0.1	0.1	0.4	0.6	0.7
Higher employment rate of older workers (+10 pps)	-0.1	0.0	-0.5	-0.7	-0.7	-0.4	-0.1
Higher migration (+33%)	-0.5	0.0	0.0	-0.1	-0.2	-0.4	-0.5
Lower migration (-33%)	0.5	0.0	0.0	0.0	0.2	0.4	0.5
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	-0.1	0.0	0.1	0.0	0.0	0.1	-0.1
Adverse macroeconomic scenario - adverse structural	0.9	0.0	0.2	0.5	0.6	0.9	0.9
Offset declining pension benefit ratio	4.1	0.0	0.0	1.2	3.2	4.3	4.1
Unchanged retirement age	1.4	0.0	0.7	1.4	1.4	1.7	1.4
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-3.8	15.7	13.8	14.0	13.6	12.0	11.9
pps change from 2019 due to:	-3.8		-1.9	-1.7	-2.1	-3.7	-3.8
Dependency ratio	8.4		3.3	6.6	9.0	8.8	8.4
Coverage ratio	-1.5		-1.6	-1.7	-1.7	-1.8	-1.5
Of which: old-age	1.4		0.2	0.7	0.8	0.9	1.4
early-age	-17.7		-8.6	-11.2	-13.4	-16.0	-17.7
cohort effect	-6.6		-1.2	-4.6	-7.9	-7.2	-6.6
Benefit ratio	-6.2		-1.6	-3.4	-5.1	-6.3	-6.2
Labour market ratio	-4.1		-1.9	-2.9	-3.8	-3.9	-4.1
Of which: employment rate	-3.4		-1.8	-2.6	-3.3	-3.4	-3.4
labour intensity	0.1		0.0	0.0	0.1	0.1	0.1
career shift	-0.7		-0.1	-0.4	-0.5	-0.6	-0.7
Interaction effect (residual)	-0.4		0.0	-0.3	-0.5	-0.4	-0.4
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-3.8	15.7	-1.9	0.1	-0.4	-1.5	-0.2
Dependency ratio	8.4		3.3	3.3	2.4	-0.2	-0.4
Coverage ratio	-1.5		-1.6	-0.1	0.0	-0.1	0.3
Of which: old-age	1.4		0.2	0.5	0.1	0.1	0.4
early-age	-17.7		-8.6	-2.6	-2.2	-2.6	-1.7
cohort effect	-6.6		-1.2	-3.4	-3.2	0.7	0.6
Benefit ratio	-6.2		-1.6	-1.7	-1.8	-1.2	0.1
Labour market ratio	-4.1		-1.9	-1.0	-0.9	-0.1	-0.2
Of which: employment rate	-3.4		-1.8	-0.8	-0.8	-0.1	0.0
labour intensity	0.1		0.0	0.0	0.0	0.0	0.0
career shift	-0.7		-0.1	-0.3	-0.1	0.0	-0.1
Interaction effect (residual)	-0.4		0.0	-0.3	-0.2	0.0	0.0

Greece

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.8	4.4	4.7	5.0	5.2	5.3	5.2
AWG risk scenario	1.6	4.4	4.9	5.5	5.9	6.1	6.1
TFP risk scenario	0.8	4.4	4.7	5.0	5.2	5.3	5.2
Demographic scenario	0.9	4.4	4.8	5.1	5.3	5.4	5.4
High life expectancy scenario (variation of demogr. scenario)	1.0	4.4	4.8	5.1	5.3	5.5	5.5
Healthy ageing scenario	0.3	4.4	4.6	4.8	4.9	4.9	4.8
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	1.1	4.4	4.8	5.2	5.5	5.6	5.6
EU cost convergence scenario	2.3	4.4	5.0	5.6	6.1	6.5	6.8
Labour intensity scenario	0.3	4.4	4.4	4.6	4.8	4.8	4.7
Sector-specific composite indexation scenario	1.9	4.4	4.9	5.6	6.1	6.4	6.4
Non-demographic determinants scenario	2.8	4.4	5.0	5.8	6.5	7.0	7.2

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.0	0.2	0.2	0.2	0.2	0.2	0.2
AWG risk scenario	2.4	0.2	0.2	0.3	0.6	1.3	2.6
TFP risk scenario	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Demographic scenario	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Base case scenario	0.0	0.2	0.2	0.2	0.2	0.2	0.2
High life expectancy scenario (variation of base case)	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Healthy ageing scenario	0.0	0.2	0.2	0.1	0.1	0.2	0.1
Shift to formal care scenario	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Coverage convergence scenario	0.2	0.2	0.2	0.2	0.3	0.3	0.4
Cost convergence scenario	1.1	0.2	0.2	0.3	0.4	0.7	1.2
Cost and coverage convergence scenario	2.6	0.2	0.2	0.4	0.7	1.4	2.8
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	7%	1,034	1,090	1,156	1,195	1,181	1,109
Recipients: receiving institutional care	-28%	11	10	9	9	9	8
receiving home care	35%	290	315	352	389	409	392
receiving cash benefits	:	0	0	0	0	0	0

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.6	3.2	2.9	2.6	2.7	2.7	2.6
Number of students (in thousands)							
Total (students/staff in 2019 = 11.7)	-30.7%	2,068	1,840	1,631	1,561	1,507	1,434
as % of population 5-24	-1.6	95.5	92.5	94.1	94.8	93.9	93.9
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.2	0.0	0.1	0.2	0.2	0.2	0.2

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	-3.7	23.6	21.6	21.8	21.7	20.2	19.9
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	3.3	0.0	0.2	0.6	1.2	2.0	3.3
TFP risk scenario (-0.2 pps)	0.7	0.0	-0.1	0.1	0.4	0.6	0.7
High life expectancy (+2 years) (8)	-0.1	0.0	-0.2	-0.4	-0.3	-0.3	-0.1
Lower fertility (-20%)	1.1	0.0	-0.1	-0.2	0.2	0.6	1.1
Higher TFP growth (+0.2 pps)	-0.6	0.0	-0.2	-0.5	-0.6	-0.6	-0.6
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.6	-0.9	-0.9	-0.5	-0.3
Higher migration (+33%)	-0.6	0.0	0.0	0.0	-0.2	-0.4	-0.6
Lower migration (-33%)	0.6	0.0	0.0	0.0	0.2	0.4	0.6
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	-0.2	0.0	0.1	0.0	0.0	0.0	-0.2
Adverse macroeconomic scenario - adverse structural	0.8	0.0	0.2	0.5	0.6	0.9	0.8

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
The values of the gross replacement rate at retirement, the average accrual rate and the average contributory period are for 2020. The average accrual rate and the average contributory period concern only the main pension provision and include both contributory and flat rate components.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

9. SPAIN

Spain							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.27	1.33	1.37	1.41	1.45	1.49
Life expectancy at birth							
males	5.9	81.2	82.4	83.7	84.9	86.0	87.1
females	4.6	86.8	87.7	88.7	89.7	90.6	91.4
Life expectancy at 65							
males	4.2	19.9	20.7	21.6	22.5	23.3	24.1
females	3.8	23.9	24.6	25.5	26.2	27.0	27.7
Net migration (thousand)	:	438.5	185.4	178.2	178.7	175.7	169.0
Net migration as % of population	:	0.9	0.4	0.4	0.4	0.4	0.4
Population (million)	-0.1	47.1	48.8	49.4	49.3	48.3	47.0
Young population (0-19) as % of total population	-2.9	19.7	17.2	16.3	16.7	16.7	16.8
Prime-age population (25-54) as % of total population	-9.3	42.8	37.8	35.2	34.4	33.9	33.5
Working-age population (20-64) as % of total population	-9.6	60.8	58.7	54.3	50.6	50.8	51.2
Elderly population (65+) as % of total population	12.5	19.5	24.0	29.4	32.7	32.5	32.0
Very elderly population (80+) as % of total population	8.5	6.1	7.3	9.4	12.4	15.1	14.6
Very elderly population (80+) as % of elderly population	14.4	31.2	30.5	32.1	38.0	46.3	45.6
Very elderly population (80+) as % of working-age population	18.5	10.0	12.5	17.3	24.6	29.7	28.5
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.4	1.7	1.6	1.4	1.4	1.5	1.3
Employment (growth rate)	0.0	1.2	0.4	-0.3	-0.3	-0.1	-0.3
Labour input: hours worked (growth rate)	0.0	1.1	0.4	-0.3	-0.3	-0.1	-0.3
Labour productivity per hour (growth rate)	1.5	0.6	1.1	1.8	1.7	1.6	1.5
TFP (growth rate)	1.0	0.5	0.8	1.2	1.1	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.1	0.4	0.6	0.6	0.6	0.5
Potential GDP per capita (growth rate)	1.4	1.0	1.4	1.4	1.5	1.8	1.5
Potential GDP per worker (growth rate)	1.5	0.5	1.1	1.8	1.7	1.6	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-4,574	28,662	28,646	26,846	24,943	24,538	24,088
Population growth (20-64)	-0.9	0.5	-0.3	-1.0	-0.4	-0.1	-0.3
Labour force 15-64 (thousands)	-2,960	22,917	23,695	22,313	20,772	20,381	19,958
Labour force 20-64 (thousands)	-2,934	22,639	23,389	22,059	20,517	20,115	19,705
Participation rate (20-64)	2.8	79.0	81.7	82.2	82.3	82.0	81.8
Participation rate (20-74)	1.7	68.6	70.5	69.4	68.8	70.6	70.3
youngest (20-24)	0.7	55.5	56.0	56.6	56.1	56.0	56.2
prime-age (25-54)	-0.1	87.0	87.4	87.0	87.0	86.9	86.9
older (55-64)	16.6	61.7	77.1	79.0	78.5	78.5	78.3
very old (65-74)	16.7	4.5	17.5	20.2	19.0	20.1	21.2
Participation rate (20-64) - females	5.1	73.8	78.3	79.3	79.3	79.0	78.9
Participation rate (20-74) - females	4.0	63.5	67.1	66.6	66.0	67.7	67.5
youngest (20-24)	0.5	52.1	52.4	52.9	52.4	52.4	52.5
prime-age (25-54)	0.9	82.3	83.9	83.4	83.3	83.2	83.2
older (55-64)	22.8	54.5	73.9	78.2	77.8	77.5	77.3
very old (65-74)	17.2	3.5	16.2	19.4	18.8	19.8	20.7
Participation rate (20-64) - males	0.6	84.2	85.1	85.0	85.3	85.0	84.8
Participation rate (20-74) - males	-0.6	73.8	74.1	72.2	71.7	73.5	73.2
youngest (20-24)	0.9	58.8	59.5	60.0	59.6	59.5	59.7
prime-age (25-54)	-1.1	91.7	90.9	90.7	90.7	90.6	90.6
older (55-64)	10.1	69.1	80.4	79.8	79.3	79.6	79.3
very old (65-74)	16.1	5.5	18.9	21.1	19.2	20.5	21.6
Average effective exit age - total (1)	2.0	64.2	65.3	66.0	66.4	66.2	66.2
males	2.3	63.8	65.3	65.9	66.4	66.2	66.1
females	1.7	64.6	65.4	66.0	66.5	66.3	66.2
Employment rate (15-64)	7.5	63.4	65.3	68.9	71.2	70.9	70.9
Employment rate (20-64)	8.2	68.1	70.4	73.7	76.5	76.4	76.2
Employment rate (20-74)	6.5	59.2	61.1	62.5	64.2	65.9	65.7
Unemployment rate (15-64)	-7.2	14.2	14.2	10.6	7.2	7.0	7.0
Unemployment rate (20-64)	-7.0	13.8	13.8	10.3	7.0	6.8	6.8
Unemployment rate (20-74)	-7.1	13.7	13.5	10.0	6.8	6.6	6.6
Employment (20-64) (in millions)	-1.2	19.5	20.2	19.8	19.1	18.7	18.4
Employment (20-74) (in millions)	-0.2	19.7	21.1	21.1	20.3	19.8	19.5
share of youngest (20-24)	1.1	5%	5%	5%	5%	6%	6%
share of prime-age (25-54)	-11.9	78%	66%	65%	68%	67%	66%
share of older (55-64)	5.9	17%	24%	24%	21%	22%	23%
share of very old (65-74)	4.9	1%	5%	6%	6%	5%	6%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3.5	21.6	25.9	26.4	23.1	23.6	25.1
Old-age dependency ratio 20-64 (3)	30.5	32.1	40.9	54.0	64.7	64.1	62.5
Total dependency ratio (4)	30.9	64.4	70.3	84.0	97.7	96.9	95.3
Total economic dependency ratio (5)	1.9	139.1	130.7	133.8	142.8	143.7	141.1
Economic old-age dependency ratio (20-64) (6)	29.5	46.1	53.0	66.2	77.9	77.9	75.6
Economic old-age dependency ratio (20-74) (7)	25.5	45.6	50.5	61.9	73.1	73.7	71.1

Spain							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-2.1	12.3	12.3	12.8	13.0	11.7	10.3
Of which : Old-age and early pensions	-0.9	9.0	9.4	10.2	10.6	9.3	8.1
Disability pensions	-0.3	1.1	0.9	0.9	0.8	0.8	0.8
Survivors' pensions	-0.9	2.2	2.0	1.8	1.7	1.5	1.3
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	-1.0	8.9	9.2	10.0	10.3	9.1	7.9
Private occupational pensions, gross	0.0	0.3	0.3	0.4	0.4	0.4	0.3
Private individual pensions, gross	0.1	0.2	0.4	0.5	0.5	0.4	0.4
New pensions, gross (old-age and early pensions)	-0.1	0.3	0.3	0.4	0.3	0.2	0.2
Public pensions, net	-2.0	11.4	11.3	11.8	11.9	10.7	9.4
Public pensions, contributions	0.0	11.8	11.8	11.8	11.8	11.8	11.8
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	-0.3	92.1%	91.9%	91.8%	91.9%	91.8%	91.8%
Pensioners (public, 1000 persons)	6,206	9,961	11,529	14,272	16,496	16,822	16,167
Public pensioners aged 65+ (1000 persons)	6,509	8,069	9,668	12,519	15,034	15,297	14,579
Pensioners younger than 65 as % of all pensioners (public)	-9.2	19%	16%	12%	9%	9%	10%
Benefit ratio % (public pensions)	-30.7	60.0	53.6	45.0	38.0	32.7	29.4
Gross replacement rate at retirement % (old-age earnings-related)	-35.7	77.0	66.7	59.9	52.6	46.5	41.3
Average accrual rates % (new pensions, earnings-related)	-1.0	2.4	2.1	1.9	1.7	1.6	1.4
Average contributory period, years (new pensions, earnings-related)	3.7	38.9	39.5	40.2	41.0	41.8	42.6
Contributors (public pensions, 1000 persons)	-1,978	23,124	24,741	23,726	22,047	21,497	21,146
Support ratio (contributors/100 pensioners, public pensions)	-101	232	215	166	134	128	131
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.1	0.0	0.0	0.1	0.0	0.1	0.1
Lower fertility (-20%)	1.0	0.0	0.0	0.0	0.4	0.7	1.0
Higher TFP growth (+0.2 pps)	-0.9	0.0	-0.1	-0.4	-0.6	-0.8	-0.9
TFP risk scenario (-0.2 pps)	0.9	0.0	0.0	0.2	0.5	0.7	0.9
Higher employment rate of older workers (+10 pps)	-1.4	0.0	-1.4	-2.6	-2.7	-2.0	-1.4
Higher migration (+33%)	-0.5	0.0	-0.2	-0.4	-0.7	-0.7	-0.5
Lower migration (-33%)	0.7	0.0	0.2	0.4	0.8	0.8	0.7
Policy scenario linking retirement age to life expectancy	-1.1	0.0	-0.4	-0.8	-1.1	-1.1	-1.1
Adverse macroeconomic scenario - lagged recovery	-0.1	0.0	0.1	0.0	-0.1	-0.1	-0.1
Adverse macroeconomic scenario - adverse structural	1.4	0.0	0.4	0.7	0.8	1.1	1.4
Offset declining pension benefit ratio	8.3	0.0	0.1	2.5	5.4	7.3	8.3
Unchanged retirement age	1.5	0.0	2.3	3.2	2.5	1.8	1.5
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-2.1	12.3	12.3	12.8	13.0	11.7	10.3
pps change from 2019 due to:	-2.1		0.0	0.5	0.7	-0.6	-2.1
Dependency ratio	9.2		3.4	7.1	9.6	9.4	9.2
Coverage ratio	-0.1		-1.3	-1.3	-0.7	-0.2	-0.1
Of which: old-age	1.3		-0.8	-0.2	0.8	1.3	1.3
early-age	-1.1		-1.8	-0.8	-1.2	-1.4	-1.1
cohort effect	-7.0		-1.3	-5.1	-8.2	-7.4	-7.0
Benefit ratio	-8.3		-1.0	-3.1	-5.2	-7.1	-8.3
Labour market ratio	-2.1		-0.9	-1.7	-2.1	-2.0	-2.1
Of which: employment rate	-1.5		-0.5	-1.0	-1.5	-1.5	-1.5
labour intensity	0.1		0.0	0.0	0.1	0.1	0.1
career shift	-0.7		-0.5	-0.7	-0.7	-0.6	-0.7
Interaction effect (residual)	-0.8		-0.2	-0.6	-0.8	-0.8	-0.8
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-2.1	12.3	0.0	0.5	0.2	-1.3	-1.4
Dependency ratio	9.2		3.4	3.7	2.5	-0.1	-0.3
Coverage ratio	-0.1		-1.3	0.0	0.5	0.6	0.0
Of which: old-age	1.3		-0.8	0.6	1.0	0.6	-0.1
early-age	-1.1		-1.8	1.0	-0.3	-0.2	0.3
cohort effect	-7.0		-1.3	-3.8	-3.1	0.8	0.4
Benefit ratio	-8.3		-1.0	-2.1	-2.1	-1.8	-1.2
Labour market ratio	-2.1		-0.9	-0.8	-0.4	0.1	0.0
Of which: employment rate	-1.5		-0.5	-0.6	-0.5	0.0	0.0
labour intensity	0.1		0.0	0.0	0.0	0.0	0.0
career shift	-0.7		-0.5	-0.2	0.0	0.1	-0.1
Interaction effect (residual)	-0.8		-0.2	-0.3	-0.2	0.0	0.0

Spain

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.3	5.7	6.2	6.7	7.0	7.1	7.0
AWG risk scenario	2.2	5.7	6.3	7.2	7.7	8.0	7.9
TFP risk scenario	1.3	5.7	6.2	6.7	7.0	7.1	7.0
Demographic scenario	1.5	5.7	6.2	6.8	7.1	7.2	7.2
High life expectancy scenario (variation of demogr. scenario)	1.7	5.7	6.2	6.8	7.2	7.4	7.4
Healthy ageing scenario	0.8	5.7	6.1	6.4	6.7	6.7	6.5
Death-related cost scenario	1.4	5.7	6.2	6.7	7.1	7.1	7.1
Income elasticity scenario	1.7	5.7	6.3	6.9	7.3	7.4	7.4
EU cost convergence scenario	1.6	5.7	6.2	6.8	7.2	7.3	7.3
Labour intensity scenario	1.8	5.7	6.2	6.9	7.5	7.7	7.5
Sector-specific composite indexation scenario	2.2	5.7	6.4	7.1	7.7	7.9	7.9
Non-demographic determinants scenario	3.3	5.7	6.5	7.5	8.3	8.9	9.0

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.8	0.7	0.9	1.0	1.3	1.5	1.5
AWG risk scenario	2.8	0.7	1.0	1.5	2.1	2.9	3.5
TFP risk scenario	0.8	0.7	0.9	1.0	1.3	1.5	1.5
Demographic scenario	0.7	0.7	0.9	1.0	1.2	1.4	1.5
Base case scenario	0.8	0.7	0.9	1.0	1.3	1.5	1.5
High life expectancy scenario (variation of base case)	1.0	0.7	0.9	1.1	1.4	1.6	1.7
Healthy ageing scenario	0.7	0.7	0.8	1.0	1.2	1.4	1.4
Shift to formal care scenario	1.1	0.7	1.1	1.3	1.6	1.8	1.8
Coverage convergence scenario	2.4	0.7	1.0	1.4	2.0	2.6	3.1
Cost convergence scenario	1.2	0.7	0.9	1.1	1.5	1.8	1.9
Cost and coverage convergence scenario	2.9	0.7	1.0	1.5	2.2	3.0	3.7
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	47%	2,007	2,316	2,622	2,916	3,066	2,958
Recipients: receiving institutional care	90%	153	180	214	255	288	292
receiving home care	93%	454	536	652	791	891	878
receiving cash benefits	81%	606	699	823	976	1,092	1,096

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.4	3.6	3.3	3.0	3.1	3.2	3.2
Number of students (in thousands)							
Total (students/staff in 2019 = 12.1)	-13.8%	8,591	8,229	7,615	7,697	7,642	7,408
as % of population 5-24	-0.5	89.9	87.9	90.0	90.1	89.4	89.4
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.4	0.0	0.2	0.3	0.4	0.4	0.4

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	-0.4	22.3	22.6	23.6	24.5	23.5	21.9
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.8	0.0	0.3	0.9	1.5	2.3	2.8
TFP risk scenario (-0.2 pps)	0.9	0.0	0.0	0.2	0.5	0.7	0.9
High life expectancy (+2 years) (8)	0.3	0.0	0.0	0.1	0.1	0.2	0.3
Lower fertility (-20%)	1.1	0.0	-0.1	-0.2	0.2	0.7	1.1
Higher TFP growth (+0.2 pps)	-0.9	0.0	-0.1	-0.3	-0.6	-0.8	-0.9
Higher employment rate of older workers (+10 pps)	-1.6	0.0	-1.5	-2.8	-2.9	-2.2	-1.6
Higher migration (+33%)	-0.8	0.0	-0.2	-0.5	-0.8	-0.9	-0.8
Lower migration (-33%)	0.9	0.0	0.2	0.5	0.9	1.1	0.9
Policy scenario linking retirement age to life expectancy	-1.1	0.0	-0.4	-0.8	-1.1	-1.1	-1.1
Adverse macroeconomic scenario - lagged recovery	-0.1	0.0	0.1	0.0	-0.1	-0.1	-0.1
Adverse macroeconomic scenario - adverse structural	1.4	0.0	0.4	0.8	0.8	1.1	1.4

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

10. FRANCE

France							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.0	1.85	1.84	1.84	1.84	1.84	1.84
Life expectancy at birth							
males	6.6	80.1	81.6	83.0	84.3	85.6	86.7
females	5.1	86.3	87.4	88.6	89.6	90.6	91.4
Life expectancy at 65							
males	4.2	20.0	20.9	21.8	22.6	23.5	24.2
females	3.8	24.1	24.9	25.7	26.5	27.2	27.9
Net migration (thousand)	:	38.1	68.3	73.9	75.2	74.6	80.2
Net migration as % of population	:	0.1	0.1	0.1	0.1	0.1	0.1
Population (million)	2.3	67.1	68.8	69.8	70.0	69.7	69.4
Young population (0-19) as % of total population	-3.3	24.1	22.3	21.6	21.5	21.1	20.8
Prime-age population (25-54) as % of total population	-4.2	37.5	35.1	34.6	34.0	33.8	33.3
Working-age population (20-64) as % of total population	-5.1	55.6	53.6	51.7	50.7	50.6	50.5
Elderly population (65+) as % of total population	8.4	20.3	24.1	26.8	27.8	28.3	28.7
Very elderly population (80+) as % of total population	6.5	6.2	7.7	9.9	11.2	11.9	12.6
Very elderly population (80+) as % of elderly population	13.5	30.3	32.1	36.8	40.5	42.2	43.9
Very elderly population (80+) as % of working-age population	13.9	11.1	14.4	19.1	22.2	23.6	25.0
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.3	1.1	1.0	1.6	1.5	1.5	1.4
Employment (growth rate)	0.1	0.5	0.2	0.1	-0.1	0.0	-0.1
Labour input: hours worked (growth rate)	0.1	0.4	0.2	0.1	-0.1	0.0	-0.1
Labour productivity per hour (growth rate)	1.3	0.7	0.8	1.5	1.5	1.5	1.5
TFP (growth rate)	0.8	0.3	0.5	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.4	0.3	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.3	0.9	0.8	1.5	1.5	1.6	1.4
Potential GDP per worker (growth rate)	1.3	0.6	0.8	1.5	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-2,276	37,327	36,906	36,102	35,511	35,255	35,051
Population growth (20-64)	0.1	-0.2	-0.1	-0.1	-0.2	0.1	-0.1
Labour force 15-64 (thousands)	-1,165	29,717	29,670	29,333	28,960	28,795	28,551
Labour force 20-64 (thousands)	-1,103	29,127	29,076	28,789	28,417	28,246	28,024
Participation rate (20-64)	1.9	78.0	78.8	79.7	80.0	80.1	80.0
Participation rate (20-74)	2.0	66.2	66.5	67.2	68.2	68.3	68.2
youngest (20-24)	1.0	62.6	63.4	63.5	63.5	63.5	63.6
prime-age (25-54)	-0.3	87.4	87.1	87.0	87.2	87.1	87.2
older (55-64)	10.1	56.9	62.9	65.8	66.4	67.3	67.0
very old (65-74)	9.0	5.5	9.1	11.8	14.4	14.0	14.6
Participation rate (20-64) - females	3.1	74.1	75.5	76.9	77.3	77.5	77.3
Participation rate (20-74) - females	3.3	62.3	63.2	64.5	65.5	65.6	65.6
youngest (20-24)	1.5	58.1	59.4	59.6	59.5	59.5	59.6
prime-age (25-54)	1.4	83.1	83.8	84.3	84.6	84.6	84.6
older (55-64)	10.2	54.6	59.7	62.9	63.9	65.1	64.8
very old (65-74)	9.7	4.3	8.1	11.2	13.7	13.3	14.0
Participation rate (20-64) - males	0.6	82.1	82.2	82.8	82.8	82.8	82.7
Participation rate (20-74) - males	0.6	70.3	70.0	70.1	71.1	71.0	70.9
youngest (20-24)	0.6	67.0	67.3	67.4	67.4	67.4	67.6
prime-age (25-54)	-2.0	91.9	90.5	89.9	89.8	89.8	89.8
older (55-64)	10.1	59.3	66.2	68.9	69.2	69.6	69.4
very old (65-74)	8.2	6.9	10.3	12.6	15.2	14.7	15.2
Average effective exit age - total (1)	2.2	62.3	63.5	64.3	64.5	64.5	64.5
males	2.4	62.3	63.6	64.5	64.7	64.7	64.7
females	2.1	62.2	63.3	64.1	64.3	64.3	64.3
Employment rate (15-64)	3.0	65.5	66.2	67.8	68.4	68.5	68.6
Employment rate (20-64)	2.9	71.6	72.4	73.8	74.6	74.7	74.5
Employment rate (20-74)	2.9	60.8	61.2	62.3	63.7	63.8	63.7
Unemployment rate (15-64)	-1.6	8.6	8.4	7.7	7.0	7.0	7.0
Unemployment rate (20-64)	-1.5	8.2	8.1	7.4	6.8	6.8	6.8
Unemployment rate (20-74)	-1.6	8.2	8.0	7.3	6.6	6.6	6.6
Employment (20-64) (in millions)	-0.6	26.7	26.7	26.6	26.5	26.3	26.1
Employment (20-74) (in millions)	0.1	27.1	27.4	27.6	27.6	27.4	27.2
share of youngest (20-24)	0.3	7%	8%	7%	7%	7%	7%
share of prime-age (25-54)	-5.5	75%	71%	71%	71%	70%	69%
share of older (55-64)	2.7	17%	19%	18%	18%	18%	19%
share of very old (65-74)	2.6	1%	3%	3%	4%	4%	4%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.9	22.6	23.6	22.8	22.7	22.6	23.5
Old-age dependency ratio 20-64 (3)	20.4	36.5	44.9	51.7	54.8	55.9	56.9
Total dependency ratio (4)	18.3	79.8	86.5	93.4	97.1	97.6	98.1
Total economic dependency ratio (5)	7.6	147.4	151.0	153.2	153.8	154.4	155.1
Economic old-age dependency ratio (20-64) (6)	22.6	49.4	59.3	66.5	69.2	70.8	72.0
Economic old-age dependency ratio (20-74) (7)	20.5	48.7	57.8	64.2	66.4	68.1	69.2

France							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-2.2	14.8	15.6	15.2	14.3	13.4	12.6
Of which : Old-age and early pensions	-1.4	12.1	13.1	12.8	12.1	11.4	10.7
Disability pensions	-0.1	1.1	1.1	1.0	1.0	0.9	1.0
Survivors' pensions	-0.6	1.5	1.5	1.4	1.2	1.1	0.9
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	-1.5	12.0	12.8	12.5	11.8	11.1	10.5
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.1	0.3	0.3	0.4	0.4	0.3	0.4
Public pensions, net	-1.9	12.8	13.5	13.2	12.4	11.6	10.9
Public pensions, contributions	-0.2	11.8	11.5	11.5	11.5	11.6	11.6
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.0	86.7%	86.7%	86.7%	86.7%	86.7%	86.7%
Pensioners (public, 1000 persons)	6,856	24,080	27,326	29,694	30,748	30,926	30,936
Public pensioners aged 65+ (1000 persons)	6,302	14,067	17,045	19,105	19,895	20,204	20,369
Pensioners younger than 65 as % of all pensioners (public)	-7.4	42%	38%	36%	35%	35%	34%
Benefit ratio % (public pensions)	-13.0	40.9	39.4	35.5	32.2	29.8	27.9
Gross replacement rate at retirement % (old-age earnings-related)	-19.7	54.4	49.8	39.6	41.5	36.7	34.7
Average accrual rates % (new pensions, earnings-related)	0.0	1.1	1.2	1.1	1.1	1.0	1.0
Average contributory period, years (new pensions, earnings-related)	0.0	33.0	31.1	32.8	32.7	32.8	33.0
Contributors (public pensions, 1000 persons)	675	28,322	28,960	29,269	29,236	29,125	28,998
Support ratio (contributors/100 pensioners, public pensions)	-24	118	106	99	95	94	94
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.6	0.0	0.2	0.3	0.4	0.4	0.6
Lower fertility (-20%)	1.8	0.0	0.0	0.2	0.7	1.1	1.8
Higher TFP growth (+0.2 pps)	-1.0	0.0	-0.1	-0.5	-0.8	-1.0	-1.0
TFP risk scenario (-0.2 pps)	0.9	0.0	0.0	0.2	0.6	0.7	1.0
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.4	-0.4	-0.4	-0.3	-0.3
Higher migration (+33%)	-0.2	0.0	0.1	-0.1	-0.1	-0.1	-0.2
Lower migration (-33%)	0.2	0.0	0.2	0.1	0.2	0.1	0.2
Policy scenario linking retirement age to life expectancy	-2.6	0.0	-1.1	-1.9	-2.3	-2.4	-2.6
Adverse macroeconomic scenario - lagged recovery	-0.1	0.0	0.1	0.0	0.0	-0.2	-0.1
Adverse macroeconomic scenario - adverse structural	1.6	0.0	0.4	0.7	1.2	1.4	1.6
Offset declining pension benefit ratio	3.4	0.0	0.0	0.6	1.8	2.7	3.4
Unchanged retirement age	2.2	0.0	0.4	0.9	1.2	1.6	2.2
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-2.2	14.8	15.6	15.2	14.3	13.4	12.6
pps change from 2019 due to:	-2.2		0.8	0.4	-0.5	-1.4	-2.2
Dependency ratio	7.1		3.4	5.7	6.6	6.9	7.1
Coverage ratio	-2.0		-1.1	-1.7	-1.7	-1.9	-2.0
Of which: old-age	-0.2		-0.1	-0.2	-0.2	-0.1	-0.2
early-age	-3.7		-1.3	-3.0	-3.0	-3.5	-3.7
cohort effect	-6.5		-3.0	-5.3	-6.4	-6.4	-6.5
Benefit ratio	-5.9		-1.0	-2.6	-4.0	-5.0	-5.9
Labour market ratio	-1.0		-0.3	-0.8	-1.0	-1.0	-1.0
Of which: employment rate	-0.6		-0.2	-0.5	-0.6	-0.7	-0.6
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.4		-0.2	-0.3	-0.4	-0.4	-0.4
Interaction effect (residual)	-0.4		-0.2	-0.3	-0.3	-0.4	-0.4
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-2.2	14.8	0.8	-0.4	-0.9	-0.9	-0.8
Dependency ratio	7.1		3.4	2.3	0.9	0.3	0.2
Coverage ratio	-2.0		-1.1	-0.6	-0.1	-0.1	-0.1
Of which: old-age	-0.2		-0.1	-0.1	0.0	0.0	0.0
early-age	-3.7		-1.3	-1.7	0.0	-0.5	-0.2
cohort effect	-6.5		-3.0	-2.2	-1.1	0.0	-0.1
Benefit ratio	-5.9		-1.0	-1.6	-1.4	-1.1	-0.9
Labour market ratio	-1.0		-0.3	-0.4	-0.2	0.0	0.0
Of which: employment rate	-0.6		-0.2	-0.3	-0.2	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.4		-0.2	-0.1	-0.1	0.0	0.0
Interaction effect (residual)	-0.4		-0.2	-0.1	0.0	0.0	0.0

France

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.1	8.4	9.0	9.3	9.4	9.5	9.5
AWG risk scenario	2.1	8.4	9.2	9.8	10.2	10.4	10.5
TFP risk scenario	1.1	8.4	9.0	9.3	9.4	9.4	9.4
Demographic scenario	1.3	8.4	9.1	9.4	9.5	9.6	9.7
High life expectancy scenario (variation of demogr. scenario)	1.5	8.4	9.1	9.4	9.6	9.7	9.8
Healthy ageing scenario	0.4	8.4	8.9	9.0	8.9	8.9	8.8
Death-related cost scenario	1.2	8.4	9.1	9.3	9.4	9.5	9.5
Income elasticity scenario	1.6	8.4	9.1	9.5	9.7	9.9	9.9
EU cost convergence scenario	1.3	8.4	9.1	9.4	9.5	9.6	9.7
Labour intensity scenario	1.5	8.4	9.1	9.5	9.7	9.8	9.9
Sector-specific composite indexation scenario	2.4	8.4	9.3	9.9	10.3	10.6	10.8
Non-demographic determinants scenario	3.5	8.4	9.3	10.2	10.9	11.6	11.9

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.8	1.9	2.1	2.4	2.6	2.7	2.7
AWG risk scenario	3.3	1.9	2.3	3.0	3.7	4.4	5.2
TFP risk scenario	0.9	1.9	2.1	2.4	2.6	2.7	2.7
Demographic scenario	1.0	1.9	2.1	2.4	2.6	2.8	2.8
Base case scenario	1.0	1.9	2.1	2.5	2.7	2.8	2.9
High life expectancy scenario (variation of base case)	1.3	1.9	2.1	2.5	2.8	3.0	3.2
Healthy ageing scenario	0.8	1.9	2.1	2.4	2.5	2.6	2.7
Shift to formal care scenario	1.6	1.9	2.6	3.0	3.2	3.4	3.5
Coverage convergence scenario	2.7	1.9	2.3	2.9	3.5	4.0	4.6
Cost convergence scenario	1.6	1.9	2.2	2.6	3.0	3.2	3.4
Cost and coverage convergence scenario	3.5	1.9	2.4	3.1	3.8	4.6	5.4
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	30%	6,185	6,856	7,554	7,853	7,982	8,013
Recipients: receiving institutional care	52%	1,150	1,252	1,506	1,639	1,714	1,743
receiving home care	51%	1,286	1,466	1,719	1,844	1,908	1,937
receiving cash benefits	-12%	446	432	418	413	405	395

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.6	4.4	4.2	4.0	4.0	3.9	3.9
Number of students (in thousands)							
Total (students/staff in 2019 = 15.9)	-11.2%	13,098	12,507	12,044	12,123	11,919	11,631
as % of population 5-24	-1.1	80.9	79.4	80.0	80.2	79.8	79.8
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.9	0.0	0.4	0.7	0.9	0.9	0.9

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	-0.8	29.5	30.8	30.8	30.2	29.5	28.7
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	3.4	0.0	0.4	1.1	1.9	2.7	3.4
TFP risk scenario (-0.2 pps)	0.9	0.0	0.0	0.2	0.6	0.7	0.9
High life expectancy (+2 years) (8)	0.8	0.0	0.2	0.3	0.5	0.5	0.8
Lower fertility (-20%)	2.1	0.0	0.0	-0.2	0.5	1.2	2.1
Higher TFP growth (+0.2 pps)	-1.0	0.0	-0.1	-0.5	-0.8	-1.0	-1.0
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.7	-0.7	-0.7	-0.6	-0.6
Higher migration (+33%)	-0.2	0.0	0.1	-0.1	-0.1	-0.1	-0.2
Lower migration (-33%)	0.2	0.0	0.1	0.1	0.2	0.1	0.2
Policy scenario linking retirement age to life expectancy	-2.7	0.0	-1.1	-1.9	-2.3	-2.4	-2.7
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.2	0.0	0.0	-0.2	0.0
Adverse macroeconomic scenario - adverse structural	1.6	0.0	0.5	0.8	1.2	1.4	1.6

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**

(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

11. CROATIA

Croatia							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.43	1.48	1.51	1.54	1.56	1.59
Life expectancy at birth							
males	9.0	75.3	77.3	79.3	81.1	82.7	84.3
females	7.2	81.6	83.2	84.7	86.2	87.5	88.8
Life expectancy at 65							
males	6.3	15.8	17.2	18.5	19.7	20.9	22.1
females	5.9	19.4	20.7	21.9	23.1	24.2	25.3
Net migration (thousand)	:	-3.8	-1.2	0.8	2.6	4.4	6.0
Net migration as % of population	:	-0.1	0.0	0.0	0.1	0.1	0.2
Population (million)	-1.0	4.1	3.8	3.6	3.4	3.2	3.0
Young population (0-19) as % of total population	-2.7	19.3	18.0	17.1	16.9	16.7	16.7
Prime-age population (25-54) as % of total population	-6.3	39.4	38.0	36.1	34.9	33.8	33.1
Working-age population (20-64) as % of total population	-9.2	59.8	56.7	55.2	52.9	51.6	50.6
Elderly population (65+) as % of total population	11.9	20.8	25.3	27.8	30.3	31.7	32.7
Very elderly population (80+) as % of total population	8.1	5.4	6.5	9.2	10.7	12.0	13.5
Very elderly population (80+) as % of elderly population	15.4	26.0	25.7	33.1	35.4	37.9	41.4
Very elderly population (80+) as % of working-age population	17.7	9.0	11.4	16.7	20.2	23.3	26.7
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.1	1.8	0.7	1.5	1.2	1.0	0.9
Employment (growth rate)	-0.7	0.7	-0.7	-0.8	-0.9	-0.8	-0.6
Labour input: hours worked (growth rate)	-0.7	0.7	-0.7	-0.8	-0.9	-0.8	-0.6
Labour productivity per hour (growth rate)	1.8	1.0	1.4	2.3	2.2	1.9	1.5
TFP (growth rate)	1.1	0.3	0.7	1.5	1.4	1.2	1.0
Capital deepening (contribution to labour productivity growth)	0.7	0.7	0.7	0.8	0.8	0.7	0.5
Potential GDP per capita (growth rate)	1.7	2.4	0.9	1.8	2.1	2.0	1.8
Potential GDP per worker (growth rate)	1.9	1.0	1.0	2.0	2.4	2.3	1.9
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-900	2,433	2,165	1,986	1,788	1,643	1,533
Population growth (20-64)	0.5	-1.0	-0.9	-0.9	-1.0	-0.8	-0.6
Labour force 15-64 (thousands)	-603	1,762	1,624	1,499	1,353	1,240	1,159
Labour force 20-64 (thousands)	-593	1,737	1,601	1,479	1,335	1,223	1,143
Participation rate (20-64)	3.2	71.4	73.9	74.5	74.6	74.4	74.6
Participation rate (20-74)	0.2	60.8	61.1	61.9	61.0	61.0	61.0
youngest (20-24)	3.1	52.4	55.3	55.5	55.5	55.5	55.5
prime-age (25-54)	1.4	83.6	84.8	85.0	85.0	85.0	85.0
older (55-64)	8.6	45.8	50.3	54.2	54.2	53.8	54.5
very old (65-74)	3.1	5.0	6.6	7.8	8.4	8.3	8.1
Participation rate (20-64) - females	4.5	66.1	69.4	70.2	70.6	70.5	70.6
Participation rate (20-74) - females	2.3	55.2	56.2	57.5	57.0	57.5	57.6
youngest (20-24)	2.7	44.4	46.8	47.0	47.1	47.0	47.1
prime-age (25-54)	1.5	80.3	81.4	81.6	81.8	81.7	81.8
older (55-64)	12.8	37.6	45.5	49.8	49.8	49.8	50.4
very old (65-74)	4.0	3.8	5.8	7.3	8.0	7.9	7.8
Participation rate (20-64) - males	1.7	76.6	78.2	78.4	78.4	78.1	78.3
Participation rate (20-74) - males	-2.2	66.4	66.0	66.2	64.7	64.3	64.3
youngest (20-24)	3.5	59.9	63.3	63.4	63.4	63.4	63.4
prime-age (25-54)	1.3	86.8	88.1	88.1	88.0	88.0	88.1
older (55-64)	3.6	54.8	55.1	58.4	58.3	57.6	58.4
very old (65-74)	2.0	6.4	7.6	8.4	8.9	8.8	8.4
Average effective exit age - total (1)	0.9	62.0	62.7	63.0	63.0	63.0	63.0
males	0.6	62.7	62.9	63.2	63.2	63.2	63.2
females	1.3	61.4	62.4	62.7	62.7	62.7	62.7
Employment rate (15-64)	2.4	62.4	63.4	64.5	64.9	64.6	64.8
Employment rate (20-64)	2.8	66.8	68.2	69.1	69.6	69.5	69.6
Employment rate (20-74)	0.1	57.0	56.5	57.6	57.0	57.0	57.1
Unemployment rate (15-64)	0.3	6.7	8.1	7.6	7.0	7.0	7.0
Unemployment rate (20-64)	0.3	6.4	7.7	7.2	6.7	6.7	6.7
Unemployment rate (20-74)	0.2	6.3	7.5	7.1	6.5	6.5	6.5
Employment (20-64) (in millions)	-0.6	1.6	1.5	1.4	1.2	1.1	1.1
Employment (20-74) (in millions)	-0.6	1.6	1.5	1.4	1.3	1.2	1.1
share of youngest (20-24)	-0.5	7%	6%	6%	6%	6%	6%
share of prime-age (25-54)	-3.7	76%	75%	73%	73%	73%	72%
share of older (55-64)	2.7	16%	16%	19%	18%	18%	19%
share of very old (65-74)	1.5	1%	2%	3%	3%	3%	3%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	1.0	24.3	23.6	25.5	25.2	25.2	25.3
Old-age dependency ratio 20-64 (3)	29.8	34.8	44.5	50.4	57.2	61.5	64.6
Total dependency ratio (4)	30.4	67.1	76.3	81.3	89.1	94.0	97.5
Total economic dependency ratio (5)	28.9	146.6	152.6	155.9	163.4	170.9	175.6
Economic old-age dependency ratio (20-64) (6)	39.1	50.6	63.0	70.3	79.0	85.5	89.8
Economic old-age dependency ratio (20-74) (7)	37.3	49.9	61.6	68.6	76.7	83.0	87.2

Croatia							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-0.7	10.2	11.0	10.4	9.9	9.7	9.5
Of which : Old-age and early pensions	0.7	6.7	7.9	7.7	7.5	7.5	7.4
Disability pensions	-1.2	1.8	1.4	1.1	0.8	0.7	0.7
Survivors' pensions	-0.3	1.7	1.7	1.6	1.5	1.5	1.4
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	0.7	6.7	7.9	7.7	7.5	7.5	7.4
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	0.4	0.0	0.2	0.3	0.3	0.3	0.4
New pensions, gross (old-age and early pensions)	0.0	0.2	0.2	0.2	0.2	0.1	0.1
Public pensions, net	-0.7	10.1	10.9	10.3	9.8	9.6	9.4
Public pensions, contributions	1.1	6.0	7.1	7.2	7.1	7.1	7.1
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.0	99.0%	99.0%	99.0%	99.0%	99.0%	99.0%
Pensioners (public, 1000 persons)	-175	1,241	1,239	1,202	1,149	1,103	1,067
Public pensioners aged 65+ (1000 persons)	33	914	1,047	1,050	1,013	972	946
Pensioners younger than 65 as % of all pensioners (public)	-15.1	26%	15%	13%	12%	12%	11%
Benefit ratio % (public pensions)	-9.4	31.2	29.9	27.3	24.7	23.1	21.8
Gross replacement rate at retirement % (old-age earnings-related)	-9.7	32.5	29.2	27.1	25.4	23.9	22.8
Average accrual rates % (new pensions, earnings-related)	-0.2	1.3	1.2	1.1	1.1	1.1	1.1
Average contributory period, years (new pensions, earnings-related)	1.7	32.0	32.9	33.6	33.7	33.7	33.7
Contributors (public pensions, 1000 persons)	-481	1,558	1,480	1,378	1,258	1,152	1,077
Support ratio (contributors/100 pensioners, public pensions)	-25	126	119	115	109	105	101
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.8	0.0	0.2	0.4	0.5	0.7	0.8
Lower fertility (-20%)	1.5	0.0	0.0	0.1	0.4	0.9	1.5
Higher TFP growth (+0.2 pps)	-0.4	0.0	-0.1	-0.2	-0.3	-0.3	-0.4
TFP risk scenario (-0.2 pps)	0.3	0.0	0.0	0.0	0.1	0.2	0.3
Higher employment rate of older workers (+10 pps)	-0.7	0.0	-0.6	-0.6	-0.7	-0.8	-0.7
Higher migration (+33%)	-0.2	0.0	0.0	0.0	-0.1	-0.1	-0.2
Lower migration (-33%)	0.2	0.0	0.0	0.0	0.1	0.2	0.2
Policy scenario linking retirement age to life expectancy	-1.1	0.0	-0.1	-0.3	-0.6	-0.9	-1.1
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.8	0.0	0.3	0.4	0.6	0.7	0.8
Offset declining pension benefit ratio	2.4	0.0	0.0	0.2	1.0	1.8	2.4
Unchanged retirement age	0.2	0.0	0.2	0.3	0.3	0.3	0.2
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-0.7	10.2	11.0	10.4	9.9	9.7	9.5
pps change from 2019 due to:	-0.7		0.8	0.2	-0.3	-0.5	-0.7
Dependency ratio	6.8		2.9	4.3	5.6	6.4	6.8
Coverage ratio	-3.2		-1.4	-2.2	-2.8	-3.1	-3.2
Of which: old-age	-1.2		0.1	-0.3	-0.9	-1.2	-1.2
early-age	-5.9		-4.3	-6.2	-6.3	-5.8	-5.9
cohort effect	-5.9		-2.6	-3.5	-4.7	-5.4	-5.9
Benefit ratio	-3.3		-0.2	-1.1	-2.1	-2.8	-3.3
Labour market ratio	-0.6		-0.4	-0.5	-0.6	-0.6	-0.6
Of which: employment rate	-0.5		-0.3	-0.4	-0.5	-0.5	-0.5
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.2		-0.1	-0.1	-0.2	-0.2	-0.2
Interaction effect (residual)	-0.4		-0.2	-0.2	-0.3	-0.3	-0.4
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-0.7	10.2	0.8	-0.5	-0.5	-0.2	-0.2
Dependency ratio	6.8		2.9	1.4	1.3	0.7	0.5
Coverage ratio	-3.2		-1.4	-0.7	-0.7	-0.3	-0.1
Of which: old-age	-1.2		0.1	-0.4	-0.6	-0.3	-0.1
early-age	-5.9		-4.3	-1.9	-0.2	0.5	-0.1
cohort effect	-5.9		-2.6	-0.8	-1.2	-0.8	-0.5
Benefit ratio	-3.3		-0.2	-1.0	-1.0	-0.7	-0.5
Labour market ratio	-0.6		-0.4	-0.2	-0.1	0.0	0.0
Of which: employment rate	-0.5		-0.3	-0.1	-0.1	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.2		-0.1	0.0	-0.1	0.0	0.0
Interaction effect (residual)	-0.4		-0.2	-0.1	-0.1	0.0	0.0

Croatia

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.7	5.9	6.1	6.4	6.5	6.6	6.6
AWG risk scenario	1.7	5.9	6.3	6.9	7.3	7.6	7.6
TFP risk scenario	0.7	5.9	6.1	6.4	6.5	6.6	6.6
Demographic scenario	1.0	5.9	6.2	6.5	6.7	6.8	6.9
High life expectancy scenario (variation of demogr. scenario)	1.1	5.9	6.2	6.5	6.7	6.9	7.0
Healthy ageing scenario	0.1	5.9	6.0	6.0	6.0	6.0	5.9
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	1.3	5.9	6.3	6.6	6.9	7.0	7.1
EU cost convergence scenario	1.4	5.9	6.3	6.6	6.9	7.1	7.3
Labour intensity scenario	1.8	5.9	6.3	6.7	7.1	7.4	7.6
Sector-specific composite indexation scenario	2.4	5.9	6.5	7.2	7.7	8.1	8.2
Non-demographic determinants scenario	3.2	5.9	6.5	7.3	8.2	8.8	9.1

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.2	0.4	0.5	0.5	0.6	0.6	0.6
AWG risk scenario	2.3	0.4	0.6	0.9	1.3	1.9	2.8
TFP risk scenario	0.2	0.4	0.5	0.5	0.6	0.6	0.6
Demographic scenario	0.2	0.4	0.5	0.5	0.6	0.6	0.6
Base case scenario	0.2	0.4	0.5	0.6	0.6	0.6	0.7
High life expectancy scenario (variation of base case)	0.3	0.4	0.5	0.6	0.6	0.7	0.7
Healthy ageing scenario	0.1	0.4	0.5	0.5	0.5	0.5	0.6
Shift to formal care scenario	0.5	0.4	0.7	0.8	0.8	0.9	0.9
Coverage convergence scenario	0.5	0.4	0.5	0.6	0.7	0.8	1.0
Cost convergence scenario	1.6	0.4	0.6	0.9	1.2	1.6	2.0
Cost and coverage convergence scenario	2.5	0.4	0.7	1.0	1.4	2.0	3.0
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	-3%	395	408	417	408	396	384
Recipients: receiving institutional care	-1%	32	34	34	34	33	32
receiving home care	-4%	17	18	18	17	17	16
receiving cash benefits	-4%	108	112	114	110	107	104

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.5	5.0	4.6	4.4	4.4	4.5	4.6
Number of students (in thousands)							
Total (students/staff in 2019 = 8.9)	-37.9%	645	557	493	454	425	401
as % of population 5-24	-0.3	76.6	76.1	76.2	76.4	76.5	76.3
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	1.0	0.0	0.4	0.7	1.0	1.0	1.0

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	-0.3	21.5	22.2	21.7	21.4	21.4	21.2
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	3.1	0.0	0.4	0.9	1.5	2.2	3.1
TFP risk scenario (-0.2 pps)	0.2	0.0	0.0	0.0	0.1	0.2	0.2
High life expectancy (+2 years) (8)	0.8	0.0	0.1	0.3	0.5	0.7	0.8
Lower fertility (-20%)	1.2	0.0	-0.3	-0.5	0.0	0.5	1.2
Higher TFP growth (+0.2 pps)	-0.4	0.0	-0.1	-0.1	-0.2	-0.3	-0.4
Higher employment rate of older workers (+10 pps)	-1.0	0.0	-0.8	-0.9	-1.0	-1.1	-1.0
Higher migration (+33%)	-0.2	0.0	0.0	0.0	-0.1	-0.2	-0.2
Lower migration (-33%)	0.3	0.0	0.0	0.0	0.1	0.2	0.3
Policy scenario linking retirement age to life expectancy	-1.5	0.0	-0.1	-0.4	-0.8	-1.2	-1.5
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.9	0.0	0.4	0.5	0.6	0.7	0.9

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

12. ITALY

Italy							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.31	1.37	1.41	1.45	1.48	1.52
Life expectancy at birth							
males	5.7	81.3	82.6	83.8	84.9	86.0	87.0
females	5.2	85.7	86.9	88.0	89.0	90.0	90.9
Life expectancy at 65							
males	4.3	19.6	20.5	21.4	22.3	23.1	23.9
females	4.3	22.9	23.8	24.7	25.6	26.4	27.2
Net migration (thousand)	:	134.7	224.0	217.2	214.3	210.5	206.6
Net migration as % of population	:	0.2	0.4	0.4	0.4	0.4	0.4
Population (million)	-6.4	60.3	59.9	59.3	58.0	55.9	53.9
Young population (0-19) as % of total population	-2.1	17.9	15.9	15.4	15.6	15.6	15.8
Prime-age population (25-54) as % of total population	-7.1	40.3	35.8	34.9	34.1	33.6	33.1
Working-age population (20-64) as % of total population	-8.3	59.1	56.8	52.4	50.7	51.0	50.8
Elderly population (65+) as % of total population	10.4	23.0	27.3	32.2	33.7	33.4	33.3
Very elderly population (80+) as % of total population	7.2	7.3	8.8	10.5	13.8	15.3	14.5
Very elderly population (80+) as % of elderly population	11.8	31.7	32.2	32.6	41.0	45.8	43.5
Very elderly population (80+) as % of working-age population	16.2	12.3	15.5	20.0	27.3	30.0	28.5
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.0	0.6	0.3	1.1	1.5	1.4	1.3
Employment (growth rate)	-0.2	0.7	-0.4	-0.6	-0.2	-0.2	-0.2
Labour input: hours worked (growth rate)	-0.2	0.6	-0.4	-0.6	-0.2	-0.2	-0.2
Labour productivity per hour (growth rate)	1.3	0.0	0.7	1.7	1.7	1.6	1.5
TFP (growth rate)	0.8	0.1	0.4	1.1	1.1	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.4	-0.2	0.2	0.6	0.6	0.6	0.5
Potential GDP per capita (growth rate)	1.3	0.7	0.4	1.3	1.8	1.8	1.6
Potential GDP per worker (growth rate)	1.3	-0.1	0.7	1.7	1.7	1.6	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-8,285	35,660	34,053	31,117	29,402	28,495	27,375
Population growth (20-64)	-0.1	-0.4	-0.7	-1.0	-0.4	-0.3	-0.5
Labour force 15-64 (thousands)	-4,696	25,349	24,999	23,222	22,084	21,398	20,652
Labour force 20-64 (thousands)	-4,649	25,139	24,795	23,051	21,912	21,226	20,490
Participation rate (20-64)	4.4	70.5	72.8	74.1	74.5	74.5	74.9
Participation rate (20-74)	5.6	60.7	62.5	62.2	64.3	65.8	66.3
youngest (20-24)	0.6	44.7	45.3	45.5	45.3	45.3	45.4
prime-age (25-54)	0.3	78.2	78.3	78.4	78.7	78.5	78.5
older (55-64)	18.4	57.5	69.4	72.2	73.3	74.4	75.9
very old (65-74)	23.5	9.1	18.8	21.0	24.1	29.5	32.6
Participation rate (20-64) - females	6.8	60.5	64.6	66.3	66.9	67.1	67.3
Participation rate (20-74) - females	8.6	51.3	54.9	55.3	57.5	59.2	59.9
youngest (20-24)	0.6	38.5	39.0	39.2	39.0	39.0	39.1
prime-age (25-54)	2.1	67.8	69.3	69.7	70.1	70.0	69.9
older (55-64)	23.3	47.0	62.3	66.3	67.8	69.3	70.2
very old (65-74)	25.8	5.7	16.5	20.1	23.1	28.0	31.5
Participation rate (20-64) - males	1.3	80.6	80.8	81.5	81.6	81.4	81.9
Participation rate (20-74) - males	2.0	70.3	70.0	68.9	70.9	72.0	72.3
youngest (20-24)	0.7	50.4	51.0	51.2	51.0	51.0	51.1
prime-age (25-54)	-2.1	88.5	86.8	86.4	86.5	86.3	86.4
older (55-64)	12.6	68.7	76.9	78.5	78.7	79.1	81.3
very old (65-74)	20.9	12.9	21.2	22.1	25.1	31.0	33.7
Average effective exit age - total (1)	3.4	65.5	66.4	67.0	67.6	68.3	68.9
males	3.2	65.2	66.0	66.4	67.0	67.8	68.5
females	3.5	65.8	66.9	67.6	68.2	68.8	69.3
Employment rate (15-64)	5.8	59.1	61.7	63.7	64.6	64.5	64.9
Employment rate (20-64)	6.2	63.6	66.3	68.2	69.4	69.4	69.8
Employment rate (20-74)	7.3	54.8	57.1	57.6	60.1	61.6	62.1
Unemployment rate (15-64)	-3.2	10.2	9.2	8.1	7.1	7.0	7.0
Unemployment rate (20-64)	-3.1	9.8	8.9	7.9	6.9	6.8	6.8
Unemployment rate (20-74)	-3.4	9.7	8.6	7.5	6.5	6.3	6.3
Employment (20-64) (in millions)	-3.6	22.7	22.6	21.2	20.4	19.8	19.1
Employment (20-74) (in millions)	-1.9	23.3	24.1	23.1	22.2	21.8	21.3
share of youngest (20-24)	0.0	4%	4%	4%	4%	4%	4%
share of prime-age (25-54)	-12.6	74%	63%	64%	65%	63%	61%
share of older (55-64)	4.7	20%	26%	23%	23%	24%	24%
share of very old (65-74)	7.9	3%	6%	8%	8%	9%	10%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.4	23.5	27.9	25.1	24.1	25.1	25.8
Old-age dependency ratio 20-64 (3)	26.7	38.9	48.0	61.4	66.5	65.5	65.6
Total dependency ratio (4)	27.6	69.2	76.0	90.7	97.4	96.1	96.8
Total economic dependency ratio (5)	-6.7	159.3	149.1	157.1	161.7	156.7	152.6
Economic old-age dependency ratio (20-64) (6)	23.7	58.5	65.8	81.0	87.0	84.2	82.2
Economic old-age dependency ratio (20-74) (7)	16.7	56.9	61.7	74.5	80.1	76.5	73.6

Italy							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-1.8	15.4	17.3	17.8	16.2	14.1	13.6
Of which : Old-age and early pensions	-1.0	12.6	14.5	15.0	13.6	11.8	11.7
Disability pensions	-0.1	0.4	0.4	0.3	0.3	0.3	0.3
Survivors' pensions	-0.8	2.4	2.5	2.6	2.4	2.0	1.7
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	-1.0	12.3	14.2	14.6	13.2	11.4	11.3
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.6	0.8	0.7	0.5	0.6	0.6
Public pensions, net	-1.5	12.5	14.0	14.4	13.1	11.4	11.0
Public pensions, contributions	0.2	10.7	11.0	11.0	11.1	11.1	11.0
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.0	81.0%	81.0%	81.0%	81.0%	81.0%	81.0%
Pensioners (public, 1000 persons)	619	14,796	15,900	17,504	17,747	16,605	15,415
Public pensioners aged 65+ (1000 persons)	2,077	12,680	14,228	16,422	16,918	15,851	14,757
Pensioners younger than 65 as % of all pensioners (public)	-10.0	14%	11%	6%	5%	5%	4%
Benefit ratio % (public pensions)	-15.2	60.8	63.8	57.0	49.1	45.0	45.6
Gross replacement rate at retirement % (old-age earnings-related)	-15.4	66.9	55.2	46.4	45.4	48.8	51.5
Average accrual rates % (new pensions, earnings-related)	-0.2	1.9	1.7	1.7	1.7	1.7	1.7
Average contributory period, years (new pensions, earnings-related)	1.9	36.2	35.2	35.3	35.1	36.6	38.1
Contributors (public pensions, 1000 persons)	-2,257	23,823	24,430	23,369	22,604	22,293	21,566
Support ratio (contributors/100 pensioners, public pensions)	-21	161	154	134	127	134	140
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.2	0.0	0.0	-0.1	0.2	0.2	0.2
Lower fertility (-20%)	1.0	0.0	0.0	0.1	0.4	0.7	1.0
Higher TFP growth (+0.2 pps)	-0.6	0.0	-0.3	-0.6	-0.7	-0.6	-0.6
TFP risk scenario (-0.2 pps)	0.6	0.0	-0.1	0.3	0.6	0.7	0.6
Higher employment rate of older workers (+10 pps)	0.2	0.0	-1.8	-1.2	0.0	0.3	0.2
Higher migration (+33%)	-0.5	0.0	-0.2	-0.4	-0.6	-0.6	-0.5
Lower migration (-33%)	0.7	0.0	0.2	0.5	0.7	0.8	0.7
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.3	0.0	0.1	0.1	0.1	0.3	0.3
Adverse macroeconomic scenario - adverse structural	1.6	0.0	0.2	0.9	1.3	1.6	1.6
Offset declining pension benefit ratio	2.7	0.0	0.0	0.0	1.9	3.1	2.7
Unchanged retirement age	0.4	0.0	1.1	0.9	0.4	0.6	0.4
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1.8	15.4	17.3	17.8	16.2	14.1	13.6
pps change from 2019 due to:	-1.8		1.9	2.4	0.8	-1.3	-1.8
Dependency ratio	9.5		3.7	8.3	9.7	9.5	9.5
Coverage ratio	-3.5		-1.5	-2.5	-2.7	-3.0	-3.5
Of which: old-age	-1.7		-0.8	-1.0	-0.9	-1.2	-1.7
early-age	-14.5		-4.2	-8.3	-11.7	-13.3	-14.5
cohort effect	-8.4		-2.1	-7.6	-9.1	-8.2	-8.4
Benefit ratio	-4.3		1.2	-0.6	-3.2	-4.5	-4.3
Labour market ratio	-2.9		-1.3	-2.2	-2.5	-2.7	-2.9
Of which: employment rate	-1.6		-0.7	-1.2	-1.5	-1.5	-1.6
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-1.4		-0.6	-1.0	-1.0	-1.2	-1.4
Interaction effect (residual)	-0.6		-0.2	-0.5	-0.6	-0.6	-0.6
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-1.8	15.4	1.9	0.5	-1.6	-2.1	-0.6
Dependency ratio	9.5		3.7	4.6	1.5	-0.2	0.0
Coverage ratio	-3.5		-1.5	-1.0	-0.2	-0.3	-0.5
Of which: old-age	-1.7		-0.8	-0.2	0.1	-0.3	-0.5
early-age	-14.5		-4.2	-4.2	-3.4	-1.7	-1.2
cohort effect	-8.4		-2.1	-5.5	-1.5	1.0	-0.2
Benefit ratio	-4.3		1.2	-1.9	-2.5	-1.4	0.2
Labour market ratio	-2.9		-1.3	-0.8	-0.3	-0.2	-0.3
Of which: employment rate	-1.6		-0.7	-0.5	-0.3	0.0	-0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-1.4		-0.6	-0.4	0.0	-0.2	-0.2
Interaction effect (residual)	-0.6		-0.2	-0.3	-0.1	0.0	0.0

Italy

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.2	5.9	6.5	6.9	7.2	7.2	7.1
AWG risk scenario	1.9	5.9	6.6	7.2	7.7	7.8	7.8
TFP risk scenario	1.2	5.9	6.5	6.9	7.2	7.2	7.1
Demographic scenario	1.4	5.9	6.6	7.0	7.3	7.3	7.3
High life expectancy scenario (variation of demogr. scenario)	1.5	5.9	6.6	7.1	7.4	7.4	7.5
Healthy ageing scenario	0.7	5.9	6.4	6.7	6.9	6.8	6.6
Death-related cost scenario	1.3	5.9	6.6	7.0	7.3	7.3	7.3
Income elasticity scenario	1.5	5.9	6.6	7.1	7.4	7.5	7.5
EU cost convergence scenario	1.5	5.9	6.6	7.1	7.4	7.4	7.4
Labour intensity scenario	1.5	5.9	6.6	7.3	7.7	7.5	7.4
Sector-specific composite indexation scenario	1.5	5.9	6.6	7.1	7.4	7.4	7.4
Non-demographic determinants scenario	3.0	5.9	6.7	7.5	8.2	8.7	8.9

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.0	1.7	1.9	2.2	2.6	2.8	2.6
AWG risk scenario	2.0	1.7	2.0	2.5	3.1	3.5	3.7
TFP risk scenario	1.0	1.7	1.9	2.2	2.6	2.8	2.6
Demographic scenario	1.0	1.7	1.9	2.2	2.6	2.8	2.7
Base case scenario	1.1	1.7	1.9	2.2	2.6	2.8	2.7
High life expectancy scenario (variation of base case)	1.3	1.7	1.9	2.3	2.7	3.0	3.0
Healthy ageing scenario	0.7	1.7	1.8	2.1	2.4	2.6	2.4
Shift to formal care scenario	1.4	1.7	2.1	2.5	2.9	3.1	3.0
Coverage convergence scenario	1.3	1.7	1.9	2.3	2.8	3.0	3.0
Cost convergence scenario	1.9	1.7	2.0	2.4	3.1	3.5	3.6
Cost and coverage convergence scenario	2.2	1.7	2.0	2.5	3.2	3.7	3.9
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	20%	3,395	3,717	4,038	4,360	4,376	4,076
Recipients: receiving institutional care	34%	645	704	783	891	934	865
receiving home care	52%	721	832	966	1,133	1,188	1,098
receiving cash benefits	38%	2,006	2,232	2,503	2,869	2,993	2,768

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.4	3.5	3.1	3.0	3.1	3.1	3.1
Number of students (in thousands)							
Total (students/staff in 2019 = 11.7)	-22.7%	9,347	8,335	7,748	7,727	7,489	7,229
as % of population 5-24	-0.4	81.6	80.0	81.6	81.6	81.0	81.1
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.6	0.0	0.3	0.5	0.6	0.6	0.6

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	-0.1	26.5	28.9	30.0	29.1	27.2	26.4
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	1.7	0.0	0.2	0.5	1.0	1.4	1.7
TFP risk scenario (-0.2 pps)	0.6	0.0	-0.1	0.3	0.6	0.7	0.6
High life expectancy (+2 years) (8)	0.3	0.0	-0.1	-0.1	0.2	0.3	0.3
Lower fertility (-20%)	1.1	0.0	-0.1	-0.2	0.2	0.7	1.1
Higher TFP growth (+0.2 pps)	-0.5	0.0	-0.3	-0.5	-0.6	-0.6	-0.5
Higher employment rate of older workers (+10 pps)	0.0	0.0	-2.0	-1.5	-0.3	0.1	0.0
Higher migration (+33%)	-0.7	0.0	-0.2	-0.6	-0.8	-0.9	-0.7
Lower migration (-33%)	0.9	0.0	0.3	0.6	1.0	1.1	0.9
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.3	0.0	0.1	0.1	0.1	0.3	0.3
Adverse macroeconomic scenario - adverse structural	1.5	0.0	0.2	0.9	1.3	1.6	1.5

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

13. CYPRUS

Cyprus							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.33	1.38	1.42	1.46	1.49	1.53
Life expectancy at birth							
males	5.8	80.8	82.1	83.3	84.5	85.6	86.6
females	5.1	85.1	86.1	87.2	88.3	89.3	90.2
Life expectancy at 65							
males	4.3	19.2	20.1	21.0	21.9	22.7	23.5
females	4.3	22.1	22.9	23.8	24.7	25.6	26.4
Net migration (thousand)	:	7.8	3.4	3.0	2.7	2.4	2.3
Net migration as % of population	:	0.9	0.4	0.3	0.3	0.2	0.2
Population (million)	0.2	0.9	1.0	1.0	1.0	1.1	1.1
Young population (0-19) as % of total population	-2.3	21.6	21.0	20.6	19.8	19.5	19.4
Prime-age population (25-54) as % of total population	-6.5	43.2	43.0	41.7	39.4	38.0	36.7
Working-age population (20-64) as % of total population	-8.6	62.1	59.4	58.5	57.8	55.4	53.5
Elderly population (65+) as % of total population	10.9	16.2	19.6	20.9	22.4	25.1	27.1
Very elderly population (80+) as % of total population	6.8	3.7	5.5	7.2	8.0	8.6	10.5
Very elderly population (80+) as % of elderly population	15.8	22.9	28.2	34.5	35.8	34.4	38.7
Very elderly population (80+) as % of working-age population	13.7	6.0	9.3	12.3	13.9	15.6	19.6
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.9	1.9	1.7	2.4	2.1	1.6	1.5
Employment (growth rate)	0.4	1.6	0.9	0.5	0.3	-0.1	0.0
Labour input: hours worked (growth rate)	0.4	1.4	0.9	0.5	0.3	-0.1	0.0
Labour productivity per hour (growth rate)	1.5	0.5	0.8	1.9	1.8	1.7	1.5
TFP (growth rate)	0.9	0.0	0.4	1.2	1.2	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.6	0.5	0.4	0.7	0.6	0.6	0.5
Potential GDP per capita (growth rate)	1.4	0.6	1.0	2.0	1.8	1.4	1.3
Potential GDP per worker (growth rate)	1.4	0.3	0.8	1.9	1.8	1.7	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	40	548	574	594	606	596	588
Population growth (20-64)	-1.3	1.2	0.4	0.4	0.0	-0.2	-0.1
Labour force 15-64 (thousands)	62	450	487	508	520	516	512
Labour force 20-64 (thousands)	62	443	480	501	513	509	505
Participation rate (20-64)	4.9	80.9	83.7	84.4	84.6	85.4	85.9
Participation rate (20-74)	3.2	72.1	73.6	75.2	75.1	74.6	75.4
youngest (20-24)	4.4	62.5	66.8	67.0	67.0	67.0	66.9
prime-age (25-54)	2.2	88.3	89.7	90.1	90.3	90.4	90.5
older (55-64)	14.8	65.3	68.6	72.0	75.0	77.7	80.1
very old (65-74)	11.1	13.8	13.5	17.2	21.1	23.4	24.9
Participation rate (20-64) - females	6.6	75.7	79.7	80.6	80.9	81.6	82.2
Participation rate (20-74) - females	4.7	66.5	69.9	71.6	71.3	70.5	71.2
youngest (20-24)	2.5	64.0	66.4	66.6	66.6	66.6	66.5
prime-age (25-54)	3.3	83.5	85.8	86.4	86.6	86.7	86.7
older (55-64)	21.3	53.9	61.0	65.5	69.6	72.4	75.2
very old (65-74)	14.0	6.9	10.6	14.7	17.8	19.6	20.9
Participation rate (20-64) - males	3.3	86.5	88.1	88.6	88.8	89.4	89.8
Participation rate (20-74) - males	1.9	78.1	77.5	79.1	79.3	79.3	79.9
youngest (20-24)	6.5	60.8	67.3	67.4	67.4	67.3	67.3
prime-age (25-54)	1.2	93.3	94.0	94.2	94.4	94.5	94.5
older (55-64)	8.8	77.0	76.6	79.3	81.6	83.9	85.8
very old (65-74)	8.3	21.4	16.4	19.8	24.8	28.0	29.7
Average effective exit age - total (1)	3.4	63.9	64.7	65.5	66.2	66.8	67.3
males	3.3	64.4	65.3	66.1	66.7	67.3	67.7
females	3.4	63.4	64.2	65.1	65.8	66.3	66.8
Employment rate (15-64)	4.3	69.7	71.3	72.3	73.2	73.8	74.1
Employment rate (20-64)	5.0	75.1	76.8	78.1	78.9	79.6	80.1
Employment rate (20-74)	3.5	67.0	67.7	69.7	70.2	69.8	70.5
Unemployment rate (15-64)	-0.5	7.5	8.5	7.8	7.0	7.0	7.0
Unemployment rate (20-64)	-0.5	7.2	8.2	7.5	6.8	6.7	6.7
Unemployment rate (20-74)	-0.6	7.1	8.0	7.3	6.5	6.4	6.4
Employment (20-64) (in millions)	0.1	0.4	0.4	0.5	0.5	0.5	0.5
Employment (20-74) (in millions)	0.1	0.4	0.5	0.5	0.5	0.5	0.5
share of youngest (20-24)	-1.2	8%	7%	7%	7%	7%	7%
share of prime-age (25-54)	-6.0	74%	76%	74%	70%	69%	68%
share of older (55-64)	3.9	15%	14%	16%	18%	19%	19%
share of very old (65-74)	3.3	3%	3%	3%	4%	6%	6%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.4	18.9	17.3	19.0	21.6	21.4	21.3
Old-age dependency ratio 20-64 (3)	24.6	26.2	33.0	35.6	38.8	45.3	50.7
Total dependency ratio (4)	26.0	61.0	68.4	70.9	73.0	80.5	86.9
Total economic dependency ratio (5)	10.8	108.6	112.9	111.7	109.5	113.7	119.4
Economic old-age dependency ratio (20-64) (6)	24.8	32.0	40.0	42.2	44.4	50.8	56.9
Economic old-age dependency ratio (20-74) (7)	22.3	31.2	38.9	40.8	42.4	47.9	53.5

Cyprus							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	2.1	8.8	10.0	10.2	10.1	10.7	10.9
Of which : Old-age and early pensions	1.6	7.4	8.2	8.3	8.3	8.9	9.0
Disability pensions	0.1	0.2	0.2	0.3	0.3	0.2	0.3
Survivors' pensions	0.3	1.2	1.7	1.7	1.6	1.5	1.5
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	1.9	7.1	7.9	8.0	8.1	8.8	8.9
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.1	0.2	0.4	0.4	0.4	0.5	0.3
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	1.6	8.4	9.2	10.1	10.1	10.0	10.0
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	155	160	202	242	282	319	315
Public pensioners aged 65+ (1000 persons)	159	142	189	227	266	305	301
Pensioners younger than 65 as % of all pensioners (public)	-6.8	11%	7%	6%	6%	4%	4%
Benefit ratio % (public pensions)	-15.4	59.5	57.3	51.9	45.8	43.1	44.1
Gross replacement rate at retirement % (old-age earnings-related)	8.7	35.7	46.1	42.6	38.8	44.1	44.4
Average accrual rates % (new pensions, earnings-related)	-0.1	1.3	1.3	1.3	1.3	1.3	1.2
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:
Contributors (public pensions, 1000 persons)	67	518	572	608	626	608	585
Support ratio (contributors/100 pensioners, public pensions)	-139	324	283	252	222	191	186
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.3	0.0	0.1	0.0	0.0	0.1	0.3
Lower fertility (-20%)	1.2	0.0	0.0	0.1	0.4	0.7	1.2
Higher TFP growth (+0.2 pps)	-0.1	0.0	-0.1	-0.2	-0.1	-0.1	-0.1
TFP risk scenario (-0.2 pps)	0.3	0.0	-0.1	0.1	0.2	0.3	0.3
Higher employment rate of older workers (+10 pps)	-0.2	0.0	-0.3	-0.2	-0.3	-0.4	-0.2
Higher migration (+33%)	-0.8	0.0	-0.2	-0.4	-0.6	-0.8	-0.8
Lower migration (-33%)	1.0	0.0	0.2	0.4	0.7	1.0	1.0
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.3	0.0	0.3	0.5	0.5	0.4	0.3
Offset declining pension benefit ratio	4.0	0.0	0.2	1.2	3.0	4.1	4.0
Unchanged retirement age	2.2	0.0	0.1	0.4	1.4	2.2	2.2
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2.1	8.8	10.0	10.2	10.1	10.7	10.9
pps change from 2019 due to:	2.1		1.3	1.5	1.3	1.9	2.1
Dependency ratio	7.1		2.4	3.2	4.1	5.8	7.1
Coverage ratio	-0.6		-0.4	0.3	0.8	0.6	-0.6
Of which: old-age	0.2		0.1	0.8	1.4	1.3	0.2
early-age	-4.4		-2.7	-3.2	-3.4	-4.1	-4.4
cohort effect	-5.3		-2.7	-2.3	-2.3	-4.1	-5.3
Benefit ratio	-3.0		-0.3	-1.4	-2.6	-3.2	-3.0
Labour market ratio	-1.0		-0.2	-0.4	-0.7	-0.9	-1.0
Of which: employment rate	-0.7		-0.2	-0.4	-0.5	-0.6	-0.7
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.4		0.0	-0.1	-0.2	-0.3	-0.4
Interaction effect (residual)	-0.5		-0.2	-0.2	-0.3	-0.4	-0.5
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	2.1	8.8	1.3	0.2	-0.1	0.6	0.1
Dependency ratio	7.1		2.4	0.8	0.9	1.7	1.3
Coverage ratio	-0.6		-0.4	0.7	0.5	-0.2	-1.2
Of which: old-age	0.2		0.1	0.8	0.6	-0.1	-1.2
early-age	-4.4		-2.7	-0.5	-0.2	-0.7	-0.3
cohort effect	-5.3		-2.7	0.4	0.0	-1.7	-1.2
Benefit ratio	-3.0		-0.3	-1.0	-1.3	-0.6	0.2
Labour market ratio	-1.0		-0.2	-0.2	-0.2	-0.2	-0.1
Of which: employment rate	-0.7		-0.2	-0.2	-0.1	-0.1	-0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.4		0.0	-0.1	-0.1	-0.1	0.0
Interaction effect (residual)	-0.5		-0.2	-0.1	-0.1	-0.1	-0.1

Cyprus

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.3	2.9	3.0	3.1	3.1	3.2	3.2
AWG risk scenario	0.7	2.9	3.0	3.2	3.4	3.5	3.6
TFP risk scenario	0.3	2.9	3.0	3.1	3.1	3.1	3.2
Demographic scenario	0.3	2.9	3.0	3.1	3.1	3.2	3.2
High life expectancy scenario (variation of demogr. scenario)	0.3	2.9	3.0	3.1	3.1	3.2	3.2
Healthy ageing scenario	0.1	2.9	3.0	3.0	3.0	3.0	3.0
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	0.4	2.9	3.0	3.1	3.2	3.2	3.3
EU cost convergence scenario	3.1	2.9	3.3	3.8	4.4	5.1	6.0
Labour intensity scenario	0.5	2.9	3.0	3.1	3.1	3.2	3.4
Sector-specific composite indexation scenario	0.4	2.9	3.0	3.1	3.1	3.2	3.3
Non-demographic determinants scenario	1.1	2.9	3.0	3.3	3.6	3.9	4.0

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.3	0.3	0.4	0.5	0.5	0.6	0.6
AWG risk scenario	2.8	0.3	0.6	0.8	1.2	1.8	3.2
TFP risk scenario	0.3	0.3	0.4	0.5	0.5	0.6	0.6
Demographic scenario	0.3	0.3	0.4	0.5	0.5	0.6	0.6
Base case scenario	0.3	0.3	0.4	0.5	0.5	0.6	0.7
High life expectancy scenario (variation of base case)	0.4	0.3	0.4	0.5	0.6	0.6	0.7
Healthy ageing scenario	0.2	0.3	0.4	0.5	0.5	0.5	0.6
Shift to formal care scenario	0.4	0.3	0.5	0.6	0.6	0.6	0.7
Coverage convergence scenario	0.3	0.3	0.4	0.5	0.5	0.6	0.7
Cost convergence scenario	3.0	0.3	0.6	0.9	1.2	1.9	3.4
Cost and coverage convergence scenario	3.1	0.3	0.6	0.9	1.3	2.0	3.4
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	78%	62	77	87	94	101	110
Recipients: receiving institutional care	119%	9	13	15	17	18	21
receiving home care	125%	12	16	19	21	23	26
receiving cash benefits	122%	20	27	32	35	38	44

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.7	5.3	4.7	4.7	4.5	4.5	4.6
Number of students (in thousands)							
Total (students/staff in 2019 = 10.7)	5.9%	159	158	166	165	165	169
as % of population 5-24	-0.2	76.8	75.4	76.4	75.3	76.2	76.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	1.1	0.0	0.5	0.9	1.1	1.1	1.1

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.0	17.3	18.2	18.5	18.2	18.9	19.3
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.9	0.0	0.2	0.5	1.0	1.6	2.9
TFP risk scenario (-0.2 pps)	0.3	0.0	-0.1	0.1	0.2	0.3	0.3
High life expectancy (+2 years) (8)	0.2	0.0	0.1	0.0	-0.1	0.0	0.2
Lower fertility (-20%)	0.6	0.0	-0.3	-0.7	-0.2	0.2	0.6
Higher TFP growth (+0.2 pps)	-0.1	0.0	-0.1	-0.2	-0.1	-0.1	-0.1
Higher employment rate of older workers (+10 pps)	-0.4	0.0	-0.4	-0.3	-0.4	-0.6	-0.4
Higher migration (+33%)	-0.9	0.0	-0.3	-0.4	-0.5	-0.9	-0.9
Lower migration (-33%)	1.1	0.0	0.3	0.4	0.6	1.0	1.1
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.3	0.0	0.4	0.6	0.5	0.5	0.3

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

14. LATVIA

Latvia							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.58	1.64	1.67	1.69	1.70	1.71
Life expectancy at birth							
males	12.0	70.6	73.3	75.9	78.4	80.6	82.6
females	8.3	80.2	82.1	83.9	85.6	87.1	88.5
Life expectancy at 65							
males	7.2	14.5	16.0	17.6	19.0	20.4	21.7
females	6.1	19.4	20.7	22.0	23.3	24.4	25.5
Net migration (thousand)	:	-3.9	-7.3	-4.7	-2.3	-0.6	0.7
Net migration as % of population	:	-0.2	-0.4	-0.3	-0.2	0.0	0.1
Population (million)	-0.7	1.9	1.7	1.5	1.4	1.3	1.2
Young population (0-19) as % of total population	-2.3	20.6	20.1	18.1	18.3	18.6	18.3
Prime-age population (25-54) as % of total population	-7.8	40.4	35.8	33.7	31.8	32.6	32.6
Working-age population (20-64) as % of total population	-9.0	59.0	54.8	53.2	50.3	48.0	50.0
Elderly population (65+) as % of total population	11.4	20.4	25.0	28.7	31.3	33.4	31.8
Very elderly population (80+) as % of total population	9.2	5.7	7.0	9.4	11.5	12.9	14.9
Very elderly population (80+) as % of elderly population	19.0	28.0	27.8	32.9	36.7	38.6	47.0
Very elderly population (80+) as % of working-age population	20.2	9.7	12.7	17.7	22.9	26.8	29.9
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.2	2.7	1.9	1.0	0.6	1.0	1.1
Employment (growth rate)	-1.1	-0.1	-1.2	-1.2	-1.5	-0.8	-0.4
Labour input: hours worked (growth rate)	-1.1	-0.6	-1.2	-1.2	-1.4	-0.8	-0.4
Labour productivity per hour (growth rate)	2.3	3.3	3.1	2.2	2.0	1.8	1.5
TFP (growth rate)	1.4	1.9	1.9	1.4	1.3	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.9	1.4	1.2	0.8	0.7	0.6	0.5
Potential GDP per capita (growth rate)	2.2	3.4	3.1	2.0	1.5	1.9	1.8
Potential GDP per worker (growth rate)	2.3	2.8	3.2	2.2	2.0	1.8	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-540	1,129	934	814	699	610	589
Population growth (20-64)	1.0	-1.4	-1.6	-1.4	-1.7	-0.6	-0.4
Labour force 15-64 (thousands)	-451	945	775	676	581	516	495
Labour force 20-64 (thousands)	-448	936	766	667	575	510	489
Participation rate (20-64)	0.1	82.9	82.0	82.0	82.2	83.6	83.0
Participation rate (20-74)	-2.9	73.6	68.8	68.4	67.6	67.7	70.7
youngest (20-24)	3.8	66.2	69.6	70.4	70.0	69.7	69.9
prime-age (25-54)	1.7	88.4	89.1	89.5	90.4	90.2	90.1
older (55-64)	-3.1	72.5	68.3	68.8	67.5	69.4	69.4
very old (65-74)	-7.1	20.7	13.8	13.7	13.7	12.5	13.6
Participation rate (20-64) - females	0.9	80.4	79.7	79.8	80.3	81.9	81.2
Participation rate (20-74) - females	-0.4	69.7	65.4	65.4	65.4	66.0	69.3
youngest (20-24)	4.4	61.4	65.6	66.2	65.9	65.6	65.8
prime-age (25-54)	3.1	85.5	86.9	87.9	88.8	88.7	88.6
older (55-64)	-3.9	72.2	67.5	66.4	66.0	68.3	68.2
very old (65-74)	-4.0	19.3	15.1	15.0	14.9	14.1	15.3
Participation rate (20-64) - males	-0.9	85.6	84.3	84.2	84.0	85.1	84.7
Participation rate (20-74) - males	-6.0	78.0	72.4	71.5	69.8	69.3	72.0
youngest (20-24)	3.2	70.6	73.5	74.2	73.9	73.5	73.8
prime-age (25-54)	0.3	91.3	91.2	91.0	91.9	91.6	91.6
older (55-64)	-2.3	73.0	69.1	71.2	68.9	70.5	70.6
very old (65-74)	-11.0	22.8	12.0	11.9	12.3	10.8	11.8
Average effective exit age - total (1)	0.9	63.5	64.5	64.5	64.5	64.5	64.5
males	1.1	63.2	64.3	64.3	64.3	64.3	64.3
females	0.8	63.8	64.6	64.6	64.6	64.6	64.6
Employment rate (15-64)	-1.3	72.5	68.5	69.8	70.9	71.4	71.3
Employment rate (20-64)	-0.2	77.6	74.7	75.5	76.6	77.9	77.4
Employment rate (20-74)	-3.0	69.0	62.8	63.2	63.1	63.2	66.0
Unemployment rate (15-64)	0.4	6.6	9.2	8.1	7.1	7.0	7.0
Unemployment rate (20-64)	0.4	6.4	8.9	7.9	6.9	6.8	6.8
Unemployment rate (20-74)	0.4	6.2	8.7	7.7	6.7	6.6	6.7
Employment (20-64) (in millions)	-0.4	0.9	0.7	0.6	0.5	0.5	0.5
Employment (20-74) (in millions)	-0.4	0.9	0.7	0.6	0.6	0.5	0.5
share of youngest (20-24)	2.3	6%	7%	8%	7%	8%	8%
share of prime-age (25-54)	-1.3	70%	69%	67%	67%	71%	69%
share of older (55-64)	-0.1	20%	20%	21%	22%	18%	20%
share of very old (65-74)	-0.8	4%	4%	4%	5%	4%	4%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.6	24.0	25.0	26.1	27.6	22.1	24.6
Old-age dependency ratio 20-64 (3)	29.0	34.6	45.7	53.8	62.3	69.5	63.6
Total dependency ratio (4)	30.7	69.5	82.3	87.9	98.7	108.2	100.2
Total economic dependency ratio (5)	40.7	108.8	133.9	138.2	147.8	155.8	149.5
Economic old-age dependency ratio (20-64) (6)	38.5	39.9	56.7	66.8	76.5	84.6	78.4
Economic old-age dependency ratio (20-74) (7)	37.5	38.1	54.3	64.0	73.1	80.9	75.6

Latvia							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-1.2	7.1	6.9	6.6	6.3	6.2	5.9
Of which : Old-age and early pensions	-1.1	6.4	6.3	6.0	5.8	5.7	5.3
Disability pensions	-0.1	0.6	0.5	0.5	0.4	0.4	0.5
Survivors' pensions	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	-1.1	6.4	6.3	6.0	5.8	5.7	5.3
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	2.2	0.0	0.2	0.4	1.0	1.7	2.2
New pensions, gross (old-age and early pensions)	-0.1	0.2	0.2	0.1	0.1	0.1	0.1
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	-1.6	8.4	7.3	7.0	6.7	6.6	6.8
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	-115	557	538	532	514	489	441
Public pensioners aged 65+ (1000 persons)	-42	409	425	434	429	417	368
Pensioners younger than 65 as % of all pensioners (public)	-9.8	26%	21%	18%	16%	15%	17%
Benefit ratio % (public pensions)	-9.5	23.0	19.8	16.8	14.7	13.5	13.5
Gross replacement rate at retirement % (old-age earnings-related)	-34.7	54.8	38.9	28.1	23.6	21.0	20.0
Average accrual rates % (new pensions, earnings-related)	-0.5	1.1	1.0	0.8	0.7	0.6	0.6
Average contributory period, years (new pensions, earnings-related)	0.9	36.1	37.0	37.0	37.0	37.0	37.0
Contributors (public pensions, 1000 persons)	-478	977	775	676	582	515	499
Support ratio (contributors/100 pensioners, public pensions)	-62	175	144	127	113	105	113
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.2	0.0	0.0	0.0	0.0	0.1	0.2
Lower fertility (-20%)	0.3	0.0	0.0	0.0	0.1	0.2	0.3
Higher TFP growth (+0.2 pps)	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1
TFP risk scenario (-0.2 pps)	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Higher employment rate of older workers (+10 pps)	0.1	0.0	-0.2	0.0	0.0	0.1	0.1
Higher migration (+33%)	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Lower migration (-33%)	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.0
Policy scenario linking retirement age to life expectancy	0.0	0.0	-0.1	-0.4	-0.5	-0.4	0.0
Adverse macroeconomic scenario - lagged recovery	0.2	0.0	0.3	0.3	0.3	0.2	0.2
Adverse macroeconomic scenario - adverse structural	0.5	0.0	0.4	0.5	0.5	0.5	0.5
Offset declining pension benefit ratio	3.3	0.0	0.3	1.6	2.7	3.5	3.3
Unchanged retirement age	0.0	0.0	0.4	0.1	0.0	-0.1	0.0
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1.2	7.1	6.9	6.6	6.3	6.2	5.9
pps change from 2019 due to:	-1.2		-0.2	-0.6	-0.8	-0.9	-1.2
Dependency ratio	4.6		2.3	3.4	4.4	5.1	4.6
Coverage ratio	-1.4		-0.9	-1.2	-1.4	-1.5	-1.4
Of which: old-age	-0.5		-0.4	-0.4	-0.4	-0.4	-0.5
early-age	-0.7		-1.0	-1.5	-1.0	-0.7	-0.7
cohort effect	-3.6		-1.7	-2.3	-3.5	-4.7	-3.6
Benefit ratio	-4.1		-1.6	-2.7	-3.5	-4.1	-4.1
Labour market ratio	0.1		0.3	0.2	0.1	0.0	0.1
Of which: employment rate	0.1		0.3	0.2	0.1	0.0	0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.1		0.0	0.0	0.0	0.0	0.1
Interaction effect (residual)	-0.5		-0.3	-0.4	-0.4	-0.5	-0.5
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-1.2	7.1	-0.2	-0.4	-0.2	-0.1	-0.3
Dependency ratio	4.6		2.3	1.2	1.0	0.7	-0.5
Coverage ratio	-1.4		-0.9	-0.3	-0.2	-0.1	0.1
Of which: old-age	-0.5		-0.4	0.0	0.0	0.0	0.0
early-age	-0.7		-1.0	-0.5	0.5	0.3	0.0
cohort effect	-3.6		-1.7	-0.6	-1.3	-1.2	1.1
Benefit ratio	-4.1		-1.6	-1.1	-0.8	-0.5	0.0
Labour market ratio	0.1		0.3	-0.1	-0.1	-0.1	0.1
Of which: employment rate	0.1		0.3	-0.1	-0.1	-0.1	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.1		0.0	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.5		-0.3	-0.1	-0.1	0.0	0.0

Latvia

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.4	4.6	5.0	5.2	5.2	5.2	5.1
AWG risk scenario	1.7	4.6	5.5	6.1	6.3	6.4	6.3
TFP risk scenario	0.4	4.6	5.0	5.1	5.2	5.2	5.0
Demographic scenario	0.9	4.6	5.1	5.3	5.5	5.5	5.5
High life expectancy scenario (variation of demogr. scenario)	0.9	4.6	5.0	5.3	5.4	5.5	5.5
Healthy ageing scenario	-0.6	4.6	4.7	4.7	4.5	4.3	4.0
Death-related cost scenario	0.9	4.6	5.1	5.3	5.4	5.5	5.5
Income elasticity scenario	1.2	4.6	5.2	5.5	5.7	5.8	5.8
EU cost convergence scenario	2.3	4.6	5.2	5.7	6.2	6.6	6.9
Labour intensity scenario	1.5	4.6	5.3	5.7	6.1	6.3	6.1
Sector-specific composite indexation scenario	1.6	4.6	5.3	5.8	6.1	6.2	6.2
Non-demographic determinants scenario	3.5	4.6	5.8	6.7	7.4	7.9	8.1

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.2	0.5	0.5	0.6	0.6	0.7	0.6
AWG risk scenario	3.9	0.5	0.7	1.0	1.7	2.7	4.4
TFP risk scenario	0.2	0.5	0.5	0.6	0.6	0.6	0.6
Demographic scenario	0.2	0.5	0.5	0.6	0.6	0.6	0.6
Base case scenario	0.2	0.5	0.5	0.6	0.6	0.7	0.7
High life expectancy scenario (variation of base case)	0.2	0.5	0.5	0.6	0.6	0.7	0.7
Healthy ageing scenario	0.1	0.5	0.5	0.5	0.6	0.6	0.6
Shift to formal care scenario	0.5	0.5	0.8	0.8	0.9	1.0	1.0
Coverage convergence scenario	1.6	0.5	0.6	0.8	1.1	1.5	2.1
Cost convergence scenario	1.0	0.5	0.6	0.8	1.0	1.3	1.5
Cost and coverage convergence scenario	4.2	0.5	0.7	1.1	1.7	2.9	4.6
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	-18%	171	168	166	160	150	141
Recipients: receiving institutional care	-12%	13	13	13	13	12	12
receiving home care	-28%	17	17	16	15	14	12
receiving cash benefits	-39%	16	15	13	12	11	10

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.0	3.6	3.8	3.5	3.5	3.8	3.6
Number of students (in thousands)							
Total (students/staff in 2019 = 10.1)	-43.7%	321	294	237	209	198	181
as % of population 5-24	-4.7	85.7	81.4	79.9	81.7	81.5	81.0
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.5	0.0	0.2	0.4	0.5	0.5	0.5

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	-0.6	15.8	16.3	15.8	15.7	15.8	15.2
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	5.0	0.0	0.7	1.3	2.1	3.3	5.0
TFP risk scenario (-0.2 pps)	0.1	0.0	0.0	0.1	0.1	0.1	0.1
High life expectancy (+2 years) (8)	0.1	0.0	0.0	0.0	0.0	0.1	0.1
Lower fertility (-20%)	0.2	0.0	-0.2	-0.5	-0.2	0.0	0.2
Higher TFP growth (+0.2 pps)	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1
Higher employment rate of older workers (+10 pps)	0.0	0.0	-0.4	-0.2	-0.3	-0.2	0.0
Higher migration (+33%)	0.1	0.0	0.1	0.2	0.2	0.2	0.1
Lower migration (-33%)	-0.1	0.0	-0.1	-0.2	-0.2	-0.2	-0.1
Policy scenario linking retirement age to life expectancy	-0.3	0.0	-0.1	-0.5	-0.7	-0.7	-0.3
Adverse macroeconomic scenario - lagged recovery	0.2	0.0	0.3	0.3	0.3	0.2	0.2
Adverse macroeconomic scenario - adverse structural	0.5	0.0	0.5	0.6	0.6	0.5	0.5

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

15. LITHUANIA

Lithuania							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.61	1.63	1.65	1.67	1.69	1.70
Life expectancy at birth							
males	11.6	71.3	73.8	76.4	78.8	80.9	82.9
females	7.7	81.1	82.8	84.4	86.0	87.4	88.8
Life expectancy at 65							
males	6.9	15.0	16.4	17.9	19.3	20.6	21.9
females	5.7	20.0	21.2	22.4	23.5	24.6	25.7
Net migration (thousand)	:	10.1	-9.5	-5.2	-1.9	0.7	2.6
Net migration as % of population	:	0.4	-0.4	-0.2	-0.1	0.0	0.1
Population (million)	-1.0	2.8	2.6	2.3	2.1	2.0	1.8
Young population (0-19) as % of total population	-2.6	19.9	19.6	17.5	17.1	17.5	17.3
Prime-age population (25-54) as % of total population	-7.0	39.9	36.3	34.5	32.6	32.7	32.8
Working-age population (20-64) as % of total population	-10.4	60.2	55.3	52.9	51.3	49.0	49.8
Elderly population (65+) as % of total population	13.0	19.8	25.1	29.6	31.6	33.5	32.9
Very elderly population (80+) as % of total population	8.5	5.8	6.7	9.4	12.3	13.1	14.3
Very elderly population (80+) as % of elderly population	14.1	29.4	26.6	31.9	39.0	39.2	43.5
Very elderly population (80+) as % of working-age population	19.0	9.7	12.1	17.8	24.0	26.8	28.7
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.2	3.8	1.4	1.0	0.7	0.8	1.1
Employment (growth rate)	-1.0	1.4	-1.7	-1.1	-1.3	-0.9	-0.4
Labour input: hours worked (growth rate)	-1.0	1.3	-1.7	-1.1	-1.3	-0.9	-0.4
Labour productivity per hour (growth rate)	2.2	2.4	3.0	2.1	2.0	1.8	1.5
TFP (growth rate)	1.3	1.1	1.8	1.4	1.3	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.9	1.3	1.3	0.8	0.7	0.6	0.5
Potential GDP per capita (growth rate)	2.1	4.0	2.4	1.9	1.6	1.6	1.7
Potential GDP per worker (growth rate)	2.2	2.4	3.1	2.2	2.0	1.8	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-776	1,683	1,417	1,232	1,092	956	907
Population growth (20-64)	0.0	-0.3	-1.6	-1.2	-1.4	-0.9	-0.3
Labour force 15-64 (thousands)	-629	1,419	1,207	1,062	943	833	790
Labour force 20-64 (thousands)	-624	1,407	1,196	1,052	935	825	783
Participation rate (20-64)	2.8	83.6	84.4	85.4	85.6	86.3	86.4
Participation rate (20-74)	-2.4	74.2	69.5	69.9	70.6	69.4	71.8
youngest (20-24)	2.6	63.1	64.6	65.8	65.9	65.5	65.7
prime-age (25-54)	3.7	90.1	92.6	93.3	93.8	93.9	93.8
older (55-64)	0.7	73.8	70.2	72.4	73.1	73.4	74.5
very old (65-74)	-6.7	17.5	9.9	10.4	11.1	10.9	10.7
Participation rate (20-64) - females	2.6	82.1	82.7	83.6	83.8	84.6	84.7
Participation rate (20-74) - females	-1.1	71.0	65.3	66.1	67.7	67.1	69.8
youngest (20-24)	2.0	60.1	60.9	62.2	62.3	61.8	62.0
prime-age (25-54)	3.1	89.0	90.9	91.6	92.0	92.2	92.1
older (55-64)	1.0	72.7	70.6	71.6	72.0	72.4	73.7
very old (65-74)	-6.6	15.4	7.8	8.8	9.0	8.9	8.8
Participation rate (20-64) - males	2.7	85.2	86.1	87.0	87.2	87.9	87.9
Participation rate (20-74) - males	-4.2	77.8	73.9	73.6	73.2	71.5	73.6
youngest (20-24)	3.2	65.8	68.1	69.2	69.2	68.9	69.0
prime-age (25-54)	4.1	91.3	94.1	94.8	95.4	95.5	95.4
older (55-64)	0.1	75.1	69.6	73.2	74.0	74.2	75.2
very old (65-74)	-8.3	20.8	12.9	12.4	13.2	12.8	12.5
Average effective exit age - total (1)	1.4	62.7	64.1	64.1	64.1	64.1	64.1
males	1.0	63.4	64.4	64.4	64.4	64.4	64.4
females	1.6	62.1	63.8	63.8	63.8	63.8	63.8
Employment rate (15-64)	1.2	73.0	72.2	73.2	74.1	74.2	74.3
Employment rate (20-64)	2.2	78.3	78.5	79.4	79.7	80.4	80.4
Employment rate (20-74)	-2.6	69.6	64.8	65.2	65.8	64.8	67.0
Unemployment rate (15-64)	0.5	6.5	7.2	7.1	7.0	7.0	7.0
Unemployment rate (20-64)	0.5	6.4	7.0	7.0	6.9	6.9	6.9
Unemployment rate (20-74)	0.5	6.2	6.9	6.8	6.7	6.7	6.7
Employment (20-64) (in millions)	-0.6	1.3	1.1	1.0	0.9	0.8	0.7
Employment (20-74) (in millions)	-0.6	1.4	1.1	1.0	0.9	0.8	0.8
share of youngest (20-24)	0.2	6%	6%	7%	6%	6%	7%
share of prime-age (25-54)	0.6	69%	70%	69%	68%	70%	70%
share of older (55-64)	-0.3	21%	21%	20%	23%	20%	20%
share of very old (65-74)	-0.5	4%	3%	3%	3%	4%	3%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.0	24.5	25.8	25.0	27.7	24.2	24.5
Old-age dependency ratio 20-64 (3)	33.1	32.9	45.4	55.9	61.5	68.4	66.0
Total dependency ratio (4)	34.8	66.0	80.9	89.1	94.8	104.2	100.8
Total economic dependency ratio (5)	37.4	104.6	123.6	130.3	136.3	144.5	142.0
Economic old-age dependency ratio (20-64) (6)	40.5	38.4	54.8	67.0	73.7	81.2	78.9
Economic old-age dependency ratio (20-74) (7)	39.4	37.0	53.1	64.8	71.2	78.1	76.5

Lithuania

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	0.4	7.1	7.9	8.4	8.2	8.1	7.5
Of which : Old-age and early pensions	0.5	5.5	6.1	6.6	6.5	6.5	6.0
Disability pensions	0.1	1.2	1.4	1.4	1.4	1.3	1.3
Survivors' pensions	-0.1	0.3	0.3	0.2	0.2	0.2	0.1
Other	-0.1	0.2	0.1	0.1	0.1	0.1	0.1
Earnings-related pensions (old-age and early pensions), gross	0.5	2.3	2.6	2.9	3.0	3.0	2.8
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	1.0	0.0	0.1	0.2	0.4	0.8	1.0
New pensions, gross (old-age and early pensions)	-0.1	0.2	0.2	0.2	0.1	0.1	0.1
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	-0.2	7.2	7.2	7.4	7.4	7.2	6.9
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	-144	900	906	917	873	825	756
Public pensioners aged 65+ (1000 persons)	15	612	679	725	705	686	627
Pensioners younger than 65 as % of all pensioners (public)	-14.9	32%	25%	21%	19%	17%	17%
Benefit ratio % (public pensions)	-5.8	26.7	27.9	25.7	23.6	21.7	20.8
Gross replacement rate at retirement % (old-age earnings-related)	-10.4	31.7	31.0	27.4	24.7	22.6	21.2
Average accrual rates % (new pensions, earnings-related)	0.1	1.1	1.1	1.1	1.1	1.2	1.2
Average contributory period, years (new pensions, earnings-related)	2.0	40.7	42.7	42.7	42.7	42.7	42.7
Contributors (public pensions, 1000 persons)	-568	1,263	1,058	934	831	737	694
Support ratio (contributors/100 pensioners, public pensions)	-48	140	117	102	95	89	92
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.5	0.0	0.1	0.2	0.3	0.4	0.5
Lower fertility (-20%)	0.1	0.0	0.0	0.0	0.0	0.1	0.1
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TFP risk scenario (-0.2 pps)	0.1	0.0	0.1	0.0	0.1	0.1	0.1
Higher employment rate of older workers (+10 pps)	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Higher migration (+33%)	-0.2	0.0	0.0	0.0	-0.1	-0.2	-0.2
Lower migration (-33%)	0.2	0.0	0.0	0.0	0.1	0.2	0.2
Policy scenario linking retirement age to life expectancy	-0.6	0.0	-0.1	-0.3	-0.5	-0.7	-0.6
Adverse macroeconomic scenario - lagged recovery	0.2	0.0	0.2	0.3	0.2	0.2	0.2
Adverse macroeconomic scenario - adverse structural	0.4	0.0	0.2	0.4	0.4	0.4	0.4
Offset declining pension benefit ratio	1.7	0.0	0.0	0.0	0.6	1.5	1.7
Unchanged retirement age	0.2	0.0	0.6	0.4	0.4	0.3	0.2
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	0.4	7.1	7.9	8.4	8.2	8.1	7.5
pps change from 2019 due to:	0.4		0.8	1.2	1.1	0.9	0.4
Dependency ratio	5.9		2.7	4.5	5.3	6.2	5.9
Coverage ratio	-1.9		-1.1	-1.5	-1.7	-2.0	-1.9
Of which: old-age	-0.4		-0.3	-0.4	-0.4	-0.4	-0.4
early-age	-1.5		-0.7	-1.1	-1.4	-1.1	-1.5
cohort effect	-5.1		-2.1	-3.6	-4.1	-5.7	-5.1
Benefit ratio	-2.9		-0.6	-1.2	-1.9	-2.6	-2.9
Labour market ratio	-0.2		0.0	-0.1	-0.2	-0.3	-0.2
Of which: employment rate	-0.3		0.0	-0.1	-0.2	-0.2	-0.3
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.0	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.5		-0.3	-0.4	-0.4	-0.5	-0.5
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	0.4	7.1	0.8	0.4	-0.1	-0.2	-0.5
Dependency ratio	5.9		2.7	1.8	0.8	0.9	-0.3
Coverage ratio	-1.9		-1.1	-0.4	-0.2	-0.2	0.0
Of which: old-age	-0.4		-0.3	0.0	0.0	0.0	0.0
early-age	-1.5		-0.7	-0.4	-0.4	0.3	-0.4
cohort effect	-5.1		-2.1	-1.4	-0.5	-1.6	0.5
Benefit ratio	-2.9		-0.6	-0.7	-0.7	-0.7	-0.3
Labour market ratio	-0.2		0.0	-0.1	0.0	-0.1	0.1
Of which: employment rate	-0.3		0.0	-0.1	0.0	-0.1	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.0	0.0	0.0	0.0	0.1
Interaction effect (residual)	-0.5		-0.3	-0.1	0.0	0.0	0.0

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Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.6	4.2	4.4	4.6	4.8	4.8	4.7
AWG risk scenario	1.6	4.2	4.8	5.3	5.7	5.8	5.8
TFP risk scenario	0.5	4.2	4.4	4.6	4.7	4.7	4.7
Demographic scenario	0.7	4.2	4.4	4.6	4.8	4.8	4.8
High life expectancy scenario (variation of demogr. scenario)	0.7	4.2	4.3	4.6	4.8	4.8	4.9
Healthy ageing scenario	0.1	4.2	4.2	4.3	4.4	4.3	4.2
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	0.9	4.2	4.5	4.8	5.0	5.1	5.1
EU cost convergence scenario	2.6	4.2	4.6	5.2	5.8	6.3	6.8
Labour intensity scenario	1.3	4.2	4.5	4.9	5.2	5.5	5.4
Sector-specific composite indexation scenario	0.6	4.2	4.3	4.5	4.7	4.7	4.7
Non-demographic determinants scenario	2.7	4.2	4.9	5.7	6.3	6.7	6.9

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.8	1.0	1.2	1.4	1.6	1.7	1.8
AWG risk scenario	5.4	1.0	1.5	2.2	3.3	4.7	6.4
TFP risk scenario	0.8	1.0	1.2	1.4	1.6	1.7	1.7
Demographic scenario	0.7	1.0	1.1	1.3	1.5	1.6	1.7
Base case scenario	0.8	1.0	1.2	1.4	1.6	1.8	1.8
High life expectancy scenario (variation of base case)	1.0	1.0	1.2	1.4	1.7	1.9	2.0
Healthy ageing scenario	0.6	1.0	1.1	1.3	1.5	1.6	1.6
Shift to formal care scenario	0.9	1.0	1.3	1.5	1.7	1.9	1.9
Coverage convergence scenario	0.8	1.0	1.2	1.4	1.6	1.8	1.8
Cost convergence scenario	6.0	1.0	1.5	2.3	3.5	5.1	7.0
Cost and coverage convergence scenario	6.0	1.0	1.5	2.3	3.5	5.1	7.0
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	-11%	242	246	251	250	232	216
Recipients: receiving institutional care	-10%	94	96	98	98	91	85
receiving home care	26%	83	90	100	112	110	105
receiving cash benefits	26%	119	128	139	156	156	149

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.1	3.0	3.0	2.9	2.7	2.9	2.9
Number of students (in thousands)							
Total (students/staff in 2019 = 9.4)	-43.3%	476	431	358	306	290	269
as % of population 5-24	-1.4	84.0	83.9	82.1	82.7	83.3	82.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.6	0.0	0.3	0.5	0.6	0.6	0.6

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.6	15.3	16.5	17.2	17.3	17.5	16.9
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	5.7	0.0	0.7	1.5	2.6	4.0	5.7
TFP risk scenario (-0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High life expectancy (+2 years) (8)	0.6	0.0	0.0	0.2	0.3	0.5	0.6
Lower fertility (-20%)	0.0	0.0	-0.1	-0.4	-0.2	-0.1	0.0
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate of older workers (+10 pps)	-0.2	0.0	-0.2	-0.1	-0.2	-0.3	-0.2
Higher migration (+33%)	-0.2	0.0	0.0	0.0	0.0	-0.1	-0.2
Lower migration (-33%)	0.2	0.0	0.0	0.0	0.0	0.1	0.2
Policy scenario linking retirement age to life expectancy	-0.9	0.0	-0.1	-0.4	-0.7	-0.9	-0.9
Adverse macroeconomic scenario - lagged recovery	0.2	0.0	0.2	0.3	0.2	0.2	0.2
Adverse macroeconomic scenario - adverse structural	0.4	0.0	0.3	0.4	0.4	0.4	0.4

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

16. LUXEMBOURG

Luxembourg							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.34	1.40	1.46	1.49	1.53	1.56
Life expectancy at birth							
males	6.3	80.3	81.7	83.1	84.4	85.5	86.6
females	5.8	85.0	86.3	87.5	88.7	89.8	90.8
Life expectancy at 65							
males	4.6	19.1	20.1	21.1	22.0	22.9	23.7
females	4.6	22.5	23.5	24.5	25.4	26.3	27.1
Net migration (thousand)	:	10.2	4.2	3.5	3.0	2.7	2.5
Net migration as % of population	:	1.6	0.6	0.5	0.4	0.3	0.3
Population (million)	0.2	0.6	0.7	0.7	0.8	0.8	0.8
Young population (0-19) as % of total population	-3.9	21.4	19.8	18.5	17.9	17.7	17.5
Prime-age population (25-54) as % of total population	-10.4	45.8	43.2	40.6	37.8	36.5	35.4
Working-age population (20-64) as % of total population	-11.3	64.2	61.9	59.2	56.4	53.8	52.9
Elderly population (65+) as % of total population	15.2	14.5	18.3	22.4	25.7	28.5	29.7
Very elderly population (80+) as % of total population	8.3	4.0	4.8	6.5	9.0	10.6	12.3
Very elderly population (80+) as % of elderly population	14.0	27.5	26.2	29.2	34.9	37.2	41.5
Very elderly population (80+) as % of working-age population	17.1	6.2	7.7	11.0	15.9	19.7	23.3
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.8	2.1	1.8	2.1	1.7	1.6	1.3
Employment (growth rate)	0.7	2.9	1.1	0.6	0.1	0.0	-0.2
Labour input: hours worked (growth rate)	0.7	2.9	1.1	0.5	0.1	0.0	-0.2
Labour productivity per hour (growth rate)	1.1	-0.8	0.7	1.5	1.5	1.5	1.5
TFP (growth rate)	0.7	-0.7	0.5	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.4	-0.2	0.3	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.3	0.1	1.0	1.6	1.4	1.5	1.3
Potential GDP per worker (growth rate)	1.1	-0.9	0.7	1.5	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	18	398	431	438	435	422	416
Population growth (20-64)	-2.2	2.1	0.3	0.1	-0.2	-0.2	-0.1
Labour force 15-64 (thousands)	18	311	341	348	343	334	329
Labour force 20-64 (thousands)	17	305	335	342	337	328	323
Participation rate (20-64)	0.8	76.8	77.7	78.1	77.5	77.9	77.5
Participation rate (20-74)	-4.5	68.7	67.4	66.2	64.8	64.0	64.2
youngest (20-24)	2.6	51.9	54.4	54.6	54.6	54.4	54.5
prime-age (25-54)	3.7	88.5	91.3	91.9	92.3	92.3	92.2
older (55-64)	0.0	45.2	42.9	45.1	44.9	45.0	45.2
very old (65-74)	1.0	2.9	4.1	3.8	3.9	3.9	3.9
Participation rate (20-64) - females	4.8	71.8	75.7	76.8	76.4	77.0	76.6
Participation rate (20-74) - females	-0.6	63.9	65.4	65.0	63.6	62.9	63.3
youngest (20-24)	4.2	46.5	50.6	50.9	50.8	50.7	50.7
prime-age (25-54)	7.9	84.0	90.1	91.3	91.9	91.9	91.8
older (55-64)	5.2	38.4	37.9	42.8	43.1	43.4	43.6
very old (65-74)	1.7	1.7	3.2	3.1	3.5	3.5	3.5
Participation rate (20-64) - males	-3.1	81.5	79.6	79.3	78.5	78.8	78.4
Participation rate (20-74) - males	-8.2	73.4	69.3	67.3	65.9	65.0	65.1
youngest (20-24)	1.1	56.9	57.9	58.2	58.1	57.9	58.0
prime-age (25-54)	-0.3	92.9	92.5	92.5	92.7	92.6	92.6
older (55-64)	-4.9	51.6	47.5	47.3	46.7	46.6	46.7
very old (65-74)	0.2	4.1	5.0	4.4	4.4	4.3	4.3
Average effective exit age - total (1)	0.0	60.2	60.2	60.2	60.2	60.2	60.2
males	0.0	60.4	60.4	60.4	60.4	60.4	60.4
females	0.0	60.1	60.1	60.1	60.1	60.1	60.1
Employment rate (15-64)	1.2	68.0	69.4	69.9	69.4	69.5	69.2
Employment rate (20-64)	1.4	72.7	74.2	74.6	74.0	74.4	74.1
Employment rate (20-74)	-3.7	65.1	64.3	63.2	61.9	61.1	61.4
Unemployment rate (15-64)	-0.9	5.7	4.9	4.9	4.9	4.9	4.9
Unemployment rate (20-64)	-0.8	5.3	4.5	4.5	4.5	4.5	4.5
Unemployment rate (20-74)	-0.8	5.3	4.5	4.5	4.5	4.5	4.5
Employment (20-64) (in millions)	0.0	0.3	0.3	0.3	0.3	0.3	0.3
Employment (20-74) (in millions)	0.0	0.3	0.3	0.3	0.3	0.3	0.3
share of youngest (20-24)	-0.1	6%	6%	5%	5%	6%	6%
share of prime-age (25-54)	-3.2	82%	82%	80%	79%	80%	79%
share of older (55-64)	2.6	11%	12%	13%	14%	13%	14%
share of very old (65-74)	0.7	0%	1%	1%	1%	1%	1%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	4.9	19.1	21.4	22.6	24.3	23.3	24.0
Old-age dependency ratio 20-64 (3)	33.6	22.6	29.6	37.8	45.5	52.8	56.1
Total dependency ratio (4)	33.4	55.9	61.5	69.0	77.2	85.7	89.2
Total economic dependency ratio (5)	39.2	113.4	115.8	124.6	136.8	146.7	152.6
Economic old-age dependency ratio (20-64) (6)	44.1	30.6	38.9	49.7	60.3	69.8	74.6
Economic old-age dependency ratio (20-74) (7)	43.4	30.4	38.6	49.2	59.7	69.0	73.8

Luxembourg							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	8.7	9.2	11.4	13.0	14.8	16.7	18.0
Of which : Old-age and early pensions	7.7	7.0	8.8	10.2	11.8	13.5	14.8
Disability pensions	0.5	0.7	1.0	1.1	1.1	1.1	1.1
Survivors' pensions	0.5	1.5	1.7	1.8	1.9	2.0	2.1
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	7.7	7.0	8.8	10.2	11.8	13.5	14.8
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.1	0.4	0.5	0.5	0.6	0.6	0.6
Public pensions, net	7.4	7.8	9.7	11.0	12.6	14.1	15.2
Public pensions, contributions	0.0	9.9	9.9	9.9	9.9	9.9	9.9
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.0	84.6%	84.6%	84.6%	84.6%	84.6%	84.6%
Pensioners (public, 1000 persons)	447	207	313	420	524	609	654
Public pensioners aged 65+ (1000 persons)	391	149	229	325	411	490	540
Pensioners younger than 65 as % of all pensioners (public)	-10.8	28%	27%	23%	22%	20%	17%
Benefit ratio % (public pensions)	-7.5	52.6	53.6	49.4	46.7	45.4	45.0
Gross replacement rate at retirement % (old-age earnings-related)	-7.0	67.1	55.7	55.8	55.3	58.6	60.1
Average accrual rates % (new pensions, earnings-related)	-0.2	1.8	1.8	1.7	1.6	1.6	1.6
Average contributory period, years (new pensions, earnings-related)	7.4	27.7	27.4	29.0	31.3	33.9	35.2
Contributors (public pensions, 1000 persons)	190	487	606	659	680	683	677
Support ratio (contributors/100 pensioners, public pensions)	-132	235	194	157	130	112	104
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.5	0.0	0.0	0.1	0.2	0.3	0.5
Lower fertility (-20%)	2.2	0.0	0.0	0.1	0.5	1.3	2.2
Higher TFP growth (+0.2 pps)	-0.9	0.0	0.0	-0.2	-0.5	-0.7	-0.9
TFP risk scenario (-0.2 pps)	0.7	0.0	0.1	0.3	0.5	0.6	0.7
Higher employment rate of older workers (+10 pps)	-0.1	0.0	-0.3	-0.5	-0.6	-0.6	-0.1
Higher migration (+33%)	-1.1	0.0	-0.4	-0.7	-1.1	-1.2	-1.1
Lower migration (-33%)	1.5	0.0	0.4	0.8	1.3	1.6	1.5
Policy scenario linking retirement age to life expectancy	-1.6	0.0	-0.5	-0.8	-1.1	-1.5	-1.6
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Adverse macroeconomic scenario - adverse structural	1.3	0.0	0.3	0.7	1.0	1.2	1.3
Offset declining pension benefit ratio	2.0	0.0	0.0	0.0	1.0	1.6	2.0
Unchanged retirement age	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	8.7	9.2	11.4	13.0	14.8	16.7	18.0
pps change from 2019 due to:	8.7		2.2	3.8	5.6	7.4	8.7
Dependency ratio	12.1		3.0	6.0	8.6	11.0	12.1
Coverage ratio	2.5		0.7	1.0	1.6	2.1	2.5
Of which: old-age	4.4		0.9	1.9	2.7	3.6	4.4
early-age	5.8		2.2	2.8	5.0	6.6	5.8
cohort effect	-9.3		-2.0	-4.0	-6.1	-8.5	-9.3
Benefit ratio	-5.1		-1.0	-2.6	-4.0	-4.8	-5.1
Labour market ratio	-0.2		-0.2	-0.3	-0.2	-0.3	-0.2
Of which: employment rate	-0.2		-0.2	-0.3	-0.2	-0.2	-0.2
labour intensity	0.1		0.0	0.0	0.1	0.1	0.1
career shift	-0.1		0.0	0.0	-0.1	-0.1	-0.1
Interaction effect (residual)	-0.6		-0.2	-0.4	-0.5	-0.6	-0.6
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	8.7	9.2	2.2	1.6	1.8	1.8	1.3
Dependency ratio	12.1		3.0	3.1	2.6	2.4	1.0
Coverage ratio	2.5		0.7	0.4	0.6	0.5	0.4
Of which: old-age	4.4		0.9	1.0	0.8	0.9	0.9
early-age	5.8		2.2	0.6	2.2	1.6	-0.7
cohort effect	-9.3		-2.0	-2.0	-2.1	-2.4	-0.8
Benefit ratio	-5.1		-1.0	-1.6	-1.4	-0.9	-0.2
Labour market ratio	-0.2		-0.2	0.0	0.1	-0.1	0.1
Of which: employment rate	-0.2		-0.2	-0.1	0.1	-0.1	0.1
labour intensity	0.1		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		0.0	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.6		-0.2	-0.2	-0.1	-0.1	0.0

Luxembourg

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.1	3.6	3.8	4.1	4.4	4.5	4.6
AWG risk scenario	1.6	3.6	3.9	4.4	4.8	5.0	5.2
TFP risk scenario	1.0	3.6	3.8	4.1	4.4	4.5	4.6
Demographic scenario	1.3	3.6	3.9	4.2	4.5	4.7	4.9
High life expectancy scenario (variation of demogr. scenario)	1.4	3.6	3.9	4.2	4.6	4.8	5.0
Healthy ageing scenario	0.7	3.6	3.7	3.9	4.1	4.2	4.2
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	1.4	3.6	3.9	4.3	4.6	4.8	5.0
EU cost convergence scenario	2.9	3.6	4.1	4.7	5.4	5.9	6.4
Labour intensity scenario	0.9	3.6	3.5	3.8	4.1	4.3	4.5
Sector-specific composite indexation scenario	1.1	3.6	3.8	4.1	4.4	4.6	4.7
Non-demographic determinants scenario	2.5	3.6	4.0	4.6	5.3	5.7	6.1

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.4	1.0	1.1	1.4	1.8	2.2	2.5
AWG risk scenario	3.5	1.0	1.3	1.8	2.6	3.5	4.6
TFP risk scenario	1.4	1.0	1.1	1.4	1.8	2.1	2.5
Demographic scenario	1.7	1.0	1.2	1.6	2.0	2.4	2.7
Base case scenario	1.5	1.0	1.1	1.4	1.8	2.2	2.5
High life expectancy scenario (variation of base case)	1.8	1.0	1.2	1.5	1.9	2.4	2.9
Healthy ageing scenario	1.3	1.0	1.1	1.3	1.7	2.0	2.3
Shift to formal care scenario	2.1	1.0	1.5	1.8	2.3	2.7	3.1
Coverage convergence scenario	3.5	1.0	1.3	1.8	2.6	3.5	4.6
Cost convergence scenario	1.7	1.0	1.2	1.4	1.9	2.3	2.7
Cost and coverage convergence scenario	3.8	1.0	1.3	1.9	2.7	3.7	4.8
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	79%	56	69	79	89	95	100
Recipients: receiving institutional care	248%	5	7	10	13	16	19
receiving home care	158%	9	11	15	18	21	23
receiving cash benefits	104%	2	2	3	3	3	3

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.8	3.0	2.5	2.3	2.2	2.2	2.2
Number of students (in thousands)							
Total (students/staff in 2019 = 8.2)	3.0%	94	97	97	97	98	97
as % of population 5-24	0.1	68.6	68.5	68.5	68.7	68.9	68.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	1.5	0.0	0.6	1.1	1.5	1.4	1.5

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	10.4	16.9	18.8	20.8	23.2	25.6	27.3
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.6	0.0	0.3	0.7	1.2	1.9	2.6
TFP risk scenario (-0.2 pps)	0.7	0.0	0.1	0.3	0.4	0.6	0.7
High life expectancy (+2 years) (8)	0.7	0.0	0.0	0.1	0.3	0.5	0.7
Lower fertility (-20%)	2.4	0.0	-0.1	-0.2	0.4	1.3	2.4
Higher TFP growth (+0.2 pps)	-0.9	0.0	0.0	-0.2	-0.5	-0.7	-0.9
Higher employment rate of older workers (+10 pps)	-0.4	0.0	-0.4	-0.6	-0.8	-0.8	-0.4
Higher migration (+33%)	-1.5	0.0	-0.5	-0.9	-1.4	-1.6	-1.5
Lower migration (-33%)	1.9	0.0	0.5	1.0	1.7	2.0	1.9
Policy scenario linking retirement age to life expectancy	-2.0	0.0	-0.5	-0.9	-1.3	-1.7	-2.0
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	1.4	0.0	0.4	0.7	1.1	1.2	1.4

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

17. HUNGARY

Hungary							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.51	1.61	1.67	1.69	1.69	1.70
Life expectancy at birth							
males	10.7	72.9	75.4	77.7	79.8	81.8	83.6
females	8.7	79.8	81.8	83.7	85.4	87.0	88.5
Life expectancy at 65							
males	7.1	14.8	16.4	17.9	19.3	20.6	21.9
females	6.7	18.7	20.2	21.6	23.0	24.2	25.4
Net migration (thousand)	:	36.3	23.5	23.3	23.2	23.3	23.5
Net migration as % of population	:	0.4	0.2	0.2	0.3	0.3	0.3
Population (million)	-0.9	9.8	9.6	9.4	9.3	9.1	8.9
Young population (0-19) as % of total population	-0.9	19.6	19.2	18.8	18.7	18.7	18.7
Prime-age population (25-54) as % of total population	-8.0	42.4	39.7	36.6	35.1	34.6	34.4
Working-age population (20-64) as % of total population	-9.2	60.8	59.2	56.6	53.5	51.8	51.7
Elderly population (65+) as % of total population	10.0	19.6	21.7	24.6	27.8	29.5	29.6
Very elderly population (80+) as % of total population	7.7	4.5	5.9	7.8	8.6	11.6	12.2
Very elderly population (80+) as % of elderly population	18.3	22.7	27.3	31.8	30.8	39.3	41.0
Very elderly population (80+) as % of working-age population	16.2	7.3	10.0	13.8	16.0	22.4	23.5
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.8	3.9	2.4	1.4	1.6	1.4	1.3
Employment (growth rate)	-0.2	1.1	0.1	-0.9	-0.5	-0.4	-0.2
Labour input: hours worked (growth rate)	-0.3	0.9	0.1	-0.8	-0.5	-0.4	-0.2
Labour productivity per hour (growth rate)	2.1	2.9	2.3	2.3	2.1	1.8	1.5
TFP (growth rate)	1.3	1.2	1.5	1.5	1.4	1.2	1.0
Capital deepening (contribution to labour productivity growth)	0.7	1.7	0.8	0.8	0.7	0.6	0.5
Potential GDP per capita (growth rate)	2.0	3.9	2.6	1.6	1.8	1.6	1.5
Potential GDP per worker (growth rate)	2.0	2.7	2.3	2.3	2.1	1.8	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-1,337	5,944	5,687	5,336	4,953	4,715	4,607
Population growth (20-64)	0.6	-0.8	-0.2	-1.2	-0.4	-0.5	-0.2
Labour force 15-64 (thousands)	-710	4,674	4,852	4,561	4,261	4,060	3,964
Labour force 20-64 (thousands)	-705	4,634	4,813	4,523	4,224	4,023	3,928
Participation rate (20-64)	7.3	77.9	84.6	84.8	85.3	85.3	85.3
Participation rate (20-74)	4.9	66.8	73.2	71.6	70.3	71.1	71.7
youngest (20-24)	3.0	54.4	57.5	57.5	57.4	57.3	57.4
prime-age (25-54)	2.9	87.1	89.4	90.0	90.0	90.0	90.0
older (55-64)	25.5	58.2	81.5	81.7	83.5	83.6	83.7
very old (65-74)	4.5	7.1	9.6	12.6	10.6	11.8	11.5
Participation rate (20-64) - females	10.1	70.0	79.3	79.4	80.1	80.2	80.1
Participation rate (20-74) - females	8.5	58.4	67.1	66.0	65.0	66.2	67.0
youngest (20-24)	3.4	46.4	50.0	49.9	49.9	49.8	49.8
prime-age (25-54)	4.0	80.5	83.7	84.4	84.5	84.6	84.5
older (55-64)	33.2	47.4	78.5	77.8	80.2	80.5	80.6
very old (65-74)	5.2	5.1	8.1	11.2	9.2	10.5	10.3
Participation rate (20-64) - males	4.2	85.9	89.8	89.8	90.1	90.2	90.1
Participation rate (20-74) - males	0.6	75.6	79.4	77.2	75.5	75.7	76.2
youngest (20-24)	2.7	61.8	64.6	64.5	64.5	64.4	64.5
prime-age (25-54)	1.7	93.4	94.9	95.1	95.2	95.2	95.2
older (55-64)	15.9	70.7	84.7	85.6	86.6	86.5	86.6
very old (65-74)	3.0	9.8	11.6	14.3	12.0	13.1	12.8
Average effective exit age - total (1)	2.3	62.8	65.1	65.1	65.1	65.1	65.1
males	2.1	63.2	65.3	65.3	65.3	65.3	65.3
females	2.5	62.4	64.8	64.8	64.8	64.8	64.8
Employment rate (15-64)	5.2	70.2	75.5	75.4	75.6	75.4	75.4
Employment rate (20-64)	6.5	75.4	81.2	81.4	81.9	82.0	81.9
Employment rate (20-74)	4.3	64.6	70.3	68.8	67.6	68.3	68.9
Unemployment rate (15-64)	0.7	3.5	4.2	4.2	4.2	4.2	4.2
Unemployment rate (20-64)	0.7	3.3	4.0	4.0	3.9	3.9	3.9
Unemployment rate (20-74)	0.6	3.3	4.0	3.9	3.9	3.9	3.9
Employment (20-64) (in millions)	-0.7	4.5	4.6	4.3	4.1	3.9	3.8
Employment (20-74) (in millions)	-0.7	4.6	4.7	4.5	4.2	4.0	3.9
share of youngest (20-24)	0.0	6%	6%	6%	6%	6%	6%
share of prime-age (25-54)	-8.4	77%	70%	67%	67%	68%	68%
share of older (55-64)	7.1	16%	23%	24%	24%	22%	23%
share of very old (65-74)	1.3	2%	2%	3%	3%	3%	3%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.5	21.0	23.7	25.8	24.8	23.4	23.6
Old-age dependency ratio 20-64 (3)	25.1	32.2	36.6	43.5	52.0	57.0	57.4
Total dependency ratio (4)	29.2	64.4	69.0	76.8	87.0	93.2	93.6
Total economic dependency ratio (5)	14.8	114.4	103.8	110.0	121.3	127.9	129.2
Economic old-age dependency ratio (20-64) (6)	25.9	41.0	42.9	50.0	60.2	66.1	66.9
Economic old-age dependency ratio (20-74) (7)	24.5	40.3	42.1	48.4	58.4	63.9	64.8

Hungary

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	4.1	8.3	8.3	9.7	11.2	11.9	12.4
Of which : Old-age and early pensions	4.6	6.7	7.0	8.5	10.1	10.9	11.3
Disability pensions	-0.1	0.6	0.6	0.6	0.5	0.5	0.5
Survivors' pensions	-0.4	0.9	0.7	0.5	0.5	0.5	0.5
Other	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Earnings-related pensions (old-age and early pensions), gross	4.6	6.7	7.0	8.5	10.1	10.9	11.3
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.2	0.2	0.3	0.3	0.3	0.3
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	-0.3	7.7	7.4	7.4	7.4	7.4	7.4
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	529	2,631	2,700	2,970	3,138	3,218	3,160
Public pensioners aged 65+ (1000 persons)	744	1,924	2,044	2,330	2,592	2,713	2,667
Pensioners younger than 65 as % of all pensioners (public)	-11.3	27%	24%	22%	17%	16%	16%
Benefit ratio % (public pensions)	2.0	37.5	37.8	38.0	38.7	38.5	39.6
Gross replacement rate at retirement % (old-age earnings-related)	3.3	44.8	48.7	47.9	47.3	47.6	48.2
Average accrual rates % (new pensions, earnings-related)	-0.2	2.3	2.1	2.1	2.1	2.1	2.1
Average contributory period, years (new pensions, earnings-related)	3.6	34.6	37.8	38.1	37.7	38.5	38.1
Contributors (public pensions, 1000 persons)	-550	4,468	4,744	4,518	4,213	4,023	3,917
Support ratio (contributors/100 pensioners, public pensions)	-46	170	176	152	134	125	124
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.5	0.0	0.0	0.1	0.3	0.4	0.5
Lower fertility (-20%)	1.5	0.0	0.0	0.0	0.4	0.9	1.5
Higher TFP growth (+0.2 pps)	-0.5	0.0	0.0	-0.1	-0.3	-0.4	-0.5
TFP risk scenario (-0.2 pps)	0.5	0.0	0.0	0.2	0.4	0.5	0.5
Higher employment rate of older workers (+10 pps)	-0.7	0.0	-0.1	-0.6	-0.6	-0.7	-0.7
Higher migration (+33%)	-0.4	0.0	-0.1	-0.2	-0.3	-0.4	-0.4
Lower migration (-33%)	0.2	0.0	0.0	0.1	0.2	0.3	0.2
Policy scenario linking retirement age to life expectancy	-2.3	0.0	-0.2	-1.0	-1.0	-1.7	-2.3
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	1.4	0.0	0.3	0.6	1.0	1.2	1.4
Offset declining pension benefit ratio	:	:	:	:	:	:	:
Unchanged retirement age	0.7	0.0	0.4	0.7	0.6	0.7	0.7
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	4.1	8.3	8.3	9.7	11.2	11.9	12.4
pps change from 2019 due to:	4.1		0.0	1.4	2.9	3.6	4.1
Dependency ratio	5.7		1.1	2.7	4.6	5.6	5.7
Coverage ratio	-1.3		-0.5	-0.6	-1.1	-1.3	-1.3
Of which: old-age	0.1		-0.2	0.0	0.0	0.1	0.1
early-age	-1.8		-1.7	-1.3	-1.8	-1.8	-1.8
cohort effect	-4.4		0.4	-1.1	-3.0	-4.4	-4.4
Benefit ratio	0.6		0.1	0.1	0.3	0.2	0.6
Labour market ratio	-0.8		-0.7	-0.8	-0.8	-0.8	-0.8
Of which: employment rate	-0.7		-0.6	-0.7	-0.7	-0.7	-0.7
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		0.0	-0.1	-0.1	-0.1	-0.1
Interaction effect (residual)	-0.1		-0.1	-0.1	-0.1	-0.1	-0.1
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	4.1	8.3	0.0	1.3	1.5	0.8	0.4
Dependency ratio	5.7		1.1	1.6	1.9	1.1	0.1
Coverage ratio	-1.3		-0.5	-0.1	-0.5	-0.2	0.0
Of which: old-age	0.1		-0.2	0.2	0.0	0.0	0.0
early-age	-1.8		-1.7	0.4	-0.5	0.0	0.0
cohort effect	-4.4		0.4	-1.5	-2.0	-1.3	0.0
Benefit ratio	0.6		0.1	0.0	0.2	-0.1	0.3
Labour market ratio	-0.8		-0.7	-0.1	0.0	0.0	0.0
Of which: employment rate	-0.7		-0.6	0.0	-0.1	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		0.0	-0.1	0.0	0.0	0.0
Interaction effect (residual)	-0.1		-0.1	0.0	0.0	0.0	0.0

Hungary

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.9	4.8	5.1	5.3	5.6	5.7	5.6
AWG risk scenario	2.1	4.8	5.5	6.1	6.6	6.8	6.8
TFP risk scenario	0.8	4.8	5.1	5.3	5.5	5.7	5.6
Demographic scenario	1.2	4.8	5.2	5.5	5.8	6.0	6.0
High life expectancy scenario (variation of demogr. scenario)	1.3	4.8	5.2	5.5	5.8	6.0	6.1
Healthy ageing scenario	0.1	4.8	4.9	4.9	5.0	5.0	4.9
Death-related cost scenario	0.8	4.8	5.1	5.4	5.6	5.6	5.6
Income elasticity scenario	1.5	4.8	5.3	5.7	6.0	6.2	6.3
EU cost convergence scenario	2.0	4.8	5.3	5.8	6.2	6.5	6.8
Labour intensity scenario	1.7	4.8	4.9	5.4	6.0	6.3	6.4
Sector-specific composite indexation scenario	1.9	4.8	5.4	5.9	6.3	6.6	6.7
Non-demographic determinants scenario	3.7	4.8	5.8	6.7	7.6	8.2	8.4

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.7	0.6	0.6	0.8	0.9	1.1	1.2
AWG risk scenario	3.8	0.6	0.8	1.3	2.0	3.1	4.4
TFP risk scenario	0.7	0.6	0.6	0.8	0.9	1.1	1.2
Demographic scenario	0.6	0.6	0.7	0.8	0.9	1.1	1.2
Base case scenario	0.7	0.6	0.6	0.8	0.9	1.1	1.2
High life expectancy scenario (variation of base case)	0.9	0.6	0.6	0.8	1.0	1.2	1.4
Healthy ageing scenario	0.5	0.6	0.6	0.7	0.8	1.0	1.1
Shift to formal care scenario	1.2	0.6	1.0	1.2	1.3	1.6	1.7
Coverage convergence scenario	3.7	0.6	0.8	1.3	2.0	3.0	4.3
Cost convergence scenario	0.8	0.6	0.7	0.8	1.0	1.2	1.3
Cost and coverage convergence scenario	4.2	0.6	0.9	1.4	2.1	3.3	4.7
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	19%	696	747	783	799	839	832
Recipients: receiving institutional care	76%	70	80	93	100	114	123
receiving home care	60%	59	68	76	82	92	94
receiving cash benefits	:	0	0	0	0	0	0

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.1	3.4	3.0	3.1	3.2	3.3	3.3
Number of students (in thousands)							
Total (students/staff in 2019 = 10.4)	-14.7%	1,526	1,441	1,386	1,348	1,329	1,301
as % of population 5-24	-0.9	76.5	74.9	74.9	75.4	75.7	75.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.7	0.0	0.3	0.5	0.7	0.7	0.7

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	5.5	17.1	17.1	18.9	20.8	22.0	22.5
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	4.3	0.0	0.6	1.3	2.1	3.1	4.3
TFP risk scenario (-0.2 pps)	0.5	0.0	0.0	0.2	0.4	0.5	0.5
High life expectancy (+2 years) (8)	0.6	0.0	0.0	0.1	0.3	0.5	0.6
Lower fertility (-20%)	1.5	0.0	-0.1	-0.3	0.2	0.8	1.5
Higher TFP growth (+0.2 pps)	-0.4	0.0	0.0	-0.1	-0.3	-0.4	-0.4
Higher employment rate of older workers (+10 pps)	-1.0	0.0	-0.2	-0.8	-0.9	-1.0	-1.0
Higher migration (+33%)	-0.6	0.0	-0.1	-0.2	-0.4	-0.5	-0.6
Lower migration (-33%)	0.3	0.0	0.1	0.2	0.3	0.4	0.3
Policy scenario linking retirement age to life expectancy	-2.5	0.0	-0.2	-1.0	-1.1	-1.9	-2.5
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	1.4	0.0	0.4	0.7	1.0	1.3	1.4

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

18. MALTA

Malta							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.3	1.14	1.26	1.34	1.39	1.44	1.47
Life expectancy at birth							
males	6.3	80.5	82.0	83.3	84.6	85.7	86.8
females	6.1	84.5	85.9	87.2	88.4	89.5	90.6
Life expectancy at 65							
males	4.3	19.6	20.5	21.4	22.3	23.1	23.9
females	4.6	22.4	23.4	24.4	25.3	26.2	27.0
Net migration (thousand)	:	12.8	6.0	5.3	4.7	4.2	3.8
Net migration as % of population	:	2.6	1.0	0.8	0.7	0.6	0.5
Population (million)	0.2	0.5	0.6	0.6	0.7	0.7	0.7
Young population (0-19) as % of total population	-2.6	18.1	17.8	16.4	15.7	15.7	15.6
Prime-age population (25-54) as % of total population	-9.5	44.4	45.5	42.6	38.4	36.3	34.9
Working-age population (20-64) as % of total population	-11.1	63.1	61.2	61.3	58.7	53.9	52.0
Elderly population (65+) as % of total population	13.7	18.7	21.0	22.3	25.6	30.4	32.4
Very elderly population (80+) as % of total population	9.0	4.3	6.4	7.9	8.4	10.1	13.2
Very elderly population (80+) as % of elderly population	18.0	22.7	30.7	35.6	32.8	33.3	40.7
Very elderly population (80+) as % of working-age population	18.7	6.8	10.5	12.9	14.3	18.8	25.4
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	2.2	4.5	3.9	2.1	1.3	1.2	1.4
Employment (growth rate)	0.5	3.7	1.8	0.5	-0.3	-0.3	-0.1
Labour input: hours worked (growth rate)	0.4	2.8	1.7	0.4	-0.3	-0.3	-0.1
Labour productivity per hour (growth rate)	1.8	1.7	2.1	1.7	1.6	1.6	1.5
TFP (growth rate)	1.2	1.3	1.5	1.1	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.6	0.4	0.7	0.6	0.6	0.6	0.5
Potential GDP per capita (growth rate)	1.5	1.2	2.9	1.5	0.9	0.9	1.3
Potential GDP per worker (growth rate)	1.7	0.8	2.1	1.7	1.6	1.6	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	52	316	362	390	393	374	368
Population growth (20-64)	-3.8	3.7	0.9	0.4	-0.2	-0.4	-0.1
Labour force 15-64 (thousands)	66	257	317	343	343	328	323
Labour force 20-64 (thousands)	65	251	311	336	336	321	316
Participation rate (20-64)	6.4	79.7	85.9	86.2	85.6	85.8	86.0
Participation rate (20-74)	2.0	68.8	74.3	75.2	72.0	69.4	70.8
youngest (20-24)	1.5	77.7	79.2	79.4	79.4	79.3	79.2
prime-age (25-54)	5.4	87.5	91.6	92.7	93.0	93.0	93.0
older (55-64)	16.8	52.3	65.1	68.1	69.1	68.1	69.2
very old (65-74)	-1.0	8.7	5.7	8.1	8.2	8.0	7.7
Participation rate (20-64) - females	13.0	68.8	79.1	81.1	81.1	81.5	81.8
Participation rate (20-74) - females	8.8	58.4	67.6	70.2	67.8	65.5	67.2
youngest (20-24)	0.3	77.3	77.4	77.8	77.8	77.6	77.6
prime-age (25-54)	11.8	77.1	85.5	88.3	88.9	88.9	88.9
older (55-64)	27.1	36.4	54.2	60.1	62.9	62.4	63.5
very old (65-74)	1.2	5.2	3.7	6.3	6.7	6.7	6.4
Participation rate (20-64) - males	0.2	89.4	91.5	90.4	89.3	89.4	89.6
Participation rate (20-74) - males	-4.6	78.4	80.2	79.4	75.6	72.6	73.8
youngest (20-24)	2.6	78.0	80.7	80.9	80.8	80.7	80.7
prime-age (25-54)	-0.3	96.7	96.6	96.3	96.4	96.5	96.4
older (55-64)	6.0	67.8	74.7	74.9	74.2	72.7	73.8
very old (65-74)	-3.7	12.4	7.7	9.7	9.6	9.1	8.7
Average effective exit age - total (1)	0.9	62.4	63.3	63.3	63.3	63.3	63.3
males	1.1	62.8	63.9	63.9	63.9	63.9	63.9
females	0.8	61.9	62.7	62.7	62.7	62.7	62.7
Employment rate (15-64)	4.5	73.5	78.1	78.4	78.1	78.0	78.0
Employment rate (20-64)	5.5	77.3	82.5	82.8	82.3	82.5	82.7
Employment rate (20-74)	1.3	66.8	71.5	72.3	69.3	66.8	68.2
Unemployment rate (15-64)	1.0	3.4	4.4	4.4	4.3	4.3	4.4
Unemployment rate (20-64)	0.8	3.0	3.9	3.9	3.9	3.8	3.8
Unemployment rate (20-74)	0.8	2.9	3.8	3.8	3.8	3.8	3.8
Employment (20-64) (in millions)	0.1	0.2	0.3	0.3	0.3	0.3	0.3
Employment (20-74) (in millions)	0.1	0.2	0.3	0.3	0.3	0.3	0.3
share of youngest (20-24)	-2.0	9%	7%	7%	7%	7%	7%
share of prime-age (25-54)	-4.7	76%	79%	74%	70%	71%	71%
share of older (55-64)	6.5	13%	14%	18%	21%	19%	19%
share of very old (65-74)	0.2	2%	1%	2%	2%	3%	2%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	4.6	19.6	18.0	22.2	26.6	24.4	24.2
Old-age dependency ratio 20-64 (3)	32.7	29.7	34.4	36.4	43.5	56.5	62.4
Total dependency ratio (4)	33.9	58.5	63.4	63.3	70.3	85.7	92.3
Total economic dependency ratio (5)	26.5	101.0	95.7	94.0	102.8	119.4	127.5
Economic old-age dependency ratio (20-64) (6)	36.8	36.4	40.4	42.4	50.8	65.9	73.2
Economic old-age dependency ratio (20-74) (7)	35.9	35.7	40.0	41.7	49.8	64.2	71.6

Malta							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	3.8	7.1	6.6	6.6	8.1	10.1	10.9
Of which : Old-age and early pensions	4.7	4.6	4.7	5.1	6.5	8.6	9.3
Disability pensions	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Survivors' pensions	-0.3	1.2	1.0	1.0	0.9	0.9	0.8
Other	-0.6	1.1	0.6	0.4	0.4	0.5	0.5
Earnings-related pensions (old-age and early pensions), gross	4.7	4.2	4.4	4.8	6.2	8.2	8.9
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.4	0.3	0.3	0.4	0.4	0.4
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	-0.9	7.9	8.5	8.0	7.7	7.4	7.0
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	137	92	115	138	170	207	229
Public pensioners aged 65+ (1000 persons)	134	74	100	119	147	186	208
Pensioners younger than 65 as % of all pensioners (public)	-10.6	19%	13%	14%	14%	10%	9%
Benefit ratio % (public pensions)	-11.9	44.9	38.0	35.2	35.0	34.4	33.0
Gross replacement rate at retirement % (old-age earnings-related)	8.7	48.4	50.7	51.3	52.3	54.1	57.1
Average accrual rates % (new pensions, earnings-related)	-0.3	2.0	1.7	1.7	1.7	1.7	1.7
Average contributory period, years (new pensions, earnings-related)	1.6	36.0	36.9	37.0	37.1	37.3	37.6
Contributors (public pensions, 1000 persons)	72	248	309	336	339	326	320
Support ratio (contributors/100 pensioners, public pensions)	-130	270	268	244	200	157	140
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.5	0.0	0.0	0.1	0.2	0.3	0.5
Lower fertility (-20%)	1.0	0.0	0.0	0.0	0.3	0.6	1.0
Higher TFP growth (+0.2 pps)	-0.7	0.0	0.0	-0.1	-0.2	-0.5	-0.7
TFP risk scenario (-0.2 pps)	0.6	0.0	0.1	0.2	0.3	0.4	0.6
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.1	-0.1	-0.2	-0.5	-0.3
Higher migration (+33%)	-0.8	0.0	-0.2	-0.4	-0.6	-0.9	-0.8
Lower migration (-33%)	1.2	0.0	0.3	0.4	0.8	1.3	1.2
Policy scenario linking retirement age to life expectancy	-0.4	0.0	0.0	0.0	-0.1	-0.3	-0.4
Adverse macroeconomic scenario - lagged recovery	0.2	0.0	0.0	0.0	0.1	0.1	0.2
Adverse macroeconomic scenario - adverse structural	1.5	0.0	0.4	0.4	0.7	1.1	1.5
Offset declining pension benefit ratio	1.2	0.0	0.0	0.2	0.3	0.6	1.2
Unchanged retirement age	0.2	0.0	0.1	0.1	0.2	0.2	0.2
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	3.8	7.1	6.6	6.6	8.1	10.1	10.9
pps change from 2019 due to:	3.8		-0.5	-0.4	1.0	3.0	3.8
Dependency ratio	6.2		1.1	1.5	2.8	5.2	6.2
Coverage ratio	0.1		-0.4	-0.1	0.0	-0.1	0.1
Of which: old-age	1.1		0.2	0.4	0.5	0.8	1.1
early-age	-1.9		-2.3	-2.4	-1.8	-1.3	-1.9
cohort effect	-4.1		-0.9	0.1	-0.6	-3.2	-4.1
Benefit ratio	-1.9		-0.7	-1.3	-1.3	-1.5	-1.9
Labour market ratio	-0.5		-0.4	-0.5	-0.4	-0.5	-0.5
Of which: employment rate	-0.5		-0.5	-0.5	-0.5	-0.5	-0.5
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.1	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.1		0.0	-0.1	-0.1	-0.1	-0.1
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	3.8	7.1	-0.5	0.1	1.4	2.0	0.8
Dependency ratio	6.2		1.1	0.4	1.3	2.4	1.0
Coverage ratio	0.1		-0.4	0.3	0.1	-0.1	0.2
Of which: old-age	1.1		0.2	0.2	0.2	0.2	0.4
early-age	-1.9		-2.3	-0.2	0.7	0.5	-0.7
cohort effect	-4.1		-0.9	0.9	-0.6	-2.6	-0.9
Benefit ratio	-1.9		-0.7	-0.5	0.0	-0.2	-0.4
Labour market ratio	-0.5		-0.4	0.0	0.0	-0.1	0.0
Of which: employment rate	-0.5		-0.5	0.0	0.0	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.1	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.1		0.0	0.0	0.0	0.0	0.0

Malta

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.6	5.4	5.9	6.4	6.8	7.3	8.0
AWG risk scenario	3.9	5.4	6.3	7.1	7.7	8.4	9.3
TFP risk scenario	2.6	5.4	5.9	6.4	6.7	7.3	7.9
Demographic scenario	2.9	5.4	5.9	6.4	6.9	7.5	8.3
High life expectancy scenario (variation of demogr. scenario)	3.2	5.4	5.9	6.5	7.0	7.7	8.6
Healthy ageing scenario	1.8	5.4	5.7	6.0	6.2	6.6	7.1
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	3.3	5.4	6.0	6.6	7.1	7.8	8.6
EU cost convergence scenario	3.5	5.4	6.0	6.7	7.2	8.0	8.9
Labour intensity scenario	4.8	5.4	6.2	6.7	7.5	8.9	10.2
Sector-specific composite indexation scenario	3.1	5.4	6.0	6.5	7.0	7.7	8.5
Non-demographic determinants scenario	5.4	5.4	6.4	7.6	8.5	9.6	10.8

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.9	1.1	1.5	1.8	2.0	2.4	3.0
AWG risk scenario	4.6	1.1	1.7	2.2	2.8	3.9	5.7
TFP risk scenario	1.8	1.1	1.5	1.8	2.0	2.3	2.9
Demographic scenario	1.4	1.1	1.4	1.7	1.8	2.1	2.5
Base case scenario	1.9	1.1	1.5	1.8	2.0	2.4	3.0
High life expectancy scenario (variation of base case)	2.6	1.1	1.5	2.0	2.3	2.8	3.8
Healthy ageing scenario	1.5	1.1	1.4	1.7	1.8	2.1	2.6
Shift to formal care scenario	2.2	1.1	1.6	1.9	2.2	2.6	3.3
Coverage convergence scenario	3.7	1.1	1.6	2.1	2.6	3.4	4.8
Cost convergence scenario	2.9	1.1	1.5	1.9	2.3	2.9	4.0
Cost and coverage convergence scenario	5.0	1.1	1.7	2.3	3.0	4.2	6.1
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	149%	16	22	27	31	34	40
Recipients: receiving institutional care	269%	4	6	9	10	12	15
receiving home care	186%	8	12	14	16	19	23
receiving cash benefits	23%	4	4	5	5	5	4

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.3	4.3	3.9	3.7	3.6	3.9	4.1
Number of students (in thousands)							
Total (students/staff in 2019 = 8.7)	20.1%	74	84	85	84	88	89
as % of population 5-24	1.9	75.0	77.6	75.4	75.9	77.3	76.8
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	1.4	0.0	0.6	1.0	1.4	1.4	1.4

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	8.0	17.9	17.8	18.5	20.4	23.7	25.9
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	4.0	0.0	0.5	1.2	1.8	2.7	4.0
TFP risk scenario (-0.2 pps)	0.6	0.0	0.1	0.1	0.2	0.4	0.6
High life expectancy (+2 years) (8)	1.1	0.0	0.1	0.2	0.4	0.7	1.1
Lower fertility (-20%)	1.1	0.0	-0.1	-0.3	0.0	0.5	1.1
Higher TFP growth (+0.2 pps)	-0.6	0.0	0.0	-0.1	-0.2	-0.4	-0.6
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.2	-0.2	-0.5	-0.8	-0.6
Higher migration (+33%)	-1.4	0.0	-0.5	-0.6	-1.0	-1.4	-1.4
Lower migration (-33%)	2.1	0.0	0.5	0.8	1.3	2.0	2.1
Policy scenario linking retirement age to life expectancy	-0.8	0.0	0.0	-0.1	-0.3	-0.6	-0.8
Adverse macroeconomic scenario - lagged recovery	0.2	0.0	0.0	0.0	0.1	0.1	0.2
Adverse macroeconomic scenario - adverse structural	1.6	0.0	0.6	0.6	0.9	1.3	1.6

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
The values of the gross replacement rate at retirement and the average contributory period are for 2020.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

19. THE NETHERLANDS

The Netherlands							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.58	1.60	1.62	1.64	1.66	1.68
Life expectancy at birth							
males	5.9	80.7	81.9	83.2	84.4	85.5	86.6
females	6.3	83.6	85.1	86.4	87.6	88.8	89.9
Life expectancy at 65							
males	4.5	19.0	19.9	20.9	21.8	22.7	23.5
females	4.9	21.4	22.5	23.5	24.5	25.4	26.3
Net migration (thousand)	:	105.4	33.3	34.0	33.4	32.8	33.2
Net migration as % of population	:	0.6	0.2	0.2	0.2	0.2	0.2
Population (million)	0.6	17.3	18.0	18.2	18.1	18.0	18.0
Young population (0-19) as % of total population	-2.2	21.8	20.4	20.3	19.9	19.6	19.7
Prime-age population (25-54) as % of total population	-4.3	39.0	37.0	36.9	35.9	35.2	34.7
Working-age population (20-64) as % of total population	-7.1	58.8	55.9	53.4	53.6	53.1	51.8
Elderly population (65+) as % of total population	9.2	19.3	23.7	26.3	26.4	27.3	28.6
Very elderly population (80+) as % of total population	6.6	4.7	6.9	8.8	10.8	10.7	11.3
Very elderly population (80+) as % of elderly population	15.2	24.2	29.2	33.4	40.8	39.4	39.4
Very elderly population (80+) as % of working-age population	13.8	7.9	12.4	16.5	20.1	20.3	21.7
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.3	1.8	0.7	1.5	1.6	1.4	1.4
Employment (growth rate)	0.0	1.2	-0.3	-0.1	0.1	-0.1	-0.1
Labour input: hours worked (growth rate)	0.0	1.2	-0.3	-0.1	0.1	-0.1	-0.1
Labour productivity per hour (growth rate)	1.3	0.6	1.0	1.5	1.5	1.5	1.5
TFP (growth rate)	0.9	0.4	0.6	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.2	0.4	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.2	1.2	0.5	1.4	1.7	1.5	1.4
Potential GDP per worker (growth rate)	1.3	0.6	1.0	1.5	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-893	10,205	10,055	9,709	9,729	9,557	9,312
Population growth (20-64)	-0.7	0.5	-0.4	-0.1	0.0	-0.2	-0.2
Labour force 15-64 (thousands)	-639	9,108	8,968	8,739	8,784	8,645	8,469
Labour force 20-64 (thousands)	-559	8,435	8,342	8,121	8,156	8,042	7,875
Participation rate (20-64)	1.9	82.6	83.0	83.7	83.8	84.1	84.6
Participation rate (20-74)	2.2	71.8	71.6	71.7	73.8	73.6	74.0
youngest (20-24)	2.8	75.7	78.5	78.5	78.5	78.5	78.5
prime-age (25-54)	0.1	87.4	87.4	87.3	87.4	87.5	87.5
older (55-64)	6.5	72.0	72.4	74.1	75.6	77.1	78.5
very old (65-74)	13.5	14.4	19.4	18.5	22.6	25.6	27.9
Participation rate (20-64) - females	4.0	77.8	79.0	80.5	81.1	81.3	81.8
Participation rate (20-74) - females	4.0	66.7	67.5	68.1	70.5	70.3	70.8
youngest (20-24)	3.1	75.3	78.3	78.4	78.3	78.4	78.4
prime-age (25-54)	1.8	83.3	84.3	84.9	85.0	85.1	85.1
older (55-64)	10.5	63.1	64.4	67.0	70.8	72.0	73.6
very old (65-74)	14.3	9.1	14.9	14.0	16.9	21.0	23.4
Participation rate (20-64) - males	-0.1	87.4	86.9	86.8	86.6	87.0	87.3
Participation rate (20-74) - males	0.4	76.9	75.8	75.3	77.2	77.0	77.3
youngest (20-24)	2.6	76.1	78.7	78.7	78.7	78.7	78.7
prime-age (25-54)	-1.6	91.5	90.4	89.7	89.8	89.9	89.9
older (55-64)	2.6	81.0	80.6	81.2	80.5	82.3	83.5
very old (65-74)	12.8	19.8	24.0	23.1	28.5	30.5	32.6
Average effective exit age - total (1)	2.8	64.9	65.8	66.2	66.7	67.3	67.7
males	2.7	65.8	66.6	67.0	67.6	68.1	68.5
females	3.0	64.0	65.0	65.4	65.9	66.4	67.0
Employment rate (15-64)	0.5	78.2	77.4	77.9	78.0	78.4	78.7
Employment rate (20-64)	0.6	80.2	79.2	79.9	80.1	80.3	80.7
Employment rate (20-74)	1.0	69.7	68.4	68.4	70.4	70.2	70.6
Unemployment rate (15-64)	1.7	3.4	5.0	5.0	5.0	5.0	5.0
Unemployment rate (20-64)	1.5	3.0	4.5	4.5	4.5	4.5	4.5
Unemployment rate (20-74)	1.6	3.0	4.6	4.6	4.6	4.6	4.6
Employment (20-64) (in millions)	-0.7	8.2	8.0	7.8	7.8	7.7	7.5
Employment (20-74) (in millions)	-0.4	8.4	8.4	8.1	8.2	8.2	8.1
share of youngest (20-24)	-0.7	9%	9%	9%	9%	9%	8%
share of prime-age (25-54)	-3.3	68%	67%	69%	67%	65%	65%
share of older (55-64)	0.2	19%	19%	18%	19%	20%	20%
share of very old (65-74)	3.8	3%	5%	5%	5%	6%	7%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-0.2	23.0	23.4	20.9	22.7	23.3	22.8
Old-age dependency ratio 20-64 (3)	22.4	32.9	42.4	49.3	49.3	51.4	55.2
Total dependency ratio (4)	23.2	69.9	78.9	87.3	86.4	88.4	93.2
Total economic dependency ratio (5)	17.3	105.3	115.1	123.6	121.4	120.1	122.7
Economic old-age dependency ratio (20-64) (6)	22.9	37.6	48.2	56.5	56.0	57.0	60.5
Economic old-age dependency ratio (20-74) (7)	19.9	36.4	45.9	53.9	53.3	53.5	56.3

The Netherlands							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	2.3	6.8	8.1	9.1	8.9	8.9	9.1
Of which : Old-age and early pensions	2.0	4.9	5.9	6.9	6.8	6.6	6.9
Disability pensions	0.3	1.9	2.1	2.0	2.1	2.2	2.2
Survivors' pensions	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Private occupational pensions, gross	1.5	5.1	5.7	7.1	6.8	6.5	6.6
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.1	0.2	0.4	0.3	0.3	0.3	0.3
Public pensions, net	2.0	5.8	6.9	7.8	7.6	7.6	7.8
Public pensions, contributions	2.2	6.5	7.7	8.8	8.6	8.4	8.7
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.7	84.7%	84.9%	85.6%	85.4%	85.2%	85.4%
Pensioners (public, 1000 persons)	1,263	3,957	4,670	5,157	5,099	5,061	5,220
Public pensioners aged 65+ (1000 persons)	1,271	3,149	3,861	4,351	4,296	4,262	4,421
Pensioners younger than 65 as % of all pensioners (public)	-5.1	20%	17%	16%	16%	16%	15%
Benefit ratio % (public pensions)	-2.0	37.2	36.0	35.7	35.8	35.8	35.3
Gross replacement rate at retirement % (old-age earnings-related)	-1.6	30.9	29.9	29.6	29.7	29.7	29.2
Average accrual rates % (new pensions, earnings-related)	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:
Contributors (public pensions, 1000 persons)	-44	9,921	10,139	10,018	10,122	10,113	9,877
Support ratio (contributors/100 pensioners, public pensions)	-62	251	217	194	199	200	189
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Lower fertility (-20%)	1.3	0.0	0.0	0.1	0.5	0.8	1.3
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TFP risk scenario (-0.2 pps)	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
Higher employment rate of older workers (+10 pps)	-0.2	0.0	-0.2	-0.2	-0.1	-0.2	-0.2
Higher migration (+33%)	-0.3	0.0	-0.1	-0.1	-0.2	-0.3	-0.3
Lower migration (-33%)	0.4	0.0	0.1	0.2	0.2	0.3	0.4
Policy scenario linking retirement age to life expectancy	-0.4	0.0	-0.1	-0.1	-0.2	-0.3	-0.4
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Offset declining pension benefit ratio	:	:	:	:	:	:	:
Unchanged retirement age	1.2	0.0	0.3	0.5	0.7	1.0	1.2
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2.3	6.8	8.1	9.1	8.9	8.9	9.1
pps change from 2019 due to:	2.3		1.3	2.3	2.1	2.1	2.3
Dependency ratio	4.3		2.0	3.3	3.3	3.7	4.3
Coverage ratio	-1.2		-0.5	-0.7	-0.8	-1.1	-1.2
Of which: old-age	-0.7		-0.3	-0.2	-0.4	-0.6	-0.7
early-age	1.0		0.6	1.1	0.5	0.6	1.0
cohort effect	-4.1		-2.1	-3.6	-3.0	-3.3	-4.1
Benefit ratio	-0.3		-0.1	-0.2	-0.2	-0.2	-0.3
Labour market ratio	-0.4		0.0	-0.1	-0.1	-0.3	-0.4
Of which: employment rate	-0.1		0.1	0.0	0.0	0.0	-0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.3		-0.1	-0.1	-0.1	-0.3	-0.3
Interaction effect (residual)	-0.1		-0.1	-0.1	-0.1	-0.1	-0.1
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	2.3	6.8	1.3	1.0	-0.2	0.0	0.3
Dependency ratio	4.3		2.0	1.3	0.0	0.4	0.6
Coverage ratio	-1.2		-0.5	-0.1	-0.1	-0.3	-0.1
Of which: old-age	-0.7		-0.3	0.0	-0.1	-0.3	-0.1
early-age	1.0		0.6	0.6	-0.6	0.1	0.4
cohort effect	-4.1		-2.1	-1.5	0.6	-0.3	-0.8
Benefit ratio	-0.3		-0.1	-0.1	0.0	0.0	-0.1
Labour market ratio	-0.4		0.0	-0.1	0.0	-0.1	-0.1
Of which: employment rate	-0.1		0.1	-0.1	0.0	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.3		-0.1	0.0	0.0	-0.1	-0.1
Interaction effect (residual)	-0.1		-0.1	0.0	0.0	0.0	0.0

The Netherlands

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.8	5.7	6.0	6.3	6.4	6.4	6.5
AWG risk scenario	1.4	5.7	6.1	6.5	6.8	7.0	7.1
TFP risk scenario	0.8	5.7	6.0	6.2	6.4	6.4	6.5
Demographic scenario	1.0	5.7	6.1	6.3	6.5	6.6	6.7
High life expectancy scenario (variation of demogr. scenario)	1.2	5.7	6.1	6.4	6.6	6.7	6.9
Healthy ageing scenario	0.4	5.7	5.9	6.1	6.1	6.1	6.0
Death-related cost scenario	0.8	5.7	6.0	6.3	6.4	6.4	6.5
Income elasticity scenario	1.1	5.7	6.1	6.4	6.6	6.7	6.8
EU cost convergence scenario	1.2	5.7	6.1	6.4	6.6	6.7	6.9
Labour intensity scenario	1.6	5.7	6.4	6.9	7.1	7.1	7.3
Sector-specific composite indexation scenario	1.7	5.7	6.1	6.6	7.0	7.2	7.4
Non-demographic determinants scenario	2.4	5.7	6.2	6.7	7.3	7.8	8.1

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.7	3.7	4.5	5.4	6.0	6.3	6.3
AWG risk scenario	4.1	3.7	4.7	5.8	6.7	7.3	7.8
TFP risk scenario	2.7	3.7	4.5	5.4	6.0	6.3	6.3
Demographic scenario	2.7	3.7	4.4	5.2	5.9	6.3	6.4
Base case scenario	3.2	3.7	4.6	5.6	6.3	6.7	6.8
High life expectancy scenario (variation of base case)	3.9	3.7	4.7	5.8	6.7	7.3	7.6
Healthy ageing scenario	2.3	3.7	4.5	5.3	5.7	6.0	5.9
Shift to formal care scenario	3.5	3.7	4.9	5.9	6.6	7.1	7.2
Coverage convergence scenario	3.2	3.7	4.6	5.6	6.3	6.8	6.9
Cost convergence scenario	4.6	3.7	4.8	6.0	7.0	7.7	8.3
Cost and coverage convergence scenario	4.7	3.7	4.8	6.0	7.0	7.8	8.4
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	31%	1,130	1,301	1,401	1,471	1,487	1,478
Recipients: receiving institutional care	98%	263	340	425	489	523	521
receiving home care	69%	921	1,180	1,381	1,510	1,539	1,554
receiving cash benefits	56%	90	104	119	132	143	141

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.5	4.9	4.4	4.5	4.5	4.4	4.4
Number of students (in thousands)							
Total (students/staff in 2019 = 12.8)	-11.4%	3,608	3,328	3,339	3,305	3,216	3,198
as % of population 5-24	-1.8	90.0	87.6	88.3	87.7	87.9	88.2
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.5	0.0	0.2	0.4	0.5	0.5	0.5

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	5.4	21.0	23.1	25.3	25.8	26.0	26.4
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.0	0.0	0.2	0.6	1.1	1.6	2.0
TFP risk scenario (-0.2 pps)	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
High life expectancy (+2 years) (8)	0.4	0.0	-0.1	0.1	0.2	0.4	0.4
Lower fertility (-20%)	1.7	0.0	-0.1	-0.2	0.4	1.0	1.7
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.6	-0.6	-0.4	-0.6	-0.6
Higher migration (+33%)	-0.7	0.0	-0.1	-0.3	-0.4	-0.6	-0.7
Lower migration (-33%)	0.8	0.0	0.1	0.3	0.4	0.6	0.8
Policy scenario linking retirement age to life expectancy	-0.6	0.0	-0.1	-0.2	-0.3	-0.4	-0.6
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.0	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.2	0.0	0.2	0.2	0.2	0.2	0.2

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

20. AUSTRIA

Austria							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.45	1.49	1.52	1.55	1.57	1.60
Life expectancy at birth							
males	6.5	79.8	81.2	82.6	83.9	85.2	86.3
females	5.9	84.3	85.7	86.9	88.1	89.2	90.2
Life expectancy at 65							
males	4.8	18.8	19.8	20.8	21.8	22.7	23.6
females	4.8	21.8	22.9	23.9	24.8	25.7	26.6
Net migration (thousand)	:	44.3	31.3	29.4	27.2	26.4	25.5
Net migration as % of population	:	0.5	0.3	0.3	0.3	0.3	0.3
Population (million)	0.4	8.9	9.2	9.3	9.3	9.3	9.2
Young population (0-19) as % of total population	-1.0	19.4	19.3	18.5	18.2	18.5	18.4
Prime-age population (25-54) as % of total population	-6.9	41.9	38.3	37.1	35.9	35.5	35.1
Working-age population (20-64) as % of total population	-9.4	61.7	57.5	55.0	54.0	52.7	52.3
Elderly population (65+) as % of total population	10.3	18.9	23.2	26.5	27.8	28.9	29.3
Very elderly population (80+) as % of total population	7.0	5.2	6.7	8.3	11.1	11.3	12.2
Very elderly population (80+) as % of elderly population	14.4	27.3	29.0	31.3	40.0	39.1	41.7
Very elderly population (80+) as % of working-age population	14.9	8.4	11.7	15.1	20.6	21.4	23.3
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.3	1.3	1.2	1.5	1.3	1.4	1.4
Employment (growth rate)	0.0	0.7	0.1	0.0	-0.2	-0.2	-0.1
Labour input: hours worked (growth rate)	0.0	0.6	0.1	-0.1	-0.2	-0.2	-0.1
Labour productivity per hour (growth rate)	1.4	0.7	1.1	1.5	1.5	1.5	1.5
TFP (growth rate)	0.9	0.3	0.7	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.4	0.4	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.2	0.9	1.0	1.4	1.3	1.4	1.5
Potential GDP per worker (growth rate)	1.3	0.6	1.1	1.5	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-640	5,478	5,268	5,115	5,047	4,892	4,838
Population growth (20-64)	-0.3	0.3	-0.6	-0.1	-0.3	-0.2	-0.1
Labour force 15-64 (thousands)	-385	4,562	4,426	4,411	4,332	4,219	4,176
Labour force 20-64 (thousands)	-388	4,399	4,256	4,239	4,168	4,054	4,010
Participation rate (20-64)	2.6	80.3	80.8	82.9	82.6	82.9	82.9
Participation rate (20-74)	-0.7	70.6	68.1	69.3	70.0	69.3	69.9
youngest (20-24)	1.0	74.0	75.1	75.1	75.1	75.0	75.0
prime-age (25-54)	1.5	89.0	90.0	90.3	90.6	90.6	90.6
older (55-64)	7.4	56.5	57.6	64.1	63.5	63.4	63.9
very old (65-74)	3.2	7.1	9.3	9.5	10.5	10.3	10.3
Participation rate (20-64) - females	5.4	75.6	77.5	80.8	80.6	80.9	81.0
Participation rate (20-74) - females	2.1	65.6	64.4	66.6	67.5	66.9	67.7
youngest (20-24)	0.0	71.6	71.6	71.6	71.6	71.6	71.6
prime-age (25-54)	2.4	85.7	87.2	87.8	88.0	88.1	88.1
older (55-64)	17.2	47.4	53.5	64.3	63.9	64.0	64.6
very old (65-74)	3.8	4.8	6.1	7.4	8.9	8.6	8.6
Participation rate (20-64) - males	-0.2	84.9	84.0	84.9	84.6	84.8	84.7
Participation rate (20-74) - males	-3.6	75.6	72.0	72.1	72.5	71.7	72.0
youngest (20-24)	2.0	76.2	78.3	78.3	78.3	78.3	78.3
prime-age (25-54)	0.6	92.4	92.7	92.7	93.0	93.0	93.0
older (55-64)	-2.6	65.9	61.9	63.9	63.0	62.9	63.3
very old (65-74)	2.3	9.7	12.7	11.8	12.3	12.1	12.0
Average effective exit age - total (1)	0.9	62.3	62.9	63.2	63.2	63.2	63.2
males	0.0	63.2	63.2	63.2	63.2	63.2	63.2
females	1.8	61.4	62.6	63.2	63.2	63.2	63.2
Employment rate (15-64)	2.0	73.5	73.9	75.6	75.5	75.6	75.5
Employment rate (20-64)	2.7	76.8	77.5	79.5	79.2	79.5	79.5
Employment rate (20-74)	-0.5	67.5	65.4	66.5	67.2	66.5	67.1
Unemployment rate (15-64)	-0.3	4.6	4.4	4.3	4.3	4.3	4.3
Unemployment rate (20-64)	-0.3	4.4	4.1	4.1	4.1	4.1	4.1
Unemployment rate (20-74)	-0.3	4.3	4.0	4.0	4.0	4.0	4.0
Employment (20-64) (in millions)	-0.4	4.2	4.1	4.1	4.0	3.9	3.8
Employment (20-74) (in millions)	-0.3	4.3	4.2	4.2	4.1	4.0	4.0
share of youngest (20-24)	0.1	8%	8%	9%	8%	8%	8%
share of prime-age (25-54)	-3.1	74%	72%	72%	71%	72%	71%
share of older (55-64)	1.7	16%	17%	17%	18%	17%	17%
share of very old (65-74)	1.3	1%	2%	3%	3%	3%	3%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.6	22.4	24.1	22.5	23.9	22.8	23.0
Old-age dependency ratio 20-64 (3)	25.2	30.7	40.3	48.2	51.5	54.8	55.9
Total dependency ratio (4)	29.0	62.1	73.8	81.8	85.2	89.9	91.1
Total economic dependency ratio (5)	25.7	108.2	118.8	122.7	127.4	132.0	133.9
Economic old-age dependency ratio (20-64) (6)	29.0	38.5	49.5	57.9	62.2	66.0	67.5
Economic old-age dependency ratio (20-74) (7)	27.7	38.0	48.3	56.4	60.5	64.1	65.7

Austria							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	1.0	13.3	15.1	15.1	14.7	14.6	14.3
Of which : Old-age and early pensions	1.9	10.9	12.8	13.0	12.8	12.9	12.8
Disability pensions	-0.2	0.5	0.4	0.4	0.4	0.3	0.3
Survivors' pensions	-0.8	1.6	1.5	1.3	1.2	0.9	0.7
Other	0.1	0.4	0.4	0.4	0.4	0.4	0.4
Earnings-related pensions (old-age and early pensions), gross	1.9	10.9	12.8	13.0	12.8	12.9	12.8
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.6	0.6	0.5	0.6	0.6	0.6
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	-0.4	9.4	9.0	9.0	9.0	9.0	9.0
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	781	2,437	2,859	3,106	3,200	3,209	3,218
Public pensioners aged 65+ (1000 persons)	:	:	:	:	:	:	:
Pensioners younger than 65 as % of all pensioners (public)	:	:	:	:	:	:	:
Benefit ratio % (public pensions)	-11.1	53.6	53.3	49.2	45.6	43.9	42.5
Gross replacement rate at retirement % (old-age earnings-related)	-3.3	55.4	55.7	55.4	55.0	53.9	52.1
Average accrual rates % (new pensions, earnings-related)	0.0	1.8	1.8	1.8	1.8	1.8	1.8
Average contributory period, years (new pensions, earnings-related)	1.0	37.3	38.1	38.2	38.3	38.4	38.3
Contributors (public pensions, 1000 persons)	-273	4,301	4,198	4,199	4,145	4,060	4,028
Support ratio (contributors/100 pensioners, public pensions)	-51	176	147	135	130	127	125
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.7	0.0	0.1	0.3	0.4	0.6	0.7
Lower fertility (-20%)	0.6	0.0	0.0	0.0	0.2	0.3	0.6
Higher TFP growth (+0.2 pps)	-0.4	0.0	0.1	0.0	-0.2	-0.3	-0.4
TFP risk scenario (-0.2 pps)	0.4	0.0	-0.1	0.0	0.2	0.3	0.4
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-1.1	-0.8	-0.6	-0.5	-0.3
Higher migration (+33%)	-0.6	0.0	-0.1	-0.2	-0.3	-0.5	-0.6
Lower migration (-33%)	0.7	0.0	0.1	0.2	0.3	0.6	0.7
Policy scenario linking retirement age to life expectancy	-1.5	0.0	-0.3	-0.5	-0.9	-1.3	-1.5
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.7	0.0	0.1	0.2	0.4	0.5	0.7
Offset declining pension benefit ratio	1.9	0.0	0.0	0.0	0.8	1.4	1.9
Unchanged retirement age	0.3	0.0	0.6	0.5	0.4	0.3	0.3
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	1.0	13.3	15.1	15.1	14.7	14.6	14.3
pps change from 2019 due to:	1.0		1.8	1.8	1.4	1.2	1.0
Dependency ratio	9.3		4.2	7.1	8.1	9.0	9.3
Coverage ratio	-2.9		-1.1	-2.0	-2.4	-2.8	-2.9
Of which: old-age	:		:	:	:	:	:
early-age	:		:	:	:	:	:
cohort effect	-8.6		-3.9	-6.6	-7.2	-8.5	-8.6
Benefit ratio	-4.2		-0.8	-2.1	-3.1	-3.7	-4.2
Labour market ratio	-0.7		-0.3	-0.6	-0.6	-0.7	-0.7
Of which: employment rate	-0.5		-0.1	-0.5	-0.5	-0.5	-0.5
labour intensity	0.0		0.0	0.1	0.1	0.0	0.0
career shift	-0.2		-0.2	-0.2	-0.2	-0.2	-0.2
Interaction effect (residual)	-0.6		-0.3	-0.5	-0.5	-0.5	-0.6
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	1.0	13.3	1.8	0.1	-0.4	-0.2	-0.3
Dependency ratio	9.3		4.2	2.8	1.0	0.9	0.3
Coverage ratio	-2.9		-1.1	-1.0	-0.3	-0.4	-0.1
Of which: old-age	:		:	:	:	:	:
early-age	:		:	:	:	:	:
cohort effect	-8.6		-3.9	-2.7	-0.6	-1.3	0.0
Benefit ratio	-4.2		-0.8	-1.2	-1.1	-0.6	-0.5
Labour market ratio	-0.7		-0.3	-0.4	0.0	-0.1	0.0
Of which: employment rate	-0.5		-0.1	-0.4	0.1	-0.1	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.2		-0.2	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.6		-0.3	-0.2	0.0	0.0	0.0

Austria

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.2	6.9	7.4	7.8	8.0	8.1	8.1
AWG risk scenario	2.1	6.9	7.5	8.2	8.7	8.9	9.0
TFP risk scenario	1.1	6.9	7.3	7.8	8.0	8.0	8.1
Demographic scenario	1.4	6.9	7.4	7.9	8.2	8.3	8.4
High life expectancy scenario (variation of demogr. scenario)	1.6	6.9	7.4	7.9	8.3	8.4	8.6
Healthy ageing scenario	0.5	6.9	7.2	7.4	7.6	7.5	7.5
Death-related cost scenario	1.2	6.9	7.4	7.8	8.0	8.0	8.1
Income elasticity scenario	1.7	6.9	7.5	8.0	8.3	8.5	8.6
EU cost convergence scenario	1.5	6.9	7.4	7.9	8.2	8.3	8.4
Labour intensity scenario	2.1	6.9	7.5	8.1	8.6	8.8	9.0
Sector-specific composite indexation scenario	2.1	6.9	7.5	8.2	8.6	8.8	9.0
Non-demographic determinants scenario	3.3	6.9	7.7	8.6	9.4	9.9	10.3

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.8	1.8	2.2	2.5	3.2	3.4	3.5
AWG risk scenario	2.9	1.8	2.3	2.8	3.7	4.2	4.7
TFP risk scenario	1.8	1.8	2.2	2.5	3.2	3.4	3.5
Demographic scenario	1.8	1.8	2.2	2.5	3.2	3.4	3.6
Base case scenario	1.9	1.8	2.2	2.6	3.3	3.6	3.7
High life expectancy scenario (variation of base case)	2.4	1.8	2.2	2.7	3.5	3.9	4.2
Healthy ageing scenario	1.6	1.8	2.1	2.5	3.0	3.3	3.4
Shift to formal care scenario	2.7	1.8	2.7	3.2	3.9	4.3	4.4
Coverage convergence scenario	2.0	1.8	2.2	2.6	3.3	3.6	3.7
Cost convergence scenario	3.2	1.8	2.3	2.9	3.9	4.4	4.9
Cost and coverage convergence scenario	3.2	1.8	2.3	2.9	3.9	4.4	4.9
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	33%	781	871	947	1,030	1,034	1,040
Recipients: receiving institutional care	110%	70	89	105	134	143	147
receiving home care	88%	94	116	136	166	172	177
receiving cash benefits	78%	466	563	655	777	816	832

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.1	4.7	4.5	4.4	4.4	4.5	4.5
Number of students (in thousands)							
Total (students/staff in 2019 = 8.6)	-2.8%	1,462	1,473	1,449	1,418	1,427	1,421
as % of population 5-24	-0.7	80.6	80.0	79.3	79.8	80.1	79.9
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.6	0.0	0.2	0.5	0.6	0.6	0.6

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	3.8	26.7	29.1	29.8	30.3	30.6	30.5
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.0	0.0	0.3	0.8	1.3	1.6	2.0
TFP risk scenario (-0.2 pps)	0.4	0.0	-0.1	0.0	0.2	0.3	0.4
High life expectancy (+2 years) (8)	1.1	0.0	0.1	0.3	0.6	0.9	1.1
Lower fertility (-20%)	0.9	0.0	-0.1	-0.3	0.0	0.4	0.9
Higher TFP growth (+0.2 pps)	-0.3	0.0	0.1	0.0	-0.2	-0.2	-0.3
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-1.4	-1.0	-0.9	-0.8	-0.6
Higher migration (+33%)	-1.1	0.0	-0.2	-0.4	-0.6	-1.0	-1.1
Lower migration (-33%)	1.3	0.0	0.2	0.4	0.7	1.1	1.3
Policy scenario linking retirement age to life expectancy	-1.8	0.0	-0.3	-0.6	-1.0	-1.5	-1.8
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.7	0.0	0.2	0.3	0.5	0.6	0.7

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
Other pensions include the Ausgleichszulage and Rehabilitationsgeld.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

21. POLAND

Poland							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.36	1.40	1.45	1.49	1.53	1.56
Life expectancy at birth							
males	10.2	74.1	76.5	78.7	80.7	82.6	84.3
females	7.5	82.0	83.8	85.4	86.9	88.3	89.5
Life expectancy at 65							
males	6.5	16.1	17.6	18.9	20.2	21.4	22.6
females	5.7	20.5	21.8	23.0	24.2	25.2	26.2
Net migration (thousand)	:	3.3	25.4	37.5	47.6	60.4	72.4
Net migration as % of population	:	0.0	0.1	0.1	0.1	0.2	0.2
Population (million)	-7.1	38.0	37.0	35.6	34.0	32.4	30.8
Young population (0-19) as % of total population	-4.3	20.1	18.6	16.5	16.4	16.3	15.9
Prime-age population (25-54) as % of total population	-10.3	42.9	40.9	37.0	34.3	33.5	32.6
Working-age population (20-64) as % of total population	-11.8	61.9	58.6	58.1	53.3	49.8	50.1
Elderly population (65+) as % of total population	16.0	17.9	22.8	25.5	30.4	33.9	34.0
Very elderly population (80+) as % of total population	11.3	4.4	5.8	9.2	9.8	12.5	15.7
Very elderly population (80+) as % of elderly population	21.7	24.5	25.6	36.3	32.2	36.8	46.3
Very elderly population (80+) as % of working-age population	24.3	7.1	9.9	15.9	18.3	25.1	31.4
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.5	3.5	2.3	1.4	0.9	1.1	1.0
Employment (growth rate)	-0.8	0.4	-0.9	-0.9	-1.2	-0.7	-0.6
Labour input: hours worked (growth rate)	-0.8	0.3	-0.9	-0.9	-1.2	-0.7	-0.6
Labour productivity per hour (growth rate)	2.3	3.2	3.2	2.2	2.1	1.8	1.5
TFP (growth rate)	1.5	1.8	2.0	1.5	1.3	1.2	1.0
Capital deepening (contribution to labour productivity growth)	0.9	1.3	1.2	0.8	0.7	0.6	0.5
Potential GDP per capita (growth rate)	2.0	3.5	2.7	1.8	1.3	1.5	1.5
Potential GDP per worker (growth rate)	2.3	3.1	3.2	2.3	2.1	1.8	1.6
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-8,061	23,506	21,666	20,665	18,122	16,150	15,445
Population growth (20-64)	0.6	-1.0	-0.2	-0.8	-1.5	-0.8	-0.4
Labour force 15-64 (thousands)	-6,109	17,909	16,779	15,593	13,732	12,442	11,799
Labour force 20-64 (thousands)	-6,079	17,798	16,662	15,493	13,647	12,356	11,719
Participation rate (20-64)	0.2	75.7	76.9	75.0	75.3	76.5	75.9
Participation rate (20-74)	-1.9	65.7	66.0	64.8	61.6	62.2	63.9
youngest (20-24)	0.3	61.3	60.9	61.7	61.7	61.4	61.6
prime-age (25-54)	0.8	85.3	85.2	85.5	86.3	86.2	86.1
older (55-64)	4.0	51.1	56.3	54.8	53.6	54.6	55.1
very old (65-74)	4.1	8.5	11.9	13.3	12.8	12.3	12.6
Participation rate (20-64) - females	0.6	68.0	69.6	67.2	67.6	69.3	68.5
Participation rate (20-74) - females	-0.9	57.7	58.4	57.0	53.9	55.1	56.8
youngest (20-24)	0.9	54.3	54.4	55.2	55.2	54.9	55.2
prime-age (25-54)	1.4	79.0	79.0	79.3	80.5	80.5	80.4
older (55-64)	3.7	40.3	46.3	43.7	41.8	43.3	44.0
very old (65-74)	2.8	5.5	8.1	9.1	8.5	8.0	8.4
Participation rate (20-64) - males	-0.6	83.5	84.1	82.6	82.8	83.4	82.9
Participation rate (20-74) - males	-3.4	74.1	73.8	72.7	69.2	69.2	70.7
youngest (20-24)	-0.3	68.0	67.1	67.8	67.8	67.6	67.8
prime-age (25-54)	0.0	91.6	91.3	91.4	91.9	91.6	91.6
older (55-64)	3.0	63.0	66.8	66.3	65.4	65.7	66.1
very old (65-74)	4.6	12.3	16.5	18.1	17.6	16.8	17.0
Average effective exit age - total (1)	0.0	62.9	62.9	62.9	62.9	62.9	62.9
males	0.0	64.5	64.5	64.5	64.5	64.5	64.5
females	0.0	61.3	61.3	61.3	61.3	61.3	61.3
Employment rate (15-64)	-1.6	68.4	67.5	66.4	66.7	67.1	66.8
Employment rate (20-64)	-1.2	73.3	73.1	71.2	71.5	72.7	72.1
Employment rate (20-74)	-2.9	63.6	62.8	61.6	58.6	59.2	60.8
Unemployment rate (15-64)	1.8	3.3	5.1	5.2	5.2	5.2	5.2
Unemployment rate (20-64)	1.8	3.2	4.9	5.0	5.0	5.0	5.0
Unemployment rate (20-74)	1.7	3.2	4.8	4.9	4.8	4.8	4.9
Employment (20-64) (in millions)	-6.1	17.2	15.8	14.7	13.0	11.7	11.1
Employment (20-74) (in millions)	-6.0	17.6	16.3	15.3	13.6	12.3	11.6
share of youngest (20-24)	-0.1	7%	6%	7%	6%	6%	6%
share of prime-age (25-54)	-5.5	77%	75%	70%	71%	73%	71%
share of older (55-64)	3.7	15%	15%	19%	19%	16%	18%
share of very old (65-74)	1.9	2%	3%	4%	5%	5%	4%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3.9	22.0	21.1	27.2	27.5	23.8	25.9
Old-age dependency ratio 20-64 (3)	38.8	29.0	38.9	43.9	57.0	68.2	67.8
Total dependency ratio (4)	38.0	61.5	70.6	72.2	87.7	100.9	99.5
Total economic dependency ratio (5)	49.8	116.1	126.1	133.3	150.0	163.8	165.9
Economic old-age dependency ratio (20-64) (6)	52.4	37.5	49.9	57.9	74.7	89.0	90.0
Economic old-age dependency ratio (20-74) (7)	49.7	36.8	48.4	55.9	71.1	84.9	86.4

Poland

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-0.2	10.6	11.0	10.5	10.7	10.8	10.5
Of which : Old-age and early pensions	0.2	9.7	10.2	9.7	10.0	10.2	9.9
Disability pensions	-0.1	0.6	0.5	0.6	0.6	0.5	0.5
Survivors' pensions	-0.2	0.4	0.3	0.2	0.2	0.2	0.1
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	0.6	8.5	9.2	8.8	9.0	9.3	9.1
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	-0.1	0.2	0.2	0.2	0.2	0.1	0.1
Public pensions, net	-0.1	9.0	9.3	8.9	9.1	9.2	8.9
Public pensions, contributions	0.3	8.4	8.6	8.7	8.7	8.7	8.7
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.6	84.4%	84.9%	84.9%	84.9%	84.9%	84.9%
Pensioners (public, 1000 persons)	2,323	9,638	10,473	11,384	12,414	12,591	11,961
Public pensioners aged 65+ (1000 persons)	3,569	6,881	8,488	9,161	10,463	11,089	10,450
Pensioners younger than 65 as % of all pensioners (public)	-16.0	29%	19%	20%	16%	12%	13%
Benefit ratio % (public pensions)	-20.9	43.8	38.7	31.6	26.4	23.8	22.8
Gross replacement rate at retirement % (old-age earnings-related)	-28.9	54.1	43.9	29.5	25.2	25.1	25.1
Average accrual rates % (new pensions, earnings-related)	-0.2	0.9	0.9	0.8	0.8	0.8	0.7
Average contributory period, years (new pensions, earnings-related)	0.9	34.9	35.8	35.9	35.4	36.0	35.8
Contributors (public pensions, 1000 persons)	-5,993	17,380	16,300	15,250	13,557	12,207	11,387
Support ratio (contributors/100 pensioners, public pensions)	-85	180	156	134	109	97	95
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.3	0.0	0.0	0.1	0.2	0.2	0.3
Lower fertility (-20%)	1.1	0.0	0.0	0.0	0.4	0.7	1.1
Higher TFP growth (+0.2 pps)	-0.4	0.0	0.1	-0.1	-0.3	-0.4	-0.4
TFP risk scenario (-0.2 pps)	0.4	0.0	0.1	0.3	0.4	0.4	0.4
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.2	-0.2	-0.5	-0.5	-0.3
Higher migration (+33%)	-0.2	0.0	0.0	0.0	-0.1	-0.2	-0.2
Lower migration (-33%)	0.2	0.0	0.0	0.0	0.1	0.2	0.2
Policy scenario linking retirement age to life expectancy	-0.7	0.0	-0.6	-0.7	-0.7	-0.6	-0.7
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.0	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.8	0.0	0.4	0.6	0.8	0.9	0.8
Offset declining pension benefit ratio	6.7	0.0	0.0	2.2	4.6	6.3	6.7
Unchanged retirement age	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-0.2	10.6	11.0	10.5	10.7	10.8	10.5
pps change from 2019 due to:	-0.2		0.3	-0.1	0.1	0.2	-0.2
Dependency ratio	9.9		3.7	5.0	8.0	10.0	9.9
Coverage ratio	-2.4		-1.5	-1.4	-1.8	-2.3	-2.4
Of which: old-age	-0.1		0.0	0.0	0.0	0.0	-0.1
early-age	-4.2		-3.6	-3.6	-3.2	-4.1	-4.2
cohort effect	-6.4		-2.3	-1.8	-4.7	-7.1	-6.4
Benefit ratio	-6.8		-1.4	-3.4	-5.2	-6.3	-6.8
Labour market ratio	-0.1		-0.1	0.1	-0.1	-0.2	-0.1
Of which: employment rate	0.1		0.0	0.3	0.2	0.1	0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.2		-0.1	-0.2	-0.3	-0.3	-0.2
Interaction effect (residual)	-0.9		-0.3	-0.5	-0.8	-0.9	-0.9
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070

Poland

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.6	4.9	6.3	6.7	7.0	7.4	7.4
AWG risk scenario	4.2	4.9	6.9	7.8	8.4	9.0	9.1
TFP risk scenario	2.5	4.9	6.3	6.7	7.0	7.4	7.4
Demographic scenario	2.8	4.9	6.3	6.7	7.1	7.5	7.6
High life expectancy scenario (variation of demogr. scenario)	2.9	4.9	6.3	6.7	7.2	7.6	7.7
Healthy ageing scenario	1.8	4.9	6.0	6.2	6.4	6.6	6.7
Death-related cost scenario	2.6	4.9	6.3	6.7	7.1	7.4	7.4
Income elasticity scenario	3.2	4.9	6.4	7.0	7.5	7.9	8.0
EU cost convergence scenario	3.6	4.9	6.4	7.0	7.5	8.1	8.4
Labour intensity scenario	4.7	4.9	6.6	7.4	8.4	9.3	9.5
Sector-specific composite indexation scenario	2.8	4.9	6.3	6.7	7.2	7.6	7.7
Non-demographic determinants scenario	5.9	4.9	7.1	8.4	9.4	10.4	10.8

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.6	0.8	1.1	1.5	1.7	2.1	2.4
AWG risk scenario	5.8	0.8	1.4	2.2	3.1	4.8	6.6
TFP risk scenario	1.6	0.8	1.1	1.5	1.7	2.1	2.4
Demographic scenario	1.5	0.8	1.1	1.5	1.6	2.0	2.3
Base case scenario	1.6	0.8	1.1	1.5	1.7	2.1	2.4
High life expectancy scenario (variation of base case)	1.9	0.8	1.2	1.5	1.8	2.3	2.6
Healthy ageing scenario	1.4	0.8	1.1	1.4	1.5	1.9	2.1
Shift to formal care scenario	1.9	0.8	1.3	1.6	1.9	2.3	2.6
Coverage convergence scenario	2.0	0.8	1.2	1.6	1.8	2.4	2.8
Cost convergence scenario	5.4	0.8	1.4	2.2	3.0	4.6	6.2
Cost and coverage convergence scenario	6.3	0.8	1.5	2.3	3.2	5.1	7.1
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	27%	2,556	2,825	3,076	3,118	3,202	3,241
Recipients: receiving institutional care	87%	225	271	327	363	385	422
receiving home care	90%	285	345	416	462	494	543
receiving cash benefits	141%	2,532	3,697	4,544	4,713	5,671	6,103

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.1	3.8	3.8	3.5	3.6	3.8	3.8
Number of students (in thousands)							
Total (students/staff in 2019 = 10.2)	-34.7%	6,336	5,979	5,078	4,605	4,470	4,137
as % of population 5-24	-0.9	81.4	80.6	79.8	80.8	80.9	80.5
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.6	0.0	0.2	0.4	0.6	0.6	0.6

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	4.0	20.1	22.2	22.2	23.0	24.1	24.1
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	5.8	0.0	0.9	1.8	2.8	4.2	5.8
TFP risk scenario (-0.2 pps)	0.3	0.0	0.1	0.3	0.3	0.3	0.3
High life expectancy (+2 years) (8)	0.4	0.0	0.0	0.1	0.2	0.3	0.4
Lower fertility (-20%)	1.3	0.0	-0.1	-0.3	0.1	0.7	1.3
Higher TFP growth (+0.2 pps)	-0.3	0.0	0.1	-0.1	-0.3	-0.3	-0.3
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.4	-0.4	-0.8	-0.8	-0.6
Higher migration (+33%)	-0.3	0.0	0.0	-0.1	-0.2	-0.3	-0.3
Lower migration (-33%)	0.3	0.0	0.0	0.1	0.2	0.3	0.3
Policy scenario linking retirement age to life expectancy	-1.1	0.0	-0.6	-0.8	-1.0	-0.9	-1.1
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.9	0.0	0.5	0.7	0.8	0.9	0.9

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

22. PORTUGAL

Portugal							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.43	1.47	1.51	1.53	1.56	1.59
Life expectancy at birth							
males	7.1	78.6	80.2	81.7	83.2	84.5	85.7
females	5.6	84.8	86.0	87.2	88.3	89.4	90.4
Life expectancy at 65							
males	4.8	18.4	19.4	20.4	21.4	22.3	23.2
females	4.5	22.2	23.2	24.1	25.0	25.9	26.7
Net migration (thousand)	:	40.1	9.9	12.3	14.3	16.3	18.6
Net migration as % of population	:	0.4	0.1	0.1	0.2	0.2	0.2
Population (million)	-1.8	10.3	10.1	9.8	9.4	8.9	8.5
Young population (0-19) as % of total population	-1.2	19.0	17.5	17.4	17.3	17.3	17.7
Prime-age population (25-54) as % of total population	-7.5	40.0	36.2	33.0	32.5	32.1	32.5
Working-age population (20-64) as % of total population	-9.8	59.0	56.1	51.8	49.0	49.3	49.2
Elderly population (65+) as % of total population	11.1	22.0	26.5	30.9	33.7	33.4	33.1
Very elderly population (80+) as % of total population	8.2	6.5	8.0	10.3	12.8	15.2	14.7
Very elderly population (80+) as % of elderly population	15.0	29.5	30.4	33.4	37.9	45.4	44.5
Very elderly population (80+) as % of working-age population	19.0	11.0	14.4	19.9	26.1	30.8	30.0
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.2	1.8	0.7	1.2	1.3	1.4	1.2
Employment (growth rate)	-0.5	1.4	-0.7	-0.9	-0.6	-0.4	-0.4
Labour input: hours worked (growth rate)	-0.5	1.3	-0.7	-0.9	-0.6	-0.4	-0.3
Labour productivity per hour (growth rate)	1.7	0.5	1.4	2.1	2.0	1.8	1.5
TFP (growth rate)	1.1	0.8	0.9	1.4	1.3	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.6	-0.3	0.5	0.7	0.7	0.6	0.5
Potential GDP per capita (growth rate)	1.6	1.8	1.0	1.5	1.8	1.9	1.6
Potential GDP per worker (growth rate)	1.7	0.4	1.4	2.1	2.0	1.8	1.6
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-1,908	6,070	5,648	5,058	4,581	4,379	4,162
Population growth (20-64)	-0.2	-0.2	-0.9	-1.3	-0.6	-0.4	-0.5
Labour force 15-64 (thousands)	-1,390	4,993	4,729	4,265	3,923	3,766	3,603
Labour force 20-64 (thousands)	-1,374	4,942	4,685	4,226	3,884	3,729	3,568
Participation rate (20-64)	4.3	81.4	83.0	83.5	84.8	85.2	85.7
Participation rate (20-74)	2.1	70.9	70.1	69.5	70.2	72.7	73.0
youngest (20-24)	0.5	58.3	58.8	58.6	58.7	58.8	58.8
prime-age (25-54)	2.1	90.3	91.7	92.2	92.3	92.3	92.4
older (55-64)	14.0	64.5	69.9	71.6	74.5	76.9	78.4
very old (65-74)	7.0	16.1	15.4	18.8	18.9	21.1	23.1
Participation rate (20-64) - females	6.3	78.3	80.7	81.8	83.5	84.0	84.5
Participation rate (20-74) - females	4.8	66.7	67.6	67.4	68.4	71.2	71.5
youngest (20-24)	0.6	55.3	55.9	55.8	55.8	55.9	55.9
prime-age (25-54)	3.9	88.0	90.5	91.5	91.8	91.8	91.9
older (55-64)	16.9	58.7	65.4	67.7	71.5	74.3	75.6
very old (65-74)	13.1	9.5	14.2	17.8	18.0	20.3	22.7
Participation rate (20-64) - males	2.2	84.9	85.4	85.5	86.2	86.5	87.1
Participation rate (20-74) - males	-0.8	75.6	73.0	72.0	72.2	74.4	74.7
youngest (20-24)	0.4	61.2	61.6	61.5	61.5	61.6	61.6
prime-age (25-54)	0.2	92.7	92.9	92.9	92.9	92.8	92.9
older (55-64)	10.6	71.0	75.2	76.1	78.0	79.9	81.7
very old (65-74)	-0.4	24.0	16.9	20.0	20.0	22.0	23.6
Average effective exit age - total (1)	2.1	64.3	64.8	65.2	65.6	65.9	66.4
males	2.0	64.6	65.1	65.5	65.8	66.1	66.6
females	2.2	64.1	64.6	65.0	65.4	65.8	66.2
Employment rate (15-64)	3.7	70.4	72.4	72.5	73.2	73.6	74.1
Employment rate (20-64)	4.2	76.2	77.8	78.3	79.5	79.9	80.4
Employment rate (20-74)	2.2	66.4	65.9	65.3	66.0	68.3	68.6
Unemployment rate (15-64)	-0.2	6.7	6.4	6.4	6.4	6.4	6.4
Unemployment rate (20-64)	-0.2	6.4	6.2	6.2	6.2	6.2	6.2
Unemployment rate (20-74)	-0.3	6.3	6.1	6.1	6.0	6.0	6.0
Employment (20-64) (in millions)	-1.3	4.6	4.4	4.0	3.6	3.5	3.3
Employment (20-74) (in millions)	-1.2	4.8	4.6	4.2	3.9	3.7	3.6
share of youngest (20-24)	0.1	6%	6%	5%	6%	6%	6%
share of prime-age (25-54)	-5.9	73%	69%	67%	68%	67%	67%
share of older (55-64)	3.0	18%	21%	22%	20%	21%	21%
share of very old (65-74)	2.8	4%	4%	6%	6%	6%	7%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.9	23.2	26.3	27.1	24.1	25.0	24.1
Old-age dependency ratio 20-64 (3)	30.0	37.3	47.2	59.6	68.8	67.9	67.3
Total dependency ratio (4)	33.9	69.4	78.4	93.1	104.1	103.0	103.3
Total economic dependency ratio (5)	22.2	114.0	119.4	131.7	140.9	139.3	136.2
Economic old-age dependency ratio (20-64) (6)	31.5	44.9	56.0	69.5	79.8	78.6	76.4
Economic old-age dependency ratio (20-74) (7)	28.1	43.2	53.6	65.3	74.9	74.0	71.3

Portugal							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-3.2	12.7	14.2	14.4	12.6	10.5	9.5
Of which : Old-age and early pensions	-2.7	10.4	11.7	11.7	10.2	8.4	7.8
Disability pensions	0.1	0.5	0.5	0.6	0.5	0.5	0.6
Survivors' pensions	-0.5	1.6	1.8	1.9	1.8	1.5	1.1
Other	-0.1	0.2	0.2	0.2	0.1	0.1	0.0
Earnings-related pensions (old-age and early pensions), gross	-2.7	10.1	11.4	11.4	9.8	8.0	7.4
Private occupational pensions, gross	-0.1	0.3	0.3	0.2	0.2	0.2	0.2
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	-0.1	0.3	0.5	0.3	0.2	0.2	0.2
Public pensions, net	-2.9	11.7	13.0	13.2	11.6	9.6	8.7
Public pensions, contributions	-3.7	13.3	14.1	13.3	11.6	10.2	9.6
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.0	91.7%	91.7%	91.7%	91.7%	91.7%	91.7%
Pensioners (public, 1000 persons)	78	2,659	2,834	3,070	3,093	2,947	2,737
Public pensioners aged 65+ (1000 persons)	324	2,232	2,509	2,786	2,878	2,745	2,556
Pensioners younger than 65 as % of all pensioners (public)	-9.4	16%	11%	9%	7%	7%	7%
Benefit ratio % (public pensions)	-26.4	58.9	60.1	51.4	41.2	34.5	32.5
Gross replacement rate at retirement % (old-age earnings-related)	-32.7	74.0	81.1	54.5	43.5	43.0	41.4
Average accrual rates % (new pensions, earnings-related)	0.0	2.2	2.2	2.2	2.2	2.2	2.2
Average contributory period, years (new pensions, earnings-related)	3.4	30.3	32.3	32.9	33.2	33.6	33.7
Contributors (public pensions, 1000 persons)	-1,487	5,072	4,767	4,256	3,885	3,717	3,586
Support ratio (contributors/100 pensioners, public pensions)	-60	191	168	139	126	126	131
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Lower fertility (-20%)	1.3	0.0	0.0	0.0	0.5	0.9	1.3
Higher TFP growth (+0.2 pps)	-0.8	0.0	-0.3	-0.7	-0.8	-0.8	-0.8
TFP risk scenario (-0.2 pps)	0.7	0.0	-0.1	0.1	0.5	0.7	0.7
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.4	-0.7	-0.5	-0.3	-0.3
Higher migration (+33%)	-0.3	0.0	0.0	-0.1	-0.2	-0.2	-0.3
Lower migration (-33%)	0.2	0.0	0.1	0.1	0.2	0.2	0.2
Policy scenario linking retirement age to life expectancy	-0.3	0.0	0.0	-0.1	-0.2	-0.3	-0.3
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.2	0.1	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	1.4	0.0	0.3	0.7	1.1	1.3	1.4
Offset declining pension benefit ratio	5.6	0.0	0.0	1.0	3.7	5.2	5.6
Unchanged retirement age	0.6	0.0	0.3	0.4	0.8	0.7	0.6
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-3.2	12.7	14.2	14.4	12.6	10.5	9.5
pps change from 2019 due to:	-3.2		1.5	1.6	-0.1	-2.2	-3.2
Dependency ratio	8.8		3.4	6.9	9.1	8.9	8.8
Coverage ratio	-2.5		-1.3	-1.9	-2.5	-2.3	-2.5
Of which: old-age	-1.0		-0.6	-0.9	-1.1	-0.9	-1.0
early-age	-6.1		-3.9	-3.8	-5.5	-5.9	-6.1
cohort effect	-7.8		-1.6	-5.2	-7.9	-7.5	-7.8
Benefit ratio	-7.8		0.0	-2.2	-5.1	-7.2	-7.8
Labour market ratio	-1.1		-0.3	-0.7	-0.9	-0.9	-1.1
Of which: employment rate	-0.7		-0.3	-0.4	-0.6	-0.7	-0.7
labour intensity	0.0		0.0	0.0	0.0	0.1	0.0
career shift	-0.4		-0.1	-0.3	-0.4	-0.3	-0.4
Interaction effect (residual)	-0.7		-0.2	-0.5	-0.7	-0.7	-0.7
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-3.2	12.7	1.5	0.1	-1.8	-2.1	-1.0
Dependency ratio	8.8		3.4	3.6	2.1	-0.2	-0.1
Coverage ratio	-2.5		-1.3	-0.6	-0.5	0.1	-0.1
Of which: old-age	-1.0		-0.6	-0.3	-0.2	0.1	-0.1
early-age	-6.1		-3.9	0.2	-1.7	-0.4	-0.2
cohort effect	-7.8		-1.6	-3.6	-2.7	0.4	-0.3
Benefit ratio	-7.8		0.0	-2.2	-2.9	-2.1	-0.6
Labour market ratio	-1.1		-0.3	-0.3	-0.2	0.0	-0.2
Of which: employment rate	-0.7		-0.3	-0.1	-0.2	-0.1	-0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.4		-0.1	-0.3	0.0	0.0	-0.1
Interaction effect (residual)	-0.7		-0.2	-0.3	-0.2	0.0	0.0

Portugal

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.6	5.7	6.3	6.8	7.2	7.4	7.3
AWG risk scenario	2.6	5.7	6.5	7.3	8.0	8.3	8.2
TFP risk scenario	1.6	5.7	6.3	6.8	7.2	7.4	7.2
Demographic scenario	1.9	5.7	6.3	6.9	7.4	7.6	7.5
High life expectancy scenario (variation of demogr. scenario)	2.2	5.7	6.3	7.0	7.6	7.9	7.9
Healthy ageing scenario	0.9	5.7	6.1	6.5	6.7	6.8	6.6
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	2.1	5.7	6.4	7.1	7.6	7.9	7.8
EU cost convergence scenario	2.5	5.7	6.4	7.2	7.7	8.1	8.2
Labour intensity scenario	2.5	5.7	6.4	7.4	8.2	8.4	8.2
Sector-specific composite indexation scenario	1.7	5.7	6.3	6.9	7.3	7.5	7.4
Non-demographic determinants scenario	4.0	5.7	6.6	7.7	8.7	9.5	9.7

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.4	0.4	0.5	0.6	0.8	0.9	0.8
AWG risk scenario	7.8	0.4	0.8	1.6	3.0	5.2	8.2
TFP risk scenario	0.4	0.4	0.5	0.6	0.8	0.9	0.8
Demographic scenario	0.4	0.4	0.5	0.6	0.7	0.8	0.8
Base case scenario	0.4	0.4	0.5	0.7	0.8	0.9	0.9
High life expectancy scenario (variation of base case)	0.5	0.4	0.5	0.7	0.8	0.9	1.0
Healthy ageing scenario	0.3	0.4	0.5	0.6	0.7	0.8	0.8
Shift to formal care scenario	1.5	0.4	1.4	1.6	1.9	2.0	2.0
Coverage convergence scenario	8.0	0.4	0.8	1.6	3.1	5.4	8.5
Cost convergence scenario	0.5	0.4	0.5	0.7	0.8	0.9	0.9
Cost and coverage convergence scenario	8.2	0.4	0.8	1.6	3.1	5.4	8.6
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	7%	831	905	957	976	955	892
Recipients: receiving institutional care	44%	33	39	44	49	50	48
receiving home care	55%	17	20	23	26	27	27
receiving cash benefits	7%	13	15	15	16	15	14

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.1	4.3	3.8	4.0	4.2	4.1	4.1
Number of students (in thousands)							
Total (students/staff in 2019 = 10.4)	-25.4%	1,738	1,545	1,471	1,416	1,339	1,296
as % of population 5-24	-0.3	84.2	83.3	84.1	84.1	83.7	84.0
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.6	0.0	0.2	0.4	0.6	0.6	0.6

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	-1.3	23.1	24.8	25.8	24.8	22.9	21.8
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	8.3	0.0	0.5	1.4	3.0	5.3	8.3
TFP risk scenario (-0.2 pps)	0.7	0.0	-0.1	0.1	0.4	0.6	0.7
High life expectancy (+2 years) (8)	0.1	0.0	0.0	0.1	0.1	0.2	0.1
Lower fertility (-20%)	1.4	0.0	-0.1	-0.4	0.2	0.8	1.4
Higher TFP growth (+0.2 pps)	-0.7	0.0	-0.2	-0.6	-0.8	-0.7	-0.7
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.5	-1.1	-0.9	-0.5	-0.6
Higher migration (+33%)	-0.4	0.0	0.0	-0.1	-0.2	-0.3	-0.4
Lower migration (-33%)	0.3	0.0	0.1	0.1	0.2	0.2	0.3
Policy scenario linking retirement age to life expectancy	-0.5	0.0	-0.1	-0.2	-0.3	-0.4	-0.5
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.3	0.1	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	1.4	0.0	0.4	0.8	1.1	1.3	1.4

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

23. ROMANIA

Romania							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.65	1.66	1.70	1.72	1.73	1.74
Life expectancy at birth							
males	11.6	71.9	74.7	77.2	79.5	81.6	83.5
females	9.0	79.5	81.6	83.5	85.3	87.0	88.5
Life expectancy at 65							
males	7.2	14.9	16.5	18.0	19.5	20.8	22.1
females	6.8	18.6	20.1	21.6	22.9	24.2	25.4
Net migration (thousand)	:	-73.5	-40.0	-20.2	-2.0	10.4	21.0
Net migration as % of population	:	-0.4	-0.2	-0.1	0.0	0.1	0.2
Population (million)	-5.7	19.3	17.7	16.5	15.5	14.5	13.7
Young population (0-19) as % of total population	-3.3	21.0	19.3	18.0	18.0	17.8	17.8
Prime-age population (25-54) as % of total population	-9.2	42.6	38.0	34.9	33.5	33.4	33.4
Working-age population (20-64) as % of total population	-9.5	60.2	58.8	55.1	51.3	50.0	50.7
Elderly population (65+) as % of total population	12.8	18.7	21.8	26.9	30.7	32.2	31.5
Very elderly population (80+) as % of total population	9.6	4.7	5.8	8.4	10.2	13.2	14.3
Very elderly population (80+) as % of elderly population	20.2	25.2	26.6	31.0	33.3	41.0	45.4
Very elderly population (80+) as % of working-age population	20.4	7.8	9.9	15.2	19.9	26.4	28.2
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.7	4.6	2.8	1.2	1.1	1.2	1.1
Employment (growth rate)	-0.9	-0.3	-0.8	-1.1	-1.1	-0.6	-0.5
Labour input: hours worked (growth rate)	-0.9	-0.4	-0.8	-1.1	-1.1	-0.6	-0.5
Labour productivity per hour (growth rate)	2.6	4.9	3.7	2.3	2.2	1.9	1.5
TFP (growth rate)	1.6	3.1	2.3	1.5	1.4	1.2	1.0
Capital deepening (contribution to labour productivity growth)	0.9	1.9	1.3	0.8	0.8	0.7	0.5
Potential GDP per capita (growth rate)	2.4	5.3	3.6	1.9	1.7	1.9	1.6
Potential GDP per worker (growth rate)	2.6	5.0	3.7	2.3	2.2	1.9	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-4,728	11,654	10,439	9,103	7,932	7,252	6,927
Population growth (20-64)	0.8	-1.3	-0.5	-1.5	-1.2	-0.5	-0.5
Labour force 15-64 (thousands)	-3,376	8,715	7,868	6,854	6,069	5,623	5,338
Labour force 20-64 (thousands)	-3,330	8,594	7,760	6,762	5,985	5,542	5,264
Participation rate (20-64)	2.2	73.7	74.3	74.3	75.5	76.4	76.0
Participation rate (20-74)	0.5	64.7	65.1	62.6	62.8	64.3	65.1
youngest (20-24)	1.6	48.4	49.6	49.8	49.9	49.8	49.9
prime-age (25-54)	2.7	84.1	85.7	86.4	87.0	86.9	86.8
older (55-64)	8.2	49.0	55.2	54.9	55.2	57.6	57.2
very old (65-74)	4.5	13.4	15.5	17.4	16.9	17.0	17.9
Participation rate (20-64) - females	2.5	63.3	64.1	63.6	65.0	66.2	65.8
Participation rate (20-74) - females	1.1	54.6	54.9	52.4	52.8	54.8	55.8
youngest (20-24)	1.8	38.5	39.9	40.2	40.2	40.1	40.3
prime-age (25-54)	2.4	74.6	75.6	76.2	77.1	77.1	77.0
older (55-64)	9.0	37.2	45.4	44.3	43.9	46.6	46.3
very old (65-74)	1.9	12.1	12.0	14.0	13.3	13.2	14.1
Participation rate (20-64) - males	1.2	83.9	84.0	84.1	84.8	85.5	85.1
Participation rate (20-74) - males	-1.3	74.8	75.1	72.3	72.2	73.0	73.5
youngest (20-24)	1.1	57.7	58.5	58.8	58.8	58.7	58.8
prime-age (25-54)	2.4	93.0	94.8	95.2	95.5	95.5	95.4
older (55-64)	5.2	61.9	65.3	65.7	65.8	67.6	67.1
very old (65-74)	6.6	15.1	20.0	21.4	20.9	20.9	21.6
Average effective exit age - total (1)	0.0	63.4	63.3	63.3	63.3	63.3	63.3
males	0.0	64.1	64.1	64.1	64.1	64.1	64.1
females	-0.1	62.7	62.6	62.6	62.6	62.6	62.6
Employment rate (15-64)	1.3	65.9	65.9	66.0	66.8	67.4	67.2
Employment rate (20-64)	1.7	71.0	71.1	71.0	72.2	73.1	72.7
Employment rate (20-74)	0.1	62.3	62.3	60.0	60.2	61.7	62.4
Unemployment rate (15-64)	0.7	4.0	4.8	4.8	4.8	4.8	4.8
Unemployment rate (20-64)	0.7	3.7	4.4	4.4	4.4	4.3	4.4
Unemployment rate (20-74)	0.6	3.6	4.2	4.1	4.1	4.1	4.1
Employment (20-64) (in millions)	-3.2	8.3	7.4	6.5	5.7	5.3	5.0
Employment (20-74) (in millions)	-3.2	8.6	7.7	6.9	6.1	5.6	5.3
share of youngest (20-24)	0.4	5%	5%	6%	5%	5%	5%
share of prime-age (25-54)	-6.8	78%	72%	70%	71%	72%	72%
share of older (55-64)	4.3	13%	19%	19%	18%	17%	18%
share of very old (65-74)	2.1	3%	4%	6%	6%	6%	5%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3.9	20.7	26.0	26.8	25.5	23.5	24.5
Old-age dependency ratio 20-64 (3)	31.0	31.1	37.1	48.9	59.8	64.3	62.1
Total dependency ratio (4)	31.1	66.0	70.0	81.5	94.8	99.9	97.1
Total economic dependency ratio (5)	30.4	126.2	129.8	140.2	153.7	158.1	156.6
Economic old-age dependency ratio (20-64) (6)	39.3	40.5	48.1	62.5	76.5	82.0	79.8
Economic old-age dependency ratio (20-74) (7)	36.3	39.2	46.3	58.7	71.8	77.4	75.5

Romania							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	3.8	8.1	12.9	14.2	14.8	13.6	11.9
Of which : Old-age and early pensions	3.9	5.9	10.4	11.7	12.3	11.4	9.8
Disability pensions	0.1	0.5	0.8	0.7	0.7	0.6	0.5
Survivors' pensions	0.1	0.4	0.5	0.5	0.6	0.5	0.5
Other	-0.3	1.3	1.1	1.3	1.3	1.2	1.0
Earnings-related pensions (old-age and early pensions), gross	3.7	5.9	10.3	11.6	12.1	11.2	9.6
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	1.1	0.0	0.0	0.3	0.7	1.0	1.1
New pensions, gross (old-age and early pensions)	0.0	0.1	0.3	0.3	0.2	0.2	0.2
Public pensions, net	3.7	8.0	12.7	14.0	14.6	13.4	11.7
Public pensions, contributions	-0.3	6.8	6.8	6.5	6.5	6.5	6.5
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	-0.7	98.8%	98.7%	98.6%	98.4%	98.2%	98.1%
Pensioners (public, 1000 persons)	-280	5,139	5,532	5,961	5,870	5,413	4,859
Public pensioners aged 65+ (1000 persons)	456	3,390	3,901	4,447	4,599	4,367	3,846
Pensioners younger than 65 as % of all pensioners (public)	-13.2	34%	29%	25%	22%	19%	21%
Benefit ratio % (public pensions)	-1.6	32.5	41.8	38.7	36.3	33.5	30.8
Gross replacement rate at retirement % (old-age earnings-related)	0.5	27.1	42.1	38.7	34.8	30.7	27.6
Average accrual rates % (new pensions, earnings-related)	0.1	0.9	1.0	1.0	1.0	1.0	0.9
Average contributory period, years (new pensions, earnings-related)	2.4	32.0	34.4	34.3	34.4	34.5	34.4
Contributors (public pensions, 1000 persons)	-1,783	5,632	5,727	4,968	4,364	4,050	3,849
Support ratio (contributors/100 pensioners, public pensions)	-30	110	104	83	74	75	79
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.7	0.0	0.1	0.2	0.4	0.6	0.7
Lower fertility (-20%)	1.9	0.0	0.0	0.0	0.6	1.3	1.9
Higher TFP growth (+0.2 pps)	-0.5	0.0	0.3	0.3	0.0	-0.3	-0.5
TFP risk scenario (-0.2 pps)	0.8	0.0	0.3	0.7	0.8	0.8	0.8
Higher employment rate of older workers (+10 pps)	-0.4	0.0	-0.5	-0.8	-1.0	-0.6	-0.4
Higher migration (+33%)	0.4	0.0	0.2	0.4	0.5	0.5	0.4
Lower migration (-33%)	-0.3	0.0	-0.2	-0.3	-0.4	-0.4	-0.3
Policy scenario linking retirement age to life expectancy	-1.1	0.0	-0.3	-0.9	-1.1	-1.1	-1.1
Adverse macroeconomic scenario - lagged recovery	-0.1	0.0	0.3	0.3	0.2	0.0	-0.1
Adverse macroeconomic scenario - adverse structural	1.5	0.0	0.7	0.9	1.3	1.4	1.5
Offset declining pension benefit ratio	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unchanged retirement age	0.1	0.0	0.3	0.3	0.2	0.1	0.1
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	3.8	8.1	12.9	14.2	14.8	13.6	11.9
pps change from 2019 due to:	3.8		4.7	6.1	6.7	5.5	3.8
Dependency ratio	9.4		1.8	5.7	8.8	9.9	9.4
Coverage ratio	-3.0		0.3	-0.6	-1.7	-2.6	-3.0
Of which: old-age	-0.9		0.8	0.7	0.2	-0.3	-0.9
early-age	-1.2		-1.2	-0.5	0.2	-1.0	-1.2
cohort effect	-7.1		0.4	-2.8	-6.7	-8.0	-7.1
Benefit ratio	-1.7		2.6	1.5	0.6	-0.6	-1.7
Labour market ratio	-0.6		0.0	-0.3	-0.6	-0.7	-0.6
Of which: employment rate	-0.3		0.0	0.0	-0.2	-0.4	-0.3
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.3		-0.1	-0.3	-0.4	-0.3	-0.3
Interaction effect (residual)	-0.4		0.1	-0.2	-0.4	-0.5	-0.4
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	3.8	8.1	4.7	1.3	0.6	-1.2	-1.7
Dependency ratio	9.4		1.8	3.9	3.1	1.1	-0.5
Coverage ratio	-3.0		0.3	-0.8	-1.1	-0.9	-0.4
Of which: old-age	-0.9		0.8	-0.1	-0.4	-0.5	-0.6
early-age	-1.2		-1.2	0.7	0.7	-1.2	-0.2
cohort effect	-7.1		0.4	-3.3	-3.8	-1.3	0.9
Benefit ratio	-1.7		2.6	-1.2	-0.9	-1.2	-1.1
Labour market ratio	-0.6		0.0	-0.3	-0.2	-0.1	0.1
Of which: employment rate	-0.3		0.0	0.0	-0.2	-0.2	0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.3		-0.1	-0.3	0.0	0.1	0.0
Interaction effect (residual)	-0.4		0.1	-0.3	-0.2	-0.1	0.0

Romania

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.9	3.9	4.3	4.6	4.8	4.9	4.9
AWG risk scenario	2.4	3.9	4.9	5.6	6.1	6.3	6.3
TFP risk scenario	0.9	3.9	4.3	4.6	4.8	4.9	4.9
Demographic scenario	1.0	3.9	4.3	4.6	4.8	5.0	5.0
High life expectancy scenario (variation of demogr. scenario)	1.1	3.9	4.2	4.6	4.9	5.0	5.0
Healthy ageing scenario	0.3	3.9	4.1	4.2	4.3	4.4	4.3
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	1.4	3.9	4.4	4.8	5.1	5.3	5.3
EU cost convergence scenario	2.7	3.9	4.5	5.1	5.7	6.2	6.6
Labour intensity scenario	1.7	3.9	4.4	4.9	5.4	5.7	5.6
Sector-specific composite indexation scenario	3.1	3.9	5.1	6.0	6.6	7.0	7.0
Non-demographic determinants scenario	3.7	3.9	5.1	6.1	6.9	7.5	7.7

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.4	0.4	0.4	0.5	0.7	0.8	0.8
AWG risk scenario	3.9	0.4	0.6	1.0	1.7	2.8	4.2
TFP risk scenario	0.4	0.4	0.4	0.5	0.7	0.8	0.8
Demographic scenario	0.3	0.4	0.4	0.5	0.6	0.7	0.7
Base case scenario	0.4	0.4	0.4	0.5	0.7	0.8	0.8
High life expectancy scenario (variation of base case)	0.5	0.4	0.4	0.6	0.7	0.8	0.9
Healthy ageing scenario	0.3	0.4	0.4	0.5	0.6	0.7	0.7
Shift to formal care scenario	0.6	0.4	0.5	0.7	0.8	0.9	1.0
Coverage convergence scenario	1.1	0.4	0.5	0.7	0.9	1.2	1.5
Cost convergence scenario	2.2	0.4	0.6	0.9	1.3	1.9	2.6
Cost and coverage convergence scenario	4.3	0.4	0.6	1.1	1.8	3.1	4.6
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	9%	1,238	1,296	1,357	1,375	1,405	1,344
Recipients: receiving institutional care	33%	240	257	284	300	323	319
receiving home care	36%	295	317	353	376	407	402
receiving cash benefits	:	0	0	0	0	0	0

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.1	2.5	2.4	2.3	2.3	2.4	2.4
Number of students (in thousands)							
Total (students/staff in 2019 = 14.2)	-39.8%	2,821	2,488	2,106	1,942	1,822	1,699
as % of population 5-24	-1.5	69.2	67.9	66.8	68.3	67.9	67.7
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	1.0	0.0	0.4	0.8	1.0	1.0	1.0

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	5.1	14.9	20.0	21.7	22.6	21.8	20.0
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	4.9	0.0	0.8	1.5	2.3	3.5	4.9
TFP risk scenario (-0.2 pps)	0.8	0.0	0.3	0.7	0.8	0.8	0.8
High life expectancy (+2 years) (8)	0.8	0.0	0.1	0.2	0.5	0.7	0.8
Lower fertility (-20%)	2.0	0.0	-0.1	-0.2	0.4	1.2	2.0
Higher TFP growth (+0.2 pps)	-0.5	0.0	0.3	0.3	0.0	-0.3	-0.5
Higher employment rate of older workers (+10 pps)	-0.5	0.0	-0.6	-1.0	-1.2	-0.8	-0.5
Higher migration (+33%)	0.4	0.0	0.2	0.4	0.5	0.5	0.4
Lower migration (-33%)	-0.3	0.0	-0.2	-0.4	-0.5	-0.5	-0.3
Policy scenario linking retirement age to life expectancy	-1.4	0.0	-0.3	-1.0	-1.3	-1.3	-1.4
Adverse macroeconomic scenario - lagged recovery	-0.1	0.0	0.3	0.3	0.2	0.0	-0.1
Adverse macroeconomic scenario - adverse structural	1.5	0.0	0.8	1.0	1.3	1.5	1.5

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

24. SLOVENIA

Slovenia							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.55	1.59	1.62	1.65	1.67	1.68
Life expectancy at birth							
males	7.2	78.7	80.3	81.8	83.3	84.6	85.9
females	5.9	84.5	85.8	87.1	88.2	89.4	90.4
Life expectancy at 65							
males	5.1	18.1	19.2	20.3	21.3	22.3	23.2
females	4.8	22.0	23.0	24.0	25.0	25.9	26.8
Net migration (thousand)	:	15.7	4.5	4.6	4.9	5.2	5.2
Net migration as % of population	:	0.8	0.2	0.2	0.2	0.3	0.3
Population (million)	-0.2	2.1	2.1	2.1	2.0	2.0	1.9
Young population (0-19) as % of total population	-1.8	19.6	18.6	17.2	17.9	18.0	17.8
Prime-age population (25-54) as % of total population	-7.5	41.4	37.4	35.0	34.1	34.2	33.9
Working-age population (20-64) as % of total population	-8.6	60.4	56.7	54.9	51.3	50.7	51.8
Elderly population (65+) as % of total population	10.4	20.0	24.7	28.0	30.8	31.3	30.4
Very elderly population (80+) as % of total population	8.4	5.4	6.8	9.5	11.2	12.9	13.8
Very elderly population (80+) as % of elderly population	18.6	26.9	27.4	33.9	36.5	41.2	45.4
Very elderly population (80+) as % of working-age population	17.8	8.9	11.9	17.3	21.9	25.4	26.7
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.6	2.4	2.2	1.2	1.1	1.5	1.3
Employment (growth rate)	-0.3	1.0	-0.5	-0.6	-0.6	-0.2	-0.2
Labour input: hours worked (growth rate)	-0.3	0.5	-0.5	-0.6	-0.6	-0.2	-0.2
Labour productivity per hour (growth rate)	1.9	1.8	2.7	1.8	1.7	1.6	1.5
TFP (growth rate)	1.3	1.9	1.8	1.2	1.1	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.6	-0.1	0.9	0.6	0.6	0.6	0.5
Potential GDP per capita (growth rate)	1.8	1.7	2.3	1.3	1.3	1.7	1.6
Potential GDP per worker (growth rate)	1.9	1.3	2.7	1.8	1.7	1.6	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-258	1,261	1,195	1,141	1,048	1,007	1,002
Population growth (20-64)	0.0	-0.1	-0.4	-0.7	-0.7	-0.1	-0.1
Labour force 15-64 (thousands)	-175	1,018	999	949	881	853	843
Labour force 20-64 (thousands)	-175	1,007	986	938	871	841	832
Participation rate (20-64)	3.1	79.9	82.5	82.2	83.1	83.5	83.0
Participation rate (20-74)	1.5	68.4	68.9	68.4	67.5	69.2	69.9
youngest (20-24)	0.3	59.3	58.8	59.7	59.5	59.3	59.5
prime-age (25-54)	1.1	92.4	93.0	93.2	93.7	93.6	93.5
older (55-64)	14.3	50.3	63.6	63.7	62.9	64.1	64.6
very old (65-74)	4.8	4.6	8.0	9.5	9.3	9.1	9.4
Participation rate (20-64) - females	4.4	76.6	80.0	79.8	81.0	81.6	81.0
Participation rate (20-74) - females	3.9	64.5	65.7	65.7	65.5	67.6	68.4
youngest (20-24)	0.4	53.5	53.3	54.1	53.9	53.7	53.9
prime-age (25-54)	1.4	90.4	90.9	91.3	92.0	91.9	91.8
older (55-64)	17.6	45.6	62.0	61.8	61.0	62.8	63.2
very old (65-74)	6.4	3.0	8.0	9.4	9.1	8.9	9.4
Participation rate (20-64) - males	1.8	83.0	84.8	84.2	84.8	85.2	84.8
Participation rate (20-74) - males	-0.8	72.1	71.9	70.8	69.3	70.5	71.3
youngest (20-24)	0.3	64.4	63.9	64.8	64.7	64.4	64.7
prime-age (25-54)	0.7	94.3	94.7	94.9	95.1	95.0	95.0
older (55-64)	10.8	54.9	65.1	65.3	64.5	65.2	65.7
very old (65-74)	3.0	6.4	7.9	9.6	9.4	9.2	9.4
Average effective exit age - total (1)	0.9	62.0	62.9	62.9	62.9	62.9	62.9
males	0.9	62.1	63.0	63.0	63.0	63.0	63.0
females	0.8	62.0	62.8	62.8	62.8	62.8	62.8
Employment rate (15-64)	0.8	71.8	71.9	72.3	72.9	72.7	72.6
Employment rate (20-64)	1.9	76.4	77.9	77.5	78.4	78.8	78.3
Employment rate (20-74)	0.6	65.5	65.1	64.6	63.8	65.4	66.1
Unemployment rate (15-64)	1.3	4.5	5.8	5.8	5.8	5.8	5.8
Unemployment rate (20-64)	1.3	4.4	5.6	5.7	5.7	5.6	5.7
Unemployment rate (20-74)	1.2	4.3	5.5	5.5	5.5	5.5	5.5
Employment (20-64) (in millions)	-0.2	1.0	0.9	0.9	0.8	0.8	0.8
Employment (20-74) (in millions)	-0.2	1.0	1.0	0.9	0.8	0.8	0.8
share of youngest (20-24)	0.9	6%	6%	7%	6%	7%	7%
share of prime-age (25-54)	-6.5	79%	73%	71%	73%	74%	72%
share of older (55-64)	4.1	15%	18%	20%	18%	17%	19%
share of very old (65-74)	1.5	1%	2%	3%	3%	3%	3%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	1.3	23.4	24.5	26.5	24.5	22.6	24.7
Old-age dependency ratio 20-64 (3)	25.5	33.2	43.5	51.0	59.9	61.7	58.8
Total dependency ratio (4)	27.5	65.7	76.2	82.3	94.8	97.3	93.2
Total economic dependency ratio (5)	25.9	114.5	121.3	128.7	140.9	143.6	140.4
Economic old-age dependency ratio (20-64) (6)	30.0	42.4	53.5	62.9	73.3	75.6	72.4
Economic old-age dependency ratio (20-74) (7)	28.7	41.9	52.4	61.2	71.1	73.5	70.6

Slovenia							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	6.0	10.0	10.8	13.6	15.7	16.1	16.0
Of which : Old-age and early pensions	5.1	7.8	8.6	10.8	12.6	12.8	12.8
Disability pensions	0.5	1.1	1.1	1.4	1.6	1.6	1.6
Survivors' pensions	0.5	1.1	1.1	1.4	1.5	1.6	1.6
Other	-0.1	0.1	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	5.1	7.8	8.6	10.8	12.6	12.8	12.8
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Public pensions, net	5.9	9.9	10.7	13.4	15.5	15.9	15.8
Public pensions, contributions	0.0	9.3	9.3	9.3	9.3	9.3	9.3
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.0	99.1%	99.1%	99.1%	99.1%	99.1%	99.1%
Pensioners (public, 1000 persons)	121	623	688	758	789	771	743
Public pensioners aged 65+ (1000 persons)	177	478	579	649	695	687	655
Pensioners younger than 65 as % of all pensioners (public)	-11.3	23%	16%	14%	12%	11%	12%
Benefit ratio % (public pensions)	3.4	30.8	29.7	32.2	33.3	33.6	34.2
Gross replacement rate at retirement % (old-age earnings-related)	4.3	33.2	37.4	37.6	37.5	37.5	37.5
Average accrual rates % (new pensions, earnings-related)	0.2	1.6	1.7	1.7	1.7	1.7	1.7
Average contributory period, years (new pensions, earnings-related)	0.5	38.8	39.0	39.3	39.2	39.3	39.3
Contributors (public pensions, 1000 persons)	-165	961	941	898	837	806	796
Support ratio (contributors/100 pensioners, public pensions)	-47	154	137	119	106	105	107
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	1.0	0.0	0.1	0.2	0.5	0.8	1.0
Lower fertility (-20%)	2.1	0.0	0.0	0.1	0.6	1.2	2.1
Higher TFP growth (+0.2 pps)	-0.4	0.0	0.0	-0.2	-0.3	-0.4	-0.4
TFP risk scenario (-0.2 pps)	0.2	0.0	0.0	0.1	0.1	0.2	0.2
Higher employment rate of older workers (+10 pps)	-1.4	0.0	-1.0	-1.6	-1.9	-1.6	-1.4
Higher migration (+33%)	-0.4	0.0	-0.1	-0.3	-0.5	-0.5	-0.4
Lower migration (-33%)	0.5	0.0	0.1	0.3	0.6	0.6	0.5
Policy scenario linking retirement age to life expectancy	-1.9	0.0	0.0	-0.4	-1.0	-1.4	-1.9
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	1.0	0.0	0.4	0.6	0.8	1.0	1.0
Offset declining pension benefit ratio	:	:	:	:	:	:	:
Unchanged retirement age	0.5	0.0	0.5	0.6	0.6	0.4	0.5
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	6.0	10.0	10.8	13.6	15.7	16.1	16.0
pps change from 2019 due to:	6.0		0.9	3.6	5.7	6.1	6.0
Dependency ratio	7.0		3.0	4.9	7.3	7.7	7.0
Coverage ratio	-1.8		-1.2	-1.4	-1.9	-2.1	-1.8
Of which: old-age	-0.3		-0.2	-0.2	-0.4	-0.4	-0.3
early-age	-3.0		-2.9	-2.6	-2.2	-3.1	-3.0
cohort effect	-5.9		-2.1	-3.6	-6.9	-7.6	-5.9
Benefit ratio	1.4		-0.4	0.6	1.0	1.2	1.4
Labour market ratio	-0.4		-0.3	-0.3	-0.5	-0.6	-0.4
Of which: employment rate	-0.3		-0.2	-0.2	-0.3	-0.4	-0.3
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		-0.1	-0.2	-0.2	-0.2	-0.1
Interaction effect (residual)	-0.2		-0.2	-0.1	-0.2	-0.2	-0.2
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	6.0	10.0	0.9	2.7	2.1	0.4	-0.1
Dependency ratio	7.0		3.0	1.9	2.4	0.5	-0.8
Coverage ratio	-1.8		-1.2	-0.2	-0.5	-0.2	0.3
Of which: old-age	-0.3		-0.2	0.0	-0.1	0.0	0.1
early-age	-3.0		-2.9	0.3	0.4	-0.9	0.1
cohort effect	-5.9		-2.1	-1.5	-3.3	-0.7	1.6
Benefit ratio	1.4		-0.4	1.0	0.5	0.2	0.3
Labour market ratio	-0.4		-0.3	0.0	-0.2	0.0	0.1
Of which: employment rate	-0.3		-0.2	0.1	-0.2	-0.1	0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		-0.1	-0.1	0.0	0.1	0.0
Interaction effect (residual)	-0.2		-0.2	0.1	0.0	0.0	0.0

Slovenia

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.5	5.9	6.7	7.1	7.4	7.5	7.4
AWG risk scenario	2.9	5.9	7.2	8.1	8.6	8.8	8.8
TFP risk scenario	1.4	5.9	6.7	7.1	7.4	7.4	7.4
Demographic scenario	1.6	5.9	6.7	7.1	7.4	7.5	7.5
High life expectancy scenario (variation of demogr. scenario)	1.8	5.9	6.7	7.1	7.5	7.6	7.7
Healthy ageing scenario	0.8	5.9	6.5	6.7	6.9	6.9	6.7
Death-related cost scenario	1.3	5.9	6.7	7.0	7.2	7.3	7.3
Income elasticity scenario	1.9	5.9	6.8	7.3	7.7	7.8	7.9
EU cost convergence scenario	1.6	5.9	6.7	7.1	7.4	7.6	7.6
Labour intensity scenario	2.4	5.9	6.8	7.5	8.2	8.4	8.3
Sector-specific composite indexation scenario	2.6	5.9	7.1	7.8	8.2	8.5	8.6
Non-demographic determinants scenario	4.3	5.9	7.4	8.5	9.3	9.9	10.2

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.3	1.0	1.2	1.6	1.9	2.1	2.2
AWG risk scenario	4.5	1.0	1.6	2.3	3.3	4.4	5.5
TFP risk scenario	1.3	1.0	1.2	1.6	1.9	2.1	2.2
Demographic scenario	1.2	1.0	1.3	1.6	1.8	2.0	2.1
Base case scenario	1.4	1.0	1.3	1.6	2.0	2.2	2.3
High life expectancy scenario (variation of base case)	1.7	1.0	1.3	1.7	2.1	2.4	2.6
Healthy ageing scenario	1.1	1.0	1.3	1.5	1.8	2.0	2.1
Shift to formal care scenario	1.8	1.0	1.6	2.0	2.3	2.6	2.7
Coverage convergence scenario	1.5	1.0	1.3	1.7	2.1	2.3	2.5
Cost convergence scenario	4.4	1.0	1.6	2.3	3.3	4.3	5.4
Cost and coverage convergence scenario	4.8	1.0	1.6	2.4	3.5	4.6	5.8
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	18%	209	232	249	253	252	247
Recipients: receiving institutional care	78%	37	45	54	61	64	66
receiving home care	74%	38	45	55	61	64	66
receiving cash benefits	58%	47	55	63	70	73	74

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.1	3.8	3.9	3.6	3.9	4.1	3.9
Number of students (in thousands)							
Total (students/staff in 2019 = 9.2)	-13.0%	362	370	329	325	329	315
as % of population 5-24	-1.0	88.5	87.7	87.2	87.9	87.7	87.4
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.5	0.0	0.2	0.4	0.5	0.5	0.5

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	8.9	20.7	22.7	25.9	28.8	29.7	29.5
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	4.6	0.0	0.9	1.7	2.6	3.6	4.6
TFP risk scenario (-0.2 pps)	0.1	0.0	0.0	0.0	0.1	0.1	0.1
High life expectancy (+2 years) (8)	1.3	0.0	0.1	0.3	0.6	1.0	1.3
Lower fertility (-20%)	2.1	0.0	-0.1	-0.3	0.3	1.1	2.1
Higher TFP growth (+0.2 pps)	-0.3	0.0	0.0	-0.2	-0.3	-0.3	-0.3
Higher employment rate of older workers (+10 pps)	-1.7	0.0	-1.2	-1.8	-2.2	-1.9	-1.7
Higher migration (+33%)	-0.6	0.0	-0.2	-0.4	-0.7	-0.8	-0.6
Lower migration (-33%)	0.7	0.0	0.2	0.5	0.8	0.9	0.7
Policy scenario linking retirement age to life expectancy	-2.2	0.0	0.0	-0.4	-1.1	-1.6	-2.2
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	1.1	0.0	0.6	0.7	1.0	1.1	1.1

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

25. SLOVAKIA

Slovakia							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.56	1.59	1.61	1.63	1.65	1.67
Life expectancy at birth							
males	9.7	74.4	76.5	78.6	80.6	82.4	84.1
females	7.8	81.2	82.9	84.6	86.2	87.6	89.0
Life expectancy at 65							
males	6.5	15.6	17.0	18.4	19.7	21.0	22.1
females	6.1	19.6	20.8	22.1	23.4	24.6	25.7
Net migration (thousand)	:	3.4	4.5	5.0	5.4	6.3	7.4
Net migration as % of population	:	0.1	0.1	0.1	0.1	0.1	0.2
Population (million)	-0.7	5.5	5.4	5.3	5.1	4.9	4.7
Young population (0-19) as % of total population	-2.5	20.6	20.2	18.4	18.1	18.3	18.1
Prime-age population (25-54) as % of total population	-11.3	44.4	40.4	35.7	33.4	33.3	33.1
Working-age population (20-64) as % of total population	-12.9	63.1	58.7	57.0	52.3	49.1	50.2
Elderly population (65+) as % of total population	15.4	16.3	21.1	24.6	29.6	32.6	31.7
Very elderly population (80+) as % of total population	11.3	3.3	5.0	7.7	9.0	12.2	14.6
Very elderly population (80+) as % of elderly population	25.7	20.4	23.5	31.4	30.4	37.4	46.1
Very elderly population (80+) as % of working-age population	23.8	5.3	8.5	13.5	17.2	24.8	29.1
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.3	2.3	1.7	1.2	1.0	1.3	1.2
Employment (growth rate)	-0.7	0.9	-0.8	-1.0	-1.1	-0.5	-0.4
Labour input: hours worked (growth rate)	-0.7	0.4	-0.8	-1.0	-1.1	-0.5	-0.4
Labour productivity per hour (growth rate)	2.1	1.9	2.5	2.2	2.0	1.8	1.5
TFP (growth rate)	1.3	0.9	1.6	1.4	1.3	1.2	1.0
Capital deepening (contribution to labour productivity growth)	0.8	1.0	0.9	0.8	0.7	0.6	0.5
Potential GDP per capita (growth rate)	1.6	2.2	1.9	1.5	1.3	1.7	1.7
Potential GDP per worker (growth rate)	2.0	1.3	2.5	2.2	2.1	1.8	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-1,073	3,441	3,193	3,025	2,688	2,427	2,367
Population growth (20-64)	0.5	-0.7	-0.5	-0.9	-1.3	-0.6	-0.2
Labour force 15-64 (thousands)	-877	2,699	2,502	2,289	2,039	1,877	1,822
Labour force 20-64 (thousands)	-875	2,683	2,484	2,273	2,025	1,863	1,809
Participation rate (20-64)	-1.6	78.0	77.8	75.1	75.3	76.8	76.4
Participation rate (20-74)	-4.4	68.2	66.1	63.2	60.0	61.3	63.8
youngest (20-24)	1.9	50.4	51.9	52.3	52.5	52.2	52.3
prime-age (25-54)	-0.4	86.6	86.1	86.0	86.1	86.4	86.2
older (55-64)	-0.9	60.5	62.4	58.5	57.6	58.3	59.6
very old (65-74)	-1.2	7.0	5.6	6.5	5.9	5.6	5.8
Participation rate (20-64) - females	-2.7	71.3	71.0	67.7	67.3	68.9	68.6
Participation rate (20-74) - females	-4.2	61.1	59.2	56.1	52.9	54.3	56.9
youngest (20-24)	2.9	37.4	39.9	40.2	40.4	40.2	40.3
prime-age (25-54)	-1.3	79.6	79.3	78.4	77.9	78.5	78.3
older (55-64)	-3.9	57.7	58.2	53.2	51.8	52.3	53.8
very old (65-74)	-1.0	5.4	4.7	5.1	4.5	4.3	4.4
Participation rate (20-64) - males	-0.8	84.6	84.4	82.3	83.0	84.2	83.9
Participation rate (20-74) - males	-4.9	75.5	72.9	70.2	67.0	68.1	70.5
youngest (20-24)	0.9	62.9	63.3	63.7	63.9	63.6	63.7
prime-age (25-54)	0.4	93.2	92.7	93.2	93.9	93.8	93.6
older (55-64)	1.7	63.5	66.7	63.9	63.2	64.1	65.3
very old (65-74)	-1.8	9.0	6.6	8.1	7.3	7.1	7.3
Average effective exit age - total (1)	0.5	61.7	62.2	62.2	62.2	62.2	62.2
males	0.7	62.0	62.7	62.7	62.7	62.7	62.7
females	0.3	61.4	61.7	61.7	61.7	61.7	61.7
Employment rate (15-64)	-3.3	68.6	66.0	64.2	64.9	65.5	65.3
Employment rate (20-64)	-2.3	73.6	71.8	69.7	70.3	71.6	71.3
Employment rate (20-74)	-4.8	64.4	61.0	58.7	56.1	57.3	59.6
Unemployment rate (15-64)	1.2	5.8	8.2	7.6	7.0	7.0	7.0
Unemployment rate (20-64)	1.1	5.6	7.8	7.3	6.7	6.7	6.7
Unemployment rate (20-74)	1.1	5.5	7.7	7.1	6.6	6.5	6.6
Employment (20-64) (in millions)	-0.8	2.5	2.3	2.1	1.9	1.7	1.7
Employment (20-74) (in millions)	-0.9	2.6	2.3	2.1	1.9	1.8	1.7
share of youngest (20-24)	1.0	5%	5%	6%	6%	6%	6%
share of prime-age (25-54)	-3.8	77%	76%	71%	72%	75%	73%
share of older (55-64)	2.5	16%	18%	21%	20%	17%	19%
share of very old (65-74)	0.2	1%	1%	2%	2%	2%	2%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3.1	20.9	22.3	27.5	27.0	22.4	24.1
Old-age dependency ratio 20-64 (3)	37.2	25.9	35.9	43.1	56.5	66.3	63.1
Total dependency ratio (4)	40.6	58.5	70.3	75.4	91.1	103.6	99.1
Total economic dependency ratio (5)	62.3	112.1	133.8	146.8	165.8	178.2	174.3
Economic old-age dependency ratio (20-64) (6)	53.1	33.6	48.5	59.9	78.1	90.4	86.7
Economic old-age dependency ratio (20-74) (7)	52.1	33.1	47.8	58.8	76.3	88.5	85.2

Slovakia

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	5.9	8.3	10.2	11.6	13.4	14.5	14.2
Of which : Old-age and early pensions	4.9	6.5	7.5	8.6	10.4	11.6	11.4
Disability pensions	0.2	0.9	1.2	1.3	1.2	1.1	1.1
Survivors' pensions	0.2	0.8	1.1	1.1	1.1	1.0	1.0
Other	0.6	0.2	0.4	0.6	0.7	0.8	0.7
Earnings-related pensions (old-age and early pensions), gross	4.2	6.5	7.3	8.2	9.8	10.9	10.7
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	0.0	7.4	7.0	7.2	7.4	7.5	7.5
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	455	1,390	1,637	1,825	1,974	1,980	1,844
Public pensioners aged 65+ (1000 persons)	656	866	1,154	1,329	1,553	1,641	1,522
Pensioners younger than 65 as % of all pensioners (public)	-20.2	38%	29%	27%	21%	17%	17%
Benefit ratio % (public pensions)	-4.7	37.0	35.4	33.3	32.0	31.9	32.4
Gross replacement rate at retirement % (old-age earnings-related)	1.6	41.6	44.1	43.6	43.3	43.2	43.2
Average accrual rates % (new pensions, earnings-related)	-0.2	1.1	0.9	0.8	0.8	0.9	0.9
Average contributory period, years (new pensions, earnings-related)	0.3	39.3	39.9	39.7	39.6	39.6	39.6
Contributors (public pensions, 1000 persons)	-777	2,367	2,143	1,982	1,786	1,645	1,591
Support ratio (contributors/100 pensioners, public pensions)	-84	170	131	109	90	83	86
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.6	0.0	0.0	0.1	0.3	0.5	0.6
Lower fertility (-20%)	2.1	0.0	0.0	0.0	0.5	1.3	2.1
Higher TFP growth (+0.2 pps)	-0.5	0.0	0.1	-0.1	-0.3	-0.4	-0.5
TFP risk scenario (-0.2 pps)	0.3	0.0	0.1	0.2	0.2	0.2	0.3
Higher employment rate of older workers (+10 pps)	-0.4	0.0	-0.3	-0.6	-0.9	-0.8	-0.4
Higher migration (+33%)	-0.2	0.0	0.0	0.0	-0.1	-0.2	-0.2
Lower migration (-33%)	0.2	0.0	0.0	0.0	0.1	0.2	0.2
Policy scenario linking retirement age to life expectancy	-2.3	0.0	-0.2	-1.1	-1.9	-2.1	-2.3
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	1.0	0.0	0.3	0.5	0.8	0.9	1.0
Offset declining pension benefit ratio	1.3	0.0	0.0	0.8	1.4	1.6	1.3
Unchanged retirement age	0.6	0.0	0.5	0.8	0.8	0.6	0.6
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	5.9	8.3	10.2	11.6	13.4	14.5	14.2
pps change from 2019 due to:	5.9		1.8	3.2	5.0	6.2	5.9
Dependency ratio	10.4		3.3	5.3	8.8	11.1	10.4
Coverage ratio	-2.6		-0.8	-1.0	-1.9	-2.7	-2.6
Of which: old-age	0.4		0.3	0.4	0.5	0.4	0.4
early-age	-3.0		-1.5	-1.8	-1.4	-1.7	-3.0
cohort effect	-7.6		-1.6	-2.2	-6.1	-9.4	-7.6
Benefit ratio	-1.6		-0.7	-1.2	-1.7	-1.8	-1.6
Labour market ratio	0.2		0.2	0.5	0.3	0.1	0.2
Of which: employment rate	0.2		0.2	0.5	0.4	0.2	0.2
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.0	0.0	-0.1	-0.1	0.0
Interaction effect (residual)	-0.6		-0.2	-0.3	-0.5	-0.6	-0.6
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	5.9	8.3	1.8	1.4	1.8	1.2	-0.3
Dependency ratio	10.4		3.3	2.0	3.5	2.3	-0.7
Coverage ratio	-2.6		-0.8	-0.2	-0.9	-0.7	0.1
Of which: old-age	0.4		0.3	0.1	0.0	0.0	0.0
early-age	-3.0		-1.5	-0.4	0.4	-0.2	-1.4
cohort effect	-7.6		-1.6	-0.7	-3.8	-3.3	1.8
Benefit ratio	-1.6		-0.7	-0.6	-0.5	-0.1	0.2
Labour market ratio	0.2		0.2	0.3	-0.2	-0.2	0.1
Of which: employment rate	0.2		0.2	0.3	-0.1	-0.3	0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.0	0.0	0.0	0.0	0.1
Interaction effect (residual)	-0.6		-0.2	-0.1	-0.2	-0.1	0.0

Slovakia

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.5	5.7	6.9	7.5	7.9	8.2	8.2
AWG risk scenario	3.7	5.7	7.2	8.2	9.0	9.5	9.5
TFP risk scenario	2.4	5.7	6.9	7.4	7.9	8.2	8.1
Demographic scenario	2.9	5.7	7.0	7.6	8.2	8.6	8.7
High life expectancy scenario (variation of demogr. scenario)	3.1	5.7	7.0	7.7	8.3	8.7	8.8
Healthy ageing scenario	1.5	5.7	6.6	6.9	7.2	7.4	7.2
Death-related cost scenario	2.4	5.7	6.9	7.5	7.9	8.2	8.1
Income elasticity scenario	3.3	5.7	7.1	7.8	8.5	8.9	9.0
EU cost convergence scenario	3.1	5.7	7.0	7.7	8.3	8.8	8.9
Labour intensity scenario	5.5	5.7	7.7	8.9	10.3	11.4	11.2
Sector-specific composite indexation scenario	3.9	5.7	7.2	8.2	9.0	9.5	9.6
Non-demographic determinants scenario	5.6	5.7	7.5	8.8	10.0	11.0	11.3

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.1	0.8	1.2	1.7	2.1	2.5	2.9
AWG risk scenario	5.5	0.8	1.5	2.3	3.3	4.7	6.4
TFP risk scenario	2.1	0.8	1.2	1.7	2.1	2.5	2.9
Demographic scenario	1.6	0.8	1.2	1.5	1.8	2.1	2.5
Base case scenario	2.2	0.8	1.3	1.7	2.1	2.6	3.0
High life expectancy scenario (variation of base case)	2.5	0.8	1.3	1.7	2.2	2.8	3.4
Healthy ageing scenario	1.8	0.8	1.2	1.5	1.9	2.3	2.6
Shift to formal care scenario	2.6	0.8	1.5	2.0	2.5	3.0	3.5
Coverage convergence scenario	2.2	0.8	1.3	1.7	2.1	2.6	3.0
Cost convergence scenario	6.0	0.8	1.5	2.4	3.4	5.0	6.8
Cost and coverage convergence scenario	6.0	0.8	1.5	2.4	3.5	5.0	6.9
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	45%	493	578	646	680	715	716
Recipients: receiving institutional care	135%	73	94	118	135	154	172
receiving home care	180%	68	88	117	139	162	190
receiving cash benefits	70%	131	157	182	197	213	223

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.4	3.4	3.6	3.5	3.6	3.8	3.8
Number of students (in thousands)							
Total (students/staff in 2019 = 12.4)	-22.4%	837	844	755	696	689	650
as % of population 5-24	-0.9	74.2	74.3	72.4	73.6	74.1	73.3
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	1.1	0.0	0.4	0.8	1.1	1.1	1.1

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	10.8	18.3	21.9	24.2	26.9	29.2	29.1
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	4.7	0.0	0.6	1.3	2.2	3.4	4.7
TFP risk scenario (-0.2 pps)	0.2	0.0	0.1	0.2	0.2	0.2	0.2
High life expectancy (+2 years) (8)	1.0	0.0	0.0	0.1	0.4	0.6	1.0
Lower fertility (-20%)	2.6	0.0	-0.1	-0.3	0.4	1.4	2.6
Higher TFP growth (+0.2 pps)	-0.5	0.0	0.1	-0.1	-0.3	-0.4	-0.5
Higher employment rate of older workers (+10 pps)	-0.7	0.0	-0.4	-0.8	-1.3	-1.1	-0.7
Higher migration (+33%)	-0.3	0.0	0.0	0.0	-0.1	-0.2	-0.3
Lower migration (-33%)	0.3	0.0	0.0	0.0	0.1	0.2	0.3
Policy scenario linking retirement age to life expectancy	-2.8	0.0	-0.2	-1.2	-2.2	-2.5	-2.8
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	1.1	0.0	0.4	0.6	0.8	1.0	1.1

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

26. FINLAND

Finland							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.2	1.35	1.38	1.42	1.46	1.50	1.53
Life expectancy at birth							
males	6.6	79.5	80.9	82.3	83.7	85.0	86.1
females	5.6	84.8	86.0	87.3	88.4	89.4	90.4
Life expectancy at 65							
males	4.6	18.9	19.8	20.8	21.7	22.7	23.5
females	4.5	22.3	23.3	24.2	25.1	26.0	26.8
Net migration (thousand)	:	17.6	11.3	11.5	12.2	12.7	13.2
Net migration as % of population	:	0.3	0.2	0.2	0.2	0.2	0.3
Population (million)	-0.5	5.5	5.5	5.4	5.3	5.1	5.0
Young population (0-19) as % of total population	-4.7	21.2	18.8	17.4	17.5	16.9	16.5
Prime-age population (25-54) as % of total population	-4.5	37.7	37.8	38.0	36.1	34.9	33.3
Working-age population (20-64) as % of total population	-5.3	56.7	55.3	55.7	54.2	52.5	51.4
Elderly population (65+) as % of total population	10.0	22.1	25.9	27.0	28.3	30.6	32.1
Very elderly population (80+) as % of total population	7.8	5.6	8.4	10.4	11.2	11.6	13.4
Very elderly population (80+) as % of elderly population	16.5	25.2	32.5	38.4	39.4	38.0	41.7
Very elderly population (80+) as % of working-age population	16.2	9.8	15.2	18.6	20.6	22.1	26.1
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.2	1.2	1.3	1.4	1.2	1.2	1.2
Employment (growth rate)	-0.2	0.6	0.0	-0.2	-0.4	-0.4	-0.3
Labour input: hours worked (growth rate)	-0.3	0.3	0.0	-0.2	-0.4	-0.4	-0.3
Labour productivity per hour (growth rate)	1.5	0.8	1.3	1.5	1.5	1.5	1.5
TFP (growth rate)	0.9	0.4	0.9	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.5	0.4	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.4	1.0	1.4	1.6	1.4	1.4	1.4
Potential GDP per worker (growth rate)	1.4	0.6	1.3	1.6	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-546	3,131	3,053	3,018	2,863	2,701	2,585
Population growth (20-64)	-0.2	-0.3	-0.1	-0.4	-0.6	-0.6	-0.5
Labour force 15-64 (thousands)	-405	2,684	2,638	2,615	2,502	2,378	2,279
Labour force 20-64 (thousands)	-377	2,572	2,520	2,523	2,412	2,288	2,196
Participation rate (20-64)	2.8	82.2	82.6	83.6	84.2	84.7	85.0
Participation rate (20-74)	4.0	69.2	69.8	71.9	71.8	72.0	73.2
youngest (20-24)	3.9	70.7	74.5	74.7	74.6	74.6	74.6
prime-age (25-54)	0.2	87.6	87.8	87.7	87.9	88.0	87.8
older (55-64)	9.9	71.5	69.6	74.8	77.7	79.6	81.4
very old (65-74)	13.3	11.5	11.5	13.3	16.9	20.7	24.8
Participation rate (20-64) - females	3.1	80.1	80.5	81.8	82.7	83.2	83.2
Participation rate (20-74) - females	4.9	66.2	66.9	69.3	69.6	69.9	71.1
youngest (20-24)	4.7	67.9	72.6	72.8	72.6	72.6	72.6
prime-age (25-54)	0.7	84.8	85.2	85.4	85.7	85.8	85.5
older (55-64)	9.2	72.1	70.0	74.6	78.4	80.0	81.3
very old (65-74)	13.9	8.2	8.3	10.1	13.2	17.5	22.2
Participation rate (20-64) - males	2.4	84.2	84.5	85.4	85.7	86.2	86.6
Participation rate (20-74) - males	3.0	72.2	72.7	74.4	74.0	74.0	75.3
youngest (20-24)	3.2	73.3	76.3	76.6	76.4	76.4	76.5
prime-age (25-54)	-0.3	90.3	90.4	90.0	90.1	90.0	90.0
older (55-64)	10.7	70.8	69.1	75.0	76.9	79.3	81.5
very old (65-74)	12.4	15.1	15.0	16.7	20.8	23.9	27.5
Average effective exit age - total (1)	3.4	63.7	64.4	65.1	65.8	66.4	67.1
males	3.5	63.9	64.7	65.4	66.1	66.7	67.4
females	3.3	63.5	64.1	64.8	65.5	66.1	66.8
Employment rate (15-64)	2.8	72.9	73.0	74.7	75.1	75.3	75.7
Employment rate (20-64)	2.6	77.1	77.6	78.4	79.1	79.5	79.7
Employment rate (20-74)	3.8	65.1	65.7	67.6	67.5	67.7	68.9
Unemployment rate (15-64)	0.0	6.9	6.9	6.9	6.9	6.9	6.9
Unemployment rate (20-64)	0.1	6.1	6.0	6.2	6.2	6.1	6.2
Unemployment rate (20-74)	-0.1	6.0	5.9	6.1	6.0	5.9	5.9
Employment (20-64) (in millions)	-0.4	2.4	2.4	2.4	2.3	2.1	2.1
Employment (20-74) (in millions)	-0.3	2.5	2.4	2.4	2.4	2.3	2.2
share of youngest (20-24)	-0.8	8%	9%	7%	7%	7%	7%
share of prime-age (25-54)	-6.4	70%	71%	70%	67%	66%	63%
share of older (55-64)	3.6	20%	17%	20%	22%	21%	23%
share of very old (65-74)	3.7	3%	3%	3%	5%	6%	7%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.7	23.3	21.2	22.8	24.6	24.2	26.0
Old-age dependency ratio 20-64 (3)	23.6	38.9	46.8	48.4	52.3	58.2	62.5
Total dependency ratio (4)	18.3	76.4	80.7	79.6	84.6	90.5	94.7
Total economic dependency ratio (5)	6.1	121.4	125.8	121.6	122.9	125.3	127.5
Economic old-age dependency ratio (20-64) (6)	23.8	47.1	57.1	58.3	61.3	66.8	70.9
Economic old-age dependency ratio (20-74) (7)	20.4	45.6	55.4	56.4	58.5	62.8	66.0

Finland

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	1.3	13.0	13.7	12.8	12.7	13.5	14.4
Of which : Old-age and early pensions	1.3	11.2	11.9	11.0	10.9	11.7	12.5
Disability pensions	0.2	1.1	1.2	1.2	1.3	1.4	1.4
Survivors' pensions	-0.2	0.7	0.7	0.7	0.6	0.5	0.5
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	1.2	10.6	11.3	10.4	10.3	11.0	11.7
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.3	0.3	0.3	0.3	0.3	0.3
Public pensions, net	1.0	10.3	10.9	10.2	10.1	10.7	11.4
Public pensions, contributions	-7.8	21.7	12.8	12.9	13.2	13.5	13.9
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	0.0	79.2%	79.2%	79.2%	79.2%	79.2%	79.2%
Pensioners (public, 1000 persons)	267	1,556	1,706	1,712	1,732	1,792	1,823
Public pensioners aged 65+ (1000 persons)	422	1,252	1,492	1,514	1,552	1,632	1,674
Pensioners younger than 65 as % of all pensioners (public)	-11.4	20%	13%	12%	10%	9%	8%
Benefit ratio % (public pensions)	-10.7	52.2	47.3	43.7	41.5	41.2	41.6
Gross replacement rate at retirement % (old-age earnings-related)	-8.5	45.9	36.8	35.2	36.4	36.0	37.3
Average accrual rates % (new pensions, earnings-related)	-0.1	1.7	1.5	1.4	1.5	1.5	1.6
Average contributory period, years (new pensions, earnings-related)	2.4	34.7	35.1	34.9	35.9	35.8	37.1
Contributors (public pensions, 1000 persons)	-232	2,353	2,362	2,356	2,276	2,191	2,122
Support ratio (contributors/100 pensioners, public pensions)	-35	151	138	138	131	122	116
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Lower fertility (-20%)	1.6	0.0	0.0	0.1	0.4	0.9	1.6
Higher TFP growth (+0.2 pps)	-0.5	0.0	0.0	-0.2	-0.4	-0.5	-0.5
TFP risk scenario (-0.2 pps)	0.6	0.0	0.1	0.3	0.4	0.5	0.6
Higher employment rate of older workers (+10 pps)	-0.2	0.0	-0.5	-0.3	-0.3	-0.3	-0.2
Higher migration (+33%)	-0.6	0.0	-0.1	-0.2	-0.3	-0.5	-0.6
Lower migration (-33%)	0.7	0.0	0.1	0.2	0.4	0.5	0.7
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1
Adverse macroeconomic scenario - adverse structural	0.9	0.0	0.2	0.5	0.7	0.8	0.9
Offset declining pension benefit ratio	1.9	0.0	0.0	1.0	1.7	1.9	1.9
Unchanged retirement age	1.9	0.0	0.4	0.8	1.2	1.6	1.9
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	1.3	13.0	13.7	12.8	12.7	13.5	14.4
pps change from 2019 due to:	1.3		0.7	-0.2	-0.3	0.5	1.3
Dependency ratio	6.5		2.7	3.1	4.1	5.5	6.5
Coverage ratio	-1.7		-0.9	-1.2	-1.3	-1.5	-1.7
Of which: old-age	0.1		0.2	0.1	0.1	0.1	0.1
early-age	-7.7		-3.3	-5.0	-6.2	-7.1	-7.7
cohort effect	-5.1		-3.3	-2.9	-3.3	-4.4	-5.1
Benefit ratio	-2.4		-0.8	-1.7	-2.4	-2.5	-2.4
Labour market ratio	-1.0		-0.1	-0.3	-0.5	-0.8	-1.0
Of which: employment rate	-0.4		-0.1	-0.2	-0.3	-0.4	-0.4
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.5		0.0	0.0	-0.2	-0.4	-0.5
Interaction effect (residual)	-0.2		-0.1	-0.1	-0.2	-0.2	-0.2
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	1.3	13.0	0.7	-0.9	-0.1	0.8	0.8
Dependency ratio	6.5		2.7	0.5	1.0	1.4	1.0
Coverage ratio	-1.7		-0.9	-0.2	-0.2	-0.2	-0.1
Of which: old-age	0.1		0.2	-0.1	0.0	0.0	0.0
early-age	-7.7		-3.3	-1.7	-1.2	-1.0	-0.6
cohort effect	-5.1		-3.3	0.4	-0.3	-1.2	-0.7
Benefit ratio	-2.4		-0.8	-0.9	-0.7	-0.1	0.1
Labour market ratio	-1.0		-0.1	-0.2	-0.3	-0.3	-0.2
Of which: employment rate	-0.4		-0.1	-0.2	-0.1	-0.1	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.5		0.0	0.0	-0.2	-0.2	-0.1
Interaction effect (residual)	-0.2		-0.1	0.0	0.0	0.0	0.0

Finland

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.8	6.1	6.5	6.7	6.7	6.8	7.0
AWG risk scenario	1.8	6.1	6.7	7.2	7.4	7.7	7.9
TFP risk scenario	0.8	6.1	6.5	6.7	6.7	6.8	6.9
Demographic scenario	1.2	6.1	6.6	6.8	6.9	7.1	7.3
High life expectancy scenario (variation of demogr. scenario)	1.3	6.1	6.6	6.8	6.9	7.1	7.4
Healthy ageing scenario	0.2	6.1	6.3	6.4	6.3	6.3	6.4
Death-related cost scenario	1.0	6.1	6.5	6.7	6.8	6.9	7.1
Income elasticity scenario	1.4	6.1	6.6	6.9	7.1	7.3	7.5
EU cost convergence scenario	1.5	6.1	6.6	6.9	7.1	7.3	7.6
Labour intensity scenario	1.5	6.1	6.8	7.0	7.1	7.4	7.7
Sector-specific composite indexation scenario	2.1	6.1	6.8	7.3	7.7	8.0	8.3
Non-demographic determinants scenario	3.1	6.1	6.9	7.6	8.2	8.7	9.2

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.1	2.0	2.7	3.3	3.5	3.7	4.1
AWG risk scenario	4.1	2.0	2.9	3.7	4.3	4.9	6.1
TFP risk scenario	2.1	2.0	2.7	3.3	3.5	3.7	4.1
Demographic scenario	2.1	2.0	2.7	3.3	3.5	3.7	4.2
Base case scenario	2.3	2.0	2.8	3.4	3.6	3.9	4.4
High life expectancy scenario (variation of base case)	2.8	2.0	2.8	3.5	3.9	4.2	4.8
Healthy ageing scenario	1.9	2.0	2.7	3.2	3.4	3.6	3.9
Shift to formal care scenario	2.8	2.0	3.1	3.7	4.0	4.3	4.8
Coverage convergence scenario	2.4	2.0	2.8	3.4	3.7	3.9	4.5
Cost convergence scenario	4.4	2.0	2.9	3.8	4.4	5.1	6.4
Cost and coverage convergence scenario	4.5	2.0	2.9	3.8	4.4	5.2	6.5
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	20%	384	434	457	452	449	460
Recipients: receiving institutional care	83%	27	35	43	45	46	50
receiving home care	77%	195	250	301	313	319	345
receiving cash benefits	41%	276	322	361	368	370	388

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.9	5.3	4.9	4.5	4.5	4.4	4.4
Number of students (in thousands)							
Total (students/staff in 2019 = 14.8)	-27.4%	1,230	1,115	1,012	976	936	893
as % of population 5-24	2.6	100.0	98.8	102.8	101.8	101.4	102.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.4	0.0	0.2	0.3	0.4	0.4	0.4

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	3.4	26.5	27.9	27.3	27.4	28.5	29.9
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.9	0.0	0.4	0.9	1.5	2.1	2.9
TFP risk scenario (-0.2 pps)	0.5	0.0	0.1	0.3	0.4	0.5	0.5
High life expectancy (+2 years) (8)	0.3	0.0	0.1	0.2	0.2	0.3	0.3
Lower fertility (-20%)	1.9	0.0	-0.1	-0.2	0.3	0.9	1.9
Higher TFP growth (+0.2 pps)	-0.5	0.0	0.0	-0.2	-0.3	-0.4	-0.5
Higher employment rate of older workers (+10 pps)	-0.7	0.0	-0.9	-0.6	-0.7	-0.8	-0.7
Higher migration (+33%)	-0.8	0.0	-0.1	-0.3	-0.5	-0.7	-0.8
Lower migration (-33%)	1.0	0.0	0.1	0.3	0.5	0.8	1.0
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	1.0	0.0	0.3	0.6	0.8	0.9	1.0

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

27. SWEDEN

Sweden							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.71	1.75	1.78	1.78	1.78	1.78
Life expectancy at birth							
males	5.4	81.4	82.5	83.7	84.8	85.8	86.8
females	5.6	84.7	85.9	87.1	88.2	89.3	90.3
Life expectancy at 65							
males	4.0	19.7	20.4	21.3	22.2	23.0	23.7
females	4.6	22.0	22.9	23.9	24.8	25.7	26.6
Net migration (thousand)	:	66.7	52.1	45.5	39.8	35.1	30.3
Net migration as % of population	:	0.6	0.5	0.4	0.3	0.3	0.2
Population (million)	2.8	10.3	11.1	11.7	12.3	12.7	13.1
Young population (0-19) as % of total population	-2.4	23.3	22.8	21.8	21.8	21.5	20.9
Prime-age population (25-54) as % of total population	-4.3	39.6	37.7	38.1	36.5	36.1	35.3
Working-age population (20-64) as % of total population	-4.0	56.8	55.7	55.4	54.7	52.9	52.8
Elderly population (65+) as % of total population	6.3	20.0	21.4	22.8	23.5	25.6	26.3
Very elderly population (80+) as % of total population	5.5	5.2	7.2	7.7	8.8	9.5	10.6
Very elderly population (80+) as % of elderly population	14.6	25.8	33.7	33.8	37.2	36.9	40.4
Very elderly population (80+) as % of working-age population	11.0	9.1	13.0	13.9	16.0	17.9	20.1
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.8	1.8	2.2	1.9	1.7	1.7	1.7
Employment (growth rate)	0.4	1.1	1.1	0.4	0.2	0.2	0.1
Labour input: hours worked (growth rate)	0.4	0.8	1.1	0.4	0.2	0.2	0.1
Labour productivity per hour (growth rate)	1.4	1.0	1.1	1.5	1.5	1.5	1.5
TFP (growth rate)	0.9	0.5	0.8	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.5	0.3	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.3	0.8	1.6	1.4	1.3	1.4	1.4
Potential GDP per worker (growth rate)	1.3	0.7	1.0	1.5	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	1,075	5,833	6,205	6,489	6,716	6,730	6,908
Population growth (20-64)	-0.5	0.7	0.4	0.4	0.2	0.1	0.1
Labour force 15-64 (thousands)	982	5,312	5,680	5,926	6,112	6,156	6,294
Labour force 20-64 (thousands)	921	5,094	5,414	5,664	5,850	5,877	6,015
Participation rate (20-64)	-0.3	87.3	87.2	87.3	87.1	87.3	87.1
Participation rate (20-74)	-0.6	76.2	76.6	76.1	76.2	74.8	75.6
youngest (20-24)	3.6	71.5	75.1	75.2	75.2	75.2	75.2
prime-age (25-54)	0.5	91.2	91.7	91.7	91.8	91.8	91.7
older (55-64)	-2.8	81.7	79.4	78.9	78.9	78.9	78.9
very old (65-74)	-0.4	17.8	17.8	17.5	17.5	17.3	17.4
Participation rate (20-64) - females	0.4	84.8	85.0	85.2	85.1	85.4	85.1
Participation rate (20-74) - females	0.1	73.2	73.7	73.3	73.6	72.4	73.4
youngest (20-24)	5.2	68.7	73.9	74.0	74.0	74.0	74.0
prime-age (25-54)	1.3	88.7	89.7	89.9	90.0	90.1	90.0
older (55-64)	-3.3	79.1	76.1	75.3	75.7	75.8	75.9
very old (65-74)	-1.3	14.8	13.4	13.6	13.4	13.4	13.5
Participation rate (20-64) - males	-0.9	89.8	89.4	89.3	89.0	89.1	88.9
Participation rate (20-74) - males	-1.3	79.1	79.4	78.6	78.6	77.2	77.8
youngest (20-24)	2.2	74.1	76.3	76.4	76.4	76.3	76.3
prime-age (25-54)	-0.3	93.7	93.6	93.3	93.4	93.4	93.3
older (55-64)	-2.5	84.3	82.6	82.4	81.9	81.7	81.8
very old (65-74)	0.2	20.9	22.3	21.4	21.5	21.2	21.2
Average effective exit age - total (1)	0.1	65.0	65.1	65.1	65.1	65.1	65.1
males	0.0	65.6	65.6	65.6	65.6	65.6	65.6
females	0.1	64.5	64.6	64.6	64.6	64.6	64.6
Employment rate (15-64)	0.8	77.2	77.9	78.2	78.2	78.1	78.0
Employment rate (20-64)	0.8	82.1	83.1	83.2	83.0	83.2	83.0
Employment rate (20-74)	0.4	71.8	73.1	72.6	72.7	71.4	72.2
Unemployment rate (15-64)	-1.4	7.0	5.6	5.6	5.6	5.6	5.6
Unemployment rate (20-64)	-1.2	5.9	4.7	4.7	4.7	4.7	4.7
Unemployment rate (20-74)	-1.2	5.8	4.6	4.6	4.6	4.6	4.6
Employment (20-64) (in millions)	0.9	4.8	5.2	5.4	5.6	5.6	5.7
Employment (20-74) (in millions)	1.0	5.0	5.4	5.6	5.8	5.9	6.0
share of youngest (20-24)	1.0	7%	9%	8%	8%	8%	8%
share of prime-age (25-54)	-2.5	70%	69%	70%	68%	69%	68%
share of older (55-64)	1.4	18%	19%	18%	20%	18%	20%
share of very old (65-74)	0.0	4%	4%	4%	4%	4%	4%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2.3	20.2	21.3	20.3	22.8	21.0	22.5
Old-age dependency ratio 20-64 (3)	14.6	35.2	38.4	41.2	43.0	48.4	49.8
Total dependency ratio (4)	13.2	76.2	79.4	80.7	82.8	89.1	89.4
Total economic dependency ratio (5)	13.1	106.2	107.9	108.9	112.1	117.5	119.3
Economic old-age dependency ratio (20-64) (6)	17.2	38.7	42.3	45.5	47.9	53.6	55.9
Economic old-age dependency ratio (20-74) (7)	16.5	37.2	40.8	43.8	46.2	51.3	53.7

Sweden

Pension expenditure projections

Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	-0.1	7.6	7.4	7.0	7.0	7.4	7.5
Of which : Old-age and early pensions	0.1	6.7	6.5	6.2	6.2	6.6	6.7
Disability pensions	0.0	0.8	0.8	0.8	0.8	0.8	0.8
Survivors' pensions	-0.2	0.2	0.1	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	-0.5	6.2	6.0	5.6	5.4	5.7	5.7
Private occupational pensions, gross	-2.1	3.3	2.6	2.0	1.7	1.3	1.2
Private individual pensions, gross	0.5	0.7	0.8	0.9	1.1	1.2	1.2
New pensions, gross (old-age and early pensions)	0.0	0.3	0.3	0.3	0.3	0.3	0.3
Public pensions, net	0.2	5.8	5.6	5.5	5.5	5.9	6.0
Public pensions, contributions	0.3	5.7	5.9	5.9	6.0	6.0	6.1
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	3.5	76.1%	76.4%	77.5%	78.7%	79.2%	79.6%
Pensioners (public, 1000 persons)	1,866	2,638	3,068	3,396	3,738	4,219	4,504
Public pensioners aged 65+ (1000 persons)	1,830	2,239	2,670	3,013	3,317	3,818	4,069
Pensioners younger than 65 as % of all pensioners (public)	-5.5	15%	13%	11%	11%	9%	10%
Benefit ratio % (public pensions)	-10.7	35.5	31.9	29.0	27.1	25.7	24.8
Gross replacement rate at retirement % (old-age earnings-related)	-4.4	34.2	35.3	33.8	32.8	31.4	29.9
Average accrual rates % (new pensions, earnings-related)	-0.1	0.9	0.9	0.9	0.8	0.8	0.8
Average contributory period, years (new pensions, earnings-related)	1.0	40.5	40.6	38.5	40.2	40.7	41.5
Contributors (public pensions, 1000 persons)	1,070	5,848	6,183	6,474	6,692	6,738	6,918
Support ratio (contributors/100 pensioners, public pensions)	-68	222	202	191	179	160	154
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.2	0.0	0.1	0.1	0.1	0.2	0.2
Lower fertility (-20%)	1.0	0.0	0.0	0.1	0.3	0.6	1.0
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TFP risk scenario (-0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate of older workers (+10 pps)	-0.2	0.0	-0.2	-0.2	-0.2	-0.3	-0.2
Higher migration (+33%)	-0.3	0.0	-0.1	-0.3	-0.3	-0.4	-0.3
Lower migration (-33%)	0.4	0.0	0.2	0.3	0.4	0.5	0.4
Policy scenario linking retirement age to life expectancy	-0.7	0.0	-0.3	-0.3	-0.4	-0.5	-0.7
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.3	0.0	0.2	0.3	0.2	0.3	0.3
Offset declining pension benefit ratio	3.4	0.0	0.2	1.2	2.0	2.8	3.4
Unchanged retirement age	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-0.1	7.6	7.4	7.0	7.0	7.4	7.5
pps change from 2019 due to:	-0.1		-0.3	-0.6	-0.6	-0.2	-0.1
Dependency ratio	2.6		0.7	1.2	1.6	2.4	2.6
Coverage ratio	0.1		0.0	-0.1	0.0	0.1	0.1
Of which: old-age	0.6		0.2	0.3	0.4	0.5	0.6
early-age	-1.0		-0.5	-1.1	-1.0	-1.1	-1.0
cohort effect	-2.0		-0.7	-1.1	-1.2	-2.1	-2.0
Benefit ratio	-2.7		-0.9	-1.6	-2.1	-2.5	-2.7
Labour market ratio	-0.1		-0.1	-0.1	-0.1	-0.1	-0.1
Of which: employment rate	-0.1		-0.1	-0.1	-0.1	-0.1	-0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.0	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.1		0.0	-0.1	-0.1	-0.1	-0.1
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-0.1	7.6	-0.3	-0.3	0.0	0.4	0.1
Dependency ratio	2.6		0.7	0.5	0.3	0.9	0.2
Coverage ratio	0.1		0.0	-0.1	0.1	0.0	0.1
Of which: old-age	0.6		0.2	0.0	0.1	0.2	0.1
early-age	-1.0		-0.5	-0.6	0.1	-0.2	0.1
cohort effect	-2.0		-0.7	-0.4	0.0	-1.0	0.1
Benefit ratio	-2.7		-0.9	-0.7	-0.5	-0.4	-0.3
Labour market ratio	-0.1		-0.1	0.0	0.0	-0.1	0.1
Of which: employment rate	-0.1		-0.1	0.0	0.0	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	0.0		0.0	0.0	0.0	0.0	0.0
Interaction effect (residual)	-0.1		0.0	0.0	0.0	0.0	0.0

Sweden

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.8	7.2	7.4	7.6	7.7	7.9	8.0
AWG risk scenario	1.7	7.2	7.7	8.2	8.5	8.8	9.0
TFP risk scenario	0.7	7.2	7.4	7.6	7.7	7.8	7.9
Demographic scenario	0.9	7.2	7.5	7.6	7.8	8.0	8.1
High life expectancy scenario (variation of demogr. scenario)	1.1	7.2	7.5	7.7	7.8	8.1	8.3
Healthy ageing scenario	0.2	7.2	7.3	7.3	7.3	7.4	7.4
Death-related cost scenario	0.7	7.2	7.4	7.6	7.7	7.8	7.9
Income elasticity scenario	1.2	7.2	7.5	7.8	8.0	8.2	8.4
EU cost convergence scenario	0.9	7.2	7.5	7.6	7.8	8.0	8.2
Labour intensity scenario	1.1	7.2	7.3	7.5	7.7	8.1	8.4
Sector-specific composite indexation scenario	1.1	7.2	7.5	7.7	7.9	8.1	8.3
Non-demographic determinants scenario	3.0	7.2	7.8	8.5	9.2	9.8	10.2

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.2	3.3	3.9	4.3	4.6	5.1	5.5
AWG risk scenario	6.1	3.3	4.3	5.2	6.3	7.7	9.4
TFP risk scenario	2.2	3.3	3.9	4.3	4.6	5.1	5.5
Demographic scenario	2.4	3.3	4.0	4.5	4.8	5.3	5.7
Base case scenario	2.6	3.3	3.9	4.4	4.8	5.4	5.9
High life expectancy scenario (variation of base case)	3.3	3.3	4.0	4.5	5.1	5.9	6.6
Healthy ageing scenario	1.9	3.3	3.8	4.2	4.4	4.9	5.2
Shift to formal care scenario	3.2	3.3	4.4	4.9	5.4	6.0	6.5
Coverage convergence scenario	6.6	3.3	4.3	5.3	6.5	8.1	9.9
Cost convergence scenario	2.6	3.3	3.9	4.4	4.8	5.4	5.9
Cost and coverage convergence scenario	6.7	3.3	4.3	5.4	6.5	8.1	10.0
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	56%	413	488	532	570	609	643
Recipients: receiving institutional care	130%	63	84	101	114	131	145
receiving home care	90%	254	330	364	405	442	482
receiving cash benefits	90%	254	330	364	405	442	482

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.5	5.9	5.5	5.4	5.3	5.4	5.4
Number of students (in thousands)							
Total (students/staff in 2019 = 12.7)	14.6%	2,309	2,442	2,475	2,549	2,634	2,647
as % of population 5-24	-2.9	97.0	92.7	93.7	94.2	93.9	94.1
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.8	0.0	0.3	0.6	0.8	0.8	0.8

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	2.3	24.1	24.2	24.3	24.7	25.8	26.4
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	4.8	0.0	0.7	1.5	2.4	3.6	4.8
TFP risk scenario (-0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High life expectancy (+2 years) (8)	0.7	0.0	0.1	0.2	0.3	0.5	0.7
Lower fertility (-20%)	1.4	0.0	-0.1	-0.2	0.1	0.7	1.4
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.5	-0.5	-0.5	-0.7	-0.6
Higher migration (+33%)	-0.7	0.0	-0.2	-0.5	-0.6	-0.8	-0.7
Lower migration (-33%)	0.9	0.0	0.3	0.5	0.7	0.9	0.9
Policy scenario linking retirement age to life expectancy	-1.5	0.0	-0.5	-0.7	-0.8	-1.2	-1.5
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.1	0.1	0.0	0.1	0.0
Adverse macroeconomic scenario - adverse structural	0.4	0.0	0.4	0.4	0.4	0.4	0.4

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

28. NORWAY

Norway							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.53	1.55	1.58	1.60	1.62	1.65
Life expectancy at birth							
males	5.5	81.4	82.5	83.7	84.8	85.9	86.9
females	5.7	84.6	85.9	87.1	88.2	89.3	90.3
Life expectancy at 65							
males	4.1	19.7	20.5	21.4	22.2	23.0	23.8
females	4.7	21.9	22.9	23.9	24.8	25.7	26.6
Net migration (thousand)	:	25.3	27.2	25.9	25.2	24.4	23.4
Net migration as % of population	:	0.5	0.5	0.4	0.4	0.4	0.3
Population (million)	1.4	5.3	5.8	6.1	6.4	6.6	6.7
Young population (0-19) as % of total population	-4.3	23.4	21.3	20.4	20.0	19.5	19.2
Prime-age population (25-54) as % of total population	-5.4	40.9	39.4	39.3	37.7	36.6	35.5
Working-age population (20-64) as % of total population	-6.1	59.2	58.1	56.4	55.5	54.2	53.0
Elderly population (65+) as % of total population	10.4	17.4	20.6	23.3	24.5	26.3	27.8
Very elderly population (80+) as % of total population	6.7	4.3	6.2	7.6	9.1	10.0	10.9
Very elderly population (80+) as % of elderly population	14.7	24.5	30.1	32.7	37.1	37.8	39.3
Very elderly population (80+) as % of working-age population	13.4	7.2	10.6	13.5	16.4	18.4	20.6
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.7	1.8	1.6	1.8	1.7	1.6	1.5
Employment (growth rate)	0.2	1.7	0.5	0.2	0.2	0.0	0.0
Labour input: hours worked (growth rate)	0.2	1.7	0.2	0.2	0.2	0.0	0.0
Labour productivity per hour (growth rate)	1.5	0.1	1.4	1.5	1.5	1.5	1.5
TFP (growth rate)	0.9	-0.2	1.0	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.3	0.4	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.2	1.1	1.0	1.3	1.4	1.3	1.3
Potential GDP per worker (growth rate)	1.5	0.1	1.2	1.5	1.5	1.5	1.5
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	398	3,164	3,360	3,444	3,532	3,554	3,562
Population growth (20-64)	-0.6	0.6	0.5	0.2	0.2	0.0	0.0
Labour force 15-64 (thousands)	298	2,725	2,869	2,932	3,003	3,019	3,023
Labour force 20-64 (thousands)	294	2,599	2,737	2,809	2,874	2,888	2,893
Participation rate (20-64)	-0.9	82.1	81.5	81.6	81.4	81.3	81.2
Participation rate (20-74)	-3.1	73.1	72.2	71.2	71.4	70.2	70.0
youngest (20-24)	1.6	70.7	72.2	72.4	72.3	72.3	72.3
prime-age (25-54)	0.0	86.3	86.1	86.2	86.3	86.3	86.3
older (55-64)	-3.6	73.9	71.5	70.0	70.3	70.2	70.3
very old (65-74)	-0.8	19.0	19.9	18.5	18.6	18.5	18.2
Participation rate (20-64) - females	0.3	79.1	78.9	79.3	79.5	79.5	79.4
Participation rate (20-74) - females	-2.0	69.6	69.1	68.4	69.0	67.9	67.6
youngest (20-24)	1.7	69.1	70.7	71.0	70.8	70.8	70.8
prime-age (25-54)	1.7	83.5	84.0	84.9	85.2	85.2	85.2
older (55-64)	-2.9	69.4	66.8	64.3	66.0	66.4	66.5
very old (65-74)	-1.0	14.9	15.1	14.0	13.8	14.1	13.9
Participation rate (20-64) - males	-2.1	85.0	83.9	83.7	83.1	82.9	82.9
Participation rate (20-74) - males	-4.2	76.4	75.2	73.8	73.7	72.5	72.2
youngest (20-24)	1.5	72.2	73.7	73.8	73.7	73.7	73.7
prime-age (25-54)	-1.6	89.0	88.1	87.5	87.4	87.3	87.4
older (55-64)	-4.5	78.3	76.0	75.4	74.2	73.8	73.9
very old (65-74)	-0.9	23.2	24.6	23.1	23.3	22.7	22.3
Average effective exit age - total (1)	0.0	65.4	65.4	65.4	65.4	65.4	65.4
males	0.0	66.0	66.0	66.0	66.0	66.0	66.0
females	0.0	64.7	64.7	64.7	64.7	64.7	64.7
Employment rate (15-64)	-0.4	75.2	74.8	75.2	75.0	74.9	74.9
Employment rate (20-64)	-0.7	79.4	78.9	79.0	78.9	78.7	78.7
Employment rate (20-74)	-2.9	70.7	69.9	69.0	69.2	68.1	67.9
Unemployment rate (15-64)	-0.2	3.8	3.7	3.6	3.6	3.6	3.6
Unemployment rate (20-64)	-0.2	3.3	3.2	3.1	3.1	3.1	3.1
Unemployment rate (20-74)	-0.2	3.2	3.1	3.0	3.0	3.0	3.0
Employment (20-64) (in millions)	0.3	2.5	2.6	2.7	2.8	2.8	2.8
Employment (20-74) (in millions)	0.3	2.6	2.8	2.8	2.9	2.9	2.9
share of youngest (20-24)	-0.6	9%	9%	8%	8%	8%	8%
share of prime-age (25-54)	-2.2	70%	69%	71%	69%	68%	68%
share of older (55-64)	1.9	18%	19%	17%	19%	19%	20%
share of very old (65-74)	0.9	4%	4%	4%	4%	5%	5%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3.2	20.0	21.7	20.5	22.5	22.7	23.3
Old-age dependency ratio 20-64 (3)	23.0	29.4	35.4	41.3	44.1	48.5	52.4
Total dependency ratio (4)	19.6	69.0	72.1	77.4	80.1	84.4	88.6
Total economic dependency ratio (5)	23.7	104.6	109.0	114.7	118.7	123.2	128.3
Economic old-age dependency ratio (20-64) (6)	28.6	33.0	40.4	47.6	51.4	56.6	61.6
Economic old-age dependency ratio (20-74) (7)	27.0	31.7	38.7	45.5	49.3	54.0	58.7

Norway							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	2.6	11.0	12.3	12.6	12.7	13.2	13.6
Of which : Old-age and early pensions	2.2	7.6	8.8	9.2	9.1	9.5	9.9
Disability pensions	0.4	3.3	3.5	3.4	3.6	3.6	3.7
Survivors' pensions	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings-related pensions (old-age and early pensions), gross	4.2	5.0	6.9	8.1	8.5	8.9	9.2
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	-0.1	0.5	0.4	0.4	0.4	0.4	0.4
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	2.6	11.0	12.3	12.6	12.7	13.2	13.6
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	1,597	1,325	1,788	2,119	2,422	2,765	2,922
Public pensioners aged 65+ (1000 persons)	1,465	938	1,315	1,652	1,924	2,247	2,403
Pensioners younger than 65 as % of all pensioners (public)	-11.5	29%	26%	22%	21%	19%	18%
Benefit ratio % (public pensions)	-21.9	56.0	47.7	42.3	38.1	34.9	34.1
Gross replacement rate at retirement % (old-age earnings-related)	:	:	:	:	:	:	:
Average accrual rates % (new pensions, earnings-related)	0.0	0.9	0.9	0.9	0.9	0.9	0.8
Average contributory period, years (new pensions, earnings-related)	-8.4	38.6	33.5	30.3	27.9	27.9	30.2
Contributors (public pensions, 1000 persons)	:	:	:	:	:	:	:
Support ratio (contributors/100 pensioners, public pensions)	:	:	:	:	:	:	:
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.2	0.0	0.1	0.1	0.2	0.2	0.2
Lower fertility (-20%)	1.4	0.0	0.0	0.2	0.5	0.9	1.4
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TFP risk scenario (-0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.4	-0.5	-0.4	-0.5	-0.6
Higher migration (+33%)	-0.7	0.0	-0.2	-0.5	-0.6	-0.7	-0.7
Lower migration (-33%)	0.9	0.0	0.3	0.5	0.8	0.9	0.9
Policy scenario linking retirement age to life expectancy	-0.4	0.0	-0.1	-0.2	-0.3	-0.4	-0.4
Adverse macroeconomic scenario - lagged recovery	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adverse macroeconomic scenario - adverse structural	0.4	0.0	0.3	0.3	0.3	0.3	0.4
Offset declining pension benefit ratio	:	:	:	:	:	:	:
Unchanged retirement age	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2.6	11.0	12.3	12.6	12.7	13.2	13.6
pps change from 2019 due to:	2.6		1.4	1.7	1.8	2.2	2.6
Dependency ratio	7.4		2.3	4.2	5.1	6.3	7.4
Coverage ratio	1.1		0.6	0.5	1.1	1.5	1.1
Of which: old-age	3.0		1.1	1.7	2.5	3.2	3.0
early-age	1.0		1.5	1.0	0.8	1.0	1.0
cohort effect	-5.8		-1.9	-3.8	-3.8	-4.9	-5.8
Benefit ratio	-5.5		-1.4	-2.8	-4.1	-5.2	-5.5
Labour market ratio	0.0		0.0	0.0	0.0	0.0	0.0
Of which: employment rate	0.1		0.1	0.1	0.1	0.1	0.1
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		-0.1	-0.1	-0.1	-0.1	-0.1
Interaction effect (residual)	-0.4		-0.1	-0.2	-0.3	-0.4	-0.4
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	2.6	11.0	1.4	0.3	0.1	0.5	0.4
Dependency ratio	7.4		2.3	2.0	0.8	1.3	1.1
Coverage ratio	1.1		0.6	-0.1	0.5	0.4	-0.3
Of which: old-age	3.0		1.1	0.6	0.8	0.7	-0.2
early-age	1.0		1.5	-0.4	-0.3	0.2	0.0
cohort effect	-5.8		-1.9	-1.9	0.0	-1.0	-1.0
Benefit ratio	-5.5		-1.4	-1.4	-1.3	-1.1	-0.3
Labour market ratio	0.0		0.0	-0.1	0.1	0.0	0.0
Of which: employment rate	0.1		0.1	0.0	0.0	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.1		-0.1	0.0	0.0	-0.1	0.0
Interaction effect (residual)	-0.4		-0.1	-0.1	-0.1	-0.1	0.0

Norway

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.1	7.0	7.4	7.7	7.9	8.0	8.2
AWG risk scenario	2.1	7.0	7.7	8.2	8.6	8.9	9.1
TFP risk scenario	1.1	7.0	7.4	7.6	7.8	8.0	8.1
Demographic scenario	1.4	7.0	7.5	7.8	8.0	8.2	8.4
High life expectancy scenario (variation of demogr. scenario)	1.5	7.0	7.5	7.8	8.1	8.3	8.6
Healthy ageing scenario	0.5	7.0	7.3	7.4	7.4	7.5	7.5
Death-related cost scenario	:	7.0	:	:	:	:	:
Income elasticity scenario	1.7	7.0	7.5	7.9	8.2	8.5	8.7
EU cost convergence scenario	1.4	7.0	7.5	7.8	8.0	8.3	8.5
Labour intensity scenario	2.5	7.0	7.7	8.3	8.7	9.1	9.6
Sector-specific composite indexation scenario	2.7	7.0	7.8	8.5	9.0	9.4	9.7
Non-demographic determinants scenario	3.4	7.0	7.9	8.6	9.3	10.0	10.4

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	3.9	4.0	4.9	5.9	6.6	7.4	8.0
AWG risk scenario	4.7	4.0	5.0	6.1	7.0	7.9	8.7
TFP risk scenario	3.9	4.0	4.9	5.9	6.6	7.4	8.0
Demographic scenario	3.5	4.0	4.8	5.7	6.4	7.1	7.5
Base case scenario	4.5	4.0	4.9	6.1	6.9	7.8	8.5
High life expectancy scenario (variation of base case)	5.5	4.0	5.0	6.3	7.4	8.6	9.6
Healthy ageing scenario	3.5	4.0	4.8	5.7	6.4	7.0	7.5
Shift to formal care scenario	5.1	4.0	5.4	6.6	7.5	8.4	9.2
Coverage convergence scenario	4.5	4.0	4.9	6.1	6.9	7.8	8.5
Cost convergence scenario	5.3	4.0	5.0	6.2	7.2	8.3	9.3
Cost and coverage convergence scenario	5.3	4.0	5.0	6.2	7.2	8.3	9.3
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	62%	276	327	368	400	427	446
Recipients: receiving institutional care	172%	45	60	80	96	112	123
receiving home care	96%	200	254	299	337	368	392
receiving cash benefits	110%	92	118	143	163	181	194

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.6	7.2	6.8	6.6	6.6	6.6	6.7
Number of students (in thousands)							
Total (students/staff in 2019 = 8.4)	2.3%	1,172	1,155	1,156	1,185	1,193	1,199
as % of population 5-24	0.7	90.0	89.2	90.6	90.4	90.4	90.7
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.9	0.0	0.4	0.7	0.9	0.9	0.9

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	7.1	29.2	31.4	32.8	33.9	35.3	36.4
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	1.7	0.0	0.3	0.7	1.1	1.4	1.7
TFP risk scenario (-0.2 pps)	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1
High life expectancy (+2 years) (8)	0.8	0.0	0.1	0.2	0.4	0.6	0.8
Lower fertility (-20%)	1.8	0.0	-0.2	-0.4	0.2	0.9	1.8
Higher TFP growth (+0.2 pps)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate of older workers (+10 pps)	-1.1	0.0	-0.7	-0.9	-0.8	-1.1	-1.1
Higher migration (+33%)	-1.3	0.0	-0.4	-0.7	-1.0	-1.3	-1.3
Lower migration (-33%)	1.7	0.0	0.4	0.8	1.2	1.6	1.7
Policy scenario linking retirement age to life expectancy	-1.2	0.0	-0.2	-0.4	-0.7	-1.0	-1.2
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.6	0.0	0.6	0.6	0.6	0.6	0.6

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

29. EURO AREA

Euro-area							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.51	1.55	1.58	1.60	1.63	1.65
Life expectancy at birth							
males	6.6	79.9	81.4	82.8	84.1	85.3	86.5
females	5.6	85.0	86.3	87.5	88.6	89.7	90.6
Life expectancy at 65							
males	4.6	19.1	20.1	21.1	22.0	22.9	23.7
females	4.5	22.6	23.5	24.5	25.4	26.3	27.1
Net migration (thousand)	:	1249.9	870.8	861.9	855.9	850.1	844.5
Net migration as % of population	:	0.4	0.3	0.2	0.2	0.3	0.3
Population (million)	-9.2	342.4	346.6	347.0	344.2	338.2	333.1
Young population (0-19) as % of total population	-1.7	20.3	19.1	18.4	18.5	18.6	18.6
Prime-age population (25-54) as % of total population	-6.0	39.9	36.6	35.4	34.6	34.3	33.9
Working-age population (20-64) as % of total population	-7.7	58.9	56.0	53.3	51.7	51.3	51.2
Elderly population (65+) as % of total population	9.4	20.8	24.9	28.3	29.8	30.1	30.2
Very elderly population (80+) as % of total population	6.8	6.3	7.6	9.5	11.9	12.8	13.1
Very elderly population (80+) as % of elderly population	13.2	30.1	30.5	33.6	40.1	42.4	43.3
Very elderly population (80+) as % of working-age population	14.9	10.6	13.5	17.9	23.1	24.9	25.5
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.3	1.4	0.9	1.4	1.4	1.4	1.4
Employment (growth rate)	-0.1	0.8	-0.2	-0.2	-0.2	-0.1	-0.1
Labour input: hours worked (growth rate)	-0.1	0.7	-0.2	-0.3	-0.2	-0.1	-0.1
Labour productivity per hour (growth rate)	1.4	0.7	1.1	1.7	1.6	1.6	1.6
TFP (growth rate)	0.9	0.5	0.7	1.1	1.1	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.2	0.4	0.6	0.6	0.6	0.5
Potential GDP per capita (growth rate)	1.3	1.1	0.9	1.5	1.5	1.6	1.5
Potential GDP per worker (growth rate)	1.4	0.6	1.1	1.7	1.6	1.6	1.6
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-31,044	201,743	194,220	184,817	177,979	173,612	170,699
Population growth (20-64)	-0.1	0.0	-0.5	-0.4	-0.3	-0.1	-0.2
Labour force 15-64 (thousands)	-20,234	161,783	158,341	152,261	147,150	143,836	141,549
Labour force 20-64 (thousands)	-20,003	158,252	154,819	148,869	143,826	140,505	138,249
Participation rate (20-64)	2.5	78.4	79.7	80.5	80.8	80.9	81.0
Participation rate (20-74)	1.9	68.0	68.0	68.1	69.0	69.5	69.9
youngest (20-24)	1.5	61.0	61.4	62.4	62.4	62.2	62.4
prime-age (25-54)	0.6	85.8	86.2	86.2	86.4	86.4	86.4
older (55-64)	10.0	63.7	69.9	72.1	72.5	73.3	73.7
very old (65-74)	11.5	9.5	15.4	16.9	18.3	19.5	21.0
Participation rate (20-64) - females	4.6	72.8	75.4	76.7	77.2	77.4	77.4
Participation rate (20-74) - females	4.2	62.3	63.5	64.3	65.3	66.0	66.5
youngest (20-24)	1.7	57.2	57.8	58.9	58.9	58.6	58.9
prime-age (25-54)	2.2	80.3	81.8	82.1	82.4	82.4	82.5
older (55-64)	13.6	57.5	65.5	69.0	69.8	70.8	71.1
very old (65-74)	12.8	6.8	13.4	15.4	17.0	18.0	19.5
Participation rate (20-64) - males	0.4	84.1	84.0	84.3	84.4	84.4	84.5
Participation rate (20-74) - males	-0.5	73.8	72.5	72.0	72.7	73.0	73.3
youngest (20-24)	1.3	64.5	64.9	65.7	65.7	65.5	65.8
prime-age (25-54)	-1.1	91.4	90.6	90.2	90.3	90.3	90.3
older (55-64)	6.1	70.2	74.4	75.3	75.2	75.8	76.3
very old (65-74)	10.0	12.5	17.6	18.5	19.8	21.1	22.4
Average effective exit age - total (1)	2.1	63.9	65.1	65.5	65.7	65.9	66.0
males	2.1	64.0	65.2	65.5	65.7	65.9	66.1
females	2.1	63.9	65.1	65.4	65.7	65.8	66.0
Employment rate (15-64)	3.2	68.0	68.7	70.3	71.1	71.1	71.2
Employment rate (20-64)	3.7	72.6	73.6	75.1	76.1	76.2	76.3
Employment rate (20-74)	3.0	63.0	62.9	63.6	65.1	65.6	66.0
Unemployment rate (15-64)	-1.7	7.7	7.9	7.0	6.1	6.0	6.0
Unemployment rate (20-64)	-1.7	7.5	7.7	6.8	5.9	5.8	5.8
Unemployment rate (20-74)	-1.7	7.4	7.5	6.6	5.7	5.6	5.6
Employment (20-64) (in millions)	-16.2	146.4	142.9	138.8	135.4	132.3	130.2
Employment (20-74) (in millions)	-11.6	149.8	149.4	146.2	142.8	139.9	138.2
share of youngest (20-24)	0.4	6%	7%	7%	7%	7%	7%
share of prime-age (25-54)	-5.9	73%	68%	68%	68%	68%	67%
share of older (55-64)	2.1	19%	21%	21%	20%	20%	21%
share of very old (65-74)	3.5	2%	4%	5%	5%	5%	6%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.8	23.1	24.9	23.8	23.5	23.3	23.8
Old-age dependency ratio 20-64 (3)	23.6	35.3	44.4	53.2	57.6	58.6	58.9
Total dependency ratio (4)	25.5	69.7	78.5	87.8	93.4	94.8	95.2
Total economic dependency ratio (5)	12.5	128.6	132.0	137.4	141.0	141.8	141.1
Economic old-age dependency ratio (20-64) (6)	24.6	46.3	55.7	65.4	70.1	71.1	71.0
Economic old-age dependency ratio (20-74) (7)	21.6	45.3	53.3	62.1	66.4	67.2	66.9

Euro-area							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	0.1	12.1	13.1	13.4	13.1	12.5	12.1
Of which : Old-age and early pensions	0.7	9.6	10.6	11.1	10.9	10.4	10.2
Disability pensions	-0.1	0.9	0.9	0.8	0.8	0.8	0.8
Survivors' pensions	-0.5	1.6	1.5	1.4	1.3	1.2	1.0
Other	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Earnings-related pensions (old-age and early pensions), gross	0.4	9.0	9.9	10.3	10.0	9.6	9.4
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.3	0.4	0.4	0.3	0.3	0.3
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	0.5	10.1	10.2	10.5	10.5	10.6	10.6
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	23,711	93,137	104,750	115,279	119,657	118,874	116,848
Public pensioners aged 65+ (1000 persons)	26,304	69,054	81,244	92,562	97,311	97,051	95,357
Pensioners younger than 65 as % of all pensioners (public)	-7.5	26%	22%	20%	19%	18%	18%
Benefit ratio % (public pensions)	-10.0	42.4	40.8	37.6	34.7	32.9	32.4
Gross replacement rate at retirement % (old-age earnings-related)	-8.9	46.9	44.4	40.3	38.7	38.2	38.0
Average accrual rates % (new pensions, earnings-related)	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:
Contributors (public pensions, 1000 persons)	-12,473	153,367	153,778	149,765	145,666	143,020	140,894
Support ratio (contributors/100 pensioners, public pensions)	-44	165	147	130	122	120	121
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.4	0.0	0.1	0.1	0.2	0.3	0.4
Lower fertility (-20%)	1.2	0.0	0.0	0.1	0.4	0.8	1.2
Higher TFP growth (+0.2 pps)	-0.5	0.0	-0.1	-0.3	-0.4	-0.5	-0.5
TFP risk scenario (-0.2 pps)	0.5	0.0	0.0	0.1	0.3	0.4	0.5
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.7	-0.7	-0.6	-0.4	-0.3
Higher migration (+33%)	-0.4	0.0	-0.1	-0.2	-0.3	-0.4	-0.4
Lower migration (-33%)	0.4	0.0	0.1	0.3	0.4	0.4	0.4
Policy scenario linking retirement age to life expectancy	-1.1	0.0	-0.3	-0.6	-0.9	-1.0	-1.1
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	1.0	0.0	0.3	0.5	0.8	0.9	1.0
Offset declining pension benefit ratio	:	:	:	:	:	:	:
Unchanged retirement age	0.9	0.0	0.7	0.9	0.8	0.9	1.0
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	0.1	12.1	13.1	13.4	13.1	12.5	12.1
pps change from 2019 due to:	0.1		1.0	1.3	1.0	0.4	0.1
Dependency ratio	7.0		3.1	5.6	6.7	6.9	7.0
Coverage ratio	-1.5		-0.9	-1.4	-1.4	-1.4	-1.5
Of which: old-age	-0.3		-0.4	-0.4	-0.2	-0.2	-0.3
early-age	-2.6		-1.1	-1.9	-2.2	-2.5	-2.6
cohort effect	-6.5		-2.5	-5.2	-6.4	-6.5	-6.5
Benefit ratio	-3.9		-0.5	-1.8	-2.9	-3.6	-3.9
Labour market ratio	-1.1		-0.5	-0.8	-1.0	-1.0	-1.1
Of which: employment rate	-0.7		-0.2	-0.5	-0.6	-0.7	-0.7
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.5		-0.3	-0.4	-0.4	-0.4	-0.5
Interaction effect (residual)	-0.4		-0.2	-0.3	-0.3	-0.4	-0.4
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	0.1	12.1	1.0	0.3	-0.3	-0.6	-0.4
Dependency ratio	7.0		3.1	2.5	1.1	0.2	0.1
Coverage ratio	-1.5		-0.9	-0.4	-0.1	0.0	-0.1
Of which: old-age	-0.3		-0.4	0.0	0.1	0.1	-0.1
early-age	-2.6		-1.1	-0.8	-0.3	-0.3	-0.1
cohort effect	-6.5		-2.5	-2.6	-1.2	-0.1	0.0
Benefit ratio	-3.9		-0.5	-1.2	-1.1	-0.7	-0.3
Labour market ratio	-1.1		-0.5	-0.4	-0.2	-0.1	0.0
Of which: employment rate	-0.7		-0.2	-0.3	-0.2	0.0	0.0
labour intensity	0.0		0.0	0.0	0.0	0.0	0.0
career shift	-0.5		-0.3	-0.1	0.0	0.0	0.0
Interaction effect (residual)	-0.4		-0.2	-0.1	-0.1	0.0	0.0

Euro-area							
Health care							
Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.9	6.7	7.1	7.4	7.6	7.6	7.6
AWG risk scenario	1.7	6.7	7.3	7.8	8.2	8.4	8.5
TFP risk scenario	0.9	6.7	7.1	7.4	7.6	7.6	7.6
Demographic scenario	1.2	6.7	7.2	7.5	7.7	7.8	7.9
High life expectancy scenario (variation of demogr. scenario)	1.3	6.7	7.2	7.6	7.8	7.9	8.0
Healthy ageing scenario	0.3	6.7	7.0	7.1	7.2	7.1	7.1
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	1.4	6.7	7.2	7.6	7.9	8.0	8.1
EU cost convergence scenario	1.3	6.7	7.2	7.6	7.8	7.9	8.0
Labour intensity scenario	1.7	6.7	7.3	7.9	8.2	8.3	8.4
Sector-specific composite indexation scenario	1.8	6.7	7.3	7.8	8.2	8.4	8.5
Non-demographic determinants scenario	3.0	6.7	7.4	8.2	8.9	9.4	9.7
Long-term care							
Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.9	1.7	1.9	2.2	2.4	2.6	2.6
AWG risk scenario	2.8	1.7	2.1	2.6	3.3	3.9	4.5
TFP risk scenario	0.9	1.7	1.9	2.2	2.5	2.6	2.6
Demographic scenario	1.1	1.7	1.9	2.2	2.5	2.7	2.8
Base case scenario	1.2	1.7	1.9	2.3	2.6	2.8	2.9
High life expectancy scenario (variation of base case)	1.6	1.7	2.0	2.3	2.8	3.1	3.2
Healthy ageing scenario	0.9	1.7	1.9	2.2	2.4	2.6	2.6
Shift to formal care scenario	1.7	1.7	2.3	2.7	3.1	3.3	3.4
Coverage convergence scenario	2.1	1.7	2.0	2.5	3.0	3.4	3.8
Cost convergence scenario	2.0	1.7	2.0	2.5	3.0	3.4	3.7
Cost and coverage convergence scenario	3.1	1.7	2.1	2.7	3.4	4.1	4.7
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	21%	3,844	4,117	4,389	4,660	4,664	4,636
Recipients: receiving institutional care	58%	3,659	4,137	4,806	5,473	5,764	5,796
receiving home care	58%	5,710	6,669	7,733	8,607	8,958	9,017
receiving cash benefits	41%	6,888	7,624	8,503	9,552	9,818	9,720
Education							
Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.2	4.1	3.9	3.9	3.9	3.9	3.9
Number of students (in thousands)							
Total (students/staff in 2019 = 227.9)	-11.4%	61,057	58,672	56,157	55,650	55,117	54,093
as % of population 5-24	-0.7	85.3	84.1	84.6	84.9	84.6	84.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.7	0.0	0.3	0.6	0.7	0.7	0.7
Total cost of ageing							
As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.7	24.6	26.0	26.9	27.0	26.7	26.3
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	2.7	0.0	0.3	0.9	1.5	2.1	2.7
TFP risk scenario (-0.2 pps)	0.5	0.0	0.0	0.1	0.3	0.4	0.5
High life expectancy (+2 years) (8)	0.6	0.0	0.1	0.1	0.3	0.4	0.6
Lower fertility (-20%)	1.4	0.0	-0.1	-0.2	0.2	0.8	1.4
Higher TFP growth (+0.2 pps)	-0.5	0.0	-0.1	-0.3	-0.4	-0.5	-0.5
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-1.0	-1.0	-0.9	-0.7	-0.6
Higher migration (+33%)	-0.6	0.0	-0.1	-0.3	-0.5	-0.6	-0.6
Lower migration (-33%)	0.7	0.0	0.2	0.3	0.6	0.7	0.7
Policy scenario linking retirement age to life expectancy	-1.3	0.0	-0.3	-0.6	-0.9	-1.1	-1.3
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	1.1	0.0	0.4	0.6	0.8	1.0	1.0

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

30. EUROPEAN UNION

European Union							
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 19-70	2019	2030	2040	2050	2060	2070
Fertility rate	0.1	1.52	1.55	1.59	1.61	1.63	1.65
Life expectancy at birth							
males	7.4	78.7	80.4	82.0	83.5	84.8	86.1
females	6.1	84.2	85.6	86.9	88.2	89.3	90.3
Life expectancy at 65							
males	5.1	18.4	19.5	20.6	21.6	22.6	23.5
females	4.8	22.0	23.0	24.1	25.1	25.9	26.8
Net migration (thousand)	:	1317.5	960.0	980.8	1001.3	1020.4	1036.8
Net migration as % of population	:	0.3	0.2	0.2	0.2	0.2	0.2
Population (million)	-23.2	447.2	449.1	446.6	440.8	432.0	424.0
Young population (0-19) as % of total population	-1.9	20.3	19.2	18.4	18.5	18.5	18.5
Prime-age population (25-54) as % of total population	-6.6	40.4	37.2	35.6	34.6	34.3	33.9
Working-age population (20-64) as % of total population	-8.0	59.3	56.5	53.9	52.0	51.2	51.2
Elderly population (65+) as % of total population	9.9	20.4	24.4	27.7	29.6	30.3	30.3
Very elderly population (80+) as % of total population	7.3	5.9	7.3	9.3	11.4	12.6	13.2
Very elderly population (80+) as % of elderly population	14.7	28.8	29.9	33.6	38.6	41.5	43.5
Very elderly population (80+) as % of working-age population	15.8	9.9	12.9	17.3	21.9	24.6	25.7
Macroeconomic assumptions*	AVG 19-70	2019	2030	2040	2050	2060	2070
Potential GDP (growth rate)	1.3	1.6	1.1	1.4	1.4	1.4	1.4
Employment (growth rate)	-0.2	0.7	-0.3	-0.3	-0.3	-0.2	-0.2
Labour input: hours worked (growth rate)	-0.2	0.6	-0.3	-0.4	-0.4	-0.2	-0.2
Labour productivity per hour (growth rate)	1.6	1.0	1.4	1.8	1.8	1.7	1.6
TFP (growth rate)	1.0	0.6	0.9	1.2	1.1	1.1	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.3	0.5	0.6	0.6	0.6	0.6
Potential GDP per capita (growth rate)	1.4	1.4	1.1	1.5	1.6	1.7	1.6
Potential GDP per worker (growth rate)	1.5	0.9	1.4	1.8	1.7	1.6	1.6
Labour force assumptions	Ch 19-70	2019	2030	2040	2050	2060	2070
Working-age population (20-64) (in thousands)	-47,860	265,024	253,521	240,781	229,065	221,135	217,163
Population growth (20-64)	0.0	-0.2	-0.5	-0.5	-0.4	-0.2	-0.2
Labour force 15-64 (thousands)	-32,369	211,644	205,946	196,818	188,219	182,561	179,276
Labour force 20-64 (thousands)	-32,100	207,378	201,657	192,693	184,197	178,519	175,278
Participation rate (20-64)	2.5	78.2	79.5	80.0	80.4	80.7	80.7
Participation rate (20-74)	1.7	67.8	68.0	67.8	68.3	68.9	69.5
youngest (20-24)	1.7	60.3	60.9	61.8	61.9	61.8	62.0
prime-age (25-54)	0.8	85.9	86.4	86.5	86.7	86.7	86.7
older (55-64)	9.6	62.3	68.6	69.8	70.3	71.6	71.9
very old (65-74)	10.1	9.8	14.9	16.5	17.4	18.4	19.9
Participation rate (20-64) - females	4.4	72.2	74.7	75.6	76.1	76.6	76.6
Participation rate (20-74) - females	3.9	61.7	63.0	63.3	64.0	64.8	65.6
youngest (20-24)	2.2	55.8	56.6	57.6	57.9	57.7	58.0
prime-age (25-54)	2.2	80.2	81.5	81.9	82.3	82.4	82.4
older (55-64)	12.9	55.4	63.6	65.6	66.5	68.1	68.4
very old (65-74)	11.0	7.1	12.7	14.6	15.6	16.5	18.1
Participation rate (20-64) - males	0.5	84.2	84.3	84.4	84.6	84.7	84.7
Participation rate (20-74) - males	-0.7	74.0	73.1	72.4	72.6	72.9	73.4
youngest (20-24)	1.4	64.5	64.9	65.7	65.8	65.6	65.9
prime-age (25-54)	-0.7	91.6	91.1	90.8	91.0	90.9	90.9
older (55-64)	5.8	69.7	73.8	74.2	74.2	75.0	75.5
very old (65-74)	8.8	12.9	17.5	18.5	19.3	20.4	21.7
Average effective exit age - total (1)	1.8	63.8	64.8	65.1	65.3	65.5	65.6
males	1.8	64.0	65.0	65.3	65.5	65.7	65.8
females	1.9	63.5	64.6	64.9	65.1	65.3	65.4
Employment rate (15-64)	2.7	68.4	69.0	70.1	70.9	71.0	71.1
Employment rate (20-64)	3.1	73.1	74.0	75.0	75.9	76.3	76.2
Employment rate (20-74)	2.4	63.4	63.4	63.7	64.6	65.2	65.8
Unemployment rate (15-64)	-1.0	6.8	7.2	6.5	5.8	5.8	5.8
Unemployment rate (20-64)	-1.0	6.6	7.0	6.3	5.6	5.5	5.5
Unemployment rate (20-74)	-1.1	6.5	6.8	6.1	5.4	5.4	5.4
Employment (20-64) (in millions)	-28.2	193.7	187.6	180.6	173.9	168.6	165.6
Employment (20-74) (in millions)	-23.2	198.3	195.6	189.8	183.2	178.0	175.1
share of youngest (20-24)	0.4	6%	7%	7%	6%	7%	7%
share of prime-age (25-54)	-6.0	73%	69%	68%	68%	68%	67%
share of older (55-64)	2.5	18%	20%	20%	20%	20%	20%
share of very old (65-74)	3.1	2%	4%	5%	5%	5%	5%
Dependency ratios	Ch 19-70	2019	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	1.3	22.7	24.4	24.3	23.9	23.2	24.0
Old-age dependency ratio 20-64 (3)	24.7	34.4	43.1	51.4	56.9	59.2	59.2
Total dependency ratio (4)	26.5	68.8	77.1	85.5	92.5	95.4	95.3
Total economic dependency ratio (5)	16.6	125.5	129.6	135.3	140.6	142.7	142.2
Economic old-age dependency ratio (20-64) (6)	27.0	44.7	53.9	63.3	69.5	71.9	71.7
Economic old-age dependency ratio (20-74) (7)	24.2	43.7	51.7	60.2	66.0	68.2	67.8

European Union							
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross	0.1	11.6	12.5	12.8	12.6	12.1	11.7
Of which : Old-age and early pensions	0.6	9.3	10.2	10.6	10.5	10.2	9.9
Disability pensions	-0.1	0.9	0.9	0.8	0.8	0.8	0.8
Survivors' pensions	-0.5	1.4	1.3	1.2	1.1	1.0	0.9
Other	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Earnings-related pensions (old-age and early pensions), gross	0.4	8.5	9.4	9.7	9.5	9.2	8.9
Private occupational pensions, gross	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:
New pensions, gross (old-age and early pensions)	0.0	0.3	0.4	0.4	0.3	0.3	0.3
Public pensions, net	:	:	:	:	:	:	:
Public pensions, contributions	0.3	9.5	9.6	9.8	9.8	9.8	9.8
Additional indicators	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, net/public pensions, gross, %	:	:	:	:	:	:	:
Pensioners (public, 1000 persons)	27,928	120,771	134,031	146,601	152,580	151,991	148,699
Public pensioners aged 65+ (1000 persons)	33,571	89,088	104,321	117,710	124,814	125,647	122,659
Pensioners younger than 65 as % of all pensioners (public)	-8.7	26%	22%	20%	18%	17%	18%
Benefit ratio % (public pensions)	-9.3	42.1	40.8	37.7	35.0	33.4	32.8
Gross replacement rate at retirement % (old-age earnings-related)	-8.7	46.2	44.4	40.4	38.6	38.0	37.5
Average accrual rates % (new pensions, earnings-related)	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:
Contributors (public pensions, 1000 persons)	-22,255	196,780	196,065	189,786	182,619	177,731	174,525
Support ratio (contributors/100 pensioners, public pensions)	-46	163	146	129	120	117	117
Public pensions, gross as pps of GDP (difference from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.4	0.0	0.1	0.1	0.2	0.3	0.4
Lower fertility (-20%)	1.2	0.0	0.0	0.1	0.4	0.8	1.2
Higher TFP growth (+0.2 pps)	-0.5	0.0	0.0	-0.2	-0.4	-0.4	-0.5
TFP risk scenario (-0.2 pps)	0.5	0.0	0.0	0.2	0.3	0.4	0.5
Higher employment rate of older workers (+10 pps)	-0.3	0.0	-0.6	-0.7	-0.6	-0.4	-0.3
Higher migration (+33%)	-0.3	0.0	-0.1	-0.2	-0.3	-0.3	-0.3
Lower migration (-33%)	0.4	0.0	0.1	0.2	0.3	0.4	0.4
Policy scenario linking retirement age to life expectancy	-1.1	0.0	-0.3	-0.6	-0.8	-0.9	-1.1
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	0.9	0.0	0.3	0.5	0.7	0.9	0.9
Offset declining pension benefit ratio	:	:	:	:	:	:	:
Unchanged retirement age	0.9	0.0	0.6	0.8	0.8	0.8	0.9
Breakdown of the increase (in pps) in pension expenditure (public) - cumulative change from 2019 (Baseline scenario)	Ch 19-70	2019	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	0.1	11.6	12.5	12.8	12.6	12.1	11.7
pps change from 2019 due to:	0.1		0.9	1.2	0.9	0.5	0.1
Dependency ratio	6.4		2.7	4.8	6.0	6.4	6.4
Coverage ratio	-1.5		-0.9	-1.2	-1.4	-1.5	-1.5
Of which: old-age	-0.2		-0.3	-0.3	-0.2	-0.2	-0.2
early-age	-2.7		-1.5	-1.9	-2.1	-2.6	-2.7
cohort effect	-5.8		-2.0	-4.0	-5.4	-5.9	-5.8
Benefit ratio	-3.7		-0.5	-1.6	-2.7	-3.4	-3.7
Labour market ratio	-0.8		-0.3	-0.6	-0.7	-0.8	-0.8
Of which: employment rate	-0.5		-0.2	-0.3	-0.4	-0.5	-0.5
labour intensity	0.1		0.0	0.0	0.1	0.1	0.1
career shift	-0.4		-0.2	-0.3	-0.3	-0.3	-0.4
Interaction effect (residual)	-0.3		-0.1	-0.2	-0.2	-0.3	-0.3
Breakdown of the increase (in pps) in pension expenditure (public) - change over selected time periods (Baseline scenario)	Ch 19-70	2019	2019-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	0.1	11.6	0.9	0.3	-0.2	-0.5	-0.4
Dependency ratio	6.4		2.7	2.1	1.2	0.5	0.0
Coverage ratio	-1.5		-0.9	-0.4	-0.1	-0.1	0.0
Of which: old-age	-0.2		-0.3	0.0	0.1	0.0	-0.1
early-age	-2.7		-1.5	-0.4	-0.2	-0.5	-0.1
cohort effect	-5.8		-2.0	-2.0	-1.4	-0.5	0.1
Benefit ratio	-3.7		-0.5	-1.1	-1.1	-0.7	-0.3
Labour market ratio	-0.8		-0.3	-0.2	-0.1	-0.1	0.0
Of which: employment rate	-0.5		-0.2	-0.2	-0.1	0.0	0.0
labour intensity	0.1		0.0	0.0	0.0	0.0	0.0
career shift	-0.4		-0.2	-0.1	0.0	0.0	0.0
Interaction effect (residual)	-0.3		-0.1	-0.1	-0.1	-0.1	0.0

European Union

Health care

Health care expenditure in % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	0.9	6.6	7.0	7.3	7.5	7.5	7.5
AWG risk scenario	1.8	6.6	7.2	7.7	8.2	8.4	8.4
TFP risk scenario	0.9	6.6	7.0	7.3	7.4	7.5	7.5
Demographic scenario	1.2	6.6	7.0	7.4	7.6	7.7	7.7
High life expectancy scenario (variation of demogr. scenario)	1.3	6.6	7.0	7.4	7.7	7.8	7.9
Healthy ageing scenario	0.3	6.6	6.8	7.0	7.0	7.0	6.9
Death-related cost scenario	:	:	:	:	:	:	:
Income elasticity scenario	1.4	6.6	7.1	7.5	7.8	7.9	8.0
EU cost convergence scenario	1.4	6.6	7.1	7.4	7.7	7.8	8.0
Labour intensity scenario	1.7	6.6	7.2	7.7	8.1	8.2	8.3
Sector-specific composite indexation scenario	1.8	6.6	7.2	7.7	8.1	8.3	8.4
Non-demographic determinants scenario	3.1	6.6	7.3	8.1	8.8	9.4	9.7

Long-term care

Long-term care spending as % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.1	1.7	1.9	2.2	2.5	2.7	2.8
AWG risk scenario	3.1	1.7	2.1	2.7	3.4	4.1	4.8
TFP risk scenario	1.1	1.7	1.9	2.3	2.5	2.7	2.8
Demographic scenario	1.2	1.7	2.0	2.3	2.6	2.8	2.9
Base case scenario	1.4	1.7	2.0	2.3	2.7	2.9	3.1
High life expectancy scenario (variation of base case)	1.7	1.7	2.0	2.4	2.9	3.2	3.4
Healthy ageing scenario	1.0	1.7	1.9	2.2	2.5	2.7	2.7
Shift to formal care scenario	1.8	1.7	2.3	2.7	3.1	3.4	3.5
Coverage convergence scenario	2.4	1.7	2.1	2.6	3.1	3.6	4.1
Cost convergence scenario	2.3	1.7	2.1	2.6	3.1	3.6	3.9
Cost and coverage convergence scenario	3.4	1.7	2.2	2.8	3.6	4.3	5.1
Number of recipients (in thousands)	Ch 19-70	2019	2030	2040	2050	2060	2070
Disabled people	19%	3,448	3,656	3,880	4,105	4,113	4,089
Recipients: receiving institutional care	61%	4,483	5,106	5,934	6,696	7,100	7,205
receiving home care	61%	6,945	8,174	9,454	10,490	11,004	11,169
receiving cash benefits	68%	10,227	12,301	14,131	15,417	16,752	17,158

Education

Education spending as % of GDP - Baseline	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	-0.2	4.1	4.0	3.9	3.9	4.0	4.0
Number of students (in thousands)							
Total (students/staff in 2019 = 320.3)	-13.8%	78,669	75,546	71,442	70,208	69,461	67,845
as % of population 5-24	-0.4	84.2	83.0	83.4	83.9	83.8	83.7
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 19-70	2019	2030	2040	2050	2060	2070
Total	0.7	0.0	0.3	0.6	0.7	0.7	0.7

Total cost of ageing

As % of GDP	Ch 19-70	2019	2030	2040	2050	2060	2070
AWG reference scenario	1.9	24.0	25.4	26.2	26.5	26.3	25.9
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	3.0	0.0	0.4	1.0	1.6	2.3	3.0
TFP risk scenario (-0.2 pps)	0.4	0.0	0.0	0.2	0.3	0.4	0.4
High life expectancy (+2 years) (8)	0.6	0.0	0.1	0.1	0.3	0.5	0.6
Lower fertility (-20%)	1.4	0.0	-0.1	-0.2	0.2	0.8	1.4
Higher TFP growth (+0.2 pps)	-0.4	0.0	0.0	-0.2	-0.3	-0.4	-0.4
Higher employment rate of older workers (+10 pps)	-0.6	0.0	-0.9	-1.0	-0.9	-0.7	-0.6
Higher migration (+33%)	-0.5	0.0	-0.1	-0.3	-0.4	-0.5	-0.5
Lower migration (-33%)	0.6	0.0	0.1	0.3	0.5	0.6	0.6
Policy scenario linking retirement age to life expectancy	-1.3	0.0	-0.3	-0.6	-0.9	-1.1	-1.3
Adverse macroeconomic scenario - lagged recovery	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Adverse macroeconomic scenario - adverse structural	1.0	0.0	0.4	0.6	0.8	0.9	1.0

LEGENDA:
*** The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations.**
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2020 instead of 2019.
(2) Share of older population = population aged 55-64 as a % of the population aged 20-64.
(3) Old-age dependency ratio = population aged 65+ as a % of the population aged 20-64.
(4) Total dependency ratio = population under 20 and over 64 as a % of the population aged 20-64.
(5) Total economic dependency ratio = total population less employed as a % of the employed population 20-74.
(6) Economic old-age dependency ratio (20-64) = inactive population aged 65+ as a % of the employed population 20-64.
(7) Economic old-age dependency ratio (20-74) = inactive population aged 65+ as a % of the employed population 20-74.
(8) For HC & LTC: high life expectancy scenario (variation of reference scenario).
Source: European Commission (DG ECFIN), Eurostat (EUROPOP2019), EPC (AWG).

Part V

Resources

1. ABBREVIATIONS AND SYMBOLS USED

Member States, other countries and country aggregates

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

FI	Finland
SE	Sweden
NO	Norway
EA	Euro area
EU	European Union
EU15	European Union, 15 Member States before 1 May 2004
NMS	European Union, 13 Member States that joined the EU on and after 1 May 2004 (BG, CZ, EE, HR, CY, LV, LT, HU, MT, PL, RO, SI, SK)

Other abbreviations

2009 AR	2009 Ageing Report
2012 AR	2012 Ageing Report
2015 AR	2015 Ageing Report
2018 AR	2018 Ageing Report
ADL	Activity of daily living
AGIRC	Association générale des institutions de retraite des cadres
AMECO	Macro-economic database of the European Commission
ARRCO	Association pour le régime de retraite complémentaire des salariés
AWG	Ageing Working Group
CNAVTS	Caisse nationale de l'assurance vieillesse des travailleurs salaries
COFOG	Classification of the functions of government
COM	Commission
CPI	Consumer price index
CSM	Cohort Simulation Model/Method
DB	Defined benefits
DC	Defined contributions
DG ECFIN	Directorate-General Economic and Financial Affairs
EC	European Commission

ECB	European Central Bank
ECOFIN	Economic and Financial Council
EPC	Economic Policy Committee
ESA (95)	Old European System of National and Regional Accounts
ESA (2010)	New European System of National and Regional Accounts
ESSPOP2015	Eurostat demographic projections 2016-2070
ESSPROS	European System of Integrated Social Protection Statistics
EU KLEMS	European database on capital, labour, energy, material and services
EUR	Euro
EUROPOP2019	Eurostat demographic projections 2019-2070
EU-SILC	European Union Statistics on Income and Living Conditions
FELICIE	Future of Elderly Living Conditions in Europe
GDP	Gross domestic product
HC	Health care
IADL	Instrumental activity of daily living
ICT	Information and communications technology
IMF	International Monetary Fund
ISCED	International Standard Classification of Education
LTC	Long-term care
MS	Member State(s)
MTO	Medium-term budgetary objective
NAWRU	Non accelerating wage rate of unemployment
NDC	Notional Defined Contributions
NDD	Non demographics drivers
OECD	Organisation of Economic Co-operation and Development
OG	Output Gap
OGWG	Output Gap Working Group

PHI	Private Health Insurance
PS	Point System
pps.	Percentage points
PAYG system	Pay-as-you-go system
SHA	System of Health Accounts
SHI	Social health Insurance
SHARE	Survey of Health, Ageing and Retirement in Europe
TFP	Total factor productivity
TFR	Total fertility rate
UB	Unemployment benefits
UN	United Nations
VAT	Value Added Tax
WHO	World Health Organization

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