European
Commission

The
2018
Ageing Report

Economic & Budgetary Projections for the 28 EU Member States (2016-2070)

INSTITUTIONAL PAPER 079 | MAY 2018

EUROPEAN ECONOMY

Economic and
Financial Affairs

European Economy Institutional Papers are important reports analysing the economic situation and economic developments prepared by the European Commission's Directorate-General for Economic and Financial Affairs, which serve to underpin economic policy-making by the European Commission, the Council of the European Union and the European Parliament.

Views expressed in unofficial documents do not necessarily represent the views of the European Commission.

The 2018 Ageing Report

Economic and Budgetary Projections for the EU Member States (2016-2070)

ACKNOWLEDGEMENTS

MEMBERS OF THE AGEING WORKING GROUP

CHAIRMAN

Mr. Godwin **MIFSUD**   Ministry of Finance, Malta

BELGIQUE-BELGÏE

Ms. Nicole **FASQUELLE**   Bureau fédéral du Plan - Federaal Planbureau

Dr. Peter **WILLEME**   Bureau fédéral du Plan - Federaal Planbureau

BULGARIA

Ms. Rositsa **TRANKOVA**   Ministry of Finance

Ms. Penka **TANEVA**   National Social Security Institute

CZECH REPUBLIC

Mr. Zbynek **STORK**   Ministry of Finance

Mr. Jindrich **MARVAL**   Ministry of Finance

DANMARK

Mr. Soren **ARNBERG**   Ministry of Finance

Mr. Morten **YDE PETERSEN**   Ministry of Finance

BUNDESREPUBLIK DEUTSCHLAND

Mr. Werner **EBERT**   Federal Ministry of Finance

Mr. François **PEGLOW**   Federal Ministry of Labour and Social Affairs

ESTONIA

Mr. Risto **KAARNA**   Ministry of Finance

Ms. Tonu **LILLELAID**   Ministry of Finance

ELLAS

Ms. Angeliki **ZOULAKI**   National Actuarial Authority

Ms. Eirini **ANDRIOPOULOU**   Ministry of Finance

ESPAÑA

Ms. Carolina **MATEOS**   Ministry of Economy, Industry and Competitiveness

Ms. Itziar **ALBERDI**   Ministry of Finance and Civil Service

FRANCE

Mr. Thomas **LAURENT**   Ministère de l'économie, des finances et de l'industrie

Ms. Mylène **SABATINI**   Ministère de l'économie, des finances et de l'industrie

CROATIA

Ms. Josipa **MESTROVIC SPOLJAR**   Croatian Health Insurance Fund

Ms. Ljiljana **MARUSIC**   Croatian Pension Insurance Institute

IRELAND

Mr. Ian **POWER**   Department of Finance

Mr. David **HUGHES**   Department of Finance

ITALIA

Mr. Rocco **APRILE**   Ministero dell'Economia e delle Finanze

Ms. Elena **FABRIZI**   Ministero dell'Economia e delle Finanze

CYPRUS

Mr. Costas **STAVRAKIS**   Ministry of Labour, Welfare and Social Insurance

Ms. Maria **MATSI**   Ministry of Finance

LATVIA

Mr. Jurijs **KABAKOVS**   Ministry of Finance

Ms. Sandra **STABIŅA**   Ministry of Welfare

LITHUANIA

Ms. Rasa **SLIOGERIENE**   Ministry of Finance

Ms. Vidija **PASTUKIENE**   Ministry of Social Security and Labour

LUXEMBOURG

Mr. François **PELTIER**   STATEC

Mr. Kevin **EVERARD**   Inspection Générale de la Securité Sociale

HUNGARY

Mr. Krisztián **TÓTH**   Hungarian State Treasury

Mr. Miklos **ERDEI**   Ministry for National Economy

MALTA

Mr. Melchior **VELLA**   Ministry of Finance

Ms. Pauline **SALIBA**   Ministry of Finance

NEDERLAND

Mr. Harry **TER RELE**   Centraal Planbureau

Mr. Wouter **HOGERVORST**   Ministry of Finance

ÖSTERREICH

Mr. Peter **GRAFENEDER**   Bundesministerium für Finanzen

Mr. Armin **HEINRICH**   Bundesministerium für Finanzen

POLAND

Ms. Joanna **STACHURA**   Ministry of Finance

Mr. Pawel **STRZELECKI**   National Bank of Poland

PORTUGAL

Ms. Conceicao **NUNES**   Ministry of Finance

Ms. Rita **FIGUEIRAS**   Ministry of Labour, Solidarity, and Social Security

ROMANIA

Mr. Daniel **VALCU**   Ministry of Public Finance

Mr. Lucian **NOVAK**   National Commission for Economic Forecasting

SLOVENIA

Ms. Eva **ZVER**   Institute of Macroeconomic Analysis and Development

Mr. Franc **KLUZER**   Ministry of Finance

SLOVAKIA

Mr. Thomas **RIZMAN**   Ministry of Finance

Mr. Peter **HARVAN**   Ministry of Finance

SUOMI FINLAND

Mr. Ilari **AHOLA**   Ministry of Finance

SVERIGE

Mr. Jonas **NORLIN**	Ministry of Finance
Mr. Olle **SUNDBERG**	Ministry of Health and Social Affairs

UNITED KINGDOM

Mr. George **VERNON**	HM Treasury
Mr. Vincent **TANG**	HM Treasury

OBSERVERS

Mr. Yngvar **DYVI**	Ministry of Finance, Norway
Mr. Per-Mathis **KONGSRUD**	Ministry of Finance, Norway

EUROPEAN CENTRAL BANK

Ms. Carolin **NERLICH**

EUROSTAT

Mr. Giampaolo **LANZIERI**

EPC SECRETARIAT

Mr. Jens **LARSEN**

Mr. Fuat **VARDAR**

EUROPEAN COMMISSION

Mr. Giuseppe **CARONE**

Mr. Per **ECKEFELDT**

CONTENTS

LIST OF TABLES

LIST OF GRAPHS

LIST OF BOXES

EXECUTIVE SUMMARY

1. 2018 AGEING REPORT: MANDATE AND BROAD PRINCIPLES

The sustainability of public finances in the EU can be better monitored and safeguarded if its analysis banks on reliable and comparable information on possible challenges, including the expected strains caused by the demographic changes ahead.

For this reason, the ECOFIN Council gave a mandate to the Economic Policy Committee (EPC) to produce a new set of long-term budgetary projections by 2018, on the basis of new population projections to be provided by Eurostat.

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 budgetary projections and reach an agreement on its assumptions and methodologies to discharge this mandate (see 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 people in the EU are 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 (until 2070), compiled in a comparable and transparent manner.

The projections feed into a variety of policy debates and processes at EU level, including the overarching Europe 2020 strategy for smart, sustainable and inclusive growth. In particular, they are used in the context of the European Semester so as to identify policy challenges, among others in setting the medium-term budgetary objectives (MTOs), in the annual assessment of the sustainability of public finances carried out as part of the Stability and Growth Pact, and in the analysis on the impact of ageing populations on the labour market and potential economic growth.

Coverage and overview of the 2018 long-term projection exercise

The long-term projections take as starting point Eurostat's population projections for the period 2016 to 2070. 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 exogenous macroeconomic variables covering the labour force (participation, employment and unemployment rates), labour productivity, and the real interest rate (see Graph 1). This combined set of projections enabled the calculation of GDP for all Member States up to 2070. The macroeconomic assumptions on which this report is based were agreed upon in the first half of 2017 and published in November 2017 ([1]).

On the basis of these assumptions, separate budgetary projections were carried out for five government expenditure items. The projections for pensions were run by the Member States using their own national model(s), reflecting current pension legislation ([2]). 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

---

([1]) See European Commission (DG ECFIN) and Economic Policy Committee (AWG) (2017) "2018 Ageing Report: Underlying assumptions and projection methodologies", European Commission, European Economy, Institutional papers No 65.

([2]) 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 the Commission in several meetings during September-December 2017. The projections incorporate pension legislation in place at that time. No further reform measures after 1 December 2017 have been incorporated in this report.

underlying assumptions. A novelty in this projection round is a detailed account of the extent to which special pensions (those which have different conditions for a pension from the general pension schemes prevailing in a country) are an important part of public pension provision in the EU countries.

The projections for health care, long-term care, education and unemployment were run by the European Commission (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 this set of projections are aggregated to provide an overall projection of age-related public expenditure (see Graph 1).

Graph 1: Overview of the 2018 long-term projection exercise
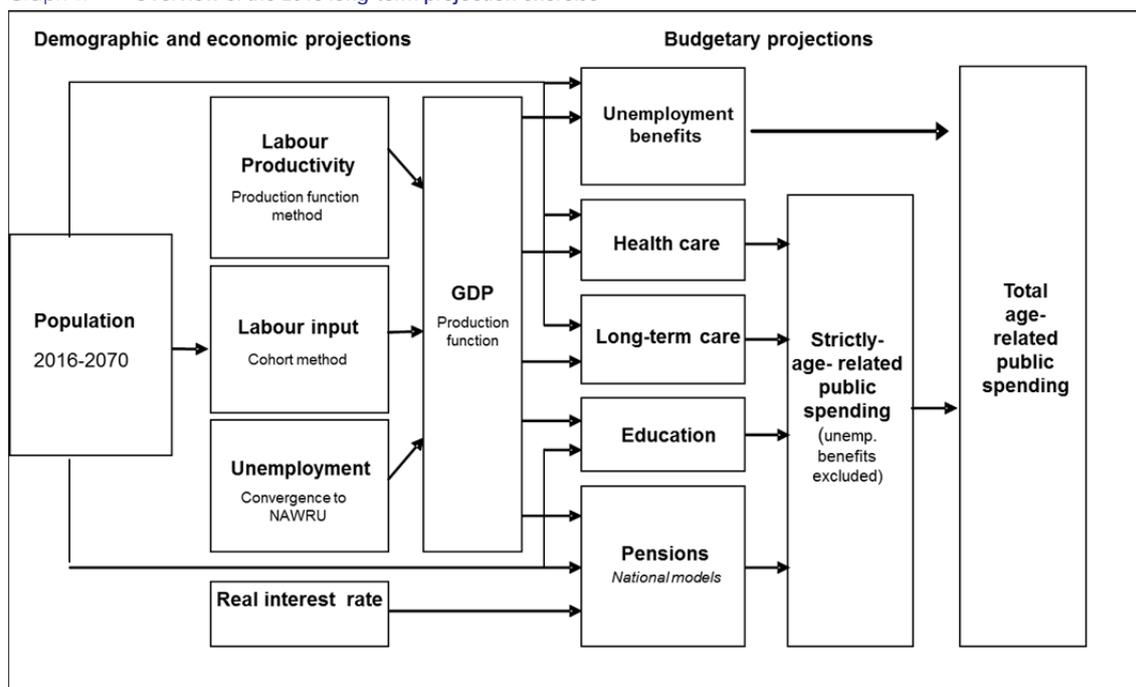
Source: Commission services, EPC.

There is uncertainty surrounding these long-term projections, which are made under a 'no-policy-change' assumption to illustrate what the future could be if current policies remain unchanged. The projection results are strongly influenced by the underlying assumptions. For this reason, a set of sensitivity tests are carried out to illustrate the extent to which the 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 used. The second part presents the long-term budgetary projections on pensions, health care, long-term care, education and unemployment benefits. A Statistical Annex gives an overview of the main assumptions and macroeconomic projections as well as projection results of age-related expenditure items by area and by country.

2.   THE ECONOMIC AND BUDGETARY IMPACT OF POPULATION AGEING

Significantly lower working-age population 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 in the EU is projected to increase from 511 million in 2016 to 520 million in 2070, but the working-age population (15-64) will decrease significantly from 333 million in 2016 to 292 million in 2070 due to fertility, life expectancy and migration flow dynamics ([3]).

Graph 2:   **Population by age group and gender, 2016-70 (thousands)**
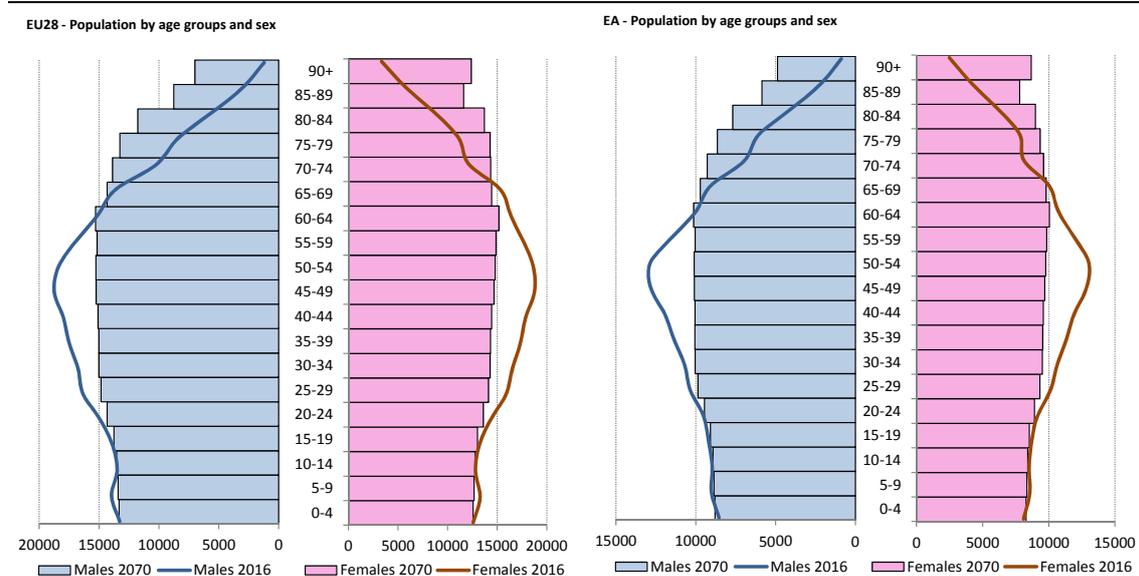
Source: Commission services, Eurostat.

For males, the projected population in 2070 is lower than or close to the population in 2016 in all age cohorts between 0 and 64 years old. Conversely, in all age cohorts of 65 years old and above, the projected population in 2070 is higher than in 2016. For females, the projected population in 2070 is lower than or close to the population in 2016 in all age cohorts between 0 and 69. Conversely, in the age cohorts above 69 years old, the projected population in 2070 will be higher than in 2016. Moreover, while in 2016 the largest cohort for both males and females is 45-49 years old, in 2070 the largest cohort will be 70-74 years old for women and 50-54 years old for men (see Graph 2). Overall, the median age will rise by 4 years for both men and women by 2070. Similar developments are projected for the euro area.

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 in almost all Member States between 2016 and 2070, increasing from 1.58 to 1.81 for the EU as whole. In the EU, life expectancy at birth for males is expected to increase by 7.8 years over the projection period, from 78.3 in 2016 to 86.1 in 2070. For females, life expectancy at birth is projected to increase by 6.6 years, from 83.7 in 2016 to 90.3 in 2070, implying a convergence of life expectancy between males and females. Annual net migration inflows to the EU are projected to decrease from about 1.5 million people in 2016 to 0.8 million people by 2070, representing a decreased contribution from 0.3% to 0.15% of the total population.

([3])   For EU27 (all EU countries except the UK), the total population is projected to decrease from 445 million in 2016 to 439 million in 2070, and the working age population (15-64) is projected to fall from 291 million in 2016 to 246 million in 2070.

The projected demographic old-age dependency ratio almost doubling over the long-term

The old-age dependency ratio (people aged 65 and above relative to those aged 15 to 64) in the EU is projected to increase by 21.6 pps. over the projection period, from 29.6% in 2016 to 51.2% in 2070. This implies that the EU would go from having 3.3 working-age people for every person aged over 65 years to only 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 15-64) which is rising by 14 pps. (8.3% to 22.3%) over this horizon.

Overall participation and employment rates projected to rise, in particular for women and for older workers thanks to implemented pension reforms

Participation rates are projected using a cohort simulation model (CSM), which allows taking into account assumptions on the impact on the participation rate of older workers of legislated pension reforms, including measures to be phased in gradually. In most of the EU Member States that have recently legislated pension reforms, these are projected to have a sizeable impact on the labour market participation of workers aged 55-64, depending on their magnitude and phasing in. The projections show an average increase of approximately 12.2 pps. in the participation rate for men ([4]). The expected increase in the participation rates of women between 55-64 years old is slightly higher (16.2 pps. on average), reflecting the progressive convergence of participation rates across genders in a number of countries.

The total participation rate for those aged 20-64 is projected to rise from 77.5% in 2016 to 80.7% in 2070 in the EU as a whole and from 77.6% to 80.6% in the euro area. This is being driven by higher female participation, which is projected to rise by 5.5 pps. compared with 0.8 pps. for males in the EU and by 5.7 pps. compared with 0.3 pps. for men in the euro area.

Labour supply will decline because of the projected drop of the working-age population

Total labour supply for those aged 20 to 64 in the EU is projected to fall by 9.6% over 2016-70, of which 2% by 2030 and a further 7.8% between 2030 and 2070. In the euro area, the projected fall in labour supply is 9.7% over the entire period, of which 2.3% takes place between 2016 and 2030 and a further 7.5% between 2030 and 2070.

Employment rates expected to rise…

Given the population projection, the labour force projection and the unemployment rate assumptions ([5]), the total employment rate (for persons aged 20 to 64) in the EU is projected to increase from 71.1% in 2016 to 73.9% in 2030 and 75.8% in 2070. In the euro area, a similar development is expected, with the employment rate rising from 69.9% in 2016 to 75.3% in 2070.

…while employment is projected to fall

The population projection trends have significant effects on labour market. Three distinctive periods can be identified for the EU (See Graph 3).

– 2007-2010: the working-age population was growing, but employment was sluggish as the financial and economic crisis weighed on job growth during this period.

– 2011-2020: the working-age population starts to decline as the baby-boom generation enters retirement. However, the assumed reduction in unemployment rates, the projected increase in the

---

([4]) Unweighted average of the 26 Member States considered.

([5]) A reduction in the unemployment rate in the EU as a whole of around 2 ¼ percentage points is projected over the long-term (to 6 ½% in 2070). A slightly larger fall of 2 ¾ pps is projected for the euro area (to 6 ½% in 2070).

employment rates of women and older workers cushion the impact of demographic change, and the overall number of persons employed start to increase during the latter part of this period.

‒ From 2021: 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 falls over the remainder of the projection period.

Graph 3:   **Population and employment developments (million), EU**
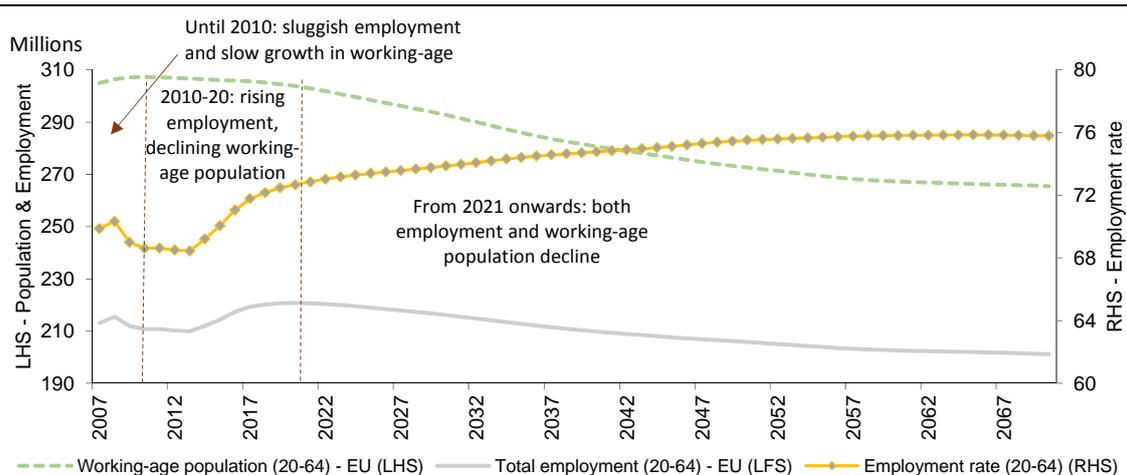
Source: Commission services, Eurostat, EPC.

Stable potential GDP growth projected over the long-term

In the EU as a whole, the average annual GDP growth rate is projected to remain quite stable over the long-term. After an average potential growth of 1.2% up to 2040, an increase to 1.5% is projected over the remainder of the projection horizon. Over the whole period 2016-2070, the average annual GDP growth rate in the EU is projected to be 1.4%. Developments in the euro area are slightly less positive than in the EU as a whole, with an average annual growth rate of 1.3% over 2016-2070. In per capita terms, developments are projected to be similar, with average potential GDP growth of 1.3% in both the EU and the euro area.

The sources of GDP growth will alter dramatically over the projection horizon. Labour will make a positive contribution to growth in both the EU and the euro area up to the 2020s, but turn negative thereafter. For the EU and for the euro area, an assumed increase of employment rates makes a positive contribution to average potential GDP growth. However, this is more than offset by a decline in the share of the working-age population, which is a negative influence on growth (by an annual average of -0.2 percentage points). As a result, labour input contributes negatively to output growth on average over the projection period (by 0.1 pps. in the EU and by 0.2 pps. in the euro area). Hence, labour productivity growth, driven by TFP growth, is projected to be the sole source of potential output growth in both the EU and the euro area over the entire projection period.

Budgetary projections: population ageing put upward pressure on public spending

The fiscal impact of ageing is projected to be 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, there is considerable uncertainty as to future developments of age-related public expenditure, related to future GDP growth prospects, in particular as regards TFP growth, uncertainty of the population projections and to the challenge to cope with trend increases in public spending in particular on health care and long-term care. For this reason, a set of sensitivity tests are carried out to illustrate the extent to which the public expenditure projections are sensitive to key assumptions such as demographic assumptions, labour force and macro-economic assumptions and assumptions on the cost drivers (see section on risk scenarios below).

Baseline projection results

In the baseline scenario, the total cost of ageing was 25% of GDP in 2016 and is projected to rise by 1.7 pps. of GDP (baseline scenario) in the period to 2070 in the EU. In the euro area, it is projected to rise from 26% of GDP in 2016 by 1.1 pps. in the baseline scenario up to 2070 (see Graph 4 and Table 1).

The peak in age-related expenditure as a share of GDP takes place in the middle of the projection horizon. This reflects primarily the expenditure profile for pension expenditure. For a majority of countries, the highest value is reached before the end of the projection horizon (see Graphs 4 and 7). This results from the projection of pension expenditure, where 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, the limited decline in pension expenditure (as a share of GDP) is projected to materialize only after nearly three decades of further increases in the EU overall.

Graph 4:   Total age-related expenditure (2016, peak year and 2070), % of GDP
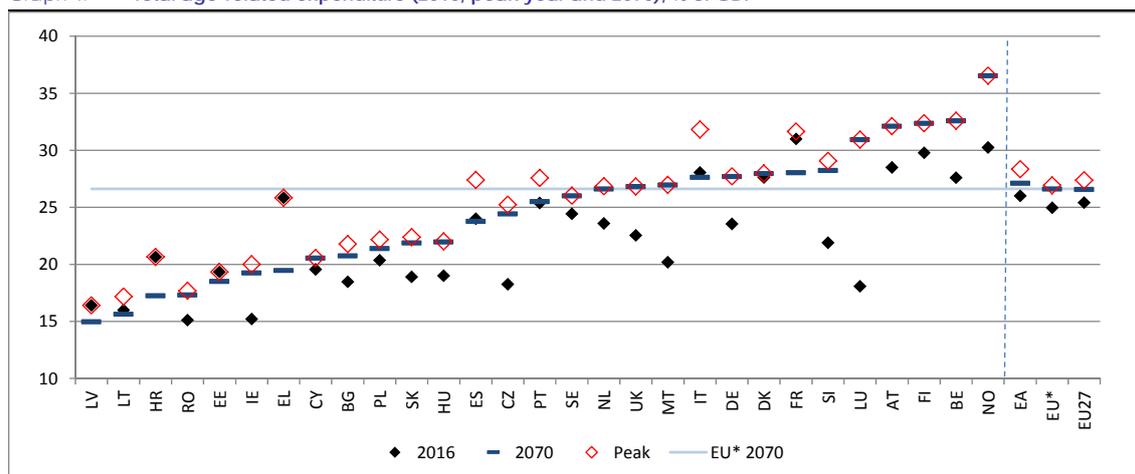
Source: Commission services, EPC.

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:

– A fall in total age-related expenditure relative to GDP is projected in eight Member States (EL, HR, FR, LV, EE, IT, LT and ES). 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, HR and FR).

– For another set of countries (PT, DK, CY, PL, SE, RO, BG, FI, HU and SK), the age-related expenditure ratio is expected to rise moderately (by up to 3 pps. of GDP).

– The age-related expenditure ratio increase is projected to be the largest in the remaining ten Member States (NL, AT, IE, DE, UK, BE, CZ, SI, MT and LU), rising by 3 pps. of GDP or more and with pension expenditure increasing in all of these countries (exceeding 2.5 pps. of GDP in LU, SI, BE, MT and CZ).

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, which combined is projected to rise by 2.1 pps. of GDP (Long-term care: +1.2 pps., Health care: +0.9 pps.) in the EU (EA: +1.8 pps.). After a projected increase of 0.8 pps. of GDP up to 2040 (EA: +1.3 pps.), public pension expenditure is projected to return close to its 2016 level (EU: -0.2 pps., EA: -0.4 pps.). However, the projected decline in pension spending is mostly visible in the latter part of the projection horizon. Education expenditure is projected to remain unchanged by 2070. Unemployment benefit expenditure is projected to decline by 0.2 pps. of GDP (see Graph 5 and Table 1).

Graph 5: **Projected change in age-related expenditure (2016-70), by expenditure component, pps. of GDP**
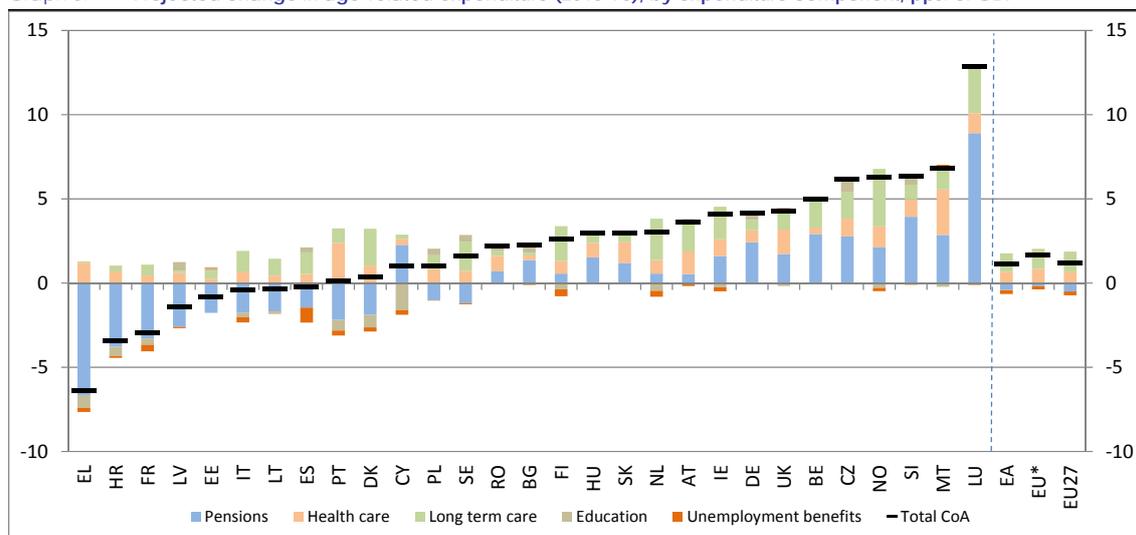
Source: Commission services, EPC.

A reduction of public pension spending as a share of GDP over the long term is projected in 12 Member States (EL, HR, FR, LV, PT, DK, EE, IT, LT, ES, SE and PL), as a result of implemented pension reforms (see Table 1). These reform measures, including changes to the retirement age and 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 in the EU by 10.6 pps. over the period 2016-70 (see Graph 6) ([6]). For some countries the decline is projected to be 20 pps. or more (EL, PL, PT, CY and

---

([6]) 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).

ES). 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.

However, many countries also have private pension schemes, and the total benefit ratio in 2070 is on average 10.5 pps. higher (for countries where private pensions are reported) ([7]). Moreover, the decline in the minimum pension benefit ratio is much smaller in most countries because those pensions are indexed to wages (or similar) ([8]), and is projected to decrease by 1.7 pps. on average in the EU ([9]). 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.

Graph 6:   Total public pension benefit ratio, in %, 2016 and 2070
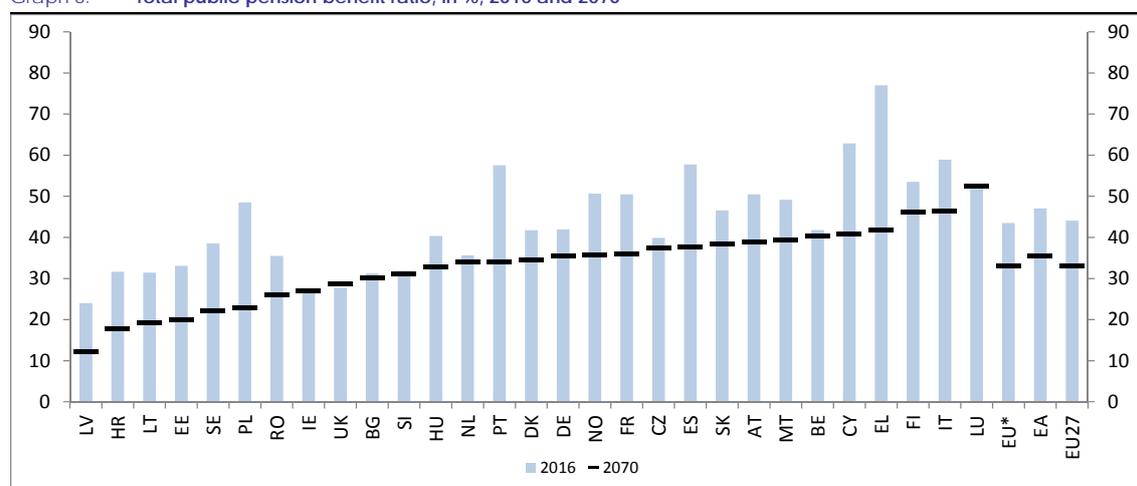
Note: the EU aggregates are simple averages in this graph.
Source: Commission services, EPC.

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. The budgetary projections were also run with a set of alternative scenarios to assess the sensitivity of age-related government expenditure to different underlying assumptions (demographic, macro-economic and in terms of cost drivers).

Two of these scenarios were therefore carried out for all budgetary items, as was the case in the previous report, defined as follows:

– **TFP risk scenario** ([10]): In light of the trend decline in TFP growth performance over the last decades in the EU, 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%). The TFP risk scenario essentially shows that GDP growth could be much lower in the event that future TFP growth rates developed less dynamically than 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

([7]) Private pension projections are available for nine Member States (DK, EE, HR, LV, LT, NL, PT, RO and SE).
([8]) 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.
([9]) Minimum pension projections are available for all but nine Member States (CZ, DE, EL, HR, CY, LU, NL, AT and SI).
([10]) With an impact on the projections for pensions, health care and long-term care.

would grow by 1.1% on average up to 2070 in the EU and the euro area, as opposed to 1.4% and 1.3%, respectively, in the baseline scenario.

– **AWG risk scenario** [11]: 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 which assumes the partial continuation of recently observed trends in health care expenditure due to, e.g. technological progress. Moreover, an upward convergence of coverage and costs to the EU average is assumed to take place in long-term care.

Risk scenario projections

Graph 7 illustrates the projected increase in age-related expenditure (total and strictly) over 2016-70 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 was 25% of GDP in 2016 and is projected to rise by 1.7 pps. of GDP (baseline scenario), by 2.2 pps. (TFP risk scenario) and by as much as 4 pps. (AWG risk scenario) in the period to 2070. In the euro area, it is projected to rise from 26% of GDP in 2016 by 1.1 pps. (baseline scenario), by 1.7 pps. (TFP risk scenario) and by 3.6 pps. (AWG risk scenario) up to 2070.

Graph 7: **Projected age-related expenditure (2016-70), different scenarios, % of GDP, EU and EA**
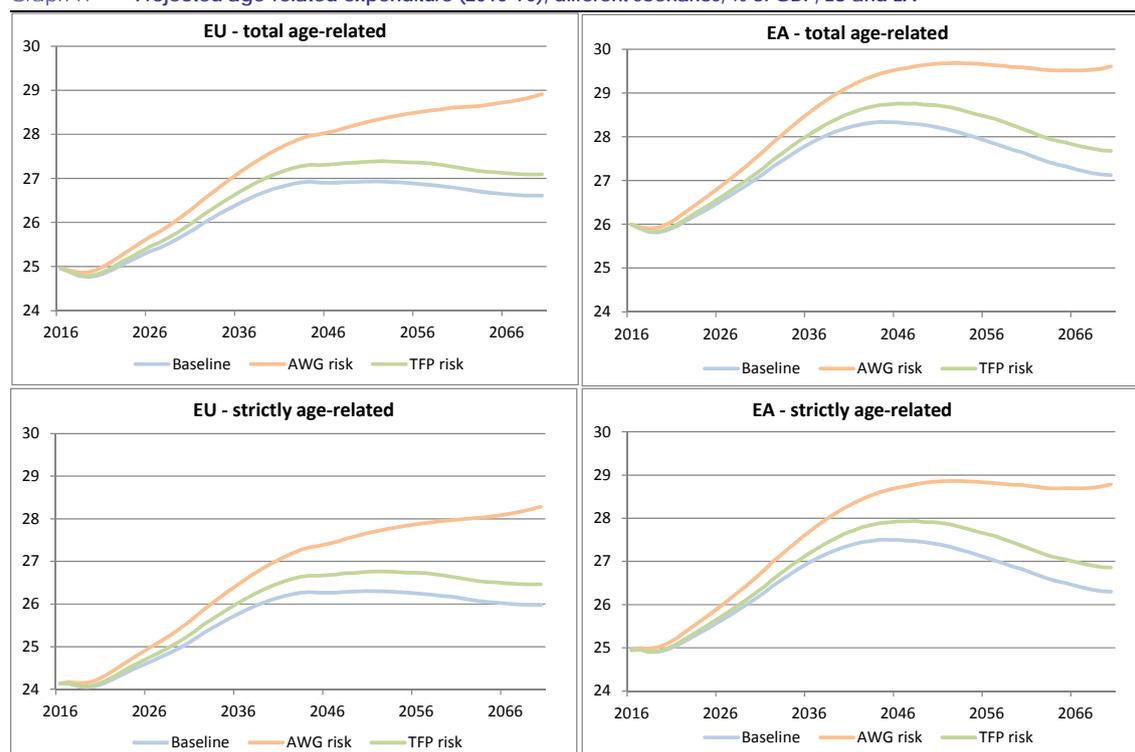
Source: Commission services, EPC.

The projected rise in strictly age-related expenditure (pensions, health care, long-term care and education) is higher, since unemployment benefit expenditure is projected to fall in the period to 2070 (by 0.2 pps. of GDP in the EU and the EA, see Table 1 and Graph 7). The projected rise in strictly public age-related expenditure is almost 1.8 pps. of GDP in the EU (EA: +1.4 pps.) between 2016 and 2070 in the baseline

---

[11] With an impact on the projections for health care and long-term care.

scenario (see Table 1 and Graph 7) (^{12}). A higher increase is projected in the TFP risk scenario, up by 2.4 pps (EA: +1.9pps) and in the AWG risk scenario, rising by 4.1 pps (EA: +3.8 pps.)

Graph 8: **Projected change in age-related expenditure (2016-70), different scenarios, pps. of GDP**
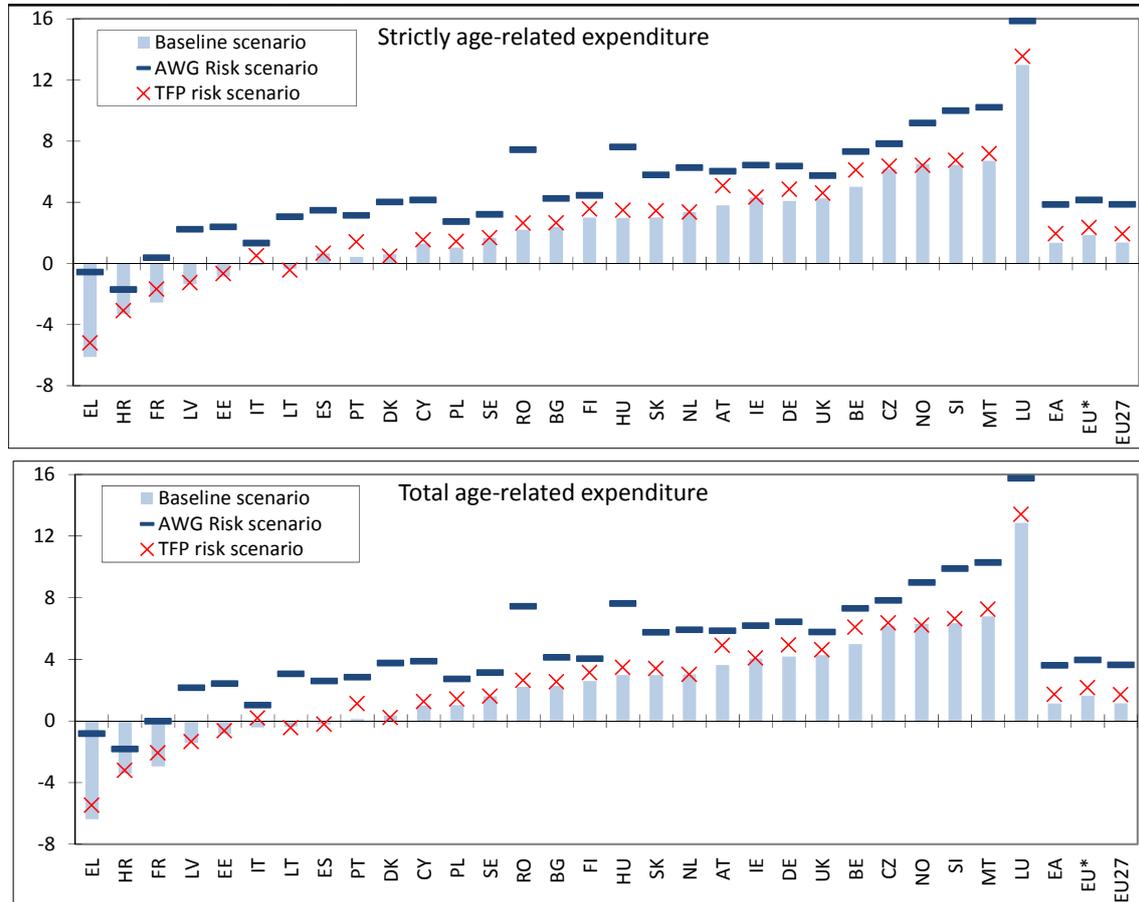
Source: Commission services, EPC.

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, i.e. slower than wages (which evolve in line with labour productivity growth, which in turn depends on TFP 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, Graph 9 and Table 2).

The AWG risk scenario has an important effect on health care and long-term care expenditure. The projected increase in total age-related expenditure would be 2 ½ pps. of GDP higher than the baseline scenario up to 2070 for both the EU as a whole and the EA. It would entail an increase over the entire projection horizon of 4 pps. in the EU and of 3.6 pps. in the EA (see Graph 8, Graph 9 and Table 3). However, in both risk scenarios, the EU aggregates mask considerable variety and the expenditure projections are very different across Member States.

(^{12}) As in previous long-term projection exercises, the baseline scenario focuses on the budgetary impact mostly due to demographic developments.

Graph 9: **Total age-related expenditure, different scenarios and by component, 2016 and 2070, % of GDP**
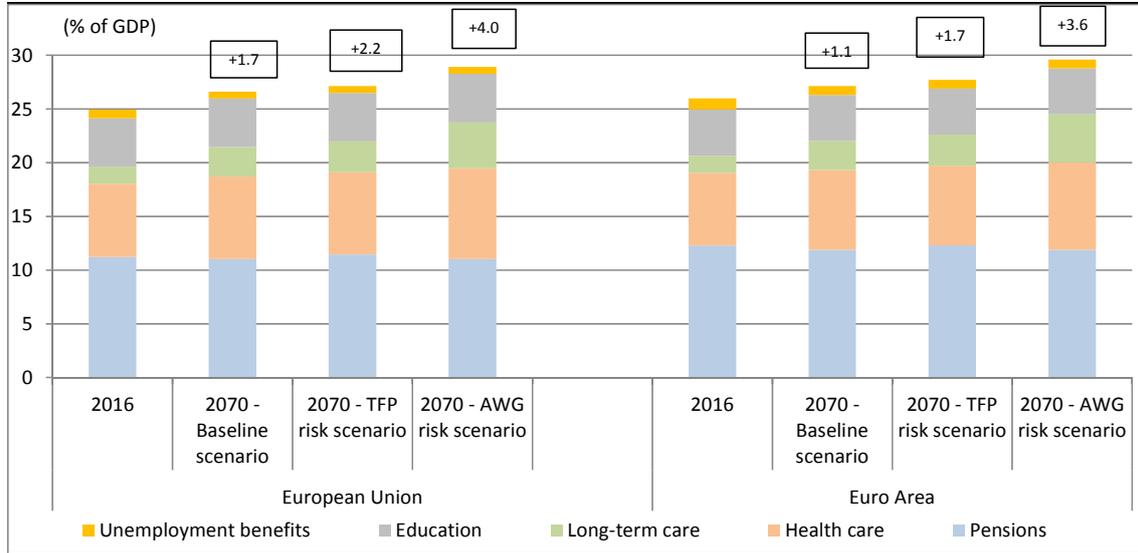
Source: Commission services, EPC.

A slightly higher projected increase in age-related spending projections now compared with the 2015 Ageing Report

Total age-related public expenditure according to the baseline scenario is now projected to rise more in all EU countries except EE, EL, FR, LT, MT, NL, SK and FI compared with the projections in the 2015 Ageing Report up to 2060 ([13]). Age-related expenditure was however slightly lower in 2016 than projected in the 2015 Ageing Report in the EU (-0.5 pps. of GDP). The higher projected increase is mainly due to higher increases in pension expenditure over the long-term (see Graph 10), and also to long-term care expenditure. This reflects a more pronounced population ageing effect in the EU up to 2060 according to the latest Eurostat population projection, but also the impact of reducing the retirement age in the future in some countries (e.g. CZ and PL), which has led to higher pension expenditure increases.

Graph 10: **Projected change in age-related and pension expenditure compared, 2018 and 2015 AR, 2016-60, pps. of GDP**
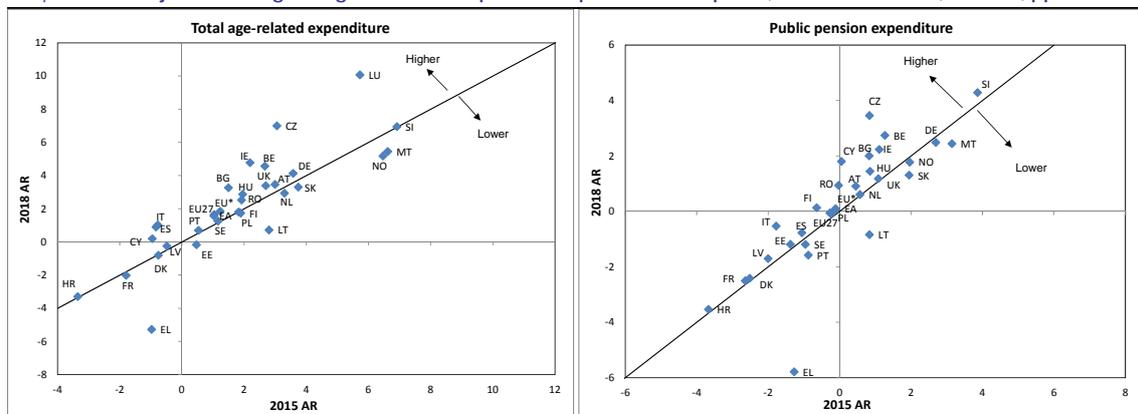
Source: Commission services, EPC.

([13]) Pension reforms implemented and having been subject to a peer review by the EPC after the 2015 Ageing Report was published are included in the 2015 AR projections in Graph 10.

Table 1: **Overview of the 2018 long-term budgetary projections – Baseline scenario**

	Age-related spending, percentage points of GDP, 2016-2070																					
	Ageing Report 2018 - Baseline scenario																					
	Pensions			Health-care			Long-term care			Education			Strictly age-related items			Unemployment benefits			Total age related items		
	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	
BE	12.1	2.4	2.9	5.9	0.3	0.4	2.3	0.9	1.7	5.8	-0.1	0.0	26.2	3.5	5.0	1.4	0.0	0.0	27.6	3.5	5.0	BE
BG	9.6	0.2	1.4	5.0	0.5	0.3	0.4	0.1	0.1	3.1	0.2	0.6	18.0	1.1	2.4	0.4	-0.1	-0.1	18.5	1.0	2.3	BG
CZ	8.2	1.0	2.8	5.4	0.8	1.1	1.3	0.8	1.6	3.2	0.4	0.8	18.1	3.0	6.2	0.1	0.0	0.0	18.2	3.0	6.2	CZ
DK	10.0	-1.8	-1.9	6.9	0.6	1.0	2.5	1.2	2.2	7.4	-0.5	-0.7	26.8	-0.6	0.6	0.9	-0.2	-0.2	27.6	-0.8	0.3	DK
DE	10.1	1.9	2.4	7.4	0.6	0.7	1.3	0.5	0.6	4.2	0.1	0.3	22.9	3.1	4.1	0.6	0.1	0.1	23.5	3.2	4.2	DE
EE	8.1	-1.0	-1.8	5.3	0.1	0.3	0.9	0.2	0.5	4.8	-0.2	0.2	19.1	-0.9	-0.9	0.2	0.0	0.0	19.3	-0.8	-0.8	EE
IE	5.0	1.7	1.6	4.1	0.8	1.0	1.3	0.8	1.9	3.6	-0.4	-0.2	14.1	2.9	4.3	1.1	-0.2	-0.2	15.2	2.7	4.1	IE
EL	17.3	-4.4	-6.6	5.0	1.0	1.2	0.1	0.0	0.1	3.1	-0.9	-0.8	25.5	-4.3	-6.1	0.4	-0.2	-0.3	25.8	-4.6	-6.4	EL
ES	12.2	1.8	-1.5	5.9	0.8	0.5	0.9	0.5	1.3	3.7	0.0	0.3	22.6	3.1	0.7	1.3	-0.7	-0.9	24.0	2.5	-0.2	ES
FR	15.0	0.0	-3.3	7.9	0.5	0.5	1.7	0.5	0.6	4.8	-0.2	-0.4	29.4	0.9	-2.6	1.6	-0.3	-0.4	31.0	0.6	-3.0	FR
HR	10.6	-2.2	-3.8	5.2	0.5	0.7	0.9	0.2	0.3	3.7	-0.6	-0.5	20.4	-2.1	-3.3	0.3	-0.1	-0.1	20.7	-2.2	-3.4	HR
IT	15.6	3.1	-1.7	6.3	0.6	0.7	1.7	0.6	1.2	3.5	-0.5	-0.3	27.2	3.8	-0.1	0.9	-0.3	-0.3	28.0	3.5	-0.4	IT
CY	10.2	1.3	2.3	2.8	0.2	0.4	0.3	0.1	0.3	5.8	-1.7	-1.6	19.1	-0.1	1.3	0.5	-0.3	-0.3	19.5	-0.4	1.0	CY
LV	7.4	-1.1	-2.6	3.7	0.6	0.6	0.4	0.1	0.1	4.5	0.1	0.5	16.0	-0.2	-1.4	0.4	0.0	-0.1	16.4	-0.2	-1.4	LV
LT	6.9	0.2	-1.7	4.1	0.6	0.4	1.0	0.7	1.0	3.9	-0.3	-0.1	15.8	1.1	-0.4	0.2	0.0	0.0	16.0	1.1	-0.4	LT
LU	9.0	2.5	8.9	3.9	0.6	1.2	1.3	0.8	2.8	3.3	-0.1	0.1	17.5	3.7	13.0	0.5	-0.1	-0.1	18.1	3.6	12.9	LU
HU	9.7	-0.3	1.5	4.9	0.7	0.8	0.7	0.2	0.4	3.6	-0.2	0.2	18.9	0.4	3.0	0.1	0.0	0.0	19.0	0.4	3.0	HU
MT	8.0	-0.7	2.9	5.6	1.7	2.7	0.9	0.7	1.4	5.4	-0.7	-0.2	20.0	1.1	6.7	0.2	0.1	0.1	20.2	1.2	6.8	MT
NL	7.3	1.2	0.6	6.2	0.6	0.8	3.5	1.8	2.5	5.2	-0.3	-0.5	22.3	3.4	3.4	1.3	-0.3	-0.3	23.6	3.0	3.0	NL
AT	13.8	1.1	0.5	7.0	0.7	1.3	1.9	0.7	1.9	4.9	-0.2	0.0	27.6	2.3	3.8	0.9	-0.2	-0.2	28.5	2.1	3.6	AT
PL	11.2	-0.3	-1.0	4.3	0.5	0.8	0.5	0.4	0.8	4.3	-0.2	0.4	20.3	0.3	1.0	0.1	0.0	0.0	20.4	0.3	1.0	PL
PT	13.5	1.2	-2.2	5.9	1.6	2.4	0.5	0.4	0.9	4.5	-1.0	-0.6	24.5	2.2	0.4	0.9	-0.3	-0.3	25.4	2.0	0.1	PT
RO	8.0	-0.3	0.7	4.3	0.8	0.9	0.3	0.2	0.3	2.5	0.0	0.3	15.0	0.7	2.2	0.1	0.0	0.0	15.1	0.7	2.2	RO
SI	10.9	3.2	3.9	5.6	1.0	1.0	0.9	0.5	0.9	4.0	0.1	0.6	21.5	4.8	6.4	0.4	-0.1	-0.1	21.9	4.7	6.3	SI
SK	8.6	-0.8	1.2	5.6	1.1	1.2	0.9	0.3	0.6	3.7	-0.2	0.0	18.8	0.4	3.0	0.2	0.0	0.0	18.9	0.4	3.0	SK
FI	13.4	0.5	0.6	6.1	0.6	0.8	2.2	1.4	2.1	5.9	-0.1	-0.4	27.6	2.4	3.0	2.2	-0.4	-0.4	29.8	2.0	2.6	FI
SE	8.2	-1.3	-1.2	6.9	0.4	0.7	3.2	0.9	1.7	5.8	0.2	0.4	24.1	0.2	1.7	0.3	-0.1	-0.1	24.4	0.1	1.6	SE
UK	7.7	0.9	1.7	7.9	0.8	1.4	1.5	0.6	1.3	5.2	-0.1	-0.2	22.4	2.2	4.3	0.1	0.0	0.0	22.5	2.2	4.3	UK
NO	10.7	1.2	2.1	7.7	0.8	1.2	3.7	1.6	3.4	7.6	-0.5	-0.3	29.7	3.1	6.5	0.6	-0.2	-0.2	30.2	2.9	6.3	NO
EA	12.3	1.3	-0.4	6.8	0.6	0.7	1.6	0.7	1.1	4.3	-0.1	0.0	24.9	2.4	1.4	1.1	-0.2	-0.2	26.0	2.2	1.1	EA
EU*	11.2	0.8	-0.2	6.8	0.6	0.9	1.6	0.6	1.2	4.5	-0.1	0.0	24.1	2.0	1.8	0.8	-0.2	-0.2	25.0	1.8	1.7	EU*
EU27	11.9	0.9	-0.5	6.6	0.6	0.7	1.6	0.6	1.1	4.4	-0.1	0.0	24.5	2.0	1.4	0.9	-0.2	-0.2	25.4	1.8	1.1	EU27
EU* s	10.3	0.4	0.2	5.5	0.7	0.9	1.3	0.6	1.1	4.4	-0.3	-0.1	21.5	1.4	2.2	0.6	-0.1	-0.2	22.1	1.2	2.1	EU* s

Note: Unless otherwise stated, EA: euro area; EU*: All 28 Member States; EU27: All EU Member States except the UK; EU*s: non-weighted EU average.

Source: Commission services, EPC.

Table 2:   **Overview of the 2018 long-term budgetary projections – TFP risk scenario**

	Age-related spending, percentage points of GDP, 2016-2070																					
	Ageing Report 2018 - TFP risk scenario																					
	Pensions			Health-care			Long-term care			Education			Strictly age-related items			Unemployment benefits			Total age related items		
	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	
BE	12.1	2.7	4.0	5.9	0.2	0.4	2.3	0.9	1.7	5.8	-0.1	0.0	26.2	3.8	6.1	1.4	0.0	0.0	27.6	3.8	6.1	BE
BG	9.6	0.5	1.7	5.0	0.5	0.2	0.4	0.1	0.1	3.1	0.2	0.6	18.0	1.3	2.7	0.4	-0.1	-0.1	18.5	1.2	2.5	BG
CZ	8.2	1.3	3.0	5.4	0.8	1.0	1.3	0.8	1.5	3.2	0.4	0.8	18.1	3.2	6.4	0.1	0.0	0.0	18.2	3.2	6.4	CZ
DK	10.0	-1.8	-2.0	6.9	0.5	1.0	2.5	1.2	2.2	7.4	-0.5	-0.7	26.8	-0.6	0.5	0.9	-0.2	-0.2	27.6	-0.9	0.2	DK
DE	10.1	1.9	2.5	7.4	0.5	0.7	1.3	0.8	1.4	4.2	0.1	0.3	22.9	3.4	4.8	0.6	0.1	0.1	23.5	3.5	4.9	DE
EE	8.1	-0.9	-1.5	5.3	0.1	0.2	0.9	0.2	0.5	4.8	-0.2	0.2	19.1	-0.8	-0.7	0.2	0.0	0.0	19.3	-0.7	-0.6	EE
IE	5.0	1.6	1.6	4.1	0.8	1.0	1.3	0.8	2.0	3.6	-0.4	-0.2	14.1	2.8	4.3	1.1	-0.2	-0.2	15.2	2.5	4.1	IE
EL	17.3	-3.6	-5.7	5.0	0.9	1.1	0.1	0.0	0.1	3.1	-0.9	-0.8	25.5	-3.5	-5.2	0.4	-0.2	-0.3	25.8	-3.7	-5.5	EL
ES	12.2	2.2	-1.4	5.9	0.8	0.5	0.9	0.5	1.3	3.7	0.0	0.3	22.6	3.5	0.7	1.3	-0.7	-0.9	24.0	2.9	-0.2	ES
FR	15.0	0.4	-2.4	7.9	0.5	0.4	1.7	0.6	0.7	4.8	-0.2	-0.4	29.4	1.3	-1.7	1.6	-0.3	-0.4	31.0	0.9	-2.1	FR
HR	10.6	-2.2	-3.6	5.2	0.5	0.7	0.9	0.2	0.3	3.7	-0.6	-0.5	20.4	-2.1	-3.1	0.3	-0.1	-0.1	20.7	-2.2	-3.2	HR
IT	15.6	3.4	-1.1	6.3	0.6	0.7	1.7	0.6	1.2	3.5	-0.4	-0.3	27.2	4.1	0.5	0.9	-0.3	-0.3	28.0	3.8	0.2	IT
CY	10.2	1.4	2.5	2.8	0.2	0.4	0.3	0.1	0.3	5.8	-1.7	-1.6	19.1	0.0	1.5	0.5	-0.3	-0.3	19.5	-0.3	1.3	CY
LV	7.4	-0.8	-2.4	3.7	0.6	0.5	0.4	0.1	0.1	4.5	0.1	0.5	16.0	0.0	-1.3	0.4	0.0	-0.1	16.4	0.0	-1.3	LV
LT	6.9	0.2	-1.6	4.1	0.5	0.3	1.0	0.7	1.0	3.9	-0.3	-0.1	15.8	1.1	-0.4	0.2	0.0	0.0	16.0	1.1	-0.4	LT
LU	9.0	2.9	9.5	3.9	0.5	1.1	1.3	0.7	2.8	3.3	-0.1	0.1	17.5	4.1	13.5	0.5	-0.1	-0.1	18.1	4.0	13.4	LU
HU	9.7	0.5	2.1	4.9	0.6	0.8	0.7	0.2	0.4	3.6	-0.2	0.2	18.9	1.2	3.5	0.1	0.0	0.0	19.0	1.2	3.5	HU
MT	8.0	-0.5	3.4	5.6	1.7	2.6	0.9	0.7	1.4	5.4	-0.7	-0.2	20.0	1.3	7.2	0.2	0.1	0.1	20.2	1.4	7.2	MT
NL	7.3	1.2	0.6	6.2	0.6	0.8	3.5	1.8	2.5	5.2	-0.3	-0.5	22.3	3.4	3.4	1.3	-0.3	-0.3	23.6	3.0	3.0	NL
AT	13.8	1.8	0.8	7.0	0.7	1.3	1.9	0.7	1.9	4.9	-0.2	0.0	27.6	3.1	4.0	0.9	-0.2	-0.2	28.5	2.9	3.8	AT
PL	11.2	0.5	-0.5	4.3	0.4	0.8	0.5	0.4	0.8	4.3	-0.2	0.4	20.3	1.1	1.4	0.1	0.0	0.0	20.4	1.1	1.4	PL
PT	13.5	1.7	-1.2	5.9	1.6	2.3	0.5	0.4	0.9	4.5	-1.0	-0.6	24.5	2.7	1.4	0.9	-0.3	-0.3	25.4	2.5	1.1	PT
RO	8.0	0.1	1.2	4.3	0.8	0.9	0.3	0.2	0.3	2.5	0.0	0.3	15.0	1.1	2.6	0.1	0.0	0.0	15.1	1.1	2.6	RO
SI	10.9	3.6	4.2	5.6	1.0	1.0	0.9	0.5	0.9	4.0	0.1	0.6	21.5	5.2	6.7	0.4	-0.1	-0.1	21.9	5.1	6.6	SI
SK	8.6	-0.2	1.7	5.6	1.0	1.1	0.9	0.3	0.6	3.7	-0.2	0.0	18.8	0.9	3.4	0.2	0.0	0.0	18.9	0.9	3.4	SK
FI	13.4	1.2	1.2	6.1	0.5	0.7	2.2	1.4	2.1	5.9	-0.1	-0.4	27.6	3.0	3.5	2.2	-0.4	-0.4	29.8	2.6	3.1	FI
SE	8.2	-1.3	-1.2	6.9	0.4	0.7	3.2	0.9	1.7	5.8	0.2	0.4	24.1	0.2	1.7	0.3	-0.1	-0.1	24.4	0.1	1.6	SE
UK	7.7	1.1	2.2	7.9	0.8	1.4	1.5	0.6	1.2	5.2	-0.1	-0.2	22.4	2.4	4.6	0.1	0.0	0.0	22.5	2.4	4.6	UK
NO	10.7	1.2	2.1	7.7	0.7	1.2	3.7	1.6	3.4	7.6	-0.5	-0.3	29.7	3.0	6.4	0.6	-0.2	-0.2	30.2	2.8	6.2	NO
EA	12.3	1.5	0.0	6.8	0.6	0.6	1.6	0.7	1.3	4.3	-0.1	0.0	24.9	2.7	1.9	1.1	-0.2	-0.2	26.0	2.5	1.7	EA
EU*	11.2	1.1	0.2	6.8	0.6	0.8	1.6	0.7	1.3	4.5	-0.1	0.0	24.1	2.3	2.3	0.8	-0.2	-0.2	25.0	2.1	2.1	EU*
EU27	11.9	1.1	-0.1	6.6	0.6	0.7	1.6	0.7	1.3	4.4	-0.1	0.0	24.5	2.3	1.9	0.9	-0.2	-0.2	25.4	2.1	1.7	EU27
EU* s	10.3	0.7	0.6	5.5	0.7	0.9	1.3	0.6	1.1	4.4	-0.3	-0.1	21.5	1.7	2.6	0.6	-0.1	-0.2	22.1	1.5	2.4	EU*

Source: Commission services, EPC.

Table 3: **Overview of the 2018 long-term budgetary projections – AWG risk scenario**

	Age-related spending, percentage points of GDP, 2016-2070																					
	Ageing Report 2018 - AWG risk scenario																					
	Pensions			Health-care			Long-term care			Education			Strictly age-related items			Unemployment benefits			Total age related items		
	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70	2016 level	CH 16-40	CH 16-70
BE	12.1	2.4	2.9	5.9	0.5	0.9	2.3	1.3	3.5	5.8	-0.1	0.0	26.2	4.2	7.3	1.4	0.0	0.0	27.6	4.2	7.3
BG	9.6	0.2	1.4	5.0	1.4	1.3	0.4	0.3	1.0	3.1	0.2	0.6	18.0	2.0	4.2	0.4	-0.1	-0.1	18.5	1.9	4.1
CZ	8.2	1.0	2.8	5.4	1.4	1.9	1.3	1.0	2.4	3.2	0.4	0.8	18.1	3.8	7.8	0.1	0.0	0.0	18.2	3.8	7.8
DK	10.0	-1.8	-1.9	6.9	1.0	1.8	2.5	2.1	4.8	7.4	-0.5	-0.7	26.8	0.7	4.0	0.9	-0.2	-0.2	27.6	0.5	3.8
DE	10.1	1.9	2.4	7.4	1.1	1.5	1.3	1.0	2.1	4.2	0.1	0.3	22.9	4.1	6.3	0.6	0.1	0.1	23.5	4.2	6.4
EE	8.1	-1.0	-1.8	5.3	0.7	1.1	0.9	0.8	2.9	4.8	-0.2	0.2	19.1	0.3	2.4	0.2	0.0	0.0	19.3	0.3	2.4
IE	5.0	1.7	1.6	4.1	1.2	1.7	1.3	1.2	3.4	3.6	-0.4	-0.2	14.1	3.8	6.4	1.1	-0.2	-0.2	15.2	3.5	6.2
EL	17.3	-4.4	-6.6	5.0	1.4	2.0	0.1	0.4	4.8	3.1	-0.9	-0.8	25.5	-3.5	-0.6	0.4	-0.2	-0.3	25.8	-3.7	-0.8
ES	12.2	1.8	-1.5	5.9	1.2	1.2	0.9	1.1	3.5	3.7	0.0	0.3	22.6	4.0	3.5	1.3	-0.7	-0.9	24.0	3.4	2.6
FR	15.0	0.0	-3.3	7.9	0.9	1.2	1.7	1.2	2.8	4.8	-0.2	-0.4	29.4	2.0	0.4	1.6	-0.3	-0.4	31.0	1.7	0.0
HR	10.6	-2.2	-3.8	5.2	1.0	1.5	0.9	0.3	1.1	3.7	-0.6	-0.5	20.4	-1.6	-1.7	0.3	-0.1	-0.1	20.7	-1.6	-1.8
IT	15.6	3.1	-1.7	6.3	0.8	1.1	1.7	0.9	2.2	3.5	-0.3	-0.3	27.2	4.3	1.3	0.9	-0.3	-0.3	28.0	4.0	1.0
CY	10.2	1.3	2.3	2.8	0.4	0.6	0.3	0.4	2.9	5.8	-1.7	-1.6	19.1	0.4	4.1	0.5	-0.3	-0.3	19.5	0.1	3.9
LV	7.4	-1.1	-2.6	3.7	1.6	1.8	0.4	0.5	2.6	4.5	0.1	0.5	16.0	1.1	2.2	0.4	0.0	-0.1	16.4	1.1	2.2
LT	6.9	0.2	-1.7	4.1	1.2	1.2	1.0	1.3	3.6	3.9	-0.3	-0.1	15.8	2.3	3.1	0.2	0.0	0.0	16.0	2.3	3.1
LU	9.0	2.5	8.9	3.9	0.9	1.7	1.3	1.2	5.2	3.3	-0.1	0.1	17.5	4.5	15.8	0.5	-0.1	-0.1	18.1	4.4	15.7
HU	9.7	-0.3	1.5	4.9	1.4	1.8	0.7	0.9	4.1	3.6	-0.2	0.2	18.9	1.8	7.6	0.1	0.0	0.0	19.0	1.8	7.6
MT	8.0	-0.7	2.9	5.6	2.9	4.3	0.9	1.0	3.3	5.4	-0.7	-0.2	20.0	2.6	10.2	0.2	0.1	0.1	20.2	2.6	10.3
NL	7.3	1.2	0.6	6.2	0.9	1.4	3.5	2.3	4.7	5.2	-0.3	-0.5	22.3	4.2	6.3	1.3	-0.3	-0.3	23.6	3.9	5.9
AT	13.8	1.1	0.5	7.0	1.2	2.1	1.9	1.1	3.4	4.9	-0.2	0.0	27.6	3.1	6.0	0.9	-0.2	-0.2	28.5	3.0	5.8
PL	11.2	-0.3	-1.0	4.3	1.1	1.7	0.5	0.5	1.6	4.3	-0.2	0.4	20.3	1.1	2.7	0.1	0.0	0.0	20.4	1.1	2.7
PT	13.5	1.2	-2.2	5.9	2.2	3.3	0.5	0.7	2.6	4.5	-1.0	-0.6	24.5	3.1	3.1	0.9	-0.3	-0.3	25.4	2.8	2.8
RO	8.0	-0.3	0.7	4.3	1.7	2.1	0.3	0.5	4.3	2.5	0.0	0.3	15.0	2.0	7.4	0.1	0.0	0.0	15.1	2.0	7.4
SI	10.9	3.2	3.9	5.6	1.7	2.0	0.9	1.2	3.5	4.0	0.1	0.6	21.5	6.2	10.0	0.4	-0.1	-0.1	21.9	6.1	9.9
SK	8.6	-0.8	1.2	5.6	2.1	2.6	0.9	0.6	2.0	3.7	-0.2	0.0	18.8	1.7	5.8	0.2	0.0	0.0	18.9	1.7	5.8
FI	13.4	0.5	0.6	6.1	0.9	1.4	2.2	1.7	2.9	5.9	-0.1	-0.4	27.6	3.0	4.4	2.2	-0.4	-0.4	29.8	2.6	4.0
SE	8.2	-1.3	-1.2	6.9	0.9	1.5	3.2	1.1	2.5	5.8	0.2	0.4	24.1	0.9	3.2	0.3	-0.1	-0.1	24.4	0.8	3.1
UK	7.7	0.9	1.7	7.9	1.4	2.4	1.5	0.7	1.8	5.2	-0.1	-0.2	22.4	2.9	5.7	0.1	0.0	0.0	22.5	2.9	5.8
NO	10.7	1.2	2.1	7.7	1.3	2.1	3.7	2.0	5.2	7.6	-0.5	-0.3	29.7	4.0	9.2	0.6	-0.2	-0.2	30.2	3.8	9.0
EA	12.3	1.3	-0.4	6.8	1.0	1.4	1.6	1.1	2.9	4.3	-0.1	0.0	24.9	3.3	3.8	1.1	-0.2	-0.2	26.0	3.1	3.6
EU*	11.2	0.8	-0.2	6.8	1.1	1.6	1.6	1.0	2.7	4.5	-0.1	0.0	24.1	2.8	4.1	0.8	-0.2	-0.2	25.0	2.7	4.0
EU27	11.9	0.9	-0.5	6.6	1.0	1.4	1.6	1.1	2.9	4.4	-0.1	0.0	24.5	2.9	3.8	0.9	-0.2	-0.2	25.4	2.7	3.6
EU* s	10.3	0.4	0.2	5.5	1.3	1.8	1.3	1.0	3.1	4.4	-0.3	-0.1	21.5	2.3	5.0	0.6	-0.1	-0.2	22.1	2.2	4.8

Source: Commission services, EPC.

Part I

Underlying demographic and macroeconomic assumptions

1. DEMOGRAPHIC ASSUMPTIONS

1.1. POPULATION PROJECTIONS

The 2018 long-term budgetary projections for the period 2016-2070 are based on the 2015-based population projections released by Eurostat in February 2017. The datasets on the key demographic determinants, as well as the underlying methodologies used can be found on the Eurostat dedicated website ([14]).

National statistical institutes have collaborated with Eurostat during the preparation of these population projections ([15]).

As was the case with the previous demographic projections, the 2015-based population projections were made using a partial 'convergence' approach. This means that the key demographic determinants are assumed to converge over the very long-term. Setting the year of convergence far into the future has the advantage of taking due account of recent trends and developments in the beginning of the period, while at the same time assuming a degree of convergence over the very long-term in terms of demographic drivers.

The key demographic determinants are: (i) the fertility rate; (ii) the mortality rate and (iii) the level of net migration. As far as fertility and mortality are concerned, it is assumed that they converge to that of the 'forerunners'.

Migration flows on a net basis in each Member State are the result of a model taking various elements into account (past trends, latest empirical evidence and long-term partial convergence). Furthermore, immigration flows which depend on the specific age structure of the national population are added to the net migration projections.

1.1.1. Fertility rates

The total fertility rate (TFR) is assumed to rise in almost all Member States between 2016-70, increasing from 1.58 to 1.81 for the EU as whole and from 1.56 to 1.79 for the euro-area

Past trends

In the preceding decades fertility rates declined sharply in the EU Member States after the post-war "baby boom" peak above 2.5 in the second half of the 1960s, to below the natural replacement level of 2.1 (see Graph I.1.1).

Graph I.1.1: **Total average fertility rates in European Union and euro-area, 1960-2015**
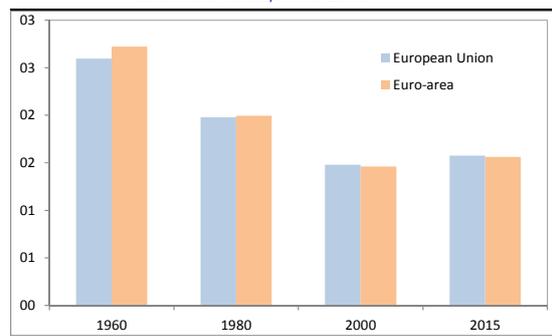
Note: Simple average.
Source: Commission services based on Eurostat data.

Total fertility rates (TFR([16])) have increased since 2000 on average in the EU as a whole, although this trend increase has reversed into a decline since 2010. Fertility rates have nevertheless increased between 2000 and 2015 in almost all Member States, with total fertility rates reaching above 1.8 or more in Ireland, France, Sweden and the UK. By contrast, fertility rates have decreased in Cyprus, Luxembourg, Malta, Poland and Portugal.

The 2015-based population projections

The 2015-based population projections assume a process of convergence in the fertility rates across Member States to that of the forerunners over the long-term. The total fertility rate (TFR) is projected to rise from 1.58 in 2016 to 1.81 by 2070

([14]) Eurostat's dedicated website on population projections can be found at http://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-projections-data; the datasets can be found on http://ec.europa.eu/eurostat/data/database?node_code=proj; Eurostat(2017): 'Summary methodology of the 2015-based population projections', is available at http://ec.europa.eu/eurostat/cache/metadata/Annexes/proj_esms_an1.pdf.

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

([16]) Fertility rates are reflected by the average number of children a woman would have, should she at each bearing age have the fertility rates of the year under review (this number is obtained by summing the fertility rates by age and is called the Total Fertility Rate, or TFR).

for the EU and in the euro-area, a similar increase is projected, from 1.56 in 2016 to 1.79 in 2070.

The fertility rate is projected to increase over the projection period in all Member States, with the exception of France where it is expected to decrease slightly. Consequently, fertility rates in all countries are expected to remain below the natural replacement rate of 2.1 in the period to 2070 (see Graph I.1.2)

Graph I.1.2: **Projection of total fertility rates, 2016-2070 (number of births per woman)**
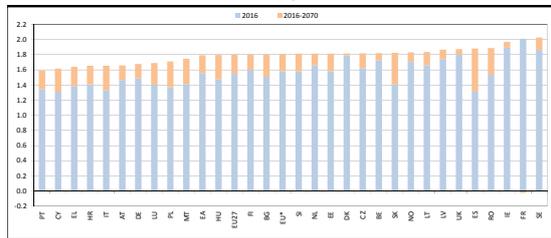
Source: Eurostat, 2015-based population projections.

1.1.2. Life expectancy

For the EU as a whole, life expectancy at birth is expected to increase by 7.8 years for males and 6.6 years for females over the projection horizon, with the largest increases in Member States with the lowest life expectancies in 2016.

Past trends

Life expectancy has been increasing in most developed countries worldwide since 1960, with life expectancy at birth in the European Union (see Graph I.1.3), on average rising around 2.2 years per decade for both genders.

For males, average life expectancy rose from 66.9 years in 1960 to 76.8 years in 2015 in the European Union and for females, life expectancy rose from 72.3 years to 82.6 years.

The difference between female and male life expectancies has diminished since 1990 in the EU due to faster improvements in life expectancy for males relative to females.

Graph I.1.3: **Life expectancy at birth in the EU, 1960-2015 (in years)**
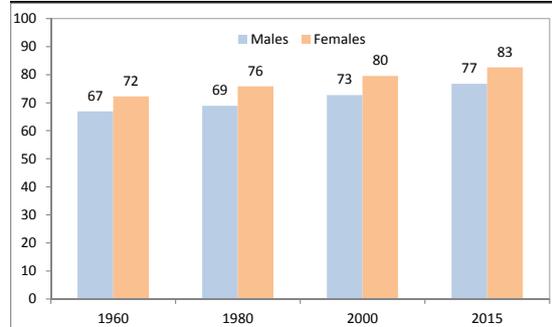
Note: Simple average
Source: Commission services based on Eurostat data.

Official projections generally assume that gains in life expectancy at birth will slow down compared with historical trends. 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 wide range of life expectancies across EU Member States, and also compared with other countries, points to considerable scope for future gains. In 2015, life expectancy at birth for females ranged from 78.2 in Bulgaria to 85.8 years in Spain, and for males from 69.2 in Lithuania to 80.4 in Sweden.

However, regarding trends over the very long term, there is no consensus among demographers, e.g. whether there is a natural biological limit to longevity, the impact of future medical breakthroughs, long-term impact of public health programmes and societal behaviour such as reduction of smoking rates or increased prevalence of obesity. Past population projections from official sources have, however, generally underestimated the gains in life expectancy at birth as it was difficult to imagine that the reduction of mortality would continue at the same pace in the long run. As a consequence, in certain cases the budgetary impact of ageing populations may have been different than originally projected.

The 2015-based population projections

The 2015-based population projection shows large increases in life expectancy at birth being sustained during the projection period, albeit with a considerable degree of diversity across Member States reflecting the convergence assumption.

In the EU, life expectancy at birth for males is expected to increase by 7.8 years over the projection period, from 78.3 in 2016 to 86.1 in 2070. For females, life expectancy at birth is projected to increase by 6.6 years for females, from 83.7 in 2013 to 90.3 in 2070, implying a convergence of life expectancy between males and females.

The largest increases in life expectancies at birth, for both males and females, are projected to take place in the Member States with the lowest life expectancies in 2016.

Life expectancies for males are the lowest in Bulgaria, Estonia, Latvia, Lithuania, Hungary and Romania, ranging between 69 and 73 years, and are projected to increase more than 11 years up to 2070, indicating catching-up vis-à-vis the rest of the EU (Graph I.1.4).

Graph I.1.4: **Projection of life expectancy at birth, males (in years), 2016-2070**
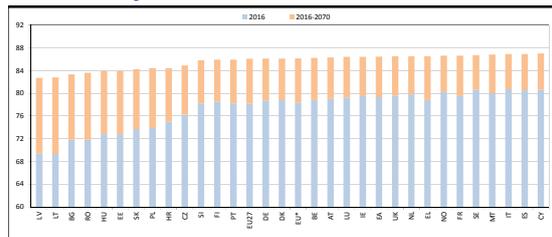
Source: Eurostat, 2015-based population projections.

For females, the largest gains in life expectancy at birth of 8 years or more are projected in Bulgaria, Latvia, Lithuania, Hungary, Romania and Slovakia where female life expectancy in 2016 was below 81 years (Graph I.1.5).

Graph I.1.5: **Projection of life expectancy at birth, females (in years), 2016-2070**
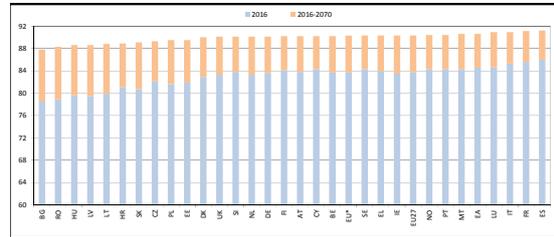
Source: Eurostat, 2015-based population projections.

In the EU as a whole, life expectancy at age 65 is projected to increase by 5.3 years for males and by 5.1 years for females over the projection period 2016-2070 (see Graphs I.1.6 and I.1.7).

Graph I.1.6: **Projection of life expectancy at 65, females (in years), 2016-2070**
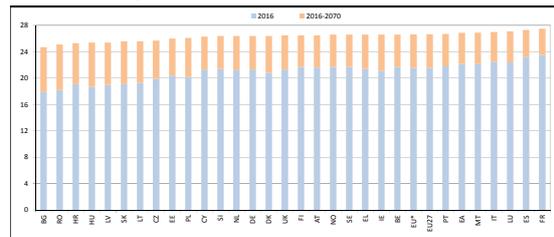
Source: Eurostat, 2015-based population projections.

In 2070, life expectancy at age 65 will reach 23.4 years for males and 26.6 for females and the projected difference (3.2 years) is smaller than the difference in life expectancy at birth (4.2 years). In 2070, the highest life expectancy at age 65 is expected in France for both males (24 years) and females (27.5 years), while the lowest is expected in Bulgaria for both males (21.5 years) and females (24.7 years).

Graph I.1.7: **Projection of life expectancy at 65, males (in years), 2016-2070**
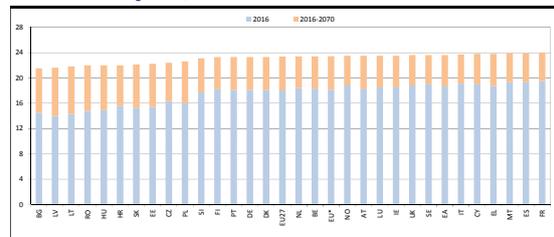
Source: Eurostat, 2015-based population projections.

1.1.3. Net migration flows

Net migration projections typically are the most methodologically difficult, with high volatility across time and countries. Annual net migration inflows to the EU are projected to decrease from about 1.5 million people in 2016 to 821,000 people by 2070 or 0.2% of the total population.

Past trends and driving forces

Graph I.1.8: **Net migration flows, 1965-2015 (thousands)**
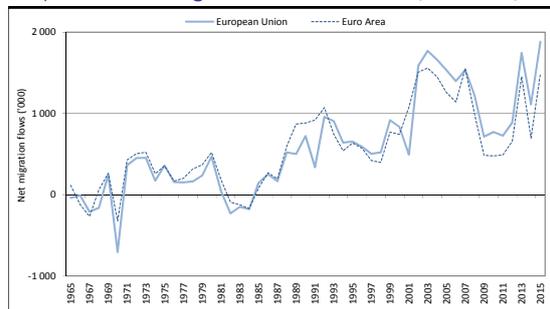
Source: Eurostat, 2015-based population projections..

Net migration inflows ([17]) to the EU and euro-area over the last fifty years have increased considerably, albeit with fluctuations (see Graph I.1.8). From 1965 through the mid-1980s net migration was mostly positive with annual net inflows averaging around 78,000 over the period though certain years saw large net outflows. Since 1985, annual net migration into the EU has been consistently positive and has risen significantly (albeit with periods of volatility), averaging around 674,000 in 1990-99 and 1.27 million in 2000-09.

Net migration inflows dropped to around 774,000 per year in the years 2009-12 following the global economic crisis, but subsequently increased to pre-crisis levels with annual net inflows averaging 1.58 million in years 2013-15, as the European economy recovered and as a consequence of instability in North Africa and the Middle East.

Net inflows for the EU peaked in 2015 (1.8 million).

The 2015-based population projections

For the EU as a whole, annual net inflows are projected to decrease from about 1.5 million people in 2016 (0.3% of the population) to 805,000 people by 2070 (0.2% of the population), see Box I.1.1 for the methodology used to project net migration. Cumulatively, net migration inflows during the period 2016-70 are forecast to equal 11.3% of the total EU population in 2070 and 12.8% of the total population of the euro-area (Table I.1.1). The countries with the largest net migration inflows (in terms of resident population) are projected to be Luxembourg, Austria, Malta, Cyprus, Italy and Sweden. Cumulative net migration outflows are projected over this period for Bulgaria, Romania, Lithuania and Latvia.

Table I.1.1: **Projection of net migration flows, 2016-70**

	Net migration ('000)				Net migration (% of population)				
	2016	2030	2060	2070	2016	2030	2060	2070	2016-70 (1)
BE	55	48	30	26	0.5	0.4	0.2	0.2	15.7
BG	-4	-9	1	1	-0.1	-0.1	0.0	0.0	-2.8
CZ	19	17	9	9	0.2	0.2	0.1	0.1	8.4
DK	37	27	11	9	0.6	0.4	0.2	0.1	15.5
DE	750	268	175	143	0.9	0.3	0.2	0.2	16.7
EE	3	1	0	0	0.2	0.1	0.0	0.0	5.1
IE	15	8	12	11	0.3	0.1	0.2	0.2	10.0
EL	-24	-4	10	11	-0.2	0.0	0.1	0.1	2.1
ES	13	119	154	137	0.0	0.3	0.3	0.3	14.5
FR	54	86	62	55	0.1	0.1	0.1	0.1	5.1
HR	-21	4	5	5	-0.5	0.1	0.1	0.1	5.4
IT	134	210	177	164	0.2	0.3	0.3	0.3	18.9
CY	1	3	4	4	0.1	0.3	0.4	0.4	19.3
LV	-9	-6	0	0	-0.5	-0.4	0.0	0.0	-10.2
LT	-28	-17	0	0	-1.0	-0.7	0.0	0.0	-25.7
LU	11	9	4	4	1.9	1.1	0.4	0.4	35.9
HU	18	16	14	11	0.2	0.2	0.2	0.1	9.9
MT	3	3	1	1	0.8	0.5	0.2	0.2	21.2
NL	86	59	29	25	0.5	0.3	0.1	0.1	12.4
AT	74	55	25	21	0.8	0.6	0.2	0.2	22.1
PL	5	-2	12	7	0.0	0.0	0.0	0.0	1.7
PT	-10	13	15	14	-0.1	0.1	0.2	0.2	8.8
RO	-64	-51	2	3	-0.3	-0.3	0.0	0.0	-7.2
SI	0	4	3	3	0.0	0.2	0.1	0.1	10.0
SK	6	5	4	3	0.1	0.1	0.1	0.1	5.9
FI	16	14	8	7	0.3	0.2	0.1	0.1	10.5
SE	104	57	27	24	1.0	0.5	0.2	0.2	17.5
UK	244	220	121	107	0.4	0.3	0.2	0.1	11.8
NO	27	26	18	16	0.5	0.4	0.3	0.2	17.6
EA	1149	878	713	628	0.3	0.3	0.2	0.2	12.8
EU*	1485	1157	915	805	0.3	0.2	0.2	0.2	11.3
EU27	1241	937	793	697	0.3	0.2	0.2	0.2	11.2

Note: Cumulative net migration as % of population in 2070.
Source: Eurostat, 2015-based population projections.

([17]) Due to difficulties in having for each Member State good statistics of the migration flows, net migration is measured as the difference between the total population on 31 December and 1 January for a given calendar year, minus the difference between births and deaths (or natural increase). The approach is different from that of subtracting recorded emigration flows from immigration flows. Notably, when operating like that, the "net migration" not only records errors due to the difficulty of registering the migration moves, it also includes all possible errors and adjustments in other demographic variables.

Box I.1.1: **Methodology for the migration assumptions in the 2015-based population projections**

The model used to produce migration assumptions for the 2015-based population projections is built upon four components ([1]):

a) nowcast;

b) trend model;

c) convergence model;

d) working-age population 'feedback mechanism'.

The weight of the first three components in the overall migration assumptions varies depending on the year of reference. This model tries to take into account past migration trends, very latest evidences, driving demographic factors as well as a vision about future developments in migration flows. On purpose, it does not require non-demographic data input.

Being the jump-off time of reference of the population projections the 1 January 2015 ('2015-based' projections), the migration events that should have been considered were those until the year 2014. However, because of the timing of the exercise, provisional data for the year 2015 and for part of the year 2016 were available at the time of the projections computations. In order to incorporate the latest empirical evidence, the net migration observed in 2015 has been directly taken as 'assumption' for the year 2015.

For the year 2016, the Member States have been invited to provide a statistically sound forecast of net migration, using all the latest (usually monthly or quarterly) available data. The nowcast for the net migration in 2016 has been provided by all countries except Belgium, Estonia, France, Hungary, Romania and Slovakia. For these latter countries, assumptions for the year 2016 where then produced using the other components of the migration model (see below).

In order to take into account past migration in the formulation of assumptions on future flows, net migration trends were identified and extrapolated by applying Auto-Regressive Integrated Moving Average (ARIMA) models selected by an automated model specification procedure. The extrapolated trends can point to any direction, i.e. indicating increase, decrease or stability of the future flows, depending on the past migration trends. They are mainly an attempt to incorporate any past regularity in migration flows into the assumption for the future; in several cases, however, the best possible model was a 'random walk'.

Considering that the prolongation of the latest migration trends very far in the future may require implausible assumptions, an additional component of the migration model dealt with a longer term view on migration.

The values of net migration based on the convergence assumption for the long term are derived by a piecewise linear interpolation between the last observed value (2015) and the common reference value in the far future. In order to reduce the influence of the last observation, the linear interpolation has been applied first between the net migration value in the year 2015 and an intermediate point value estimated for the year 2020, obtained as the average of the net migration observed in the last 20 years (1996-2015). Afterwards, a second linear interpolation was done between the intermediate value in 2020 and the reference value of convergence (here equal to zero in 2150). By doing so, the potential impact of an extreme starting value in 2015 is smoothed by forcing it towards a more 'stable' value derived from a much longer time period.

Once projected values of the total net migration are available from both the trends and the convergence models, they are pooled giving progressively more weight to the convergence model. This was done by means of a simple weighted average, where the weight attributed to the trend component goes from one in 2015

([1]) Excerpt from Eurostat (2017), 'Methodology for the migration assumptions in the 2015-based population projections', which contains a comprehensive description of the methodology.

(Continued on the next page)

Box (continued)

to zero in 2050, year by which the transition from the trends to the convergence is completed.

In countries where the size of the population of working ages (conventionally 15-64 years old) is projected to shrink, a 'feedback' correction factor for immigration is applied. This additional immigration is limited to 10% of the projected shrinkage of the working-age population between two consecutive years. This quantity is estimated as overall volume, added in one round to the corresponding annual assumptions for each year of the projections period and distributed by age and sex in accordance with the country- and year-specific immigration patterns.

Putting all the parts together, the assumptions on total net migration are derived from observed data for 2015, from national nowcasting for the year 2016 when available, from a mix of trends extrapolation and long-term convergence from the following year to 2050, almost exclusively from the trends component at the beginning and progressively more from the 'convergence' values until entering the long-term period (2050 onwards) in which the convergence assumption defines the migration values. All over the projections horizon, net migration flows may be increased due to the additional feedback mechanism depending on the working-age population change.

The methodology applied for the 2015-based population projections is the same applied in the previous round of projections (Eurostat Population Projections 2013-based – EUROPOP2013), except for the following changes:

1. The intermediate point for net migration used in the double linear interpolation of the convergence model is computed over the latest available 20 years instead than over the latest available 10 years as in the EUROPOP2013 model.

2. The transition from trend to convergence starts at the beginning of the projections period (i.e., in 2015), while in EUROPOP2013 the transition was starting in 2020.

3. In EUROPOP2013, the transition for countries with negative net migration at the intermediate point above described was shortened to be completed by 2035; in the 2015-based projections, the final year of the transition remains the same (2050) for all countries.

Emigration levels used to break down the net migration by flow are estimated as average over the latest 5 years (2010 – 2014) rather than over the latest 3 years (2010 – 2012) as in EUROPOP2013.

1.1.4. Baseline population size

The total population in the EU is projected to increase from 511 million in 2016 to 520 million in 2070 but the working-age population will decrease significantly due to fertility, life expectancy and migration dynamics.

Table I.1.2:   **Total population projections, 2016-70**

	Total population (annual average - millions)						% change
	2016	2030	2040	2050	2060	2070	2016-70
BE	11.3	12.3	12.9	13.3	13.6	13.9	22.8
BG	7.1	6.4	5.9	5.5	5.2	4.9	-31.9
CZ	10.6	10.7	10.5	10.5	10.3	10.0	-5.7
DK	5.7	6.3	6.6	6.7	6.8	6.8	19.2
DE	82.5	84.6	84.1	82.6	80.7	79.2	-3.9
EE	1.3	1.3	1.3	1.3	1.2	1.2	-10.5
IE	4.7	5.2	5.4	5.7	5.9	6.0	28.9
EL	10.8	9.9	9.4	8.9	8.3	7.7	-28.8
ES	46.4	47.2	48.3	49.3	49.6	49.9	7.4
FR	66.8	70.7	73.0	74.4	75.6	77.0	15.3
HR	4.2	3.9	3.8	3.7	3.5	3.4	-18.6
IT	60.8	60.3	60.0	58.9	56.8	54.9	-9.7
CY	0.9	0.9	1.0	1.0	1.0	1.0	19.8
LV	2.0	1.7	1.6	1.5	1.4	1.3	-31.7
LT	2.9	2.4	2.1	2.0	1.8	1.7	-40.1
LU	0.6	0.8	0.9	0.9	1.0	1.0	78.0
HU	9.8	9.7	9.5	9.3	9.1	8.9	-9.7
MT	0.4	0.5	0.5	0.5	0.5	0.5	19.3
NL	17.0	18.4	19.1	19.2	19.3	19.6	14.8
AT	8.7	9.7	10.1	10.2	10.2	10.2	16.5
PL	38.0	37.2	35.8	34.3	32.8	30.9	-18.7
PT	10.3	9.9	9.5	9.1	8.5	8.0	-22.7
RO	19.7	18.0	17.0	16.3	15.7	15.0	-23.8
SI	2.1	2.1	2.1	2.0	2.0	2.0	-5.3
SK	5.4	5.5	5.4	5.3	5.1	4.9	-9.8
FI	5.5	5.7	5.7	5.7	5.7	5.6	2.3
SE	9.9	11.3	12.0	12.7	13.3	13.9	39.9
UK	65.6	71.8	75.2	77.7	79.4	81.0	23.5
NO	5.2	5.9	6.3	6.6	6.8	7.0	33.9
EA	340.3	349.0	352.2	351.8	348.3	345.6	1.5
EU*	510.9	524.1	528.5	528.4	524.4	520.3	1.8
EU27	445.3	452.4	453.3	450.8	445.0	439.2	-1.4

Source: Eurostat, 2015-based population projections.

The overall size of the population is projected to be slightly larger by 2070 than in 2016, with a hump-shaped trajectory. The EU population is projected to increase from 510.9 million in 2016 to 528.5 million in 2040, remain stable until 2050 and decline thereafter to 520.3 million in 2070.

Moreover, while the total EU population is set to increase by 1.8% over the 2016-70 projection horizon, there are wide differences in trends across Member States (see Table I.1.2).

Decreases of the total population are projected for half of the EU28 Member States, with the declines ranging from -3.9% (Germany) to -40.1% (Lithuania). The strongest population growth is projected in Luxembourg (+78.0%), Sweden (+39.9%), and Ireland (28.9%), while the lowest positive growth is projected for Finland (2.3%).

In 2016, the Member States with the largest population were Germany (82.5 million), France (66.8 million), the United Kingdom (65.6 million), Italy (60.8 million) and Spain (46.4 million). In 2070, the UK is projected to become the most populous country (81 million), followed by Germany (79.2 million), France (77 million), Italy (54.9 million) and Spain (49.9 million).

The population pyramids presented in Graph I.1.9 show that according to the baseline 2015-based population projections, the structure of the EU and euro-area populations is expected to age significantly.

Graph I.1.9:   **Population by age group and gender, 2016-70 (thousands)**
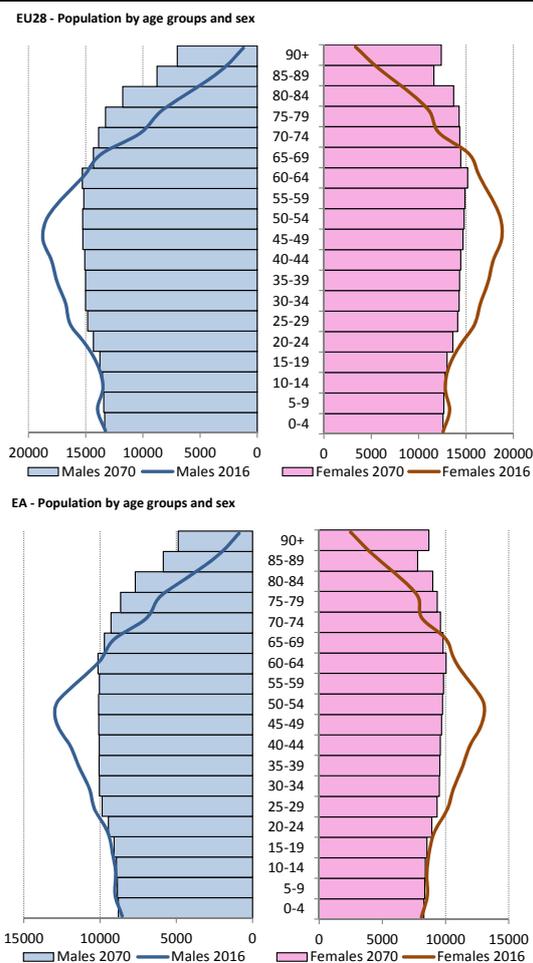
Source: Eurostat, 2015-based population projection.

For males, in all age cohorts between 0-64, the projected population in 2070 is lower than the population in 2016 in the EU. Conversely, in all

age cohorts of 65 years old and above, the projected population in 2070 is higher than in 2015. For females in all age cohorts between 0-69 years old, the projected population in 2070 is lower than in 2016. Conversely, in the age cohorts above 69 years old, the projected population in 2070 will be higher than in 2016.

Moreover, while in 2016 the largest cohort for both males and females is 45-49 years old, in 2070 the largest cohort will be 70-74 years old for women and 50-54 years old for men. Overall, the median age will rise from 41 years old in 2016 to 45 in 2070 for men and from 43 years old to 47 for women.

Similar developments are anticipated for the euro-area. For males, in all age cohorts between 0-64, the projected population in 2070 is lower than in 2016 while the opposite is true for the cohorts 65 years old and above. For females, the age cohorts up to 69 years old are projected to have a smaller population in 2070 than in 2016, while the population in the cohorts 70 years old and above is projected to grow during this period.

The drivers of these trends are manifold: first, the

increasing share of the population in the higher age cohorts is due to the combination of the numerous cohorts born in the 1950's and 1960's and the continuing projected gains in life expectancy.

Secondly, the size of the groups between the ages of 20-59 (the bulk of the working age population) shrinks significantly between 2016 and 2070 due to fertility rates below natural replacement level and shrinking cohorts of women in childbearing ages. Finally, net migration flows are not projected to offset the aforementioned trends.

The implications of this ageing process is that for the EU and the euro-area, the working age population (15-64 year olds) is projected to shrink during the projection period as a share of the total population (see Table I.1.3).

The proportion of young people (aged 0-14) is projected to remain fairly constant by 2070 in the EU28, falling from 16% to 15%. Those aged 65 and over will become a much larger share, rising from 19% to 29% of the population, while the share of those aged 80 and over will increase from 5% to 13%, becoming almost as large as the young population in 2070. By contrast, those aged 15-64

Table I.1.3:   **Decomposition of the population by age-groups, 2016 and 2070**

	2016				2070			
	(0-14)	(15-64)	(65+)	(80+)	(0-14)	(15-64)	(65+)	(80+)
BE	17.0%	64.6%	18.4%	5.5%	15.9%	58.0%	26.2%	10.6%
BG	14.0%	65.4%	20.6%	4.7%	14.0%	55.1%	30.9%	14.7%
CZ	15.5%	65.9%	18.6%	4.0%	14.7%	57.0%	28.3%	13.3%
DK	16.8%	64.3%	18.9%	4.3%	15.5%	56.3%	28.3%	10.6%
DE	13.2%	65.7%	21.1%	5.9%	13.9%	55.3%	30.9%	13.3%
EE	16.1%	64.7%	19.2%	5.2%	14.7%	55.9%	29.4%	13.9%
IE	22.2%	64.4%	13.4%	3.1%	17.0%	58.7%	24.2%	11.2%
EL	14.4%	64.2%	21.4%	6.6%	12.3%	53.8%	33.9%	16.6%
ES	15.1%	66.0%	18.9%	6.1%	16.3%	57.1%	26.6%	12.8%
FR	18.4%	62.6%	19.0%	5.9%	17.1%	57.3%	25.6%	10.8%
HR	14.6%	66.0%	19.4%	4.9%	13.2%	55.6%	31.2%	13.0%
IT	13.6%	64.3%	22.1%	6.7%	12.6%	54.5%	32.9%	14.6%
CY	16.1%	68.7%	15.3%	3.4%	11.4%	55.1%	33.6%	14.0%
LV	15.4%	64.9%	19.8%	5.1%	15.4%	55.0%	29.6%	15.0%
LT	14.7%	66.1%	19.2%	5.4%	14.7%	55.8%	29.6%	13.9%
LU	16.4%	69.3%	14.3%	4.0%	14.9%	57.2%	27.9%	11.1%
HU	14.5%	67.1%	18.5%	4.3%	14.9%	56.0%	29.1%	12.3%
MT	14.3%	66.4%	19.3%	4.2%	14.5%	54.9%	30.6%	13.3%
NL	16.4%	65.3%	18.3%	4.5%	15.7%	56.8%	27.5%	10.6%
AT	14.3%	67.2%	18.5%	5.0%	13.8%	55.8%	30.4%	12.4%
PL	15.0%	68.7%	16.3%	4.2%	13.1%	53.6%	33.3%	16.2%
PT	14.0%	65.1%	20.9%	6.0%	11.9%	52.7%	35.4%	15.7%
RO	15.3%	67.1%	17.6%	4.3%	15.5%	55.3%	29.2%	13.5%
SI	14.9%	66.4%	18.7%	5.0%	14.9%	56.7%	28.5%	13.5%
SK	15.3%	70.0%	14.7%	3.2%	14.2%	54.7%	31.1%	14.3%
FI	16.3%	63.0%	20.7%	5.2%	14.7%	56.1%	29.2%	12.2%
SE	17.5%	62.7%	19.8%	5.1%	17.2%	57.8%	25.0%	10.1%
UK	17.7%	64.4%	18.0%	4.8%	15.9%	57.6%	26.5%	10.7%
NO	17.8%	65.7%	16.5%	4.2%	15.7%	57.3%	27.0%	10.7%
EA	15.2%	64.8%	20.0%	5.9%	14.9%	56.0%	29.0%	12.7%
EU*	15.5%	65.2%	19.3%	5.4%	15.0%	56.2%	28.8%	12.5%
EU27	15.2%	65.3%	19.5%	5.5%	14.9%	55.9%	29.2%	12.9%

Source: Eurostat, 2015-based population projections.

Table I.1.4:   **Demographic dependency ratios, 2016-2070 (%)**

	Old-age dependency ratio (65+/15-64)			p.p. change	Very old-age dependency ratio (80+/15-64)			p.p. change	Total dependency ratio (0-14 and 65+)/(15-64)			p.p. change
	2016	2060	2070	2016-70	2016	2060	2070	2016-70	2016	2060	2070	2016-70
BE	28.4	43.5	45.2	16.7	8.5	16.9	18.4	9.8	54.7	71.0	72.5	17.8
BG	31.5	63.0	56.2	24.7	7.2	24.6	26.8	19.6	52.9	89.3	81.6	28.7
CZ	28.1	55.7	49.7	21.6	6.1	22.9	23.3	17.2	51.6	83.6	75.6	23.9
DK	29.5	45.0	50.2	20.8	6.7	17.1	18.9	12.1	55.5	71.2	77.7	22.2
DE	32.2	55.1	55.9	23.7	8.9	21.4	24.1	15.1	52.3	79.9	81.0	28.7
EE	29.7	55.7	52.7	23.0	8.1	20.9	24.9	16.9	54.6	83.2	79.0	24.4
IE	20.9	44.2	41.2	20.4	4.9	18.7	19.0	14.1	55.4	75.4	70.2	14.9
EL	33.4	67.2	63.1	29.7	10.3	32.7	31.0	20.7	55.8	89.6	86.0	30.2
ES	28.6	53.2	46.6	18.0	9.2	26.9	22.4	13.1	51.5	81.8	75.3	23.8
FR	30.4	43.3	44.8	14.4	9.4	19.0	18.9	9.5	59.8	73.0	74.6	14.8
HR	29.3	53.7	56.2	26.9	7.5	20.3	23.3	15.9	51.5	77.0	80.0	28.5
IT	34.5	61.0	60.3	25.8	10.5	28.4	26.8	16.3	55.6	83.3	83.5	27.8
CY	22.2	55.7	61.0	38.7	4.9	18.2	25.4	20.5	45.6	75.9	81.7	36.1
LV	30.5	65.2	53.8	23.3	7.9	25.0	27.3	19.5	54.2	97.1	81.8	27.7
LT	29.0	63.9	53.1	24.1	8.1	25.7	24.9	16.8	51.2	94.4	79.3	28.1
LU	20.6	44.6	48.9	28.2	5.8	16.2	19.5	13.7	44.3	69.9	74.9	30.6
HU	27.5	53.2	52.0	24.5	6.4	21.6	22.0	15.5	49.1	79.8	78.6	29.5
MT	29.1	53.9	55.8	26.6	6.4	20.1	24.3	17.9	50.6	80.5	82.3	31.7
NL	28.1	44.3	48.4	20.3	6.8	17.5	18.7	11.8	53.2	70.7	76.1	22.9
AT	27.6	51.3	54.4	26.9	7.4	19.3	22.3	14.9	48.8	75.6	79.2	30.4
PL	23.7	64.9	62.2	38.5	6.1	24.4	30.3	24.2	45.6	90.3	86.7	41.1
PT	32.1	64.9	67.2	35.1	9.3	30.2	29.8	20.5	53.6	85.8	89.7	36.2
RO	26.3	56.7	52.8	26.6	6.4	23.3	24.4	18.0	49.1	84.7	80.8	31.7
SI	28.1	55.0	50.2	22.1	7.6	23.4	23.8	16.3	50.5	82.0	76.5	26.0
SK	21.0	59.4	56.8	35.8	4.5	22.3	26.2	21.7	42.9	85.6	82.7	39.7
FI	32.8	49.7	52.0	19.1	8.3	18.8	21.7	13.5	58.7	75.9	78.3	19.5
SE	31.6	42.7	43.2	11.6	8.1	15.7	17.5	9.4	59.5	73.0	73.0	13.5
UK	27.9	43.5	46.0	18.0	7.5	16.5	18.5	11.0	55.4	71.2	73.7	18.3
NO	25.2	44.1	47.2	22.1	6.4	16.5	18.7	12.3	52.3	71.1	74.6	22.3
EA	30.9	52.3	51.8	20.9	9.1	22.7	22.6	13.6	54.3	78.5	78.4	24.1
EU*	29.6	51.6	51.2	21.6	8.3	21.6	22.3	14.0	53.5	78.2	78.0	24.6
EU27	29.9	53.1	52.2	22.4	8.4	22.5	23.0	14.6	53.2	79.5	78.9	25.7

Source: Commission services, Eurostat 2015-based population projections.

– namely the working-age population - will become a substantially smaller share of the total population, declining from 65% to 56%.

As a result of these trends, the demographic dependency ratios are projected to rise significantly across the EU and euro-area over the projection horizon (see Table I.1.4).

The old-age dependency ratio (people aged 65 and above relative to those aged 15-64) in the EU is projected to increase by 21.6 pps., from 29.6% in 2016 to 51.2% in 2070, over the projection period. This implies that the EU would go from having 3.3 working-age people for every person aged over 65 years to only two working-age persons. Most of this increase is being driven by the very old-age dependency ratio (people aged 85 and above relative to those aged 15-64) which is rising by 14 pps. (8.3% to 22.3%) over this horizon.

The rise in the old-age dependency ratio is particularly acute in Cyprus, Poland, Portugal and

Slovakia where it will exceed 35 pps. over the projection horizon. Conversely, the rise will be lowest in Belgium, Spain, France, Finland, Sweden, and the UK where it will be below 20 pps.

The increase in the total age-dependency ratio (people aged below 15 and aged 65 and above over the population aged 15-64) is projected to be 24.6 pps., leading the ratio to rise from 53.5% in 2016 to 78% in 2070. The rise in the total dependency ratio is noticeably different across individual EU Member States. A relatively small increase in the total age-dependency ratio (less than 20 pps.) is projected in Belgium, Ireland, France, Finland, Sweden and the UK between 2016-2070, while in Greece, Cyprus, Luxembourg, Malta, Austria, Poland, Portugal, Romania and Slovakia, an increase of 30 pps. or more is projected.

1.1.5. Comparison with the 2015 Ageing Report

By 2060, the total EU population is projected to be about 1.6 million larger than in the 2015 Ageing Report, due to a large increase in the population above 65 years old that offsets the reduction in the working-age population. The population in the euro-area is projected to be 5.3 million higher, with higher estimates for all population groups, but in particular for that above 65 years of age.

The differences in the demographic assumptions of the 2018 Ageing Report projection exercise (based on Eurostat's 2015-based population projections) compared with those underpinning the 2015 Ageing Report projection exercise (based on Eurostat's EUROPOP2013 projection) are summarized in Table I.1.6.

Total fertility rates in 2060 for the EU and euro-area are marginally higher (around 0.03 and 0.05 respectively) in the 2018 projection exercise. This is especially true in Spain and Slovakia whose fertility rates are projected to be at least 0.25 higher in 2060 than in the 2015 projection exercise. Conversely, the total fertility rate is projected to be lower in 2060 in Belgium, Denmark, Estonia, Ireland, Croatia, Italy, Cyprus, Luxembourg, Malta, Netherlands, Finland and the UK.

In the EU and euro-area, life expectancy at birth is expected to be very marginally higher in the 2018 projection exercise than in the previous projection for males and females both in 2016 and 2060. For both males and females in the EU, life expectancy at birth is 0.2 higher in 2016 and in 2060.

The largest increases in 2016 (of 0.5 years or more) for males occur in Belgium, Czech Republic, Estonia, Spain, Italy, Cyprus, Malta and Slovenia, and for females in Spain, Cyprus, Luxembourg and Malta. By 2060, only males in Cyprus and females in Malta are projected to have significantly higher life expectancy at birth (0.5 years or more) in the 2018 projection than in the 2015 projection.

Cumulative net migration inflows between 2016-2060 are projected to be slightly lower in the EU and euro-area (-0.6 pps. and -0.3 pps. respectively)

than in the 2015 exercise. The largest downward revisions were projected for Italy, Belgium, Romania, the Czech Republic and Luxembourg (of more than 5.5 pps.) ([18]). However, for thirteen Member States, net migration inflows are forecast to be higher than in the 2015 exercise, namely Denmark, Germany, Estonia, Ireland, Greece, Latvia, Lithuania, Malta, Netherlands, Austria, Portugal, Slovakia and Sweden.

These differences in demographic assumptions are driving long-term differences in total population and old-age dependency ratios between the two projection exercises (see Table I.1.5).

Table I.1.5: **Comparison of population and dependency ratio projections used in 2018 and 2015 Cost of Ageing projection exercises, 2016 - 2060**

	Projection exercise 2018 - Projection exercise 2015					
	Total population (millions)			Old-age dependency ratio (65+/(15-64))		
	2016	2060	Diff in 2060 as % of 2060 population	2016	2060	p.p change
BE	-0.2	-1.8	-11.9%	0.3	3.6	3.3
BG	0.0	-0.3	-4.6%	0.2	4.5	4.3
CZ	0.0	-0.8	-7.1%	0.1	5.7	5.6
DK	0.0	0.2	3.3%	-0.2	3.2	3.4
DE	1.7	9.9	14.0%	-1.4	-4.1	-2.7
EE	0.0	0.1	11.7%	-0.2	1.2	1.4
IE	0.1	0.7	12.4%	0.0	8.6	8.6
EL	-0.1	-0.3	-3.5%	0.7	6.4	5.7
ES	0.2	3.4	7.4%	0.1	0.1	-0.1
FR	0.2	-0.1	-0.1%	0.1	0.5	0.4
HR	-0.1	-0.2	-4.6%	0.3	1.4	1.1
IT	-0.5	-9.5	-14.3%	0.6	8.0	7.4
CY	0.0	-0.1	-9.8%	0.8	9.2	8.5
LV	0.0	0.0	1.9%	0.4	14.9	14.4
LT	0.0	0.0	0.0%	-0.2	18.3	18.5
LU	0.0	-0.1	-13.0%	-0.2	9.1	9.2
HU	0.0	0.0	-0.5%	0.1	0.7	0.6
MT	0.0	0.0	9.1%	-0.2	3.1	3.3
NL	0.1	2.3	13.2%	-0.2	-3.4	-3.3
AT	0.1	0.5	5.5%	-0.5	0.8	1.2
PL	-0.5	-0.4	-1.3%	0.4	3.9	3.5
PT	0.0	0.3	4.0%	0.1	1.0	0.8
RO	-0.2	-1.7	-10.0%	0.2	4.9	4.7
SI	0.0	0.0	-2.0%	0.1	2.5	2.4
SK	0.0	0.5	12.0%	0.1	-6.7	-6.8
FI	0.0	-0.6	-9.5%	0.1	4.6	4.6
SE	0.1	0.2	1.8%	-0.2	1.2	1.4
UK	0.3	-0.7	-0.8%	-0.1	0.8	0.9
NO	0.0	-1.3	-16.4%	0.2	5.1	4.9
EA	1.6	5.3	1.5%	-0.2	1.2	1.4
EU*	1.3	1.6	0.3%	-0.1	1.5	1.6
EU27	1.0	2.3	0.5%	-0.1	1.7	1.7

Source: Commission services, Eurostat, 2015-based population projections, EUROPOP2013.

([18]) For additional information on comparison of the net migration flows in the current population projection with the one used in the 2015 Ageing Report, see Part I, Chapter 1 and Section 1.7 in European Commission (DG ECFIN) and Economic Policy Committee (Ageing Working Group) (2017).

Table I.1.6:   **Comparison of demographic assumptions used in 2018 and 2015 Cost of Ageing projection exercises, 2016-60**

	Projection exercise 2018												2018 AR - 2015 AR (2016-60)												
	Fertility rate			Life expectancy at birth						Net migration ('000)				Fertility rate			Life expectancy at birth						Net migration ('000)		
				Males			Females										Males			Females					
	2016	2070	change 2016-70	2016	2070	change 2016-70	2016	2070	change 2016-70	2016	2070	cum. change 2016-70 (1)		2016	2060	change 2016-60	2016	2060	change 2016-60	2016	2060	change 2016-60	2016	2060	cum. change 2016-60 (2)	
BE	1.73	1.82	0.09	78.8	86.2	7.4	83.7	90.2	6.5	55.2	26.2	19.3%	-0.08	-0.07	0.01	0.5	0.4	-0.1	0.3	0.3	0.0	-19.8	-12.6	-7.0%	BE
BG	1.51	1.80	0.29	71.8	83.3	11.5	78.5	87.8	9.3	-4.3	1.3	-1.9%	-0.04	0.01	0.05	-0.1	-0.1	0.0	-0.1	-0.1	0.0	0.4	0.0	-2.4%	BG
CZ	1.62	1.82	0.20	76.2	84.9	8.7	82.1	89.3	7.2	18.6	8.5	7.9%	0.05	0.00	-0.05	0.5	0.2	-0.3	0.4	0.2	-0.2	-6.5	-12.4	-5.8%	CZ
DK	1.79	1.82	0.02	78.8	86.1	7.3	82.9	90.0	7.1	36.7	9.3	18.4%	0.03	-0.07	-0.10	0.2	0.1	-0.1	0.3	0.2	-0.1	19.0	1.3	3.9%	DK
DE	1.49	1.68	0.19	78.7	86.1	7.4	83.3	90.1	6.8	750.0	143.5	16.0%	0.07	0.01	-0.06	-0.3	-0.3	0.0	0.0	-0.1	-0.1	517.9	77.2	5.6%	DE
EE	1.58	1.81	0.23	72.8	83.9	11.1	81.9	89.5	7.6	2.9	0.3	4.5%	-0.03	-0.02	0.01	0.5	0.3	-0.2	0.1	0.0	-0.1	6.0	0.1	9.1%	EE
IE	1.89	1.97	0.08	79.5	86.4	6.9	83.5	90.3	6.8	14.8	10.8	12.9%	-0.12	-0.02	0.10	0.3	0.1	-0.2	0.0	0.0	0.0	46.4	-2.9	11.5%	IE
EL	1.39	1.64	0.25	78.8	86.5	7.7	83.9	90.3	6.4	-23.9	11.0	1.5%	0.03	0.00	-0.02	0.3	0.4	0.1	0.2	0.3	0.1	-0.3	5.8	2.9%	EL
ES	1.31	1.88	0.57	80.5	86.9	6.4	86.0	91.2	5.2	12.9	136.8	15.6%	-0.03	0.33	0.36	0.6	0.4	-0.2	0.5	0.3	-0.2	95.7	-121.2	-2.6%	ES
FR	2.01	1.99	-0.02	79.5	86.6	7.1	85.6	91.1	5.5	53.6	55.3	5.9%	0.00	0.01	0.01	0.4	0.3	-0.1	0.3	0.3	0.0	-34.5	-4.6	-0.5%	FR
HR	1.41	1.65	0.25	75.0	84.4	9.4	81.1	88.9	7.8	-21.5	4.6	4.4%	-0.13	-0.06	0.07	0.4	0.2	-0.2	-0.1	0.0	0.1	-22.7	0.5	-1.4%	HR
IT	1.33	1.66	0.33	80.7	86.9	6.2	85.3	90.9	5.6	134.5	163.8	17.1%	-0.12	-0.01	0.11	0.5	0.4	-0.1	0.3	0.3	0.0	-183.2	-19.7	-7.7%	IT
CY	1.31	1.62	0.30	80.6	87.0	6.4	84.3	90.2	5.9	1.0	3.7	23.1%	-0.11	-0.06	0.05	1.1	0.8	-0.3	0.6	0.4	-0.2	1.6	-3.5	-5.3%	CY
LV	1.74	1.87	0.13	69.4	82.7	13.3	79.5	88.6	9.1	-9.4	0.1	-7.0%	0.20	0.08	-0.12	-0.6	-0.2	0.4	0.0	0.2	0.2	2.5	0.0	4.8%	LV
LT	1.66	1.84	0.18	69.3	82.8	13.5	79.9	88.8	8.9	-28.2	0.0	-15.4%	0.03	0.03	0.00	-0.3	-0.1	0.2	-0.3	0.0	0.3	6.4	0.2	4.3%	LT
LU	1.40	1.69	0.29	79.2	86.4	7.2	84.6	90.9	6.3	10.8	4.0	64.0%	-0.21	-0.12	0.08	-0.4	-0.1	0.3	0.6	0.4	-0.2	-0.2	-0.4	-5.7%	LU
HU	1.48	1.80	0.32	72.8	83.9	11.1	79.6	88.6	9.0	18.2	11.2	9.0%	0.04	0.03	0.00	0.2	0.1	-0.1	0.2	0.2	0.0	-3.8	-0.2	-1.4%	HU
MT	1.41	1.75	0.33	80.0	86.8	6.8	84.3	90.6	6.3	3.5	1.0	25.2%	-0.08	-0.06	0.02	0.9	0.7	-0.2	1.0	0.5	-0.5	1.9	0.1	7.4%	MT
NL	1.66	1.81	0.16	79.8	86.5	6.7	83.3	90.1	6.8	85.5	24.5	14.2%	-0.06	-0.01	0.06	0.1	0.3	0.2	-0.1	0.1	0.2	63.8	19.4	8.2%	NL
AT	1.47	1.66	0.19	79.0	86.3	7.3	83.8	90.2	6.4	73.8	20.6	25.8%	0.00	0.00	0.01	0.2	0.3	0.1	-0.1	0.1	0.2	26.0	0.0	1.9%	AT
PL	1.37	1.71	0.34	73.9	84.4	10.5	81.6	89.5	7.9	4.9	7.3	1.4%	0.02	0.06	0.04	0.3	0.2	-0.1	0.1	0.2	0.1	4.0	0.1	-0.5%	PL
PT	1.34	1.59	0.25	78.2	85.9	7.7	84.3	90.4	6.1	-10.5	14.2	6.8%	0.05	0.01	-0.05	0.3	0.2	-0.1	0.4	0.2	-0.2	7.1	6.7	3.0%	PT
RO	1.54	1.89	0.35	71.8	83.6	11.8	78.9	88.3	9.4	-63.8	2.6	-5.5%	-0.15	0.05	0.20	-0.2	0.0	0.2	0.1	0.2	0.1	-62.0	-0.8	-6.2%	RO
SI	1.58	1.81	0.24	78.2	85.8	7.6	83.8	90.1	6.3	0.2	2.5	9.5%	-0.03	0.03	0.06	0.5	0.3	-0.2	0.3	0.2	-0.1	-3.8	-1.6	-2.3%	SI
SK	1.40	1.82	0.42	73.7	84.2	10.5	80.7	89.1	8.4	6.0	3.2	5.3%	0.10	0.26	0.15	0.3	0.3	0.0	0.3	0.4	0.1	2.9	1.4	2.2%	SK
FI	1.60	1.80	0.20	78.5	85.9	7.4	84.1	90.2	6.1	15.9	6.8	10.8%	-0.20	-0.08	0.12	0.3	0.1	-0.2	0.1	0.0	-0.1	-4.6	-1.0	-3.7%	FI
SE	1.86	2.03	0.16	80.6	86.7	6.1	84.3	90.3	6.0	103.5	24.4	24.5%	-0.07	0.09	0.15	0.1	0.1	0.0	0.3	0.2	-0.1	51.4	-3.8	0.5%	SE
UK	1.80	1.87	0.07	79.6	86.5	6.9	83.3	90.1	6.8	244.0	107.3	14.6%	-0.13	-0.07	0.05	0.0	0.1	0.1	0.0	0.0	0.0	79.5	-50.1	-0.3%	UK
NO	1.70	1.83	0.13	80.2	86.6	6.4	84.3	90.4	6.1	27.4	16.1	23.5%	-0.15	-0.07	0.08	0.2	0.1	-0.1	0.3	0.3	0.0	-22.2	-4.3	-9.4%	NO
EA	1.56	1.79	0.24	79.3	86.4	7.1	84.6	90.6	6.1	1 148.6	628.2	13.0%	-0.01	0.05	0.06	0.1	0.2	0.0	0.2	0.1	0.0	531.8	-56.8	-0.3%	EA
EU*	1.58	1.81	0.23	78.3	86.1	7.8	83.7	90.3	6.6	1 484.8	804.7	11.5%	-0.03	0.03	0.06	0.2	0.2	0.0	0.2	0.2	0.0	591.1	-122.1	-0.6%	EU*
EU27	1.55	1.80	0.25	78.1	86.1	7.9	83.7	90.3	6.6	1 240.8	697.4	13.2%	-0.04	0.03	0.06	0.2	0.2	0.0	0.2	0.2	0.0	511.6	-72.0	-0.7%	EU27

(1) Cumulated net migration as % of total population in 2016.
(2) Cumulated difference as % of total pop in 2016.

Source: Commission services, Eurostat, 2015-based population projections, EUROPOP2013.

Graph I.1.10: **Population of main geographic areas and selected countries as percentage of the world population**
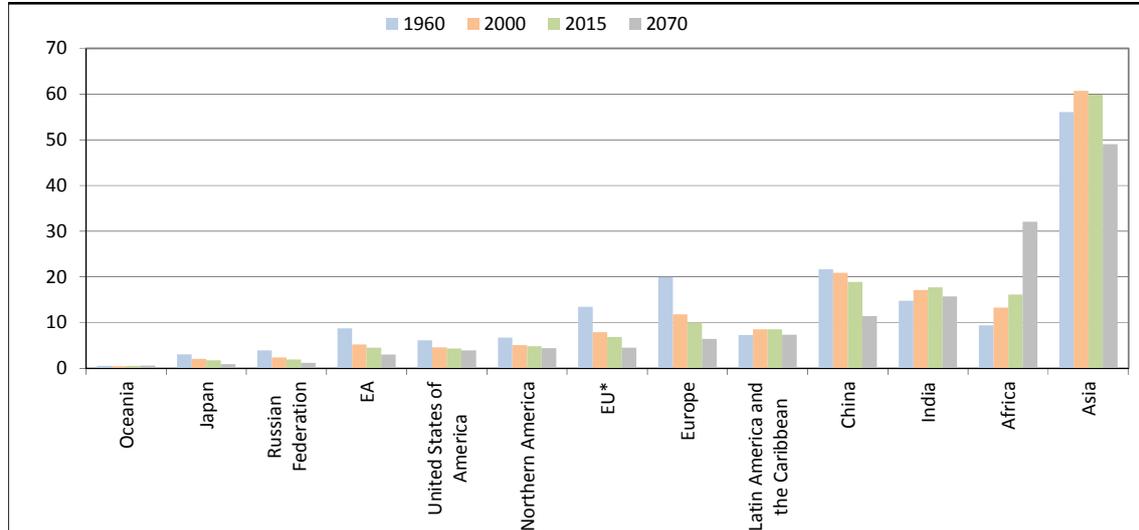
Source: UN World Population Prospects: The 2017 Revision.

For the EU as a whole and the euro-area, the total population projections in the 2018 exercise are slightly higher than in the 2015 equivalent. The population of the EU is projected in the 2018 exercise to be 1.3 million inhabitants larger in 2016 than in the 2015 exercise and 1.6 million inhabitants larger in 2060, which represents an increase of 0.3% vis-à-vis the 2015 projection for total population in 2060. The euro area population is projected to be 1.6 million inhabitants higher in 2016 and 5.3 million higher in 2060 in the 2018 projection exercise, equivalent to a 1.5% larger population in 2060 vis-à-vis the 2015 projection.

The variation across EU Member States however is quite broad, with fifteen countries in the 2018 projection exercise now forecast to have lower total populations in 2060 than in the 2015 projection exercise, and thirteen to have higher populations. The most extreme case of the former Belgium, Italy, Cyprus, Luxembourg, Romania and Finland that in the 2018 projection exercise have total populations in 2060 that are around 10% lower than the populations projected in the 2015 exercise. By contrast, Germany, Estonia, Ireland, Malta, the Netherlands and Slovakia have total populations in 2060 in the latest projection exercise that are around 10% higher than the equivalent 2015 projection.

The old-age dependency ratio by 2060 is slightly higher in the 2018 projection for both the EU and the euro-area (1.5% and 1.2% respectively) despite

starting off slightly lower in 2016. This implies that the ageing process is assumed to be more pronounced in the 2018 projection exercise. This is also the case for almost all Member States, that have higher old-age dependency ratios in 2060 in the latest projections exercises, in particular Lithuania (+18.3%), Latvia (14.9%) and Luxembourg (9.1%). Only three Member States are now forecast to have lower old-age dependency ratios in 2060 than they were in the 2015 projection exercise: Slovakia (-6.7%), Germany (-4.1%) and the Netherlands (-3.4%).

1.1.6. Population ageing globally

The EU's share of the total world population is forecast to shrink from 6.9% in 2015 to 4.5% in 2070 and its old-age dependency ratio will be second highest globally among large economies.

Population ageing is a global phenomenon with trends similar to those in EU present also in other parts of the world, though to varying degrees (see Graph I.1.10), as shown by the UN population statistics and projections ([19]). These data show that the world population share of EU Member States declined from 13.5% in 1960 to 6.9% in 2015. The shares of Japan, China, Russia and the US also

---

([19]) The United Nations Population Division produces global population projections revised every two years. The latest projections are the 2017 Revision.

declined over this period, in contrast with rising shares of Africa, Asia and Latin America.

Through 2070, continued declines are projected for the EU, Japan and China, and to a less extent for Northern America. The share of the EU is projected to drop to 4.5% by 2070, despite the projected net migration inflows. In Asia, a slight decline is expected though it is projected to still account for 49% of the world population in 2070. The decline is particularly evident for China, whose world population share is projected to fall from 18.9% to 11.4% between 2015 and 2070.

The world population shares of Northern America and the US (4.8% and 4.3%, respectively in 2015) will also decline but much more slowly, reaching 4.4% and 4.0% respectively by 2070. By contrast, the share of Africa is forecast to continue to rise steadily, reaching 32.1% in 2070. The other regions of the world will roughly keep their share in the growing world population.

Looking at the age structure in the UN projections, it can be seen that Europe is currently the oldest continent with the highest old-age dependency ratio, and will remain so in 2070 (see Table I.1.7).

Other continents are however also projected to experience a dramatic ageing of their populations, with old-age dependency ratios rising by at least 15 pps. between 2015-2070 bar Africa. Latin America is projected to experience the highest rise in dependency ratio during this period (33.6 pps.), followed by Asia (25.4 pps.) and Europe (23 pps.).

Demographic change is projected to be pronounced in particular in China, and Japan, where the old age dependency ratio is projected to rise by 40 pps. and 27 pps. respectively, with the EU and euro area just behind (25 pps. and 25.3 pps. respectively).

The result of these projections of significant demographic change is that by 2070 Japan, the EU/euro-area and China will have the highest old-age dependency ratios among large economies, all of them exceeding the 50% benchmark (that implies two working-age adults for one elderly person).

This benchmark will not be surpassed in the United States and India, where the old-age dependency ratios are projected to rise to 43.1% and 31% respectively. Japan is also projected to have the highest increase of the very old-age dependency ratio in 2070 (23.3%), followed by China (19.8%), the euro-area (16.2%) and the EU (15.9%).

Table I.1.7: **Old-age dependency ratio (65+/(15-64)**

	Old-age dependency ratio (65+/(15-64))						"Very" old-age dependency ratio (80+/(15-64))					
	1960	2000	2015	2070	p.p. change 1960-2015	p.p. change 2015-70	1960	2000	2015	2070	p.p. change 1960-2015	p.p. change 2015-70
World	8.6	10.9	12.6	30.5	4.0	17.8	1.0	1.9	2.6	9.9	1.6	7.3
Africa	5.7	6.2	6.2	13.5	0.6	7.3	0.5	0.7	0.8	2.7	0.4	1.8
Asia	6.4	9.1	11.2	36.5	4.7	25.4	0.6	1.3	2.0	12.0	1.5	10.0
China	6.5	10.1	13.3	53.3	6.8	39.9	0.3	1.5	2.3	22.1	1.9	19.8
Japan	8.8	24.9	42.7	69.6	33.9	27.0	1.1	5.4	12.4	35.8	11.4	23.3
India	5.4	7.2	8.6	31.0	3.2	22.4	0.6	0.9	1.3	7.6	0.8	6.3
Europe	13.6	21.8	26.4	49.4	12.8	23.0	2.0	4.3	7.0	21.5	5.0	14.4
Russian Federation	9.6	18.0	19.4	34.5	9.8	15.1	1.3	2.9	4.5	14.1	3.2	9.6
EU*	15.2	23.4	29.2	54.2	14.1	25.0	2.3	5.0	8.2	24.0	5.9	15.9
EA	15.7	24.2	30.6	56.0	14.9	25.3	2.4	5.3	8.9	25.1	6.5	16.2
Latin America and the Caribbean	6.8	8.9	11.4	45.0	4.6	33.6	0.8	1.6	2.4	16.4	1.7	13.9
Northern America	15.0	18.6	22.3	43.6	7.3	21.3	2.3	4.9	5.7	16.8	3.3	11.2
United States of America	15.2	18.7	22.1	43.1	7.0	20.9	2.3	4.9	5.6	16.4	3.3	10.8
Oceania	12.5	15.4	18.5	34.1	6.0	15.6	1.9	3.4	4.6	12.7	2.7	8.1

Source: UN Population Prospects (2017 UN revision)

2. MACROECONOMIC ASSUMPTIONS

2.1. BACKGROUND

A production function framework is used to project GDP growth over the long-term [20]. In this framework, potential GDP growth is driven by long-term developments in labour input and labour productivity.

Participation rates are projected using a cohort simulation model (CSM) [21]. Labour input projections are based on Eurostat's latest population projections. Labour productivity projections are based on assumptions regarding the long-run developments of its underlying determinants, namely labour-augmenting total factor productivity and the capital stock per worker (also referred to as capital deepening). The long-run projection is based on the central assumption of convergence toward the same value of labour productivity at the end of the projection horizon for all Member States [22].

All assumptions were approved by the EPC, including the T+10 methodology developed by the EPC's Output Gap Working Group (OGWG), and are used in their work by other Council committees [23].

The remainder of this section describes the main labour force and labour productivity assumptions that underpin the long-term GDP projections in this report [24].

2.2. LABOUR FORCE PROJECTIONS

2.2.1. Introduction

Notwithstanding large cross-country labour force variability in the EU, some stylised facts are assumed in the projection exercise, summarised as follows:

- participation rates of prime-age males (aged 25 to 54) remain the highest of all groups, although they are showing signs of marginal decline. The participation rates of males aged 55 to 64 years, which had recorded a steady decline in the past twenty five years, are showing clear signs of a reversal in most countries since the turn of the century, mostly due to pension reforms raising the statutory retirement age or the state pension age. As a result, participation rates of cohorts older than 65 years are beginning to increase in several countries;

- female participation rates have steadily increased over the past twenty five years, largely reflecting societal trends and pension reforms;

- participation rates of young people (aged 15 to 24 years) have declined, mostly due to longer education periods, but also to unfavourable cyclical developments.

Given these trends, the main drivers of the projected change in the total participation rate and by extension the labour force in the EU will be changes in the labour force attachment of prime age women, older workers (especially women) and, to a lesser extent, young people.

2.2.2. The impact of legislated pension reforms

As a result of pension reforms, an average increase of 2.3 years in the effective retirement age for men and of 2.9 years for women is expected, the later also influenced by cohort effects.

Participation rates are projected using a cohort simulation model (CSM). A strong point of the CSM is its ability to take into account the expected effects on the participation rate of older workers of

---

[20] A standard specification of the Cobb-Douglas production function with constant returns to scale is used.

[21] See Carone et al. (2005).

[22] A detailed description of the production function framework and the key assumptions underpinning the long-term GDP projections presented in this section can be found Chapter 3 of the '2018 Ageing Report: Underlying Assumptions and Projection Methodologies'.

[23] For a detailed description of the macro-economic assumptions and projections, see Annex 3 in '2018 Ageing Report: Underlying Assumptions and Projection Methodologies'.

[24] Assumptions on interest rates are described in Part I, Chapter 4 of European Commission (DG ECFIN) and Economic Policy Committee (Ageing Working Group) (2017).

Graph I.2.1: **Impact of pension reforms on participation rates of persons aged 55-64 in 2070 (percentage points)**
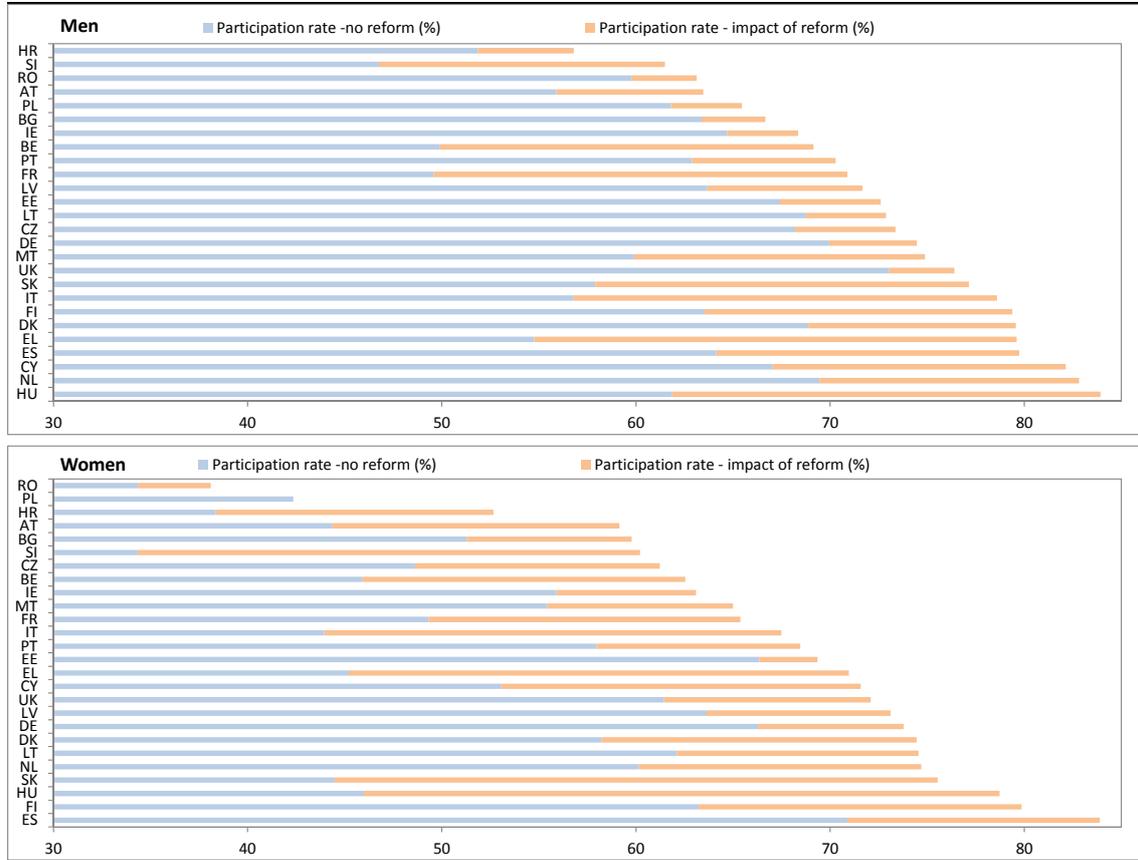
Note: LU, SE and NO excluded as there is no legislated pension measures that will affect retirement behaviour in the interval 2016 - 70.
Source: Commission services, EPC.

legislated pension reforms, including measures to be phased in gradually ([25]).

Although the age profiles of the probability of retirement vary across countries reflecting the heterogeneity of pension systems, a common feature is that the distribution of retirement decisions is markedly skewed towards the earliest possible retirement age. In fact, a typical distribution of the retirement age tends to have spikes/modes at both the minimum age for early retirement and the normal (statutory) retirement ages.

A comprehensive assessment of how to shift the distribution of retirement ages ultimately depends

on the considered judgement of all the relevant factors underlying retirement decisions. This assessment is carried out by Commission Services (DG ECFIN) and the EPC-AWG delegates.

In most of the EU Member States that have recently legislated pension reforms, these are projected to have a sizeable impact on the labour market participation of workers aged 55-64, depending on their magnitude and phasing in. The average participation rates for workers between 55-64 years old in 2070 before and after the impact of pension reforms are presented in Graph I.2.1.

The projections show an average increase of approximately 11.3 pps. in the participation rate for men. ([26]) In Greece, Italy, Hungary, and France the expected increase exceeds 20 pps. The

---

([25]) A description of past legislated pension reforms that have an impact on future participation rates of workers for the EU Member States is provided in Box I.2.2 of the '2018 Ageing Report: Underlying Assumptions and Projection Methodologies'.

([26]) Non-weighted average of the 26 Member States considered.

Graph I.2.2:   **Impact of pension reforms on the average exit age from the labour force for persons aged 55-64 years old, 2016-2070 (increase in average exit age in years)**
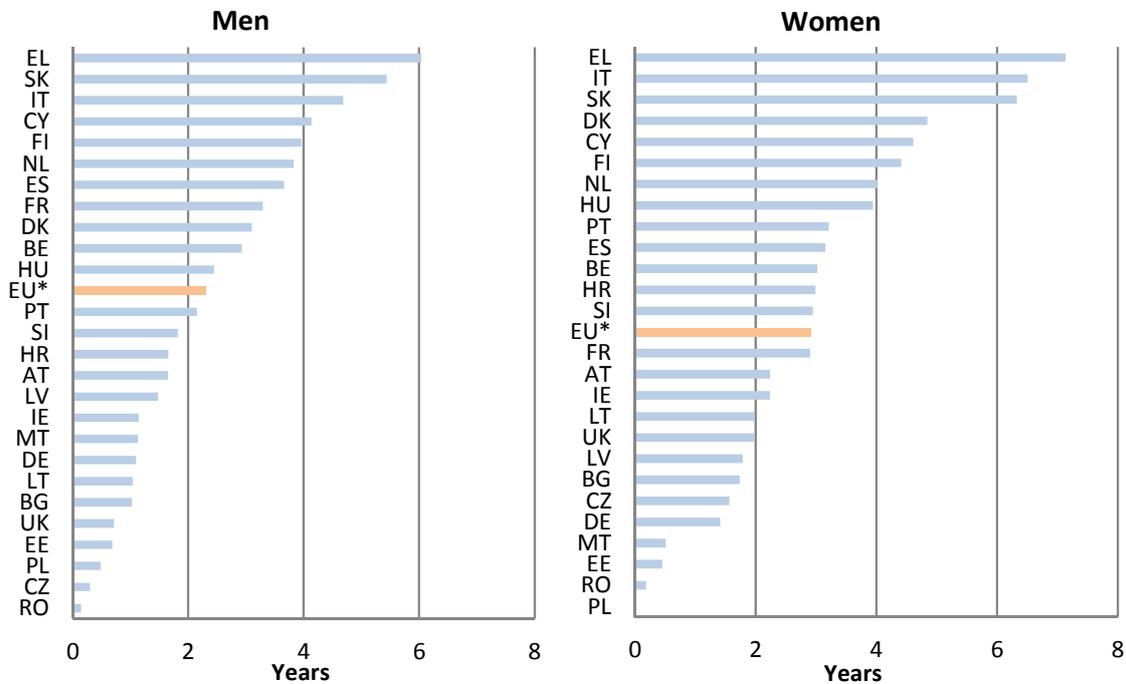
Note: Based on the age group 50-70 years old. LU, SE and NO excluded as there is no legislated pension reform that will affect retirement behaviour in the period 2016-2070. EU* is the simple average of the 26 countries included.
Source: Commission services, EPC.

expected increase in the participation rates of women between 55-64 years old is slightly higher (14.3 pps. on average), reflecting in a number of countries the progressive convergence of participation rates across genders. In Slovakia, Hungary, Greece, Italy and Slovenia the rise in participation rate is forecast to exceed 30 pps.

The increases in the average exit ages from the labour market for 2070, as presented in Graph I.2.2, are calculated based on participation rates discussed above and provide a summary measure of the long-term impact of enacted pension reforms in 26 Member States ([27]).

Projections show an average increase of 2.3 years in the effective retirement age for men ([28]). As a result of the implementation of the automatic link between retirement age and increases in life expectancy, an increase in the average exit age higher than 4 years is expected in Greece, Italy, Cyprus, Slovakia and Finland. The expected

increase in the retirement age of women is slightly higher (2.9 years on average), reflecting in a number of countries the progressive convergence of retirement ages across gender. Increases higher than 4 years have been projected for some countries with a link between retirement age and life expectancy (Denmark, Greece, Italy, Cyprus, Netherland, Slovakia and Finland).

The average participation rates for workers between 65-74 years old in 2070 before and after the impact of pension reforms are presented in Graph I.2.3.

The projections show that the impact on the participation rates of the group aged 65-74 are in certain countries quite different to that on the group aged 55-64 shown earlier.

The non-weighted average increase in the participation rate for 65 to 74 year olds between 2016 and 2070 is equal to approximately 8.2 pps. for men and 9 pps. for women. Only in Greece and Slovakia is the expected increase in the participation rate of men during this period

([27]) Excluding Luxembourg, Sweden and Norway.
([28]) Non-weighted average of the 26 Member States considered.

Graph I.2.3:   **Impact of pension reforms on participation rates of persons aged 65-74 in 2070 (percentage points)**
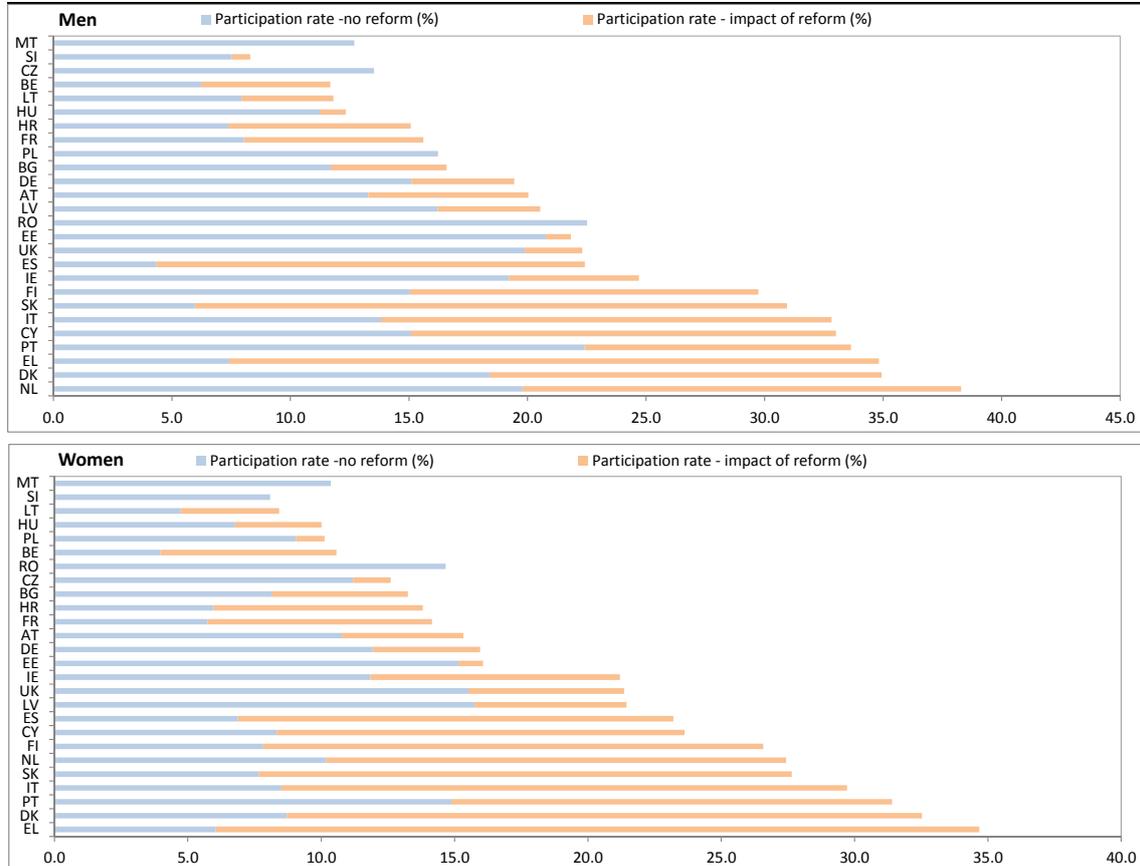
Note: LU, SE and NO excluded as there is no legislated pension measures that will affect retirement behaviour in the interval 2016 - 70. For MT, SI, CZ and RO (men) there is no impact of reforms on participation rates for those aged 65 and more.
Source: Commission services, EPC.

exceeding 20 pps. For women, the expected increase in the participation rates of women exceeds 20 pps. in Denmark, Greece, Slovakia and Italy. Overall, by 2070 the non-weighted average participation rate for those aged 65-74 years old will be 21.8% for men and 18.6% for women.

2.2.3. Projection of labour force participation rates

The projections show an average increase of approximately 12.2 pps. in the participation rate for men between 55 and 64 years old, and a slightly higher increase for women, 16.2 pps. on average, reflecting the impact of pension reforms in a number of countries and the progressive convergence of participation rates across genders.

Graph I.2.4 presents an overview of participation rate projections between 2016 and 2070 broken down by age groups and gender.

The aggregate total participation rate for those aged 20-64 is projected to rise from 77.5% in 2016 to 80.7% in 2070 in the EU as a whole and from 77.6% to 80.6% in the euro-area. This is being driven by higher female participation, which is projected to rise by 5.5 pps. compared with 0.8 pps. for males in the EU and by 5.7 pps. compared with 0.3 pps. for men in the euro area.

Although the participation rate of total prime age workers (25-54) in the EU is projected to rise slightly between 2016 and 2070, by 1.2 pps., this is the outcome of opposite trends by gender.

In fact, the participation rate for women is projected to rise by about 3 pps., reaching 82.6%

Graph I.2.4:   **Participation rates across ages and gender, 2016-70 (%)**

Total participation rates, ages 20-64 (%)

Projected changes in participation rates by gender over 2016-2070, ages 20-64 (pps)

Projected changes in participation rates by age group over 2016-2070 (pps)

Projected changes in participation rates by gender over 2016-2070, ages 55-64 (pps)
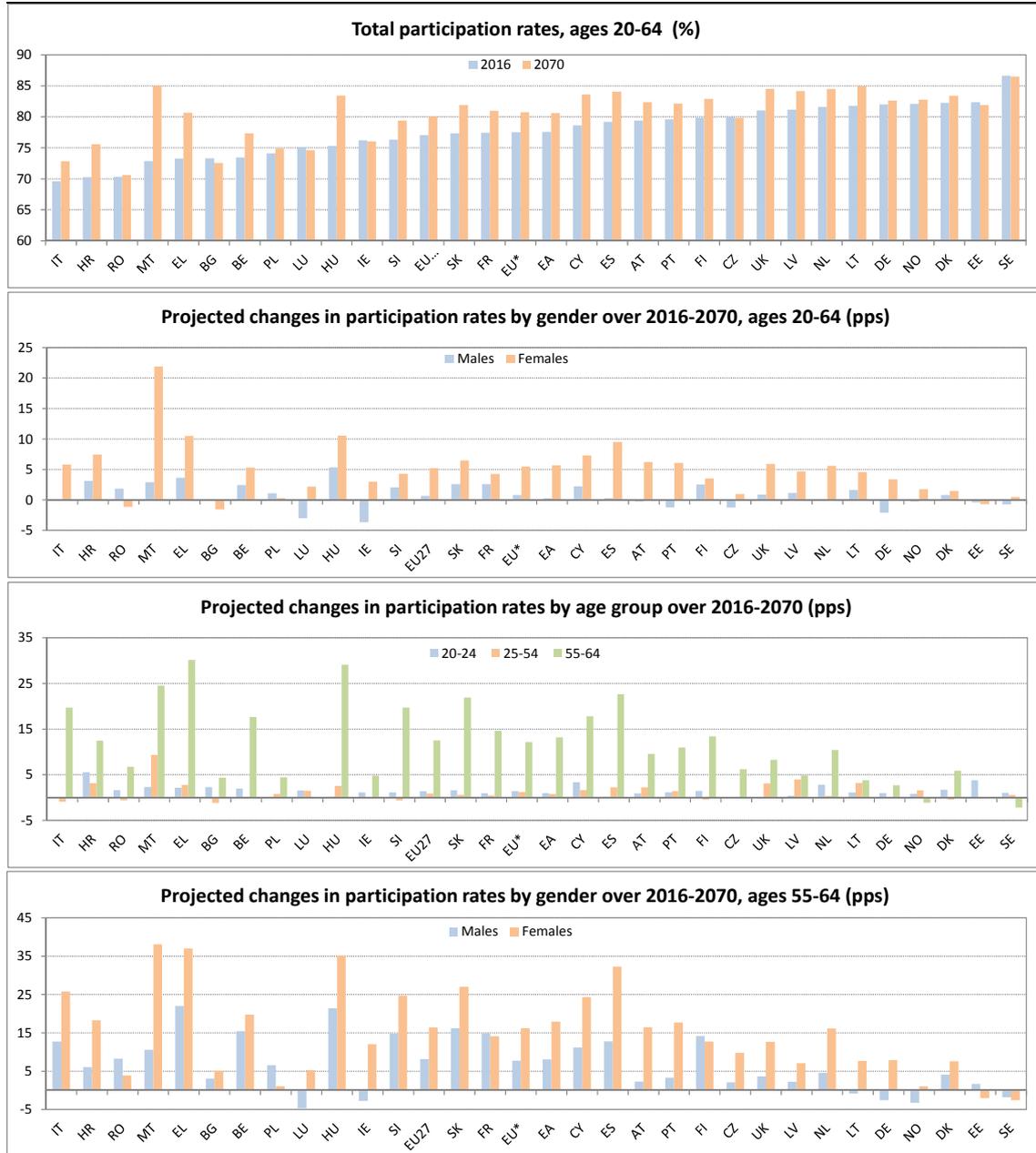
Source: Commission services, EPC.

in 2070, while men's participation rate is projected to decline by almost 1 pp, attaining 90.7% in 2070.

The biggest increase in participation rates is projected for older workers (around 16.2 pps. for women and 7.7 pps. for men) in the EU. Consequently, the gender gap in terms of participation rates is projected to narrow substantially in the period up to 2070.

There are wide differences across countries. In almost all countries total participation rates (aged 20-64) are projected to increase; while in a few the opposite holds. The highest increases are projected for MT, HU and EL (7 ½ pps. or more), with projected high increases of older workers (55-64), but also of prime age workers (25-54). By contrast, decreases are projected for BG, EE and LU, (-0.5

Graph I.2.5:   **Percentage changes in total labour supply of the population aged 20 to 64 and 20 to 74 (2016-2030, 2030-2070) (1)**
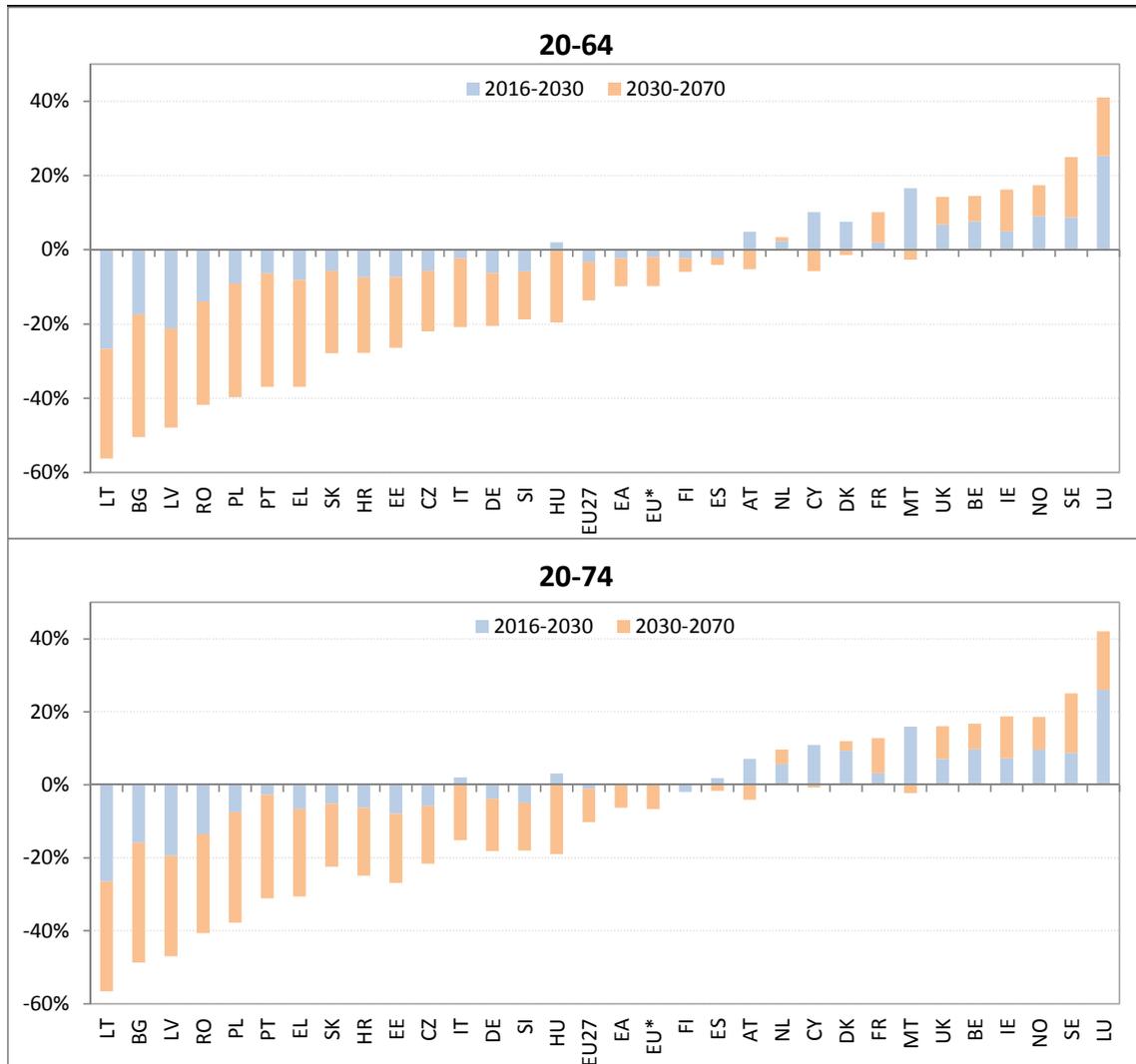
(1) Countries ranked in ascending order of total changes over the period 2016-2070.
Source: Commission services, EPC.

pps. or less), with negative or very low increases for prime-age and/or older workers.

2.2.4. Projection of labour supply

Labour supply is projected to fall significantly over the projection horizon; by 9.6% in the EU and by 9.7% in the euro area.

Labour supply projections are calculated by age and gender (by multiplying participation rates by population) and are summarised in Graph I.2.5 for the period 2016-70.

Total labour supply for those aged 20 to 64 in the EU is projected to fall by 9.6% over 2016-70, of which 2% during 2016-30 and a further 7.8% between 2030 and 2070. In the euro area, the projected fall in labour supply is 9.7% over the entire period, of which 2.3% between 2016 and 2030 and a further 7.5% between 2030 and 2070.

There is wide diversity of labour supply projections across Member States between 2016 and 2070, ranging from an increase of 45% in Luxembourg to a decrease of 48.4% in Lithuania. More EU Member States are projected to see a decline in the labour force than an increase (17 vs

Graph I.2.6:   **Unemployment rate assumptions for those aged 15-64, 2016-70 (%)**
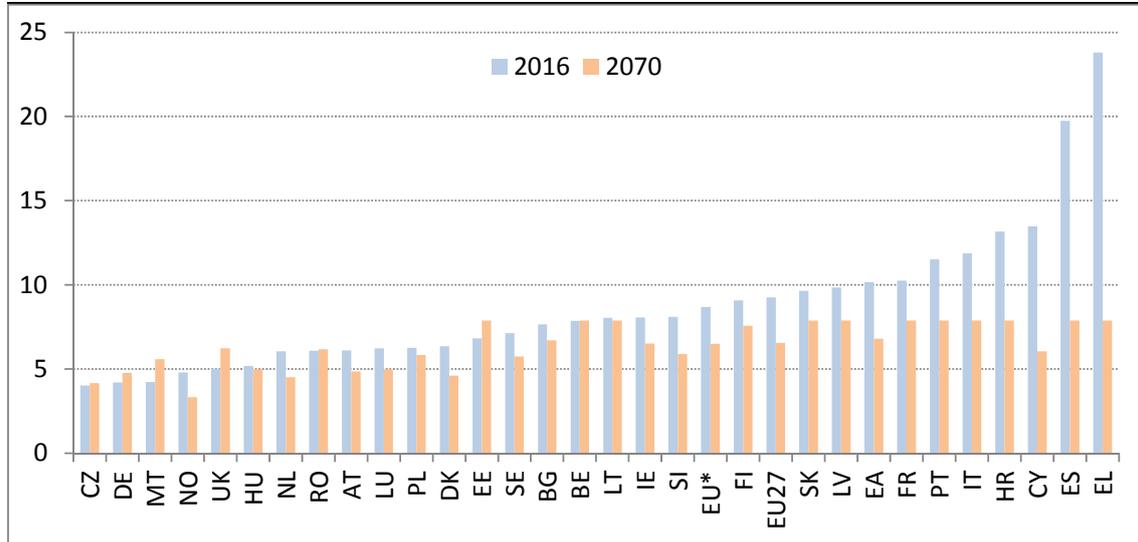
Note: Countries ranked in ascending order of unemployment in 2016.
Source: Commission services, EPC.

11) during this period. Moreover, 12 Member States will see a decline of their population of at least 20% until 2070, while only two will see an increase of at least 20%.

For all but five EU Member States (France, UK, Ireland, Spain and Sweden), labour force developments between 2030 and 2070 are worse than between 2016 and 2030. Particularly notable are the cases of Hungary, Austria, Cyprus, Denmark and Malta, where positive labour force growth until 2030 is reversed subsequently with the labour force decline between 2030 and 2070.

Since participation rates - especially for older workers and women - are projected to increase over the period, the projected labour force decline in the EU is being driven by negative demographic developments.

2.2.5. Assumptions on unemployment

As a general rule, actual unemployment rates are assumed to converge to NAWRU rates in 5 years (currently 2021), corresponding to the closure of the output gap 3 years after the end of the forecast horizon. Afterwards, NAWRU rates are assumed to gradually [29] converge to the minimum of

country-specific "Anchors" [30] or the median of national (Member States) "Anchors", whichever is the lowest [31].

Graph I.2.6 above presents the unemployment rate assumptions underlying the projections. In the EU, the unemployment rate is assumed to decline from 8.7% in 2016 to 6.5% in 2070. In the euro area, the unemployment rate is expected to fall from 10.2% in 2016 to 6.8% in 2070.

2.2.6. Employment projections

The total employment rate (20-64 year olds) in the EU is projected to increase from 71.1% in 2016 to 73.9% in 2030 and 75.8% in 2070.

---

[29] In addition, if the estimated NAWRU ten years ahead (2026) is lower than the country specific anchor, the former is assumed to replace the "Anchor". The gradual

convergence, for countries whose NAWRU's is higher than the EU median, is assumed to be completed by 2050.

[30] 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 2026), DG ECFIN carried out some econometric work (Orlandi, 2012) leading to the estimation of "Anchor" values for the NAWRU. The median of the national anchors was estimated at 7.9%.

[31] Anchors values are country-specific values for the NAWRU that are calculated on the basis of the coefficients of a panel estimation model in which 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 then that the non-structural variables are set at their average values. For details, see Box I.2.3 in "The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy, No. 065/2017, European Commission.

Graph I.2.7:   Employment rate assumptions for those aged 20-64, 2016-2070 (%) (1)
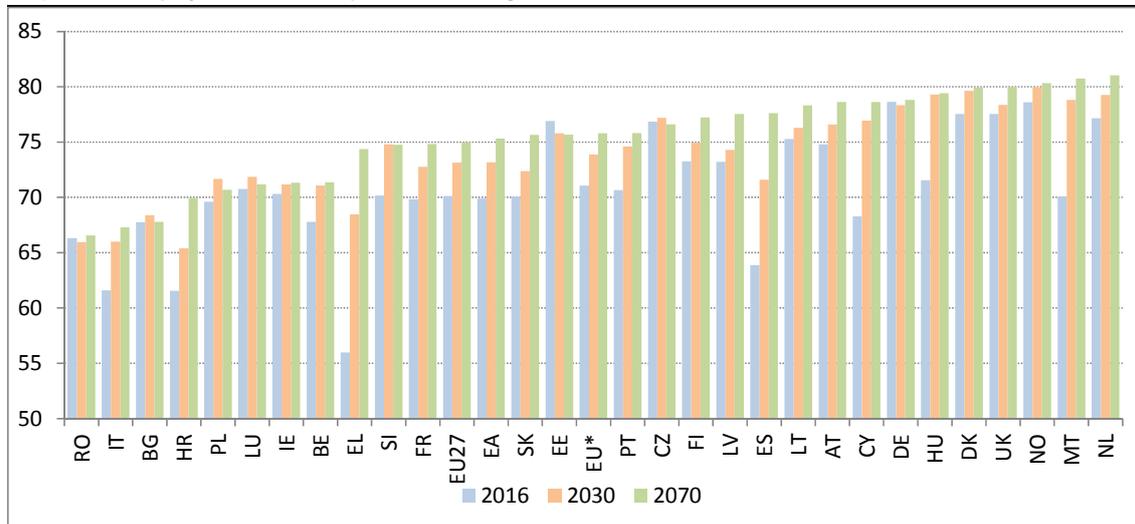
(1) Countries ranked in ascending order in terms of employment rate in 2070.
Source: European Commission, EPC.

Increases of the employment rate for women (20-64 year olds) by 6.9 pps. and older workers (55-64 year olds) by 12.6 pps. are driving this rise. In the euro area, a similar development is expected, with the employment rate (20-64 year olds) rising from 69.9% in 2016 to 75.3% in 2070.

Notwithstanding this, a shrinking working-age population would result in negative labour input growth in the EU, the euro area, and the majority of Member States notably after 2030.

All the countries in the sample will see their employment rates increase over this period except the Czech Republic and Estonia for which a marginal decrease is foreseen. Greece is forecast to see the highest increase (18 pps.) between 2016 and 2070, followed by Spain (14 pps.) and Cyprus and Malta for whom the increase will exceed 10 pps. As a result of these projections, there will be significant convergence within EU Member States during this period, with the difference between the countries with the highest and the lowest employment rates falling from 25 pps. in 2016 to 15 pps. by 2070 (see Graph I.2.7).

As mentioned above, 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 65.3% in 2016 to 72.2% in 2070. The employment rate for older workers is expected to increase by even more,

from 55.3% in 2016 to 67.9% in 2070, reflecting the expected impact of recent pension reforms in many Member States aimed at increasing the retirement age.

Total hours worked are projected to rise by 1.2% in the period 2016 to 2030 in the EU and 2.4% in the euro area. ([32]) However, from 2030 onwards, this upward trend is expected to be reversed and total hours worked are expected to decline by 5.9% and 4.9% respectively between 2030 and 2070 in the EU and the euro area. Overall, over the entire projection horizon 2016-2070, in the EU and the euro area, total hours worked are projected to fall by 4.8% and 2.6% respectively (Graph I.2.8).

Developments in projected hours worked are quite varied across Member States, reflecting different demographic outlooks.

Until 2030, a small majority of EU Member States (fifteen versus thirteen) are projected to see an increase working hours. However, this trend is reversed between 2030 and 2070 when a majority of EU Member States (eighteen) will see a decline

---

([32]) The total number of hours worked is the product between employment and hours worked per person. Regarding hours worked, the following assumptions are made: i) total amount of hours worked per person (in 2016) are 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 (15-24, 25-54 and 55-74) are kept constant over the entire projection period.

Graph I.2.8:   Change in total hours worked by persons aged 15-74, 2016-2070 (%) (1)
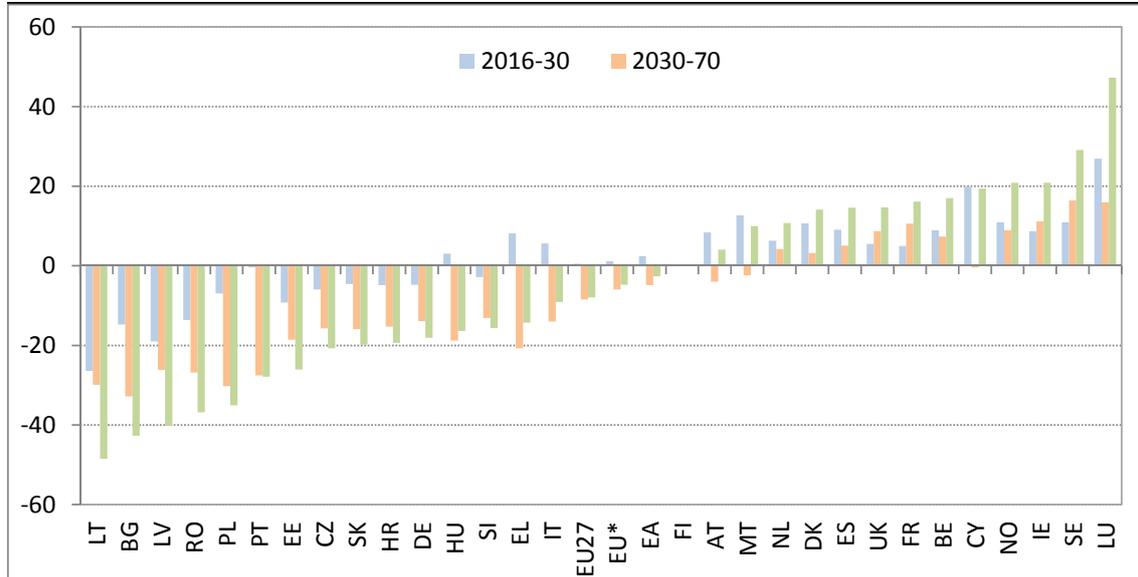
(1) Countries ranked in ascending order of the change in 2016-2070
Source: Commission services, EPC.

in the total amount of hours worked. As a result, over the entire horizon 2016-2070, most EU Member States are projected to experience a decline in total hours worked.

Over the entire horizon, a fall of 20% or more is projected for Slovakia, Czech Republic, Portugal, Estonia, Bulgaria, Latvia, Poland, Romania and Lithuania, while an increase of 20% or more on average is expected for Sweden, Ireland and Luxembourg.

The projected decline in total hours worked, particularly prevalent after 2030, is driven by demographic changes, namely a reduction in the size of the labour force driven by a shrinking working-age population.

Hence, negative labour input growth will drag down GDP growth in the EU, the euro area, and the majority of Member States after 2030. However, there are differences across countries and labour input is not projected to decline in Belgium, Denmark, Ireland, France, Cyprus, Luxembourg, Malta, Sweden, the United Kingdom, the Netherlands, Spain, Austria, Finland and Norway.

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

The economic old age dependency ratio (inactive 65+ year olds vs. employed aged 20-64) is projected to rise significantly from 43.1% in 2016 to 68.5% in 2070 in the EU. Similarly, the total economic dependency ratio (inactive vs. employed) is expected to steadily grow over the projection period, from 121.1% in 2016 to 143.3% by 2070 in the EU.

An important indicator to assess the impact of ageing on budgetary expenditure, particularly on its pension component, is the effective economic old age dependency ratio. This indicator is calculated as the ratio between the inactive elderly (65+) and total employment (either 20-64 or 20-74). The effective economic old age dependency ratio is projected to rise significantly from 43.1% in 2016 to 68.5% in 2070 in the EU (using employed aged 20-64). In the euro area, a similar increase is projected from 46.2% in 2016 to 69.2% in 2070 (see Graph I.2.9).

Across EU Member States, the effective economic old age dependency ratio is projected to range from a minimum of 54.5% in Sweden to a maximum of 92.5% in Poland in 2070. This ratio is expected to be above or equal to 80% (5 persons

Graph I.2.9:   **Effective economic old age dependency ratio - inactive population aged 65+/employed persons aged 20-64, 2016-2070 (%) (1)**
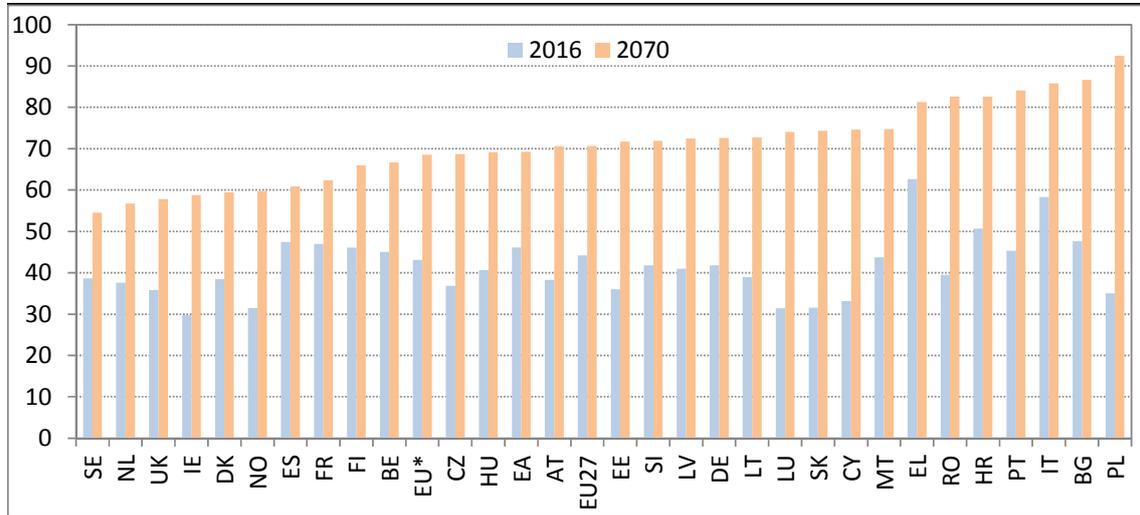
(1) Countries ranked in ascending order of the old age dependency ratio in 2070
Source: Commission services, EPC.

in working age population for 4 aged more than 65) in seven EU Member States, namely Bulgaria, Greece, Croatia, Italy, Poland, Portugal and Romania by 2070.

Another relevant indicator is the total economic dependency ratio, calculated as the ratio between the total inactive population and employment (see Graph I.2.10). It gives a measure of the average number of individuals that each employed 'supports', being relevant when considering prospects for potential GDP per capita growth. It is expected to constantly grow in the projection period, from 121.1% in 2016 in the EU up above 143.3% by 2070. A similar evolution is projected in the euro area with a rise of 19.7 pps. over the projection horizon. The projected trajectory of this indicator reflects the strong impact of the ageing process after the middle of the next decade in most EU Member States.

However, there are large cross-country differences. In Romania, the Czech Republic, Poland, Bulgaria, Estonia and Luxembourg, the total economic dependency ratio is projected to increase by 40 pps. or more between 2016 and 2070. On the other hand, in France and Spain, the total economic dependency ratio is projected to rise by just 5 pps. over the projection horizon, and in Greece it is projected to fall.

Graph I.2.10: **Total economic dependency ratio - total inactive population/employed persons aged 20-64, 2016-2070 (%) (1)**
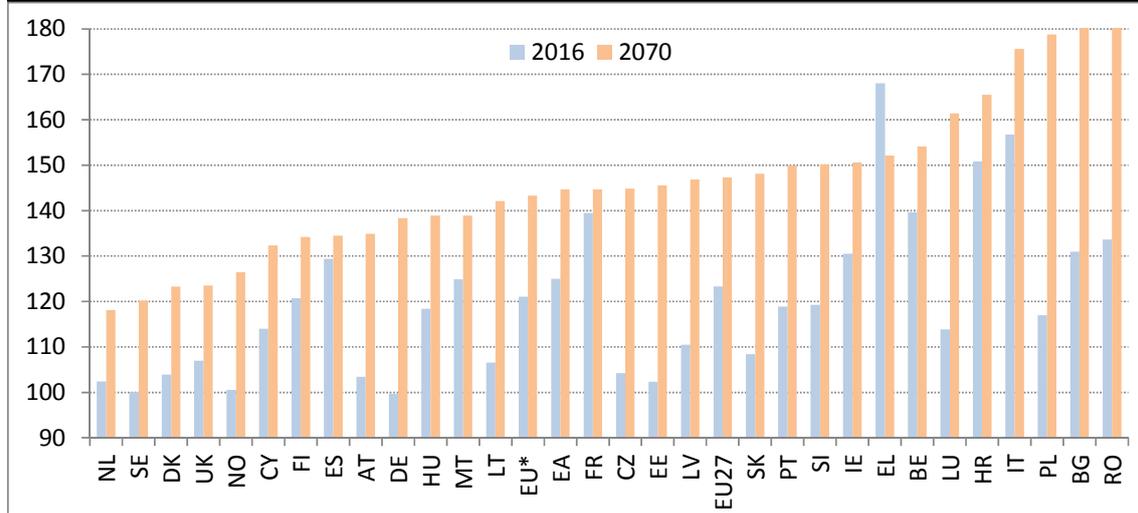
(1) Countries ranked in ascending order of the total economic dependency ratio in 2070
Source: Commission services, EPC.

2.3. PROJECTIONS OF LABOUR PRODUCTIVITY AND GDP

2.3.1. Main results of the projections – baseline scenario

In the EU as a whole, the average annual GDP growth rate is projected to remain quite stable over the long-term, at 1.4% on average up to 2070. Downside risks exist, should future TFP growth be less favourable than assumed in the baseline scenario.

Graph I.2.11 shows the average per capita GDP growth rates by Member State between 2016 and 2070 and over certain periods during this horizon.

Over the entire horizon, GDP per capita growth rates range from 1% in Italy to 2.6% in Latvia. However, in the short- to medium-term, the range in growth rates is significantly wider, affected by country specificities, such as cyclical developments, periods of (protracted) economic adjustment and catching-up. Hence, growth rates range in 2016-40 from 0.4% in Italy to 3.6% in Latvia. By the long-term, growth rates are projected to converge to around 1.5%, with the range among Member States between 2041-70 shrinking to between 1.2% (Luxembourg) and 1.8% (Greece, Latvia, Lithuania).

In the EU as a whole, the average annual GDP growth rate is projected to remain quite stable over the long-term. After an average potential growth of 1.2% up to 2040, an increase to 1.5% is projected over the remainder of the projection horizon. Over the whole period 2016-2070, the average annual GDP growth rate in the EU is projected to be 1.4%. Developments in the euro area are slightly less positive than in the EU as a whole, with an average annual growth rate of 1.3% over the entire projection horizon.

Graph I.2.11: **Average annual GDP per capita growth rates, 2016-70 (%) (1)**
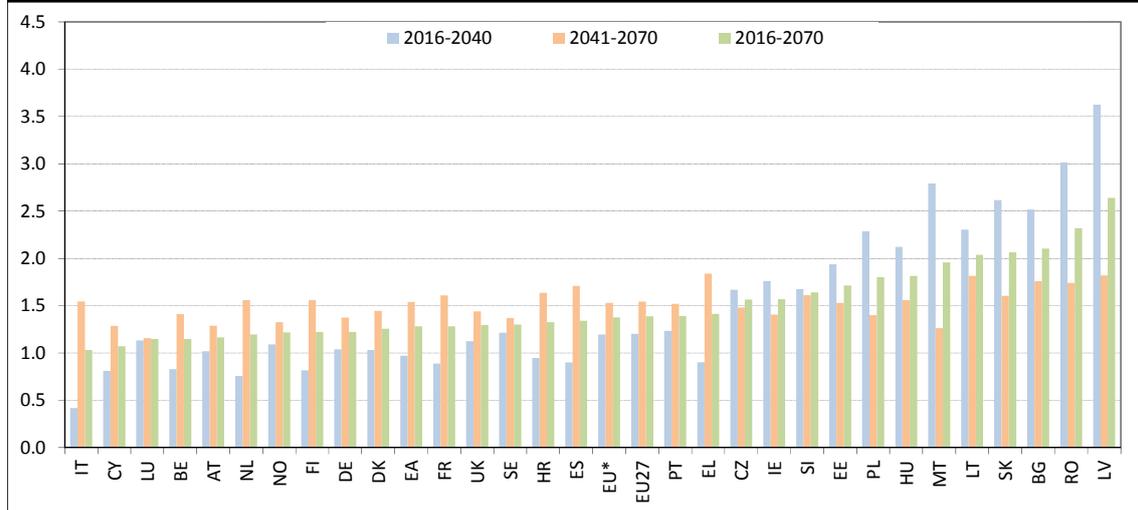
(1) Countries ranked in ascending order of the 2016-2070 period average
Source: Commission services, EPC.

Looking at actual and potential GDP growth in the medium-term, in the period through 2026, GDP growth is assumed to be higher than potential growth rates, reflecting the gradual closure of negative output gaps (Graph I.2.13) ([33]).

For the EU as a whole and the EA, GDP growth is assumed to be 0.1 pps. higher than its potential growth rate. The only economies for which actual growth is projected to be lower than potential growth over this decade are Malta, Latvia, Hungary, Estonia and the UK.

Potential growth is explained by labour input and labour productivity, with the latter being the key driving factor. In the EU, labour productivity is projected to grow 1.3% per year on average in 2016-2040, and then rise to 1.6% during 2041-2070 (Graph I.2.12). In the euro area, average annual growth is projected at 1.1% in 2016-2040 and to rise to 1.6% on average between 2041 and 2070.

Graph I.2.12: **Labour productivity per hour, annual average growth rates, 2016-2070 (%)**
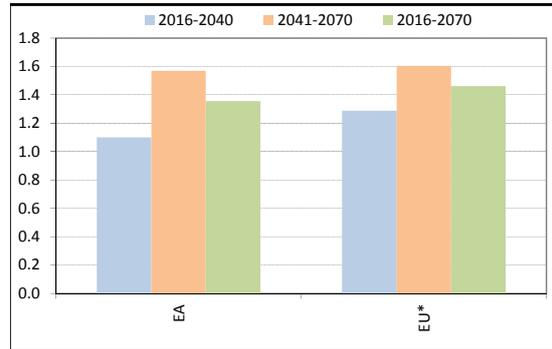
Source: Commission services, EPC.

The projected increase in the period up to 2040 is due to the assumption of higher productivity growth (through TFP) in the Member States assumed to have a catching-up potential. Eventually, in 2070 all Member States are assumed to reach the same productivity growth of 1.5%.

([33]) In making actual and potential GDP growth rate projections, the general rule is that the output gap is closed at the latest three years after the end of the Commission services economic forecast of spring 2017, namely 2021. For the years 2017-2026, medium-term potential growth estimates are based on the T+10 methodology (for more details see Chapter 3, "The 2018 Ageing Report, Underlying Assumptions and Projection Methodologies", European Economy No. 065/2017).

Graph I.2.13: **Annual average actual and potential GDP growth rates, 2016-2026 (%) (1)**
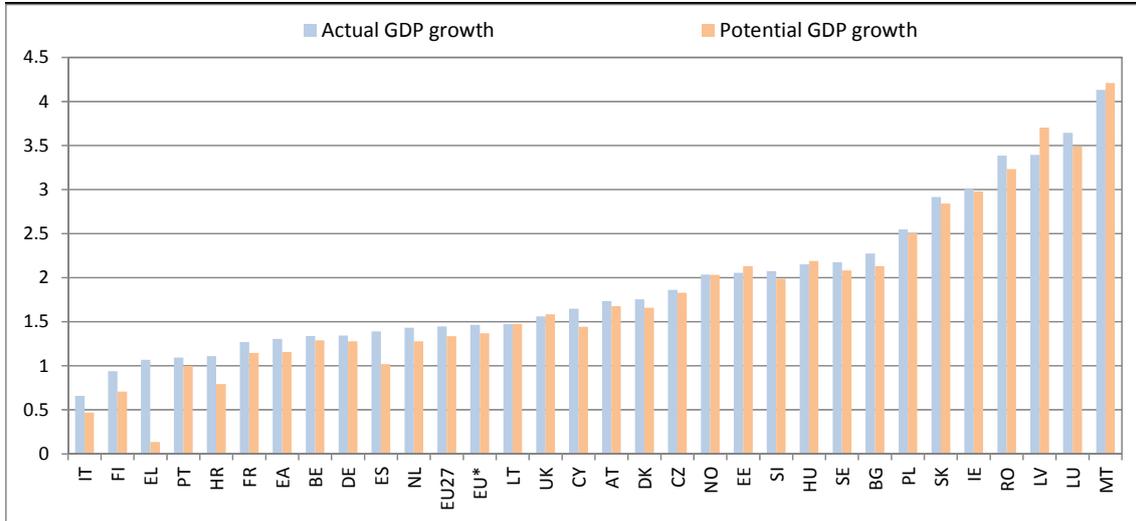
(1) Countries ranked in ascending order of actual growth
Source: Commission services, EPC.

Graph I.2.14 breaks down labour productivity growth between TFP growth and capital deepening. Trends in TFP growth explain most of productivity per hour growth for all countries. By assumption, annual TFP growth converges to 1% by 2070 in all Member States which, given a steady labour income share of 0.65, implies annual labour productivity growth of around 1.5% for all Member States in 2070 [34]. For countries with a relatively low per capita GDP by EU standards, the capital deepening contribution is very high in the first part of the projection period, reflecting the assumed catching-up process of converging economies. Then, the contribution gradually declines to the steady state value of 0.5%.

A summary of the contribution of labour input and productivity and their determinants to potential GDP growth over the period 2016-2070 is summarised in Table I.2.1. For the EU and the euro area, the contribution of total population to the average growth of potential GDP is only marginally positive. However, this is more than offset by a decline in the share of the working-age population, pulling down growth by an annual average of -0.2 pps. As a result, labour input

contributes negatively to output growth by about an annual average of -0.1 pps. [35]

Graph I.2.14: **Determinants of annual average labour productivity growth: Total factor productivity and capital deepening (contribution in pps.), 2016-2070**
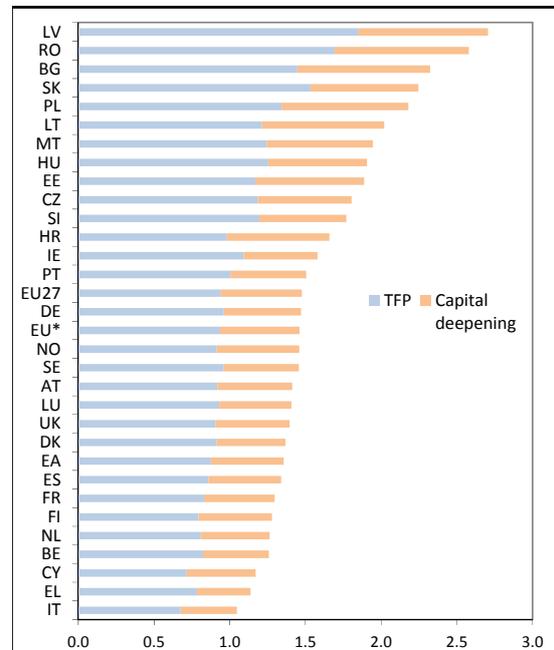
Source: Commission services, EPC.

---

[34] For details on the assumptions for TFP growth, see Box I.3.1 in European Commission (DG ECFIN) and Economic Policy Committee (Ageing Working Group) (2017).

[35] As noted above, labour input will make a positive contribution to GDP growth between 2013-2020, and then make a negative contribution for the remaining period.

Table I.2.1:   **Decomposition of annual average potential GDP growth rates, 2016-2070 (%)**

Country	GDP growth in 2016-2070	Labour prod. (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 2016-2070
	1=2+5	2=3+4	3	4	5=6+7+8+9	6	7	8	9	10=1-6
BE	1.5	1.3	0.8	0.4	0.3	0.4	0.0	-0.1	0.0	1.2
BG	1.4	2.3	1.4	0.9	-0.9	-0.7	0.1	-0.3	0.0	2.1
CZ	1.5	1.8	1.2	0.6	-0.3	-0.1	0.0	-0.3	0.0	1.6
DK	1.6	1.4	0.9	0.5	0.2	0.3	0.1	-0.2	0.0	1.3
DE	1.2	1.5	1.0	0.5	-0.3	-0.1	0.0	-0.2	-0.1	1.2
EE	1.5	1.9	1.2	0.7	-0.4	-0.2	0.1	-0.2	0.0	1.7
IE	2.0	1.6	1.1	0.5	0.5	0.5	0.1	-0.1	0.0	1.6
EL	0.8	1.1	0.8	0.4	-0.4	-0.6	0.5	-0.2	0.0	1.4
ES	1.5	1.3	0.9	0.5	0.1	0.1	0.2	-0.2	0.0	1.3
FR	1.6	1.3	0.8	0.5	0.3	0.3	0.1	-0.1	0.0	1.3
HR	1.2	1.7	1.0	0.7	-0.4	-0.4	0.2	-0.2	0.0	1.6
IT	0.8	1.0	0.7	0.4	-0.2	-0.2	0.2	-0.2	0.0	1.0
CY	1.4	1.2	0.7	0.5	0.2	0.3	0.2	-0.2	0.0	1.1
LV	1.9	2.7	1.8	0.9	-0.8	-0.7	0.2	-0.3	0.0	2.6
LT	1.1	2.0	1.2	0.8	-0.9	-0.9	0.3	-0.3	0.0	2.0
LU	2.3	1.4	0.9	0.5	0.8	1.1	-0.1	-0.2	0.0	1.2
HU	1.6	1.9	1.3	0.7	-0.3	-0.2	0.2	-0.3	0.0	1.8
MT	2.3	1.9	1.2	0.7	0.4	0.3	0.4	-0.3	0.0	2.0
NL	1.5	1.3	0.8	0.5	0.2	0.3	0.1	-0.2	0.0	1.2
AT	1.5	1.4	0.9	0.5	0.1	0.3	0.1	-0.2	-0.1	1.2
PL	1.4	2.2	1.3	0.8	-0.8	-0.4	0.0	-0.3	0.0	1.8
PT	0.9	1.5	1.0	0.5	-0.6	-0.5	0.1	-0.2	0.0	1.4
RO	1.8	2.6	1.7	0.9	-0.8	-0.5	0.0	-0.3	0.0	2.3
SI	1.5	1.8	1.2	0.6	-0.2	-0.1	0.1	-0.3	0.0	1.6
SK	1.9	2.2	1.5	0.7	-0.4	-0.2	0.2	-0.3	0.0	2.1
FI	1.3	1.3	0.8	0.5	0.0	0.0	0.1	-0.2	0.0	1.2
SE	1.9	1.5	1.0	0.5	0.5	0.6	0.0	-0.2	0.0	1.3
UK	1.7	1.4	0.9	0.5	0.3	0.4	0.1	-0.2	0.0	1.3
NO	1.8	1.5	0.9	0.5	0.3	0.5	0.0	-0.2	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*	1.4	1.5	0.9	0.5	-0.1	0.0	0.1	-0.2	0.0	1.3
EU27	1.3	1.5	0.9	0.5	-0.2	0.0	0.1	-0.2	0.0	1.3

Source: Commission services, EPC.

2.3.2. Main results of the projections under the TFP risk scenario

A so called "TFP risk scenario" has also been developed that indicates the potential effects on potential GDP growth of a lower rise in TFP than assumed in the baseline scenario. Specifically, the risk scenario assumes that TFP growth converges to 0.8% by 2070, (instead of 1.0% in the baseline).

In this scenario, potential GDP in the EU would grow by 1.1% on average per year up to 2070, compared to 1.4% in the baseline (Graph I.2.15), while that of the euro area would fall from 1.3% to 1.1% ([36]).

The implications of the risk scenario for the potential GDP growth rates of Member States vary. On one side of the spectrum are Hungary, Latvia and Lithuania whose average annual GDP growth rates are projected to be at least 0.5 pps. of

GDP lower than under the baseline. On the other hand, Ireland's average annual potential GDP growth rate is only 0.1 pps. lower under the TFP risk scenario.

2.4. **COMPARISON WITH THE 2015 AGEING REPORT**

2.4.1. Labour force developments

Employment rates have been revised up compared with the 2015 AR, both in 2016 (by 1.1 pps.) and in 2060 (by 0.8 pps.).

For the EU as a whole, the recovery from the great recession is visible in the upward revision of employment rate in 2016 by 1.1 pps., compared with the 2015 Ageing Report. Moreover, the employment rate is revised upwards by 0.8 pps. for the EU in 2060, reflecting the closure of the output gap and the impact of planned pension reforms, which together with cohort effects, are expected to raise the employment rate of older workers

([36]) For a detailed presentation of all sensitivity tests and policy scenarios see Part I, Chapter 3, of this report.

Graph I.2.15: **Average annual potential GDP growth rates under baseline and TFP risk scenarios, 2013-2070 (%)**
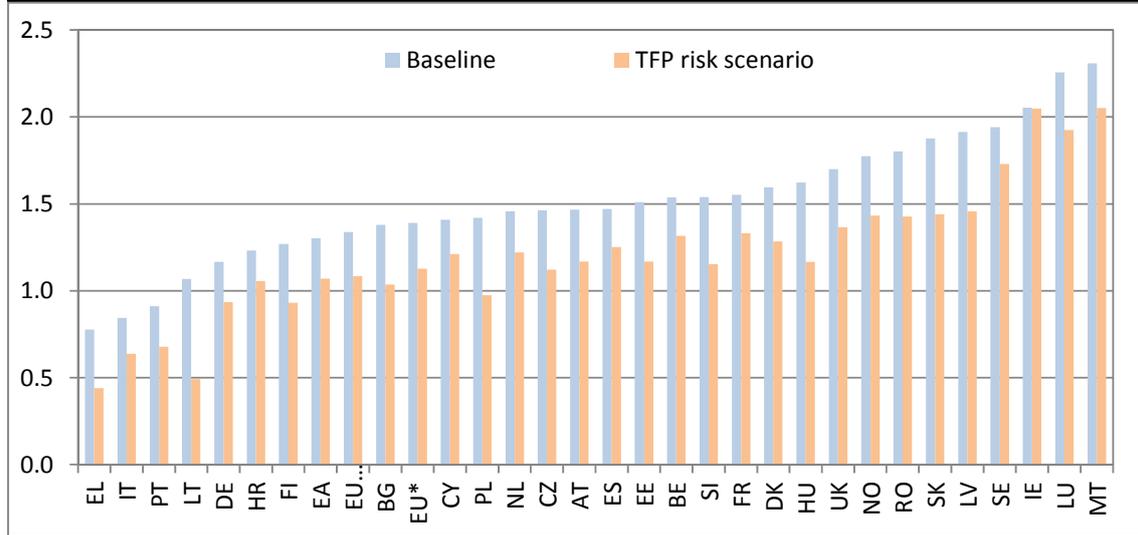
Source: Commission services, EPC.

(persons aged 55-64) by 0.6 pps. in 2060 (see Table I.2.2).

Unemployment rates in 2016 have been revised downwards by -1.3 pps. in the EU as a whole, reflecting improving labour markets in a number of Member States, in particular in Bulgaria, Croatia, Cyprus, Spain, Portugal, Hungary, Poland and Slovakia. Given that unemployment rates in underperforming labour markets are capped at 7.9% (slightly higher than in the 2015 Ageing Report), the unemployment rate for the EU as a whole in 2060 is almost unchanged (0.1 pps. lower in the 2018 exercise).

2.4.2. Labour productivity and GDP developments

Potential GDP growth is slightly lower in the current projection exercise compared with the 2015 AR, mainly influenced by lower productivity growth up to 2035.

The 2018 Ageing Report brings about marginal changes regarding potential GDP growth and its drivers in the EU as a whole (Table I.2.3).

Potential GDP is projected to rise on an annual average growth rate of 1.4% in the EU in the period 2016-2060, -0.1 pps. lower than the 2015 exercise (see also Graph I.2.16). The potential GDP growth rate in the euro area is expected to be

1.3%, again -0.1 pps. lower compared with the 2015 Ageing Report. In the EU, this reduction results from a decline in productivity per hour worked (-0.1 pps.) that is not offset by higher labour input.

The following countries are projected to see a decline in their average annual potential GDP growth rate of 0.2 pps. or more in the period 2016-2060: Belgium, Czech Republic, Denmark, Greece, Spain, Croatia, Italy, Cyprus, Luxembourg, Finland and Norway. By contrast, Germany, Ireland, Latvia, Malta, Romania and Slovakia are projected to see an improvement of 0.2 pps. or more in their average annual potential GDP growth rate in the period 2016-2060.

Graph I.2.16: **Annual GDP growth rates 2016-2060 in the 2018 and 2015 baseline scenario projections - period average (%)**
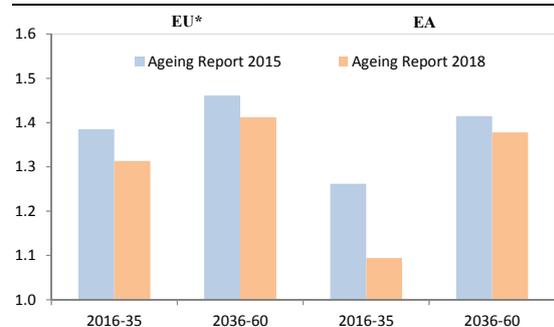
Source: Commission services, EPC.

Table I.2.2: **Long-term projections compared (2015 and 2018 projections): labour force developments**

	Projection exercise 2018															2018 AR - 2015 AR (2016-60)															
	Employment rate						Participation rate						Unemployment rate			Employment rate						Participation rate						Unemployment rate			
	(20-64)			(55-64)			(20-64)			(55-64)			(15-64)			(20-64)			(55-64)			(20-64)			(55-64)			(15-64)			
	2016	2070	pps. change	2016	2070	pps. change	2016	2070	pps. change	2016	2070	pps. change	2016	2070	pps. change	2016	2060	pps. change	2016	2060	pps. change	2016	2060	pps. change	2016	2060	pps. change	2016	2060	pps. change	
BE	67.8	71.4	3.6	45.5	62.4	16.9	73.4	77.3	3.9	48.2	65.8	17.6	7.9	7.9	0.0	-1.0	0.9	1.9	-1.2	8.9	10.1	-1.3	1.5	2.7	-1.0	9.9	10.9	-0.3	0.5	0.8	BE
BG	67.8	67.8	0.0	54.6	59.3	4.7	73.3	72.5	-0.8	58.9	63.3	4.4	7.6	6.7	-0.9	2.4	-1.7	-4.1	4.6	2.7	-1.9	-1.2	-2.4	-1.2	2.1	2.4	0.3	-4.9	-0.8	4.1	BG
CZ	76.8	76.6	-0.2	58.8	64.9	6.2	80.0	79.8	-0.2	61.1	67.3	6.2	4.0	4.2	0.1	3.1	0.1	-3.0	7.2	-9.3	-16.5	1.2	-1.4	-2.7	6.6	-10.4	-17.0	-2.5	-1.9	0.7	CZ
DK	77.5	79.9	2.4	68.3	74.9	6.6	82.2	83.4	1.2	71.1	77.0	5.9	6.4	4.6	-1.7	0.5	0.2	-0.3	2.0	-0.5	-2.5	0.5	-0.1	-0.5	1.7	-1.0	-2.7	0.0	-0.3	-0.3	DK
DE	78.6	78.8	0.2	68.6	70.9	2.3	82.0	82.6	0.6	71.4	74.1	2.7	4.2	4.8	0.6	0.2	-1.4	-1.6	1.9	-1.4	-3.4	-0.4	-2.0	-1.6	1.1	-2.6	-3.6	-0.7	-0.6	0.0	DE
EE	76.9	75.7	-1.2	65.8	65.0	-0.8	82.4	81.9	-0.5	71.2	71.0	-0.2	6.8	7.9	1.1	1.7	-1.6	-3.3	2.8	-5.7	-8.5	1.2	-1.4	-2.6	4.7	-3.4	-8.1	-0.7	0.4	1.1	EE
IE	70.3	71.3	1.0	57.2	62.6	5.5	76.2	76.0	-0.1	61.0	65.8	4.8	8.1	6.5	-1.5	2.6	2.3	-0.3	2.5	1.4	-1.2	1.1	2.2	1.1	1.5	1.2	-0.2	-2.3	-0.3	1.9	IE
EL	56.0	74.4	18.4	36.5	70.6	34.1	73.3	80.7	7.4	45.2	75.3	30.2	23.8	7.9	-15.9	-1.4	-1.4	0.0	-6.5	-4.0	2.5	-1.8	-1.1	0.7	-5.0	-2.6	2.4	-0.1	0.4	0.5	EL
ES	63.9	77.6	13.7	49.1	76.6	27.5	79.2	84.1	4.9	59.2	81.8	22.6	19.7	7.9	-11.9	1.7	-1.3	-2.9	-0.7	-0.8	-0.2	-1.1	-1.0	0.1	-1.1	-0.1	1.0	-3.3	0.4	3.7	ES
FR	69.8	74.8	5.0	49.7	64.4	14.7	77.4	81.0	3.5	53.5	68.1	14.6	10.2	7.9	-2.4	0.0	0.5	0.5	2.8	4.6	1.8	0.2	0.9	0.7	3.1	5.2	2.0	0.2	0.4	0.2	FR
HR	61.6	69.9	8.4	38.4	52.0	13.5	70.2	75.6	5.3	42.3	54.7	12.5	13.2	7.9	-5.3	3.4	11.0	7.5	-0.9	2.7	3.5	1.4	5.3	3.8	-1.1	3.3	4.4	-3.5	0.4	3.9	HR
IT	61.6	67.3	5.7	50.3	70.5	20.1	69.6	72.9	3.2	53.4	73.1	19.7	11.9	7.9	-4.0	0.9	1.7	0.8	2.8	3.2	0.4	0.9	2.2	1.3	3.1	3.6	0.5	-0.2	0.4	0.6	IT
CY	68.3	78.6	10.4	52.3	72.7	20.4	78.6	83.6	5.0	59.0	76.8	17.8	13.5	6.1	-7.4	1.3	-1.9	-3.2	-2.3	-4.1	-1.8	-2.8	-2.0	0.8	-4.2	-3.8	0.4	-4.9	0.0	4.8	CY
LV	73.2	77.5	4.3	61.5	67.4	5.9	81.2	84.2	3.0	67.5	72.4	4.9	9.8	7.9	-1.9	1.0	1.3	0.3	3.4	-1.0	-4.4	0.6	1.9	1.3	3.6	-0.5	-4.1	-0.7	0.4	1.1	LV
LT	75.3	78.3	3.1	64.6	68.3	3.6	81.8	85.0	3.2	69.9	73.7	3.8	8.0	7.9	-0.1	4.1	4.5	0.4	9.6	4.0	-5.5	2.8	5.3	2.4	9.1	5.0	-4.1	-2.0	0.4	2.4	LT
LU	70.8	71.2	0.4	40.7	41.3	0.6	75.1	74.6	-0.5	42.4	42.5	0.1	6.2	5.0	-1.2	-0.7	-2.2	-1.4	-0.6	-4.0	-3.4	-0.3	-1.8	-1.5	-0.7	-4.5	-3.7	0.8	0.7	0.0	LU
HU	71.6	79.4	7.9	50.0	78.0	28.0	75.3	83.4	8.1	52.2	81.3	29.1	5.2	5.0	-0.2	4.6	5.6	1.0	1.6	4.3	2.7	2.0	3.8	1.8	0.5	3.7	3.2	-3.8	-2.5	1.3	HU
MT	70.1	80.8	10.7	44.3	68.0	23.7	72.9	85.0	12.2	45.6	70.1	24.5	4.2	5.6	1.4	3.0	4.7	1.7	7.1	5.9	-1.3	1.6	4.1	2.5	6.1	3.8	-2.3	-2.3	-1.1	1.2	MT
NL	77.1	81.0	3.9	63.5	74.5	11.0	81.6	84.5	2.9	68.4	78.8	10.4	6.1	4.5	-1.5	0.5	-1.2	-1.7	2.1	-1.2	-3.3	-0.4	-0.9	-0.5	2.7	0.2	-2.5	-1.0	0.6	1.6	NL
AT	74.8	78.6	3.8	49.2	59.2	10.0	79.4	82.4	3.0	51.8	61.3	9.5	6.1	4.9	-1.3	-1.4	-0.2	1.2	0.4	0.4	0.0	-0.2	0.7	0.9	1.4	1.1	-0.3	1.5	1.0	-0.5	AT
PL	69.6	70.7	1.1	46.4	50.8	4.4	74.1	74.9	0.8	48.5	53.0	4.4	6.3	5.8	-0.4	2.9	0.9	-2.0	3.0	-10.6	-13.7	0.8	-0.4	-1.2	2.0	-11.9	-13.9	-2.9	-1.6	1.2	PL
PT	70.7	75.8	5.1	52.0	64.3	12.3	79.6	82.1	2.5	58.4	69.4	11.0	11.5	7.9	-3.6	2.9	1.1	-1.8	1.2	0.3	-0.9	0.7	1.6	0.9	0.8	1.2	0.5	-3.1	0.4	3.5	PT
RO	66.3	66.6	0.3	42.6	49.2	6.6	70.3	70.6	0.3	44.0	50.7	6.7	6.1	6.2	0.1	1.7	3.5	1.7	-1.1	2.6	3.7	1.1	3.2	2.1	-1.3	2.6	3.9	-1.0	-0.7	0.3	RO
SI	70.2	74.8	4.6	38.5	58.2	19.7	76.3	79.4	3.1	41.1	60.9	19.7	8.1	5.9	-2.2	1.1	0.2	-0.9	-1.4	-3.6	-2.1	-0.3	-0.2	0.1	-1.7	-3.3	-1.6	-1.8	-0.5	1.3	SI
SK	70.1	75.6	5.6	49.6	71.2	21.7	77.3	81.9	4.6	54.4	76.3	21.9	9.7	7.9	-1.8	3.9	3.9	0.1	3.9	2.5	-1.4	1.7	4.6	2.9	4.0	4.1	0.1	-3.1	0.4	3.5	SK
FI	73.3	77.2	3.9	61.2	74.7	13.5	79.8	82.9	3.0	66.2	79.6	13.4	9.1	7.6	-1.5	-0.7	1.7	2.4	0.5	10.2	9.8	0.1	2.4	2.3	1.2	11.3	10.2	1.0	0.7	-0.3	FI
SE	81.2	82.3	1.0	75.7	74.5	-1.2	86.6	86.5	-0.1	79.9	77.7	-2.2	7.1	5.7	-1.4	0.0	-0.8	-0.8	1.3	-1.5	-2.8	0.2	-1.0	-1.2	2.1	-1.2	-3.3	0.2	-0.2	-0.4	SE
UK	77.5	80.0	2.4	63.5	70.8	7.3	81.0	84.5	3.5	66.0	74.2	8.3	5.0	6.2	1.2	1.1	0.4	-0.7	0.8	-0.1	-0.9	0.2	0.5	0.4	0.7	0.6	-0.1	-1.3	0.1	1.4	UK
NO	78.6	80.3	1.7	72.5	71.8	-0.7	82.1	82.8	0.7	73.9	72.8	-1.1	4.8	3.3	-1.5	-1.1	-0.2	0.9	2.6	1.8	-0.8	-0.3	-0.4	0.0	3.1	1.9	-1.2	1.1	-0.2	-1.3	NO
EA	69.9	75.3	5.4	55.3	69.3	14.0	77.6	80.6	3.1	59.8	73.0	13.2	10.2	6.8	-3.4	0.7	0.5	-0.1	1.5	1.7	0.2	-0.7	0.3	1.0	1.4	2.0	0.6	-0.9	0.1	1.0	EA
EU*	71.1	75.8	4.7	55.3	67.9	12.6	77.5	80.7	3.2	59.1	71.3	12.2	8.7	6.5	-2.2	1.1	0.8	-0.3	1.6	0.6	-1.0	0.2	0.7	0.5	1.4	0.8	-0.6	-1.3	-0.1	1.1	EU*
EU27	70.1	75.0	4.9	54.2	67.3	13.1	77.0	80.0	3.0	58.2	70.8	12.5	9.3	6.6	-2.7	1.1	0.8	-0.3	1.7	0.7	-1.0	0.2	0.7	0.5	1.5	0.8	-0.6	-1.2	-0.2	1.1	EU27

Note: This table shows a comparison with the 2015 Ageing Report and not with subsequent peer review projections.

Source: Commission services, EPC.

Table I.2.3:   Long-term projections compared (2015 and 2018): potential GDP growth and its determinants

	Projection exercise 2018										2018 AR - 2015 AR (2016-60)										
			Due to growth in										Due to growth in								
	GDP growth 2016-70	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 2016-70	GDP growth 2016-60	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 2016-60	
	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	1.5	1.3	0.8	0.4	0.3	0.4	0.0	-0.1	0.0	1.2	-0.3	-0.1	0.0	0.0	-0.2	-0.3	0.1	0.0	0.0	0.0	BE
BG	1.4	2.3	1.4	0.9	-0.9	-0.7	0.1	-0.3	0.0	2.1	0.0	0.3	0.2	0.0	-0.3	-0.1	-0.1	0.0	0.0	0.1	BG
CZ	1.5	1.8	1.2	0.6	-0.3	-0.1	0.0	-0.3	0.0	1.6	-0.2	0.1	0.1	0.0	-0.3	-0.2	-0.1	0.0	0.0	0.0	CZ
DK	1.6	1.4	0.9	0.5	0.2	0.3	0.1	-0.2	0.0	1.3	-0.2	-0.2	-0.1	-0.1	0.0	0.1	-0.1	0.0	0.0	-0.2	DK
DE	1.2	1.5	1.0	0.5	-0.3	-0.1	0.0	-0.2	-0.1	1.2	0.2	-0.1	0.0	-0.1	0.3	0.3	0.1	0.0	0.0	0.0	DE
EE	1.5	1.9	1.2	0.7	-0.4	-0.2	0.1	-0.2	0.0	1.7	0.1	-0.1	0.0	-0.1	0.2	0.2	0.0	0.0	0.0	-0.1	EE
IE	2.0	1.6	1.1	0.5	0.5	0.5	0.1	-0.1	0.0	1.6	0.3	0.1	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.1	IE
EL	0.8	1.1	0.8	0.4	-0.4	-0.6	0.5	-0.2	0.0	1.4	-0.3	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	0.0	0.0	-0.2	EL
ES	1.5	1.3	0.9	0.5	0.1	0.1	0.2	-0.2	0.0	1.3	-0.2	-0.1	-0.1	0.0	-0.1	0.2	-0.2	-0.1	0.0	-0.3	ES
FR	1.6	1.3	0.8	0.5	0.3	0.3	0.1	-0.1	0.0	1.3	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	FR
HR	1.2	1.7	1.0	0.7	-0.4	-0.4	0.2	-0.2	0.0	1.6	-0.2	-0.2	-0.2	0.0	0.0	-0.1	0.1	0.0	0.0	-0.1	HR
IT	0.8	1.0	0.7	0.4	-0.2	-0.2	0.2	-0.2	0.0	1.0	-0.7	-0.3	-0.2	-0.1	-0.3	-0.3	0.0	-0.1	0.0	-0.3	IT
CY	1.4	1.2	0.7	0.5	0.2	0.3	0.2	-0.2	0.0	1.1	-0.7	-0.3	-0.2	-0.1	-0.4	-0.2	-0.3	0.1	0.0	-0.6	CY
LV	1.9	2.7	1.8	0.9	-0.8	-0.7	0.2	-0.3	0.0	2.6	0.5	0.5	0.6	-0.1	0.0	0.0	0.0	-0.1	0.0	0.5	LV
LT	1.1	2.0	1.2	0.8	-0.9	-0.9	0.3	-0.3	0.0	2.0	-0.1	-0.2	-0.1	-0.1	0.1	0.0	0.1	0.0	0.0	-0.1	LT
LU	2.3	1.4	0.9	0.5	0.8	1.1	-0.1	-0.2	0.0	1.2	-0.2	0.1	0.1	0.0	-0.3	-0.3	-0.1	0.0	0.1	0.1	LU
HU	1.6	1.9	1.3	0.7	-0.3	-0.2	0.2	-0.3	0.0	1.8	0.2	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.2	HU
MT	2.3	1.9	1.2	0.7	0.4	0.3	0.4	-0.3	0.0	2.0	0.8	0.5	0.3	0.2	0.3	0.2	0.2	0.0	0.0	0.6	MT
NL	1.5	1.3	0.8	0.5	0.2	0.3	0.1	-0.2	0.0	1.2	0.2	-0.1	-0.1	0.0	0.3	0.3	0.0	0.0	0.0	-0.1	NL
AT	1.5	1.4	0.9	0.5	0.1	0.3	0.1	-0.2	-0.1	1.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	-0.1	-0.1	AT
PL	1.4	2.2	1.3	0.8	-0.8	-0.4	0.0	-0.3	0.0	1.8	0.0	0.1	0.1	0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	PL
PT	0.9	1.5	1.0	0.5	-0.6	-0.5	0.1	-0.2	0.0	1.4	-0.1	-0.1	-0.1	-0.1	0.0	0.1	0.0	0.0	0.0	-0.2	PT
RO	1.8	2.6	1.7	0.9	-0.8	-0.5	0.0	-0.3	0.0	2.3	0.3	0.5	0.4	0.1	-0.2	-0.2	0.2	0.0	0.0	0.5	RO
SI	1.5	1.8	1.2	0.6	-0.2	-0.1	0.1	-0.3	0.0	1.6	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	SI
SK	1.9	2.2	1.5	0.7	-0.4	-0.2	0.2	-0.3	0.0	2.1	0.5	0.2	0.1	0.1	0.3	0.2	0.1	0.0	0.0	0.3	SK
FI	1.3	1.3	0.8	0.5	0.0	0.0	0.1	-0.2	0.0	1.2	-0.2	-0.1	-0.1	0.0	-0.1	-0.2	0.1	0.0	0.0	0.0	FI
SE	1.9	1.5	1.0	0.5	0.5	0.6	0.0	-0.2	0.0	1.3	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	SE
UK	1.7	1.4	0.9	0.5	0.3	0.4	0.1	-0.2	0.0	1.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	UK
NO	1.8	1.5	0.9	0.5	0.3	0.5	0.0	-0.2	0.0	1.2	-0.5	-0.1	-0.1	0.0	-0.4	-0.4	0.0	0.0	0.0	-0.1	NO
EA	1.3	1.4	0.9	0.5	-0.1	0.0	0.1	-0.2	0.0	1.3	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	EA
EU*	1.4	1.5	0.9	0.5	-0.1	0.0	0.1	-0.2	0.0	1.3	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	EU*
EU27	1.3	1.5	0.9	0.5	-0.2	0.0	0.1	-0.2	0.0	1.3	:	:	:	:	:	:	:	:	:	:	EU27

Source: Commission services, EPC.

3. SENSITIVITY TESTS

3.1. OVERVIEW OF THE SENSITIVITY TESTS AND ALTERNATIVE SCENARIOS

The baseline projections provide an illustration of 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 so as to quantify the responsiveness of projection results to changes in key underlying assumptions.

In order to assess the impact of varying the assumptions for the macroeconomic and budgetary variables, an additional set of sensitivity scenarios and one policy scenario are considered in addition to the baseline scenario projections agreed by the AWG. Sensitivity tests are an indispensable element of long-term projections to quantify the responsiveness of age-related expenditure projection results to changes in key drivers, such as macroeconomic and population variables, together with policy assumptions. This section

describes the impact of the sensitivity scenarios on potential GDP growth. The impact on age-related expenditure is described in Part II of this report.

In addition to seven variables for which sensitivity scenarios are carried out, a policy change scenario has also been considered, namely linking retirement ages with increases in life expectancy (see Table I.3.1).

Drawing on past experience, the sensitivity scenarios considered in the 2015 AR proved being well suited for a sensitivity analysis of age-related expenditure. Reproducing these sensitivity tests would ensure consistency and would allow for comparison between projection exercises. At the same time, experience warrants a number of modifications.

First, there is considerable uncertainty as regards future migration flows, and it is therefore important that the impact of higher or lower net migration is appropriately analysed. It is proposed therefore that the migration scenario is two-sided in order to cater for both positive and negative

Table I.3.1: Overview of sensitivity tests and policy scenario

Population			Labour force		Productivity		Policy-change scenario
High life expectancy	Lower/higher net migration	Lower fertility	Higher/lower employment rate	Higher employment rate older workers	Higher/lower TFP growth	TFP risk scenario	Linking retirement age (policy scenario)
Increase of life expectancy at birth of about **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 **2 pps. higher/lower** compared with the baseline projection for the age-group 20-64.	Employment rate of older workers (55-74) **10 pps. higher** compared with the baseline projection.	TFP growth is assumed to converge by 2045 to a growth rate which is **0.4 pps. higher/lower** than in the baseline scenario (0.6% and 1.4% respectively). As for the baseline scenario, a period of fast convergence for 'followers' is assumed (i.e. rising by up to 0.6+0.5 and 1.4+0.5, respectively).	TFP growth assumed to converge to **0.8%** (instead of 1%). As for the baseline scenario, a period of fast convergence for 'followers' is assumed (i.e. rising by up to 0.8+0.5).	Retirement ages shifted year-over-year in line with change in life expectancy at current retirement ages (in the Cohort Simulation Model).
			The increase/decrease is introduced linearly over the period 2018-2030 and remains 2 pps. higher/lower thereafter.	*The increase is introduced linearly over the period 2018-2030 and remains 10 pps. higher thereafter.*	*The increase/decrease is introduced linearly during the period 2026-2045.*	*Convergence to the target rate in 2045 from the latest outturn year, i.e. 2016.*	
			The higher/lower employment rate is assumed to be achieved by lowering/increasing the rate of structural unemployment (the NAWRU).	*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 European Commission (DG ECFIN) and Economic Policy Committee (Ageing Working Group) (2017).
Source: Commission services, EPC.

Table I.3.2:   Decomposition of average annual potential GDP growth of the European Union, 2016-2070 (%)

Scenario	Average GDP growth, 2016-2070	Labour productivity (GDP per hour worked)	TFP	Capital deepening	Labour input (total hours worked)	Total population	Employment rate	Share of working age population	Change in average hours worked	Average GDP per capita growth, 2016-2070
	1=2+5	2=3+4	3	4	5=6+7+8+9	6	7	8	9	10=1-6
Baseline	1.4	1.5	0.9	0.5	-0.1	0.0	0.1	-0.2	0.0	1.3
High life expectancy	1.4	1.5	0.9	0.5	-0.1	0.1	0.1	-0.2	0.0	1.3
Higher migration	1.5	1.5	0.9	0.5	0.0	0.1	0.1	-0.2	0.0	1.3
Lower migration	1.3	1.5	0.9	0.5	-0.2	-0.1	0.1	-0.2	0.0	1.3
Higher employment rate	1.4	1.4	0.9	0.5	0.0	0.0	0.2	-0.2	0.0	1.4
Lower employment rate	1.3	1.5	0.9	0.5	-0.1	0.0	0.1	-0.2	0.0	1.3
Higher employment rate of older workers	1.4	1.4	0.9	0.5	0.0	0.0	0.2	-0.2	0.0	1.4
Lower fertility	1.1	1.5	0.9	0.5	-0.4	-0.2	0.1	-0.2	0.0	1.3
TFP risk scenario	1.1	1.2	0.8	0.4	-0.1	0.0	0.1	-0.2	0.0	1.1
Higher TFP growth	1.8	1.9	1.2	0.7	-0.1	0.0	0.1	-0.2	0.0	1.7
Lower TFP growth	1.0	1.1	0.7	0.4	-0.1	0.0	0.1	-0.2	0.0	0.9
Policy scenario linking retirement age to life expectancy	1.5	1.5	0.9	0.5	0.0	0.0	0.2	-0.2	0.0	1.4

Source: Commission services, EPC.

shocks in the net migration flows, and the size of the sensitivity scenarios is also increased to take account of the considerable uncertainty concerning migration flows. Moreover, as small changes in the trend in fertility can generate large variations in the future size of the population, an additional demographic scenario based on *lower fertility* is done. Furthermore, given the considerable uncertainty as regards future TFP (and labour productivity) growth a 'high' and a 'low' TFP growth scenario are carried out in addition to the AWG TFP risk scenario. Finally, a lower employment rates scenario was included.

3.2.   POTENTIAL GDP PROJECTION RESULTS

The sensitivity analysis shows that there are severe downside risks to GDP growth, linked both to employment and labour productivity growth assumptions. Additionally, upside risks exist, including the policy scenario, which strengthen GDP growth perspectives.

GDP growth can be broken down into labour productivity per hour worked and labour input (Table I.3.2). The former turns out to be the key determining factor of (potential) long-term growth.

Looking at the impact of the different assumptions for GDP growth over the period 2016-2070, annual average potential GDP growth rates range from 1.0% in the lower TFP growth scenario to 1.8% in the higher TFP one in the EU, i.e. a 0.8 pps. difference. This basically reflects changes in labour productivity per hour worked, as changes in labour input growth are smaller, ranging from a minimum of -0.4% in the lower fertility scenario to a maximum of 0.03% in the higher migration one,

i.e. a 0.43 pps. difference (see Graph I.3.1 and Table I.3.2).

In the EU as a whole, average annual GDP per capita growth between 2016 and 2070 is projected to fall from 1.3% in the baseline scenario to 0.9% in the lower TFP scenario, while rising to 1.4% in the policy scenario, and to 1.7% in the high TFP growth scenario.

Graph I.3.1:   **Average annual potential GDP growth rates, 2016-70 (%)**
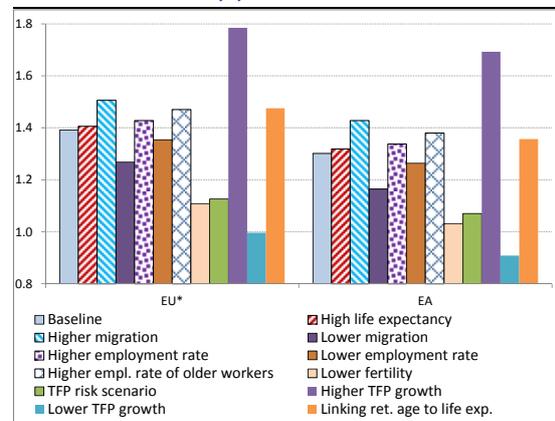
Source: Commission services, EPC.

The policy scenario, linking retirement ages with increases in life expectancy, partially insures against the risk of a negative productivity shock (i.e. the lower TFP scenario). In fact, in the EU as a whole, in the lower TFP scenario potential GDP growth is expected to increase only by 1% per year (on average over the period 2016-2070) down from 1.4% in the baseline scenario, whereas in the policy scenario, annual potential GDP growth is expected to be 1.5%. Conversely, in the high TFP growth scenario, annual potential GDP growth is

project to be 1.8% on average during the projection horizon.

The contribution of labour input is projected to be negative over the period 2016-2070 in the EU and euro area in the baseline scenario (-0.1%), and also in all sensitivity scenarios except the higher migration and higher employment of older workers scenarios (Graph I.3.2).

Graph I.3.2: **Labour input (annual average growth rates) 2016-2070 (%)**

Baseline | High life expectancy
Higher migration | Lower migration
Higher employment rate | Lower employment rate
Higher empl. rate of older workers | Lower fertility
TFP risk scenario | Higher TFP growth
Lower TFP growth | Linking ret. age to life exp.
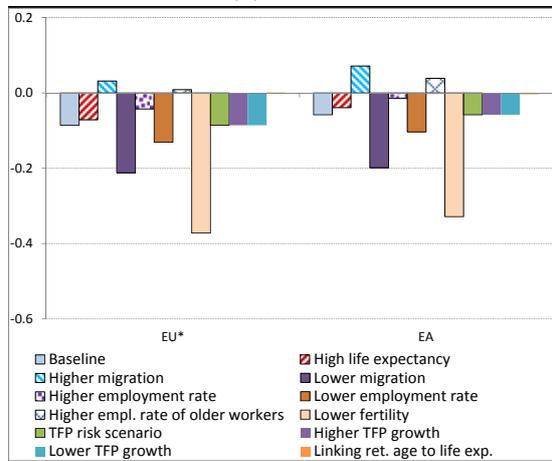
Source: Commission services, EPC.

In the higher migration scenario, the average annual contribution of labour input in 2016-2070 will be 0.03% for the EU and 0.07% in the euro area. In the higher employment rate of older workers scenario, the average annual contribution of labour input in 2016-2070 will be 0.01% for the EU and 0.04% in the euro area.

Graph I.3.3 shows the importance of TFP for labour productivity growth rates over the projection horizon, and by extension its impact on potential GDP growth. In all scenarios except those relating to TFP shocks, labour productivity growth rates are on average around 1.5% per year. In the higher TFP growth scenario, labour productivity growth grows by 1.9% on average per year in the EU and 1.7% in the euro area.

In the lower TFP growth scenario, labour productivity is growing by 1.1% per year in the EU and 1% per year in the euro area.

Finally, in the TFP risk scenario, labour productivity is growing by 1.2% per year in the EU and 1.1% in the euro area.

Graph I.3.3: **Average annual growth rate in labour productivity, 2016-2070 (%)**

Baseline | High life expectancy
Higher migration | Lower migration
Higher employment rate | Lower employment rate
Higher empl. rate of older workers | Lower fertility
TFP risk scenario | Higher TFP growth
Lower TFP growth | Linking ret. age to life exp.
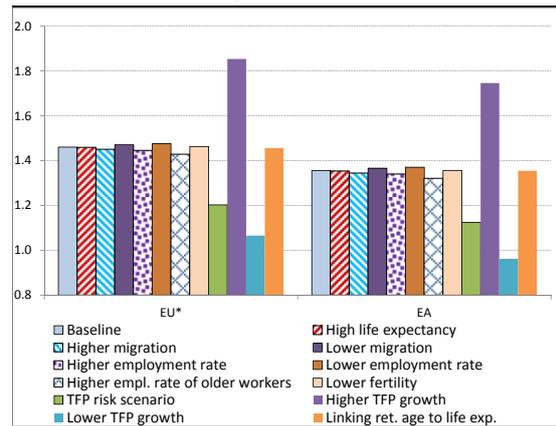
Source: Commission services, EPC.

Part II

Long-term projections of age-related expenditure and unemployment benefits

1. PENSIONS

1.1. INTRODUCTION

The State plays a prominent role in pension provision in the EU countries, reason why the main emphasis of the projections is on public pensions ([37]). A broad definition of public schemes and other public pensions includes those schemes that are statutory and that the general government sector administers. Public pension schemes affect public finances as they are considered to belong to the general government sector in the national account system. Ultimately, the government bears the costs and risks attached to the scheme.

One of the crucial parts of the EC-EPC budgetary projection exercise is to assess the impact of ageing populations on pension expenditure.

Public pension set-ups vary significantly across the EU, which makes cross-country comparisons more challenging. System differences stem from various traditions on how to provide retirement income as well as from different phases of the pension systems' reform process. However, a strong public sector involvement in the pension system is a common feature for all EU countries.

1.2. TAXONOMY OF MAIN PENSION SCHEMES IN EU COUNTRIES ([38])

Public pension systems can be classified according to different criteria, of which two of the most common ones are the funding source and the specific risk assessed. By 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 the specific risk assessed, pension schemes are generally classified as old-age and early pension, disability, survivor, minimum/basic or other schemes such as special pensions. When crossing the two classification criteria, one may further refine contributory

schemes into old-age and early pension, disability, survivor or other, and non-contributory schemes into forms such as disability, survivor, minimum (or basic) pensions or other.

In the EU publicly provided earnings-related pension systems accumulate entitlements following three broad schemes: defined-benefit (DB), notional defined contribution (NDC), and point systems (PS) (Table II.1.1). In a few EU countries, notably Ireland, Greece, Malta, the Netherlands and the UK, the public pension system provides a flat-rate pension, which can be supplemented by public or private occupational pension schemes. In the UK there is a public earnings-related pension scheme – State Second Pension – and in Ireland, an earnings-related pension scheme for public service employees, while other countries rely on earnings-related private occupational pension schemes.

The public pension system is based in most countries on statutory earnings or contributions-related old-age pension schemes, which can take the form of a common scheme for all employees or several parallel schemes in different sectors or occupational groups.

Table II.1.1: **Main public pension scheme types in the EU**

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

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

The type of benefits provided by the public pension systems varies across countries. Besides

---

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

old-age pension schemes, most pension schemes provide also early retirement, disability and survivors' pensions (Table II.AII.1). Some countries, however, have specific schemes for some of these benefit types; in particular, in some countries disability benefits are not considered pensions (although they are granted for long periods of time), and in some cases they are covered by the sickness insurance scheme.

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

Another group of public, chiefly non-contributory pensions are the special pensions, which are present in most EU countries. This group is taken stock of for the first time in this edition of the Ageing Report (Box II.1.2).

Pensions provided by occupational schemes are those that, rather than being statutory by law, are linked to an employment relationship with the scheme provider, and are often private. However, in some countries, the occupational pension provision is broadly equivalent to earnings-related public pension schemes. Several countries, including Sweden and some new Member States such as Bulgaria, Estonia, Croatia, Latvia, Lithuania, Hungary, Poland and Slovakia, have switched part of their public pension schemes into (quasi-) mandatory private funded schemes. This provision is typically statutory, but the insurance policy is concluded between the individual and the pension fund. Consequently, the insured persons have the ownership of pension assets. This means that the owner enjoys the rewards and bears the risks regarding the value of the assets. Participation in a funded scheme is conditional on participation in the public pension scheme and is mandatory for new entrants to the labour market (in Sweden for all non-retired taxpayers), while it is voluntary for older workers (in Lithuania it is voluntary for all).

However, some of these countries (Hungary, Slovakia and Poland) have recently decided to shift back a part of the private schemes again to public schemes.

The financing arrangements of pension systems also differ across countries. Employment-related systems are financed entirely or largely from contributions made by employers (usually a percentage of earnings), workers, or both, and are generally compulsory for defined categories of workers and their employers. Most public pension schemes work on a pay-as-you-go (PAYG) basis, whereby current contribution revenues are used for the payments of current pensions.

The government is "pro forma" the ultimate guarantor of many pension benefits. There is a considerable variation between countries regarding the extent to which contribution revenues cover all pension expenditures or just a certain part of it. In many countries, the national government participates 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 to varying degrees from general government funds. The government may indeed 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 make up any deficit of an insurance fund. In some cases, the government pays the contributions for low-paid workers [39]. Social security contributions and other earmarked income are kept in a dedicated fund and are shown as a separate item in government accounts.

Some specific schemes, notably public sector employees' pensions, sometimes do not constitute a well identified pension scheme but, instead, disbursements for pensions appear directly as 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 the increasing pension expenditure, many governments have started to

---

[39] These arrangements are separate from obligations the government may have as an employer under systems that cover government employees.

collect reserve funds for their public pension schemes.

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

1.3. COVERAGE OF PENSION PROJECTIONS

Pension systems and arrangements are very diverse, making it difficult to reliably project pension expenditure on the basis of one common model for all 28 EU countries. Similarly to past exercises, national projection models are used 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 over September-December 2017. In particular, they checked the projected figures' adherence to the agreed methodology and macroeconomic assumptions described in Part I of this report and to the legislation in force in each country for which the cut-off date was December 1st, 2017 ([40]); they also revised the projections where necessary and validated them. Annex II provides details on the coverage of the projections.

In some cases the huge burden of data required and/or the common macroeconomic assumptions posed some challenges for the national projection models. An overview of the countries with scope for improvement in view of the next projection

round is available in the Section 1.10 – Table II.1.26.

1.4. FEATURES OF PENSION SYSTEMS IN THE EU

1.4.1. Pension benefit formulas

Publicly provided or 1st pillar pensions account for the lion's share of retirement income in EU countries. Consequently, the projection exercise focuses mainly on public pension expenditure in the first pillar with its main components (minimum, old-age, early retirement, disability and survivors' pensions). On top of that, several countries have introduced occupational pension schemes and/or private mandatory and voluntary schemes in the 2nd and/or 3rd pillar of their pension systems.

The main characteristics of the existing pension schemes in Member States are presented in Table II.AII.1 in Annex II which shows whether pensions are provided on a flat-rate (probably means-tested) or on an earnings-related basis, whether the enrolment in the scheme is mandatory or voluntary, etc. It also informs about the coverage of current pension projections.

The coverage of public pensions is in the main complete. ([41]) In some countries (e.g. Ireland, the United Kingdom and Hungary), disability benefits are not considered pensions. Special pensions are mostly covered by the projections and their proportion in GDP is at least known for the base year 2016 (Table II.AII.2 in Annex II). The latter is also mentioned in the respective pension country fiche and/or Box II.1.2.

The size and development of public pension expenditure in the future is not only driven by demographic factors, but also by the generosity of the system, eligibility requirements determining the retirement age and accrual rates. Three important drivers of future spending are: i) the definition of pensionable earnings, ii) the valorisation rule, as well as iii) the indexation rule (Table II.AII.3 in Annex II).

---

[40] For details on the legislation in place see PENSREF database https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/pensref-pension-reform-database_en and EC-EPC, The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies, European Economy No. 065-2017, https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-underlying-assumptions-and-projection-methodologies_en for the main features of the pension system (Annex 2) and recent reforms (Box I.2.2.)

[41] Social assistance is excluded from the projections in Slovenia; see for details Slovenia's country fiche.

Following reforms over the last decade, many countries apply pension benefit formulas whereby full career earnings are the reference to calculate pension entitlements, hence establishing a close relationship between contributory career and pension benefit. In terms of financial sustainability, this leads, *ceteris paribus,* to lower pension expenditures in comparison to countries where pension benefits are calculated with a pensionable earnings reference restricted to a subset of (best earnings) years or to the last years in one's career. A selection of best years or late career years presumably leads to higher pension entitlements as wages are generally higher at the end of the career than at its start. In countries where flat-rate pensions are a relatively large component, the pensionable earnings reference is irrelevant (Ireland, Netherlands and the UK).

Valorisation rules define how pension contributions paid during the working life are capitalised before retirement. Several countries valorise pension contributions in relation to wage developments (Bulgaria, the Czech Republic, Germany, Spain, Cyprus, Lithuania, Luxemburg, Hungary, Austria, Slovenia, Slovakia, Sweden and Norway). Other countries apply a mix of wages and prices (Greece, Croatia, Romania, Finland, Portugal and UK) or a mix of wages (or comparable variables) and GDP growth (Italy) or a pure price valorisation (Belgium and France). Another way to look at pensionable earnings reference and valorisation rule is from the angle of the replacement rate and personal income distribution. Different mixes of the two will result in a higher or lower average initial pension benefit compared to the last average wage received when working (i.e. replacement rate) [42]. This determines whether pensioners will be, at retirement, on a higher or lower percentile of the income distribution compared to pre-retirement. Under the wage evolution assumptions described above, countries aiming to preserve the average relative position of new pensioners in the overall personal income distribution tend to use the full career wage as reference for the pensionable earnings and to apply a wage valorisation rule. Alternatively, using the best career wages or an average of recent 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 additional matter is the indexation of pensions in payment, i.e. how pension preserves its value over time. The evolution of the average public pension in relation to the average wage (i.e. the benefit ratio) is therefore also influenced by, pension indexation, which will determine whether the pensioner can expect to maintain its relative position over the personal income distribution over time. In the projections, wages are assumed to evolve in line with price and labour productivity. A nominal wage indexation rule will enable pensioners to maintain their relative position in the income distribution. On the contrary, partial nominal wage indexation or price indexation will make the pensioners slide towards lower percentiles of the income distribution over time. Hence, overall, the generosity of a pension system is affected by:

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

2. The evolution of the benefit ratio (influenced additionally by the indexation rule) [43].

Indexation rules applied in the EU are generally slightly different from valorisation rules. Most EU countries (23) apply indexation rules for pensions in payment that do not fully reflect a 1:1 relationship with nominal wage increases: some apply a price indexation rule (France, Italy, Hungary, Austria and Slovakia), others an indexation mix of wages (or comparable variables) and prices (Belgium, Bulgaria, the Czech Republic, Estonia, Croatia, Cyprus, Latvia, Malta, Poland, Romania [44], Slovenia, and Finland), a mix of GDP growth and prices (Greece, Portugal) or automatic balancing mechanisms whereby pension indexation is linked to the sustainability of the social security system (Spain, Germany,

---

[42] The accrual rate and the contributory period are the other determinants of the pension benefit in an earnings-related system.

[43] See Sections 1.6.2 and 1.6.3 of this chapter for a more detailed analysis of the indicators.

[44] Till 2030, then price indexation.

Sweden). Since 2011, the United Kingdom has applied annually a "triple guarantee" (the so called "triple-lock" system), with pensions being increased by the highest of wage growth, inflation or 2.5%; however, indexation to wages, which is the minimum required by law, has been assumed in the projections.

In addition, some countries (Germany, Finland, Spain, Italy, Latvia, Poland, Portugal, Sweden and Norway) have introduced a "sustainability factor" and/or other "reduction coefficients" into the calculation mechanism that determines the amount of pension entitlements (Table II.1.2). These factors change the size of the pension benefit, depending on expected demographic changes such as the life expectancy at the time of retirement or the ratio between contributions and pensions.

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

Country	Automatic balancing mechanism	Sustainability factor (benefit link to life expectancy)	Retirement age linked to life expectancy
Italy		X	X
Latvia		X	
Poland		X	
Sweden	X	X	
France*		X	
Germany	X		
Finland		X	X
Portugal**		X	X
Greece***			X
Denmark****			X
Netherlands			X
Cyprus			X
Slovak Republic			X
Spain	X	X	
Lithuania	X		
Malta*****			X
Norway		X	

(1) In all the NDC system the benefit is linked to life Expectancy through the annuity factor.
*Pension benefits evolve in line with life expectancy, through the coefficient of 'proratisation'; it has been legislated until 2035 and not thereafter.
** Only two thirds of the increase in life expectancy is reflected in the retirement age.
*** An automatic balancing mechanism is applied in auxiliary pension system.
****Subject to parliamentary decision.
***** Subject to parliamentary decision. A stable proportion between the contribution periods and life expectancy at retirement is to be kept (the Government is obliged to lay on the Table of the House of Representatives, within intervals not exceeding the period of 5 years, a report giving recommendations with a view of keeping a stable proportion between the contribution periods and life expectancy at retirement).
Source: Commission services, EPC.

The legislated indexation rule is crucial when dealing with the provision of minimum pensions. A more detailed analysis of the evolution of projected minimum pension is presented in Section 1.6.4 of this chapter.

Retirement age

Large differences in pension legislation can be observed not only with respect to indexation rules, but also concerning official retirement ages and incentives to postpone retirement.

The statutory retirement age, early retirement schemes, and the presence of incentives through bonuses and penalties all influence the retirement behaviour of individuals (Table II.1.3) and determine the effective exit ages from the labour market (Table II.1.4) [45][46].

Early retirement schemes and/or other government measures providing pension income before the official retirement age create an opportunity to exit the labour market sooner. Hence, one way to increase the effective exit age from the labour market (and also the effective retirement age) in line with an increase in the statutory retirement would be to extend the required years of contributions or to restrict early retirement, consistently increasing employment opportunities for older workers. Another way is to introduce financial incentives to stay longer in the labour market applying penalties and bonuses in the pension calculation for those who exit the market earlier/later (e.g. France, Portugal), the latter entitling pensioners to higher benefits after retirement.

The legislation regarding the three factors mentioned above determines that in most countries people effectively exit on average the labour market at ages lower than the respective statutory retirement ages, both currently and in the projections (Tables II.1.3 and II.1.4). However, by 2070 the average effective exit age is set to

---

[45] The exit from the labour market is also influenced by other policies and institutional factors such as the adoption of active labour market policy, active ageing etc.
[46] The statutory retirement ages are applied as such in the projections. Figures concerning the average effective exit age from the labour market for 2017 - 2070 are projected based on this round's commonly agreed macroeconomic assumptions and the Cohort Simulation Model.

converge towards the statutory retirement age in most countries (Graph II.1.1). Moreover, as a result of recent reforms in many countries, statutory retirement ages for males and females will gradually converge for all countries except Romania (Table II.1.3). In almost every Member State, statutory retirement ages and effective exit ages from the labour market will also rise substantially by 2070, with major steps often taking place within the next two decades (Tables II.1.3 and II.1.4). Box II.1.1 compares labour market exit ages with the average age at which people start receiving pension benefits.

Graph II.1.1:   **Evolution of the average effective exit age (EEA) and statutory retirement age (SRA) between 2016 and 2070**

Source: Commission services, EPC

When looking at EU and EA aggregates the average effective exit age for both men and women is estimated to increase by more than 2 years by 2070. This is either due to already legislated pension reforms setting a specific retirement age in the future or to the fact that countries have introduced a link between retirement ages and life expectancy in their legislations (Denmark, Greece, Italy, Cyprus, the Netherlands, Portugal and Slovakia).

The estimated duration of retirement at both EU and EA level (Table II.1.5) shows that current

pension legislation entails 3 to 4 additional years of retirement for men and around 3 for women by 2070) ([47]). Not surprisingly, in those Member States that have legislated an automatic, or other kind of link to life expectancy (Italy, Cyprus, Denmark, Greece, the Netherlands, Portugal and Slovakia) the duration of retirement is estimated to increase less or even to decline (Italy for females). In 2070 in these countries the duration of retirement is projected to be roughly 2 years lower (some 1.5-2 years for men and 2-2.5 for women) than the EU average, Table II.1.5.

Graph II.1.2 shows the inverse relationship between the increase in the effective retirement age and the shift in duration of retirement, by gender.

Graph II.1.2:   **Increase in the average effective exit age from the labour market versus shift in duration of retirement over the period 2016 – 2070**

Source: Commission services, EPC.

([47]) Duration of retirement is measured as remaining years of life at average effective exit age from the labour market as from life expectancy data calculated in the Eurostat 2015-based population projections.

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					
	2016	2030	2050	2070	2016	2030	2050	2070	Penalty	Bonus
BE	65 (62)	67 (63)	67 (63)	67 (63)	65 (62)	67 (63)	67 (63)	67 (63)		
BG	63.8 (62.8)	65 (64)	65 (64)	65 (64)	60.8 (59.8)	63.3 (62.3)	65 (64)	65 (64)	X	X
CZ	63.1 (60)	65 (60)	65 (60)	65 (60)	60.5 (57.5)	64.7 (60)	65 (60)	65 (60)	X	X
DK*	65 (61.5)	68 (65)	71.5 (68.5)	74 (71)	65 (61.5)	68 (65)	71.5 (68.5)	74 (71)		
DE	65.5 (63)	67 (63)	67 (63)	67 (63)	65.5 (63)	67 (63)	67 (63)	67 (63)	X	X
EE	63 (60)	65 (62)	65 (62)	65 (62)	63 (60)	65 (62)	65 (62)	65 (62)	X	X
IE	65.4 (65.4)	68 (68)	68 (68)	68 (68)	65.4 (65.4)	68 (68)	68 (68)	68 (68)		
EL*	67 (62)	68.7 (63.7)	70.5 (65.5)	72.6 (67.6)	67 (62)	68.7 (63.7)	70.5 (65.5)	72.6 (67.6)	X	
ES	65.3 (63)	67 (63)	67 (63)	67 (63)	65.3 (63)	67 (63)	67 (63)	67 (63)	X	X
FR	66.3 (61.3)	67 (62)	67 (62)	67 (62)	66.3 (61.3)	67 (62)	67 (62)	67 (62)	X	X
HR	65 (60)	65 (60)	67 (62)	67 (62)	61.5 (56.5)	65 (60)	67 (62)	67 (62)	X	X
IT*	66.6 (63.6)	67.9 (64.9)	69.6 (66.6)	71.1 (68.1)	66.6 (63.6)	67.9 (64.9)	69.6 (66.6)	71.1 (68.1)		
CY*	65 (65)	66 (66)	68 (68)	70 (70)	65 (65)	66 (66)	68 (68)	70 (70)	X	X
LV	62.8 (60.8)	65 (63)	65 (63)	65 (63)	62.8 (60.8)	65 (63)	65 (63)	65 (63)	X	
LT	63.3 (58.3)	65 (60)	65 (60)	65 (60)	61.7 (56.7)	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	63.1 (63.1)	65 (65)	65 (65)	65 (65)	63.1 (63.1)	65 (65)	65 (65)	65 (65)		X
MT	62 (61)	65 (61)	65 (61)	65 (61)	62 (61)	65 (61)	65 (61)	65 (61)		X
NL*	65.5 (65.5)	68 (68)	70.5 (70.5)	72.5 (72.5)	65.5 (65.5)	68 (68)	70.5 (70.5)	72.5 (72.5)		
AT	65 (60)	65 (60)	65 (60)	65 (60)	60 (55)	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*	66.2 (60)	67.2 (60)	68.3 (60)	69.3 (60)	66.2 (60)	67.2 (60)	68.3 (60)	69.3 (60)	X	X
RO	64.8 (59.8)	65 (60)	65 (60)	65 (60)	60.4 (55.4)	63 (58)	63 (58)	63 (58)		
SI	65 (59.3)	65 (60)	65 (60)	65 (60)	63 (59)	65 (60)	65 (60)	65 (60)	X	X
SK*	62 (60)	64.2 (62.2)	66.8 (64.8)	69.1 (67.1)	60.2 (58.2)	64.2 (62.2)	66.8 (64.8)	69.1 (67.1)	X	X
FI*	66 (63)	67.1 (64.1)	69.2 (66.2)	71 (68)	66 (63)	67.1 (64.1)	69.2 (66.2)	71 (68)	X	X
SE	67 (61)	67 (61)	67 (61)	67 (61)	67 (61)	67 (61)	67 (61)	67 (61)		
UK	65.4 (65.4)	66 (66)	67.3 (67.3)	68 (68)	63.1 (63.1)	66 (66)	67.3 (67.3)	68 (68)		X
NO	67 (62)	67 (62)	67 (62)	67 (62)	67 (62)	67 (62)	67 (62)	67 (62)		

(1) BG - The latest pension reform included a provision for further link retirement ages to life expectancy as from 2037.
CZ - Statutory retirement age depending on the number of children. Values for women with 2 children are reported.
DK – Increase in the retirement age subject to Parliamentary decision.
IT - In 2016, female SRA refers to public sector employees (for the female self-employed and female private sector employees they are, respectively, 66.1 and, 65.6, both aligned to other workers as of 2018). In bracket the minimum age for early retirement under the NDC system (a minimum amount of pension of 2.8 times the old-age allowance is also required). Early retirement is also allowed regardless of age, with a contribution requirement of 42.8 years (41.8 for female) in 2016, indexed to changes in life expectancy (44.2 in 2030, 45.8 in 2050 and 47.3 in 2070; one year less for females).
LV - The legislation provides allows the possibility to retire 2 years before the normal retirement age (SRA) for people whose insurance record is at least 30 years and who do not combine work with pre-retirement pension. The amount of early retirement pension (before SRA) is 50% of the pension amount calculated. The full pension is restored after reaching SRA.
PT - Early retirement due to long contributory period suspended in the social security scheme in 2012. Since January 2015 early-retirement is possible for workers aged 60 or more and 40 or more years of contributory career. The pension benefit is reduced by 0.5% for each month of anticipation to statutory retirement age (penalty) and multiplied by the sustainability factor. If the contributory career is higher than 40 years, for each year above the 40 years the statutory retirement age is reduced by 4 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 his / her 67th birthday.
*Countries where statutory retirement age is legislated to increase in line with increase in life expectancy. Reported retirement ages calculated according to life expectancy increases as from Eurostat population projections.
Actuarial equivalence is not considered as a penalty/bonus.
Source: Commission services, EPC.

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

	MALE				FEMALE			
	2016[1]	2030	2050	2070	2016[1]	2030	2050	2070
BE	61.8	64.3	64.3	64.3	61.8	64.3	64.3	64.3
BG	63.8	64.7	64.7	64.7	62.6	63.6	64.1	64.1
CZ	63.5	63.6	64.0	63.8	61.3	63.0	63.1	63.2
DK*	65.2	66.9	67.5	68.0	64.2	65.7	66.8	68.0
DE	64.6	65.6	65.7	65.7	64.0	65.2	65.3	65.3
EE	65.2	65.3	65.3	65.3	65.0	64.8	64.8	64.8
IE	65.0	66.0	66.0	66.0	64.1	66.1	66.1	66.1
EL*	62.3	65.0	67.0	67.8	61.6	64.7	66.9	68.3
ES	63.4	66.0	66.1	66.2	64.5	66.5	66.6	66.7
FR	61.9	63.6	64.7	64.7	61.8	63.3	64.3	64.3
HR	62.4	62.9	64.0	64.0	60.7	62.5	63.7	63.7
IT*	63.9	66.1	66.9	67.8	63.7	66.8	68.2	69.1
CY*	64.5	65.7	66.6	68.4	64.0	63.7	65.2	67.1
LV	61.7	65.2	65.2	65.2	63.5	65.3	65.3	65.3
LT	63.6	64.3	64.3	64.3	61.8	63.8	63.8	63.8
LU	60.4	60.4	60.4	60.4	60.0	60.1	60.1	60.1
HU	62.5	65.3	65.3	65.3	61.0	64.8	64.8	64.8
MT	62.5	64.0	64.0	64.0	61.5	62.6	62.6	62.6
NL*	65.4	67.1	68.2	69.0	63.7	65.3	66.5	67.5
AT	64.0	64.2	64.2	64.2	62.0	61.4	63.2	63.2
PL	64.0	64.5	64.5	64.5	61.3	61.3	61.3	61.3
PT*	64.8	66.3	66.6	66.6	64.1	65.9	66.2	66.3
RO	64.0	64.0	64.0	64.0	62.4	62.6	62.6	62.6
SI	60.9	62.7	62.7	62.7	60.2	62.5	62.5	62.5
SK*	61.9	62.7	65.0	67.3	61.0	62.4	64.9	67.1
FI	63.9	64.4	66.1	67.9	63.2	64.1	65.9	67.6
SE	65.9	65.6	65.6	65.6	64.7	64.4	64.4	64.4
UK	65.0	65.1	65.8	65.8	63.8	65.1	65.8	65.8
NO	65.9	65.9	65.9	65.9	65.1	65.1	65.1	65.1
EA s	63.2	64.7	65.2	65.7	62.7	64.2	64.9	65.4
EU* s	63.4	64.7	65.2	65.5	62.6	64.0	64.6	65.0
EU27 s	63.4	64.7	65.2	65.5	62.6	64.0	64.6	65.0

(1) 2017 figures
(2) The average effective exit age from the labour market calculation is based on the Cohort Simulation Model cumulated exit probabilities for the reference age group 51-74.
*Countries where the statutory retirement age is legislated to increase in line with increase in life expectancy.
Source: Commission services, EPC.

Box II.1.1: **Average retirement age versus average exit age from the labour market**

Pension expenditure projections presented in this report are based on labour force projections using a Cohort Simulation Model (CSM, see Part I, Chapter 2) (¹). By calculating participation rates by gender and 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.

However, 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 and show up in pension expenditure statistics (administrative data). For example, many countries allow people to continue working upon retirement. Conversely, people might be neither active on the labour market nor entitled to pension benefits yet.

The difference between both concepts – average retirement age and average exit age – can be distilled from the administrative data on the age distribution of new pensioners (²). The latter data allow calculating average retirement ages. Graph 1 confronts both concepts, i.e. the average age people start receiving (old-age) pension benefits versus the age at which they leave the labour market on average. Detailed figures are provided in Annex II.

For men, 17 countries show effective retirement ages that are on average 0.9 year lower than the estimated labour exit ages. This difference amounts to more than 1.5 years for Bulgaria, the Czech Republic, Portugal and Romania. In six countries, men enter the pension system at a later age than they leave the labour market, with an average gap of 1 year. Only for the United Kingdom, the difference exceeds 1.5 years.

Differences between both approaches are somewhat larger when looking at women. 14 countries have a retirement age that is lower than the theoretical labour market exit age, by 1.4 years on average. In the cases of Germany, Italy and Romania this difference exceeds two years, i.e. people start receiving pension benefits considerably earlier than suggested by the labour exit age estimate. For nine

countries the opposite holds with retirement ages that are, on average, situated 1.2 years past the labour market exit age. Only for the United Kingdom the difference surpasses 2 years.

Graph 1: **Average retirement age (old-age pensions) and average exit age from the labour market**

Male

Female

- ■ Average retirement age (administrative data, weighted)
- ■ Average labour market exit age (CSM)
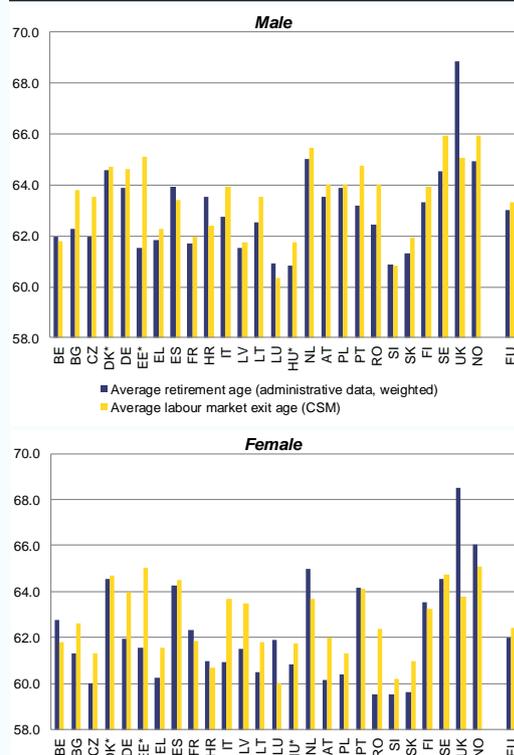
* DK, EE & HU: shows overall average, no split male/female available.
(1) Administrative data refers to 2015, with the exceptions of ES & LT (2013), DK & FR (2014) and SI (2016). Effective retirement ages refer to 2017, the first projection year.
(2) Both series refer to the age group 51-74. Calculations are based on the lower annual age limit rather than the exact age at retirement or exit from the labour force.
(3) IE, CY & MT: no (disaggregated) data was provided.
(4) UK: average retirement age based on data for State pensions only.
(5) EU: unweighted average of available countries (excl. DK, EE & HU).
Source: Commission services, EPC.

(¹) For details, see European Commission (DG ECFIN) and Economic Policy Committee (Ageing Working Group) (2017), Annex 1.

(²) Administrative data was provided by AWG members. Differences with the average labour market exit age might also be due to a different definition of the economically active population and contributors as well as to diverse data sources (administrative data versus sample survey).

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

	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		
	2017	2040	2070	2017	2040	2070	2017	2040	2070	2017	2040	2070	2017	2040	2070	2017	2040	2070
BE	20.8	21.6	24.3	24.4	24.9	27.5	53.0	52.2	58.7	64.3	62.0	68.5	32.2	31.8	34.4	35.8	35.0	37.2
BG	15.1	17.7	21.5	19.5	21.8	25.6	37.2	43.1	52.4	52.9	57.5	67.6	24.8	27.5	31.5	30.4	32.1	35.7
CZ	17	19.9	23.3	23.3	24.3	27.5	40.9	47.7	55.9	64.1	64.4	72.6	27.2	30.3	33.7	35.0	35.1	37.8
DK*	18.2	18.9	20.6	21.8	22.6	23.6	42.5	42.6	45.6	51.9	52.2	52.3	27.8	27.8	29.2	32.1	32.0	32.1
DE	18.2	19.7	22.4	22.3	23.7	26.4	41.9	44.4	50.5	53.3	55.3	61.7	28.1	29.2	32.0	32.7	33.4	35.8
EE	15.6	18.6	22.2	20.6	23.1	26	34.9	41.8	49.8	47.9	55.0	61.9	24.9	28.2	31.9	30.5	33.1	35.7
IE	18.6	20	22.7	22.1	22.9	25.7	42.8	45.2	51.3	53.5	53.2	59.7	28.3	29.4	32.1	32.4	32.3	34.8
EL*	21.1	20.4	21.2	24.3	23	23.8	53.3	47.1	47.2	64.4	55.2	54.1	32.3	29.7	29.8	35.8	32.4	32.1
ES	20.9	20.6	23.1	24.1	23.3	25.5	50.9	47.3	52.9	58.5	54.0	59.0	31.5	30.0	32.4	34.1	32.4	34.4
FR	21.9	22.5	24	26.2	26.3	28.4	54.3	52.6	55.8	67.8	64.5	69.3	33.3	32.6	33.9	37.4	36.3	38.0
HR	17.9	19.4	22.9	22.7	22.9	26.2	43.3	45.5	53.7	58.8	56.1	64.1	28.7	29.7	33.2	34.7	33.4	36.4
IT*	20	20.5	21.1	23.5	22	23.3	49.8	48.3	48.0	62.7	53.1	54.5	30.3	29.8	29.8	34.0	30.7	31.3
CY*	19.3	20.5	21.1	22.5	24.6	24.4	45.0	46.5	45.5	53.4	58.5	54.5	29.3	29.9	29.5	32.8	34.6	33.2
LV	16	17.7	21.6	20.8	22.1	25.4	39.7	40.7	49.6	50.6	52.0	59.8	26.8	27.3	31.4	31.4	31.8	34.9
LT	15.3	18.7	22.6	22.1	23.3	26.5	35.6	43.9	53.1	56.3	57.0	64.9	25.1	28.8	32.8	33.5	33.7	36.7
LU	22.8	25.2	28	27	29.3	31.9	60.3	67.2	74.7	72.4	78.7	85.7	35.0	37.3	39.8	39.1	41.0	43.1
HU	16.8	18.2	22	22	21.9	25.4	41.5	42.3	51.1	59.8	54.5	63.2	27.4	27.8	31.7	33.8	31.9	35.2
MT	21.8	22.3	24.8	25.8	26.2	28.8	51.0	50.5	56.2	62.9	62.9	69.1	32.9	32.7	35.0	37.3	37.0	39.2
NL*	18.7	18.4	19.9	22.3	22.9	23.7	42.1	39.9	41.9	52.4	52.6	52.4	28.3	27.0	28.1	32.8	32.4	32.4
AT	19.3	21.6	24.3	24.4	25.8	28.4	44.9	50.0	56.3	59.7	62.2	68.4	29.6	31.8	34.4	35.7	36.4	38.6
PL	16.8	19.1	22.6	23.6	26.5	29.8	39.7	44.8	53.0	63.8	71.8	80.8	26.7	29.1	32.7	35.3	37.9	40.7
PT*	18.3	18.9	21.5	22.8	23.2	25.7	43.1	42.9	48.7	54.6	53.4	58.8	28.1	28.0	30.7	33.1	32.6	34.7
RO	15.6	18.9	22.8	20.8	23.2	26.9	37.7	45.8	55.3	56.2	63.0	73.1	25.3	29.1	33.1	31.9	34.2	37.6
SI	20.8	21.9	24.9	25.9	25.6	28.3	53.6	54.3	61.8	69.9	65.5	72.4	32.7	32.9	35.8	38.0	36.5	38.9
SK*	17.4	19.3	20.5	22.6	23.1	23.8	43.0	45.7	44.8	62.5	60.0	56.7	28.4	29.6	29.4	34.5	33.6	32.7
FI	19	20.6	20.7	23.5	23.9	23.7	45.1	47.8	45.2	57.3	56.9	53.1	29.3	30.4	29.3	34.2	33.7	32.3
SE	18.3	20.3	22.7	21.8	24.9	27.5	40.9	45.8	51.2	50.2	58.6	64.7	27.6	29.9	32.3	31.8	34.9	37.2
UK	18.9	21.1	22.7	22.2	23.8	25.6	41.8	46.7	49.4	51.9	54.1	57.3	28.7	31.0	32.2	32.7	33.6	34.9
NO	18.1	20.2	22.6	21.8	24.1	26.6	40.2	45.4	50.8	50.4	56.0	61.8	27.4	29.7	32.0	31.6	33.8	36.1
EA s	19.3	20.5	22.7	23.5	24.2	26.2	46.5	47.8	52.2	59.2	58.5	62.3	29.8	30.3	32.2	34.5	34.2	35.6
EU* s	18.6	20.1	22.6	23.1	24.0	26.3	44.7	46.9	52.2	58.6	58.9	63.8	29.0	29.9	32.2	34.1	34.1	35.9
EU27 s	18.6	20.1	22.6	23.1	24.0	26.3	44.7	46.9	52.2	58.6	58.9	63.8	29.0	29.9	32.2	34.1	34.1	35.9

(1) Duration of retirement is calculated on the basis of life expectancy at average effective exit age from the labour market as from the Eurostat 2015-based population projections.

(2) The average working career is defined as the effective exit age form the labour market minus the effective entry age.

(3) An alternative metric to the duration of retirement as a share of working career is the duration of retirement /contributory period. The latter is presented in some country fiches. For example, for BE this variable is 0.5 and 0.7 in 2017, 0.5 and 0.6 in 2040 and 0.6 and 0.7 in 2070 for men and women respectively. For EL it is 0.7 and 0.8 in 2017, 0.6 and 0.7 in 2040 and 0.6 and 0.6 in 2070 for men and women respectively.

(4) Adult life spent at retirement is defined as the ratio between the life expectancy at average effective exit age and the estimated age of death (coherent with life expectancy at effective retirement age) minus 18.

*Countries where statutory retirement age is legislated to increase in line with increase in life expectancy.

Source: Commission services, EPC.

1.4.2. Pension system funding

Contributions to pension schemes paid by employers, employees, and self-employed persons indicate potential future deficits in the pension system. The share of tax revenues allocated to finance the pension system is also taken into account, where relevant, as State contributions.

Table II.1.6: **Contributions to the public pension system in 2016 and 2070 (% of GDP)**

Country	2016	2070	Ch 16-70
BE	:	:	:
BG	4.2	5.1	0.9
CZ	7.9	7.9	0.0
DK	0.1	0.0	-0.1
DE	10.4	12.9	2.6
EE	5.7	5.0	-0.7
IE	3.8	6.0	2.2
EL	13.7	10.8	-2.9
ES	12.5	11.5	-1.0
FR	11.9	11.9	-0.1
HR	5.8	5.6	-0.1
IT	10.7	10.9	0.2
CY	7.8	10.3	2.5
LV	6.8	6.5	-0.2
LT	7.2	6.5	-0.7
LU	9.5	9.3	-0.3
HU	9.4	8.5	-1.0
MT	8.1	6.3	-1.8
NL	7.0	7.5	0.5
AT	9.4	9.6	0.2
PL	7.9	8.3	0.3
PT	13.1	12.3	-0.8
RO	5.6	5.9	0.3
SI	9.1	8.7	-0.5
SK	6.9	6.8	-0.1
FI	17.6	19.4	1.9
SE	5.9	5.7	-0.2
UK	:	:	:
NO	10.7	12.8	2.1
EU*	8.1	8.2	0.1
EA	10.3	10.9	0.6
EU27	9.7	10.1	0.4

(1) EU and EA averages are weighted by GDP.
(2) BE: not reported as there is no specific contribution for public pensions. These expenditures are financed through a global contribution for all social security schemes. IE: contributions reported are also used to finance other social benefits in addition to pensions. UK: not reported. PT: Includes State transfers to Caixa Geral de Aposentações (CGA)
Source: Commission services, EPC.

In 2016, the revenue of public pension schemes represented 8.1% of GDP at the EU aggregate level (Table II.1.6). They are projected to slightly increase over the period 2016-2070 by 0.1 pps. of GDP. However, there are significant differences across Member States. Substantial increases are projected in several cases, in particular in Germany (+2.6 pps. of GDP), Cyprus (+2.5 pps. of GDP), Ireland (+2.2 pps. of GDP), Norway (+2.1 pps. of GDP), and Finland (+1.9 pps. of GDP), in line with legislated contribution rate increases or automatic in-built pension system stabilisers ([48]).

The revenue of the public pension system is projected to decrease in several countries, in particular in Greece (-2.9 pps. of GDP), Malta (-1.8 pps. of GDP), Hungary and Spain (-1.0 pp. of GDP), Portugal (-0.8 pps. of GDP), and Estonia and Lithuania (-0.7 pps. of GDP) ([49]).

([48]) For example, in Germany, contributions evolve in line with expenditure developments (Section 1.5). The contribution rate is automatically adjusted to ensure the financial sustainability of the public pension system (Table II.1.7). In Cyprus, several future increases of contribution rates by 2070 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.

([49]) In the case of Portugal, this reduction partially captures a base year effect due to extraordinary solidarity contributions at the beginning of the projection period.

Country	Contribution rate: employers	Contribution rate: employees	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)	-	In the wage earners' scheme, social spending is also funded by State subsidies (10.5% of total in 2016) and alternative funding (10.4%) - mainly share of VAT revenues.	In 2017, 21% for revenues from 13,296 to 57,416 EUR and 14.16% for revenues from 57,416 to 84,613 EUR.
BG	7.7% in 2017 and 8.3% in 2018 and beyond (born after December 1959) / 10.5% in 2017 and 11.1% in 2018 and beyond (born before January 1960)	6.1% in 2017 and 6.5% in 2018 and beyond (born after December 1959) / 8.3% in 2017 and 8.7% in 2018 and beyond (born before January 1960)	-	State commitment for covering the deficit on an annual basis.	For persons born before January 1, 1960, 18.8% of declared covered earnings in 2017 and 19.8% in 2018 and beyond; for persons born after December 31, 1959, is 13.8% of declared covered earnings in 2017 and 14.8% in 2018 and beyond
CZ	21.5%	6.5%	-	Balance of pension system is part of general governement budget.	28%
DK	-	-	-	-	0
DE	9.35%	9.35%	-	State subsidies with annual indexation. "Sustainability fund" fluctuating between 0.2 and 1.5 of monthly pension expenditures. Contribution rate is set to meet this requirement.	18.70%
EE	20% (if not participant to the 2nd pillar); 16% (if participant to the second pillar)	-	-	-	20%
IE	Varies	Varies	-	Social Insurance Fund and Social Assistance Fund (used to finance other social benefits in addition to pensions). Shortfalls met by Exchequer.	4% of covered income
EL	Main pensions 13.33%; Auxiliary pensions: 3%	Main pensions 6.67%; Auxiliary pensions: 3%	-	National budget / other sources	20%
ES	Private sector: 23.6%	Private sector: 4.7%	-	Central governement transfers amount to 12.16% of total expenditure.	29.80%
FR	Private sector (CNAV): 10.45% up to the Social Security Ceiling (SSC), plus 1.9% above the SSC in 2017	Private sector (CNAV): 7.3% up to the social security ceiling (SSC), 0.4% above the SSC in 2017. 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, plus 0.6% above the SSC in 2017
HR	-	20% (public PAYG scheme participants only): 15% (participants in both public PAYG scheme and mandatory fully-funded DC scheme)	-	Government 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 fuding (pension expenditure exceeding contributions) funding by the State.	Around 22.2% in 2014, gradually increasing to 24% in 2018, 23.1% in 2016
CY	7.8%	7.8%	4.6%	Reserve fund.	14.6% of insurable income
LV	20% (if no participation in the 2nd pillar (FDC)	-	-	Contributions from the state and special budgets are paid in certain cases such as child care or unemployment benefit recipients, also maternity, sickness, etc	20% if no participation in the 2nd pillar scheme or 14% for participants of 2nd pillar
LT	22.3%	3% (1% for participant in the private 2nd pillar)	1%	-	25.3% based on 50% of declared earnings
LU	8%	8%	8%	Buffer fund of at least 1.5 times the amount of annual benefits.	16%
HU	27%	10%	-	-	10% of declared monthly earnings and 27% of declared monthly earnings in the form of a social contribution tax.
MT	10%	10%	10%	-	15% of the annual income that is subject to the same ceiling that applies to employees
NL	-	17.9%	-	Government supplements shortfall between expenditure and funds raised by the 17.9% tax levy.	17.90%
AT	Between 12.55% and 20% (according to status)	10.25%	The differences to the standard contribution rate of 22.8% for farmers, self-employed in the liberal proffesions are borne by federal transfers.	Federal budget covers the deficits in public pension schemes.	18.50%
PL	9.76%	9.76%	-	Demographic Reserve Fund.	19.52%
PT	23.75%	11%	-	Social Security Trust Fund.	29.6% or 34.75%
RO	Between 15.8% and 25.8% (according to working conditions)	10.50%	-	State provides funds from the national budget to cover the public pension system deficit.	10.5% or 26.3%
SI	8.85%	15.50%	-	State provides funds from the national budget and other sources to cover the difference between the Institute's revenues from contributions and other sources, and the Institute's expenditures.	24.35%
SK	Varies according to status and participation to the 2nd pillar. 14% if not participating to II pillar	Varies according to status and participation to the 2nd pillar . 4% if not participating to II pillar	Varies according to status and participation to the 2nd pillar	-	18%
FI	National pensions: abolished in 2010. Earnings-related pensions: from 17.75% to 23.7% (according to sector)	Earnings-related pensions: 5.55% (18-52 years old) / 7.05% (53-68 years old)	20.4% for State pensions	Nations pensions: funding from the State at 100%. Earnings-related pensions: 25% of private sector pension are prefunded.	
SE	9.04%	6%	"Employer contribution" for social insurances	Buffer funds.	17.21%
UK	13.80%	Varies according to status and earnings	-	Occasional top-ups to the National Insurance Fund if reserves fall below a threshold recommended by the Government Actuary Department.	From 9%
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 governement (pension and other) expenditures.	11.40%

(1) When several schemes prevail, the information reported refers to the main (general regime) pension scheme.

Source: Commission services, EPC.

Box II.1.2: **Special pensions in the EU**

Special pensions are generating new interest and debate in some EU countries. There is however a lack of precise definitions, standard classification, or systematic data collection on these schemes. To map the presence of special pensions in the EU, a literature survey ([1]) and an AWG survey ([2]) were conducted, gauging the scale of the phenomenon and the extent to which reforms are underway.

Definitions and classification

Pension systems establish a set of criteria ruling pension eligibility. For old-age earnings-related pensions granted under the social security system these criteria commonly include *age, citizenship* and *contributory record.* Sometimes additional criteria such as *occupational activity* or *a special status ([3])* may also give access to pensions.

In the surveys performed, a certain scheme is considered to constitute a "special pension" if it is simultaneously *i)* allocated based on occupational activity or special status ([4]); *ii)* funded publically – "pillar 1" ([5]), and *iii)* deemed more advantageous than the general scheme in at least one of the following respects: contributory period counted more favourably, pensionable earnings defined more favourably, higher effective accrual rate or equivalent, more favourable indexation rule, lower retirement age, higher state funding, other benefits compared to the main scheme (e.g. health hazard compensations, free public transport, tax exemptions, obligation of the employer to contribute to the third pension pillar, etc.).

Furthermore, special pensions are classified into three main categories, of which the third is in turn divided into five subcategories:

1. Difficult conditions: arduous, hazardous dangerous or unhealthy conditions such as miners, steelworkers, maritime and fishing workers, artistic workers (dancers, embroiders) etc.

2. Security and defence forces and certain civil professions with medically-verified special conditions, ensuring security and safety of others and thus required to keep physically fit e.g. military, police, national security and intelligence, fire-fighters, rescue workers, public order workers, railway police, customs officers, pilots, air traffic controllers.

3. Other special pensions:

3.1. Certain self-employed persons with no paid /accumulated contributions such as farmers or providers of unpaid work caring for others;

3.2. Merit, victims and deprived persons such as those with distinguished achievements for the

---

([1]) The literature survey reviewed five major sources on 2014 data: i) the International Labour Organization (ILO) – "Social protection for older persons: Key policy trends and statistics"; ii) the US Social Security Administration (SSA) "Social Security Programs Throughout the World"; iii) the OECD "Pensions at a Glance", and iv) the EC-EPC and v) EC-SPC country fiches of the Pension Adequacy Report and the Ageing Report, respectively. Taken jointly, these sources covered 39 countries, i.e. all EU28 plus 11 non-EU countries.

([2]) The AWG survey of Mar. 2017, updated in Jan. 2018 is the most recent source of information on special pensions available for EU countries; it reflects legislation in place at the time of the consultation. This survey covers 22 EU countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Spain, Finland, France, Croatia, Hungary, Ireland, Italy, Lithuania, Latvia, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia and Sweden, which provided information on a voluntary basis, using a common structure. The findings of the two surveys are used in sequential manner: if a country took the AWG survey, solely these results are taken into account. If a country did not take the AWG survey, but evidence on its special pension system was found in the literature survey, the latter was used to complement the sample of the AWG survey.

([3]) This status would correspond to merits accrued during one's career serving public interest (e.g. war veterans, former political prisoners) or due to a situation of deprivation or victimhood arguably ensuing from circumstances outside the subject's control (e.g. victims of nuclear disasters, political repression, families of children with disability, long-term unemployed not reaching the retirement age).

([4]) Disability and survivor pensions have not been considered special pensions in these surveys since they constitute rather standard non-contributory schemes, more characteristic of the general regime. Yet, as they are allocated on a similar principle to special pensions – a special status or sometimes a link to an occupational activity - disability and survivor schemes may actually represent an alternative to special pensions in many countries, so information on them is given as complementary.

([5]) In the literature survey some hybrid or private pillar schemes may have been included such as pillar 2 special pensions for public service workers in the UK (NHS staff, teachers, civil servants, local government staff, police, firefighters, armed forces and judges).

Graph 1: **Presence and type of special pensions, EU countries**
(number of countries with special pensions, rewarding a specific category or granting a specific privilege)
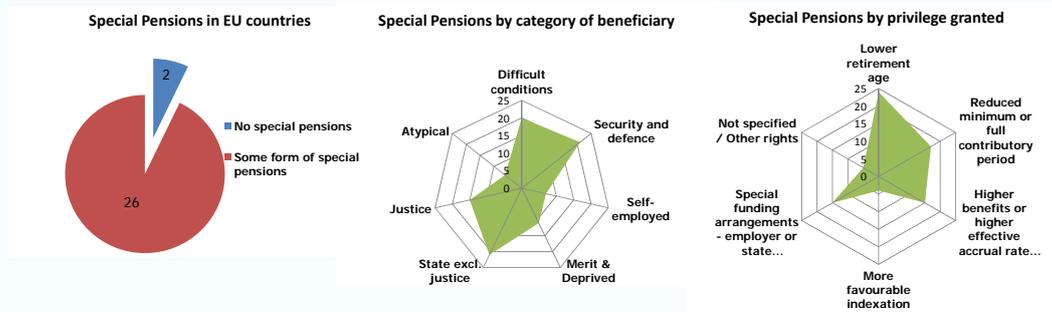
Source: AWG survey and literature survey of ILO, SSA, OECD and European Commission services sources

state, war veterans, former political prisoners, politically repressed persons, Chernobyl victims, parents or guardians of large families or disabled children, military widowers, long-term unemployed;

3.3. State employees in the executive (government) **and legislative** (parliament) branches, as well as employees of major public companies ([6]);

3.4. State employees in the judicial branch;

3.5. Atypical categories e.g. clerics, new migrants, other conditions infrequently encountered.

Scale of special pensions in EU countries

Special pension schemes are frequently encountered in EU countries, where they coexist with other, chiefly non-contributory pensions, such as survivor and disability benefits. In 2016 some form of special pensions seemed to be present in all EU countries except Cyprus and Sweden (Graph 1). ([7]) Conversely, among the countries granting special pensions, the Czech Republic appears to be the country that will soonest phase out special pensions. In most EU countries special pensions

coexist with disability and/or survivor's pensions from which special pensions are distinct. One country with no special pensions, Sweden, has disability and survivor's schemes. In one country, Cyprus, there is no evidence of either special or disability and survivor schemes.

Special pensions are granted most commonly to "other" categories holding a special status, such as state employees of all branches - legislative, executive, judiciary (23 countries), followed by security and defence forces including some civil professions (21 countries) and only in the third place to categories working in difficult conditions (20 countries). Amongst the former, the most important sub-categories are state employees of all branches, a category which also includes medical staff, teachers, academics or employees of major public companies (present in 21 countries), followed by merit, victims and deprived persons (present in 11 countries) and certain self-employed people such as farmers (found in 7 countries) (Graph 1).

Special pensions usually entail a lower retirement age (in nearly all EU countries granting these schemes, i.e. 24 countries), contributory periods counted more favourably or higher benefits **(**recurrent in more than two thirds of the EU states applying special pensions, i.e. in 17 and 15 countries, respectively) (Graph 1).

The special pension phenomenon differs largely across countries in terms of its budgetary impact and the coverage of pensioners. In terms of share of GDP, special pension expenditure goes from some 2.7% - 2.6% in Greece and Poland to some 0.1% in Estonia. In terms of proportion of all pensioners, the coverage varies between some 22% in Poland

---

([6]) Employees of major public companies or companies formerly state-owned and later privatised often concern utility providers (electricity, gas, public transport), some of which could also qualify as strenuous jobs. Since most of these categories are likely to receive special pensions due to historically strong negotiating power, they have been listed here as category 3.3. In countries where objective criteria for defining difficult conditions – e.g. recognised lists of arduous and hazardous jobs – exist, pensions for utility companies' workers could be reclassified as category 1, this being in fact irrespective of the public or private nature of those companies.

([7]) For Sweden the absence of special schemes was explicitly confirmed, for Cyprus no data was available from any of the surveys.

Box (continued)

([8]) to 2.2% in Ireland (Graphs 2 and 3 and Tables II.AII.5 and II.AII.6 in Annex II) ([9]).

Graph 2: **Special pension expenditure (total available, as % of GDP)**
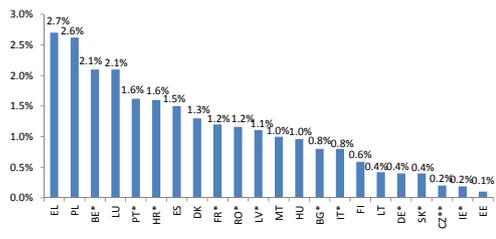
* the figures reflect the size of the phenomenon only partly, due to incomplete or unavailable data
** in reality no special pensions
Countries not represented have not reported this data.
Source: AWG survey 2017, AR 2018 country fiche (DE), AWG delegates (EL)

Graph 3: **Special pensions span (total available, as % of pensioners)**
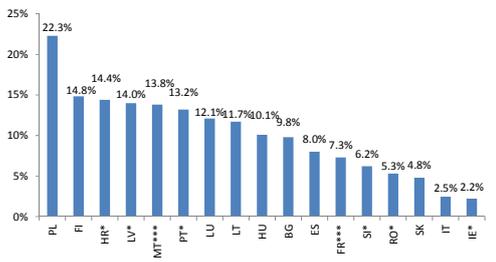
* the figures reflect the size of the phenomenon only partly, due to incomplete or unavailable data
*** % of pensions, not of pensioners.
Countries not represented have not reported this data.
Supplementary special pensions (paid as a top-up) beneficiaries are not included here
Source: AWG survey 2017

Special pension reforms

Recent reforms indicate, however, a trend towards the abolishment of such privileges, in particular for security and defence workers and for state employees. While the scale of special pension schemes appears sizeable, the extent to which these schemes are undergoing reforms is significant too. Based on the information studied here, more than 80% of EU countries operating special schemes have undergone or announced some type of reform to these systems (Graph 4). These countries are Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Spain, Finland, France, Croatia, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. No indication of reform was found for Lithuania, Germany, Greece, the Netherlands or the UK ([10]).

The reforms target most commonly the security and defence group (15 cases), followed by state employees of all sorts (14 cases), but also the group of difficult conditions (12 cases). The least reformed schemes are those in the atypical beneficiaries group, and the groups of merit, victims and deprived persons and that of certain self-employed (Graph 4), some of which are in fact transitory and would phase out naturally. Reform efforts are generally aimed at a variety of amendments including complete phasing out of some schemes (19 cases) or reducing existing privileges, in particular in terms of a lower retirement age (12 cases) and in terms of higher benefits or higher effective accrual rate or equivalent (value of pension points, cost of pension point) (8 cases) (Graph 4).

This reform trend shows, on one hand, that efforts made by EU countries to increase their pension systems' sustainability also involve special pensions; the latter is visible both from a progressive unification of special schemes under the general regime and from the tendency to align special privileges with the new reality of longer life expectancy ([11]). On the other hand, it could be concluded that reforms are undertaken in a proportional manner, targeting the correction of privileges perceived as excessive first, and affecting vulnerable groups only in subsidiary.

([8]) In Poland the high proportion in total pensioners is driven by the large number of farmers' pensions (13% of total pensioners) which do not necessarily pay above average benefits, but are more advantageously funded, through a DB scheme with flat contributions.

([9]) These statistics are not available for all countries and the AWG survey data does not always capture the full size of special pensions.

([10]) In Greece several special pension reforms have been adopted in the recent years, but details of these were not available in the sources used for this box.

([11]) A recent study on workers in arduous and hazardous jobs (equivalent to the "Difficult conditions" category) and covering 35 European countries reaches broadly similar conclusions. See European Commission, Directorate-General for Employment, Social Affairs and Inclusion, European Social Policy Network (ESPN) (2016), "Retirement regimes for workers in arduous or hazardous jobs in Europe. A study of national policies".

Box (continued)

Graph 4: **Special pension reforms, EU countries**
(number of EU countries considering or undergoing reforms, by beneficiary and by privilege type)

Nr. of countries reforming special pensions

5

21

■ No indication reform

■ Reforms (form privileges sup or reduced)

Main areas of special pension reform - by category of beneficiary

Difficult conditions
20
15
10
5
0

Security and defence

Atypical

Self-employed

Justice

State excl. justice

Merit & Deprived

Main areas of special pension reform - by type of privilege

Lower retirement age
20

10

0

Other / incl. complete phasing out

Reduced minimum contributory period

Special funding arrangements - employer or state contributions

Higher benefits or higher effective accrual rate or equivalent (value of pension points,...

More favourable indexation rules

Source: AWG survey and literature survey of ILO, SSA, OECD and European Commission Services sources.

The complexity of special pensions also varies significantly across countries. A complex system is considered to be one that features at least one of the following characteristics: *i)* manifold special pension categories, *ii)* a relatively large share of GDP allocated to special benefits (Graph 2), and / or *iii)* no or few prospects of reform towards fewer or less costly special pension categories ([12]). By this metric, EU countries with complex special pensions systems appear to be Belgium, Poland, Romania, Greece, Portugal, Luxembourg, Ireland, Latvia, Croatia, whereas the leanest arrangements seem to be in place in the Czech Republic, Austria, Hungary, Slovakia, Bulgaria, Denmark and the Netherlands (Cyprus and Sweden as countries with no documented references to special pension schemes are here aside) ([13]). Amongst the former, the Czech Republic, Austria and Hungary plan to completely phase out special pensions.

([12]) These criteria refer to the status of the special pensions system in the base year. As shown above, however, most countries are undergoing reforms.

([13]) The PENSREF database provides detailed information on pension systems in the EU countries, including on special pensions. See https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/pensref-pension-reform-database_en

1.5. PENSION EXPENDITURE PROJECTIONS

1.5.1. Public pensions

Public pension expenditure projections until 2070

In the EU, public pension expenditure is projected to increase by 0.8 pps. of GDP between 2016 and 2040 (Table II.1.8). In the period 2040-2070 spending would decline by 1 pp. of GDP with pension expenditure in 2070 returning to around the 2016 level. In the euro area, dynamics follow a comparable pattern, though with a larger amplitude: public pension expenditure is projected to increase by 1.3 pps. of GDP in 2016-2040 and to decline thereafter by 1.7 pps. of GDP.

This overall pattern conceals, however, notable differences between Member States. In 2016-2040, projected changes in public pension expenditure vary from -4.4 pps. of GDP in Greece to +3.2 pps. in Slovenia with a rising expenditure ratio in 17 Member States and in Norway. In 2040-2070, changes range between -4.8 pps. of GDP in Italy and +6.4 pps. in Luxembourg. For 14 Member States plus Norway an increase is expected in the second half of the projection exercise.

Overall, pension spending is projected to rise by as much as 8.9 pps. of GDP in Luxembourg between 2016 and 2070, the highest increase of all countries (see Graph II.1.3). Also Slovenia (+3.9 pps.), Belgium and Malta (+2.9 pps.), the Czech Republic (+2.8 pps.), Germany (+2.4 pps.), Cyprus (+2.3 pps.) and Norway (+2.1 pps.) are expected to show an increase of more than two percentage points of GDP. The United Kingdom, Ireland, Hungary, Bulgaria and Slovakia would see an increase of 1.2-1.7 pps. of GDP in 2070. In the cases of Romania, Finland, the Netherlands and Austria, the increase would amount to around 0.5 pps. of GDP.

Conversely, twelve Member States are expected to experience an overall decline in their public pension expenditure. The largest decrease would be in Greece (-6.6 pps. of GDP), followed by Croatia (-3.8 pps.), France (-3.3 pps.), Latvia (-2.6 pps.) and Portugal (-2.2 pps.). Seven other Member States would see spending decline by between 1 pp. and 1.9 pps. of GDP, namely

Denmark, Estonia, Italy, Lithuania, Spain, Sweden and Poland.

Table II.1.8: **Level and change in gross public pension expenditure; 2016-2070, baseline scenario (%/pps. of GDP)**

Country	2016	2040	2070	Change 2016-40	Change 2016-70
BE	12.1	14.5	15.0	2.4	2.9
BG	9.6	9.8	10.9	0.2	1.4
CZ	8.2	9.2	10.9	1.0	2.8
DK	10.0	8.2	8.1	-1.8	-1.9
DE	10.1	12.0	12.5	1.9	2.4
EE	8.1	7.1	6.4	-1.0	-1.8
IE (1)	5.0	6.7	6.6	1.7	1.6
EL	17.3	12.9	10.6	-4.4	-6.6
ES	12.2	13.9	10.7	1.8	-1.5
FR	15.0	15.1	11.8	0.0	-3.3
HR	10.6	8.3	6.8	-2.2	-3.8
IT	15.6	18.7	13.9	3.1	-1.7
CY	10.2	11.5	12.4	1.3	2.3
LV	7.4	6.3	4.7	-1.1	-2.6
LT (2)	6.9	7.0	5.2	0.2	-1.7
LU	9.0	11.5	17.9	2.5	8.9
HU	9.7	9.4	11.2	-0.3	1.5
MT	8.0	7.3	10.9	-0.7	2.9
NL	7.3	8.5	7.9	1.2	0.6
AT	13.8	14.9	14.3	1.1	0.5
PL	11.2	10.8	10.2	-0.3	-1.0
PT	13.5	14.7	11.4	1.2	-2.2
RO	8.0	7.7	8.7	-0.3	0.7
SI	10.9	14.2	14.9	3.2	3.9
SK	8.6	7.8	9.8	-0.8	1.2
FI	13.4	13.9	13.9	0.5	0.6
SE	8.2	6.8	7.0	-1.3	-1.2
UK	7.7	8.6	9.5	0.9	1.7
NO	10.7	11.9	12.8	1.2	2.1
EA	**12.3**	**13.5**	**11.9**	**1.3**	**-0.4**
EU*	**11.2**	**12.0**	**11.0**	**0.8**	**-0.2**
EU27	**11.9**	**12.7**	**11.4**	**0.9**	**-0.5**
EU* s	**10.3**	**10.6**	**10.5**	**0.4**	**0.2**

(1) IE: data include the Public Social Security (PSS) scheme as well as the Private Occupational Public Service (POPS) scheme for public servants.
(2) LT: The reduction of public pension expenditure as a share of GDP is largely driven by the decline in the benefit ratio over almost the entire horizon due to the valorisation and indexation of pensions to the wage bill, which is growing at a slower pace than wage growth in most years. Legislation foresees, however, that the Government shall provide a proposal with necessary measures in the case where the replacement ratio decreased the previous year. When assuming that the valorisation and the indexation of pensions to average wage growth – instead of wage bill growth – in the period 2022-2039 would lead to an unchanged total benefit ratio by 2070, this results in pension expenditure of 7% of GDP in 2070 compared to the baseline projection of 5.2% of GDP. This represents a sizeable risk to the projections.
Source: Commission services, EPC.

While projected expenditure changes are important for tracing potential pension sustainability risks, also the overall level of pension spending needs to be factored in to obtain a more balanced picture of the potential pension challenge. In the case of two countries spending for example 8% of GDP and 12% of GDP respectively on pension benefits in

2016, an identical projected increase of 3 pps. of GDP by 2070 does not necessarily bear the same policy implications.

Graph II.1.3: **Change in gross public pension expenditure; 2016-2070 (pps. of GDP)**
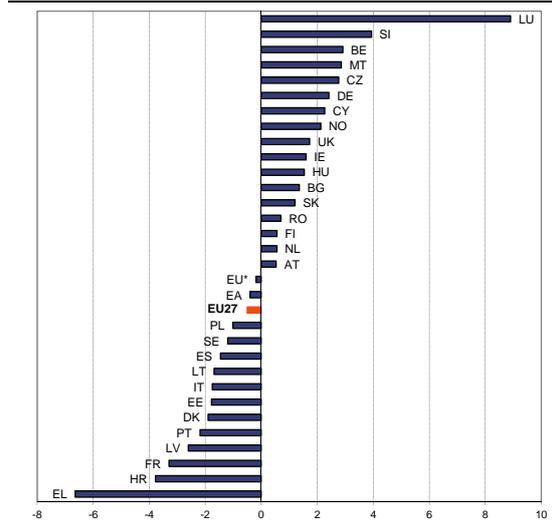
Source: Commission services, EPC.

Countries located in the upper-right quadrant of Graph II.1.4 have a higher public pension expenditure level than the EU average, both in 2016 and 2070. Those situated right of the 45-degree line in the upper-right quadrant (e.g. Belgium, Slovenia and Norway) show a larger than average increase over the considered period. Conversely, France, Greece, Italy, Portugal and Spain move closer to the EU average as a result of a projected decrease in pension expenditure. In the case of Luxembourg, the high projected expenditure increase by 2070 is to some extent mitigated by the starting position, namely an expenditure ratio that lies below the EU average in 2016. Graph II.1.4 shows how the country would nevertheless have the highest pension spending in terms of GDP of all Member States in 2070, compared to the 17th highest in 2016.

Looking back from 2016, many Member States already had to cope with rising pension costs. Between 2003 and 2016 the pension expenditure-to-GDP ratio rose for example sharply in Spain (+3.7 pps.), Italy (+2.4 pps.) and Romania (+1.8 pps.). Also Portugal (+2.7 pps.), Belgium (+2.4 pps.), the United Kingdom (+2.3 pps.) and Finland (+0.6 pps.) saw strong increases in pension spending, especially when considering the shorter

period during which these took place (see Graph II.1.5). Those past increases, sometimes induced by the denominator effect from the 2008-2009 and 2012-2013 crises, add to future pension challenges.

Graph II.1.4: **Pension spending in 2016 and 2070: relative position towards the EU average (pps. of GDP)**
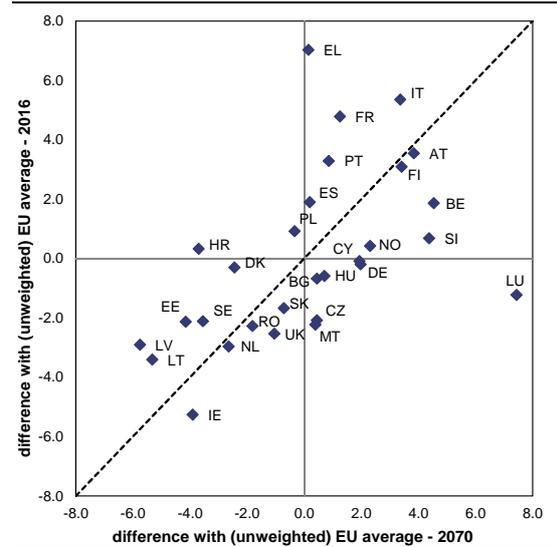
Source: Commission services, EPC.

Graph II.1.5: **Change in gross public pension expenditure prior to 2016, selected countries (pps. of GDP)**
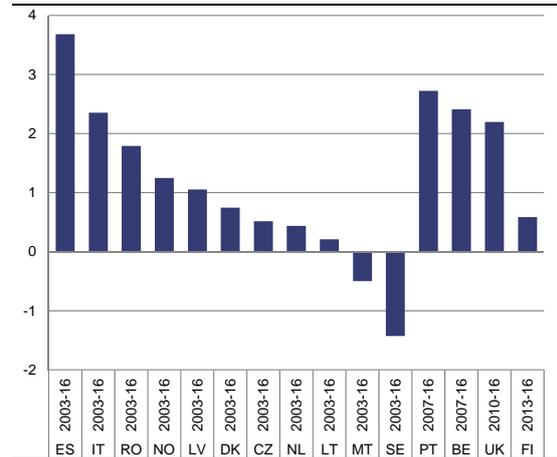
(1) Countries not depicted in the graph did not report pension expenditure levels for years prior to 2016.
Source: Commission services, EPC.

Changes for the main general schemes

Changes in public pension expenditure are predominantly driven by old-age and early pension schemes (see Graph II.1.6). Indeed, all countries that display a higher overall expenditure ratio in 2070 compared to 2016 are projected to see

Graph II.1.6:   **Change in gross public pension expenditure for the main general schemes, 2016-2070 (pps. of GDP)**
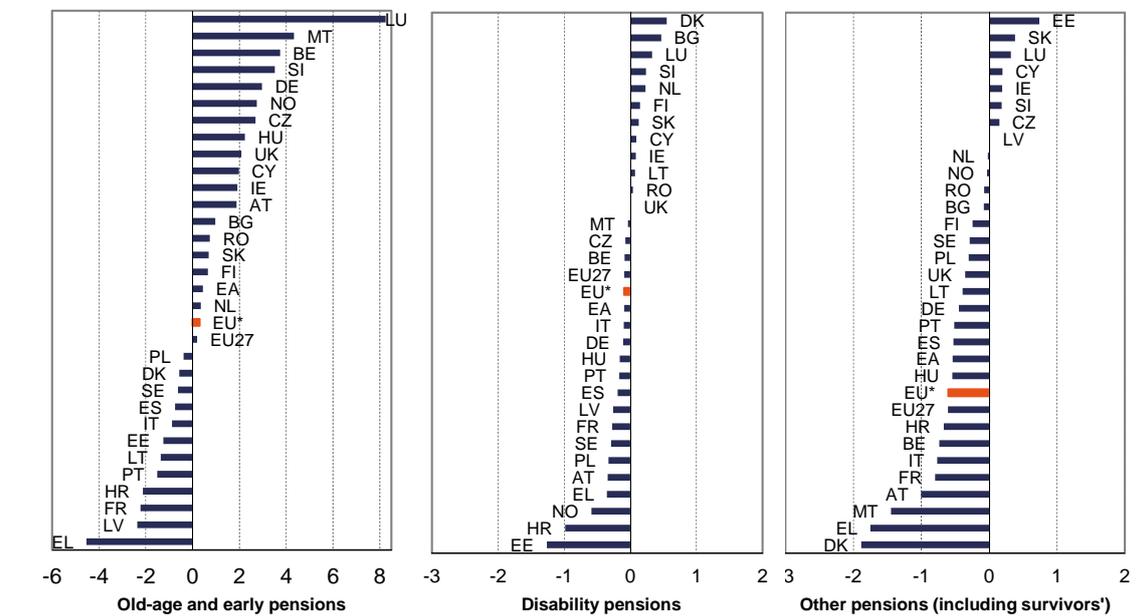
(1) IE: old-age and early pensions do not include public service occupational schemes.
(2) MT: other pensions include treasury pensions, access to which for new government employees was closed in 1979.
(3) UK: disability benefits paid to pensioners are not included in the projections as these are not considered a pension.
Source: Commission services, EPC.

spending on old-age and early pensions rise. For the EU as a whole, the increase amounts to 0.3 pps. of GDP. The largest difference is projected in Luxembourg (8.3 pps. of GDP). Malta, Belgium and Slovenia also show increases of at least 3 pps. of GDP. At the other end of the spectrum, Greece has the largest projected fall, at 4.5 pps. of GDP. Latvia, France and Croatia are expected to see a decrease of at least 2 pps. of GDP for old-age and early pensions.

Disability pensions and other pensions (including survivors' schemes) contribute generally more modestly to the overall trend with a negative contribution for most countries. At the EU level, disability pensions are projected to decrease by 0.1 pps. of GDP. Only Bulgaria and Denmark are expected to see disability pensions increase by 0.5 pps. of GDP or more. The largest decrease would be for Estonia (-1.3 pps. of GDP) ([50]) with

also Croatia and Norway projected to see a decrease of at least 0.5 pps. of GDP.

Other pension schemes (including survivors' pensions) would fall by 0.6 pps. of GDP at the EU level over the period 2016-2070. These schemes would see additional spending for only six countries, of at most 0.7 pps. of GDP for Estonia. Most countries are expected to have lower spending for these schemes, with a decline of at least 1 pp. of GDP in the cases of Austria, Malta, Greece and Denmark. This general trend results from converging life expectancies between men and women, fewer marriages and the impact of a higher female participation rate, sometimes induced by recent reforms.

Cyprus, Luxembourg, Slovenia and Slovakia are the only countries with a projected increase for all three general schemes. For eight countries spending is expected to fall in the three schemes ([51]).

([50]) This reflects the fact that disability pensions are being replaced by an unemployment benefit scheme until recipients reach the statutory retirement age. These new benefits were included under 'other pensions' to allow for comparison of total pension costs with other countries. They would amount to 0.8% of GDP in 2070, compared to 1.3% of GDP in disability pensions in 2016, i.e. a decrease of 0.5 pps. of GDP.

([51]) EL, ES, HR, FR, IT, PL, PT and SE.

Public pension expenditure: time profile

Both at the EU and the euro area level, public pension expenditure is projected to remain quite stable in the short term, before starting to increase upon entering the 2020s (see Graph II.1.7). Spending would then rise steadily and peak in 2040, at 12% of GDP for the EU and at 13.5% of GDP for the euro area. Following those peaks, pension expenditure would decrease all the way through the remainder of the projection horizon.

Graph II.1.7: **Gross public pension expenditure in EU: time profile 2016-2070 (%GDP)**
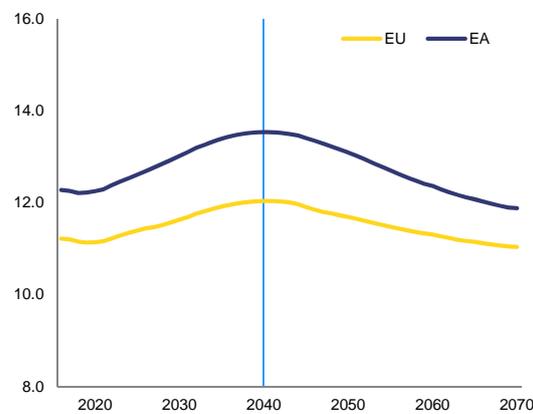
Source: Commission services, EPC.

This two-phased trajectory reflects how, initially, pension expenditure would experience a strong upward push from a higher dependency ratio (see Section 1.6.1). The latter's rise slows down beyond 2040. In addition, the delayed effect of automatic pension system stabilisers and phased-in reforms in certain countries, counteract the initial expenditure rise.

The bell-shaped curve for the EU and the euro area does, however, not apply to all individual Member States. As shown in Graph II.1.8, the number of years until a peak is reached and the expenditure increase from trough to peak vary greatly among countries. As a result, the total change in public pension expenditure between 2016 and 2070, as shown in Graph II.1.3 above, does not appropriately signal risks for those countries where pension expenditure peaks in the first decades of the projection horizon and decreases afterwards. Such frontloading appears for example to be the case for Italy and Spain. These countries would see pension spending fall in 2070 as compared to the

2016 baseline. However, spending is projected to rise in the coming decades, increasing by 3.1 pps. of GDP for Italy in 2040 and by 2.2 pps. of GDP for Spain in 2045.

Table II.1.9: **Breakdown per period of change in gross public pension expenditure (pps. of GDP)**

	2016-20	2020-30	2030-40	2040-50	2050-60	2060-70	2016-70
BE	0.5	1.2	0.7	0.1	0.2	0.2	2.9
BG	-0.5	0.0	0.8	1.2	0.5	-0.6	1.4
CZ	-0.1	0.1	1.0	1.7	0.8	-0.7	2.8
DK	-0.7	-0.7	-0.4	-0.4	-0.2	0.5	-1.9
DE	0.3	1.1	0.5	0.2	0.4	-0.1	2.4
EE	-0.4	-0.6	-0.1	0.0	-0.1	-0.6	-1.8
IE	0.1	0.7	0.9	0.7	-0.2	-0.6	1.6
EL	-3.9	-1.4	0.8	-0.3	-1.0	-0.9	-6.6
ES	0.1	0.3	1.4	-0.1	-2.5	-0.7	-1.5
FR	-0.1	0.5	-0.4	-1.3	-1.2	-0.8	-3.3
HR	-0.2	-0.4	-1.6	-0.9	-0.4	-0.2	-3.8
IT	0.0	1.6	1.4	-1.4	-2.2	-1.2	-1.7
CY	0.0	0.7	0.6	-0.2	0.7	0.5	2.3
LV	-0.6	-0.6	0.1	-0.2	-0.4	-0.9	-2.6
LT	0.1	0.1	-0.1	-0.5	-0.5	-0.8	-1.7
LU	-0.1	1.2	1.4	1.4	3.0	2.0	8.9
HU	-0.7	-0.6	1.0	1.2	0.5	0.1	1.5
MT	-0.2	-0.8	0.3	1.3	1.8	0.4	2.9
NL	-0.3	0.5	1.0	-0.4	-0.3	0.0	0.6
AT	0.1	0.5	0.5	-0.3	0.2	-0.4	0.5
PL	-0.1	-0.1	-0.1	0.3	-0.1	-0.9	-1.0
PT	0.1	0.7	0.4	-1.1	-1.7	-0.6	-2.2
RO	-0.7	-0.6	1.1	1.0	0.3	-0.2	0.7
SI	0.0	1.1	2.1	1.4	-0.4	-0.3	3.9
SK	-0.3	-0.6	0.2	1.0	1.1	-0.1	1.2
FI	0.4	1.0	-0.9	-0.7	0.3	0.4	0.6
SE	-0.5	-0.5	-0.4	-0.2	0.4	0.0	-1.2
UK	-0.1	0.3	0.6	-0.3	0.6	0.5	1.7
NO	0.3	0.7	0.2	0.1	0.5	0.3	2.1
EA	0.0	0.8	0.5	-0.4	-0.7	-0.5	-0.4
EU*	-0.1	0.5	0.4	-0.4	-0.4	-0.3	-0.2
EU27	-0.1	0.5	0.4	-0.3	-0.6	-0.4	-0.5
EU* s	-0.3	0.2	0.5	0.1	0.0	-0.2	0.2

Source: Commission services, EPC.

Table II.1.9 summarises spending dynamics by sub-period.

- In 2016-2020, the strong decrease in pension expenditure in Greece (-3.9 pps. of GDP) stands out. Also Denmark, Hungary and Romania (-0.7 pps.), Latvia (-0.6 pps.), Bulgaria and Sweden (-0.5 pps.) display a relatively strong decline when considering that only four years are covered. Eleven Member States plus Norway would see pension expenditure increase in 2016-2020, led by Belgium (+0.5 pps.) and Finland (+0.4 pps.).

- Over the next decade, pension expenditure is set to increase for sixteen Member States plus Norway. The strongest rise is projected for Italy (+1.6 pps.), Belgium and Luxembourg (+1.2 pps.), Germany and Slovenia (+1.1 pps.), and Finland (+1 pp.). The strong decrease in the case of Greece would continue in 2020-2030 (-1.4 pps.).

- In 2030-2040, the upward trend is confirmed with pension expenditure expected to increase in 20 Member States plus Norway. Slovenia is

Graph II.1.8:   **Years and increase to peak expenditure**
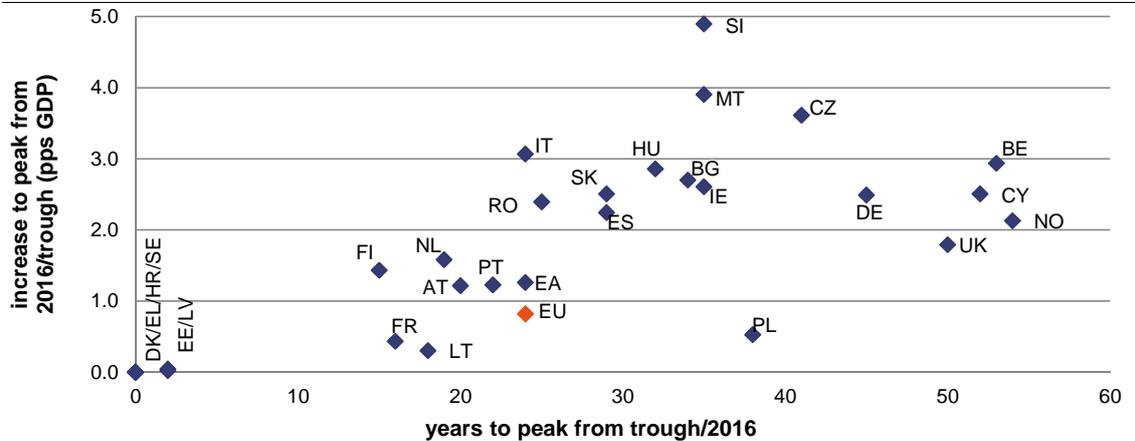
(1) The graph shows on the horizontal axis the number of years between the trough (situated between 2016 and the peak) and the year expenditure peaks. The increase in pension expenditure over this trough-to-peak period is depicted on the vertical axis. For example, in the case of Hungary pension expenditure falls between 2016 and 2031. Following this trough, spending rises and reaches a peak in 2063, i.e. 32 years later, when the pension-expenditure-to GDP ratio is expected to rise by 2.9 pps. of GDP as compared to 2031.
(2) Graph excludes LU to enhance readability. In LU, pension expenditure increases by 8.9 pps. of GDP in 2070, i.e. 50 years after its trough in 2020.
Source: Commission services, EPC.

projected to see an increase by 2.1 pps. of GDP during the decade, followed by Spain, Italy and Luxembourg (+1.4 pps.), Romania (+1.1 pps.) and the Czech Republic, Hungary and the Netherlands (+1 pp.).

- In 2040-2050, a trend reversal appears to take place as rising expenditure is limited to 12 Member States plus Norway. However, the expenditure increase for these countries is generally high: +1.7 pps. of GDP for the Czech Republic, +1.4 pps. for Luxembourg and Slovenia, +1.3 pps. for Malta, +1.2 pps. for Bulgaria and Hungary, and +1 pp. for Romania and Slovakia.

- In 2050-2060 only Luxembourg (+3 pps.), Malta (+1.8 pps.) and Slovakia (+1.1 pps.) would show a pension expenditure increase of at least 1 pp. of GDP. Countries with a strongly declining expenditure ratio include Spain (-2.5 pps.), Italy (-2.2 pps.) and Portugal (-1.7 pps.), countries which are expected to record relatively strong increases earlier on.

- Finally, in 2060-2070, pension spending is expected to decrease or to increase just slightly. This links in with the projected developments in dependency ratios after 2060 (see Part I, Chapter 1). The only notable exception to that

rule would be Luxembourg, with an additional expenditure increase of 2 pps. of GDP in the last decade covered by the projections. Seven other Member States plus Norway are expected to show a rise of at most 0.5 pps. of GDP in their expenditure ratio.

When considering the entire projection horizon, five broad time profiles can be distilled:

- *STABLE*: for seven countries pension expenditure is projected to be broadly stable throughout 2016-2070, with a difference of less than 2 pps. of GDP between the maximum and minimum values projected over this period: Estonia, the Netherlands, Austria, Poland, Finland, Sweden and the United Kingdom. For this group of countries, peak years vary notably; from 2016 for Sweden to 2070 for the United Kingdom. The relative stability of the public pension expenditure ratio for this set of countries is confirmed by their standard deviation, which is lower than for the other countries. Graph II.1.9 illustrates the time profile for these countries on the basis of the Netherlands: pension spending decreases slightly from 7.3% of GDP in 2016 to a minimum of 6.9% of GDP in 2021. It then rises to 8.5% of GDP in 2040, after which it

Graph II.1.9:   **Gross public pension expenditure: time profile 2016-2070 for selected countries (%GDP)**
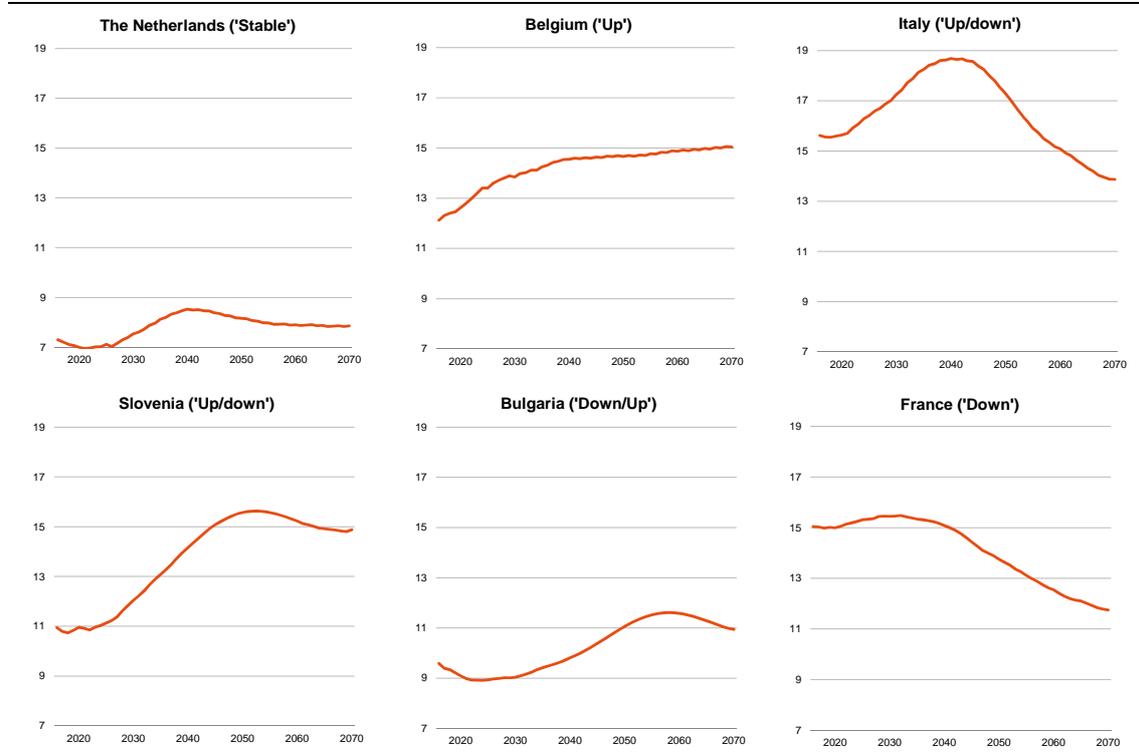
Source: Commission services, EPC.

contracts again, to 7.9% of GDP at the end of the projection horizon.

- *UP:* Five countries display an upward sloping profile for the entire period covered by the projections – limited, occasional but temporary declines notwithstanding: Belgium, Germany, Cyprus, Luxembourg and Norway. Peak values are situated around 2070, though in the case of Germany there is a broad stabilisation as of 2054, with projections peaking in 2061. Graph II.1.9 shows the time profile for Belgium: pension expenditure rises continuously, from 12.1% of GDP in 2016 to 15.1% in 2069, the penultimate year of the projection horizon.

- *UP/DOWN*: for six countries there is an initial upward trend in pension expenditure, followed by a reversal: the Czech Republic, Ireland, Spain, Italy, Portugal and Slovenia. The inflction point is generally situated in the middle or in the second half of the projection horizon. In the cases of Spain, Italy and Portugal the decline in the second phase exceeds the initial increase with the pension expenditure-to-GDP ratio in 2070 ending

below the 2016 baseline ratio. For the Czech Republic, Ireland and Slovenia, however, the trend reversal upon peaking in the 2050s fails to undo the initial increase. Graph II.1.9 illustrates both types on the basis of Italy and Slovenia. Both rise at first, though with a later peak in the case of Slovenia. From its peak, Italian pension expenditure falls by 4.8 pps. of GDP. In contrast, Slovenian pension expenditure falls by 0.8 pps. of GDP after attaining its peak.

- *DOWN/UP:* Five countries show a downward trend which is subsequently followed by an upward trend and an eventual stabilisation at a level above the 2016 starting point: Bulgaria, Hungary, Malta, Romania and Slovakia. These countries reach a minimum between 2024 and 2034, while peak expenditure is situated between 2055 and 2067, implying a back loading of higher pension costs. The increase from trough to peak amounts to 2.4-2.9 pps. of GDP, with an outlier of 3.9 pps. of GDP in the case of Malta. The typical time profile for these countries is illustrated by means of Bulgaria

(see Graph II.1.9): expenditure falls before increasing, peaking and declining again.

- *DOWN:* six countries do not show any major increase throughout the projection horizon, following mostly a downward trajectory: Denmark, Greece, France, Croatia, Latvia and Lithuania. For these countries peak expenditure is situated at the very start of the projections. In the case of Denmark expenditure increases again somewhat after 2060 but stays nevertheless far below the 2016 level. For France and Lithuania the first half of the projections show an essentially flat expenditure ratio, followed be a steady decline in the second half. For Greece and, to a lesser extent, Latvia, the opposite holds: a sharp decline in the first decade of the projections and a broad stabilisation thereafter. Graph II.1.9 shows the time profile for France: from a peak value of 15.5% of GDP in 2032, slightly up compared to 2016, pension expenditure decreases and reaches its minimum only in 2070, at 11.8% of GDP.

Developments by age groups

The share of all age groups of public pensioners below the age of 75 years old is projected to decrease between 2016 and 2070 (see Graph II.1.10). The shares of pensioners younger than 54 and those in the age group 55-59 would fall by 2-3 pps. Most of this decline is situated in the period up to 2040. For the age group 60-64 the decline of the share extends into the second half of the projections, with a total expected decrease of 6.7 pps. The age group 65-69 accounts for the largest share loss, 8.6 pps. The share of pensioners aged 70-74 in total pensioners rises until 2035 but is then fully reversed.

The lower shares of pensioners younger than 75 are, evidently, fully absorbed by the rising share of pensioners beyond the age of 75. This group would expand its share from around four out of ten of all pensioners in 2016 to around six out of ten in 2070. Aside from demographic factors, these relative changes reflect how reforms introduced in many countries, including those to lift statutory and early retirement ages, lengthen the contribution period required for acquiring full pension benefits and restrictions on early and disability schemes.

Graph II.1.10: **Share of public pensioners per age group: EU (% of total public pensioners)**

	2016	2020	2030	2040	2050	2060	2070
75+	38	39	44	50	55	57	59
70-74	17	19	20	20	18	17	16
65-69	21	21	18	16	14	13	13
60-64	12	10	08	06	06	05	05
55-59	04	04	03	03	02	02	02
-54	08	07	06	05	05	05	05
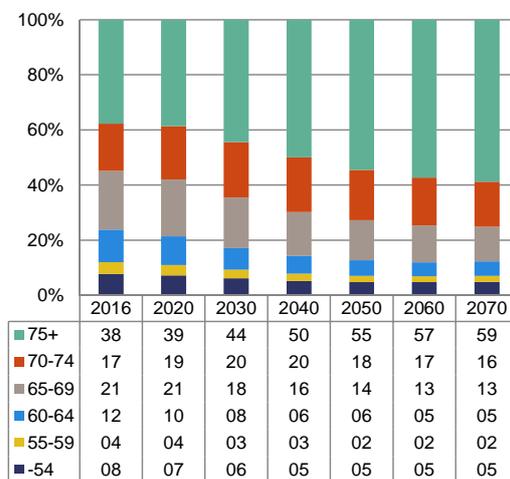
(1) Excluding AT and UK (no data).
Source: Commission services, EPC.

The aggregate picture at the EU level holds, by and large, for individual Member States, in particular for the age groups below the age of 70. The charts in Graph II.1.11 compare the shares of age groups in 2016 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 compared to 2016. For the age groups up to 65, decreases in 2070 compared to the current situation are generally the largest for countries where those age groups currently represent relatively high shares of total pensioners, e.g. Ireland, Estonia, Lithuania, Slovakia and Norway for the age group below 54. This lower dispersion implies a higher degree of similarity among countries towards the end of the projections.

The projected impact of linking retirement ages to life expectancy, a mechanism introduced in several countries ([52]), comes to the fore in the expected change in the share of pensioners in the age group 65-69. These countries commonly show the largest fall in the share of this age group. This is also the case for the age group 70-74, the only one for which not all countries move in the same direction ([53]). Of those countries for which data is

---

([52]) Such links are applied in IT, FI, PT, EL, DK, NL, CY and SK. See Table II.1.2.
([53]) This ignores the very limited increase in the -54 age group for Malta, which would still have one of the lowest shares for this age group of all Member States.

Graph II.1.11: **Share of public pensioners per age group: 2070 vs. 2016 (% of total public pensioners)**
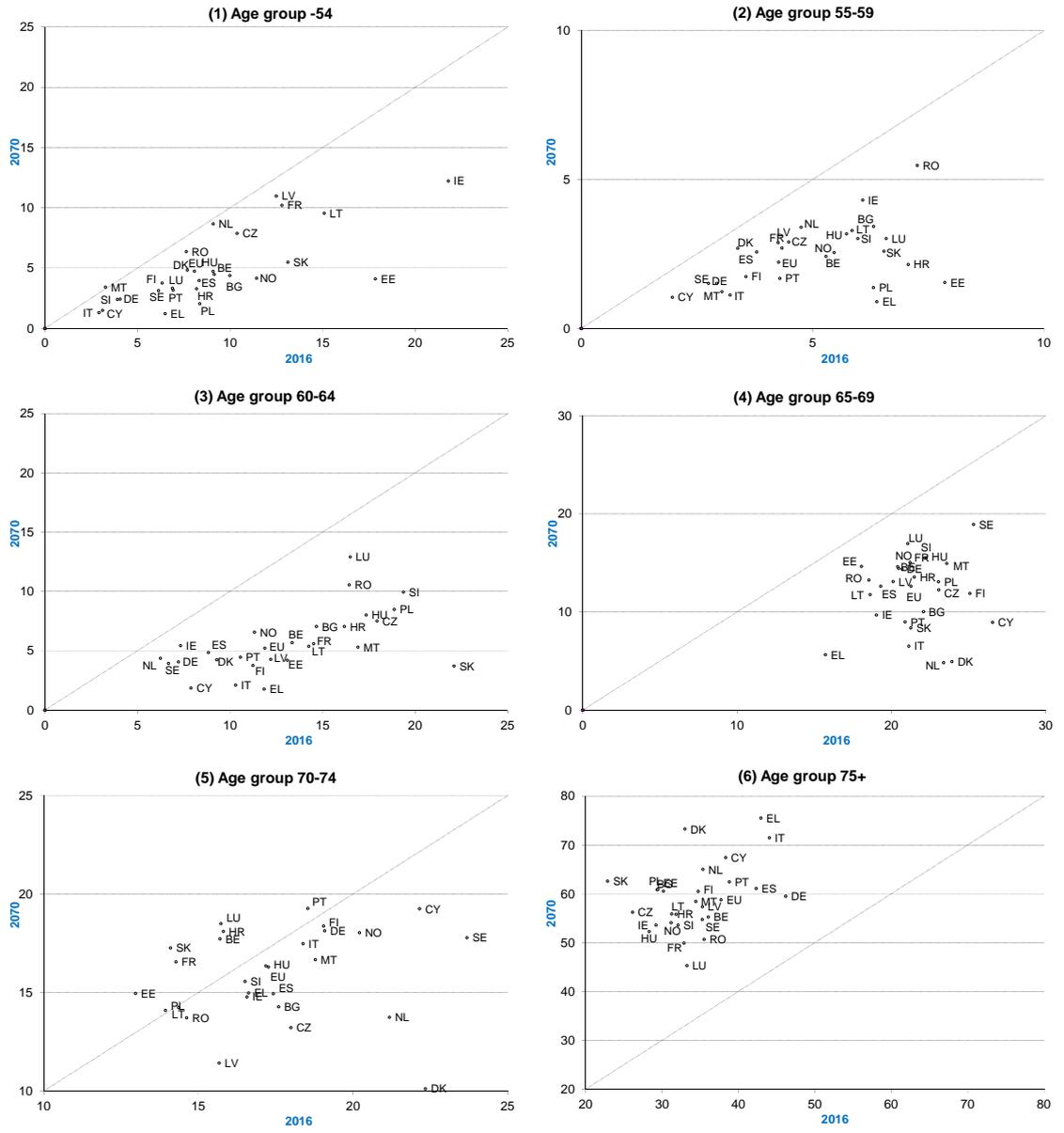
(1) AT and UK are not included for reasons of data availability.
(2) LT refers to 2017.
Source: Commission services, EPC.

available, eight are projected to have a higher share in total pensioners for this age group. For 18 countries the share would decrease.

When looking at the age groups' shares in pension expenditures rather than their shares in the number of pensioners, a comparable development shows. For the EU as a whole, pension expenditure in terms of GDP is projected to decrease for all age groups below the age of 75 years old (see Graph

II.1.12), thereby compensating for the higher spending for the latter group. Pensioners above the age of 75 would represent almost 60% of total pension spending by 2070, compared to just below 40% in 2016. This change is quasi identical to that observed for the number of pensioners and amounts to an increase of 2.2 pps. of GDP.

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

	2016	2020	2030	2040	2050	2060	2070
■ 75+	05	05	06	07	07	07	07
■ 70-74	02	02	03	03	02	02	02
■ 65-69	03	03	02	02	02	02	02
■ 60-64	01	01	01	01	01	01	01
■ 55-59	00	00	00	00	00	00	00
■ -54	01	00	00	00	00	00	00
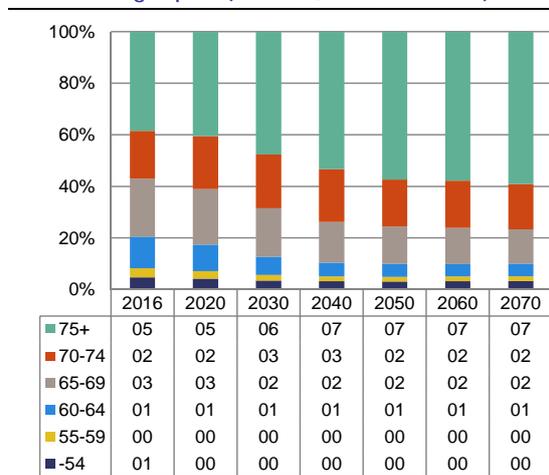
(1) Excluding UK (no data).
Source: Commission services, EPC.

The biggest reduction in pension spending is for the age groups 60-64 and 65-69. Both are projected to decrease by around 1 pp. of GDP by 2070. Pension expenditure on people below the age of 60 would reduce from 1% of GDP in 2060 to 0.6% of GDP in 2070. This is relatively low when compared to the number of pensioners in this age group. In 2016 they represent 12% of all pensioners but only around 8% of total pension spending, falling to 7% and 5% respectively in 2070.

All countries except Luxembourg are expected to spend less on pensioners in the age groups below 70 (see Table II.1.10). Greece (-6.6 pps. of GDP) and Italy (-5 pps.) would show the largest total decrease for these age groups. The decline would be less than 1 pp. of GDP for Germany, Ireland, Romania, Sweden and Norway. For the age group 70-74 the picture is mixed. Higher pension spending is projected for twelve countries; sixteen countries would see a decline. Aside from Estonia, all countries would experience an increase in pension spending for pensioners beyond the age of 75. This increase amounts to 4 pps. of GDP or more for Belgium, the Czech Republic, Cyprus, Luxembourg, Slovenia and Slovakia. The increase is less than 1 pp. of GDP for Estonia (-0.8 pps.), Croatia, Latvia, Lithuania and Sweden.

Table II.1.10: **Change in public pension expenditure per age group in 2016-2070 (pps. of GDP)**

Country	Age group					
	-54	55-59	60-64	65-69	70-74	75+
BE	-0.3	-0.3	-1.1	-0.4	0.8	4.2
BG	-0.5	-0.3	-0.7	-1.0	0.1	3.7
CZ	0.0	-0.1	-0.9	-0.7	0.0	4.5
DK	-0.5	-0.1	-0.8	-1.6	-1.1	2.1
DE	-0.1	-0.1	-0.3	-0.2	0.3	2.9
EE	0.0	0.0	-0.6	-0.8	-0.4	-0.8
IE	-0.1	0.0	0.0	-0.2	0.2	2.2
EL	-0.8	-1.2	-2.3	-2.4	-1.0	1.5
ES	-0.3	-0.2	-0.8	-1.2	-0.5	1.4
FR	-0.2	-0.1	-1.6	-1.8	-0.6	1.1
HR	-0.9	-0.6	-1.2	-1.2	-0.4	0.6
IT	-0.2	-0.5	-1.8	-2.6	-0.2	3.4
CY	-0.1	-0.2	-1.0	-1.5	0.4	4.7
LV	-0.2	-0.1	-0.7	-1.2	-0.7	0.2
LT	-0.1	-0.1	-0.5	-0.6	-0.4	0.3
LU	0.0	-0.1	0.8	1.4	2.1	4.7
HU	-0.2	-0.1	-0.7	-0.2	0.4	2.6
MT	-0.1	-0.1	-0.7	-0.3	0.2	3.9
NL	-0.1	-0.1	-0.2	-1.0	-0.4	2.4
AT	-0.1	-0.3	-1.2	-0.4	0.1	2.5
PL	-0.6	-0.5	-1.3	-1.5	-0.2	3.0
PT	-0.3	-0.3	-1.0	-1.9	-0.4	1.7
RO	0.0	0.0	-0.5	-0.4	0.0	1.6
SI	0.0	-0.2	-0.9	-0.5	0.4	5.1
SK	-0.4	-0.2	-1.5	-1.1	0.3	4.0
FI	-0.1	-0.2	-1.0	-2.1	0.0	3.9
SE	-0.1	-0.1	-0.2	-0.6	-0.8	0.6
UK	:	:	:	:	:	:
NO	-0.5	-0.1	-0.1	-0.2	0.0	3.1
EU*	**-0.2**	**-0.2**	**-0.9**	**-1.2**	**-0.2**	**2.2**
EA	**-0.2**	**-0.2**	**-0.9**	**-1.2**	**-0.1**	**2.2**
EU27	**-0.2**	**-0.2**	**-0.9**	**-1.2**	**-0.2**	**2.2**

(1) UK: no data available. LT based on 2017 figure.
Source: Commission services, EPC.

Gross versus net pension expenditure

For the set of 18 countries for which both gross and net projections are available (see Graph II.1.13), the average level of taxes on public pensions amounts to 1.3% of GDP in 2016, corresponding to an implicit average tax rate of 12% on gross benefits. These averages would be the same in 2070.

Countries for which the tax level would increase by at least 0.5 pps. of GDP are Luxembourg (+1.3 pps.), Germany (+0.8 pps.) and Belgium (+0.5 pps.). Denmark (-0.7 pps.) and Poland (-0.5 pps.) show the largest reduction of 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 shows in the implicit tax rate, which would remain broadly unchanged in the cases of Luxembourg and Belgium. For Germany the implicit tax rate would rise from 17% in 2016 to 21% in 2070. This is explained by ongoing

changes to the pension tax regime, legislated in 2005 ([54]).

Graph II.1.13: **Gross versus net public pension expenditure in 2016 and 2070 (% of GDP)**
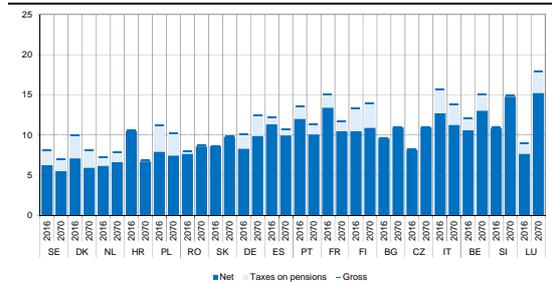
(1) The graph contains only those countries for which (non-zero) data is available.
(2) Countries are ranked in order of ascending net public pension expenditure in 2070.
Source: Commission services, EPC.

1.5.2. Private occupational and individual pensions

Private pension schemes have become more widespread across the EU as participation in both occupational and individual schemes, known as second and third pillar pensions respectively, has been increasing. Authorities encourage the build-up of private pension savings as a way to soften the burden of ageing populations on social security schemes and in order to complement public pension benefits. In some countries participation is mandatory. 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.

Occupational pension schemes are found in 23 countries. In nine of them participation is mandatory for at least part of those working. Individual schemes on a voluntary basis exist in all countries. Mandatory individual saving plans are less common; eight countries have them ([55]). Within the context of the AWG pension projections, private pension expenditures are reported on a voluntary basis by Member States. 11 countries reported non-zero data (see Graph II.1.14), mostly for occupational schemes.

Graph II.1.14: **Private (occupational and individual) pension schemes: expenditure and contributions in 2016 and 2070 (% of GDP)**
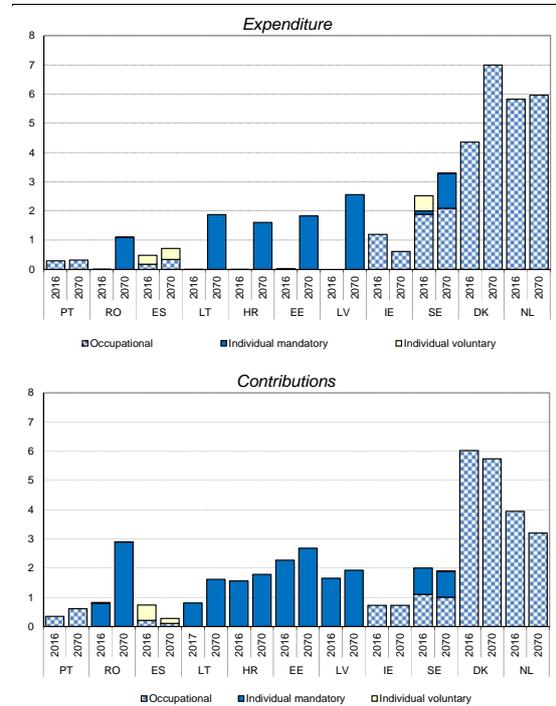
(1) The graphs contain only those countries which provided (non-zero) data for one of the three private pension schemes.
(2) DK: individual voluntary plans are included in the data for occupational schemes.
(3) IE: data covers only occupational pension schemes in the public sector.
Source: Commission services, EPC.

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 (44%), Denmark (30%), Sweden (24%) and Ireland (19%) private pension expenditure represented a significant share of total pension spending in 2016. In the Netherlands, Denmark and Sweden there is a tradition of providing occupational pension schemes to employees. Their coverage rate is high, with more than 90% of all employees participating.

Private schemes are expected to expand further over the next decades. In 2070, pension expenditure through individual mandatory schemes introduced in the early 2000s would amount to 1.6-2.6% of GDP in the Baltic countries and Croatia. The share of these plans in total pension expenditure would rise to between 19% and 35% – abstraction made of voluntary individual plans. In Romania (scheme introduced in 2007) and Sweden

---

([54]) While pension contributions will be completely exempted from tax by 2025 (partially taxed in the past), pension benefits will be fully taxed by 2040 (practically non-existent in the past).
([55]) For an overview, see Annex II, Table II.AII.1.

(1998) such schemes would pay benefits representing 1.1% of GDP in 2070. At the same time, Sweden expects spending for voluntary individual plans to gradually fade out following the abolition of the tax deduction for employees in 2016.

In 2016, contributions for the new mandatory individual schemes in Romania, Croatia and the Baltic countries amounted to 0.8-2.3% of GDP (see Graph II.1.14). These would rise for all five countries by 2070, to 1.6-2.9% of GDP. In Sweden contributions would remain about stable, as is the case for the country's occupational scheme. In Denmark and the Netherlands contributions for occupational pension plans are higher than in Sweden and would decrease over the projection horizon, by 0.3 pps. of GDP in Denmark and by 0.7 pps. in the Netherlands.

1.6. DRIVERS OF PENSION EXPENDITURE

1.6.1. Breakdown of projected pension expenditure

Box II.1.3 presents the breakdown of the pension expenditure-to-GDP ratio into its main underlying components. The overall change in gross public pension expenditure is split into four drivers: the dependency ratio, the coverage ratio, the benefit ratio and the labour market impact. The latter is further divided into three drivers: employment, labour intensity and career shift effects. The results of this breakdown for the change in the pension expenditure ratios between 2016 and 2070 are shown in Table II.1.11 and Graph II.1.15.

The demographic factor, captured by the dependency ratio, contributes by far the most to increases in pension spending in 2016-2070. 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 6.5 pps. of GDP on average in the EU and ranges from 2.4 pps. of GDP in Sweden to 11.7 pps. of GDP in Poland. Other countries where a higher dependency ratio would contribute to a double digit pension expenditure increase are Italy, Cyprus, Luxembourg, Austria and Portugal.

It strikes out how several of the countries displaying a high increase in the dependency ratio are nevertheless projected to see a pension expenditure decrease (e.g. Poland, Portugal, Italy, Greece and Spain) or a relatively limited increase (e.g. Austria and Slovakia). Several of these countries have enhanced their pension system with sustainability factors.

Graph II.1.15: **Contribution to change in gross public pension expenditure; 2016-2070 (pps. of GDP)**

Legend:
- Dependency ratio contribution
- Coverage ratio contribution
- Benefit ratio contribution
- Labour market effect contribution
- Interaction effect
- 2016 - 2070 change
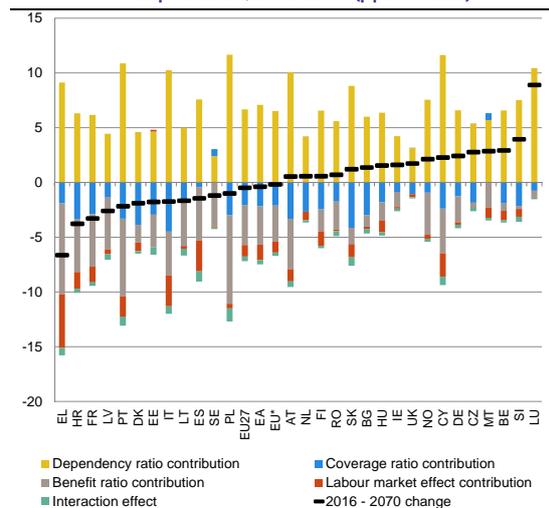
(1) LU: see note Table II.1.11.
Source: Commission services, EPC.

The universal increase in the 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 (-3.3 pps. of GDP) and the coverage ratio (-2.1 pps.). The interaction effect between the different components is favourable for all countries, i.e. a negative contribution.

The coverage ratio is expected to cause pension expenditure to increase in only two countries (Malta and Sweden), by just 0.6 pps. of GDP. For the other countries the coverage ratio reduces pension expenditure, by up to 4.5 pps. of GDP in the case of Italy and by at least 3 pps. for Bulgaria, Denmark, Croatia, Austria, Poland, Portugal and Slovakia. For countries where a link exists between the statutory retirement age and life expectancy, the number of pensioners might increase less than the population above the age of 65 years, leading to a lower coverage ratio as people start to draw pension benefits later.

<div style="border:1px solid">

Box II.1.3: **Breakdown of the pension expenditure-to-GDP ratio**

In order to analyse the dynamics and the underlying drivers of the pension spending-to-GDP ratio over time, the following decomposition formula is used:

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

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

$$= (dependency\ ratio) \times (coverage\ ratio) \times (benefit\ ratio) \times (labour\ market\ effect)$$

This equation highlights the elements that affect the dynamics of pension expenditure. Indeed, the overall change in public pension expenditure-to-GDP ratio can be 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 old age versus 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. As the dependency ratio increases, the pension-to-GDP ratio moves in the same direction.

− **The coverage ratio effect** is defined as the number of pensioners of all ages to the population over 65 years. The analysis of the coverage ratio provides information about how the developments of the effective exit age and the share of the population covered by the pension system influence pension spending. As the coverage ratio increases, the pension expenditure-to-GDP ratio increases as well.

− **The benefit ratio effect** indicates how the average pension (public pension spending divided by 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 easier to grasp:

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

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

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

</div>

> *Box (continued)*
>
> 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.

Table II.1.11:   **Breakdown of change in gross public pension expenditure; 2016-2070 (pps. of GDP)**

Country	2016 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	12.1	6.6	-1.9	-0.7	-0.9	-0.6	0.1	-0.3	-0.2	15.0
BG	9.6	6.0	-3.0	-1.1	-0.2	0.0	0.0	-0.2	-0.4	10.9
CZ	8.2	5.4	-1.9	-0.5	0.0	0.0	0.0	0.0	-0.3	10.9
DK	10.0	4.6	-3.9	-1.6	-0.8	-0.3	0.0	-0.5	-0.2	8.1
DE	10.1	6.6	-1.3	-2.4	-0.3	0.0	0.0	-0.3	-0.3	12.5
EE	8.1	4.6	-3.0	-3.0	0.2	0.1	0.0	0.0	-0.7	6.4
IE	5.0	4.2	-0.9	-1.4	-0.1	-0.1	0.0	-0.1	-0.2	6.6
EL	17.3	9.1	-1.9	-8.3	-4.9	-4.0	0.1	-1.0	-0.7	10.6
ES	12.2	7.6	-0.4	-4.9	-2.8	-2.4	0.1	-0.5	-0.9	10.7
FR	15.0	6.2	-2.9	-4.8	-1.4	-1.0	0.0	-0.4	-0.3	11.8
HR	10.6	6.3	-3.3	-4.9	-1.5	-1.2	0.0	-0.3	-0.4	6.8
IT	15.6	10.3	-4.5	-4.0	-2.8	-1.4	0.0	-1.4	-0.7	13.9
CY	10.2	11.6	-2.4	-4.1	-2.1	-1.4	0.0	-0.7	-0.8	12.4
LV	7.4	4.4	-1.4	-4.7	-0.5	-0.4	0.0	-0.1	-0.5	4.7
LT	6.9	5.0	-1.8	-4.0	-0.3	-0.3	0.0	0.0	-0.6	5.2
LU	9.0	10.4	-0.8	-0.6	-0.1	-0.1	0.1	-0.1	-0.2	17.9
HU	9.7	6.4	-1.8	-1.6	-1.1	-0.9	0.0	-0.2	-0.3	11.2
MT	8.0	5.7	0.6	-2.3	-1.0	-1.1	0.1	0.0	-0.2	10.9
NL	7.3	4.2	-2.7	0.0	-0.8	-0.4	0.0	-0.5	-0.2	7.9
AT	13.8	10.1	-3.3	-4.6	-1.1	-0.7	0.1	-0.5	-0.5	14.3
PL	11.2	11.7	-3.0	-8.1	-0.4	-0.2	0.0	-0.3	-1.2	10.2
PT	13.5	10.9	-3.3	-7.1	-1.9	-1.0	0.1	-1.0	-0.8	11.4
RO	8.0	5.6	-1.7	-2.6	-0.1	-0.1	0.0	-0.1	-0.5	8.7
SI	10.9	7.5	-2.1	-0.3	-0.7	-0.7	0.1	-0.1	-0.5	14.9
SK	8.6	8.8	-4.1	-1.5	-1.2	-0.6	0.0	-0.6	-0.8	9.8
FI	13.4	6.6	-2.5	-2.0	-1.3	-0.7	0.0	-0.6	-0.2	13.9
SE	8.2	2.4	0.6	-4.0	-0.1	-0.1	0.0	0.0	-0.1	7.0
UK	7.7	3.1	-1.1	0.0	-0.3	-0.2	0.0	-0.1	-0.1	9.5
NO	10.7	7.6	-0.9	-3.9	-0.3	-0.2	0.0	-0.1	-0.3	12.8
EU*	11.2	6.5	-2.1	-3.3	-1.0	-0.7	0.1	-0.4	-0.3	11.0
EA	12.3	7.1	-2.2	-3.5	-1.4	-0.9	0.1	-0.5	-0.4	11.9
EU27	11.9	6.7	-2.1	-3.7	-1.1	-0.7	0.1	-0.4	-0.4	11.4
EU* s	10.3	6.9	-2.1	-3.0	-1.0	-0.7	0.0	-0.3	-0.5	10.5
EA s	10.8	7.4	-2.1	-3.2	-1.3	-0.9	0.0	-0.4	-0.5	11.1
EU27 s	10.4	7.0	-2.2	-3.1	-1.0	-0.7	0.0	-0.4	-0.5	10.5

(1) Breakdown is based on number of pensioners.
(2) IE: as the breakdown excludes occupational public pensions, the interaction effect is adjusted to match with the overall expenditure change.
(3) 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 9.2 pps. and -0.1 pps. of GDP of the change in total pension expenditure between 2016 and 2070, with a small interaction effect of -0.1 pps. of GDP. This remark also applies to the other tables in this section.
Source: Commission services, EPC.

The average downward contribution from the benefit ratio is still larger. For all countries it is at least zero. The largest downward contributions are projected for Greece (-8.3 pps. of GDP), Poland (-8.1 pps.) and Portugal (-7.1 pps.). Also for Spain, France, Croatia, Italy, Cyprus ([56]), Latvia and Sweden pension expenditure is expected to be reduced by at least 4 pps. of GDP due to the fact that the average pension benefit would rise slower than the average wage.

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 pension 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.

([56]) For Cyprus, the main driver of the decrease in the benefit ratio is the closure of the Government Employees Pension Scheme (GEPS) to new members since 2011, as well as the reduced indexation of existing GEPS pensions.

The favourable contribution from the labour market effect for all countries except Estonia (+0.2 pps. of GDP) is generally smaller than that of the benefit and coverage ratios. Only for Greece, Spain, Croatia, Italy, Cyprus and Portugal – who would all see a strong decline in their unemployment rates; see Chapter 2 of Part I and Chapter 5 of Part II – the expenditure decreasing effect would be more than 1.5 pps. of GDP. 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.

Dependency ratio effect

The dependency ratio effect pushes up pension expenditure for all countries over the entirety of the projection horizon, with the impact exceeding the overall change in pension spending. This reflects an ageing society: for every person in the EU aged more than 65 years in 2016, there are 3.6 persons between 20 and 64. In 2070, this would fall to just 2.2 persons aged 20 to 64 for every person above 65 year. 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.

Table II.1.12 provides the contribution from demographics to the change in public pension expenditure per decade. The dependency ratio rises fast as the post-war baby-boom generation continues to enter retirement in 2016-2030, driving up pension spending. In the remainder of the current decade (2016-2020) a higher dependency ratio results in the largest rise in pension expenditure in Poland, Slovenia, Slovakia, France, Greece and Finland. In 2020-2030, pension expenditure would increase by between 0.6 and 3.7 pps. of GDP for all countries on the back of rising dependency ratios. The highest impact is expected for Spain (+3.7 pps. of GDP), Italy (+3.6 pps.), Austria and Poland (+3.4 pps.), Portugal (+3.3 pps.) and Slovenia (+3.1 pps.).

The demographic effect continues to exert upward pressure on pension expenditure in 2030-2040. It is

capped at 2 pps. of GDP for most countries. Only Romania, Luxembourg ([57]), Austria, Greece, Portugal, Spain and Italy would have a higher dependency ratio effect, which surpasses 4 pps. of GDP for the latter two countries. The demographic push generally abates in 2040-2050. The dependency ratio effect nevertheless remains positive for all countries except the Netherlands. The highest values are found for Poland (+3 pps. of GDP), Greece (+2.6 pps.) and Portugal (+2.4 pps.).

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

Country	2016-20	2020-30	2030-40	2040-50	2050-60	2060-70	2016-70
BE	0.8	2.5	1.4	0.5	0.8	0.5	6.6
BG	0.9	1.6	1.7	2.0	1.0	-1.3	6.0
CZ	1.1	1.2	1.4	2.0	0.9	-1.3	5.4
DK	0.5	1.3	1.0	0.0	0.9	0.9	4.6
DE	0.5	2.9	1.7	0.4	0.9	0.3	6.6
EE	0.7	1.4	0.9	1.1	1.0	-0.4	4.6
IE	0.6	1.4	1.4	1.5	-0.2	-0.5	4.2
EL	1.4	3.0	3.5	2.6	-0.6	-0.8	9.1
ES	1.1	3.7	4.1	2.0	-1.9	-1.5	7.6
FR	1.5	2.9	1.9	0.0	-0.5	0.4	6.2
HR	1.1	2.3	1.1	1.0	0.5	0.3	6.3
IT	0.9	3.6	4.7	1.6	-0.3	-0.2	10.3
CY	1.0	2.4	1.4	2.3	3.4	1.2	11.6
LV	0.7	2.0	1.1	0.9	0.7	-1.0	4.4
LT	0.6	3.0	1.6	0.2	0.5	-1.0	5.0
LU	0.4	2.1	2.3	1.9	2.1	1.6	10.4
HU	1.3	1.1	1.6	1.6	0.9	-0.2	6.4
MT	1.0	1.7	0.2	0.8	1.6	0.4	5.7
NL	0.7	1.7	1.1	-0.3	0.3	0.7	4.2
AT	0.4	3.4	2.5	1.0	1.8	0.9	10.1
PL	2.2	3.4	1.5	3.0	2.0	-0.4	11.7
PT	1.2	3.3	3.7	2.4	-0.1	0.4	10.9
RO	1.0	1.2	2.1	1.4	0.4	-0.6	5.6
SI	1.7	3.1	2.0	2.2	-0.1	-1.4	7.5
SK	1.6	2.5	1.5	2.3	1.4	-0.4	8.8
FI	1.4	2.4	0.3	0.6	1.2	0.6	6.6
SE	0.3	0.6	0.4	0.2	0.8	0.1	2.4
UK	0.2	1.0	0.7	0.3	0.5	0.4	3.1
NO	0.7	2.0	1.9	0.7	1.3	0.9	7.6
EU*	0.9	2.5	2.0	0.9	0.3	-0.1	6.5
EA	0.9	3.0	2.5	0.9	-0.1	-0.1	7.1
EU27	1.0	2.5	2.1	1.0	0.2	-0.2	6.7
EU* s	1.0	2.2	1.8	1.3	0.7	-0.1	6.9
EA s	0.9	2.6	2.0	1.3	0.6	0.0	7.4
EU27 s	1.0	2.3	1.8	1.3	0.7	-0.1	7.0

(1) LU: the alternative dependency ratio effect (see comment Table II.1.11) amounts to 0.0, 1.3, 1.4, 1.5, 2.9 and 2.0 pps. of GDP for the respective time periods, with a total of 9.2 pps. of GDP in 2016-2070. 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: Commission services, EPC.

This attenuating trend continues in 2050-2060, when the demographic change would have a downward impact on pension expenditure in seven countries. The dependency ratio effect is the highest for Cyprus (+3.4 pps. of GDP), Luxembourg (+2.1 pps.) ([58]) and Poland (+2 pps.). Finally, in 2060-2070, the demographic factor is expected to reduce pension expenditure in fourteen

---

([57]) 1.4 pps. of GDP in the alternative breakdown.
([58]) 2.9 pps. of GDP in the alternative breakdown.

countries. Of the other countries only Luxembourg (+1.6 pps. of GDP) ([59]) and Cyprus (+1.2 pps.) 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 expresses the number of pensioners in terms of the number of persons older than 65. 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-malus system), reduce the coverage ratio.

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

Country	2016	2020	2030	2040	2050	2060	2070	Change 2016-2070 (pps)
BE	134.2	132.7	122.5	116.5	116.5	115.8	115.9	*-18.3*
BG	148.5	140.8	128.3	113.9	105.7	102.7	106.9	*-41.7*
CZ	148.2	138.2	126.3	121.5	115.6	113.3	117.4	*-30.8*
DK	123.5	114.4	100.4	92.0	90.0	79.5	77.6	*-45.9*
DE	129.6	128.8	121.9	118.5	117.6	116.0	115.6	*-14.0*
EE	165.0	127.1	111.2	110.6	109.9	108.6	109.5	*-55.5*
IE	145.2	140.5	126.3	120.5	115.7	120.4	122.4	*-22.9*
EL	113.7	108.8	96.0	93.8	91.7	95.7	99.3	*-14.4*
ES	108.1	106.8	101.4	100.9	102.3	105.0	103.7	*-4.5*
FR	152.9	145.5	135.3	127.2	126.6	127.4	125.5	*-27.3*
HR	152.6	143.7	127.0	114.2	109.2	107.9	107.8	*-44.8*
IT	112.1	105.8	95.5	90.1	89.6	88.1	84.5	*-27.6*
CY	117.2	115.9	109.8	109.7	108.4	100.8	94.7	*-22.5*
LV	146.8	137.5	125.0	120.7	117.4	115.6	119.1	*-27.7*
LT	165.3	156.7	138.2	129.9	127.6	123.8	126.3	*-38.9*
LU	229.3	225.4	213.6	197.0	188.3	198.4	204.5	*-24.8*
HU	140.2	129.2	127.0	122.6	117.0	114.5	115.1	*-25.1*
MT	101.5	99.4	95.9	103.1	106.7	107.3	109.6	*8.1*
NL	129.3	121.3	110.4	106.5	102.8	97.0	90.5	*-38.8*
AT	146.8	145.6	131.4	126.7	124.0	118.2	115.2	*-31.5*
PL	149.4	139.9	124.6	125.5	119.4	112.8	113.6	*-35.8*
PT	126.0	119.6	108.9	103.7	101.5	100.6	98.6	*-27.3*
RO	148.8	139.6	130.2	121.0	115.3	113.8	116.5	*-32.2*
SI	160.0	153.1	137.8	135.4	130.1	128.4	132.4	*-27.7*
SK	170.9	152.0	127.7	118.1	107.5	102.4	101.4	*-69.4*
FI	127.4	124.1	115.4	112.9	109.9	107.0	106.3	*-21.0*
SE	127.3	126.2	127.2	126.8	131.3	134.7	140.1	*12.8*
UK	111.6	102.2	93.0	93.0	87.6	87.2	91.2	*-20.4*
NO	140.5	138.0	132.6	127.1	129.6	129.9	129.3	*-11.2*
EU*	129.8	124.2	114.5	110.3	108.2	107.1	107.0	*-22.8*
EA	128.9	124.7	115.5	110.6	109.6	109.4	108.2	*-20.8*
EU27	132.3	127.2	117.5	112.7	111.1	110.2	109.6	*-22.7*

(1) The coverage ratio is calculated as the total number of public pensioners as a share of the population 65 and over. In case the number of pensioners was not provided, the number of pensions was used as a proxy.
Source: Commission services, EPC.

In the EU, the coverage ratio is projected to fall by 23 pps. between 2016 and 2070, mostly in the period up to 2040 (see Table II.1.13). It would only increase in Sweden and Malta. A decrease by more than 35 pps. is expected for Slovakia,

Estonia, Denmark, Croatia, Bulgaria, Latvia, the Netherlands and Poland.

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. It reduces pension expenditure especially in the first decades of the projections (2016-2050), with minor upward pressure in the cases of Malta and Sweden. In 2050-2060 and 2060-2070 the average impact is close to zero.

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

Country	2016-20	2020-30	2030-40	2040-50	2050-60	2060-70	2016-70
BE	-0.1	-1.0	-0.7	0.0	-0.1	0.0	*-1.9*
BG	-0.5	-0.8	-1.1	-0.7	-0.3	0.5	*-3.0*
CZ	-0.6	-0.7	-0.3	-0.5	-0.2	0.4	*-1.9*
DK	-0.7	-1.2	-0.7	-0.2	-0.9	-0.2	*-3.9*
DE	-0.1	-0.6	-0.3	-0.1	-0.2	0.0	*-1.3*
EE	-1.9	-1.0	0.0	0.0	-0.1	0.1	*-3.0*
IE	-0.2	-0.6	-0.3	-0.3	0.3	0.1	*-0.9*
EL	-0.8	-1.6	-0.3	-0.3	0.5	0.4	*-1.9*
ES	-0.2	-0.6	-0.1	0.2	0.4	-0.1	*-0.4*
FR	-0.7	-1.1	-0.9	-0.1	0.1	-0.2	*-2.9*
HR	-0.6	-1.2	-1.0	-0.4	-0.1	0.0	*-3.3*
IT	-0.9	-1.6	-1.0	-0.1	-0.3	-0.6	*-4.5*
CY	-0.1	-0.6	0.0	-0.1	-0.8	-0.7	*-2.4*
LV	-0.5	-0.6	-0.2	-0.2	-0.1	0.2	*-1.4*
LT	-0.4	-0.8	-0.4	-0.1	-0.2	0.1	*-1.8*
LU	-0.2	-0.5	-0.8	-0.5	0.7	0.5	*-0.8*
HU	-0.8	-0.2	-0.3	-0.4	-0.2	0.1	*-1.8*
MT	-0.2	-0.3	0.5	0.3	0.0	0.2	*0.6*
NL	-0.4	-0.6	-0.3	-0.3	-0.5	-0.5	*-2.7*
AT	-0.1	-1.4	-0.5	-0.3	-0.7	-0.4	*-3.3*
PL	-0.7	-1.2	0.1	-0.5	-0.6	0.1	*-3.0*
PT	-0.7	-1.3	-0.7	-0.3	-0.1	-0.2	*-3.3*
RO	-0.5	-0.5	-0.5	-0.4	-0.1	0.2	*-1.7*
SI	-0.5	-1.1	-0.2	-0.6	-0.2	0.5	*-2.1*
SK	-0.9	-1.3	-0.6	-0.7	-0.4	-0.1	*-4.1*
FI	-0.3	-1.0	-0.3	-0.4	-0.4	-0.1	*-2.5*
SE	-0.1	0.1	0.0	0.2	0.2	0.3	*0.6*
UK	-0.5	-0.5	0.0	-0.4	0.0	0.3	*-1.1*
NO	-0.2	-0.4	-0.5	0.2	0.0	-0.1	*-0.9*
EU*	-0.5	-0.9	-0.4	-0.2	-0.1	0.0	*-2.1*
EA	-0.4	-0.9	-0.6	-0.1	0.0	-0.1	-2.2
EU27	-0.4	-0.8	-0.5	-0.2	-0.1	-0.1	*-2.1*
EU* s	-0.5	-0.9	-0.4	-0.3	-0.2	0.0	*-2.1*
EA s	-0.5	-0.9	-0.4	-0.2	-0.1	0.0	*-2.1*
EU27 s	-0.5	-0.9	-0.4	-0.3	-0.2	0.0	-2.2

Source: Commission services, EPC.

Benefit ratio effect

Future pension expenditure is impacted by the way in which pension benefits are adjusted for inflation and productivity gains. The same holds, for example, for the valorisation of acquired pension rights, accrual rates and conditions for enjoying full pension benefits. Together these design features determine the generosity of the pensions system, which is measured through the benefit ratio. The latter expresses the average pension income in terms of the average wage. A lower relative generosity of pensions as a result of parametric reforms is thus reflected in a lower

---

([59]) 2.0 pps. of GDP in the alternative breakdown.

benefit ratio. Section 1.6.2 takes a closer look at benefit ratios.

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, the generosity of the pension system would be a neutral factor for the Netherlands and the United Kingdom, whereas it would reduce pension spending by 3.3 pps. of GDP on average in the EU. The benefit ratio has the largest downward impact on pension expenditure by 2070 in Greece (-8.3 pps. of GDP), Poland (-8.1 pps.) and Portugal (-7.1 pps.). Aside from the Netherlands and the United Kingdom, the downward contribution from the benefit ratio effect would be the smallest for Ireland, Slovenia, the Czech Republic, Luxembourg and Belgium, at 0.7% of GDP or less.

reduce in 2016-2030 by 4.2 pps. of GDP in Greece, 2.6 pps. in Poland, 2.3 pps. in Latvia and Romania, and 2.2 pps. in Malta, compared to a downward impact of 0.8 pps. of GDP for the EU as a whole.

From 2030 to 2070 more generous pension systems would increase pension expenditure by maximum 0.5 pps. of GDP in a limited number of countries. The exception is Spain, where in 2060-2070 a higher benefit ratio would cause pension spending to increase by 1.1 pps. of GDP, though this follows an expenditure-decreasing impact of almost 6 pps. of GDP in the preceding decades [60]. Between 2030 and 2070 the benefit ratio effect is the most negative in 2040-2050, at -1 pp. of GDP for the EU as a whole, -2.7 pps. for Italy and Portugal, and -2 pps. for Cyprus.

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

Country	2016-20	2020-30	2030-40	2040-50	2050-60	2060-70	2016-70
BE	0.2	0.3	0.1	-0.4	-0.4	-0.4	-0.7
BG	-0.5	-0.8	0.2	0.1	0.0	0.0	-1.1
CZ	-0.4	-0.5	-0.2	0.3	0.2	0.0	-0.5
DK	-0.2	-0.5	-0.5	-0.3	0.1	-0.1	-1.6
DE	-0.1	-0.8	-0.7	-0.2	-0.3	-0.3	-2.4
EE	1.1	-1.0	-0.9	-1.0	-0.9	-0.4	-3.0
IE	-0.1	-0.1	-0.1	-0.3	-0.5	-0.3	-1.4
EL	-3.0	-1.2	-1.1	-1.6	-1.1	-0.3	-8.3
ES	0.1	-1.4	-1.5	-1.8	-1.2	1.1	-4.9
FR	-0.4	-0.7	-0.9	-1.1	-0.8	-0.9	-4.8
HR	-0.2	-1.0	-1.2	-1.1	-0.8	-0.6	-4.9
IT	0.7	1.0	-1.4	-2.7	-1.5	-0.2	-4.0
CY	-0.3	-0.2	-0.7	-2.0	-1.1	0.2	-4.1
LV	-0.7	-1.6	-0.6	-0.7	-0.8	-0.3	-4.7
LT	-0.1	-1.6	-1.0	-0.6	-0.6	-0.1	-4.0
LU	-0.2	-0.3	-0.1	-0.1	0.1	0.0	-0.6
HU	-0.7	-0.9	-0.2	0.1	-0.1	0.2	-1.6
MT	-0.7	-1.5	-0.4	0.3	0.2	-0.2	-2.3
NL	-0.3	-0.2	0.3	0.2	0.1	-0.1	0.0
AT	0.0	-0.9	-1.0	-1.1	-0.7	-0.9	-4.6
PL	-0.9	-1.8	-1.9	-1.7	-1.1	-0.8	-8.1
PT	0.1	-0.3	-1.7	-2.7	-1.8	-0.6	-7.1
RO	-0.9	-1.4	-0.3	0.0	0.0	0.1	-2.6
SI	-0.6	-0.4	0.2	0.1	0.0	0.5	-0.3
SK	-0.5	-1.4	-0.5	0.0	0.5	0.5	-1.5
FI	-0.3	-0.2	-0.8	-0.7	-0.1	0.1	-2.0
SE	-0.6	-1.1	-0.7	-0.6	-0.5	-0.4	-4.0
UK	0.0	0.0	0.1	0.0	0.1	-0.2	0.0
NO	0.0	-0.7	-1.0	-0.9	-0.8	-0.5	-3.9
EU*	-0.2	-0.6	-0.9	-0.9	-0.5	-0.2	-3.3
EA	-0.1	-0.6	-1.0	-1.0	-0.6	-0.2	-3.5
EU27	-0.2	-0.7	-0.9	-1.0	-0.6	-0.2	-3.7
EU* s	-0.3	-0.7	-0.6	-0.7	-0.5	-0.2	-3.0
EA s	-0.3	-0.7	-0.7	-0.9	-0.6	-0.1	-3.2
EU27 s	-0.4	-0.8	-0.7	-0.7	-0.5	-0.2	-3.1

(1) LU: the alternative benefit ratio effect (see comment Table II.1.11) results in contributions that hover around zero for the respective time periods, with a total of -0.1 pps. of GDP in 2016-2070.
Source: Commission services, EPC.

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

Country	2016-20	2020-30	2030-40	2040-50	2050-60	2060-70	2016-70
BE	-0.3	-0.5	-0.1	0.0	0.0	0.0	-0.9
BG	-0.3	0.1	0.0	-0.1	-0.1	0.3	-0.2
CZ	-0.2	0.2	0.0	-0.1	-0.1	0.3	0.0
DK	-0.2	-0.2	-0.1	0.1	-0.3	0.0	-0.8
DE	-0.1	-0.1	0.0	0.0	-0.1	0.0	-0.3
EE	0.0	0.1	0.0	0.0	-0.1	0.1	0.2
IE	-0.1	0.0	-0.1	-0.1	0.1	0.1	-0.1
EL	-1.6	-1.4	-1.0	-0.8	0.1	-0.2	-4.9
ES	-0.8	-1.0	-0.8	-0.4	0.3	-0.1	-2.8
FR	-0.3	-0.5	-0.4	-0.2	0.0	-0.1	-1.4
HR	-0.4	-0.4	-0.5	-0.3	0.0	0.0	-1.5
IT	-0.6	-1.2	-0.6	-0.1	-0.2	-0.2	-2.8
CY	-0.5	-0.8	-0.1	-0.2	-0.5	-0.1	-2.1
LV	-0.1	-0.2	-0.1	-0.2	-0.1	0.2	-0.5
LT	0.0	-0.1	-0.1	0.0	-0.2	0.1	-0.3
LU	-0.1	-0.1	0.1	0.1	0.0	-0.1	-0.1
HU	-0.4	-0.6	-0.1	0.0	0.0	0.1	-1.1
MT	-0.2	-0.6	-0.1	0.0	-0.1	0.0	-1.0
NL	-0.1	-0.2	-0.1	0.0	-0.2	-0.1	-0.8
AT	-0.2	-0.4	-0.4	0.1	-0.2	0.0	-1.1
PL	-0.5	-0.1	0.3	-0.2	-0.2	0.2	-0.4
PT	-0.4	-0.8	-0.5	-0.2	0.3	-0.2	-1.9
RO	-0.2	0.2	-0.1	-0.1	-0.1	0.1	-0.1
SI	-0.4	-0.3	0.1	-0.2	0.0	0.2	-0.7
SK	-0.3	-0.1	-0.1	-0.4	-0.3	-0.1	-1.2
FI	-0.3	-0.1	-0.1	-0.3	-0.4	-0.2	-1.3
SE	-0.1	0.0	0.0	0.0	-0.1	0.1	-0.1
UK	0.0	-0.1	-0.1	-0.1	-0.1	0.0	-0.3
NO	-0.2	0.0	-0.1	0.0	-0.1	0.0	-0.3
EU*	-0.3	-0.3	-0.2	-0.1	-0.1	0.0	-1.0
EA	-0.4	-0.5	-0.3	-0.1	0.0	-0.1	-1.4
EU27	-0.3	-0.4	-0.2	-0.1	0.0	0.0	-1.1
EU* s	-0.3	-0.3	-0.2	-0.1	-0.1	0.0	-1.0
EA s	-0.3	-0.4	-0.2	-0.2	-0.1	0.0	-1.3
EU27 s	-0.3	-0.3	-0.2	-0.1	-0.1	0.0	-1.0

Source: Commission services, EPC.

Labour market effect

Policy measures to permanently lift employment increase the economic growth potential and expand the contribution base. Moreover, when employment increases for older age groups, this

In the period 2016-2030 pension benefits rising faster than wages would cause the pension expenditure ratio to rise in two countries: Italy (+1.7 pps. of GDP) and Belgium (+0.5 pps.). Conversely, pension spending is projected to

---

[60] The higher benefit ratio results from a projected increase of the 'Index for Pension Revaluation' after 2057.

Table II.1.17: **Benefit ratio: 2016 and 2070 (in %)**

	Public pensions: earnings-related			Public pensions: total			All pensions		
	2016	2070	pps. change	2016	2070	pps. change	2016	2070	pps. change
BE	44.4	41.8	-2.6	41.8	40.4	-1.4			
BG	33.9	34.8	0.9	31.2	30.1	-1.1			
CZ	39.9	37.6	-2.3	39.9	37.3	-2.6			
DK	29.9	29.7	-0.2	41.7	34.5	-7.3	60.0	64.4	4.4
DE	39.7	34.9	-4.8	42.0	35.5	-6.4			
EE	37.5	20.4	-17.1	33.1	19.9	-13.1	33.2	26.5	-6.7
IE	28.8	27.7	-1.1	26.8	26.8	0.0			
EL	79.5	45.7	-33.8	77.0	41.6	-35.3			
ES	64.2	37.2	-27.0	57.7	37.6	-20.2			
FR	51.6	35.8	-15.8	50.5	35.9	-14.5			
HR	32.3	17.8	-14.5	31.6	17.8	-13.9	31.6	22.0	-9.7
IT	59.6	47.5	-12.1	58.9	46.3	-12.6			
CY	68.9	41.2	-27.7	62.9	40.8	-22.1			
LV	26.5	13.0	-13.6	24.0	12.1	-11.9	24.0	18.6	-5.4
LT	33.1	18.1	-15.0	31.4	19.3	-12.1	31.4	26.2	-5.2
LU	58.0	55.5	-2.6	51.8	52.4	0.6			
HU	40.5	33.3	-7.2	40.4	32.7	-7.7			
MT	43.3	40.5	-2.7	49.2	39.3	-9.9			
NL				35.7	34.0	-1.7	64.1	59.7	-4.4
AT	53.9	42.2	-11.7	50.5	38.9	-11.6			
PL	52.3	21.6	-30.7	48.5	22.9	-25.6			
PT	55.1	33.3	-21.8	57.5	34.0	-23.5	68.6	35.0	-33.6
RO	39.2	27.2	-12.0	35.5	26.0	-9.5	35.5	29.3	-6.2
SI	34.1	33.3	-0.8	31.8	31.0	-0.8			
SK	44.8	33.5	-11.4	46.6	38.4	-8.2			
FI	49.7	42.9	-6.8	53.5	46.1	-7.4			
SE	35.6	17.0	-18.6	38.6	22.1	-16.5	50.5	32.6	-17.9
UK				27.8	28.5	0.8			
NO	41.6	40.6	-1.0	50.6	35.8	-14.9			
EU*	45.2	33.2	-12.0	43.5	32.9	-10.6			
EA	48.5	35.8	-12.7	47.0	35.3	-11.7			
EU27	45.2	33.2	-12.0	44.1	33.1	-11.0			

(1) The benefit ratio expresses the average pension as a share of the economy-wide average wage (gross wages and salaries divided by employees), as calculated by the European Commission on the basis of data reported by the Member States.
(2) 'Public pension: earnings-related' refers to old-age earnings-related pensions. 'Public pensions: total' includes disability, survivor and non-earnings-related benefits. 'All pensions' also includes private occupational and private individual benefits; it is only reported insofar private pension data was provided.
(3) Unweighted average for EU*, EA and EU27.
(4) CY: see footnote 21 supra.
(5) LT: Under a special scenario that might materialise in case the replacement rate effectively declines considerably over the projection horizon, the total benefit ratio (public and private pillars) is unchanged. See comment Table II.I.8.
(6) NL: Old-age public pensions are flat-rate benefits, i.e. no earnings-related component. The benefit ratio of private occupational schemes is expected to decrease somewhat over the full projection horizon (from 50% in 2016 to 45% in 2070).
(7) PT & SE: The fact that the decline in the total benefit ratio exceeds the decline for public pensions is due to the growing importance of funded defined contribution components of occupational schemes. In the case of Sweden, the downward effect is partly offset by the rising prevalence of the mandatory private premium pension.
(8) UK: Old-age public pensions would no longer have an earnings-related component in 2070.
Source: Commission services, EPC.

leads to higher effective retirement ages and a shorter pension spell. 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. As shown in Table II.1.16, the total labour market effect generally reduces pension costs, in particular during the first few decades of the projections, albeit to a limited extent for most countries. The total effect is the largest for Greece (-4.9 pps. of

GDP), followed by Spain and Italy (both -2.8 pps.). Additional labour market reforms might help countries soften rising pension costs to the extent that they successfully increase employment rates (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. However, for those countries that are projected to see pension expenditure increase the

most between 2016 and 2070, the benefit ratio helps contain the upward trend only to a limited extent. In the cases of Luxembourg, Slovenia and Belgium, the countries with the highest rise in pension expenditure, changes in the benefit ratio limit the growth in pension spending by just 0.5 pps. of GDP, compared to 3.3 pps. on average in the EU. This highlights the importance of the benefit ratio and of policy measures to keep it in check.

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 impact pension adequacy, defined as the extent to which pension benefits suffice to ensure pensioners 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* ([61]).

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 data for occupational and individual private pension schemes.

For public pensions, almost all countries project a decline in the benefit ratio by 2070 as compared to 2016, which is often substantial. In Luxembourg and the United Kingdom public pensions would become somewhat more generous. They would keep pace with the average wage in Ireland. For the EU as a whole, a decrease of 11 pps. is expected. The benefit ratio would decrease the most in Greece (-35 pps.), Poland (-26 pps.), Portugal (-24 pps.), Cyprus (-22 pps.) and Spain (-20 pps.). Apart from Poland, these countries had the highest public pension benefit ratio in 2016 (64% on average). In 2070, this would still be the case for Greece, Cyprus and to some extent for Spain, while the Portuguese benefit ratio would remain above the EU average in 2070. The decline in the benefit ratio for these countries is mainly

caused by the applicable pension indexation mechanisms (Greece, Spain, Cyprus ([62]) and Portugal), lower replacement rates for new pensions (Greece, Spain and Poland) and, in the case of Greece, other reforms that are being implemented and would reduce pension expenditure significantly already in coming years given short transition periods.

A subset of nine countries reported benefit ratios for occupational and individual private pension schemes, which allows to calculate overall pension benefit ratios ([63]). The latter fall by 11 pps. on average for eight countries, with the largest change in Portugal (-34 pps.) and Sweden (-18 pps.). Only Denmark projects a small increase of 4 pps. Estonia, Croatia, Latvia, Lithuania and Romania all introduced mandatory individual schemes since 2001, which shows in their overall pension benefit ratios: they are projected to decrease by 7 pps. on average as compared to an average decrease of 12 pps. for the public pension scheme alone.

The Netherlands and Denmark, which have near-universal private occupational pension schemes, have an overall pension benefit ratio of 60-65%, both in 2016 and 2070. This is around 25-30 pps. higher than the benefit ratio of the public pension scheme, which would stand slightly above the EU average in 2070 for both countries. In the case of Sweden, which also has sizeable private schemes, the NDC public system results in a decline of the overall benefit ratio over the projection horizon. This reflects how a combination of an unchanged effective retirement age and rising longevity leads to lower annuities.

1.6.3. Replacement rates

Replacement rates are measured as the very first pension benefit relative to the last wage before retirement. As such, a downward trend of the replacement rate for new pensions might cause the benefit ratio to decrease. Changes in replacement rates between 2016 and 2070 are shown in Table II.1.18 for the public pension system (earnings-related and total benefits), as well as for the overall pension system for those countries that provided

---

([61]) This is a joint triennial report from the Social Protection Committee and the European Commission. The 2018 edition is scheduled for publication in May 2018.

([62]) Also the closure of the GEPS to new members plays a role, see footnote 21 supra.

([63]) DE, EE, HR, LV, LT, NL, PT, RO & SE.

Table II.1.18:   **Replacement rates in 2016 and 2070 (%)**

	Public pensions: earnings-related			Public pensions: total			All pensions		
	2016	2070	pps. change	2016	2070	pps. change	2016	2070	pps. change
BE	40.2	37.1	-3.1						
BG	35.8	39.2	3.4	29.1	34.0	4.9			
CZ	43.1	41.1	-2.0	32.7	30.6	-2.1			
DK	27.2	27.1	-0.2	38.0	31.4	-6.6	54.6	58.6	4.0
DE	37.8	33.2	-4.6	40.0	33.8	-6.1			
EE	41.2	25.8	-15.4				41.9	40.5	-1.4
IE	36.6	34.4	-2.1	32.8	32.1	-0.7			
EL	68.4	53.7	-14.7	53.8	44.1	-9.7			
ES	78.7	45.0	-33.7	75.0	43.7	-31.3			
FR	45.4	35.6	-9.9	50.7	38.2	-12.5			
HR	30.8	17.0	-13.8	28.9	16.4	-12.5	28.9	21.0	-7.9
IT	64.4	49.8	-14.6						
CY	40.6	50.6	10.0						
LV	51.7	21.7	-30.0				53.5	35.1	-18.4
LT	32.9	17.5	-15.4				33.1	31.8	-1.3
LU	72.9	63.0	-9.9	61.9	56.4	-5.5			
HU	45.5	49.2	3.7	38.4	39.1	0.7			
MT	50.0	47.3	-2.7	47.1	45.5	-1.6			
NL				29.6	28.2	-1.4	53.2	49.5	-3.7
AT	44.4	42.5	-1.9						
PL	61.4	23.0	-38.4	54.8	25.4	-29.4			
PT	68.3	55.9	-12.4	48.6	43.7	-4.9			
RO	30.2	29.5	-0.7	43.1	31.6	-11.5	44.2	39.0	-5.3
SI	34.7	35.7	1.0						
SK	49.0	50.2	1.3				49.0	57.4	8.4
FI	41.3	42.0	0.7	32.6	31.2	-1.4			
SE	32.6	22.3	-10.3	34.3	27.6	-6.7	40.3	33.0	-7.3
UK									
NO				44.7	34.7	-10.0			
EU*	46.3	38.1	-8.3	42.8	35.2	-7.7			
EA	49.9	41.2	-8.7	49.2	41.0	-8.2			
EU27	46.3	38.1	-8.3	42.8	35.2	-7.7			

(1) EL, LT, LU & MT refer to 2017.
(2) LT: The replacement rate would decline in 49 of the 54 years projected. This would require the Government to provide a proposal with necessary counteracting measures that might undue this development and result in higher overall pension expenditure. See comment Table II.I.8.
Source: Commission services, EPC.

data for occupational and individual private pension schemes.

The projected average decline in the public pension replacement rate for the EU (-8 pps.) is smaller than the expected decline in the pension benefit ratio (-11 pps.). Of the nineteen countries which report data, the replacement rate would rise limitedly in Bulgaria and Hungary. The decline in the rate is the largest for Spain (-31 pps.), Poland (-29 pps.), France and Croatia (-13 pps.), Romania (-12 pps.), and Greece and Norway (-10 pps.). In the case of Spain the sharp decline reflects the fact that benefits are determined in function of wages spanning a longer period and the introduction of a sustainability factor as of 2019. For Poland the decline is rooted in the NDC system and how it interacts with the expected rise in longevity. Also, older generations generally experienced a situation of full employment and complete careers and thus made higher contributions than younger generations.

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, Denmark and Slovakia. In the latter two countries the overall replacement rate would increase in 2070 as compared to 2016, to a little under 60%.

1.6.4. Minimum pensions and pension indexation

Benefit ratios can also fall because previously awarded pensions increase by less than wages. This is the case for indexation rules that adjust benefits to changes in inflation, whereas wages are also adjusted in real terms. Such situation may entail a risk of pension inadequacy over time, in

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

	Minimum pension expenditure (% GDP)		Minimum pension benefit ratio			Indexation rule	
	2016	2070	2016	2070	change (pps.)	Legislated	Projections
BE	0.1	0.1	11.9	8.2	-3.7	Prices and living standard	Prices and living standard
BG	0.0	0.0	12.5	6.7	-5.8	Prices and wages	Prices and wages
CZ							
DK	6.0	5.5	31.9	30.0	-1.9	Wages	Wages
DE							
EE	0.0	0.0	0.9	0.6	-0.3	Prices and social taxes	Prices and social taxes
IE	0.4	0.2	25.2	25.0	-0.2	No fixed rule	Wages
EL						Prices and GDP (max 100% prices)	Wages
ES	0.1	0.1	20.9	20.3	-0.6	No fixed rule	Wages
FR	0.2	0.2	12.2	8.9	-3.3	Prices	Prices (wages as of 2050)
HR						Prices and wages	Prices and wages
IT	0.3	0.4	18.7	17.5	-1.2	Prices	GDP/capita
CY	0.4	0.3				Wages	Wages
LV	0.0	0.0	5.7	3.7	-2.0	No fixed rule	Wages
LT	0.0	0.0	10.6	12.2	1.6	No fixed rule	Wages
LU							
HU	0.0	0.0	10.7	3.5	-7.2	No fixed rule	Wages
MT	0.2	0.3	24.5	23.8	-0.7	Prices	Wages
NL						Wages	Wages
AT						Prices	Wages
PL	0.1	2.4	23.7	19.8	-3.9	Prices and wages	Prices and wages
PT	0.4	0.4	15.1	10.1	-5.0	Prices and GDP	Wages
RO	0.0	0.0	3.3	2.1	-1.1	Prices and wages (until 2030)	Prices and wages (until 2030)
SI							
SK	0.0	0.4	2.7	3.1	0.4	Prices	Wages
FI	0.7	0.7	9.4	6.6	-2.8	Prices and wages	Wages
SE	0.5	1.4	10.6	8.3	-2.3	Prices	Wages
UK	0.0	0.0	6.7	13.7	7.0	Prices, wages and GDP	Wages
NO	2.6	0.9				Wages	Wages

(1) Data refer to minimum pensions (non-contributory), i.e. minimum income guarantees for people above 65.
(2) The minimum pension benefit ratio is the average minimum pension divided by the economy-wide average wage.
(3) CZ: no minimum pension exists.
(4) DE, LU, SI: minimum pensions not covered in projections.
(5) EL, HR, NL, AT: no separate data provided.
Source: Commission services, EPC.

particular in countries with low replacement rates or in those where many people depend on non-contributory minimum or basic pensions.

Spending on minimum pensions is generally limited in terms of GDP (see Table II.1.19), with the exceptions of Denmark (6% of GDP in 2016) and Norway (2.6% of GDP). This can be explained by the fact that in many countries support flows through social assistance, whether or not in combination with minimum pension benefits ([64]). Spending on minimum pensions would increase to 2.4% of GDP and 1.4% of GDP in 2070 for Poland and Sweden respectively ([65]). In the case of Sweden this reflects decreasing replacement rates from earnings-related pensions. For Poland it stems from the increase of the retirement period

relative to the contributory period, leading to lower average pension benefits in the NDC system. Both countries also index minimum pension with average earnings for most of the projection period, in line with the agreed methodology (see below).

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 pension benefits. To effectively protect recipients against poverty, both absolute amounts and the degree to which these keep track with living standards matter. As seen in Table II.1.19, most countries have legislated minimum pension and social assistance indexation rules that surpass inflation. France, Italy, Malta, Austria, Slovakia and Sweden adjust minimum pension benefits on the basis of price developments. Ireland, Spain, Latvia, Lithuania and Hungary have no formal indexation rules, though also for these countries benefits have generally grown in line with average earnings in the past.

([64]) Social assistance benefits are included in the projections if they are equivalent to minimum pensions and targeted to people over 55.

([65]) 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. The reformed system will still have a minimum guaranteed pension, though, representing 0.9% of GDP in 2070.

In case legal indexation rules describe an indexation close to price growth, this would virtually lead to the disappearance of minimum pensions in the long run if strictly applied. This would cast doubt on whether these instruments will stay effective in covering against the risk of poverty. However, also in countries with less generous indexation rules, minimum pension benefits were in practice revised more in line with wages through discretionary adjustments beyond the legal indexation, exactly to correct for the standard of living and maintain the adequacy of benefits over time.

For this reason, Member States agreed that, for the purposes of long-term pension projections in the context of the 2018 Ageing Report, minimum pensions are assumed to be 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. France, for example, assumes indexation to wages only as of 2050. Italy worked on the assumption of indexation to nominal GDP per capita as of 2021. In Greece, pensions are recalibrated and indexation is frozen until 2022.

1.7. DISAGGREGATION OF NEW PENSIONS

Public pension expenditure projections can be considered as the sum of existing pensions and new pensions that are to arise over the projection horizon. The applicable indexation rule and mortality rates determine how the stock of existing pensions changes over time. As to new pensions, the following disaggregation can be applied:

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

where P_{new} is the overall spending on new pensions, $\overline{C}_{new}$ is the average contributory period or the average years of service of the new pensions, $\overline{A}_{new}$ is the average accrual rate of the new pensions, $\overline{PE}_{new}$ is the average pensionable earnings over the contributory period related to the new pensions and N_{new} is the number of new pensions (pensioners).

Data on contributory years and average accrual rates thus help 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.

Contributory period

Contributory periods can increase for several reasons, such as for example rising statutory retirement ages that force employees to extent their working lives to receive full pensions. Higher employment rates due to the abolishment of early retirement schemes or the tightening of eligibility criteria for certain pension benefits (e.g. disability pensions or additional contributory years for military service periods, years of study or number of children) are other factors that might lead to longer contributory periods.

Average contributory periods for new pensions are shown in Table II.1.20. For most countries the indicator moves upward, with an average increase of 2.2 years in the EU. Countries for which the contributory period would decline are Norway (-2.2 years) and France (-0.9 years). Over a shorter period (2017-2040) Sweden would show a decline of -2.9 years.

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

	2017	2020	2030	2040	2050	2060	2070	2017-70
BE	37.2	37.5	40.7	40.0	40.0	39.9	39.9	2.7
BG	35.4	36.1	38.2	38.3	38.0	37.7	37.3	1.9
CZ	44.3	44.3	44.8	45.2	45.2	45.2	45.2	0.9
DK	:	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:	:
EE	:	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:	:
EL	30.6	30.5	31.2	33.1	35.1	36.4	37.4	6.8
ES	36.9	37.5	38.9	39.1	39.5	39.8	40.3	3.3
FR	34.5	36.1	31.8	32.6	32.2	33.5	33.6	-0.9
HR	31.3	31.5	32.6	34.4	34.5	34.4	34.4	3.1
IT	35.4	35.6	35.2	35.0	35.4	37.6	38.4	3.0
CY	:	:	:	:	:	:	:	:
LV	36.6	37.1	37.8	37.8	37.8	37.8	37.8	1.2
LT	:	:	:	:	:	:	:	:
LU	31.2	30.5	31.9	34.9	36.4	37.3	37.1	6.0
HU	32.8	34.5	37.2	37.8	37.4	37.6	37.5	4.7
MT	35.2	35.5	36.5	36.9	37.3	37.9	38.6	3.3
NL	:	:	:	:	:	:	:	:
AT	35.5	35.6	35.8	36.1	36.2	36.3	36.2	0.7
PL	34.8	34.8	35.4	35.6	35.3	35.9	35.6	0.8
PT	33.5	35.1	37.3	37.7	37.5	37.7	37.8	4.3
RO	30.9	31.2	32.1	31.5	32.3	32.8	32.5	1.6
SI	38.2	39.0	38.9	38.9	38.6	38.7	38.7	0.5
SK	41.5	41.6	42.2	43.4	44.7	45.9	46.7	5.2
FI	33.6	34.3	35.3	35.3	36.2	36.2	36.1	2.5
SE	40.1	40.5	39.9	37.1	39.6	39.2	40.7	0.6
UK	:	:	:	:	:	:	:	:
NO	35.9	37.5	36.3	34.8	32.6	33.5	33.8	-2.2
EU*	35.6	35.9	36.7	37.0	37.5	37.9	38.1	2.5
EA	32.9	33.3	33.8	34.3	34.8	35.3	35.6	2.7
EU27	35.6	35.9	36.7	37.0	37.5	37.9	38.1	2.5
EU* s	35.6	35.9	36.7	37.0	37.5	37.9	38.1	2.5
EA s	35.5	35.8	36.4	37.0	37.5	38.1	38.4	2.9
EU27 s	35.6	35.9	36.7	37.0	37.5	37.9	38.1	2.5

(1) FR, IT, HU, NO: 2016 data.
(2) DK, NL: flat system based on years of residence.
(3) DE, CY, LT: point system with new pensions not solely depending on the contributory period.
(4) EE, IE, UK: no data provided.
(5) For countries using microsimulation models (e.g. FR, HU, SE, NO) part of the volatility in the average contributory period from one year to another is due to sample size.
Source: Commission services, EPC.

The largest increase over the entire projection period is to be expected in Greece, Luxembourg and Slovakia, with an increase in the average contributory period of between 5 and 7 years by 2070. Whereas Slovakia had already one of the highest average contributory periods in 2017, Greece and Luxembourg were among the countries with the lowest value in 2017. In the case of Luxembourg, an initial decline by 0.6 years in 2017-2020 is followed by several decades of notable increases. These are due to the fact that migrant and cross-border workers are expected to achieve more complete careers in Luxembourg.

Longer average careers translate into a shorter period spent into retirement and into higher economic growth given higher employment rates. As such, a rising trend for 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.

Accrual rate

A small increase in the accrual rate of new public pensions is projected for the Czech Republic and Portugal over the projection period (see Table II.1.21). Bulgaria is set to see a large increase as a gradual increase to 1.5% has been legislated.

Table II.1.21: **Average effective accrual rates of new public pensions**

	2017	2020	2030	2040	2050	2060	2070	2017-70 (% change)
BE	1.4	1.4	1.4	1.4	1.4	1.4	1.4	-1.4
BG	1.1	1.2	1.5	1.5	1.5	1.5	1.5	33.2
CZ	1.3	1.3	1.3	1.3	1.4	1.5	1.3	0.4
DK	:	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:	:
EE	0.5	0.5	0.5	0.4	0.4	0.3	0.3	-43.8
IE	:	:	:	:	:	:	:	:
EL	1.9	1.8	1.8	1.7	1.6	1.5	1.5	-22.3
ES	2.3	2.1	1.7	1.6	1.5	1.5	1.5	-34.3
FR	1.6	1.5	1.7	1.7	1.7	1.6	1.5	-4.3
HR	1.0	1.0	0.6	0.6	0.5	0.5	0.5	-49.9
IT	1.9	1.9	1.7	1.7	1.7	1.7	1.6	-14.6
CY	1.3	1.3	1.3	1.3	1.3	1.3	1.3	-5.3
LV	1.1	1.0	1.0	0.8	0.7	0.6	0.6	-43.9
LT	0.5	0.5	0.4	0.4	0.4	0.4	0.3	-29.3
LU	1.8	1.8	1.7	1.7	1.6	1.6	1.6	-12.0
HU	2.3	2.3	2.2	2.1	2.1	2.1	2.1	-9.5
MT	1.9	2.0	1.7	1.7	1.7	1.7	1.7	-14.2
NL	:	:	:	:	:	:	:	:
AT	1.2	1.2	1.5	1.3	1.3	1.2	1.2	-4.0
PL	0.9	0.9	0.9	0.8	0.8	0.8	0.7	-22.8
PT	2.1	2.2	2.2	2.2	2.3	2.2	2.2	4.3
RO	:	:	:	:	:	:	:	:
SI	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-2.2
SK	1.2	1.2	1.1	1.0	1.0	1.1	1.1	-13.0
FI	1.6	1.6	1.5	1.4	1.5	1.6	1.6	-1.0
SE	0.9	0.9	0.9	0.9	0.8	0.8	0.8	-14.7
UK	:	:	:	:	:	:	:	:
NO	0.9	0.9	1.0	1.0	0.9	0.9	0.9	-0.1
EU*	1.4	1.4	1.4	1.3	1.3	1.3	1.3	-12.1
EA	1.4	1.4	1.3	1.3	1.3	1.2	1.2	-13.1
EU27	1.4	1.4	1.4	1.3	1.3	1.3	1.3	-12.1
EU* s	1.4	1.4	1.4	1.3	1.3	1.3	1.3	-12.1
EA s	1.5	1.5	1.4	1.4	1.3	1.3	1.3	-13.1
EU27 s	1.4	1.4	1.4	1.3	1.3	1.3	1.3	-12.1

(1) DK, NL, IE: flat system with new pensions not depending on accrual rates.
(2) DE, RO: point system with new pensions not depending on accrual rates.
(3) FR: accrual rates are computed ex-post, for both DB and PS systems as they coexist in France (see country fiche for more details).
(4) SE: figures for the NDC system.
(5) UK: no data provided.
(6) EL: figures refer only to the main pension provision.
Source: Commission services, EPC.

1.8. SENSITIVITY TESTS

The 2018 pension projection exercise is carried out on the basis of commonly-agreed demographic and macroeconomic assumptions, as well as a 'no-policy change' scenario (see Part I for a detailed description). Obviously, the assumptions used for this type of long-run projections are surrounded by considerable uncertainty. 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, fertility) and macroeconomic variables (employment rate, productivity). Compared to the 2015 Ageing Report, a number of additional scenarios were added that cover higher net migration, lower fertility, lower employment and higher productivity as compared to the baseline scenario. In addition, a policy-change scenario was run as was done in the 2015 Ageing Report. This scenario looks at the likely impact of automatic rules that would adapt the legal retirement age to changes in life expectancy over time.

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. For the United Kingdom, sensitivity tests were performed only for State pensions and not for public service pensions. For Ireland, tests were applied only to Public Social Security schemes.

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 0.3 pps. of GDP in 2070 (see Graph II.1.16). 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

reinforced their pension system with automatic adjustment mechanisms (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 0.2 pps. of GDP have such mechanisms. In Cyprus, the Netherlands and Greece estimates even point to a reduction of the pension expenditure ratio. The stronger-than-assumed rise in life expectancy would have the biggest impact on pension spending in Slovenia (+0.9 pps. of GDP), Belgium (+0.8 pps.), and Bulgaria, the Czech Republic and Austria (+0.7 pps.).

Graph II.1.16: **Impact of an increase of life expectancy on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**

Source: Commission services, EPC.

Pension expenditure would increase for all countries under the assumption of **net migration being 33% lower** during the entire projection horizon (see Graph II.1.17). 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.

Graph II.1.17: **Impact of lower migration on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**

Source: Commission services, EPC.

Graph II.1.18: **Impact of higher migration on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**

Source: Commission services, EPC.

The highest impact would be in smaller countries where net migration flows represent a high proportion of total population in the baseline scenario: Luxembourg (+2 pps. of GDP), Cyprus (+1.3 pps.), Austria (+1.1 pps.), Slovenia, Norway and Malta (+0.7 pps.) and Belgium (+0.6 pps.). Lithuania would see pension expenditure increase by an estimated 0.6 pps. of GDP if this scenario were to occur: under the baseline scenario the Lithuanian population would shrink by 40% in 2070 as compared to 2016. Lower net migration – higher net outflows in the case of Lithuania – would cause a further decline in the population and narrow the contributory base. The impact would be situated in the second half of the projections.

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. 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 Bulgaria, Estonia and Romania when assuming higher net migration is explained by their baseline migration profile.

Setting **fertility rates 20% lower** during the entire projection period implies a lower population growth. 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 thus results in a more pronounced ageing process. Such development would show 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.

Lower fertility would push up pension expenditure by as much as 1.3 pps. of GDP on average. The impact is estimated at less than 1 pp. of GDP in just four countries: Latvia, Estonia, Spain 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, i.e. Spain, Sweden and Germany.

Slovenia (+2.5 pps. of GDP on top of baseline), Luxembourg (+2.4 pps.), Bulgaria (+2.3 pps.) and Belgium (+2 pps.) are expected to show the largest additional pension expenditure increase in case fertility would turn out to be lower than assumed. Twelve other countries would also have pension spending increase by 1.5-1.9 pps. of GDP, though.

Graph II.1.19: **Impact of lower fertility on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**
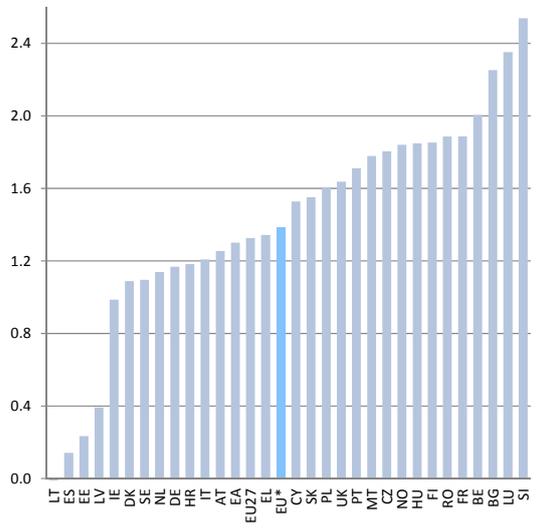
Source: Commission services, EPC.

Graph II.1.20: **Impact of lower overall employment rate of age group 20-64 on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**
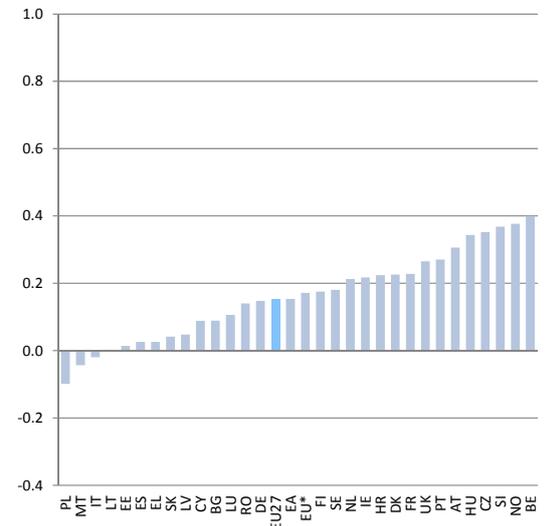
Source: Commission services, EPC.

1.8.2. Sensitivity tests on macroeconomic variables

Employment

If the **employment rate were to be 2 pps. lower** for the age group 20-64 relative to the baseline scenario ([66]), this would entail a relatively small increase in pension expenditure of 0.2 pps. of GDP on average in the EU (see Graph II.1.20). The spread around this average would be limited. Hungary, the Czech Republic, Slovenia, Norway and Belgium estimate an additional expenditure increase of around 0.4 pps. of GDP under this scenario.

Conversely, a **2 pps. higher overall employment rate** would reduce public pension expenditure by 0.2 pps. of GDP in the EU as a whole (see Graph II.1.21). Moreover, variance across countries is relatively limited, from an impact of -0.4 pps. of GDP in Austria and Belgium, to a slightly upward impact in Italy and Poland.

Graph II.1.21: **Impact of higher overall employment rate of age group 20-64 on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**
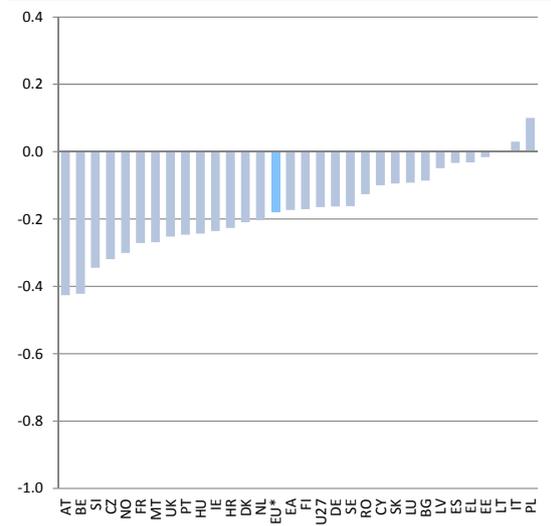
Source: Commission services, EPC.

If the **employment rate of workers aged 55 to 74 years were to rise by 10 pps.** on top of the baseline assumption ([67]), this would cut pension expenditure by 0.4 pps. of GDP on average in the EU. The effect of such development is estimated to

---

([66]) This relative reduction is phased in by 2030 and kept constant thereafter in the simulations. The same applies for the scenario of higher overall employment.

([67]) By drawing on people that are assumed to be inactive under the baseline scenario.

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 ([68]). 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.1.22: **Impact of higher employment rate among older workers on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**
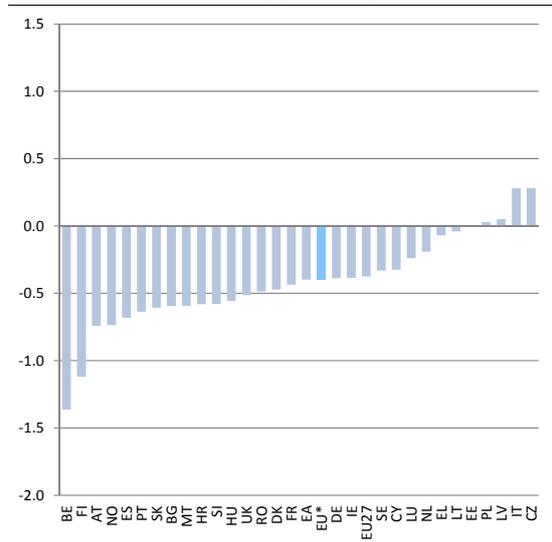
Source: Commission services, EPC.

The expenditure-reducing factors dominate in about all countries and this downward impact is generally larger than that from an increase in the employment rate of people aged 20-64. Belgium (-1.4 pps. of GDP), Finland (-1.1 pps.), and Austria, Norway and Spain (-0.7 pps.) have the most to gain from lifting employment rates 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 2016-2040, the decrease relative to the baseline amounts to 1.0-1.7 pps. of GDP for Belgium, Spain, Austria, Slovenia and Finland. For the EU as a whole,

pension expenditure would be 0.7 pps. of GDP lower compared to the baselined scenario in 2040.

In the cases of Lithuania, Greece, Estonia, Poland and Latvia 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 0.3 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 2016-2040, also Italy (-0.9 pps. of GDP relative to the baseline) and the Czech Republic (-0.9 pps.) would benefit from higher employment rates for people above the age of 55.

Productivity

The effect on pension spending from either a **higher or lower than assumed growth rate of total factor productivity (TFP)** is shown in Graph II.1.23. In this case TFP growth is assumed to converge by 2045 to a rate that is 0.4 pps. higher or lower than the baseline scenario assumption. These scenarios reflect for example the possibility of a better-than-anticipated economic absorption of technology or a higher average level of education. Conversely, technological progress might stall or fail to lift productivity. The opposing scenarios yield fairly symmetric results.

The aggregate effect on pension spending from a permanent increase in TFP growth for the EU is estimated at -0.7 pps. of GDP. It surpasses 1 pp. of GDP for seven countries: Belgium (-1.8 pps. of GDP), Portugal (-1.7 pps.), France (-1.5 pps.), Luxembourg (-1.2 pps.), Greece and Italy (-1.1 pps.) and Finland (-1 pp.). They contrast with another group of countries that expects no or only a limited impact on pension spending in case productivity gains were to emerge. The distinctive feature between both groups is generally whether or not pension indexation fully adjusts to wage growth. The latter is assumed to fully reflect higher productivity growth.

In case of a permanent negative shock to TFP growth, pension spending in the EU would be 0.7 pps. of GDP higher than in the baseline. Pension expenditure would rise by more than

---

([68]) Other favourable effects such as on social contributions are not accounted for in the simulations.

2 pps. of GDP in Belgium and Portugal. Upward deviations from the baseline of between 1.1 pps. and 1.9 pps. of GDP are expected in France, Luxembourg, Greece, Italy, Finland and Hungary.

Graph II.1.23: **Impact of higher/lower TFP growth on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**
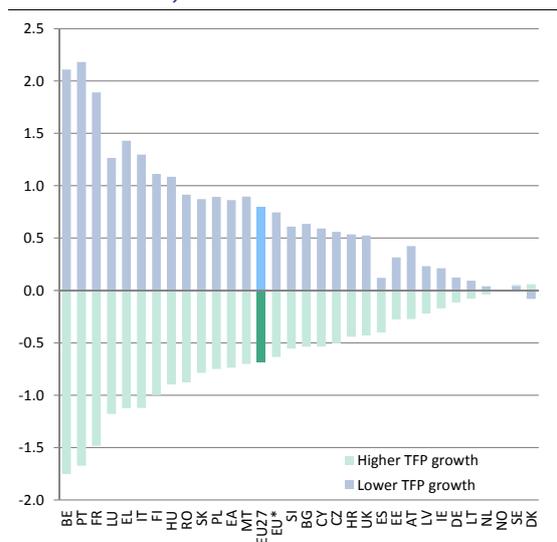
Source: Commission services, EPC.

An alternative TFP scenario looks into the impact on pension expenditure if **TFP growth is assumed to converge to only 0.8% by 2070** for all countries as compared to the 1% in the baseline scenario. Under this scenario (the 'TFP risk scenario'), gross public pension expenditure would rise by 0.4 pps. of GDP in the EU relative to the baseline (see Graph II.1.24). Belgium (+1.1 pps. of GDP), Portugal and Greece (+1 pp.) and France (+0.9 pps.) would be the most affected by such development. At the other end of the spectrum are Denmark, Norway, Ireland, the Netherlands, Sweden, Lithuania, Spain and Germany, which would be barely impacted.

Graph II.1.24: **TFP risk scenario: impact on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**
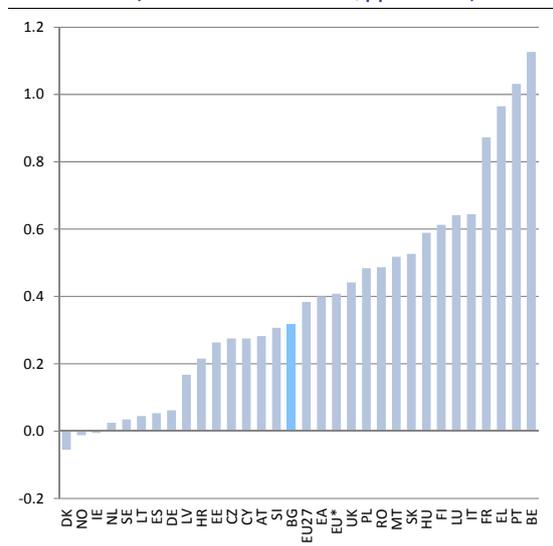
Source: Commission services, EPC.

1.8.3. Policy-change scenario: linking retirement ages 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.1.25) [69]. As careers 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 can be accumulated. 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 an automatic link between retirement ages and life expectancy, the scenario was not run as it would concur with their baseline. This is the case for

---

[69] 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 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.

Table II.1.22: Summary table: impact of all sensitivity tests on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)

	baseline 2016-2070 (%GDP)	impact of unfavourable scenarios (pps. of GDP)						impact of favourable scenarios (pps. of GDP)				
		Higher life expectancy	Lower migration	Lower fertility	Lower empl. 20-64	Lower TFP growth	TFP risk scenario	Higher migration	Higher empl. 20-64	Higher empl. 55-74	Higher TFP growth	Link to life expectancy
LU	8.9	0.5	2.0	2.4	0.1	1.3	0.6	-1.4	-0.1	-0.2	-1.2	-1.8
SI	3.9	0.9	0.7	2.5	0.4	0.6	0.3	-0.6	-0.3	-0.6	-0.6	-1.3
BE	2.9	0.8	0.6	2.0	0.4	2.1	1.1	-0.6	-0.4	-1.4	-1.8	-1.1
MT	2.9	0.5	0.7	1.8	0.0	0.9	0.5	-0.8	-0.3	-0.6	-0.7	-1.2
CZ	2.8	0.7	0.3	1.8	0.4	0.6	0.3	-0.3	-0.3	0.3	-0.5	-1.6
DE	2.4	0.3	0.5	1.2	0.1	0.1	0.1	-0.4	-0.2	-0.4	-0.1	-0.7
CY	2.3	-0.2	1.3	1.5	0.1	0.6	0.3	-0.9	-0.1	-0.3	-0.5	0.0
NO	2.1	0.2	0.7	1.8	0.4	0.0	0.0	-0.6	-0.3	-0.7	0.0	-1.1
UK	1.7	0.5	0.5	1.6	0.3	0.5	0.4	-0.5	-0.3	-0.5	-0.4	-0.6
IE	1.6	0.3	0.2	1.0	0.2	0.2	0.0	-0.1	-0.2	-0.4	-0.2	-0.5
HU	1.5	0.6	0.3	1.8	0.3	1.1	0.6	-0.2	-0.1	-0.6	-0.9	-1.6
BG	1.4	0.7	0.0	2.3	0.1	0.6	0.3	0.0	-0.1	-0.6	-0.5	-1.3
SK	1.2	0.2	0.2	1.6	0.0	0.9	0.5	-0.2	-0.1	-0.6	-0.8	0.0
RO	0.7	0.2	-0.1	1.9	0.1	0.9	0.5	0.1	-0.1	-0.5	-0.9	-1.3
FI	0.6	0.2	0.5	1.9	0.2	1.1	0.6	-0.4	-0.2	-1.1	-1.0	0.0
NL	0.6	0.0	0.4	1.1	0.2	0.0	0.0	-0.4	-0.2	-0.2	0.0	0.0
AT*	0.5	0.7	1.1	1.3	0.3	0.4	0.3	-1.3	-0.4	-0.7	-0.3	-2.4
EU*	-0.2	0.3	0.4	1.3	0.2	0.8	0.4	-0.4	-0.2	-0.4	-0.7	-0.8
EA	-0.4	0.3	0.4	1.3	0.2	0.9	0.4	-0.4	-0.2	-0.4	-0.7	-0.8
EU27	-0.5	0.3	0.4	1.3	0.2	0.8	0.4	-0.4	-0.2	-0.4	-0.7	-0.8
PL	-1.0	0.3	0.1	1.6	-0.1	0.9	0.5	-0.1	0.1	0.0	-0.7	-0.4
SE	-1.2	0.3	0.3	1.1	0.2	0.0	0.0	-0.3	-0.2	-0.3	0.0	-0.7
ES	-1.5	0.0	0.1	0.1	0.0	0.1	0.1	-0.2	0.0	-0.7	-0.4	-0.6
LT	-1.7	0.3	0.6	0.0	0.0	0.1	0.1	-0.6	0.0	0.0	-0.1	-0.1
IT	-1.7	0.1	0.5	1.2	0.0	1.3	0.6	-0.4	0.0	0.3	-1.1	0.0
EE	-1.8	0.4	-0.1	0.2	0.0	0.3	0.3	0.1	0.0	0.0	-0.3	0.0
DK	-1.9	0.1	0.2	1.1	0.2	-0.1	-0.1	-0.2	-0.2	-0.5	0.1	0.0
PT	-2.2	0.4	0.4	1.7	0.3	2.2	1.0	-0.4	-0.2	-0.6	-1.7	-0.4
LV	-2.6	0.1	0.0	0.4	0.0	0.2	0.2	0.0	0.0	0.1	-0.2	-0.2
FR	-3.3	0.5	0.5	1.9	0.2	1.9	0.9	-0.4	-0.3	-0.4	-1.5	-1.6
HR	-3.8	0.5	0.2	1.2	0.2	0.5	0.2	-0.2	-0.2	-0.6	-0.4	-0.9
EL	-6.6	0.0	0.3	1.3	0.0	1.4	1.0	-0.3	0.0	-0.1	-1.1	0.0

Source: Commission services, EPC.

Denmark, Greece, Italy, Cyprus, the Netherlands, Slovakia and Finland.

Graph II.1.25: **Impact of linking retirement age to life expectancy on the change in gross public pension expenditure in 2016-2070 (deviation from baseline, pps. of GDP)**
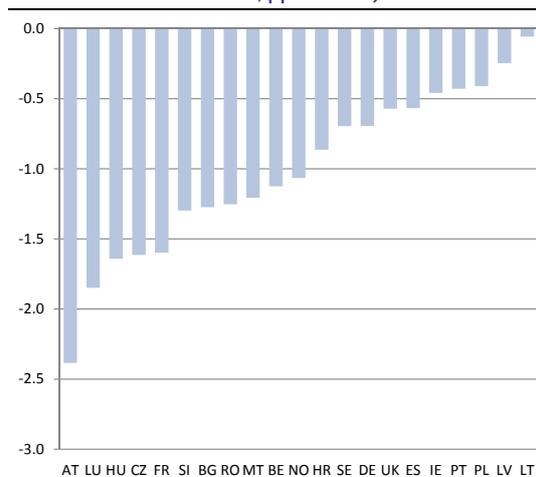
Source: Commission services, EPC.

The strongest impact would be for Austria, at -2.4 pps. of GDP in 2070 as compared to the baseline. It is followed by Luxemburg, Hungary, the Czech Republic and France, all of which would see spending decrease by 1.6-1.8 pps. of GDP. The impact is estimated at 1 pp. of GDP or more for Slovenia, Bulgaria, Romania, Malta, Belgium and Norway. 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, Germany, Spain, Portugal (where a partial link applies), Poland, Latvia and Lithuania.

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 2016-2070. It shows how downward risks are mainly associated with lower-than-assumed fertility rates and productivity growth. The countries with the highest pension expenditure increase in the baseline projections are generally the most exposed to the unfavourable scenarios. Among the favourable scenarios, the most positive impact would be expected from

Graph II.1.26: **Change in gross public pension expenditure in 2016-2070: baseline scenario, baseline + most favourable scenario & baseline + least favourable scenario (% of GDP)**
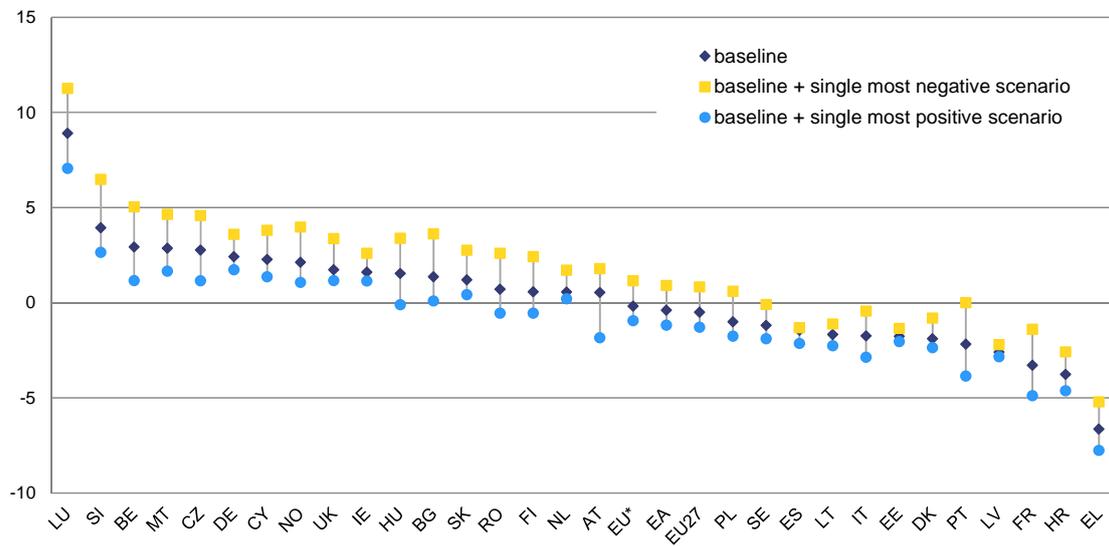
Source: Commission services, EPC.

higher TFP growth and from the policy decision to link retirement ages to life expectancy. Graph II.1.26 shows the impact on pension expenditure of the single most negative and the single most positive scenarios for all countries.

Graph II.1.27: **Change in gross public pension expenditure in 2016-2060: latest projections vs. 2015 Ageing Report (pps. of GDP)**
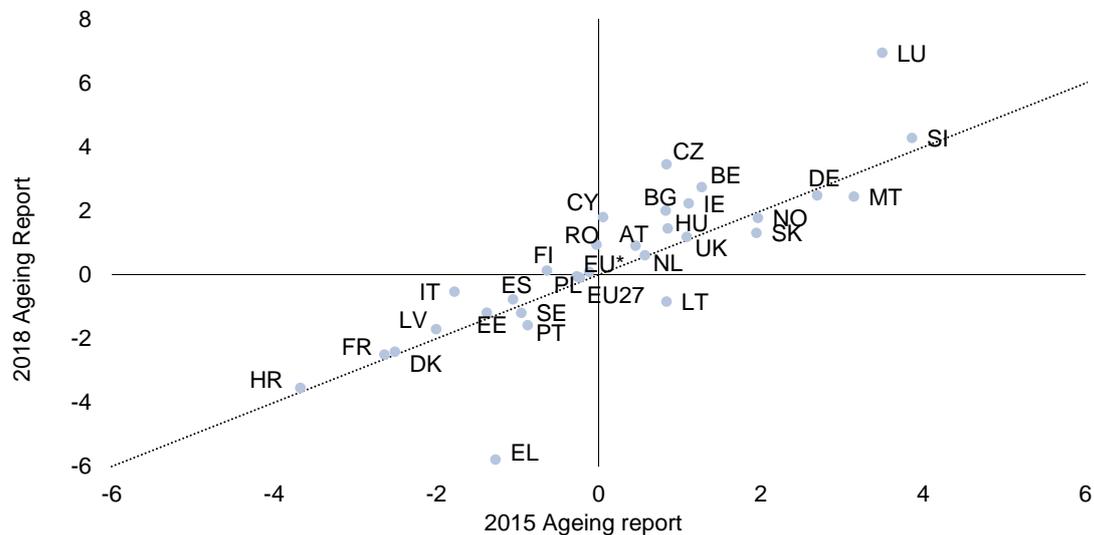
(1) For Belgium, Bulgaria and Malta, the 2015 Ageing Report projections refer to updated figures following pension reforms adopted since 2015. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
Source: Commission services, EPC.

1.9. COMPARISON WITH THE 2015 AGEING REPORT ([70])

For the EU as a whole, the projected change in public pension expenditure in 2016-2060 is basically unaltered compared to the 2015 Ageing Report: +0.1 pps. of GDP vs. -0.1 pps. of GDP in the 2015 exercise. The same holds for twelve countries with a revision of at most 0.3 pps. of GDP since the previous projections. For several other countries, projections were significantly revised, though. 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 2016-2060 was revised upwards for a majority of 21 countries. This contrasts with the comparison between the 2012 and the 2015 Ageing Reports, when the trend was clearly downward with limited upward revisions for just two countries. Now, eight countries would see spending increase by at least 1 pp. of GDP more than previously expected. These are Luxembourg (+3.5 pps. of GDP), the Czech Republic (+2.6 pps.), Cyprus (+1.7 pps.),

Belgium (+1.5 pps.), Italy and Bulgaria (+1.2 pps.), Ireland (+1.1 pps.) and Romania (+1 pp.). For some of them this increase comes atop of the one already anticipated in 2015 (e.g. Luxembourg, Belgium and Ireland). For other countries the 2015 starting point was clearly more favourable (e.g. Italy, Romania and Cyprus).

Of the eight countries for which the change in the pension expenditure ratio in 2016-2060 is lower than in the 2015 Ageing Report, Greece records the largest change (-4.5 pps. of GDP), followed by Lithuania (-1.7 pps.). For Malta, Portugal, Slovakia, Sweden, Germany and Norway, the change compared to the previous projections is 0.7 pps. of GDP or less.

Table II.1.23 contains the data for the different projection exercises. It shows how for a number of countries actual pension expenditure in 2016 differed notably from what was projected in the 2015 Ageing Report. Actual spending in 2016 was for instance higher in Greece (+1.7 pps. of GDP), Cyprus (+0.9 pps.) and Latvia (+0.7 pps.) but turned out 0.7-0.9 pps. of GDP lower for the Czech Republic, Luxembourg and Hungary. The base year effect amounts to -1.6 pps. of GDP for Malta and -2.3 pps. of GDP for Ireland. This generally reflects a denominator effect, i.e. GDP being higher or lower than expected at that time.

([70]) Considering that projections in the 2015 Ageing Report ran until 2060, comparisons in this section cover the period 2016-2060. The base year in the 2015 projection exercise was 2013.

Table II.1.23: **Comparison of gross public pension expenditure levels in 2016 and 2060: 2015 vs. 2018 Ageing Reports (% and pps. of GDP)**

| Country | 2016 | | 2060 | | Change 2016-2060 | | Difference AR 2018 - AR 2015 | | |
	AR 2015	AR 2018	AR 2015	AR 2018	AR 2015	AR 2018	Difference 2016	Difference 2060	Difference 2016-2060
BE	11.7	12.1	13.0	14.9	1.3	2.7	0.4	1.9	1.5
BG	9.3	9.6	10.2	11.6	0.8	2.0	0.2	1.4	1.2
CZ	8.9	8.2	9.7	11.6	0.8	3.5	-0.7	1.9	2.6
DK	9.7	10.0	7.2	7.5	-2.5	-2.4	0.3	0.4	0.1
DE	10.0	10.1	12.7	12.5	2.7	2.5	0.0	-0.2	-0.2
EE	7.7	8.1	6.3	6.9	-1.4	-1.2	0.5	0.6	0.2
IE	7.3	5.0	8.4	7.2	1.1	2.2	-2.3	-1.2	1.1
EL	15.5	17.3	14.3	11.5	-1.3	-5.8	1.7	-2.8	-4.5
ES	12.0	12.2	11.0	11.4	-1.1	-0.8	0.1	0.4	0.3
FR	14.8	15.0	12.1	12.5	-2.6	-2.5	0.3	0.4	0.1
HR	10.6	10.6	6.9	7.0	-3.7	-3.5	0.0	0.1	0.1
IT	15.6	15.6	13.8	15.1	-1.8	-0.5	0.0	1.3	1.2
CY	9.3	10.2	9.3	12.0	0.1	1.8	0.9	2.6	1.7
LV	6.6	7.4	4.6	5.6	-2.0	-1.7	0.7	1.0	0.3
LT	6.7	6.9	7.5	6.0	0.8	-0.8	0.2	-1.5	-1.7
LU	9.9	9.0	13.4	16.0	3.5	6.9	-0.9	2.5	3.5
HU	10.6	9.7	11.4	11.1	0.9	1.4	-0.9	-0.3	0.6
MT	9.6	8.0	12.8	10.5	3.1	2.4	-1.6	-2.3	-0.7
NL	7.3	7.3	7.8	7.9	0.6	0.6	0.0	0.1	0.0
AT	13.9	13.8	14.4	14.7	0.5	0.9	-0.1	0.4	0.5
PL	10.9	11.2	10.7	11.1	-0.2	-0.1	0.3	0.4	0.1
PT	14.0	13.5	13.1	12.0	-0.9	-1.6	-0.5	-1.2	-0.7
RO	8.1	8.0	8.1	8.9	0.0	0.9	-0.1	0.9	1.0
SI	11.4	10.9	15.3	15.2	3.9	4.3	-0.5	0.0	0.4
SK	8.7	8.6	10.7	9.9	1.9	1.3	-0.1	-0.8	-0.6
FI	13.6	13.4	12.9	13.5	-0.6	0.1	-0.2	0.6	0.8
SE	8.5	8.2	7.5	7.0	-1.0	-1.2	-0.3	-0.6	-0.2
UK	7.3	7.7	8.4	8.9	1.1	1.2	0.4	0.5	0.1
NO	10.4	10.7	12.4	12.5	2.0	1.8	0.3	0.1	-0.2
EA	12.3	12.3	12.2	12.4	-0.1	0.1	0.0	0.2	0.2
EU*	11.2	11.2	11.1	11.3	-0.1	0.1	0.0	0.2	0.2
EU27	11.9	11.9	11.7	11.8	-0.3	-0.1	0.0	0.2	0.2

(1) For Belgium, Bulgaria and Malta, the 2015 Ageing Report projections refer to updated figures following pension reforms adopted since 2015. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
Source: Commission services, EPC.

Table II.1.24 allocates the change in the 2016-2060 public pension expenditure projections between the 2015 and 2018 Ageing Reports over the dependency ratio effect, the coverage ratio effect, the benefit ratio effect and the labour market effect. It shows how for most countries revisions in either direction are driven by the developments of the dependency ratio and the benefit ratio.

The old-age dependency ratio barely moves for the EU as a whole (see Graph II.1.28). For thirteen countries the dependency ratio is larger than it was the case in the 2015 Ageing Report. The largest increases as compared to the 2015 projections are for Italy (+2.8 pps. of GDP), Cyprus (+2.5 pps.),

Luxembourg (+2.2 pps.), Lithuania (+2 pps.) and Latvia (+1.9 pps.). Those increases generally exceed the revision for the pension expenditure ratio. The exceptions are the Czech Republic and Luxembourg: the larger dependency ratio does not fully explain the upward revision in the pension expenditure ratio. The largest decreases in the dependency ratio effect in 2016-2060 as compared to the 2015 projections are for Slovakia (-1.5 pps. of GDP), Malta (-1.1 pps.), the Netherlands (-0.9 pps.) and the United Kingdom (-0.8 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

Table II.1.24: **Breakdown of the difference in the gross public pension expenditure change in 2016-2060 between the 2018 and 2015 Ageing Reports (pps. of GDP)**

Country	Change 2016 - 2060 (1+2+3+4+5)	Dependency ratio (1)	Coverage ratio (2)	Benefit ratio (3)	Labour market ratio (4)	Residual (5)
BE	1.5	1.3	0.1	0.2	0.1	-0.2
BG	1.2	1.0	-0.3	0.2	0.7	-0.4
CZ	2.6	0.6	0.5	0.7	0.7	0.2
DK	0.1	0.5	-0.4	0.2	0.1	-0.3
DE	-0.2	-0.6	-0.1	0.1	0.3	0.1
EE	0.2	0.0	-1.2	1.2	0.4	-0.2
IE	1.1	-0.7	0.5	1.1	0.1	0.2
EL	-4.5	-0.2	0.3	-5.1	0.3	0.1
ES	0.3	0.7	0.2	-1.2	0.5	0.1
FR	0.1	0.0	-0.1	0.6	-0.2	-0.1
HR	0.1	0.0	-0.3	0.4	0.1	-0.1
IT	1.2	2.8	0.4	-1.3	-0.4	-0.2
CY	1.7	2.5	0.2	-1.0	0.2	-0.1
LV	0.3	1.9	-0.4	-0.6	-0.2	-0.4
LT	-1.7	2.0	0.0	-3.4	0.0	-0.3
LU	3.5	2.2	1.0	-0.2	0.2	0.2
HU	0.6	-0.6	0.7	0.4	0.3	-0.2
MT	-0.7	-1.1	1.0	-1.0	0.2	0.1
NL	0.0	-0.9	-0.1	0.8	0.1	0.1
AT	0.5	0.1	0.1	0.4	-0.2	0.1
PL	0.1	0.6	1.4	-2.3	0.5	-0.2
PT	-0.7	-0.6	-0.3	-0.7	0.5	0.4
RO	1.0	-0.2	0.3	1.1	-0.2	0.0
SI	0.4	0.0	0.1	-0.2	0.5	0.0
SK	-0.6	-1.5	0.0	0.7	0.1	0.2
FI	0.8	0.9	-0.3	0.8	-0.7	0.2
SE	-0.2	0.0	0.1	-0.5	0.2	0.1
UK	0.1	-0.8	-0.1	0.8	0.2	0.0
NO	-0.2	1.4	-0.4	-1.0	-0.2	-0.1
EU*	0.1	0.0	0.2	-0.2	0.2	0.0
EA	0.1	0.2	0.0	-0.2	0.1	0.0

(1) For Belgium, Bulgaria and Malta, the 2015 Ageing Report projections refer to updated figures following pension reforms adopted since 2015. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
(2) Based on change in ratios in 2015-2060 for 2015 Ageing Report; the non-allocated portion of expected total change in 2016-2060 according to 2015 Ageing Report was added to residual term.
Source: Commission services, EPC.

revisions for Ireland and Romania (+1.1 pps.) and for Finland (+0.8 pps.). For other countries with considerably higher contributions from the benefit ratio effect than in 2015, the impact on overall public pensions is offset by other factors. This is for example the case for Estonia (+1.2 pps. of GDP), the Netherlands and the United Kingdom (+0.8 pps.) and for Slovakia (+0.7 pps.).

Conversely, a lower-than-previously-projected benefit ratio effect reduces the pension expenditure projections in Greece (-5.1 pps. of GDP), Lithuania (-3.4 pps.), and in Malta and Norway (-1 pp.). In Poland (-2.3 pps. of GDP), Italy (-1.3 pps.), Spain (-1.2 pps.) and Cyprus (-1 pp.) the favourable impact on the expenditure ratio is more than offset by the change in the other ratios.

For some countries also the coverage ratio effect contributes notably to the revision in the pension expenditure ratio. This is for example the case for Poland (+1.4 pps. of GDP), Malta (+1 pp.) [71], Hungary (+0.7 pps.) and for Estonia (-1.2 pps.). The effect on the overall expenditure ratio is mostly neutralized by other drivers.

The labour market effect is generally not a major driver of the revisions in the pension expenditure projections. In the case of the Czech Republic, it is one of several factors behind the upward revision compared to the 2015 Ageing Report.

---

[71] Also for Luxembourg the coverage ratio effect amounts to +1 pp. of GDP. However, as cross-border workers in Luxembourg are not covered in the labour force projections 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 2016-2060 in the 2018 Ageing Report as compared to the 2015 Ageing Report (pps. of GDP)**
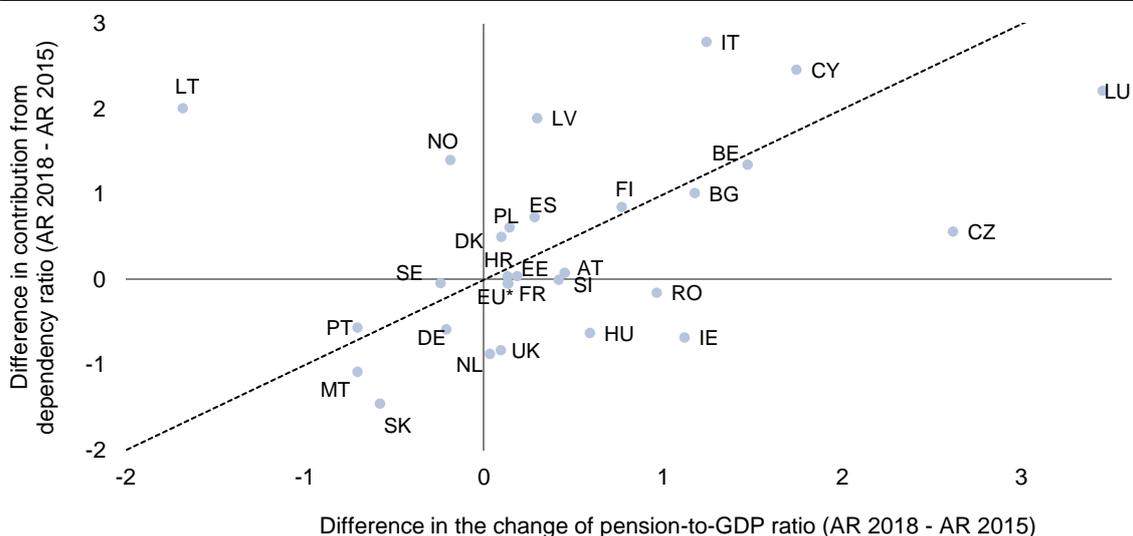
(1) For Belgium, Bulgaria and Malta, the 2015 Ageing Report projections refer to updated figures following pension reforms adopted since 2015. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
(2) Greece is not depicted in the graph in order to enhance readability. X-axis value: -4.5; Y-axis value: -0.2.
Source: Commission services, EPC.

An alternative breakdown of the change in the public pension expenditure ratio compared to the 2015 Ageing Report is provided in Table II.1.25. It indicates how much of the revision can be related to, respectively, a change in the underlying assumptions, better modelling, the interpretation of constant policy and pension reforms adopted in recent years. The breakdown shows that changes in demographic and macroeconomic assumptions are the main drivers behind revisions as compared to the 2015 exercise.

For most countries that provided the breakdown, the new set of assumptions resulted in an upward

Graph II.1.29: **Revision of the benefit ratio and of the change in gross public pension expenditure ratio in 2016-2060 in the 2018 Ageing Report as compared to the 2015 Ageing Report (pps. of GDP)**
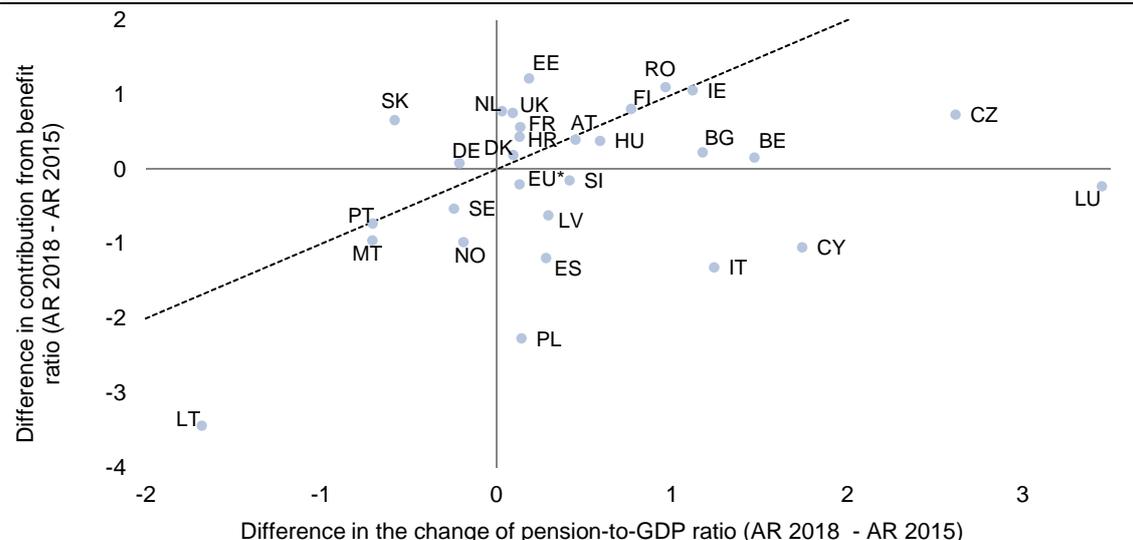
(1) For Belgium, Bulgaria and Malta, the 2015 Ageing Report projections refer to updated figures following pension reforms adopted since 2015. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
(2) Greece is not depicted in the graph in order to enhance readability. X-axis value: -4.5; Y-axis value: -5.1.
Source: Commission services, EPC.

Table II.1.25: **Alternative breakdown of the difference in the gross public pension expenditure change in 2016-2060 between the 2018 and 2015 Ageing Reports (pps. of GDP)**

Country	AR 2015	Change in assumptions	Improvements coverage / modelling	Constant policy interpretation	Policy-related changes	AR 2018	AR 2018 - AR 2015
BE	1.3	1.6	0	0	-0.1	2.7	1.5
BG	0.8	1.1	0	0	0	2.0	1.2
CZ	0.8	0.7	0	0	1.9	3.5	2.6
DK	-2.5	0	0	0	0	-2.4	0.1
DE	2.7	-0.4	0	0	0.1	2.5	-0.2
EE	-1.4	0.2	0	0	0	-1.2	0.2
IE	1.8	0.5	0.4	0	-0.1	2.5	0.7
EL	-1.3	-1.0	0	0	-3.6	-5.8	-4.5
ES	-1.1	0.3	0	0	0	-0.8	0.3
FR	-2.6	0.4	-0.1	0.1	-0.3	-2.5	0.1
HR	-3.7	0.3	-0.3	0	0.1	-3.5	0.1
IT	-1.8	1.2	0	0	0.1	-0.5	1.2
CY	0.1	1.8	0	0	0	1.8	1.7
LV	-2.0	-0.1	0	0	0.3	-1.7	0.3
LT	0.8	2.1	0	0	-3.7	-0.8	-1.7
LU	3.5	3.5	0	0	0	6.9	3.5
MT	3.1	-0.9	:	:	:	2.4	-0.7
NL	0.6	0.1	0	0	0	0.6	0.0
PL	-0.2	-0.2	0	0	0.4	-0.1	0.1
PT	-0.9	-2.2	1.3	0	0.2	-1.6	-0.7
RO	0.0	0.9	0	0	0	0.9	1.0
SK	1.9	-1.6	0.9	0	0	1.3	-0.6
FI	-0.6	1.3	-0.1	0.3	-0.7	0.1	0.8
SE	-1.0	-0.2	0	0	0	-1.2	-0.2
NO	2.0	-0.2	0	0	0	1.8	-0.2
EU*	-0.1	0.4	0.1	0	-0.2	0.1	0.2
EA	-0.1	0.4	0.1	0	-0.5	0.1	0.2
EU27	-0.3	0.4	0.1	0	-0.2	-0.1	0.2

(1) For Belgium, Bulgaria and Malta, the 2015 Ageing Report projections refer to updated figures following pension reforms adopted since 2015. These updated projections were peer-reviewed within the EPC's Ageing Working Group.
(2) HU, AT, SI & UK: no breakdown available.
(3) IE: breakdown only concerns Public Social Security Schemes.
Source: Commission services, EPC.

revision of the change in pension expenditure between 2016 and 2060. The impact amounts to 0.4 pps. of GDP for the EU as a whole but goes as high as 3.5 pps. of GDP in the case of Luxembourg, for which the change in assumptions fully explain the strong upward revision. The downward impact of changed assumptions is the largest for Portugal, at -2.2 pps. of GDP. This is explained by the reforms that entered into force in 2014. These had a larger impact than anticipated in the 2015 projections, when the base year was 2013.

Pension reforms adopted since 2015 are a second source of revisions ([72]). Their impact is generally smaller, though, at -0.2 pps. of GDP on average in the EU. The exceptions are the Czech Republic (+1.9 pps. of GDP), Lithuania (-3.7 pps.), Greece (-3.6 pps.) and Finland (-0.7 pps.). For the Czech Republic this foremost reflects the decision to cap the retirement age at 65. In the case of Lithuania

the large reduction of the change in pension spending in 2016-2060 follows the introduction of a sustainability factor and more stringent eligibility requirements for full pension benefits. For Greece the revision follows the comprehensive pension reform adopted in 2016. As to Finland, the impact stems from the 2017 pension reform. Overall, policy-related changes play a smaller role than was the case with respect to revisions in the 2015 Ageing Report as compared to the 2012 Ageing Report.

For Portugal and Slovakia an upward revision of 1.3 pps. and 0.9 pps. of GDP respectively is reported as a result of modelling refinements. For other countries, modelling techniques, a broader coverage by the projections and the constant policy assumption did not lead to major revisions.

([72]) For Belgium and Bulgaria certain reforms since 2015 are already reflected in the baseline: 'Ageing Report 2015' refers to the updated projections for these countries.

1.10. SCOPE FOR IMPROVEMENT OF MEMBER STATES PENSION PROJECTIONS

Table II.1.26: **Scope for improvement in the Member States' projections**

UK	The UK was unable to provide some of the data requested by the Ageing Working Group, namely pension expenditure by age groups, number of pensioners by age groups, blocks on replacement rate, contributions/contributors and new pensions.

Source: Commission services, EPC.

2. HEALTH CARE EXPENDITURE

2.1. INTRODUCTION

The size and growing importance of public expenditure on health care in government expenditure and the need for budgetary consolidation all across Europe makes health care expenditure an important topic in the policy debate on how to ensure the long-term sustainability of public finances. Long-term budgetary projections can be very helpful for allowing policy makers to consider the possible evolution of their public expenditure and the impact of the main underlying drivers of health care costs.

This chapter presents the projection results regarding public expenditure on health care from 2016 to 2070. Projections were run using Commission services' (DG ECFIN) models on the basis of the methodology and data agreed with the Member States delegates to the AWG-EPC. The chapter, after providing a brief overview of the determinants of health care expenditure, recalls the methodology (so-called scenarios) used to project public expenditure on health care. 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. However, those benefits come at a substantial cost: in the EU28 total expenditure on health care equalled 10.1 % of GDP in 2015. A substantial part of this expenditure – 8.0 % of GDP on average ([73]) in the EU28 in 2015 – is public spending. Overall, public expenditure on health care has risen in most EU Member States over time. Box II.2.1 presents the evolution of public spending on health care, its share in total expenditure and total government outlays over the last decades.

Public expenditure on health care is driven by a series 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" shown in Graph II.2.1. The graph plots average public per capita spending on health 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 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.

([73]) The averages presented in this chapter are weighted according to GDP. Additionally, non-weighted averages for EU28 are displayed in all tables indicated by the symbol *EU* s*.

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 economic crisis led to a reversal of the trend with slower growth and falls in spending in some countries. This reversal seem however to be temporary. Public health expenditure has reached an average level of 8.0% of GDP in 2015 in the EU, though ranging from less than 2.9 % of GDP in Cyprus to 9.6 % of GDP in Sweden (Table 1).

Table 1   Public health care expenditure (incl. long-term nursing care)in EU Member States and Norway, 1970-2015

	Public health care expenditure as % of													
	GDP						**total health expenditure**					**total government expenditure**		
	1970	1980	1990	2008	2015	1970	1980	1990	2008	2015	1990	2008	2015	
BE	:	:	:	7.2	8.1	:	:	:	77.0	77.5	10	14.3	15.1	**BE**
BG	:	:	5.2	3.9	4.9	:	:	100	55.9	54.7	:	10.6	11.9	**BG**
CZ	:	:	4.6	5.3	6.4	:	:	98	80.3	83.3	:	13.2	15.4	**CZ**
DK	:	7.9	6.9	8.3	9.0	:	89	83.2	81.3	87.2	11.9	16.5	16.4	**DK**
DE	4.4	6.6	6.3	7.8	9.4	73.3	78.9	76.1	76.3	84.5	:	17.9	21.5	**DE**
EE	:	:	:	5.1	5.4	:	:	:	79.4	77.5	:	12.8	13.6	**EE**
IE	4.1	6.8	4.4	7.5	5.5	80.4	82	72	78.6	70.8	:	17.9	19.2	**IE**
EL	2.3	3.3	3.5	5.6	5.0	42.6	55.9	53	56.9	59.3	:	10.9	9.0	**EL**
ES	2.3	4.2	5.1	6.4	6.6	65.7	79	79.1	74.4	71.3	:	15.5	15.1	**ES**
FR	4.1	5.6	6.4	8.2	9.0	75.9	80.4	78	78.6	79.4	:	15.4	15.8	**FR**
HR		:	:	6.5	5.9	:	:	:	:	77.7	:	15.3	12.8	**HR**
IT	:	:	6.1	7.0	7.0	:	:	79.2	78.5	75.6	11.7	14.6	13.9	**IT**
CY	0.9	1.5	1.8	2.6	2.9	33.3	53.6	40	41.1	43.1	:	6.7	7.3	**CY**
LV	:	:	2.5	3.7	3.7	:	:	100	56.5	60.3	:	9.9	10.0	**LV**
LT	:	:	3	4.9	4.7	:	:	90.9	70.4	68.5	:	12.9	13.4	**LT**
LU	2.8	4.8	5	5.7	5.0	90.3	92	93	79.4	82.1	11.1	14.4	12.1	**LU**
HU	:	:	:	5.0	5.3	:	:	:	69.6	69.1	:	10.4	10.7	**HU**
MT	:	:	:	5.2	5.8	:	:	:	54.8	57.5	:	12.1	14.4	**MT**
NL	:	5.1	5.4	7.8	8.6	:	69	68	81.7	80.7	:	17.9	19.1	**NL**
AT	3.3	5.1	6.1	7.7	8.1	63.5	69.2	73	74.1	76.4	:	15.5	15.8	**AT**
PL	:	:	4.4	4.9	4.7	:	:	92.1	68.5	71.2	:	11.1	11.3	**PL**
PT	1.5	3.4	3.8	6.6	6.1	60	64	64	69.1	66.8	:	14.6	12.6	**PT**
RO	:	:	2.9	4.4	4.2	:	:	100	79.9	79.3	:	11.5	11.7	**RO**
SI	4.2	4.4	5.6	5.9	6.5	100	100	100	70.1	72.9	:	13.6	13.5	**SI**
SK	:	:	:	5.4	5.6	:	:	:	67.5	80.1	:	14.5	12.3	**SK**
FI	4.1	5	6.2	6.3	7.4	74.5	79	81.3	75.6	75.3	12.1	13.1	12.9	**FI**
SE	5.8	8.2	7.4	7.2	9.6	85.3	92.7	90.4	82.6	84.2	:	14.3	19.3	**SE**
UK	3.9	5	4.9	7.2	8.0	86.7	89.1	83.3	81.1	80.2	12.1	15.3	19.0	**UK**
NO	4	5.9	6.3	7.1	8.9	:	:	83	80.7	86.0	12.6	17.6	18.3	**NO**
EA	:	:	:	7.4	8.1	:	:	:	76.4	78.4	:	15.9	17.0	**EA**
EU*	:	:	:	7.2	8.0	:	:	:	:	78.7	:	15.5	17.1	**EU***
EU27	:	:	:	6.0	6.4	:	:	:	:	73.1	:	13.7	14.1	**EU27**
EU* s	:	:	:	7.2	7.9	:	:	:	:	78.4	:	15.5	16.7	**EU* s**

Notes: The EU28 (EU*), EU27 and EA averages are weighted according to GDP. A non-weighted EU average (EU* s) is included at the bottom of the table. The figures for DE include government, social health insurance schemes and compulsory private health insurance schemes expenditure.
Source: Eurostat; OECD Health data; United Nations Statistics Division; WHO Health for all database; Commission services.

As far as the share of public in total health expenditures is concerned, there seem to be two divergent movements: in general, the share of public spending in EU15 Member States has increased in the last decade, whilst in New Member States (NMS) private financing has increased as a source of total health care funding. Moreover, health care has gained prominence relative to other government expenditures. Although overall the share of health care in total government expenditures has increased, it has fallen for some Member States, reflecting reforms in the health care system. Public spending on health care now accounts on average for 17.1 % of total government spending in the EU, ranging from 7.3 % in Cyprus to 19.3 % in Sweden.

Graph II.2.1:   **Age-related expenditure profiles of health care provision (spending per capita as % of GDP per capita) in 2016**
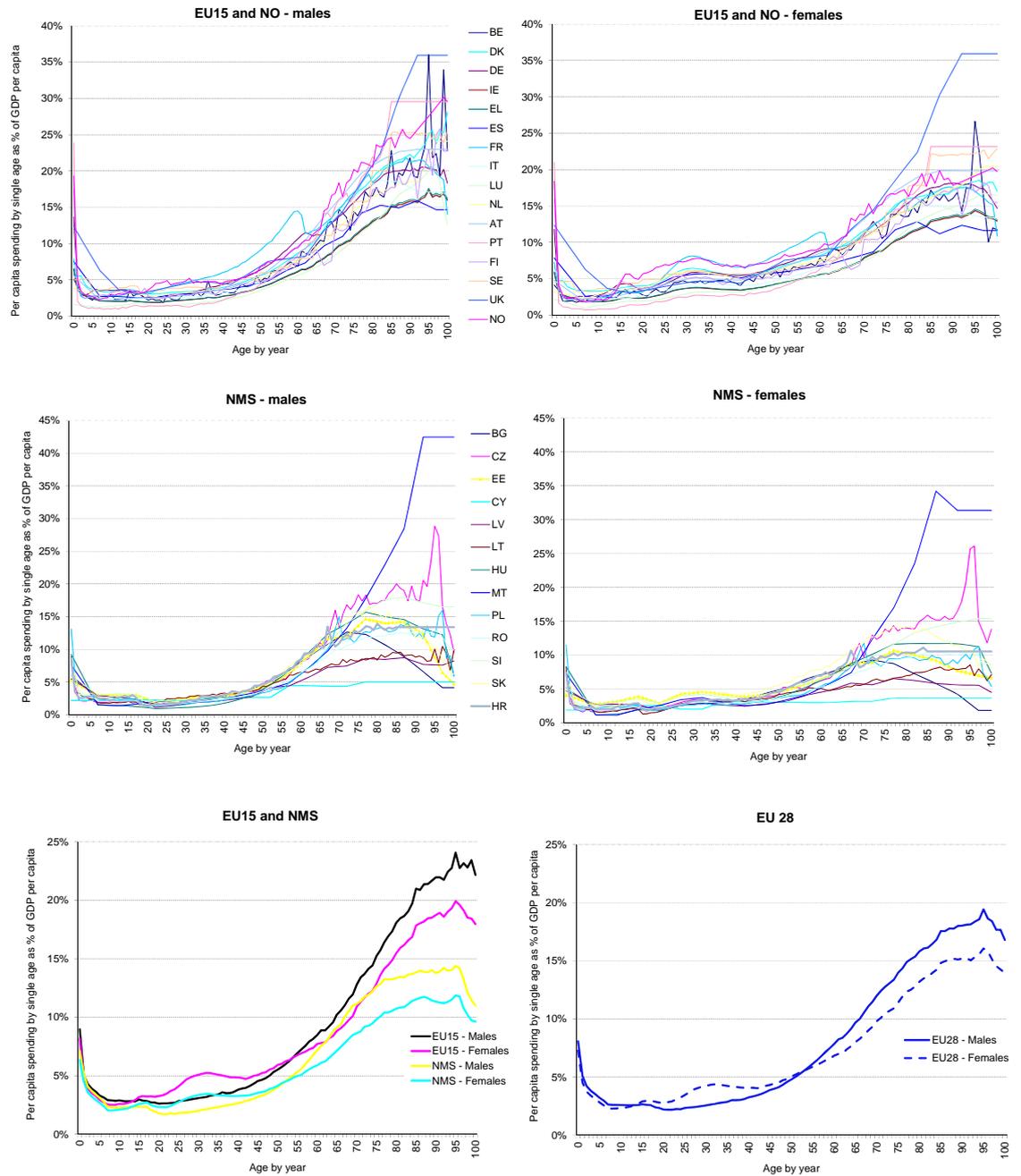
Notes: Greece, Ireland and Romania did not provide age-cost profiles and so the profile was imputed as the average cost profile of the EU15 (for Ireland and Greece) and NMS (for Romania).
Source: Commission services, EPC.

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 29.6 % in 2016 to 51.2 % in 2070 (Eurostat 2015-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

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 ([74]). International evidence is mixed ([75]) 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.

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: 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.

2.2.3. Individual and national income

An important determinant of health care expenditure is income. 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 is driven by different considerations. 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, remains uncertain.

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 estimating the real causal effect of income on demand of health services (Box II.2.2). The general implication, however, remains that as national income or wealth increases, expectations

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

([75]) 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".

***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). For an overview, see Clements et al. (2012).

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 also Getzen (2000).

---

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 which 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 expenditures. 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 2018. 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), Willemé and Dumont (2014) 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 1.4 elasticity estimate used in this report for the scenario on non-demographic drivers and the AWG risk scenario.

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). 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, the type of remuneration of physicians 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 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, but the results are not conclusive.

Graph II.2.2: **Schematic presentation of the projection methodology**
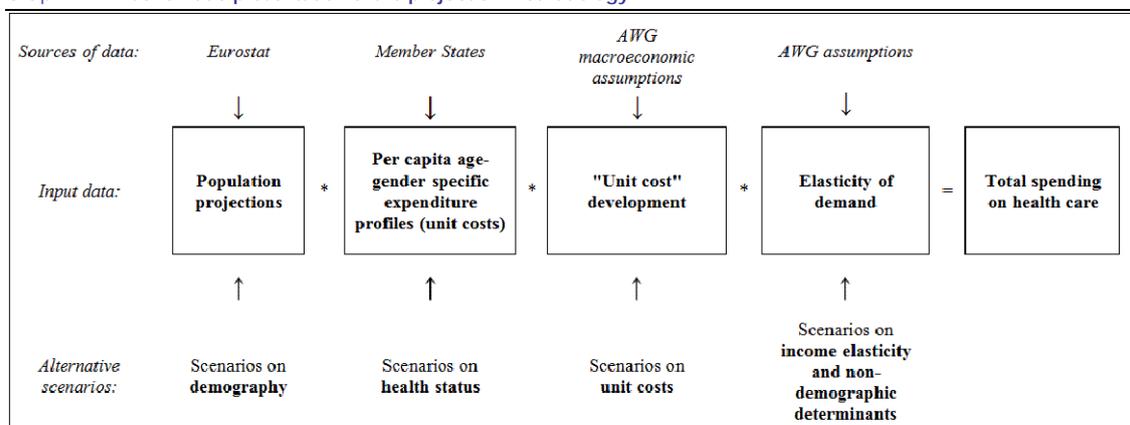
Source: Commission services, EPC.

2.3. SHORT OVERVIEW OF THE PROJECTION METHODOLOGY

2.3.1. Model

On the basis of the description just presented, a series of so-called scenarios test the potential 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 can indicate 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 aim at improving the fiscal sustainability of health care spending.

The complexity of health care markets makes expenditure projections a challenging task ([76]). The projections presented in this report are bound with uncertainty ([77]).

It is important to stress that 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.

The basic setup of the model used to project future expenditure on health care is a traditional 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 2015-based population projections provided by Eurostat.

([76]) 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.

([77]) 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 2018 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 28 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 2015 ranges from -1.5 % of GDP for Lithuania to 3.1 % of GDP for Sweden; between SHA and ESSPROS aggregates from -1.2 % of GDP for UK to 3.4 % of GDP for Denmark and Sweden; and between COFOG and ESSPROS public expenditure on health care from -2.0 % of GDP for UK to 2.4 % of GDP for Denmark. 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, 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.

---

[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)

Table 1   Public expenditure on health care as a % of GDP from available data sources,
2015 or latest year of available data

	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	5.9	2.3	8.1	:	**8.1**	7.6	0.0	**7.6**	**7.7**	0.5	0.4	-0.1	BE
BG	4.2	0.0	4.2	:	**4.2**	4.8	0.4	**5.2**	**4.6**	-1.0	-0.4	0.6	BG
CZ	5.0	0.9	6.0	0.2	**6.1**	7.1	0.3	**7.4**	**5.2**	-1.2	0.9	2.2	CZ
DK	6.4	2.3	8.7	0.7	**9.4**	7.9	0.5	**8.4**	**6.0**	1.0	3.4	2.4	DK
DE [d]	7.3	1.3	8.6	:	**8.6**	7.1	0.1	**7.2**	**8.1**	1.4	0.5	-0.9	DE [d]
EE	4.7	0.2	4.9	0.4	**5.4**	4.9	0.5	**5.4**	**3.9**	0.0	1.5	1.5	EE
IE	4.0	1.4	5.4	0.4	**5.8**	5.5	0.3	**5.8**	**4.5**	0.1	1.3	1.3	IE
EL	4.9	0.0	5.0	0.4	**5.3**	4.5	0.0	**4.5**	**4.8**	0.8	0.5	-0.3	EL
ES	5.8	0.7	6.5	0.2	**6.8**	5.8	0.1	**5.9**	**6.0**	0.9	0.8	-0.1	ES
FR	7.5	1.2	8.7	0.6	**9.3**	7.7	0.3	**8.0**	**8.4**	1.3	0.9	-0.4	FR
HR	5.5	0.2	5.7	:	**5.7**	6.0	0.3	**6.3**	**5.9**	-0.6	-0.2	0.4	HR
IT	6.1	0.7	6.7	:	**6.7**	6.8	0.3	**7.1**	**6.4**	-0.3	0.3	0.6	IT
CY	2.7	0.2	2.9	:	**2.9**	2.4	0.1	**2.5**	**3.1**	0.4	-0.2	-0.6	CY
LV	3.0	0.3	3.3	0.5	**3.8**	3.4	0.4	**3.8**	**2.8**	0.0	1.0	1.0	LV
LT	3.8	0.5	4.4	:	**4.4**	5.6	0.3	**5.9**	**4.0**	-1.5	0.4	1.9	LT
LU	3.8	1.2	5.0	0.5	**5.5**	4.5	0.1	**4.6**	**4.3**	0.9	1.2	0.2	LU
HU	4.6	0.2	4.8	0.3	**5.1**	4.7	0.3	**5.0**	**5.5**	0.1	-0.4	-0.5	HU
MT	5.0	0.8	5.8	:	**5.8**	5.2	0.5	**5.7**	**4.7**	0.1	1.1	1.0	MT
NL	6.2	2.4	8.5	0.6	**9.1**	7.9	0.0	**7.9**	**7.5**	1.2	1.6	0.4	NL
AT	6.6	1.2	7.8	0.8	**8.6**	7.1	0.3	**7.4**	**6.1**	1.2	2.5	1.3	AT
PL	4.1	0.4	4.4	0.5	**4.9**	4.4	0.2	**4.6**	**3.2**	0.3	1.7	1.4	PL
PT	5.8	0.2	5.9	:	**5.9**	5.9	0.1	**6.0**	**4.6**	-0.1	1.3	1.4	PT
RO	3.6	0.3	3.9	:	**3.9**	3.9	0.2	**4.1**	**3.3**	-0.2	0.6	0.8	RO
SI	5.2	0.9	6.1	0.4	**6.4**	6.2	0.4	**6.6**	**6.4**	-0.1	0.0	0.1	SI
SK	5.5	0.0	5.5	0.4	**5.8**	7.0	0.1	**7.1**	**5.1**	-1.3	0.7	2.0	SK
FI	5.7	1.3	7.0	0.4	**7.4**	6.7	0.4	**7.1**	**6.2**	0.4	1.2	0.9	FI
SE	6.5	2.7	9.2	0.6	**9.8**	6.3	0.4	**6.7**	**6.4**	3.1	3.4	0.3	SE
UK	6.7	1.2	7.9	0.3	**8.2**	7.2	0.2	**7.4**	**9.4**	0.7	-1.2	-2.0	UK
NO	6.0	2.5	8.5	0.5	**9.0**	7.6	0.4	**8.0**	**6.0**	1.0	3.0	2.0	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.
Source: Eurostat database, OECD Health Data, DESTATIS for SHA data for DE.

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)**.[1] 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[2]. 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 system does not aim at classifying health expenditure in detail and therefore a clear-cut separation between "core" health

---

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

Box (continued)

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[1]. 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 2018 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.

---

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

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 ([78]) 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 (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.

([78]) Public expenditure on health in this publication (with the exception of table 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 "2018 Ageing Report - Underlying assumptions and projection methodologies":
https://ec.europa.eu/info/sites/info/files/economy-finance/ip065_en.pdf.

2.3.2. Scenarios

Different scenarios simulate changes in the demographic structure, life expectancy and 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 EU28 Member States. The ideas behind the different scenarios are presented in Table II.2.1 ([79]).

Compared to the 2015 Ageing Report, there are no methodological changes in the scenarios, except for the input categories of the "sector-specific indexation scenario" as explained in point eight hereafter. All scenarios are described in more detail in the following:

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 ([80]), 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 2015-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 ([81]).

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 ([82]).

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) ([83]).

([79]) A detailed account of the projection methods is given in EC– EPC (2017), "The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies": https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-underlying-assumptions-and-projection-methodologies_en.

([80]) 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.

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

([82]) 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.

([83]) 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.

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**	**EU28 cost convergence scenario**	**Labour intensity scenario**	**Sector-specific composite indexation scenario**	**Non-demographic determinants scenario**	**AWG reference scenario**	**AWG risk scenario**	**TFP risk scenario**
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Population projection	Eurostat 2015-based population projections	Alternative higher life expectancy scenario (+2 years)	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Eurostat 2015-based population projections	**Eurostat 2015-based population projections**	Eurostat 2015-based population projections	Eurostat 2015-based population projections
Age-related expenditure profiles	2016 profiles held constant over the projection period	2016 profiles held constant over the projection period	2016 profiles shift in line with changes in age-specific life expectancy	2016 profiles split into profiles of decedents and survivors and adjusted in line with changes in age-specific life expectancy	2016 profiles held constant over the projection period	Individual EU28 profiles converging upwards to the EU28 average profile over the projection period	2016 profiles held constant over the projection period	2016 profiles held constant over the projection period	2016 profiles held constant over the projection period	**Intermediate scenarios I and III, whereby 2016 profiles shift by half the change in age-specific life expectancy**	Intermediate scenarios I and III, whereby 2016 profiles shift by half the change in age-specific life expectancy	Intermediate scenarios I and III, whereby 2016 profiles shift by half the change in age-specific life expectancy
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 2016 converging to 1 by 2070	1	1	1	Cost sensitivity of 1.4 in 2016 converging to 1 by 2070	**Cost sensitivity of 1.1 in 2016 converging to 1 by 2070**	Cost sensitivity of 1.4 in 2016 converging to 1 by 2070	Cost sensitivity of 1.1 in 2016 converging to 1 by 2070

Source: Commission services, EPC.

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 ([84]). 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 "*EU28 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 EU28 countries that are below the EU28 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 EU28 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 EU28 profiles in the base year (i.e. 2016) are assumed to increase

to the EU28 relative average profile up to 2070. The convergence speeds for all the countries below the EU28 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 EU28 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.

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 ([85]).

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" ([86]). As such, their relative

---

([84]) Data was provided by 17 Member States: Belgium, Bulgaria, Czech Republic, Denmark, Germany, Spain, France, Italy, Hungary, the Netherlands, Austria, Poland, Slovenia, Slovakia, Finland, Sweden and the UK. For countries that did not provide this data, no projections for this scenario were done.

([85]) In the 2015 Ageing Report the expenditure on health care was disaggregated in the following inputs: staff, to which corresponds expenditure on wages; pharmaceuticals; therapeutic appliances; capital investment; and other factors.

([86]) The relative growth rates were calculated on the basis of COFOG data for the past 10 years. For more information on the sector-specific composite indexation calculation method see Annex III.

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 ([87]) 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 1.4 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.

X. The **"AWG reference scenario"** is used as the baseline scenario when calculating the overall budgetary impact of ageing. It is the point of reference for comparisons with the 2015 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 2016 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 1.4, based on Commission research ([88]) and endorsed by the Ageing Working Group, is used in 2016, which

then converges linearly to 1 until the end of the projection period.

XII. *"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. The fiscal impact of some of those reforms is not easy to estimate. However, ten countries estimated the potential budgetary effects on health care spending triggered by some of their 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, reforms have been distinguished by their impact on the expenditure of 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 Austria and Belgium have legislated a ceiling on health expenditure and/or its future growth. Wage adjustments are legislated in Luxembourg, Poland, and Slovenia. Reforms to improve the overall accessibility of health care services are legislated in the Czech Republic, Estonia, Latvia, and Slovakia (Table II.2.2).

([87]) 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.

([88]) 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.

Table II.2.2:   **Health care reforms with direct budget impact taken into account in the projections**

Country	Policy reform (timeline)
Austria	Legislated ceiling on health care expenditure (2016-2018)
Belgium	Growth ceiling on health care expenditure according to growth norm of public health expenditure (2016-2019)
Czech Republic	Increase in central government contributions to the health insurance funds (2018-2020)
Estonia	Reforms to improve the overall accessibility of health care services (2018-2023)
Italy	Budgeted containment in health expenditure (2017-2019)
Latvia	Reforms to improve the overall accessibility of health care services (2016-2017)
Luxembourg	Additional capital investment, outpatient benefits basket revision and wage adjustments of health personnel (2018-2021)
Poland	Wage adjustments of health personnel and pharmaceutical reforms with direct budgetary impact (2018-2025)
Slovak Republic	Additional capital investment (2017)
Slovenia	Partial reversal of reduction in wages of employees in the general government sector (2016-2017)

Source: Commission services, EPC.

2.3.4. Accounting for institutional setting specificities

The projections account for some institutional specificities for Germany. In Germany, in 2016 only 87 % of the population was insured by social health insurance (SHI), with the remainder 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 2015 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 87 % in 2016 to account only for those covered by SHI [89], and a further reduction to 86 % by 2070, with a more relatively pronounced decrease in older age groups.

2.4. PROJECTION RESULTS

The complexity of health care markets makes expenditure projections a challenging task. The projections presented in this report follow a "what if" approach and results are bound with uncertainty. 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 briefly discussed. Finally, a series of sensitivity tests results of the "AWG reference scenario" are reviewed.

2.4.1. Changes in demography and health status

According to the *"demographic scenario"*, public health care expenditure in the EU28 is projected to increase by 1.1 pps. of GDP i.e. from 6.8 % to 7.9 % of GDP from 2016 to 2070. For half of the countries the expenditure increase lies between 1.0 and 1.7 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.2.3 where the solid colour bars show expenditure over the GDP in 2016 and the shaded bars above them the expected increase in percentage points up to 2070.

---

[89] It should be noted that the reduction of SHI coverage should also be expected in the projection of future social security contributions.

Graph II.2.3: **Projected increase in public expenditure on health care due to demographic change over 2016-2070, as % of GDP**
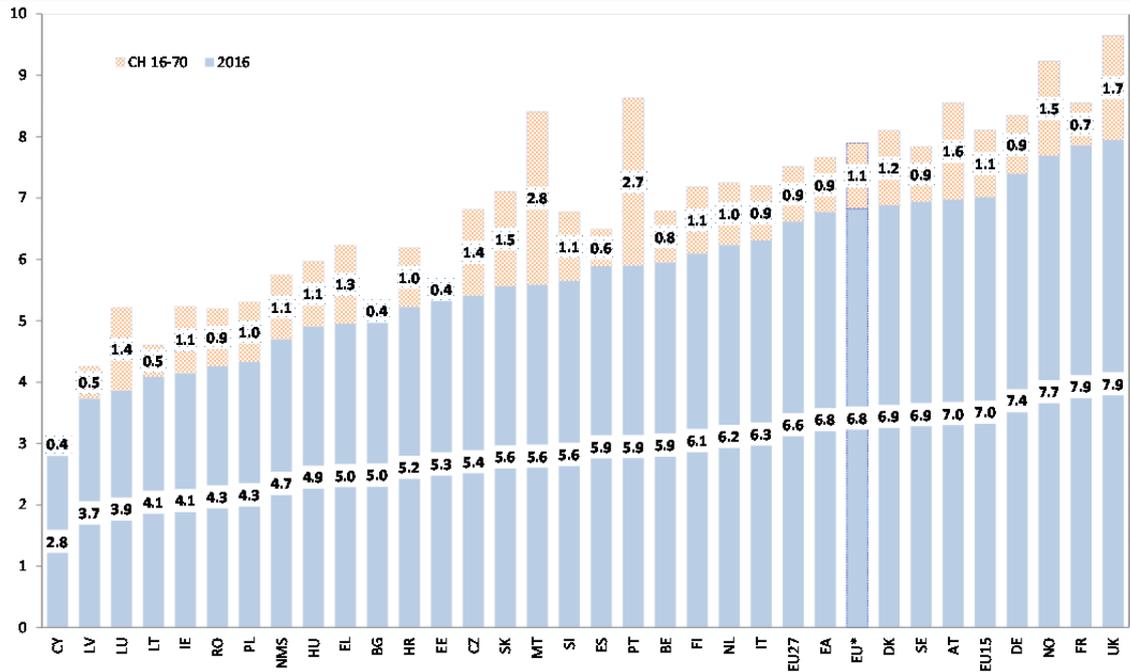
Notes: The EU28, EU15 and NMS averages in all result tables are weighted according to GDP. The level of expenditure in 2016 is the first year of projected expenditure based on latest available data. Health care expenditure exclude long-term nursing care.
Source: Commission services, EPC.

Table II.2.3: **Demographic scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	6.8	0.8	14%
BG	5.0	5.3	0.4	8%
CZ	5.4	6.8	1.4	26%
DK	6.9	8.1	1.2	18%
DE	7.4	8.3	0.9	13%
EE	5.3	5.7	0.4	7%
IE	4.1	5.2	1.1	26%
EL	5.0	6.2	1.3	26%
ES	5.9	6.5	0.6	10%
FR	7.9	8.6	0.7	9%
HR	5.2	6.2	1.0	18%
IT	6.3	7.2	0.9	14%
CY	2.8	3.2	0.4	13%
LV	3.7	4.3	0.5	14%
LT	4.1	4.6	0.5	13%
LU	3.9	5.2	1.4	35%
HU	4.9	6.0	1.1	22%
MT	5.6	8.4	2.8	50%
NL	6.2	7.2	1.0	16%
AT	7.0	8.6	1.6	23%
PL	4.3	5.3	1.0	23%
PT	5.9	8.6	2.7	46%
RO	4.3	5.2	0.9	22%
SI	5.6	6.8	1.1	20%
SK	5.6	7.1	1.5	28%
FI	6.1	7.2	1.1	18%
SE	6.9	7.8	0.9	13%
UK	7.9	9.6	1.7	21%
NO	7.7	9.2	1.5	20%
EA	6.8	7.7	0.9	13%
EU*	6.8	7.9	1.1	16%
EU27	6.6	7.5	0.9	14%
EU* s	5.5	6.6	1.1	20%

Notes: The EU28 (EU*), EA and EU27 averages in all result tables are weighted according to GDP. The level of expenditure in 2016 is the first year of projected expenditure based on latest available data. Health care expenditure excludes long-term nursing care. EU* s is the non-weighted EU average.
Source: Commission services, EPC.

the EU28 average of the "demographic scenario" (Table II.2.4).

Table II.2.4: **High life expectancy scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP.**

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	7.0	1.0	17%
BG	5.0	5.4	0.4	8%
CZ	5.4	7.0	1.6	30%
DK	6.9	8.3	1.4	20%
DE	7.4	8.5	1.1	15%
EE	5.3	5.8	0.4	8%
IE	4.1	5.4	1.2	30%
EL	5.0	6.4	1.5	30%
ES	5.9	6.6	0.7	13%
FR	7.9	8.7	0.8	11%
HR	5.2	6.3	1.1	21%
IT	6.3	7.4	1.1	17%
CY	2.8	3.2	0.4	13%
LV	3.7	4.3	0.6	16%
LT	4.1	4.7	0.6	15%
LU	3.9	5.4	1.5	39%
HU	4.9	6.1	1.2	24%
MT	5.6	8.8	3.2	57%
NL	6.2	7.4	1.2	19%
AT	7.0	8.8	1.8	26%
PL	4.3	5.4	1.1	25%
PT	5.9	9.0	3.1	53%
RO	4.3	5.3	1.1	25%
SI	5.6	7.0	1.3	23%
SK	5.6	7.2	1.7	30%
FI	6.1	7.4	1.3	21%
SE	6.9	8.0	1.1	16%
UK	7.9	10.0	2.0	25%
NO	7.7	9.4	1.7	23%
EA	6.8	7.8	1.1	16%
EU*	6.8	8.1	1.3	18%
EU27	6.6	7.7	1.1	16%
EU* s	5.5	6.8	1.3	23%

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 2015-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 an increase of 0.2 pps. of GDP relative to

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.

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 EU28, a 0.2 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 five countries even experience a decrease. Therefore, improvements in health status may be crucial for keeping expenditure on health care under control in the future.

Table II.2.5: Healthy ageing scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	5.8	-0.2	-3%
BG	5.0	4.6	-0.4	-7%
CZ	5.4	5.8	0.4	7%
DK	6.9	7.3	0.4	6%
DE	7.4	7.4	0.1	1%
EE	5.3	5.0	-0.3	-6%
IE	4.1	4.7	0.6	13%
EL	5.0	5.6	0.7	14%
ES	5.9	6.0	0.1	2%
FR	7.9	7.6	-0.2	-3%
HR	5.2	5.3	0.1	1%
IT	6.3	6.5	0.2	3%
CY	2.8	3.0	0.2	7%
LV	3.7	3.8	0.0	1%
LT	4.1	4.0	-0.1	-1%
LU	3.9	4.6	0.7	19%
HU	4.9	5.0	0.1	2%
MT	5.6	7.3	1.7	30%
NL	6.2	6.5	0.3	4%
AT	7.0	7.6	0.6	9%
PL	4.3	4.6	0.3	6%
PT	5.9	7.4	1.5	26%
RO	4.3	4.5	0.3	6%
SI	5.6	6.1	0.4	7%
SK	5.6	5.6	0.0	0%
FI	6.1	6.3	0.2	3%
SE	6.9	7.1	0.2	2%
UK	7.9	8.6	0.7	8%
NO	7.7	8.2	0.5	7%
EA	6.8	6.9	0.1	1%
EU*	6.8	7.0	0.2	3%
EU27	6.6	6.7	0.1	1%
EU* s	5.5	5.8	0.3	5%

Note: The "healthy ageing scenario" is identical with the "constant health scenario" from previous Ageing Reports.
Source: Commission services, EPC.

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 ([90]).

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) ([91]). The projected increase in public expenditure ranges from 0.4 pps. of GDP for Bulgaria to 1.4 pps. of GDP for Austria and UK.

Table II.2.6: Death-related costs scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	6.5	0.6	10%
BG	5.0	5.3	0.4	8%
CZ	5.4	6.5	1.0	19%
DK	6.9	7.8	0.9	13%
DE	7.4	8.1	0.7	10%
ES	5.9	6.4	0.5	9%
FR	7.9	8.3	0.5	6%
IT	6.3	7.1	0.8	13%
HU	4.9	5.7	0.8	16%
NL	6.2	7.0	0.7	12%
AT	7.0	8.4	1.4	20%
PL	4.3	5.1	0.7	17%
SI	5.6	6.6	1.0	17%
SK	5.6	6.9	1.3	24%
FI	6.1	7.0	0.9	15%
SE	6.9	7.6	0.6	9%
UK	7.9	9.3	1.4	18%

Source: Commission services, EPC.

Graph II.2.4 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 EU15 and NMS highlights the more pronounced growing path of the *"demographic scenario"* in the NMS. This is likely driven by faster demographic developments.

Another interesting observation is that the dynamic of the demographic projections leads to a peak in

---

([90]) Note that 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.

([91]) 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.2.4:   **Impact of demography and health status - comparison between scenarios in EU15 and NMS**
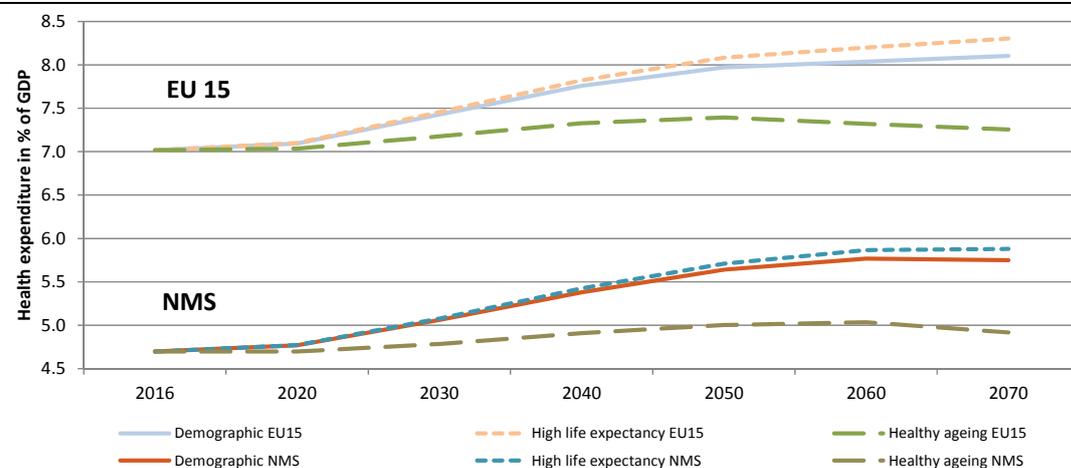
Note: The "healthy ageing scenario" is identical with the "constant health scenario" from previous Ageing Reports.
Source: Commission services, EPC.

the expenditure growth rate in 2060 for NMS and in 2050 for EU15, 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"*.

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 EU15 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 ([92]). 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

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. One way to address this concern is to assume that trends in health spending exceed the growth rate of national income.

([92]) See Medeiros J. and C. Schwierz (2013).

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 relative to the results for the EU28 in the "demographic scenario" (Table II.2.7).

Table II.2.7: Income elasticity scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	7.0	1.0	17%
BG	5.0	5.7	0.7	14%
CZ	5.4	7.1	1.7	31%
DK	6.9	8.4	1.5	22%
DE	7.4	8.6	1.2	16%
EE	5.3	6.0	0.6	12%
IE	4.1	5.4	1.3	31%
EL	5.0	6.5	1.5	31%
ES	5.9	6.7	0.8	14%
FR	7.9	8.8	1.0	12%
HR	5.2	6.5	1.2	24%
IT	6.3	7.4	1.0	17%
CY	2.8	3.2	0.4	16%
LV	3.7	4.6	0.9	24%
LT	4.1	4.9	0.8	19%
LU	3.9	5.4	1.5	39%
HU	4.9	6.3	1.4	28%
MT	5.6	8.9	3.3	60%
NL	6.2	7.4	1.2	19%
AT	7.0	8.8	1.8	26%
PL	4.3	5.6	1.3	29%
PT	5.9	8.9	3.0	52%
RO	4.3	5.6	1.3	31%
SI	5.6	7.1	1.4	25%
SK	5.6	7.5	2.0	36%
FI	6.1	7.4	1.3	21%
SE	6.9	8.1	1.2	17%
UK	7.9	10.0	2.0	25%
NO	7.7	9.5	1.8	24%
EA	6.8	7.9	1.1	17%
EU*	6.8	8.1	1.3	19%
EU27	6.6	7.8	1.1	17%
EU* s	5.5	6.9	1.4	25%

Source: Commission services, EPC.

The *"cost convergence scenario"*, performed solely for those Member States with shares of GDP per capita spending profiles below the EU28 relative average profile, captures the possible effect of a convergence in real living standards across EU countries on public expenditure on health care ([93]). Cost convergence can be a costly process. Depending on the current age-gender expenditure profiles, governments would, on

average, need to spend up to 1.3 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".

Table II.2.8: The EU28 cost convergence scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	7.0	1.0	17%
BG	5.0	7.1	2.1	42%
CZ	5.4	7.3	1.8	34%
DK	6.9	8.1	1.2	18%
DE	7.4	8.4	1.0	13%
EE	5.3	6.5	1.2	22%
IE	4.1	6.3	2.2	53%
EL	5.0	7.4	2.4	49%
ES	5.9	7.0	1.1	19%
FR	7.9	8.6	0.8	10%
HR	5.2	7.1	1.9	37%
IT	6.3	7.3	1.0	16%
CY	2.8	7.2	4.4	157%
LV	3.7	7.0	3.3	88%
LT	4.1	6.9	2.8	69%
LU	3.9	6.7	2.8	73%
HU	4.9	7.0	2.1	43%
MT	5.6	9.1	3.5	63%
NL	6.2	7.3	1.1	18%
AT	7.0	8.6	1.6	23%
PL	4.3	6.9	2.5	59%
PT	5.9	9.3	3.4	58%
RO	4.3	6.8	2.6	60%
SI	5.6	7.0	1.4	25%
SK	5.6	7.6	2.0	36%
FI	6.1	7.4	1.3	22%
SE	6.9	7.9	1.0	14%
UK	7.9	9.7	1.7	21%
NO	7.7	9.3	1.6	21%
EA	6.8	7.9	1.1	17%
EU*	6.8	8.1	1.3	19%
EU27	6.6	7.8	1.2	18%
EU* s	5.5	7.5	2.0	36%

Source: Commission services, EPC.

However, these results are sensitive to the simulated convergence process ([94]). 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).

([93]) 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.

([94]) See comparison of results between the Ageing Report 2015 and 2018 in Section 2.5.

Table II.2.9: Labour intensity scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	7.2	1.3	21%
BG	5.0	6.2	1.2	24%
CZ	5.4	7.9	2.5	45%
DK	6.9	8.6	1.7	25%
DE	7.4	9.5	2.1	28%
EE	5.3	6.3	1.0	19%
IE	4.1	5.4	1.2	30%
EL	5.0	5.4	0.5	9%
ES	5.9	6.5	0.6	10%
FR	7.9	8.6	0.8	10%
HR	5.2	6.4	1.2	22%
IT	6.3	7.3	1.0	15%
CY	2.8	3.3	0.5	19%
LV	3.7	4.5	0.8	21%
LT	4.1	4.7	0.6	16%
LU	3.9	6.0	2.1	56%
HU	4.9	6.4	1.5	31%
MT	5.6	8.6	3.0	53%
NL	6.2	7.6	1.3	21%
AT	7.0	9.7	2.8	40%
PL	4.3	6.6	2.3	53%
PT	5.9	9.3	3.4	57%
RO	4.3	6.1	1.8	43%
SI	5.6	7.4	1.7	30%
SK	5.6	7.9	2.4	43%
FI	6.1	7.4	1.3	22%
SE	6.9	8.5	1.6	23%
UK	7.9	10.2	2.3	28%
NO	7.7	10.3	2.7	35%
EA	6.8	8.1	1.3	20%
EU*	6.8	8.4	1.6	23%
EU27	6.6	8.0	1.4	21%
EU* s	5.5	7.1	1.6	29%

Source: Commission services, EPC.

Table II.2.10: Sector-specific composite indexation scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	8.4	2.4	41%
BG	5.0	6.4	1.5	29%
CZ	5.4	8.1	2.7	49%
DK	6.9	10.7	3.9	56%
DE	7.4	9.2	1.8	24%
EE	5.3	6.8	1.4	27%
IE	4.1	5.7	1.5	37%
EL	5.0	7.5	2.6	52%
ES	5.9	8.1	2.2	37%
FR	7.9	10.0	2.2	28%
HR	5.2	6.9	1.7	33%
IT	6.3	7.8	1.5	23%
CY	2.8	3.8	1.0	37%
LV	3.7	4.4	0.6	17%
LT	4.1	4.8	0.7	17%
LU	3.9	6.0	2.1	55%
HU	4.9	6.2	1.3	27%
MT	5.6	9.9	4.3	77%
NL	6.2	9.0	2.8	44%
AT	7.0	9.6	2.7	38%
PL	4.3	5.7	1.4	32%
PT	5.9	10.6	4.7	80%
RO	4.3	5.8	1.6	37%
SI	5.6	7.8	2.1	38%
SK	5.6	8.1	2.5	46%
FI	6.1	8.7	2.6	43%
SE	6.9	8.8	1.9	27%
UK	7.9	12.2	4.2	53%
NO	7.7	11.7	4.1	53%
EA	6.8	8.8	2.1	30%
EU*	6.8	9.3	2.5	36%
EU27	6.6	8.7	2.1	31%
EU* s	5.5	7.8	2.2	40%

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 1.3 pps. of GDP higher than the EU average in the "demographic scenario".

Table II.2.11 presents the projection results under the *"non-demographic determinants scenario"*. Following econometric analysis ([95]), an average elasticity of 1.4 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 2.8 pps. of GDP (compared to the 1.1 pps. projected for the EU28 under the "demographic scenario"). The results highlight the potential 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".

([95]) For details see EC/EPC (2017) "The 2018 Ageing Report "Underlying assumptions and projection methodologies", https://ec.europa.eu/info/sites/info/files/economy-finance/ip065_en.pdf.

Table II.2.11: **Non-demographic determinants scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	8.0	2.1	35%
BG	5.0	7.4	2.4	49%
CZ	5.4	8.6	3.2	59%
DK	6.9	9.9	3.0	43%
DE	7.4	10.0	2.6	36%
EE	5.3	7.4	2.1	39%
IE	4.1	6.5	2.4	58%
EL	5.0	7.9	3.0	60%
ES	5.9	7.9	2.0	34%
FR	7.9	10.3	2.5	32%
HR	5.2	8.0	2.7	52%
IT	6.3	8.3	2.0	32%
CY	2.8	3.7	0.9	32%
LV	3.7	6.5	2.8	74%
LT	4.1	6.3	2.2	53%
LU	3.9	6.2	2.4	62%
HU	4.9	7.9	3.0	62%
MT	5.6	11.4	5.9	105%
NL	6.2	8.6	2.4	39%
AT	7.0	10.2	3.3	47%
PL	4.3	7.1	2.7	63%
PT	5.9	10.7	4.8	81%
RO	4.3	7.5	3.3	77%
SI	5.6	8.7	3.1	54%
SK	5.6	9.9	4.3	78%
FI	6.1	8.6	2.5	41%
SE	6.9	9.5	2.6	37%
UK	7.9	11.7	3.8	47%
NO	7.7	11.1	3.5	45%
EA	6.8	9.2	2.5	36%
EU*	6.8	9.6	2.8	40%
EU27	6.6	9.1	2.5	38%
EU* s	5.5	8.4	2.9	51%

Source: Commission services, EPC.

Table II.2.12: **AWG reference scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	6.3	0.4	6%
BG	5.0	5.2	0.3	6%
CZ	5.4	6.5	1.1	20%
DK	6.9	7.9	1.0	15%
DE	7.4	8.1	0.7	10%
EE	5.3	5.6	0.3	5%
IE	4.1	5.1	1.0	24%
EL	5.0	6.2	1.2	24%
ES	5.9	6.4	0.5	9%
FR	7.9	8.3	0.5	6%
HR	5.2	5.9	0.7	13%
IT	6.3	7.0	0.7	11%
CY	2.8	3.2	0.4	13%
LV	3.7	4.3	0.6	16%
LT	4.1	4.5	0.4	11%
LU	3.9	5.1	1.2	31%
HU	4.9	5.7	0.8	17%
MT	5.6	8.3	2.7	48%
NL	6.2	7.0	0.8	13%
AT	7.0	8.3	1.3	19%
PL	4.3	5.2	0.8	19%
PT	5.9	8.3	2.4	40%
RO	4.3	5.2	0.9	22%
SI	5.6	6.7	1.0	18%
SK	5.6	6.8	1.2	22%
FI	6.1	6.9	0.8	13%
SE	6.9	7.7	0.7	11%
UK	7.9	9.4	1.4	18%
NO	7.7	8.9	1.2	16%
EA	6.8	7.4	0.7	10%
EU*	6.8	7.7	0.9	13%
EU27	6.6	7.3	0.7	10%
EU* s	5.5	6.5	0.9	17%

Source: Commission services, EPC.

2.4.3. AWG reference scenario

The *"AWG reference scenario"* is used as the baseline scenario. 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 2016 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 EU28 by 2070 (Table II.2.12). Individual countries' results range between 0.3 pps. (Bulgaria and Estonia) and 2.7 pps. of GDP (Malta). The estimated increases in spending are 0.2 pps. of GDP lower for the EU28 than in the "demographic scenario".

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 1.4 in 2016 converging linearly to unity in 2070. It projects spending in the EU28 to 8.4 % of GDP, i.e. an increase of 1.6 pps. of GDP relative to 2016 (Table II.2.13). Over the whole projection period, Cyprus is expected to have the lowest increase with 0.6 pps. of GDP. Malta has the highest increase with 4.3 pps. of GDP. On average, the projected increase in public health spending in the EU is 0.5 pps. of GDP higher than in the "demographic scenario" and 0.7 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 2016-2070, as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	6.9	0.9	15%
BG	5.0	6.3	1.3	26%
CZ	5.4	7.3	1.9	35%
DK	6.9	8.7	1.8	27%
DE	7.4	8.9	1.5	20%
EE	5.3	6.4	1.1	20%
IE	4.1	5.8	1.7	40%
EL	5.0	6.9	2.0	40%
ES	5.9	7.1	1.2	20%
FR	7.9	9.1	1.2	16%
HR	5.2	6.7	1.5	29%
IT	6.3	7.5	1.1	18%
CY	2.8	3.4	0.6	22%
LV	3.7	5.5	1.8	47%
LT	4.1	5.3	1.2	30%
LU	3.9	5.6	1.7	44%
HU	4.9	6.7	1.8	37%
MT	5.6	9.9	4.3	77%
NL	6.2	7.6	1.4	23%
AT	7.0	9.1	2.1	30%
PL	4.3	6.0	1.7	40%
PT	5.9	9.2	3.3	56%
RO	4.3	6.4	2.1	50%
SI	5.6	7.6	2.0	35%
SK	5.6	8.1	2.6	46%
FI	6.1	7.5	1.4	23%
SE	6.9	8.5	1.5	22%
UK	7.9	10.3	2.4	30%
NO	7.7	9.8	2.1	28%
EA	6.8	8.1	1.4	20%
EU*	6.8	8.4	1.6	24%
EU27	6.6	8.0	1.4	21%
EU* s	5.5	7.3	1.8	32%

Source: Commission services, EPC.

Table II.2.14: **TFP risk scenario - projected increase in public expenditure on health care over 2016-2070, as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	in %
BE	5.9	6.3	0.4	6%
BG	5.0	5.2	0.2	5%
CZ	5.4	6.4	1.0	19%
DK	6.9	7.8	1.0	14%
DE	7.4	8.1	0.7	9%
EE	5.3	5.5	0.2	4%
IE	4.1	5.2	1.0	25%
EL	5.0	6.1	1.1	23%
ES	5.9	6.4	0.5	9%
FR	7.9	8.3	0.4	5%
HR	5.2	5.9	0.7	13%
IT	6.3	7.0	0.7	10%
CY	2.8	3.2	0.4	12%
LV	3.7	4.3	0.5	14%
LT	4.1	4.4	0.3	8%
LU	3.9	5.0	1.1	30%
HU	4.9	5.7	0.8	16%
MT	5.6	8.2	2.6	47%
NL	6.2	7.0	0.8	13%
AT	7.0	8.2	1.3	18%
PL	4.3	5.1	0.8	18%
PT	5.9	8.2	2.3	40%
RO	4.3	5.1	0.9	20%
SI	5.6	6.6	1.0	17%
SK	5.6	6.7	1.1	20%
FI	6.1	6.8	0.7	11%
SE	6.9	7.6	0.7	10%
UK	7.9	9.3	1.4	17%
NO	7.7	8.8	1.2	15%
EA	6.8	7.4	0.6	9%
EU*	6.8	7.6	0.8	12%
EU27	6.6	7.3	0.7	10%
EU* s	5.5	6.4	0.9	16%

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 0.8 pps. of GDP (Table II.2.14). This is 0.1 pps. of GDP less than the projected increase for the EU28 under the "AWG reference scenario" and 0.3 pps. of GDP lower compared to the EU average in the "demographic scenario".

An overview of the projection results for all scenarios is presented in Table II.2.15 and Graph II.2.5.

Table II.2.15: **Overview of scenario results - increase in public expenditure on health care over 2016-2070, as pps. of GDP**

	AWG reference scenario	AWG risk scenario	Demographic scenario	High life expectancy scenario	Healthy ageing scenario	Death-related costs scenario	Income elasticity scenario	EU28 cost convergence scenario	Labour intensity scenario	Sector-specific composite indexation scenario	Non-demographic determinants scenario	TFP risk scenario	
BE	0.4	0.9	0.8	1.0	-0.2	0.6	1.0	1.0	1.3	2.4	2.1	0.4	BE
BG	0.3	1.3	0.4	0.4	-0.4	0.4	0.7	2.1	1.2	1.5	2.4	0.2	BG
CZ	1.1	1.9	1.4	1.6	0.4	1.0	1.7	1.8	2.5	2.7	3.2	1.0	CZ
DK	1.0	1.8	1.2	1.4	0.4	0.9	1.5	1.2	1.7	3.9	3.0	1.0	DK
DE	0.7	1.5	0.9	1.1	0.1	0.7	1.2	1.0	2.1	1.8	2.6	0.7	DE
EE	0.3	1.1	0.4	0.4	-0.3	:	0.6	1.2	1.0	1.4	2.1	0.2	EE
IE	1.0	1.7	1.1	1.2	0.6	:	1.3	2.2	1.2	1.5	2.4	1.0	IE
EL	1.2	2.0	1.3	1.5	0.7	:	1.5	2.4	0.5	2.6	3.0	1.1	EL
ES	0.5	1.2	0.6	0.7	0.1	0.5	0.8	1.1	0.6	2.2	2.0	0.5	ES
FR	0.5	1.2	0.7	0.8	-0.2	0.5	1.0	0.8	0.8	2.2	2.5	0.4	FR
HR	0.7	1.5	1.0	1.1	0.1	:	1.2	1.9	1.2	1.7	2.7	0.7	HR
IT	0.7	1.1	0.9	1.1	0.2	0.8	1.0	1.0	1.0	1.5	2.0	0.7	IT
CY	0.4	0.6	0.4	0.4	0.2	:	0.4	4.4	0.5	1.0	0.9	0.4	CY
LV	0.6	1.8	0.5	0.6	0.0	:	0.9	3.3	0.8	0.6	2.8	0.5	LV
LT	0.4	1.2	0.5	0.6	-0.1	:	0.8	2.8	0.6	0.7	2.2	0.3	LT
LU	1.2	1.7	1.4	1.5	0.7	:	1.5	2.8	2.1	2.1	2.4	1.1	LU
HU	0.8	1.8	1.1	1.2	0.1	0.8	1.4	2.1	1.5	1.3	3.0	0.8	HU
MT	2.7	4.3	2.8	3.2	1.7	:	3.3	3.5	3.0	4.3	5.9	2.6	MT
NL	0.8	1.4	1.0	1.2	0.3	0.7	1.2	1.1	1.3	2.8	2.4	0.8	NL
AT	1.3	2.1	1.6	1.8	0.6	1.4	1.8	1.6	2.8	2.7	3.3	1.3	AT
PL	0.8	1.7	1.0	1.1	0.3	0.7	1.3	2.5	2.3	1.4	2.7	0.8	PL
PT	2.4	3.3	2.7	3.1	1.5	:	3.0	3.4	3.4	4.7	4.8	2.3	PT
RO	0.9	2.1	0.9	1.1	0.3	:	1.3	2.6	1.8	1.6	3.3	0.9	RO
SI	1.0	2.0	1.1	1.3	0.4	1.0	1.4	1.4	1.7	2.1	3.1	1.0	SI
SK	1.2	2.6	1.5	1.7	0.0	1.3	2.0	2.0	2.4	2.5	4.3	1.1	SK
FI	0.8	1.4	1.1	1.3	0.2	0.9	1.3	1.3	1.3	2.6	2.5	0.7	FI
SE	0.7	1.5	0.9	1.1	0.2	0.6	1.2	1.0	1.6	1.9	2.6	0.7	SE
UK	1.4	2.4	1.7	2.0	0.7	1.4	2.0	1.7	2.3	4.2	3.8	1.4	UK
NO	1.2	2.1	1.5	1.7	0.5	:	1.8	1.6	2.7	4.1	3.5	1.2	NO
EA	0.7	1.4	0.9	1.1	0.1	:	1.1	1.1	1.3	2.1	2.5	0.6	EA
EU*	0.9	1.6	1.1	1.3	0.2	:	1.3	1.3	1.6	2.5	2.8	0.8	EU*
EU27	0.7	1.4	0.9	1.1	0.1	:	1.1	1.2	1.4	2.1	2.5	0.7	EU27
EA s	1.0	1.7	1.1	1.3	0.3	:	1.4	2.0	1.5	2.2	2.8	0.9	EA s
EU* s	0.9	1.8	1.1	1.3	0.3	:	1.4	2.0	1.6	2.2	2.9	0.9	EU* s

Notes: (1) The "healthy ageing scenario" is identical to the "constant health scenario" from previous Ageing Reports. (2) The EU28 (EU*), EU27 and EA averages are weighted according to GDP. A non-weighted EU average (EU* s) is included at the bottom of the table.
Source: Commission services, EPC.

Graph II.2.5: **Range of results from different scenarios on health care in EU28**
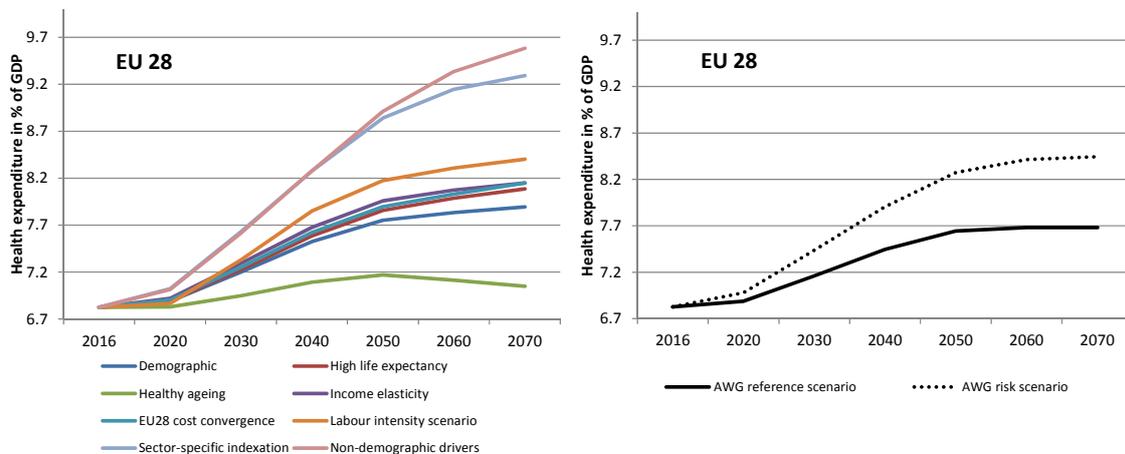
Note: The "healthy ageing scenario" is identical to the "constant health scenario" from previous Ageing Reports.
Source: Commission services, EPC.

2.4.6. AWG reference scenario sensitivity tests

So far the impact of ageing populations and other non-demographic determinants on public health care spending was shown in relation to the "demographic scenario". However, the results of the "AWG reference scenario" used for multilateral budgetary surveillance in the EU, are also sensitive to changes in key demographic and macroeconomic assumptions. Alternative sensitivity tests are applied 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.2.6, the EU28 long-term health care expenditure projections are more responsive to changes in the demographic than in the macroeconomic underlying 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 shown in Table II.2.16.

Graph II.2.6: **Sensitivity tests of the AWG reference scenario on health care, EU28**
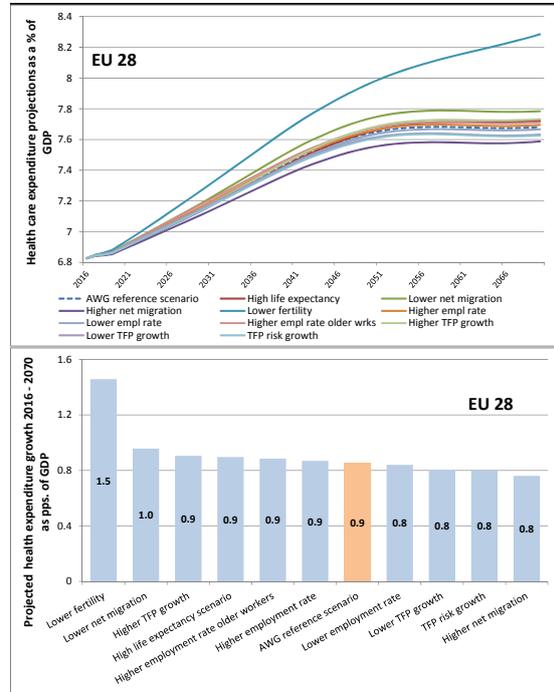
Source: Commission services, EPC.

Table II.2.16: **Sensitivity tests of the AWG reference scenario on health care - increase in public expenditure on health care over 2016-2070, as pps. of GDP**

	HC public expenditure	AWG reference scenario	High life expectancy scenario	Lower net migration	Higher net migration	Lower fertility	Higher employment rate	Lower employment rate	Higher employment rate older workers	Higher TFP growth	Lower TFP growth	TFP risk growth	
	% of GDP	pps. of GDP	pps. of GDP	pps. of GDP	pps. of GDP	pps. of GDP	pps. of GDP	pps. of GDP	pps. of GDP	pps. of GDP	pps. of GDP	pps. of GDP	
	2016	CH 16-70	CH 16-70	CH 16-70	CH 16-70	CH 16-70	CH 16-70	CH 16-70	CH 16-70	CH 16-70	CH 16-70	CH 16-70	
BE	5.9	0.4	0.4	0.5	0.3	0.9	0.4	0.4	0.4	0.4	0.3	0.4	BE
BG	5.0	0.3	0.2	0.3	0.3	0.7	0.3	0.3	0.3	0.3	0.2	0.2	BG
CZ	5.4	1.1	1.1	1.2	1.0	1.7	1.1	1.1	1.1	1.1	1.0	1.0	CZ
DK	6.9	1.0	1.1	1.1	1.0	1.6	1.0	1.0	1.1	1.1	1.0	1.0	DK
DE	7.4	0.7	0.8	0.8	0.6	1.3	0.7	0.7	0.8	0.8	0.7	0.7	DE
EE	5.3	0.3	0.3	0.3	0.2	0.7	0.3	0.2	0.3	0.3	0.2	0.2	EE
IE	4.1	1.0	1.1	1.1	1.0	1.4	1.0	1.0	1.0	1.0	1.0	1.0	IE
EL	5.0	1.2	1.3	1.3	1.1	1.7	1.2	1.2	1.2	1.2	1.2	1.1	EL
ES	5.9	0.5	0.6	0.7	0.4	0.9	0.6	0.5	0.6	0.6	0.5	0.5	ES
FR	7.9	0.5	0.4	0.5	0.4	1.2	0.5	0.5	0.5	0.5	0.4	0.4	FR
HR	5.2	0.7	0.7	0.8	0.6	1.2	0.7	0.7	0.7	0.7	0.6	0.7	HR
IT	6.3	0.7	0.7	0.8	0.6	1.2	0.7	0.7	0.7	0.7	0.6	0.7	IT
CY	2.8	0.4	0.4	0.4	0.3	0.5	0.4	0.4	0.4	0.4	0.3	0.4	CY
LV	3.7	0.6	0.6	0.6	0.6	0.9	0.6	0.6	0.6	0.6	0.6	0.5	LV
LT	4.1	0.4	0.4	0.4	0.5	0.8	0.4	0.4	0.5	0.5	0.4	0.3	LT
LU	3.9	1.2	1.2	1.3	1.1	1.6	1.2	1.2	1.2	1.2	1.2	1.1	LU
HU	4.9	0.8	0.9	0.9	0.8	1.4	0.9	0.8	0.9	0.9	0.8	0.8	HU
MT	5.6	2.7	2.8	3.0	2.5	3.5	2.7	2.7	2.7	2.8	2.6	2.6	MT
NL	6.2	0.8	0.9	0.9	0.7	1.4	0.8	0.8	0.8	0.9	0.8	0.8	NL
AT	7.0	1.3	1.4	1.5	1.2	2.0	1.3	1.3	1.4	1.4	1.3	1.3	AT
PL	4.3	0.8	0.8	0.9	0.7	1.3	0.8	0.8	0.9	0.9	0.8	0.8	PL
PT	5.9	2.4	2.6	2.5	2.2	3.3	2.4	2.4	2.4	2.4	2.3	2.3	PT
RO	4.3	0.9	1.0	0.9	0.9	1.5	0.9	0.9	0.9	1.0	0.9	0.9	RO
SI	5.6	1.0	1.1	1.2	0.9	1.6	1.1	1.0	1.7	1.1	1.6	1.0	SI
SK	5.6	1.2	1.2	1.3	1.2	1.9	1.2	1.2	1.3	1.3	1.2	1.1	SK
FI	6.1	0.8	0.8	0.8	0.7	1.3	0.8	0.7	0.8	0.8	0.7	0.7	FI
SE	6.9	0.7	0.8	0.9	0.6	1.3	0.8	0.7	0.8	0.8	0.7	0.7	SE
UK	7.9	1.4	1.6	1.6	1.3	2.2	1.5	1.4	1.5	1.5	1.4	1.4	UK
NO	7.7	1.2	1.3	1.4	1.1	1.9	1.3	1.2	1.3	1.3	1.2	1.2	NO
EA	6.8	0.7	0.7	0.8	0.6	1.3	0.7	0.7	0.7	0.7	0.6	0.6	EA
EU*	6.8	0.9	0.9	1.0	0.8	1.5	0.9	0.8	0.9	0.9	0.8	0.8	EU*
EU27	6.6	0.7	0.7	0.8	0.6	1.3	0.7	0.7	0.7	0.7	0.6	0.7	EU27
EU* s	5.5	0.9	1.0	1.0	0.8	1.5	0.9	0.9	1.0	1.0	0.9	0.9	EU* s

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 2015 AGEING REPORT

The *"AWG reference scenario"* is the point of reference for comparisons with the 2015 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 and GDP levels for the period under analysis and changes in scenario assumptions.

A decomposition of drivers ([96]), aiming at quantifying which factors can explain the differences in projected spending between the 2015 and the 2018 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.

As for the results at the level of the EU28, the new age-cost profiles have slightly increased the spending by 0.04 pps. of GDP. New demographic data has, in general, driven up spending projections by 0.1 pps. of GDP, whilst GDP per capita growth projections have driven down the results by roughly 0.1 pps. of GDP. However, there is considerable variation between countries.

The 2016 level of public expenditure on health care in the EU is 0.2 pps. of GDP lower in the current Ageing Report than in the 2015 projections. The impact ranges from an increase of 0.9 pps. of GDP in Bulgaria to a decrease of 2.0 pps. of GDP in Ireland. In aggregate, EU countries now start from a lower level of spending. Ceteris paribus, this shift results in lower increases in projected levels of health spending.

There are no noticeable changes in the **age-gender cost profiles** for the EU on average. However, this aggregate impact masks a wide range of variation across Member States, from an increase of 0.2 pps. of GPD for Italy, Hungary, Sweden, Luxembourg and the Netherlands to a decrease of 0.4 pps. of GDP for France. 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.

Graph II.2.7 shows the age-gender expenditure profiles as percentage of GDP for all ages and their evolution in comparison to the 2015 Ageing Report. In the EU28, the cost profiles for males decreased for the ages 70 to 95 and increased for the very old ages of 95 and above compared to the 2015 cost profiles. Similarly, the cost profiles for females decreased for the ages 60 to 85 but increased for the very old ages of 95 and above. These changes in the age-cost profiles may result in a relative larger increase in public expenditure on health care as compared to the 2015 Ageing Report.

Revisions in the demographic projections lead to greater health care expenditure on average in the EU in the current Ageing Report. The latest projected demographic evolution for Italy, Luxembourg and Latvia substantially affects the projected health care spending growth, while the changes in projected demographics favourably impact on the projected health care growth for Slovakia and the Netherlands.

Lower GDP growth rates per capita in the EU in the current Ageing Report relative to the 2015 Ageing Report impact favourably on lower health care expenditure growth. However, this overall impact masks some of the country-level specificities. Ireland, Malta and Portugal are most strongly affected by revisions to GDP projections reducing projected expenditure growth, whereas for Greece, Latvia and Slovakia, the effect is opposite even though somewhat smaller.

([96]) For the decomposition, departing from the level of expenditure in 2016, each driver's impact is estimated by replacing *ceteris paribus* its current value with the 2015 Ageing Report data. This is done subsequently for the age-cost profiles, GDP per capita growth and population data.

Table II.2.17: **Decomposing the impact of drivers on differences in spending growth in health care expenditures between the 2018 and 2015 Ageing Reports, in pps. of GDP**

	Difference in spending growth between the 2018 and 2015 Ageing Reports	Determinants of change behind 2018 Ageing Report health care expenditure as % of GDP compared to 2015 Ageing Report projections (AWG reference scenario, change 2016-2060)					
		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	0.2	-0.2	0.2	-0.1	0.0	BE
BG	0.2	0.1	0.0	0.1	-0.1	0.0	BG
CZ	0.2	0.0	0.0	0.3	-0.1	0.0	CZ
DK	0.2	0.0	0.1	0.2	-0.1	0.0	DK
DE	0.3	0.4	0.0	-0.1	0.0	0.0	DE
EE	-0.1	-0.3	0.1	0.0	0.0	0.0	EE
IE	0.0	0.1	0.0	0.2	-0.4	0.1	IE
EL	0.0	-0.3	0.0	0.2	0.1	0.0	EL
ES	-0.1	0.1	0.1	-0.1	-0.1	0.0	ES
FR	-0.3	0.1	-0.4	0.0	0.0	0.0	FR
HR	-0.1	-0.1	-0.1	0.1	-0.1	0.0	HR
IT	0.1	-0.3	0.2	0.4	-0.1	0.0	IT
CY	0.1	0.0	0.0	0.1	-0.1	0.0	CY
LV	0.2	0.1	-0.3	0.3	0.1	0.0	LV
LT	0.5	0.0	0.1	0.4	0.0	-0.1	LT
LU	0.5	0.0	0.2	0.5	-0.1	0.0	LU
HU	0.2	0.1	0.2	0.0	0.0	0.0	HU
MT	0.4	0.4	-0.1	0.3	-0.3	0.1	MT
NL	0.0	0.0	0.2	-0.2	0.0	0.0	NL
AT	0.0	0.0	0.0	0.1	0.0	0.0	AT
PL	-0.3	-0.4	0.0	0.1	0.0	0.0	PL
PT	0.0	0.1	0.0	0.0	-0.2	0.0	PT
RO	0.3	0.2	0.0	0.2	0.0	0.0	RO
SI	0.1	0.1	0.0	0.1	0.0	0.0	SI
SK	-0.4	0.0	0.0	-0.5	0.1	0.0	SK
FI	0.0	-0.1	-0.1	0.3	-0.1	0.0	FI
SE	0.3	0.1	0.2	0.0	0.0	0.0	SE
UK	0.1	0.2	-0.1	0.1	-0.1	0.0	UK
NO	0.3	0.0	-0.2	0.4	0.0	0.0	NO
EA	0.1	0.2	-0.1	0.0	-0.1	0.0	EA
EU*	0.1	0.2	0.0	0.1	-0.1	0.0	EU*
EU27 s	0.1	0.1	0.0	0.0	-0.1	0.0	EU27 s
EA s	0.1	0.0	0.0	0.1	-0.1	0.0	EA s
EU* s	0.1	0.0	0.0	0.1	-0.1	0.0	EU* s

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 2015 Ageing Report data for all drivers at once. (2) The EU28 (EU*) and EA averages are weighted according to GDP. A non-weighted EU average (EU* s) is included at the bottom of the table.
Source: Commission services, EPC.

Graph II.2.7: **Age-gender expenditure profiles and population changes in the 2018 and 2015 Ageing Reports**
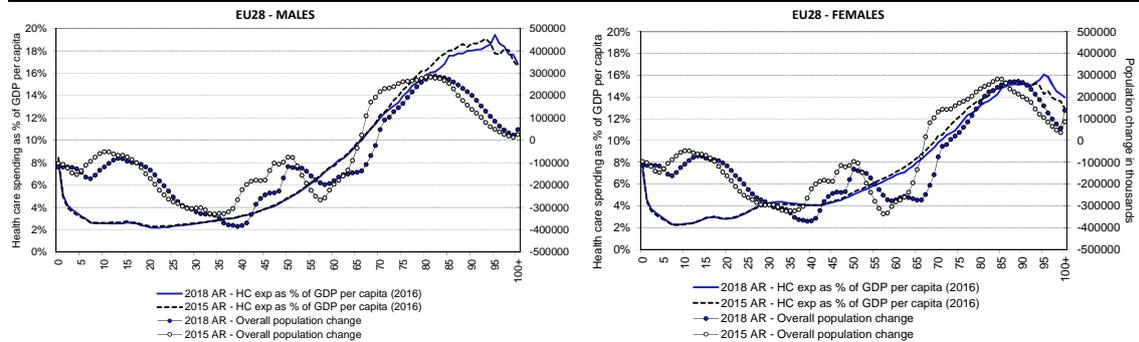
Source: Commission services, EPC.

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 materialize in a context subject to considerable uncertainty. Public health expenditure in EU28 was at 6.8 % of GDP in 2016. The projections show that expenditure may grow to 7.9 % 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 1.1 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 more pessimistic note, 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 are healthy life years, the additional cost burden from ageing can be lowered to only 0.2 pps. of GDP, as exemplified in the "***healthy ageing scenario***" ([97]).

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 ([98]). 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 1.3 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 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 1.4) - when

---

([97]) The "healthy ageing scenario" is identical to the "constant health scenario" from previous Ageing Reports.
([98]) In the past decade there was an increase in the expenditure associated with old age diseases such as Alzheimer or dementia for example.

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 1.6 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 1.6 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 *"cost convergence scenario"* Member States with age-gender spending profiles as shares of GDP per capita below the EU28 average age-gender cost profile converge in real living standards to the EU28 average. On average for the EU28 the projected increase in public expenditure on health care for this scenario is 1.3 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 1.4 pps. of GDP higher than in the "demographic scenario". This is the second highest projected increase in public spending on health care (2.5 pps. of GDP by 2070), which 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* and the *AWG risk scenarios* show that spending in the EU28 may increase between 0.9 and 1.6 pps. of GDP (Graph II.2.5).

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 with 0.8 pps. of GDP, 0.1 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, which are not well reflected in the projections, further increase this range both at the low and high ends. Despite these uncertainties, 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 2015 Ageing Report projections, the health care public expenditure projections presented here extend the projection horizon from 2060 up to 2070. Additionally, 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 EU28 show that the new age-cost profiles have slightly increased the spending by 0.04 pps. of GDP. The GDP per capita growth projections have driven down the results by roughly 0.1 pps. of GDP, while new demographic data has driven up spending projections by 0.1 pps. of GDP. However, there is considerable variation between countries.

Furthermore, the current Eurostat 2015-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, but it is also influenced by the health status of the population 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. It is unlikely that these pressures will lead to a withdrawal from public financing of health care. 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 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) were run using Commission services' (DG ECFIN) models on the basis of a methodology and data agreed with the Member States delegates to the AWG-EPC ([99]). The projections go from 2016, the base year, until 2070.

LTC expenditure is 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. 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**
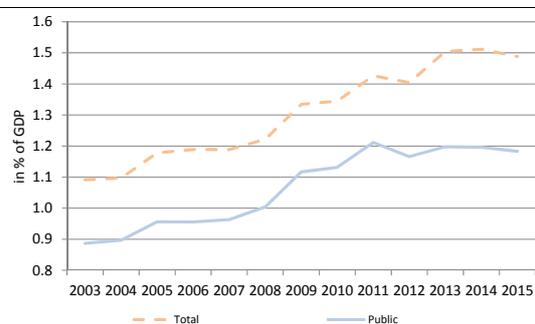
Notes: Expenditure based only on the medical care component (HC.3) of system of health accounts data.
Source: European Commission, EPC.

Long-term care is usually defined ([100]) 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 ([101])). Basic ADL are often provided in tandem with basic medical services such as nursing care, prevention, rehabilitation or services of palliative care. Instrumental Activities of Daily Living (IADL ([102])) 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**
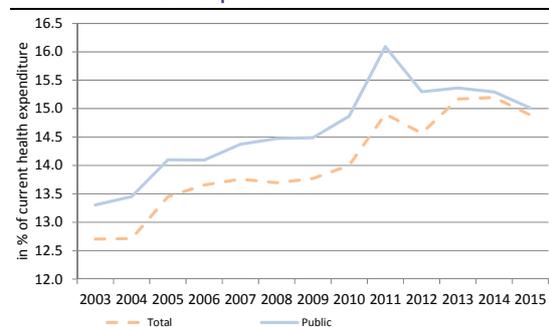
Notes: Expenditure based only on the medical care component (HC.3) of system of health accounts data.
Source: European Commission, EPC.

EU Member States finance formal LTC either as "in-kind" services, i.e. 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.

Due to historical and organisational reasons, public financing of LTC tends to be highly fragmented, with different government authorities being in charge of different strands. This leads to great difficulties in ascertaining 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. Annex 4 discusses these issues in greater detail and explains the efforts that have been made in these projections to obtain an accurate overview of the sector.

([99]) Data and methodology are briefly summarised in Annex IV to the Chapter. The detailed 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 2018 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy 24. November 2017. Brussels: https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-underlying-assumptions-and-projection-methodologies_en.

([100]) Including by international institutions, such as OECD, Eurostat and WHO.

([101]) ADL are: eating, bathing, washing, dressing, getting in and out of bed, getting to and from the toilet and continence management.

([102]) IADL are: shopping, laundry, vacuuming, cooking and performing housework, managing finances, using the telephone, etc.

For instance, it is relatively common for the same recipient to receive both in-kind and cash benefits, 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. Graph II.3.3 shows the overlap of different benefits in the provision of care in the EU by adding up the estimated coverage of in-kind (institutional and home care) and cash benefits. This leads to estimated coverage rates of above 100% in some age-categories (see also Graph II.3.4). These overlaps complicate the estimation of the exact number of care recipients and the expenditure level due to the potential double-counting of recipients and expenditure. That is why, these factors are thoroughly taken into account in this projection exercise ([103]).

Graph II.3.3: **Age-related coverage of dependent population by type of care provided in the EU, as % of population**
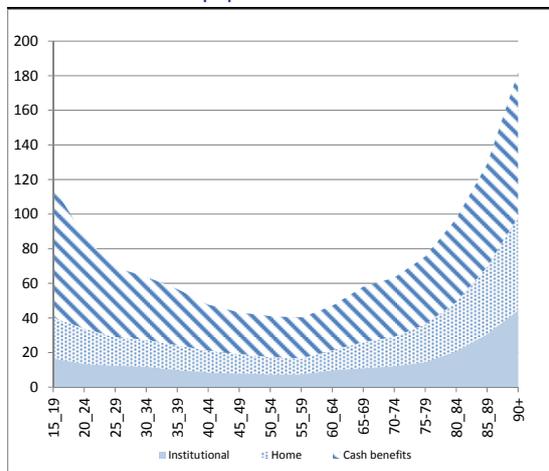
Notes: Coverage estimated as ratio between recipients and potentially dependent population; Recipient data, as provided by Member States; Population of potentially dependent based on EU-SILC data on "self-perceived longstanding severe limitation in activities because of health problems [for at least the last 6 months]" is used.
Source: European Commission, EPC. 2016 (base year) estimate)

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, increasing the need to resort to publicly financed formal care and thereby putting pressure on public expenditure on LTC.

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 ([104]).

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, the model of LTC provision (organisation and financing of the system, which shape the mix between formal, paid 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.

3.2.2. Demographic structure of the population

The ageing of the population is a key element of future public expenditure on LTC. It is on the one hand the result of the demographic transition that results from the ageing of the baby boom cohorts and on the other the result of the increase of life expectancy and the decrease of fertility rates. The increasing share of and numbers 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.3.5. The link between ageing and dependency is explored further in the next section.

([103]) See Annex IV for an explanation of how data limitations have been dealt with.

([104]) 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).

Graph II.3.4: **Country-specific coverage rates of long-term care recipients, as % of dependent population**
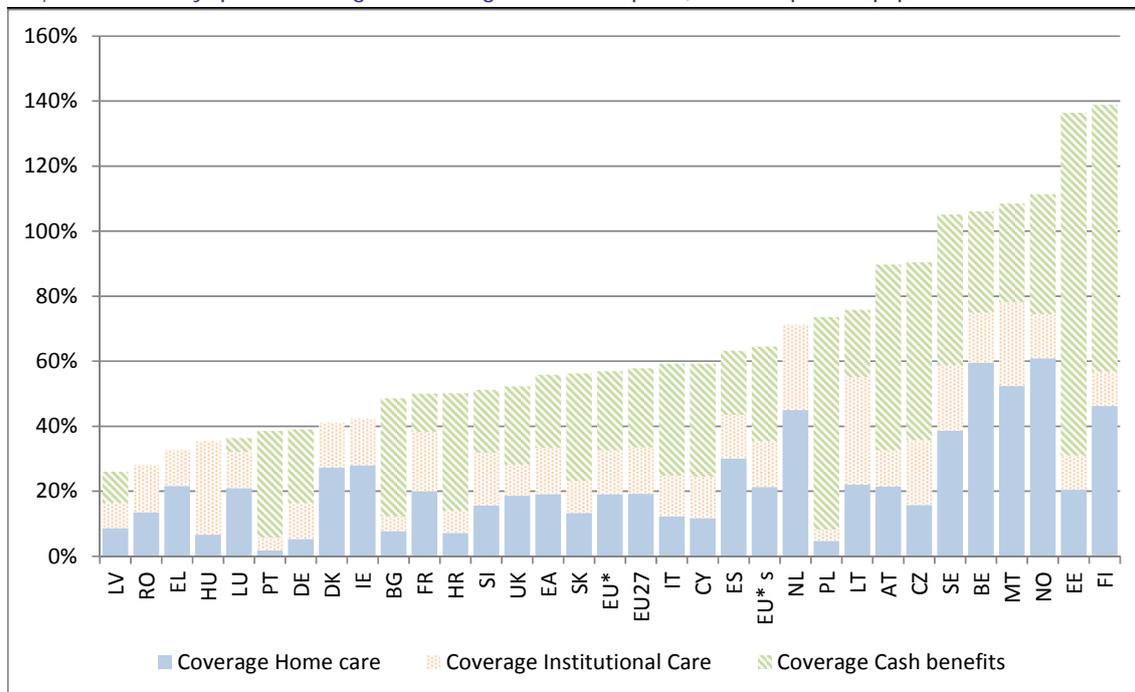
Notes: Coverage rates in the base year of 2016 in the EU and Norway; Coverage estimated as ratio between recipients and potentially dependent population; Recipient data, as provided by Member States; Coverage may be above 100%, as some recipients may receive cash benefits and in-kind benefits at the same time, which is not corrected for in this graph. Population of potentially dependent based on 2011-2015 average of EU-SILC data on "self-perceived longstanding limitation in activities because of health problems [for at least the last 6 months]" is used. It should be noted that the coverage for institutional care for Luxembourg is likely to be underestimated due to incomplete data.
Source: European Commission, EPC.

Graph II.3.5: **Median dependency rates by age-group for EU28, based on EU-SILC**
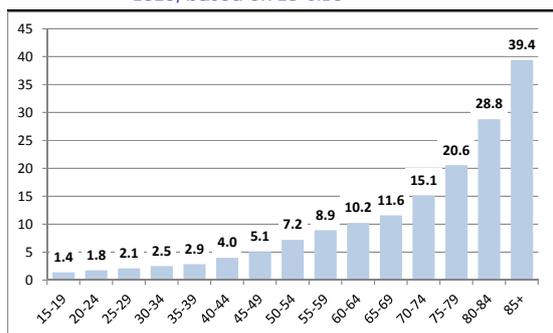
Notes: The dependency rates are based on EU-SILC data on "self-perceived longstanding severe limitation in activities because of health problems [for at least the last 6 months]".
Source: European Commission, EPC. 2016 (base year) estimate.

The age-related expenditure profiles used in the 2018 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, which suggests that the LTC costs per recipient related to severe disability are relatively independent of age. However, it is possible that the type of LTC system and its coverage may also influence these results, since they vary noticeably for the EU15 countries (which tend to have more comprehensive LTC systems, and where there does seem to be some increase in costs for older users) and the New Member States (NMS) countries (which tend to have less extensive LTC systems, and where costs tend to be greater for younger recipients). Graphs II.3.6, II.3.7 and II.3.8 show the specific profiles for institutional care, home care and cash benefits. Annex IV contains a comparison of the overall age-cost profiles with those used in AR2015.

Overall, in contrast to health care, where higher spending as a consequence of ageing is partly due to increasing age-cost profiles, ageing affects LTC spending mainly through increases in the number of dependent people.

Graph II.3.6: **Institutional care: Expenditure per recipient of long-term care services in institutional care, as % of GDP per capita**
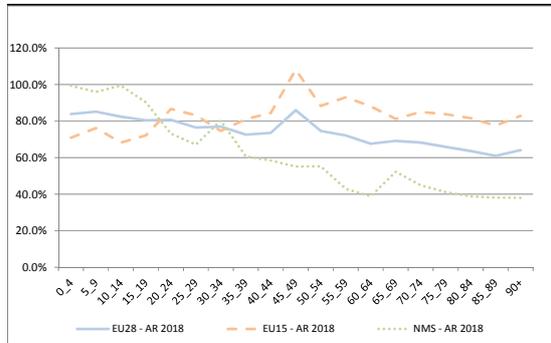
Notes: EU15: Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom. NMS: New Member States: Bulgaria, Czech Republic, Estonia, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Romania, Slovenia and Slovakia.
Source: European Commission, EPC. 2016 (base year) estimate.

Graph II.3.7: **Home care: Expenditure per recipient of long-term care services in home care, as % of GDP per capita**
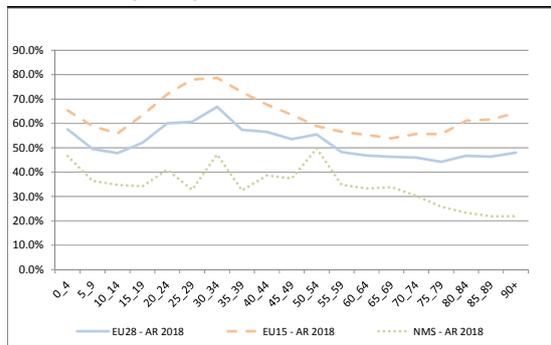
Source: European Commission, EPC. 2016 (base year) estimate.

Graph II.3.8: **Cash benefits: Expenditure per recipient of long-term care cash benefits care, as % of GDP per capita**
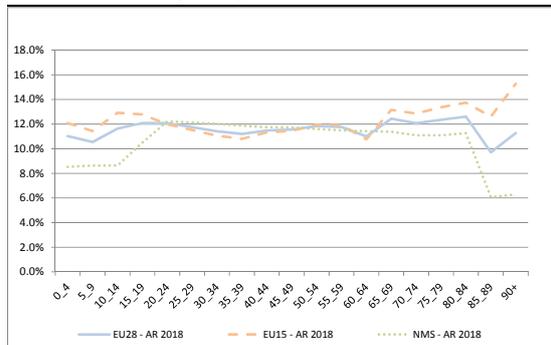
Source: European Commission, EPC. 2016 (base year) estimate.

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 ([105]) causing dependency on others.

As shown in the previous section, dependency rates are higher for older age groups and therefore, if dependency rates for each age group stay constant, as the ageing of the population increases the number of elderly people, we expect the number of people with dependency issues to increase.

However, 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.

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). It is not necessarily age per se but the dependency rates that determine LTC expenditure.

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

---

([105]) 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.

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 ([106]). 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.

In order to minimise errors and in line with the usual eligibility conditions of public schemes, it is common to focus on disability levels categorized as "severe". 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 considered an adequate measure of dependency and is available for all EU Member States and Norway for people aged 15+ and by age group ([107]). To further improve the reliability of the data, a four-year average is used.

As suggested above, a key question when projecting LTC expenditure is the impact on dependency rates of increased longevity. 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 ([108]). In particular, the number of people with dementia (e.g. Alzheimer's disease) is expected to increase ([109]). On the other hand, some studies 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 ([110]).

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 which 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.

Indeed, 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 care giver 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.

Countries such as Denmark the Netherlands and Sweden rely mostly on formal care, while countries such as Bulgaria, Cyprus, Estonia, Lithuania, Latvia, Romania and Croatia rely almost exclusively on informal care.

Pressure for increased public provision and financing of LTC services may grow substantially in coming decades as countries become richer,

---

([106]) People may not report certain socially stigmatised conditions, such as alcohol and drug related conditions, schizophrenia, and mental degeneration.

([107]) 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.

([108]) Heger, D. and Kolodziej, I.W.K. "Changes in Morbidity over Time – Evidence from Europe", Ruhr Economic Papers #640.

([109]) 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 globally, while ageing populations mean these costs are rising. OECD (2015). "Addressing Dementia: The OECD Response".

([110]) 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.

especially in those Member States where the bulk of LTC is currently provided informally.

3.2.5. Care supply – availability of human resources

In the 2018 Ageing Report, similar to the report published in 2015, 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. Further, the substitution effects between formal and informal care are not as straightforward.

Since at present, labour is the main input when providing LTC ([111]), 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.

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. The provision of care increases with age, to reach a peak in the age cohorts 45-60.

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). The FELICIE ([112]) projections suggest there may be an increase in the availability of informal caregivers. Indeed, the 85 years-old and more, both males and females, are expected to live more frequently with a partner in 2030 than in 2000.

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 may have negative consequences for the carer in cases of intensive caring: there may be a negative impact on the carer's health status, reducing their ability to care and to participate in the labour market ([113]).

([111]) 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.

([112]) FELICIE: or "Future of Elderly Living Conditions in Europe" The goal of this project was to forecast the living arrangements of people aged 75+ in the next thirty years (2000-2030), with the aim to estimate their needs, through an evaluation of the future demand for nursing homes and for informal and formal care.

([113]) See OECD (2011) "Health-reform: meeting the challenge of ageing and multiple morbidities".

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 ([114]).

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 ([115]).

The methodology proposes sensitivity analysis for key assumptions based on a series of scenarios estimating changes in:

- the future relative numbers of <u>elderly people</u>, reflecting changes in the population projections;

- the future numbers of <u>dependent</u> elderly people, by applying changes to the prevalence rates of dependency;

- the <u>balance</u> between <u>formal and informal care</u> provision;

- the <u>balance</u> between <u>home care and institutional care</u> within the formal care system; and

- the <u>unit costs</u> of care.

These macro-simulation models split the whole population into groups which are assigned certain characteristics (e.g. age, gender, per capita expenditure, health status, type of care/support…). 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.

([114]) 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.

([115]) 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 2018 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy. 24. November 2017. Brussels: https://ec.europa.eu/info/publications/economy-finance/2018-ageing-report-underlying-assumptions-and-projection-methodologies_en

Graph II.3.9: Schematic presentation of the projection methodology
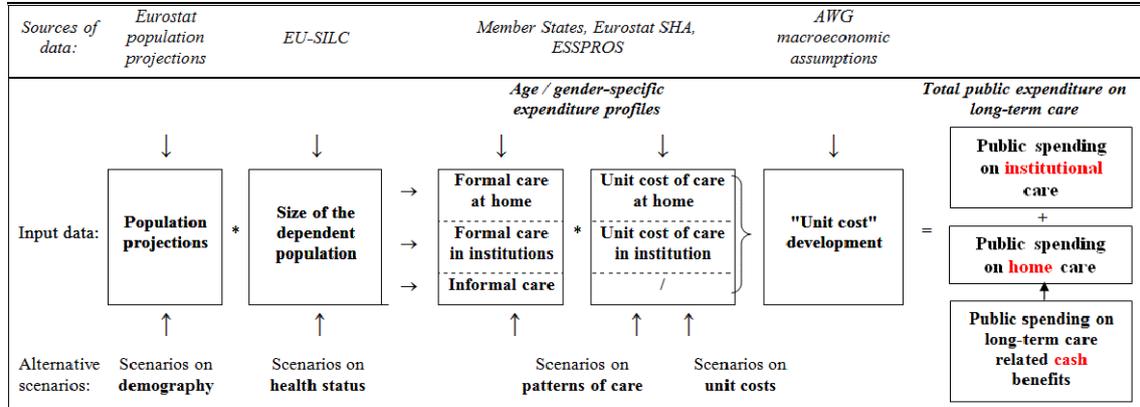
Notes: The projections need to be viewed in the context of the overall projection exercise. Consequently, the common elements of all scenarios are the population projections provided by Eurostat for 2016 to 2070 and the baseline assumptions on labour force and macroeconomic variables agreed by the EC (DG ECFIN) and the EPC (AWG). The age and gender-specific profiles of public expenditure (on long-term care) per user are provided by Member States, or proxied by the EU-average. They are applied to the demographic projections provided by Eurostat to calculate nominal spending on long-term care. As for cash benefits, they are assumed to grow in line with GDP per capita; their actual unit cost is seldom available, and therefore could not be used in this projection exercise. Further, the necessary age and sex distribution of cash recipients has not been provided by a number of Member States.
Source: European Commission, EPC.

In past exercises it has been decided that the base-case long-term budgetary projections should illustrate the policy-neutral situation. This is the situation where future changes in government policy are not considered (^{116}). 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 when specifically and clearly stated.

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 LTC services.

3.3.2. Scenarios

This methodology allows for the examination of different scenarios regarding the evolution of dependency rates, unit costs and policy settings.

Therefore, a series of 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 2015 EC-EPC projections exercise (^{117}), the present exercise maintains most of the existing scenarios and sensitivity tests while attempting to improve the specification of the reference scenario. Table II.3.1 shows an overview of all baseline characteristics of the respective scenarios.

The analysis tries to identify the impact of each quantifiable determinant separately, on the basis of hypothetical assumptions like an estimated guess or a "what if" situation. Therefore, the results of the non-baseline scenario projections should not be interpreted as forecast of expenditure as for example particular policy/institutional settings in Member States are not taken into account.

The scenarios used in these projections retain the methodology used for the 2015 Ageing Report,

---

(^{116}) 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.

(^{117}) See Economic Policy Committee and European Commission (EPC/EC) (2015), The 2015 Ageing Report: economic and budgetary projections for the 28 EU Member States (2013-2060), European Economy, No. 3/2015, Directorate General Economic and Financial Affairs, European Commission 2015. Available at: http://ec.europa.eu/economy_finance/publications/european_economy/2015/ee3_en.htm.

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
	I	II	III	IV	V	VI	VII	VIII	IX	X
Population projection	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Alternative higher life expectancy scenario	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Eurostat 2015-based population projections	Eurostat 2015-based population projections	**Eurostat 2015-based population projections**	Eurostat 2015-based population projections
Dependency status	2012-2016 average dependency rates held constant over projection period	2012-2016 average dependency rates held constant over projection period	2012-2016 average dependency rates held constant over projection period	All projected gains in life expectancy are spent without disability	2012-2016 average dependency rates held constant over projection period	2012-2016 average dependency rates held constant over projection period	2012-2016 average dependency rates held constant over projection period	2012-2016 average dependency 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
Age-related expenditure profiles	2016 cost profiles	2016 cost profiles	2016 cost profiles	2016 cost profiles	2016 cost profiles	2016 cost profiles	Cost profiles per Member State converge upwards to the EU28 average by 2070	Cost profiles per Member State converge upwards to the EU28 average by 2070	**2016 cost profiles**	Cost profiles per Member State converge upwards to the EU28 average by 2070
Policy setting / Care mix	Probability of receiving each type of care held constant at 2016 level	Probability of receiving each type of care held constant at 2016 level	Probability of receiving each type of care held constant at 2016 level	Probability of receiving each type of care held constant at 2016 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 care (in-kind or cash) converging until 2070 upwards to the EU28 average	Probability of receiving each type of care held constant at 2016 level	Probability of receiving any type of formal care (in-kind or cash) converging until 2070 upwards to the EU28 average	**Probability of receiving each type of care held constant at 2016 level**	Probability of receiving any type of formal care (in-kind or cash) converging until 2070 upwards to the EU28 average
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
Elasticity of demand	1	1	1	1	1	1	1	1	**1 for MS in highest LTC expenditure quartile in 2016, for the rest 1.1 in 2016 converging to 1 by 2070**	1

Notes: * Referred to in the 2015 Ageing Report as the "constant disability scenario".
** Unit cost development for the reference scenario also includes different country-specific assumptions for France, Germany and Slovenia.
Source: Commission services, EPC.

with the exception of the reference scenario, which has been updated (explained hereinafter).

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 are kept 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.

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. 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 EU15, as used in this report. 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"***.

Unit costs of in-kind care 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 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"* (referred to in the 2015 Ageing Report as the "constant disability 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. Pressure for increased public financing and of LTC services may grow substantially in coming decades, especially in Member States where the bulk of long-term care is currently provided informally. 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.

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 formal care, replacing care provided in an informal setting. In particular, this scenario examines the budgetary impact of a progressive shift into the formal sector of care of 1 percentage point per year of dependent persons who have so far received only informal care. 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 formal care receive care at home, the shift/increase will also go for 10% to home care (and 90% to institutional care).

This reflects the possible pressure for increased public provision of LTC services over time, particularly in those countries that rely the most on informal care.

VI. The *"coverage convergence scenario"* scenario assumes that growing expectations of the populations and the exchange of best practices will lead to an expansion of publicly financed formal care provision into those groups of population that relied on informal care until then. Note that "formal coverage" covers any of the three types of formal long-term care: institutional care, formal home care, and cash benefits. The remaining number of "dependent" people is assumed to receive informal 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.

It assumes a coverage convergence to the EU28 average by 2070. More specifically, the Member States where the formal coverage rate – i.e. referring to any of the three types of formal care described above – is below the EU28 average in the starting year are assumed to converge to this average by 2070.

VII. 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).

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 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).

VIII. The *"cost and coverage convergence scenario"* combines the coverage convergence scenario and the cost convergence scenario, as described in the sections above.

The new "cost and coverage convergence 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.

A new assumption has been added to this scenario in the present set of projections. The income-elasticity of LTC expenditure, which was assumed to be 1 in past projection exercises, is now assumed to be 1.1 in the base year (2016), converging to unity by 2070. This additional assumption is applied only to those countries below the top quartile according to expenditure as a proportion of GDP in the base year. This is expected to take into account the fact that, as countries become richer, they are likely to spend a larger proportion of their GDP on LTC. At the same time, it is considered that this effect will be weaker or non-existent in those countries that already have a comprehensive LTC system, where the focus is likely to be on reducing costs rather than on increasing the services provided.

Due to this and to the fact that GDP projections include some degree of catching-up, this leads to some convergence in LTC expenditure as a proportion of GDP, albeit more moderate than in the cost and coverage convergence scenario.

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.

XI. *"The Total factor productivity risk scenario"*. As in the previous 2015 Ageing Report, a productivity risk scenario has been included, assuming lower Total Factor Productivity (TFP) growth (cf. volume 1 of the 2018 Ageing Report for more details on this alternative scenario). In the *"AWG reference scenario"* country-specific TFP growth rates converge to 1% by 2045, whereas in this TFP scenario, growth rates would converge to 0.8%.

3.4.   PROJECTION RESULTS

3.4.1. Country specific policy reforms

In the past years, many countries have undertaken policy reforms in LTC, e.g.:

In Germany the Ministry of Health has strengthened LTC with three interlaced laws: Pflegestärkungsgesetz (PSG) I-III, which have increased premiums as well as improved services. Each year 1.3 billion EUR of these additional funds are invested in the LTC provident fund until 2034, with the rest (3.7 billion EUR per year) in improved services for dependents. PSG I has significantly increased services for dependants from January 2015 onwards and has increased the number of caregivers in institutional care, as well as setting up an LTC provident fund for demographic sustainable financing. PSG II redefines care levels and care assessment methods based on individual care demands; including dementia. PSG III strengthens the local coordination and provision of care and focuses on counselling.

In Portugal, the authorities have continued rolling out the ongoing implementation of the RNCCI (National Network of Continuous Integrated Care), with an increase in the quantity of inpatient and

home care provided each year. Pilots for paediatric integrated care within RNCCI began in 2016 and pilots on Mental Health integrated care, within RNCCI. Taken together with policies related to culture of care, optimisation of acute hospital beds through early discharge and involvement of communities in this new organisation, the implementation of these reforms in LTC resulted in an overall expenditure increase in this area.

It becomes clear that the fiscal impact of some of those reforms is not easy to estimate. However, as far as budgeted changes in long-term care spending are concerned, many countries have estimated potential budgetary effects on LTC spending triggered by legislated LTC reforms.

Table II.3.2:   **Long-term care reforms with direct budget impact taken into account in the projections**

Country	Policy reform (2016 and beyond)
Germany	Strengthening of LTC system (2017)
Luxembourg	Increase in nurse wages and LTC System reform (2017-2023)
Poland	Roll-out of new "Senior +" LTC system (2016)
Portugal	Increase in LTC system funding (2016-2017)
Slovenia	Increase in wages and indexation to prices of LTC benefits (2016)
Slovakia	Increase in public funding for institutional care (2016)

Source: European Commission, EPC.

Table II.3.2 shows that 6 countries provided information regarding the budgetary effects of 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.

3.4.2. Accounting for institutional specificities

As described in the health care chapter in section 2.3.4, 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 for

health care projections, this is taken into account in the same way for estimating LTC projections ([118]).

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.

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

---

([118]) Reducing the number of SHI insurees in working age also implies that SHI income from insurance contributions will decrease.

of the projections, the following assumptions are used for the *"AWG reference scenario"* projections:

- For Germany ([119]), 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 will be 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 would be 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 2018 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**

| | 2016 | 2070 | Change 2016-2070 | |
			pp.	In %
DE (standard)	1.3	2.7	1.4	107%
DE AWG 2018	1.3	1.9	0.6	48%
FR (standard)	1.7	2.4	0.7	40%
FR AWG 2018	1.7	2.4	0.6	37%
SI (standard)	0.9	1.9	1.0	101%
SI AWG 2018	0.9	1.8	0.9	93%

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.

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 2016 to 2070, while Table II.3.4 shows projected expenditure levels. For the EU, public expenditure on LTC is projected to increase by 1.3 pps. of GDP i.e. from 1.6% in 2016 to 2.9 % of GDP in 2070. This is equivalent to an increase of expenditure by 81%. The projected increase ranges from 0.1 pps. of GDP in Latvia, Greece and Bulgaria to 2.7 pps. in the Netherlands, and 3.1 pps. in Norway.

Table II.3.4: **Demographic scenario, projected public expenditure on long-term care as % of GDP**

| | 2016 | 2070 | Change 2016-2070 | |
			pp.	In %
BE	2.3	4.0	1.7	72%
BG	0.4	0.5	0.1	24%
CZ	1.3	2.7	1.3	98%
DK	2.5	4.7	2.2	86%
DE	1.3	2.5	1.3	98%
EE	0.9	1.3	0.4	49%
IE	1.3	3.3	1.9	143%
EL	0.1	0.2	0.1	108%
ES	0.9	2.3	1.3	139%
FR	1.7	2.5	0.8	46%
HR	0.9	1.3	0.4	45%
IT	1.7	3.0	1.3	75%
CY	0.3	0.6	0.3	87%
LV	0.4	0.6	0.1	31%
LT	1.0	2.0	1.0	100%
LU	1.3	3.6	2.3	182%
HU	0.7	1.1	0.4	57%
MT	0.9	2.3	1.4	153%
NL	3.5	6.3	2.7	77%
AT	1.9	3.6	1.7	90%
PL	0.5	1.1	0.6	131%
PT	0.5	1.3	0.8	142%
RO	0.3	0.5	0.2	73%
SI	0.9	1.8	0.8	90%
SK	0.9	1.4	0.5	56%
FI	2.2	4.4	2.2	99%
SE	3.2	4.9	1.6	51%
UK	1.5	2.7	1.1	76%
NO	3.7	6.8	3.1	82%
EA	1.6	2.9	1.3	83%
EU*	1.6	2.9	1.3	81%
EU27	1.6	2.9	1.3	82%
EU* s	1.3	2.4	1.1	86%

Source: Commission services, EPC.

([119]) In the 2015 Ageing Report, the standard indexation assumptions were applied to project expenditure for Germany, while for budgetary surveillance purposes, an additional projection was ran that indexed all benefits according to prices.

Graph II.3.10:   **Demographic scenario, current and projected levels of public expenditure on LTC as % of GDP; 2016-2070**

NO 3.7 | 3.1
NL 3.5 | 2.7
SE 3.2 | 1.6
DK 2.5 | 2.2
FI 2.2 | 2.2
BE 2.3 | 1.7
AT 1.9 | 1.7
LU 1.3 | 2.3
IE 1.3 | 1.9
IT 1.7 | 1.3
EU27 1.6 | 1.3
EA 1.6 | 1.3
EU* 1.6 | 1.3
CZ 1.3 | 1.3
UK 1.5 | 1.1
DE 1.3 | 1.3
FR 1.7 | 0.8
EU* s 1.3 | 1.1
MT 0.9 | 1.4
ES 0.9 | 1.3
LT 1.0 | 1.0
SI 0.9 | 0.8
SK 0.9 | 0.5
EE 0.9 | 0.4
PT 0.5 | 0.8
HR 0.9 | 0.4
PL 0.5 | 0.6
HU 0.7 | 0.4
LV 0 | 0.1
CY 0 | 0.3
RO 0 | 0.2
BG 0 | 0.1
EL 0.1

0   2   4   6   8

■ 2016   ■ Increase 2016-2070
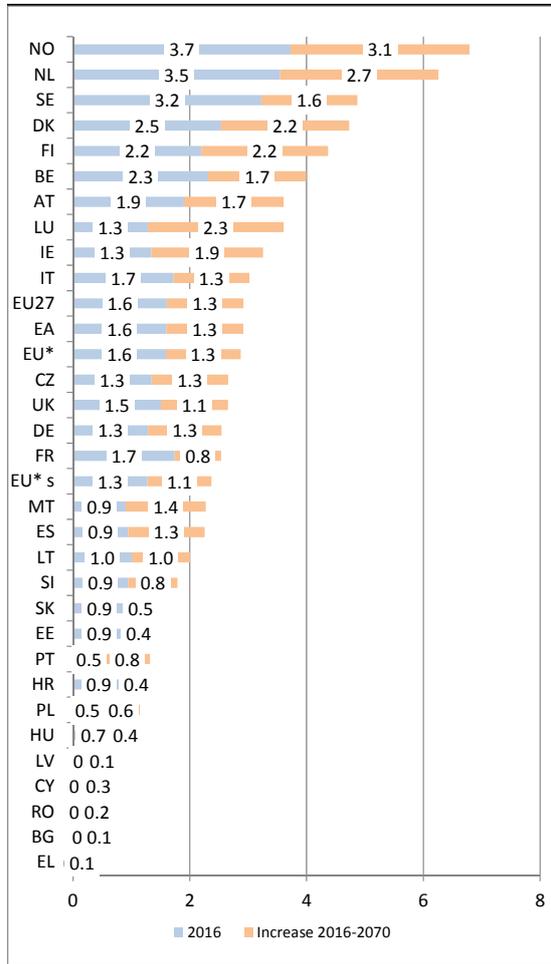
Notes: Public expenditure on LTC is defined as long-term nursing care category HC.3 and social care category HCR.1 based on the methodology of the System of Health Accounts 2011. Where the latter category is not available, a proxy is constructed from ESSPROS data. The level of expenditure in 2016 is the first year of projected expenditure based on the latest available data.
Source: European Commission, EPC.

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. 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**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	4.2	1.9	83%
BG	0.4	0.6	0.2	38%
CZ	1.3	3.0	1.7	124%
DK	2.5	5.0	2.5	98%
DE	1.3	2.7	1.4	112%
EE	0.9	1.4	0.5	59%
IE	1.3	3.4	2.0	150%
EL	0.1	0.2	0.1	80%
ES	0.9	2.2	1.3	138%
FR	1.7	2.6	0.8	47%
HR	0.9	1.3	0.4	48%
IT	1.7	3.0	1.3	76%
CY	0.3	0.6	0.3	93%
LV	0.4	0.6	0.2	37%
LT	1.0	2.0	1.0	104%
LU	1.3	4.1	2.9	224%
HU	0.7	1.2	0.5	69%
MT	0.9	2.3	1.4	157%
NL	3.5	6.5	3.0	84%
AT	1.9	4.1	2.2	114%
PL	0.5	1.3	0.8	168%
PT	0.5	1.4	0.9	161%
RO	0.3	0.6	0.3	103%
SI	0.9	1.9	1.0	102%
SK	0.9	1.6	0.7	72%
FI	2.2	4.5	2.3	105%
SE	3.2	5.3	2.1	65%
UK	1.5	2.8	1.3	86%
NO	3.7	7.6	3.9	104%
EA	1.6	3.0	1.4	90%
EU*	1.6	3.0	1.4	90%
EU27	1.6	3.1	1.5	91%
EU* s	1.3	2.5	1.2	98%

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 increase is observed for Greece (+0.1 pps.) and the largest projected increases are observed for the Netherlands (+3.0 pps.) and Norway (+3.9 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 0.4 pps. above the "base case scenario".

Table II.3.6: **High life expectancy scenario, projected public expenditure on long-term care as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	4.7	2.4	105%
BG	0.4	0.6	0.2	43%
CZ	1.3	3.4	2.0	152%
DK	2.5	5.5	3.0	117%
DE	1.3	3.1	1.8	140%
EE	0.9	1.5	0.6	69%
IE	1.3	3.8	2.4	182%
EL	0.1	0.2	0.1	100%
ES	0.9	2.7	1.7	184%
FR	1.7	2.8	1.1	61%
HR	0.9	1.4	0.5	55%
IT	1.7	3.4	1.6	95%
CY	0.3	0.6	0.3	103%
LV	0.4	0.6	0.2	46%
LT	1.0	2.3	1.3	132%
LU	1.3	4.8	3.5	271%
HU	0.7	1.3	0.6	84%
MT	0.9	2.6	1.7	188%
NL	3.5	7.2	3.7	104%
AT	1.9	4.6	2.7	141%
PL	0.5	1.5	1.0	195%
PT	0.5	1.6	1.1	198%
RO	0.3	0.7	0.4	124%
SI	0.9	2.1	1.2	127%
SK	0.9	1.6	0.7	79%
FI	2.2	5.0	2.8	127%
SE	3.2	5.9	2.7	83%
UK	1.5	3.1	1.6	109%
NO	3.7	8.6	4.8	130%
EA	1.6	3.4	1.8	113%
EU*	1.6	3.4	1.8	112%
EU27	1.6	3.4	1.8	113%
EU* s	1.3	2.8	1.5	120%

Source: Commission services, EPC.

Table II.3.7: **Healthy ageing scenario, projected public expenditure on long-term care as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	3.8	1.5	63%
BG	0.4	0.5	0.1	21%
CZ	1.3	2.5	1.2	89%
DK	2.5	4.5	2.0	78%
DE	1.3	2.4	1.1	88%
EE	0.9	1.2	0.3	32%
IE	1.3	3.0	1.6	121%
EL	0.1	0.2	0.1	61%
ES	0.9	2.0	1.1	117%
FR	1.7	2.3	0.6	34%
HR	0.9	1.0	0.2	17%
IT	1.7	2.7	1.0	59%
CY	0.3	0.5	0.2	66%
LV	0.4	0.5	0.0	11%
LT	1.0	1.8	0.8	78%
LU	1.3	3.7	2.5	192%
HU	0.7	1.0	0.3	40%
MT	0.9	2.0	1.1	126%
NL	3.5	5.6	2.1	58%
AT	1.9	3.6	1.7	89%
PL	0.5	1.2	0.7	134%
PT	0.5	1.3	0.8	138%
RO	0.3	0.5	0.2	68%
SI	0.9	1.7	0.8	81%
SK	0.9	1.2	0.3	36%
FI	2.2	4.0	1.8	82%
SE	3.2	4.6	1.4	44%
UK	1.5	2.5	1.0	68%
NO	3.7	6.8	3.0	82%
EA	1.6	2.7	1.1	69%
EU*	1.6	2.7	1.1	69%
EU27	1.6	2.7	1.1	69%
EU* s	1.3	2.2	0.9	74%

Note: This scenario was referred to in the 2015 Ageing Report as the "constant disability scenario".
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. This scenario was referred to in the 2015 Ageing Report as the *"constant disability scenario"*.

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 1.1 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.

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 Sweden, the Netherlands and Norway. 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 basically 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 service sector of 1% per year of dependent

population who have so far received only cash benefits or informal care. LTC is projected to increase by 2.0 pps. of GDP from 2016 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**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	4.6	2.3	100%
BG	0.4	0.9	0.5	125%
CZ	1.3	3.6	2.3	169%
DK	2.5	5.8	3.3	129%
DE	1.3	3.6	2.3	178%
EE	0.9	1.7	0.8	84%
IE	1.3	3.9	2.5	189%
EL	0.1	0.2	0.1	121%
ES	0.9	2.5	1.6	167%
FR	1.7	3.1	1.3	76%
HR	0.9	1.8	0.9	101%
IT	1.7	3.5	1.8	104%
CY	0.3	0.7	0.4	132%
LV	0.4	0.9	0.5	105%
LT	1.0	2.3	1.3	127%
LU	1.3	4.7	3.5	271%
HU	0.7	1.5	0.8	114%
MT	0.9	2.5	1.6	179%
NL	3.5	7.2	3.7	104%
AT	1.9	4.9	3.0	157%
PL	0.5	2.1	1.6	320%
PT	0.5	3.0	2.5	458%
RO	0.3	0.8	0.5	166%
SI	0.9	2.2	1.3	137%
SK	0.9	2.2	1.3	149%
FI	2.2	4.9	2.7	124%
SE	3.2	6.1	2.9	90%
UK	1.5	3.5	2.0	132%
NO	3.7	8.3	4.6	124%
EA	1.6	3.6	2.0	127%
EU*	1.6	3.6	2.0	129%
EU27	1.6	3.7	2.1	128%
EU* s	1.3	3.0	1.8	138%

Source: Commission services, EPC.

The *"coverage convergence scenario"* assumes an extension of the formal/public coverage in any form (institutional, home care or cash benefits) towards the average EU rate.

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 dependents individuals, especially in countries where the coverage of the dependent population is low compared to the EU average.

Table II.3.9: **Coverage convergence scenario, projected public expenditure on long-term care as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	4.2	1.9	83%
BG	0.4	1.1	0.7	171%
CZ	1.3	3.1	1.8	132%
DK	2.5	7.7	5.2	205%
DE	1.3	3.4	2.1	161%
EE	0.9	1.4	0.5	59%
IE	1.3	5.1	3.7	280%
EL	0.1	0.3	0.2	172%
ES	0.9	2.9	2.0	209%
FR	1.7	4.0	2.3	131%
HR	0.9	1.6	0.8	86%
IT	1.7	3.2	1.5	87%
CY	0.3	0.6	0.3	99%
LV	0.4	1.3	0.9	197%
LT	1.0	2.0	1.0	104%
LU	1.3	5.9	4.6	358%
HU	0.7	2.3	1.6	223%
MT	0.9	2.8	1.9	208%
NL	3.5	6.9	3.3	94%
AT	1.9	4.1	2.2	114%
PL	0.5	1.3	0.8	171%
PT	0.5	2.3	1.8	322%
RO	0.3	1.3	1.0	341%
SI	0.9	2.1	1.1	120%
SK	0.9	1.8	0.9	104%
FI	2.2	4.5	2.3	105%
SE	3.2	5.7	2.5	76%
UK	1.5	2.8	1.3	89%
NO	3.7	7.6	3.9	104%
EA	1.6	3.8	2.2	135%
EU*	1.6	3.6	2.0	128%
EU27	1.6	3.8	2.2	136%
EU* s	1.3	3.1	1.8	140%

Source: Commission services, EPC.

Interestingly, even countries where expenditure level and coverage rate are already relatively high (such as The Netherlands or Finland) show a projected increase that is much higher than in the *"base case scenario"*. This is because as long as coverage of the dependent population is less than 100% in any age-sex group, the scenario assumes an additional increase in coverage of the dependent population in the respective age groups.

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**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	6.2	3.9	167%
BG	0.4	0.7	0.3	80%
CZ	1.3	3.9	2.6	192%
DK	2.5	5.0	2.5	98%
DE	1.3	2.9	1.7	129%
EE	0.9	4.1	3.2	358%
IE	1.3	3.4	2.0	150%
EL	0.1	3.5	3.4	3396%
ES	0.9	3.6	2.7	285%
FR	1.7	3.0	1.3	73%
HR	0.9	1.7	0.8	92%
IT	1.7	3.9	2.1	125%
CY	0.3	3.2	2.9	974%
LV	0.4	1.4	0.9	212%
LT	1.0	5.1	4.1	404%
LU	1.3	4.6	3.4	263%
HU	0.7	2.9	2.2	310%
MT	0.9	3.7	2.8	311%
NL	3.5	8.5	5.0	141%
AT	1.9	5.6	3.7	195%
PL	0.5	2.2	1.8	353%
PT	0.5	2.3	1.7	320%
RO	0.3	2.3	2.0	678%
SI	0.9	4.3	3.3	352%
SK	0.9	2.7	1.8	202%
FI	2.2	5.4	3.2	145%
SE	3.2	5.7	2.5	78%
UK	1.5	3.4	1.9	128%
NO	3.7	9.5	5.8	155%
EA	1.6	3.9	2.3	142%
EU*	1.6	3.8	2.2	139%
EU27	1.6	3.9	2.3	141%
EU* s	1.3	3.8	2.5	195%

Source: Commission services, EPC.

For the EU, public expenditure on LTC is projected to increase by 2.2 pps. of GDP from 2016 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 2016 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 3.0 pps. until 2070.

Table II.3.11: **Cost and coverage convergence scenario, projected public expenditure on long-term care as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	6.2	3.9	167%
BG	0.4	1.5	1.1	272%
CZ	1.3	4.0	2.7	200%
DK	2.5	7.7	5.2	205%
DE	1.3	3.6	2.3	182%
EE	0.9	4.1	3.2	358%
IE	1.3	5.1	3.7	280%
EL	0.1	5.2	5.1	5145%
ES	0.9	4.7	3.7	395%
FR	1.7	4.7	3.0	173%
HR	0.9	2.2	1.3	151%
IT	1.7	4.1	2.4	140%
CY	0.3	3.4	3.1	1019%
LV	0.4	3.3	2.8	649%
LT	1.0	5.1	4.1	404%
LU	1.3	6.9	5.6	436%
HU	0.7	5.2	4.5	647%
MT	0.9	4.5	3.6	400%
NL	3.5	9.0	5.5	155%
AT	1.9	5.6	3.7	196%
PL	0.5	2.3	1.8	358%
PT	0.5	3.3	2.8	515%
RO	0.3	5.0	4.7	1578%
SI	0.9	4.7	3.7	397%
SK	0.9	3.2	2.3	255%
FI	2.2	5.4	3.2	145%
SE	3.2	6.1	2.9	90%
UK	1.5	3.5	2.0	132%
NO	3.7	9.5	5.8	155%
EA	1.6	4.8	3.2	198%
EU*	1.6	4.6	3.0	187%
EU27	1.6	4.8	3.2	199%
EU* s	1.3	4.6	3.4	264%

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 kicks in 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 2016 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 2015 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**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	4.0	1.7	73%
BG	0.4	0.5	0.1	37%
CZ	1.3	2.9	1.6	116%
DK	2.5	4.7	2.2	87%
DE	1.3	1.9	0.6	48%
EE	0.9	1.4	0.5	52%
IE	1.3	3.3	1.9	145%
EL	0.1	0.2	0.1	76%
ES	0.9	2.2	1.3	135%
FR	1.7	2.4	0.6	37%
HR	0.9	1.2	0.3	38%
IT	1.7	3.0	1.2	71%
CY	0.3	0.6	0.3	84%
LV	0.4	0.6	0.1	34%
LT	1.0	2.0	1.0	101%
LU	1.3	4.1	2.8	219%
HU	0.7	1.1	0.4	63%
MT	0.9	2.3	1.4	154%
NL	3.5	6.0	2.5	69%
AT	1.9	3.8	1.9	101%
PL	0.5	1.3	0.8	166%
PT	0.5	1.4	0.9	159%
RO	0.3	0.6	0.3	100%
SI	0.9	1.8	0.9	93%
SK	0.9	1.5	0.6	64%
FI	2.2	4.2	2.1	93%
SE	3.2	4.9	1.7	53%
UK	1.5	2.8	1.3	83%
NO	3.7	7.1	3.4	92%
EA	1.6	2.7	1.1	69%
EU*	1.6	2.7	1.2	73%
EU27	1.6	2.7	1.1	71%
EU* s	1.3	2.4	1.1	87%

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 1.2 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"*.

Table II.3.13: **AWG risk scenario, projected public expenditure on long-term care as % of GDP**

	2016	2070	Change 2016-2070	
			pp.	In %
BE	2.3	5.8	3.5	150%
BG	0.4	1.4	1.0	244%
CZ	1.3	3.7	2.4	175%
DK	2.5	7.3	4.8	190%
DE	1.3	3.4	2.1	164%
EE	0.9	3.8	2.9	321%
IE	1.3	4.8	3.4	255%
EL	0.1	4.9	4.8	4834%
ES	0.9	4.4	3.5	368%
FR	1.7	4.5	2.8	160%
HR	0.9	2.0	1.1	127%
IT	1.7	3.9	2.2	128%
CY	0.3	3.2	2.9	947%
LV	0.4	3.0	2.6	591%
LT	1.0	4.6	3.6	360%
LU	1.3	6.5	5.2	405%
HU	0.7	4.8	4.1	591%
MT	0.9	4.2	3.3	364%
NL	3.5	8.3	4.7	134%
AT	1.9	5.3	3.4	178%
PL	0.5	2.1	1.6	330%
PT	0.5	3.2	2.6	486%
RO	0.3	4.6	4.3	1441%
SI	0.9	4.4	3.5	369%
SK	0.9	2.9	2.0	222%
FI	2.2	5.1	2.9	131%
SE	3.2	5.7	2.5	77%
UK	1.5	3.3	1.8	120%
NO	3.7	8.9	5.2	140%
EA	1.6	4.5	2.9	181%
EU*	1.6	4.3	2.7	170%
EU27	1.6	4.5	2.9	181%
EU* s	1.3	4.3	3.1	239%

Source: Commission services, EPC.

Table II.3.14: **Sensitivity scenarios - change in spending as % of GDP 2016-2070**

	LTC expenditure 2016	High life expectancy scenario	Lower net migration	Higher net migration	Lower fertility	Higher employment rate	Lower employment rate	Higher employment rate older workers	Higher TFP growth	Lower TFP growth	TFP risk growth	
BE	2.3	2.1	2.0	1.4	2.3	1.6	1.8	1.5	1.7	1.7	1.7	BE
BG	0.4	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	BG
CZ	1.3	1.8	1.7	1.5	2.0	1.5	1.6	1.4	1.6	1.5	1.5	CZ
DK	2.5	2.5	2.4	2.0	2.8	2.1	2.3	2.0	2.2	2.2	2.2	DK
DE	1.3	1.6	1.5	1.3	1.8	1.3	1.4	1.3	1.4	1.4	1.4	DE
EE	0.9	0.5	0.5	0.5	0.7	0.5	0.5	0.4	0.5	0.5	0.5	EE
IE	1.3	2.3	2.0	1.9	2.4	1.9	2.0	1.8	2.0	1.9	2.0	IE
EL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	EL
ES	0.9	1.6	1.5	1.1	1.6	1.2	1.3	1.2	1.3	1.3	1.3	ES
FR	1.7	0.9	0.8	0.6	1.0	0.6	0.8	0.6	0.7	0.7	0.7	FR
HR	0.9	0.3	0.4	0.3	0.5	0.3	0.4	0.3	0.3	0.3	0.3	HR
IT	1.7	1.5	1.4	1.1	1.5	1.2	1.3	1.2	1.3	1.2	1.2	IT
CY	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	CY
LV	0.4	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.1	LV
LT	1.0	1.3	0.9	1.1	1.5	1.0	1.1	0.9	1.0	1.0	1.0	LT
LU	1.3	3.3	3.3	2.5	3.4	2.7	2.9	2.6	2.8	2.8	2.8	LU
HU	0.7	0.5	0.5	0.4	0.6	0.4	0.5	0.4	0.4	0.4	0.4	HU
MT	0.9	1.6	1.6	1.3	1.7	1.4	1.4	1.3	1.4	1.4	1.4	MT
NL	3.5	2.9	2.8	2.2	3.2	2.3	2.6	2.2	2.5	2.5	2.5	NL
AT	1.9	2.3	2.2	1.7	2.5	1.8	2.0	1.7	1.9	1.9	1.9	AT
PL	0.5	0.9	0.8	0.8	1.1	0.8	0.8	0.8	0.8	0.8	0.8	PL
PT	0.5	1.0	0.9	0.8	1.1	0.8	0.9	0.8	0.9	0.9	0.9	PT
RO	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	RO
SI	0.9	1.1	1.1	0.9	1.2	0.9	1.0	0.9	1.0	0.9	0.9	SI
SK	0.9	0.6	0.6	0.6	0.8	0.5	0.6	0.5	0.6	0.6	0.6	SK
FI	2.2	2.4	2.2	1.9	2.7	2.0	2.1	1.9	2.1	2.1	2.1	FI
SE	3.2	2.1	2.0	1.5	2.4	1.6	1.8	1.5	1.7	1.7	1.7	SE
UK	1.5	1.5	1.4	1.1	1.7	1.2	1.3	1.1	1.3	1.2	1.2	UK
NO	3.7	4.0	3.8	3.1	4.3	3.3	3.6	3.1	3.4	3.4	3.4	NO
EA	1.6	1.6	1.5	1.2	1.7	1.3	1.4	1.2	1.3	1.3	1.3	EA
EU	1.6	1.6	1.5	1.2	1.7	1.2	1.4	1.2	1.3	1.3	1.3	EU
EU27	1.6	1.6	1.5	1.2	1.7	1.3	1.4	1.2	1.3	1.3	1.3	EU27
EU* s	1.3	1.3	1.3	1.0	1.5	1.1	1.2	1.0	1.2	1.1	1.1	EU* s

Note: The "High-life expectancy scenario" presented here is based on the "base case" scenario.
Source: Commission services, EPC.

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 2.7 pps. of GDP in the EU by 2070 (Table II.3.13).

3.4.7. Sensitivity tests

Table II.3.14 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 (the full list and description of the assumptions can be found in Part I, Chapter 3 of this report).

As can be seen, these assumptions can have a sizable impact on the projections [120]. The EU28 long-term care expenditure-to-GDP projections are more responsive to changes in the size of the

[120] The sensitivity scenarios differ from the AWG reference scenario also in that they do not apply country-specific indexation assumptions for Germany, France and Slovenia, as described in 3.4.2 above.

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.

3.5. COMPARISON WITH THE 2015 AGEING REPORT

As in the case of health care projections, the differences observed between the 2015 Ageing Report and the current projections result from a set of factors: 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, results are pronounced for a number of countries and are related to different reasons.

Firstly, the age-cost profiles have been updated, leading to different dynamics of ageing costs for many countries. In one case (Croatia) a country-specific profile has now replaced the imputed profile used in the previous 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 do impact the projection results.

Graph II.3.11: **AWG reference scenario: Differences in the projected increase in public expenditure on long-term care over 2016-2060 between the 2018 and 2015 Ageing Report, as pps. of GDP**
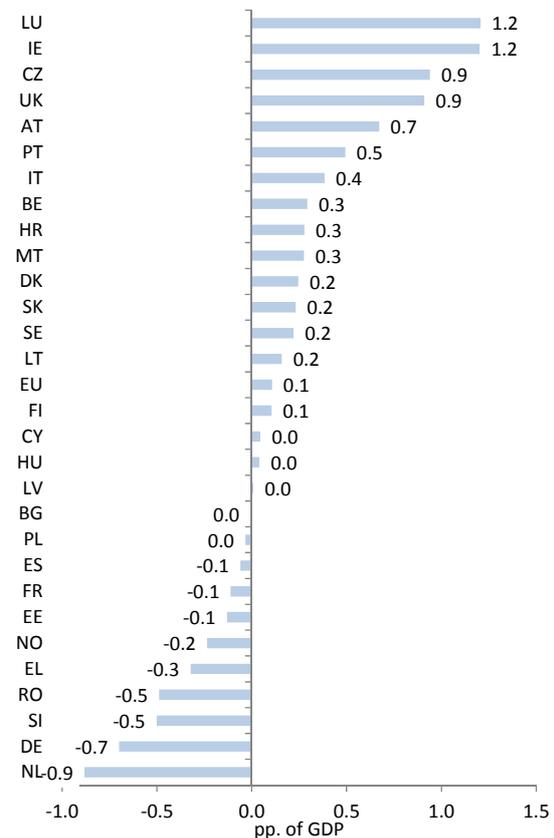
Source: European Commission, EPC.

Secondly, the 2016 level of public expenditure on long-term care in the EU is, for the EU average, the same as in the 2015 projections (Table II.3.15). However, this masks large revisions and changes for specific countries. This is partly due to new policy reforms and partly to better data availability. While Ageing Report 2015 used the older SHA 1.0 expenditure or ESSPROS where available, the new projections for all countries use data based on the new SHA 2011. A significant revision impact is that of Ireland, where the move from ESSPROS to the more accurate SHA 2011 has led to an expenditure increase of 0.7 pps. of GDP in 2016.

Table II.3.15: **Comparison between public long-term care spending as % of GDP in the 2018 and the 2015 Ageing Reports, in the base year (i.e. 2016) of current projections**

	2018 Ageing Report	2015 Ageing Report	Difference AR 2018 - AR 2015	
BE	2.3	2.2	0.1	BE
BG	0.4	0.4	0.0	BG
CZ	1.3	0.8	0.6	CZ
DK	2.5	2.5	0.0	DK
DE	1.3	1.6	-0.3	DE
EE	0.9	0.6	0.3	EE
IE	1.3	0.7	0.7	IE
EL	0.1	0.5	-0.4	EL
ES	0.9	1.1	-0.2	ES
FR	1.7	2.0	-0.3	FR
HR	0.9	0.4	0.5	HR
IT	1.7	1.8	-0.1	IT
CY	0.3	0.3	0.0	CY
LV	0.4	0.6	-0.2	LV
LT	1.0	1.4	-0.4	LT
LU	1.3	1.6	-0.3	LU
HU	0.7	0.8	-0.1	HU
MT	0.9	1.2	-0.3	MT
NL	3.5	3.8	-0.3	NL
AT	1.9	1.5	0.4	AT
PL	0.5	0.8	-0.3	PL
PT	0.5	0.5	0.1	PT
RO	0.3	0.8	-0.5	RO
SI	0.9	1.5	-0.6	SI
SK	0.9	0.3	0.6	SK
FI	2.2	2.6	-0.4	FI
SE	3.2	3.6	-0.4	SE
UK	1.5	1.2	0.3	UK
NO	3.7	5.7	-2.0	NO
EA	1.6	1.8	-0.2	EA
EU	1.6	1.7	-0.1	EU
EU27	1.6	1.8	-0.2	EU27
EU* s	1.3	1.3	-0.1	EU* s

Notes: The 2018 (2015) Ageing Report (AR)column values refers to the 2016 (projected) long-term care spending to GDP ratio in the current (previous) projection exercise.
Source: European Commission, EPC

Thirdly, GDP and population projections have been updated.

Fourthly, changes in LTC spending have been triggered by legislated policy reforms as discussed in previous sections.

Fifthly, different reforms have been quantified as part of the AR2015 and AR2018 projections.

Finally, changes to the methodology have also had an impact on the results, in particular the use of country-specific assumptions for LTC benefit indexation for France, Germany, and Slovenia.

A quantitative decomposition of drivers is proposed in Table II.3.16. The decomposition aims at quantifying which factors are driving the differences in projected spending between the 2015 and the 2018 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 and a base-year effect. Basically, departing from the level of expenditure in 2016 each driver's impact is estimated by replacing ceteris paribus its current value with the 2015 Ageing Report data.

Overall, changes in projected expenditure levels were driven to a higher degree by revised GDP growth rates and demographic projections and to a lower degree by changes in age-cost profiles, coverage rates and disability rates. Lower GDP growth rates per capita in the current relative to the last Ageing Report impact favourably on lower LTC expenditure growth, whereas the demographic projections lead to greater expenditure. However, these overall impacts mask some of the country-level impact due to specific drivers when comparing between the two Ageing Reports. As such Denmark has a flatter age cost profile at higher ages and the Netherlands has considerably lower coverage of LTC recipients, driving expenditure projections upwards relative to the 2015 Ageing Report. Ireland and the Netherlands were most strongly affected by revisions to GDP projections reducing projected expenditure growth. 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 Ireland and Slovakia and reflect as well the impact of the new country-specific indexation assumptions for France, Germany and Slovenia.

It should be noted that changes in disability rates seem to be the minor driver of changes in projected expenditure, reflecting their relative stability between reports.

Table II.3.16: **Decomposing the impact of drivers on differences in spending growth (2016-2060) between the 2018 and the 2015 Ageing Reports- based on the reference case scenario, in pps. of GDP**

	Difference in spending growth between the 2018 and 2015 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	0.1	-0.2	0.0	0.0	0.3	-0.1	0.0	0.0	BE
BG	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.1	BG
CZ	0.8	-0.2	0.3	0.0	0.3	0.0	0.0	0.3	CZ
DK	-0.1	-0.4	-0.3	0.1	-0.1	0.3	0.5	-0.1	DK
DE	-0.6	0.0	0.0	0.0	-0.3	0.1	0.1	-0.4	DE
EE	-0.2	0.0	-0.5	0.0	-0.1	0.1	-0.1	0.4	EE
IE	1.0	-0.1	-0.3	0.0	-0.9	0.4	0.4	1.6	IE
EL	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	EL
ES	-0.1	0.0	-0.1	0.0	0.1	0.1	0.0	-0.1	ES
FR	-0.1	0.1	-0.1	0.0	-0.1	0.1	0.0	0.0	FR
HR	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	HR
IT	0.5	0.2	0.0	0.0	0.2	0.1	0.0	0.1	IT
CY	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	CY
LV	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	LV
LT	0.3	0.3	-0.1	0.0	0.0	0.3	0.0	-0.1	LT
LU	0.6	-0.1	0.0	0.0	0.3	0.2	0.0	0.2	LU
HU	0.0	0.3	-0.1	0.0	0.0	0.0	-0.2	0.1	HU
MT	-0.1	0.0	0.0	0.0	-0.5	0.2	0.2	-0.1	MT
NL	-0.9	-0.1	-0.7	0.0	-0.9	0.4	0.4	0.1	NL
AT	0.4	-0.1	-0.2	0.0	-0.1	0.1	0.1	0.6	AT
PL	-0.2	0.1	0.0	0.0	0.1	0.0	0.0	-0.3	PL
PT	0.4	-0.1	0.2	0.0	-0.1	0.1	0.2	0.1	PT
RO	-0.5	-0.1	-0.2	0.0	0.0	0.0	0.1	-0.4	RO
SI	-0.5	0.1	0.0	0.0	0.0	0.0	-0.1	-0.5	SI
SK	0.2	0.1	-0.6	0.0	-0.2	0.0	0.0	0.8	SK
FI	-0.3	-0.3	0.2	0.0	0.1	0.0	0.0	-0.2	FI
SE	0.0	0.2	-0.4	0.0	0.1	0.1	0.1	-0.1	SE
UK	0.7	-0.1	0.4	0.0	-0.1	0.0	0.3	0.2	UK
NO	-0.8	0.0	0.0	0.0	1.1	-0.6	0.1	-1.4	NO
EA	-0.1	0.0	-0.1	0.0	-0.2	0.1	0.1	0.0	EA
EU	0.0	0.0	0.0	0.0	-0.1	0.1	0.1	0.0	EU

Notes:
* The interaction effect is the unexplained difference between replacing the current data with the 2015 Ageing Report data for all drivers at once and replacing the 2015 Ageing Repot 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.

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 great extent for each country and scenario, reflecting the implicit uncertainty surrounding the evolution of key variables in this kind of long-term projections.

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 baseline scenario, public LTC expenditure in the EU is projected to increase from 1.6% of GDP to 2.7% of GDP, i.e. an increase of 73% until 2070 ([121]).

([121]) It should be noted that this scenario also includes specific assumptions such as 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 2016. This explains some of the additional differences between this and the other scenarios.

Table II.3.17: **Overview of results across scenarios – Change in spending as % of GDP 2016-2070**

	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	TFP risk scenario	
BE	1.7	3.5	1.7	1.9	2.4	1.5	2.3	1.9	3.9	3.9	1.7	BE
BG	0.1	1.0	0.1	0.2	0.2	0.1	0.5	0.7	0.3	1.1	0.1	BG
CZ	1.6	2.4	1.3	1.7	2.0	1.2	2.3	1.8	2.6	2.7	1.5	CZ
DK	2.2	4.8	2.2	2.5	3.0	2.0	3.3	5.2	2.5	5.2	2.2	DK
DE	0.6	2.1	1.3	1.4	1.8	1.1	2.3	2.1	1.7	2.3	1.4	DE
EE	0.5	2.9	0.4	0.5	0.6	0.3	0.8	0.5	3.2	3.2	0.5	EE
IE	1.9	3.4	1.9	2.0	2.4	1.6	2.5	3.7	2.0	3.7	2.0	IE
EL	0.1	4.8	0.1	0.1	0.1	0.1	0.1	0.2	3.4	5.1	0.1	EL
ES	1.3	3.5	1.3	1.3	1.7	1.1	1.6	2.0	2.7	3.7	1.3	ES
FR	0.6	2.8	0.8	0.8	1.1	0.6	1.3	2.3	1.3	3.0	0.7	FR
HR	0.3	1.1	0.4	0.4	0.5	0.2	0.9	0.8	0.8	1.3	0.3	HR
IT	1.2	2.2	1.3	1.3	1.6	1.0	1.8	1.5	2.1	2.4	1.2	IT
CY	0.3	2.9	0.3	0.3	0.3	0.2	0.4	0.3	2.9	3.1	0.3	CY
LV	0.1	2.6	0.1	0.2	0.2	0.0	0.5	0.9	0.9	2.8	0.1	LV
LT	1.0	3.6	1.0	1.0	1.3	0.8	1.3	1.0	4.1	4.1	1.0	LT
LU	2.8	5.2	2.3	2.9	3.5	2.5	3.5	4.6	3.4	5.6	2.8	LU
HU	0.4	4.1	0.4	0.5	0.6	0.3	0.8	1.6	2.2	4.5	0.4	HU
MT	1.4	3.3	1.4	1.4	1.7	1.1	1.6	1.9	2.8	3.6	1.4	MT
NL	2.5	4.7	2.7	3.0	3.7	2.1	3.7	3.3	5.0	5.5	2.5	NL
AT	1.9	3.4	1.7	2.2	2.7	1.7	3.0	2.2	3.7	3.7	1.9	AT
PL	0.8	1.6	0.6	0.8	1.0	0.7	1.6	0.8	1.8	1.8	0.8	PL
PT	0.9	2.6	0.8	0.9	1.1	0.8	2.5	1.8	1.7	2.8	0.9	PT
RO	0.3	4.3	0.2	0.3	0.4	0.2	0.5	1.0	2.0	4.7	0.3	RO
SI	0.9	3.5	0.8	1.0	1.2	0.8	1.3	1.1	3.3	3.7	0.9	SI
SK	0.6	2.0	0.5	0.7	0.7	0.3	1.3	0.9	1.8	2.3	0.6	SK
FI	2.1	2.9	2.2	2.3	2.8	1.8	2.7	2.3	3.2	3.2	2.1	FI
SE	1.7	2.5	1.6	2.1	2.7	1.4	2.9	2.5	2.5	2.9	1.7	SE
UK	1.3	1.8	1.1	1.3	1.6	1.0	2.0	1.3	1.9	2.0	1.2	UK
NO	3.4	5.2	3.1	3.9	4.8	3.0	4.6	3.9	5.8	5.8	3.4	NO
EA	1.1	2.9	1.3	1.4	1.8	1.1	2.0	2.2	2.3	3.2	1.3	EA
EU*	1.2	2.7	1.3	1.4	1.8	1.1	2.0	2.0	2.2	3.0	1.3	EU*
EU27	1.1	2.9	1.3	1.5	1.8	1.1	2.1	2.2	2.3	3.2	1.3	EU27
EU* s	1.1	3.1	1.1	1.2	1.5	0.9	1.8	1.8	2.5	3.4	1.1	EU* s

Note: * This scenario was referred to in the 2015 Ageing Report as the "constant disability scenario".
Source: Commission services, EPC.

Graph II.3.12: **Projected expenditure in different LTC scenarios for the EU in % of GDP**

Cost and coverage convergence scenario — Coverage convergence scenario — Cost convergence scenario — Shift to formal care scenario — High life expectancy scenario — Base case scenario — Demographic scenario — Healthy ageing scenario

Source: Commission services, EPC.

Graph II.3.13: **Projected expenditure in LTC AWG reference and risk scenarios, for the EU in % of GDP**

EU — AWG reference — AWG risk
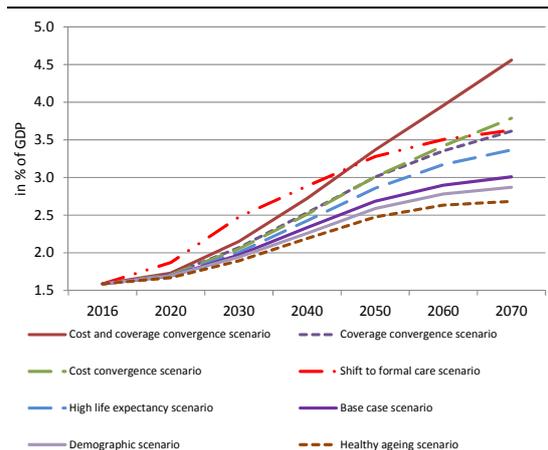
Commission services, EPC.
Source:

If to these basic assumptions we add the additional assumption, that until 2070 EU countries will have equal coverage rates of LTC dependents and equal costs per dependent, reflecting an underlying convergence process of EU economies, expenditure is expected to increase up to 4.3% (by 170%) of GDP in the EU (Graph II.3.13).
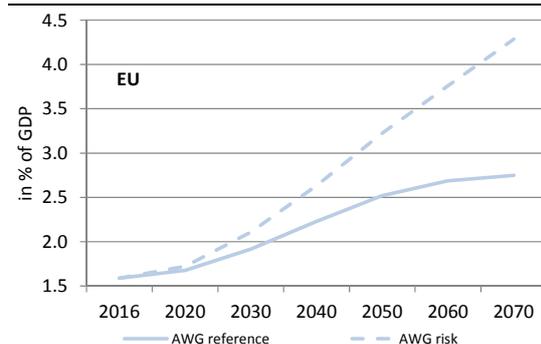
The *AWG reference scenario* also reflects a plausible combination of developments in ageing and health status. In common with the base case scenario, it also reflects the fact that supply side bottlenecks may increase fiscal pressure, if labour costs of LTC personnel increase due to insufficient availability 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 materialize (*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 projected expenditure turns 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**
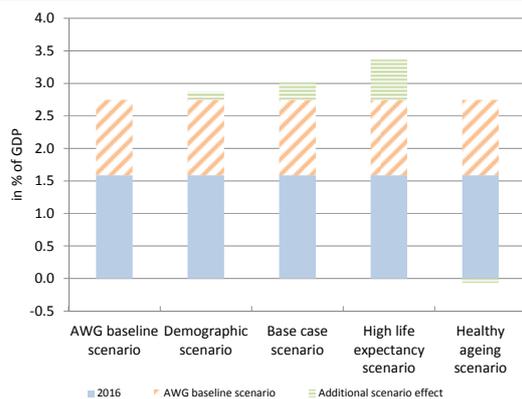
Source: Commission services, EPC.

Cost implications for the EU 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*).

In comparison to the Ageing Report 2012 and Ageing Rerpot 2015 projections, which ran until 2060, the LTC public expenditure projections presented here extend the projection horizon up to 2070. This is relevant, since the EUROSTAT population projections show an easing of ageing from 2050 onwards. 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 as a proportion of GDP is relatively subdued,

showing slower but still positive expenditure growth from 2050 to 2070 for most scenarios and constantly growing expenditure for the *cost convergence* and *AWG risk scenarios*.

Graph II.3.15: **Range of results for scenarios with mainly cost and coverage sensitivity analysis (policy change scenarios), EU in % of GDP**
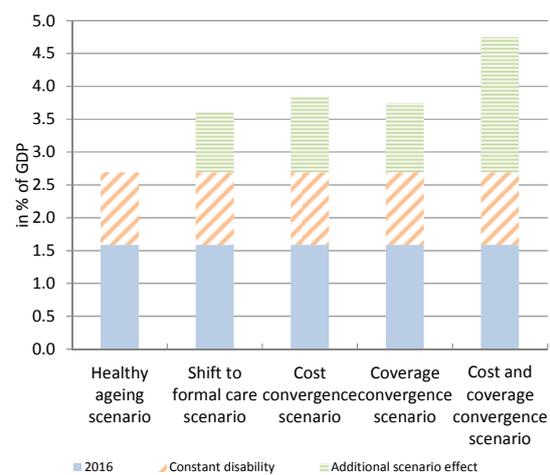
Source: Commission services, EPC.

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 higher 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 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

Because of the pronounced age profile of education enrolment rates, government expenditure on education largely reflects demographic developments. However, many other 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 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.

The projections are carried out under the assumption of "no-policy-change", as it aims at assessing the impact of demographic changes (per se) on general government education expenditure ([122]). The methodology used is highly stylised and does not "capture" the full complexities of Member States' education systems. It has been set out with a view to use harmonised datasets, ([123]) secure equal treatment across countries, and be consistent with the projected labour market developments, particularly on participation rates ([124]).

A baseline scenario attempts to isolate the impact of demographic factors. The key assumption of 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, so as to quantify the responsiveness of projection results to changes in key underlying assumptions.

A first sensitivity test ([125]) 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 3 best performers in the EU28 plus Norway; namely Finland, Belgium and Denmark ([126]).

Moreover, additional scenarios are considered. Namely, a uniform shock to the baseline projection framework (i.e. life expectancy, higher/lower migration, lower fertility, higher/lower total employment rate, older workers employment rate, higher/lower TFP growth, risk scenario, policy scenario) has been applied, each time, to all Member States ([127]).

4.2. GENERAL CHARACTERISTICS OF NATIONAL EDUCATION SYSTEMS

While the methodology used to project future education expenditure is based on a highly stylised framework that abstracts from country specificities, it also considers major aspects of education systems, such as enrolment rates by age and education level and expenditure categories by education level and type. A detailed breakdown of education systems (by age and education level) can potentially improve the quality of model calibrations.

([122]) See "The 2018 Ageing Report – Underlying Assumptions and Projection Methodologies", European Economy, No. 065/2017, European Commission, Part II, Chapter 4".

([123]) UNESCO-UIS/OECD/EUROSTAT (UOE) data collection on Education Statistics, LFS data, and macroeconomic variables from "The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy, No. 065/2017, European Commission.

([124]) See Annex V for details on the methodology used. The latest year for which UOE education expenditure data are available is 2014, and they have all been updated according to COFOG growth rates to 2016.

([125]) Hereafter referred to as "High Enrolment Scenario".

([126]) Similarly to the current exercise, the high enrolment rate scenario in the 2015 AR is generated by inflating enrolment rates for ISCED levels 3-4 and 5-8 to the three best performers in the EU plus Norway by 2040.

([127]) See "The 2018 Ageing Report – Underlying Assumptions and Projection Methodologies, ", European Economy, No. 065/2017, European Commission, Part II, Chapter 4" for detailed explanations.

Graph II.4.1: **Students-to-Staff ratio across ISCED levels (Base Year 2016)**
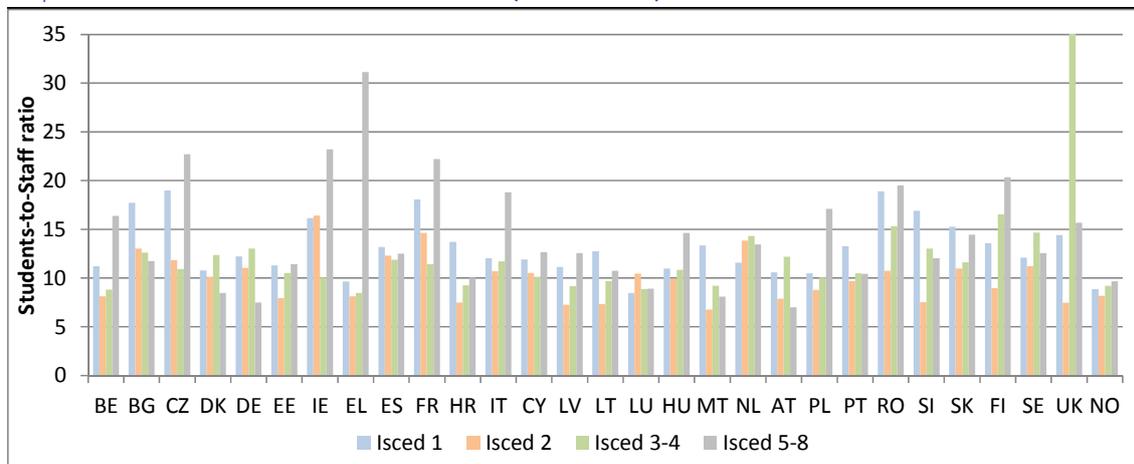
(1) Students over Total Staff in education by ISCED (UOE dataset)
Source: Commission services, EPC.

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 "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 2016 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 education (see Graph II.4.1), reflecting teaching methods relying more on individual research and library work.

Graph II.4.2: **Average compensation per member of staff as ratio of GDP per worker (Base Year 2016)**
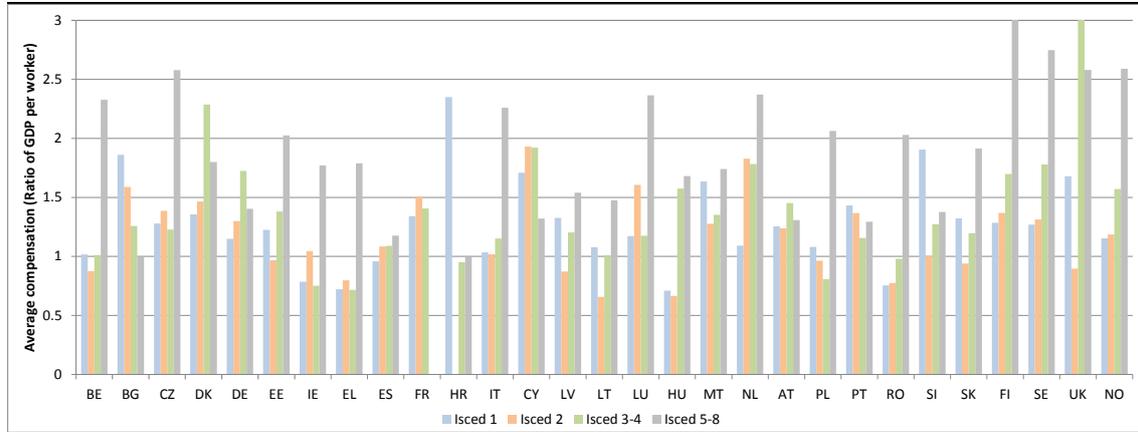
Compensation per public employee in the education sector to GDP per worker by ISCED level (UOE dataset). A few observations not reported because of missing values or outliers.
Source: Commission services, EPC.

4.2.3. Staff compensation in the education sector

There is considerable variation across Member States in the wages paid in the education sector. Graph II.4.2 plots average data for the base year 2016 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 2016, for the four levels of education and for total expenditure. Total public expenditure ranges from 2.5 % of GDP (Romania) to 7.6 % (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 2016)**
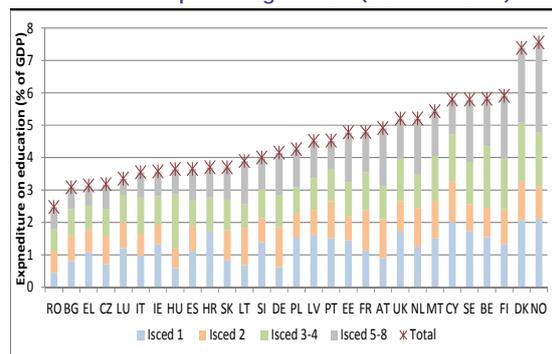
Source: Commission services, EPC

4.3. PROJECTION RESULTS

4.3.1. Baseline scenario projections

A simple simulation model is used to project expenditure on education ([128]).

Assuming "no-policy-change" scenario in the provision of education, the baseline scenario attempts to illustrate the pure impact of demographic changes on government education expenditure for the 29 countries considered in the projections. The baseline scenario assumes a fixed students-to-teaching staff ratio. The extent to which the latter is compatible with an assumption of "no-policy-change" merits some reflexion. In

---

([128]) For details see Annex V.

fact, assuming that staff levels in the education sector adjust instantaneously to student levels might prove unrealistic, besides actually demanding discretionary action to change staff levels. Instead, it might be preferable to assume some lag or inertia in the adjustment. Conversely, any mechanism chosen to adjust staff to the number of students would essentially be arbitrary.

Table II.4.1 shows the variation in education expenditure projections for the baseline scenario, between 2016 (start year) and 2070 (final year) ([129]).

In the baseline scenario, government expenditure is expected to nearly stabilise at 4.5% and 4.3% of GDP in 2070, respectively, in the EU and euro area. Government expenditure on education increases in 15 countries and falls in 14 countries. However, the impact varies across individual countries ranging from a decline of 1.6 pps. in Cyprus to a 0.8 pps. increase in Czech Republic.

Table II.4.1: **Government expenditure on education, baseline scenario, % of GDP**

	2016	2070	Change 2070-2016
BE	5.8	5.8	0.0
BG	3.1	3.7	0.6
CZ	3.2	4.0	0.8
DK	7.4	6.6	-0.7
DE	4.2	4.5	0.3
EE	4.8	5.0	0.2
IE	3.6	3.3	-0.2
EL	3.1	2.4	-0.8
ES	3.7	3.9	0.3
FR	4.8	4.4	-0.4
HR	3.7	3.2	-0.5
IT	3.5	3.3	-0.3
CY	5.8	4.2	-1.6
LV	4.5	5.0	0.5
LT	3.9	3.8	-0.1
LU	3.3	3.4	0.1
HU	3.6	3.8	0.2
MT	5.4	5.2	-0.2
NL	5.2	4.7	-0.5
AT	4.9	4.9	0.0
PL	4.3	4.7	0.4
PT	4.5	3.9	-0.6
RO	2.5	2.8	0.3
SI	4.0	4.6	0.6
SK	3.7	3.7	0.0
FI	5.9	5.5	-0.4
SE	5.8	6.2	0.4
UK	5.2	5.0	-0.2
NO	7.6	7.3	-0.3
EA	4.3	4.3	0.0
EU*	4.5	4.5	0.0
EU27	4.4	4.4	0.0
EU*s	4.4	4.3	-0.1

Source: Commission services, EPC.

([129]) See Table II.AV.4 in Annex V for projections over the entire horizon.

Graph II.4.4 shows the projected changes in expenditure to GDP ratios between 2016 and 2070 by country, total expenditure, and ISCED level in the baseline scenario.

Graph II.4.4: **Changes in government expenditure by ISCED level between 2016 and 2070**
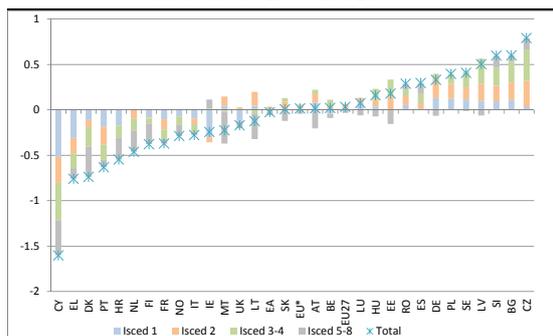
Source: Commission services, EPC.

In those countries for which a reduction in total expenditure between 2016 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 2016 and 2070, tertiary education tends to dampen the overall increase in expenditure.

4.3.2. Drivers of education expenditure

Table II.4.2 illustrates a breakdown, according to students and employment effects, for the changes in the GDP ratio of public expenditure on education between 2016 and 2070.

In line with the underlying assumptions, the idea is to show 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.

Table II.4.2:   **Breakdown of total variation in expenditure between 2016 and 2070 - Baseline scenario**

	Expenditure to GDP ratio		Change 2070-2016 in %	Students effect	Employment effect	Discrepancy
	2016	**2070**	**(3) = (2)-(1)**			
	(1)	**(2)**	**(3) = (4)-(5)+(6)**	**(4)**	**(5)**	**(6)=(3)-(4)+(5)**
BE	5.8	5.8	0.02	0.96	0.93	0.00
BG	3.1	3.7	0.60	-0.94	-1.28	0.26
CZ	3.2	4.0	0.79	-0.04	-0.62	0.22
DK	7.4	6.6	-0.74	0.17	0.93	0.02
DE	4.2	4.5	0.33	-0.22	-0.59	-0.04
EE	4.8	5.0	0.18	-0.75	-0.93	-0.01
IE	3.6	3.3	-0.24	0.47	0.89	0.18
EL	3.1	2.4	-0.76	-1.22	-0.61	-0.16
ES	3.7	3.9	0.30	0.58	0.28	0.00
FR	4.8	4.4	-0.37	0.30	0.75	0.08
HR	3.7	3.2	-0.55	-1.14	-0.75	-0.16
IT	3.5	3.3	-0.28	-0.64	-0.39	-0.02
CY	5.8	4.2	-1.60	-1.04	0.85	0.29
LV	4.5	5.0	0.50	-1.25	-1.57	0.18
LT	3.9	3.8	-0.12	-1.65	-1.63	-0.11
LU	3.3	3.4	0.07	1.96	1.80	-0.09
HU	3.6	3.8	0.16	-0.42	-0.58	0.00
MT	5.4	5.2	-0.22	0.90	1.07	-0.06
NL	5.2	4.7	-0.46	0.05	0.49	-0.02
AT	4.9	4.9	0.02	0.36	0.28	-0.07
PL	4.3	4.7	0.40	-1.21	-1.48	0.13
PT	4.5	3.9	-0.63	-1.72	-1.27	-0.18
RO	2.5	2.8	0.29	-0.67	-0.86	0.10
SI	4.0	4.6	0.60	0.01	-0.51	0.07
SK	3.7	3.7	0.01	-0.63	-0.67	-0.03
FI	5.9	5.5	-0.38	-0.45	-0.10	-0.03
SE	5.8	6.2	0.41	2.28	1.66	-0.21
UK	5.2	5.0	-0.17	0.68	0.86	0.01
NO	7.6	7.3	-0.29	1.20	1.53	0.04
EA	4.5	4.3	-0.20	-0.11	-0.12	-0.21
EU	4.4	4.3	-0.10	-0.11	-0.17	-0.16
EU27	4.4	4.3	-0.10	-0.23	-0.31	-0.18

(1) Students and Employment effects are computed as growth rates, between 2016 and 2070, of the number of students and employed, respectively (and weighted by the expenditure-to-GDP ratio in 2016).
(2) EA and EU aggregates are computed as simple averages.
Source: Commission services, EPC.

The countries with the largest expected reduction appear to be Cyprus, Greece and Denmark, respectively. Results for Cyprus are in line with the intuition of our model. A decrease in the number of students, counterbalanced by an increase of people in employment, turns out in lower education expenditure levels.

In Greece, the drop in the expenditure ratio is related to a noticeable decline in enrolled students and of people entering the workforce (see Table II.4.2. On the contrary, Denmark's lower expenditure is explained by a significant expected increase in employment levels (about 12.5%), which outweighs the rise in the number of students.

Table II.4.3:   **Breakdown of revisions in expenditure-to-GDP ratio (2018 AR round minus 2015 AR round) - Values for the Baseline scenario in 2060**

	Expenditure to GDP ratio		Revisions				
	AR2015 (1)	AR2018 (2)	Expenditure (3) = (2)-(1) (3) = (4)+(5)-(6)+(7)	Base (4)	Student Index Index % change*Exp ratio in AR2015 (5)	Employment Index (6)	Discrepancy (7) = (3)-(4)-(5)+(6)
BE	6.1	5.8	-0.26	0.12	-1.15	-0.80	-0.03
BG	3.4	3.8	0.36	0.19	0.03	-0.19	-0.04
CZ	4.1	4.1	0.01	-0.37	-0.29	-0.66	0.01
DK	6.8	6.5	-0.32	-0.02	-0.62	-0.15	0.16
DE	4.4	4.3	-0.08	0.30	0.87	0.57	-0.68
EE	5.1	5.1	-0.04	0.52	0.54	0.44	-0.67
IE	5.9	3.5	-2.36	-2.45	0.12	0.34	0.31
EL	3.0	2.5	-0.50	-0.48	-0.11	0.00	0.09
ES	3.7	4.1	0.40	-0.60	0.66	-0.17	0.17
FR	4.8	4.5	-0.33	-0.25	-0.17	0.03	0.11
HR	3.4	3.1	-0.31	0.06	-0.26	0.09	-0.01
IT	3.5	3.3	-0.22	-0.37	-0.83	-0.57	0.42
CY	6.1	4.0	-2.15	-0.97	-1.70	-0.36	0.16
LV	4.5	5.2	0.68	1.11	0.31	-0.01	-0.75
LT	4.8	3.8	-1.04	0.34	-0.07	0.16	-1.16
LU	3.5	3.3	-0.17	0.11	-0.97	-0.90	-0.22
HU	3.4	3.7	0.32	0.32	0.34	-0.19	-0.53
MT	6.0	5.1	-0.94	-0.06	0.68	0.28	-1.28
NL	4.7	4.7	-0.02	0.09	0.59	0.59	-0.11
AT	4.9	4.8	-0.12	0.26	0.22	0.08	-0.53
PL	4.3	4.6	0.33	0.05	0.41	-0.35	-0.47
PT	4.2	3.8	-0.35	-0.37	0.20	0.32	0.13
RO	3.0	2.7	-0.28	-0.16	-0.25	-0.16	-0.03
SI	6.1	4.7	-1.35	-1.49	-0.12	-0.07	0.19
SK	2.9	3.8	0.87	0.44	1.20	0.38	-0.39
FI	6.4	5.6	-0.80	-0.20	-0.96	-0.46	-0.09
SE	5.9	6.2	0.28	0.21	0.03	-0.43	-0.39
UK	5.2	5.0	-0.19	0.19	-0.43	-0.33	-0.28
NO	5.9	7.1	1.24	1.68	-1.40	-1.34	-0.38
EA	4.8	4.3	-0.46	-0.25	-0.16	-0.12	-0.17
EU	4.6	4.3	-0.31	-0.15	-0.15	-0.17	-0.17
EU27	4.6	4.3	-0.31	-0.17	-0.14	-0.16	-0.17

(1) Base is the difference, between the 2018 AR and 2015 AR, of the total expenditure-to-GDP ratio in year 2016.
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.
Source: Commission services, EPC.

In addition, we can see that the countries showing the highest increase in expenditure appear to be Czech Republic, immediately followed by Bulgaria and Slovenia. In the first two cases, 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 Slovenia, a decrease in the number of employed, an almost unchanged amount of students engenders higher education costs.

To complement the above discussion, Table II.4.3 compares the evolution of public expenditure on education between the 2015 and 2018 Ageing Report projection exercises ([130]).

The idea is to provide a breakdown of AR revisions according to the following formula ([131]):

$$\frac{\frac{EDU_t^{1-8}}{GDP_t}}{\frac{EDU_0^{1-8}}{GDP_0}} = \frac{\overline{IS_t}}{IE_t} \qquad 4.1$$

([130]) Values for the Baseline scenario in 2060 are used, as data for 2070 are not available in the 2015 AR.
([131]) The formula is obtained from Equation (4.6) of "The 2018 Ageing Report – Underlying Assumptions and Projection Methodologies", European Economy, No. 065/2017, European Commission, Part II, Chapter 4.

Graph II.4.5: **Comparison of students and employed between the 2015 AR and the 2018 AR - Values for the baseline scenario in 2060**
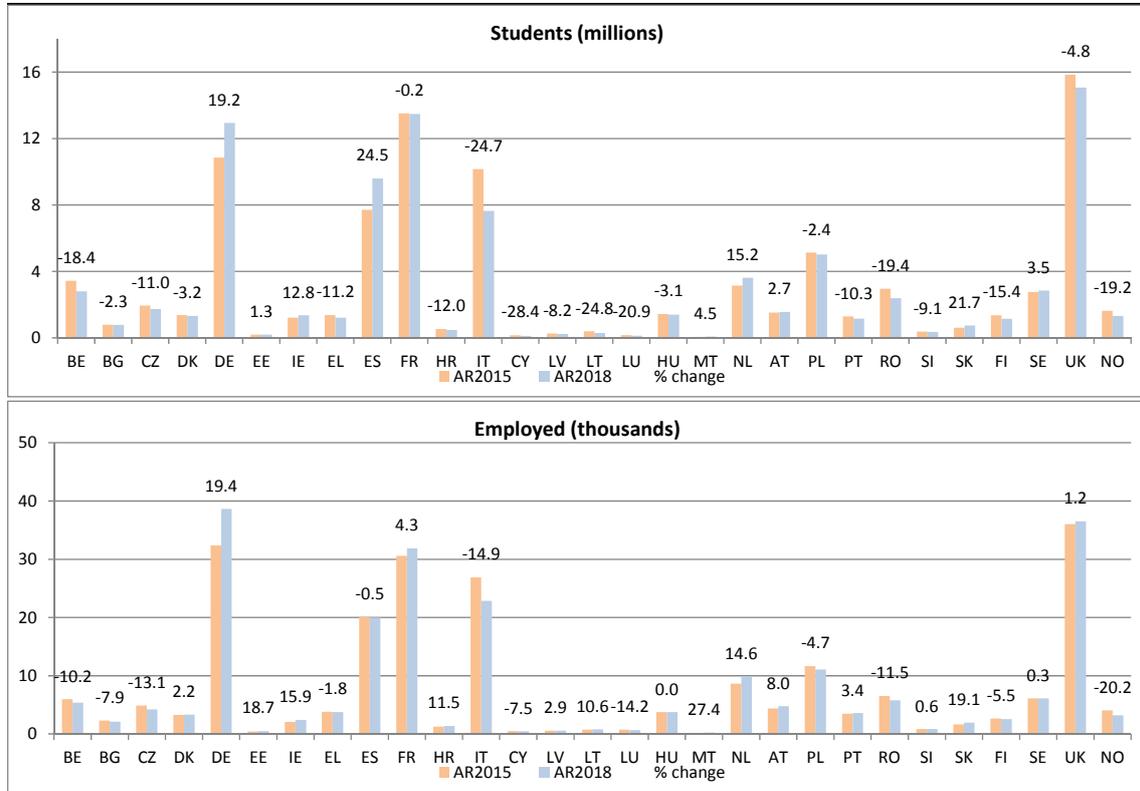
Source: Commission services, EPC

Equivalently, equation 4.1 can be rewritten as:

$$\frac{EDU_t^{1\text{-}8}}{GDP_t} = \frac{EDU_0^{1\text{-}8}}{GDP_0} * \frac{\overline{IS}_t}{IE_t} \qquad 4.2$$

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* ([132]).

Table II.4.3 shows that, despite considerable cross-country variations, the expenditure-to-GDP ratio for 2060 at EU level is, on average, revised downwards by about 0.31 pps. between the 2015 and the 2018 AR.

This largely reflects a downward revision of 0.15 pps. in base period values, together with a 0.15 pps. decrease in the number of students, which is offset by an employment decrease of 0.17 pps.

A country-level investigation highlights a remarkable downward revision of the expenditure-to-GDP ratio in Ireland (-2.36 pps.) and Cyprus (-2.15 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.

([132]) Assuming a constant students-to-staff ratio (i.e. $\overline{IT}_i = \overline{IS}_i$). Student and Employment indexes are averaged across all ISCED levels.

For Ireland, the downward effect can be explained by a decline in base period values of the expenditure-to-GDP ratio (-2.45 pps.), which derives from the surge in GDP growth that has characterized the country as of 2015. On the contrary, only a modest impact is ascribable to the change in students (+0.12 pps.) and workers (+0.34 pps.), as supported by our graphical evidence.

Concerning Cyprus, results in Table II.4.3 confirm the intuition of Graph II.4.5. That is, the substantial decline in the forecast number of students in 2060 (-1.70 pps.) is the major driver behind the overall downward revision; although accompanied by a non-negligible reduction in base year values (-0.97 pps.).

4.4. SENSITIVITY TESTS

4.4.1. The High Enrolment Rate Scenario

Different sensitivity scenarios are considered in the 2018 Ageing Report. In line with the 2015 AR, a first test assumes a demand shock that raises enrolment rates in ISCED levels 3-4 and 5-8 to the average of the three best performing countries.

In the base period 2016, the three countries with the highest enrolment rates in ISCED levels 3-4 and 5-8 are Finland, Belgium and Denmark. By age bracket (15 years and older) and ISCED level (3-4 and 5-8), countries are assumed to converge linearly from 2016 until 2045 to the average enrolment rate in Finland, Belgium and Denmark. Higher enrolment rates are then kept constant (although still considering the impact of participation rates) between 2046 and 2070. A country keeps its initial enrolment rate break (by ISCED and age) if it is higher than the target average.

In 2070, the additional budgetary cost due to higher enrolment rates is projected at +0.8 pps., on average, both in the EU and the euro area (Tables II.4.4, II.AV.4 and II.AV.5). Across countries, the increase in education expenditure varies considerably, ranging from +0.2 pps. in Finland to +1.5 pps. in Luxembourg and Malta.

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 2018 AR includes another set of sensitivity tests. Namely, a uniform shock to the baseline projection framework (i.e. life expectancy, higher/lower migration, lower fertility, higher/lower total employment rate, older workers employment rate, higher/lower TFP growth, risk scenario, policy scenario) has been applied, each time, to all Member States.

Table II.4.4 illustrates the differences, between 2016 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, heterogeneous variations occur in the remaining scenarios (with a direct impact on population).

In particular, results from Table II.4.5 show that, when an increase (decrease) in the employment rate for the age group 20-64 is taken into account, education budgetary costs are forecast to decline (rise) by -0.10 pps. (+0.12 pps.),on average, at the EU and euro area level.

Higher (lower) employment levels lead to a reduction (increase) in education expenditure in all countries. Namely, values range from -0.06 pps. (Greece) to -0.15 pps. (Belgium) in the former case, and from +0.06 pps. (Greece) to 0.17 pps. (Norway) in the latter.

Table II.4.4:   **Baseline and Sensitivity Scenarios (Public Expenditure-to-GDP ratio) - Difference between 2016 and 2070**

	2016	2070	Difference 2016 -2070												
	Baseline	Baseline	Baseline	Higher Emp.	Lower Emp.	Lower Migration	Higher Migration	Lower Fertility	Older Emp.	HLE	TFP Risk	Higher TFP	Lower TFP	Policy Shift	High Enrolment
BE	5.8	5.8	0.0	-0.1	0.2	0.0	0.0	-0.8	-0.3	0.0	0.0	0.0	0.0	-0.2	0.8
BG	3.1	3.7	0.6	0.5	0.7	0.6	0.6	-0.1	0.4	0.6	0.6	0.6	0.6	0.2	1.2
CZ	3.2	4.0	0.8	0.7	0.9	0.8	0.8	0.1	0.6	0.8	0.8	0.8	0.8	0.4	1.5
DK	7.4	6.6	-0.7	-0.9	-0.6	-0.8	-0.7	-1.7	-1.1	-0.9	-0.7	-0.7	-0.7	-0.7	-0.1
DE	4.2	4.5	0.3	0.2	0.4	0.3	0.3	-0.4	0.1	0.3	0.3	0.3	0.3	0.0	1.0
EE	4.8	5.0	0.2	0.1	0.3	0.1	0.2	-0.6	-0.1	0.2	0.2	0.2	0.2	-0.4	0.8
IE	3.6	3.3	-0.2	-0.3	-0.2	-0.3	-0.2	-0.7	-0.4	-0.2	-0.2	-0.2	-0.2	-0.4	0.2
EL	3.1	2.4	-0.8	-0.8	-0.7	-0.8	-0.7	-1.2	-0.9	-0.8	-0.8	-0.8	-0.8	-0.8	-0.3
ES	3.7	3.9	0.3	0.2	0.4	0.2	0.3	-0.3	0.1	0.3	0.3	0.3	0.3	0.2	0.8
FR	4.8	4.4	-0.4	-0.5	-0.3	-0.4	-0.4	-1.2	-0.6	-0.4	-0.4	-0.4	-0.4	-0.5	0.9
HR	3.7	3.2	-0.5	-0.6	-0.5	-0.6	-0.5	-1.2	-0.7	-0.6	-0.5	-0.5	-0.5	-0.8	0.3
IT	3.5	3.3	-0.3	-0.4	-0.2	-0.3	-0.3	-0.9	-0.5	-0.4	-0.3	-0.3	-0.3	-0.3	0.5
CY	5.8	4.2	-1.6	-1.7	-1.5	-1.5	-1.7	-2.5	-1.8	-1.7	-1.6	-1.6	-1.6	-1.6	-0.4
LV	4.5	5.0	0.5	0.4	0.6	0.4	0.7	-0.3	0.3	0.5	0.5	0.5	0.5	0.1	1.2
LT	3.9	3.8	-0.1	-0.2	0.0	-0.1	-0.1	-0.9	-0.3	-0.1	-0.1	-0.1	-0.1	-0.5	0.6
LU	3.3	3.4	0.1	0.0	0.2	0.0	0.1	-0.5	-0.1	0.1	0.1	0.1	0.1	-0.3	1.6
HU	3.6	3.8	0.2	0.1	0.3	0.1	0.2	-0.5	0.0	0.2	0.2	0.2	0.2	-0.1	0.9
MT	5.4	5.2	-0.2	-0.3	-0.1	-0.3	-0.2	-1.1	-0.5	-0.2	-0.2	-0.2	-0.2	-0.6	1.3
NL	5.2	4.7	-0.5	-0.6	-0.4	-0.5	-0.4	-1.2	-0.7	-0.6	-0.5	-0.5	-0.5	-0.5	0.1
AT	4.9	4.9	0.0	-0.1	0.1	0.0	0.0	-0.7	-0.2	0.0	0.0	0.0	0.0	-0.3	0.7
PL	4.3	4.7	0.4	0.3	0.5	0.4	0.4	-0.4	0.1	0.4	0.4	0.4	0.4	-0.2	1.0
PT	4.5	3.9	-0.6	-0.7	-0.5	-0.7	-0.6	-1.4	-0.9	-0.6	-0.6	-0.6	-0.6	-0.8	0.1
RO	2.5	2.8	0.3	0.2	0.4	0.3	0.3	-0.2	0.1	0.3	0.3	0.3	0.3	0.0	1.0
SI	4.0	4.6	0.6	0.5	0.7	0.5	0.6	-0.2	0.3	0.6	0.6	0.6	0.6	0.3	1.2
SK	3.7	3.7	0.0	-0.1	0.1	0.0	0.0	-0.7	-0.2	-0.1	0.0	0.0	0.0	0.0	0.9
FI	5.9	5.5	-0.4	-0.5	-0.2	-0.4	-0.4	-1.1	-0.7	-0.5	-0.4	-0.4	-0.4	-0.4	-0.1
SE	5.8	6.2	0.4	0.3	0.6	0.4	0.4	-0.4	0.1	0.4	0.4	0.4	0.4	-0.2	1.1
UK	5.2	5.0	-0.2	-0.3	-0.1	-0.2	-0.2	-1.0	-0.4	-0.2	-0.2	-0.2	-0.2	-0.5	0.8
NO	7.6	7.3	-0.3	-0.4	-0.1	-0.3	-0.3	-1.3	-0.7	-0.3	-0.3	-0.3	-0.3	-1.0	0.5
EA	4.3	4.3	0.0	-0.1	0.1	-0.1	0.0	-0.7	-0.3	-0.1	0.0	0.0	0.0	-0.2	0.8
EU*	4.5	4.5	0.0	-0.1	0.1	0.0	0.0	-0.7	-0.2	0.0	0.0	0.0	0.0	-0.2	0.8
EU27	4.4	4.4	0.0	-0.1	0.1	0.0	0.1	-0.7	-0.2	0.0	0.0	0.0	0.0	-0.2	0.8
EU*s	4.4	4.3	-0.1	-0.2	0.0	-0.1	0.0	-0.8	-0.3	-0.1	-0.1	-0.1	-0.1	-0.3	0.7

Source: Commission services, EPC.

When considering a contraction in the amount of inactive population (by raising the employment rate of older workers for the age group 55-74), expenditure is subject to a general downsizing (an average of -0.24 pps. and -0.22 pps. for the EU and euro area aggregates); moving from -0.14 pps. (Greece) to -0.39 pps. (Norway).

Under higher and lower migration hypotheses, results are once again in line with our assumptions. A rise and a decrease in overall population engender, respectively, a modest positive and negative variation in education expenditure (+0.03 and -0.03 pps. at EU-level and +0.03 and -0.02 pps. for the euro area). Similarly, the impacts of a higher life expectancy also appear quite limited.

Table II.4.5:   **Alternative sensitivity scenarios - Difference from the Baseline in 2070**

	Higher Employment	Lower Employment	Lower Migration	Higher Migration	Lower Fertility	Older Employment	HLE	Policy Shift
BE	-0.15	0.16	-0.03	0.02	-0.82	-0.34	0.01	-0.25
BG	-0.10	0.11	-0.02	0.02	-0.71	-0.22	-0.01	-0.38
CZ	-0.09	0.10	-0.03	0.03	-0.70	-0.21	0.00	-0.38
DK	-0.13	0.15	-0.03	0.02	-0.96	-0.34	-0.14	0.00
DE	-0.10	0.11	-0.02	0.01	-0.71	-0.23	-0.01	-0.33
EE	-0.11	0.13	-0.04	0.04	-0.82	-0.27	0.00	-0.55
IE	-0.08	0.09	-0.08	0.07	-0.49	-0.18	0.00	-0.19
EL	-0.06	0.06	-0.04	0.04	-0.46	-0.14	-0.06	0.00
ES	-0.09	0.10	-0.05	0.04	-0.60	-0.19	0.00	-0.07
FR	-0.11	0.12	-0.02	0.02	-0.79	-0.23	-0.01	-0.08
HR	-0.08	0.09	0.00	0.00	-0.60	-0.20	-0.01	-0.23
IT	-0.08	0.09	-0.01	0.01	-0.62	-0.21	-0.10	0.00
CY	-0.09	0.10	0.13	-0.09	-0.94	-0.24	-0.10	0.00
LV	-0.11	0.12	-0.14	0.18	-0.85	-0.24	-0.01	-0.43
LT	-0.09	0.09	0.00	0.00	-0.74	-0.18	-0.01	-0.37
LU	-0.08	0.10	-0.03	0.02	-0.54	-0.20	0.00	-0.34
HU	-0.09	0.09	-0.02	0.01	-0.67	-0.20	0.00	-0.29
MT	-0.08	0.13	-0.05	0.05	-0.87	-0.27	0.01	-0.37
NL	-0.10	0.10	-0.02	0.02	-0.74	-0.22	-0.09	0.00
AT	-0.11	0.12	-0.02	0.01	-0.74	-0.27	0.00	-0.28
PL	-0.12	0.13	-0.04	0.04	-0.80	-0.29	0.00	-0.55
PT	-0.09	0.09	-0.02	0.02	-0.73	-0.24	0.00	-0.16
RO	-0.07	0.08	-0.02	0.02	-0.52	-0.16	-0.01	-0.32
SI	-0.11	0.12	-0.06	0.05	-0.78	-0.25	0.00	-0.25
SK	-0.09	0.09	-0.02	0.02	-0.72	-0.20	-0.12	0.00
FI	-0.13	0.13	-0.01	0.01	-0.75	-0.32	-0.11	0.00
SE	-0.14	0.14	0.00	0.00	-0.76	-0.30	0.02	-0.57
UK	-0.11	0.12	-0.02	0.02	-0.84	-0.26	0.01	-0.33
NO	-0.13	0.17	-0.01	0.00	-0.98	-0.39	0.02	-0.66
EA	-0.10	0.11	-0.02	0.03	-0.71	-0.22	-0.02	-0.15
EU*	-0.10	0.12	-0.03	0.03	-0.74	-0.24	-0.02	-0.21
EU27	-0.10	0.11	-0.03	0.03	-0.71	-0.23	-0.02	-0.19
EU*s	-0.10	0.11	-0.02	0.03	-0.72	-0.24	-0.03	-0.24

(1)The sensitivity scenarios on productivity development (TFP Risk, Higher TFP, and Lower TFP) are the same as the baseline and are not reported here.
Source: Commission services, EPC.

Finally, as expected, a lower fertility scenario (where fertility rate is assumed to be 20 % lower compared to the baseline scenario over the entire projection horizon) mainly generates a reduction in expenditure (-0.74 pps. and -0.71 pps. for the EU and euro area, respectively), due to a fall in the number of future students.

Likewise, in the policy scenario (which adopts an automatic mechanism revising the retirement age with the evolution of life expectancy), we observe a widespread reduction in expenditure levels across countries, mainly explained by an increment of people engaged in employment activities.

5. UNEMPLOYMENT BENEFIT EXPENDITURE

5.1. INTRODUCTION

In order to preserve the comprehensive nature of the long term budgetary exercise, unemployment benefit (UB) expenditure projections are carried out although UB expenditure is largely driven by (short- and medium-term) cyclical fluctuations and influenced by structural factors relating to the functioning of the labour market, rather than by (long-term) demographic trends. In addition, and for underperforming countries, UB projections largely depend on the assumption of a decline in the (structural) unemployment rate (UR). This is rather significant in some Member States, converging to an assumed unemployment rate (EU median), implicitly assuming future implementation of structural reforms in labour markets [133].

A simple equation is used to project UB expenditure. In order to apply the methodology described here and secure the comparability of projections across countries, data should be taken from Eurostat's Social Protection Statistics (ESSPROS) [134]. Furthermore, expenditure data on unemployment benefits should cover recent years, namely 2014 and 2015. Given the delays involved in the official publication of these values by Eurostat, updated values for 2015 as provided by EPC/AWG delegates were used. Eurostat has published ESSPROS data for 2014 for all 29 countries covered in the projections (EU28 and Norway), and partially for 2015 [135]. Six Member States provided additional information [136].

UB projections require three elements: i) calibration of UB expenditure for a recent base year/period; ii) assumption of an UR trajectory up to 2070; and, iii) the assumptions of constant replacement and coverage rates of UB systems from the start of the projection period, in line with the no-policy-change assumption [137].

5.2. THE INPUT DATA

The methodology uses the AWG's unemployment rate scenario (as the driving variable) and expenditure in periodic full and partial unemployment benefits in the base period 2014-2015 (for most countries) to extrapolate future expenditure levels [138]. Using multi-annual averages can limit the impact of any given year on the final results, which is desirable in periods of strong economic fluctuations.

Given the unemployment rate scenario described in Part I of this report, the calculations assume that factors that affect the number of UB beneficiaries (entitlement rules that affect coverage, take-up rates, and so on) remain constant [139] . This approximation should be neutral, particularly over the long term, not leading to any systematic bias in the projections.

In order to guarantee the comparability of projections across countries, expenditure data were taken mainly from Eurostat's ESSPROS, specifically the sum of periodic full and partial unemployment benefits (Table II.5.1) [140].

As in previous long-term projection rounds, DG ECFIN's structural unemployment rate estimates (NAWRU) are used as a proxy for the structural unemployment rate.

As a general rule, actual unemployment rates are assumed to converge to NAWRU rates in five years (by 2021) corresponding to the assumed

---

[133] For details, see Box I.2.3 in Part I, Chapter 2 in European Commission (DG ECFIN)-Economic Policy Committee (AWG) (2017), '2018 Ageing Report: Underlying assumptions and projection methodologies', Institutional Papers 65.

[134] The European System of integrated Social PROtection Statistics (ESSPROS).

[135] Data up to 2014 was used for DK, EE, IE, NL, PL, RO, SI, FI.

[136] Data on unemployment benefit expenditure for 2015 were provided by BE, BG, ES, CY, UK, NO, and in addition, for 2016 were provided by BE, BG, CY, AT, UK.

[137] For details on the projection methodology, see Chapter I.5 in European Commission (DG ECFIN)-Economic Policy Committee (AWG) (2017), '2018 Ageing Report: Underlying assumptions and projection methodologies', Institutional Papers 65.

[138] Due to data availability, for DK, EE, IE, NL, PL, RO, SI, FI expenditure data for 2013-14 was used, for CZ, DE, EL, ES, FR, HR, IT, LV, LT, LU, HU, MT, PT, SK, SE, NO data for 2014-15 was used, for BE, BG, CY, AT, UK data for 2015-16 was used.

[139] The unemployment rate projections are based on the Commission's spring 2017 forecast. For details, see Part I, Chapter 2 in European Commission (DG ECFIN)-Economic Policy Committee (AWG) (2017).

[140] Periodic full and partial UB expenditure were also used in the previous Ageing Reports.

closure of the output gap (^{141}). Then, NAWRU rates are assumed to gradually converge to the minimum of country-specific *Anchors* or the median of national *Anchors* in the EU (which is 7.9%), whichever is the lowest (see Table II.5.2 for the unemployment rate projections) (^{142}) (^{143}).

Table II.5.1: **Periodic full and partial unemployment benefits, % of GDP**

	2006	2008	2010	2012	2014	2015
BE	2.1	1.7	2.1	1.6	1.8	1.5
BG	0.2	0.1	0.4	0.4	0.4	0.4
CZ	0.2	0.2	0.3	0.2	0.2	0.2
DK	0.9	0.4	1.0	1.1	0.9	:
DE	1.2	0.9	1.2	0.8	0.8	0.7
EE	0.1	0.2	0.4	0.2	0.2	:
IE	0.7	1.2	2.5	2.2	1.7	:
EL	0.4	0.5	0.7	0.7	0.4	0.4
ES	1.0	1.2	2.1	2.3	1.8	1.5
FR	1.4	1.2	1.5	1.5	1.6	1.6
HR	:	0.2	0.5	0.4	0.4	0.3
IT	0.4	0.4	0.7	0.8	0.9	0.9
CY	0.4	0.3	0.4	0.6	0.7	0.6
LV	0.3	0.3	0.7	0.3	0.4	0.4
LT	0.1	0.1	0.4	0.2	0.2	0.2
LU	0.5	0.4	0.6	0.6	0.6	0.5
HU	0.3	0.3	0.4	0.2	0.1	0.1
MT	0.4	0.3	0.3	0.3	0.3	0.3
NL	1.2	0.8	1.3	1.3	1.6	:
AT	0.7	0.6	0.7	0.7	0.8	0.9
PL	0.2	0.1	0.2	0.2	0.1	:
PT	1.1	0.8	1.2	1.5	1.2	0.9
RO	0.2	0.1	0.5	0.1	0.1	:
SI	0.3	0.2	0.4	0.6	0.4	:
SK	0.1	0.1	0.2	0.2	0.2	0.2
FI	1.3	1.1	1.6	1.7	2.2	:
SE	0.9	0.4	0.5	0.4	0.4	0.3
UK	0.2	0.2	0.3	0.3	0.2	0.1
NO	0.4	0.3	0.6	0.4	0.5	0.5

(1) 2016 figures for BE, BG, CY, AT, UK were provided by AWG members.
Data for NO expressed in terms of mainland GDP.
Source: Eurostat (ESSPROS), AWG, Commission services.

Anchors values are country-specific values for the NAWRU that are calculated on the basis of the coefficients of a panel estimation model in which the short term NAWRU for EU old member states is regressed on a set of structural variables

(unemployment benefit replacement rates, active labour market policies, an index of the employment protection legislation and the tax wedge) together with a set of cyclical variables (TFP, construction index and real interest rate). To derive country-specific anchors, it is assumed then that the non-structural variables are set at their average values (^{144}).

Capping country specific NAWRU values to 7.9% (EU median) is done in order to avoid extrapolating into the far future very high unemployment rate values, which are largely a consequence of the economic and financial crisis. Capping unemployment rates, as done in some cases, leads to higher employment, employment growth and GDP growth, and essentially assumes the implementation of future policy measures in the labour market. Therefore, this is not aligned with a 'no-policy-change' approach.

(^{141}) See Box I.2.3 in Part I, Chapter 2 in European Commission (DG ECFIN)-Economic Policy Committee (AWG) (2017), '2018 Ageing Report: Underlying assumptions and projection methodologies', Institutional Papers 65.

(^{142}) In addition, if the estimated NAWRU ten years ahead (2026) is lower than the country specific anchor, the former is assumed to replace the anchor. The gradual convergence, for countries whose NAWRU's is higher than the EU median, is assumed to be completed by 2050.

(^{143}) 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 2026), DG ECFIN carried out some econometric work (Orlandi, 2012) leading to the estimation of *Anchor* values for the NAWRU.

(^{144}) Over the estimation sample.

Table II.5.2: **Unemployment rate projections, age 15-64, % of labour force**

	2016	2026	2050	2070	
BE	7.9	8.2	7.9	7.9	BE
BG	7.6	6.7	6.7	6.7	BG
CZ	4.0	4.2	4.2	4.2	CZ
DK	6.4	4.6	4.6	4.6	DK
DE	4.2	4.8	4.8	4.8	DE
EE	6.8	8.5	7.9	7.9	EE
IE	8.1	6.5	6.5	6.5	IE
EL	23.8	12.1	7.9	7.9	EL
ES	19.7	15.4	7.9	7.9	ES
FR	10.2	8.7	7.9	7.9	FR
HR	13.2	12.5	7.9	7.9	HR
IT	11.9	9.1	7.9	7.9	IT
CY	13.5	6.3	6.1	6.1	CY
LV	9.8	10.1	7.9	7.9	LV
LT	8.0	8.1	7.9	7.9	LT
LU	6.2	5.0	5.0	5.0	LU
HU	5.2	5.0	5.0	5.0	HU
MT	4.2	5.6	5.6	5.6	MT
NL	6.1	4.5	4.5	4.5	NL
AT	6.1	4.9	4.9	4.9	AT
PL	6.3	5.8	5.8	5.8	PL
PT	11.5	9.1	7.9	7.9	PT
RO	6.1	6.2	6.2	6.2	RO
SI	8.1	5.9	5.9	5.9	SI
SK	9.7	9.4	7.9	7.9	SK
FI	9.1	7.6	7.6	7.6	FI
SE	7.1	5.8	5.7	5.7	SE
UK	5.0	6.2	6.2	6.2	UK
NO	4.8	3.3	3.3	3.3	NO
EA	10.2	8.4	6.7	6.8	EA
EU*	8.7	7.6	6.5	6.5	EU*
EU27	9.3	7.8	6.5	6.6	EU27

Source: Commission services, EPC.

5.3. UNEMPLOYMENT BENEFIT EXPENDITURE: BASELINE PROJECTIONS

Table II.5.3 presents UB projections for the period 2016-2070. In the EU as a whole, unemployment expenditure is projected to decline by 0.2 pps. of GDP by 2070 (from 0.8% of GDP to 0.6%). In 24 out of a total of 29 countries, the UB expenditure-to-GDP ratio is projected to decrease influenced by the unemployment rate assumptions, and in the remaining five countries it increases by 0.1 pps. of GDP or less (see Table II.5.3).

In fact, the percentage change in the UB-to-GDP ratio between the final period (2070) and the base period: $ln\left(\frac{UB_t}{GDP_t}\right) - ln\left(\frac{UB_b}{GDP_b}\right)$ can be approximated by $\frac{1}{1-u_t} * \left(\frac{u_t - u_b}{u_b}\right)$. This means that reducing the unemployment rate pays a "double dividend" in terms of reducing the UB-to-

GDP ratio. For similar changes in the unemployment rate $\left(\frac{u_t - u_b}{u_b}\right)$, countries with a higher unemployment rate in the current year (u_t) will record a larger variation in the UB-to-GDP ratio.

5.4. DEMOGRAPHIC AND MACRO-ECONOMIC RISK SCENARIOS

In addition to the baseline projections, a set of additional scenarios with alternative demographic and macro-economic assumptions were run so as to assess the sensitivity of the projections with respect to changes in the underlying assumptions (see Part I.3 for details on the sensitivity tests).

As expected, the scenario with a higher employment rate (2 pps. higher employment rate for the age-group 20-64 by 2030) leads to a lower unemployment rate and therefore lower unemployment benefit expenditure, and vice versa. For the EU as a whole, the decline would be 0.6 pps. of GDP by 2070 assuming a higher employment rate, while a lower employment rate would lead to an increase of 0.1 pps. of GDP (see column 'pos_2 pps._ER' and column 'neg_2 pps._ER', respectively, in Table II.5.3).

Moreover, under the assumption of a higher employment rate for older workers (10 pps. higher employment rate for the age-group 55-74 by 2030), unemployment benefit expenditure would be slightly lower (see column '10 pps._older_ER' in Table II.5.3).

5.5. COMPARISON WITH THE 2015 AGEING REPORT

Overall, the current UB projections point to a slightly lower reduction than those made in the 2015 AR (see the last two columns in Table II.5.3). Focusing on the differences between 2016 and 2060, expenditure on UB in the EU (and the EA) is expected to decline by 0.2 pp of GDP, less than the estimate made in the 2015 AR (a decline of 0.3 pp).

However, there are significant differences between the two projections for a number of countries. For example, in NO, AT and FI a greater reduction in

Table II.5.3: **Unemployment benefit expenditure, baseline and alternative scenarios, % of GDP, 2016-70**

| | 2016 | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 | Change 2016-70 | | | | Change 2016-60 | | |
								Baseline	pos_2pps._ER	neg_2pps._ER	10pps._older_ER	2018 AR baseline	2015 AR baseline	
BE	1.4	1.3	1.4	1.4	1.4	1.4	1.4	0.0	-0.5	0.5	-0.1	0.0	-0.2	BE
BG	0.4	0.3	0.3	0.3	0.3	0.3	0.3	-0.1	-0.2	0.0	-0.1	-0.1	-0.2	BG
CZ	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	-0.1	0.1	0.0	0.0	0.0	CZ
DK	0.9	0.7	0.6	0.6	0.6	0.6	0.6	-0.2	-0.5	0.1	-0.3	-0.2	-0.3	DK
DE	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.1	-0.3	0.5	0.1	0.1	0.1	DE
EE	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	EE
IE	1.1	0.8	0.9	0.9	0.9	0.9	0.9	-0.2	-0.6	0.2	-0.3	-0.2	-0.5	IE
EL	0.4	0.2	0.1	0.1	0.1	0.1	0.1	-0.3	-0.3	-0.2	-0.3	-0.3	-0.7	EL
ES	1.3	1.1	0.9	0.7	0.5	0.5	0.5	-0.9	-1.0	-0.7	-0.9	-0.9	-1.4	ES
FR	1.6	1.4	1.3	1.2	1.2	1.2	1.2	-0.4	-0.8	0.0	-0.4	-0.4	-0.4	FR
HR	0.3	0.2	0.2	0.2	0.1	0.1	0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.3	HR
IT	0.9	0.8	0.6	0.6	0.5	0.5	0.5	-0.3	-0.5	-0.1	-0.3	-0.3	-0.4	IT
CY	0.5	0.4	0.2	0.2	0.2	0.2	0.2	-0.3	-0.4	-0.2	-0.3	-0.3	-0.7	CY
LV	0.4	0.3	0.4	0.3	0.3	0.3	0.3	-0.1	-0.2	0.0	-0.1	-0.1	-0.1	LV
LT	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	LT
LU	0.5	0.5	0.4	0.4	0.4	0.4	0.4	-0.1	-0.3	0.1	-0.1	-0.1	-0.2	LU
HU	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	HU
MT	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.0	0.2	0.1	0.1	0.0	MT
NL	1.3	1.1	0.9	0.9	0.9	0.9	0.9	-0.3	-0.8	0.2	-0.4	-0.3	-1.0	NL
AT	0.9	0.8	0.7	0.7	0.7	0.7	0.7	-0.2	-0.5	0.2	-0.2	-0.2	-0.1	AT
PL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	PL
PT	0.9	0.7	0.6	0.6	0.6	0.6	0.6	-0.3	-0.5	-0.1	-0.3	-0.3	-0.7	PT
RO	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	RO
SI	0.4	0.3	0.3	0.3	0.3	0.3	0.3	-0.1	-0.2	0.0	-0.1	-0.1	-0.2	SI
SK	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	-0.1	0.0	0.0	0.0	-0.1	SK
FI	2.2	1.8	1.8	1.8	1.8	1.8	1.8	-0.4	-1.0	0.2	-0.4	-0.4	-0.4	FI
SE	0.3	0.3	0.3	0.2	0.2	0.2	0.2	-0.1	-0.2	0.0	-0.1	-0.1	-0.1	SE
UK	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	UK
NO	0.6	0.4	0.4	0.4	0.4	0.4	0.4	-0.2	-0.4	0.1	-0.2	-0.2	0.0	NO
EA	1.1	0.9	0.9	0.8	0.8	0.8	0.8	-0.2	-0.6	0.1	-0.2	-0.2	-0.4	EA
EU*	0.8	0.7	0.7	0.7	0.6	0.6	0.6	-0.2	-0.4	0.1	-0.2	-0.2	-0.3	EU*
EU27	0.9	0.8	0.8	0.7	0.7	0.7	0.7	-0.2	-0.5	0.1	-0.2	-0.2	-0.4	EU27

(1) Only the sensitivity tests that differ from the baseline projection are shown here.
Source: Commission services, EPC.

UB expenditure is projected compared to the 2015 AR, while in the NL, ES, EL, CY, PT and IE a smaller reduction in UB expenditure is projected between 2016 and 2060.

ANNEX I

Pension questionnaire

		2016	2020	2030	2040	2050	2060	2070
	European Commission							
	DG ECFIN Unit C2							
	Draft reporting framework: Pension expenditure and contributions - in millions EUROs, current prices							
	Country:							
	Scenario:							
	Pension scheme:							
	Voluntary							
	A. Fixed table							
		Base year	Projections in current prices					
	GDP (ECFIN projection, in current prices - billions EUR)							
1	**GDP (used in projections, in current prices)**							
2	**GDP deflator**							
3	**Economy-wide average gross wage (current prices - billions €)**							
4	**Average gross wage (current prices - 1000 €)**							
5	**Consumer price inflation**							
	0 - AVERAGE GROSS WAGE AT RETIREMENT							
6	**Average gross wage at retirement (current prices - 1000 €)**							
	1 - PENSION EXPENDITURES (Gross, in millions €)							
7	**Public pensions scheme, gross (8+9+10+11+12+13) (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*							
16	*Of which flat component (basic pension)*							
17	*Of which new pensions (168*169)*							
18	*Of which earnings related pensions*							
19	*Of which new pensions (162*163*164*165*166*167)*							
20	*Of which minimum pensions (non-contributory) i.e.minimum income guarantees for people above 65*							
21	*Of which new pensions*							
22	Disability							
23	*Of which new pensions*							
24	Survivors							
25	*Of which new pensions*							
26	Other pensions							
27	*Of which new pensions*							
28	**Private occupational scheme, gross**							
29	*Of which new pensions (170*171*172*173*174*175)*							
30	**Private individual scheme gross (32+34)**							
31	*Of which new pensions (176*177*178*179*180*181)*							
32	*Mandatory private individual scheme*							
33	*Of which new pensions*							
34	*Non-mandatory private individual scheme*							
35	*Of which new pensions*							
36	**Total pension expenditure, gross (37+38+39+40+41+42) (7+28+30)**							
	Of which							
37	*aged -54*							
38	*aged 55-59*							
39	*aged 60-64*							
40	*aged 65-69*							
41	*aged 70-74*							
42	*aged 75+*							
43	**Public pension scheme, tax revenues**							
44	**Private occupational scheme, tax revenues**							
45	**Private individual scheme, tax revenues**							
46	**Total pension, tax revenues (43+44+45)**							
47	**Public pensions scheme, net**							
48	*Of which minimum pensions (non-contributory) i.e.minimum income guarantees for people above 65*							
49	**Private occupational scheme, net**							
50	**Private individual scheme, net**							
51	**Total pension expenditure, net (47+49+50)**							
	2 - BENEFIT RATIO							
52	**Public pensions (7/87)/4**							
53	Of which old-age earnings-related pensions (including the flat component) ((16+18)/101)/4							
54	**Private occupational pensions (28/106)/4**							
55	**Mandatory private individual pensions (32/108)/4**							
56	**Non-mandatory private individual pensions (34/109)/4**							
57	**Total benefit ratio (36/110)/4**							
	3 - GROSS AVERAGE REPLACEMENT RATES (at retirement)							
58	**Public pensions**							
59	Of which old-age earnings-related pensions (including the flat component) ((15+17)/162)/6							
60	**Private occupational pensions (29/170)/6**							
61	**Private individual pensions (31/177)/6**							
62	**Total gross replacement rate**							

(Continued on the next page)

Table (continued)

	4 - NUMBER OF PENSIONS (in 1000)							
63	**Public pensions (64+65+66+67+68+69) (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							
72	Of which minimum pensions (non-contributory) i.e.minimum income guarantees for people above 65							
73	Disability							
74	Survivors pensions							
75	Other pensions							
76	**Private occupational pensions**							
77	**Private individual pensions (78+79)**							
78	*Mandatory private individual*							
79	*Non-mandatory private individual*							
80	**All pensions (63+76+77) (81+82+83+84+85+86)**							
	Of which							
81	aged -54							
82	aged 55-59							
83	aged 60-64							
84	aged 65-69							
85	aged 70-74							
86	aged 75+							
	5 - NUMBER OF PENSIONERS (in 1000)							
87	**Public pensions (88+90+92+94+96+98) (100+103+104+105)**							
	Of which							
88	aged -54							
89	*Of which female*							
90	aged 55-59							
91	*Of which female*							
92	aged 60-64							
93	*Of which female*							
94	aged 65-69							
95	*Of which female*							
96	aged 70-74							
97	*Of which female*							
98	aged 75+							
99	*Of which female*							
100	Old-age and early pensions (101+102)							
101	Of which earnings related pensions							
102	Of which minimum pensions (non-contributory) i.e.minimum income guarantees for people above 65							
103	Disability							
104	Survivors pensions							
105	Other pensions							
106	**Private occupational pensions**							
107	**Private individual pensions (108+109)**							
108	*Mandatory private individual*							
109	*Non-mandatory private individual*							
110	**All pensioners (87+106+107) (111+113+115+117+119+121)**							
	Of which							
111	aged -54							
112	*Of which female*							
113	aged 55-59							
114	*Of which female*							
115	aged 60-64							
116	*Of which female*							
117	aged 65-69							
118	*Of which female*							
119	aged 70-74							
120	*Of which female*							
121	aged 75+							
122	*Of which female*							
	6 - CONTRIBUTIONS (employee+employer, in millions €)							
123	**Public pensions (124+125+126+127)**							
124	Employer							
125	Employee							
126	State							
127	Other revenues, i.e. pension funds, nuisance charges							
128	**Private occupational pensions**							
129	**Private individual pensions (130+131)**							
130	*Mandatory private individual*							
131	*Non-mandatory private individual*							
132	**Total pension contributions (123+128+129)**							
	7 - NUMBER OF CONTRIBUTORS (employees, in 1000)							
133	**Public pensions**							
134	**Private occupational pensions**							
135	**Private individual pensions (136+137)**							
136	*Mandatory private individual*							
137	*Non-mandatory private individual*							
138	**All pensions (133+134+135)**							
	8 - INDEXATION FACTORS (percentage)							
139	Indexation factor public pensions							
140	Indexation factor old age pensions							
141	Indexation factor earnings related pensions							
142	Indexation factor flat component							
143	Indexation factor minimum pensions							
	For Memory							
144	**Consumer price inflation**	0.1	1.8	2.0	2.0	2.0	2.0	2.0
145	**Average nominal wage growth rate**	2.1	2.5	3.1	3.3	3.6	3.6	3.6

(1)The green lines are provided on a voluntary basis.
Source: Commission services, EPC.

Table II.AI.2: **Pension projections reporting sheet: decomposition of new public pensions expenditure - earnings related for defined benefit (DB) schemes**

	9- DECOMPOSITION OF NEW PUBLIC PENSIONS EXPENDITURES - OLD AGE EARNINGS RELATED (Refer to lines 15 and 17)	2016	2020	2030	2040	2050	2060	2070
	TOTAL							
	Earnings related pension							
162	Number of new pensions (in 1000)							
163	Average contributory period (in years)							
164	Average accrual rate (including contributory and flat rate component - if applicable)							
165	Monthly average pensionable earning							
166	Sustainability/adjustment factors							
167	Average number of months paid the first year							
	Flat component (basic pension)							
168	Number of new pensions (in 1000)							
169	Average new pension							

(1) Data to be provided also by gender.
Source: Commission services, EPC.

Table II.AI.3: **Pension projection reporting sheet: decomposition of new public pension expenditure - earnings related for notional defined contribution (NDC) schemes**

	9- DECOMPOSITION OF NEW PUBLIC PENSIONS EXPENDITURES - OLD AGE EARNINGS RELATED (Refer to lines 15 and 17)	2016	2020	2030	2040	2050	2060	2070
	TOTAL							
	Earnings related pension							
166	Number of new pensions (in 1000)							
167	Average contributory period (in years)							
168	Average accrual rate (c/A)							
169	Notional-accounts contribution rate (c)							
170	Annuity factor (A)							
171	Monthly average pensionable earning							
172	Sustainability/adjustment factors							
173	Average number of months of pension paid the first year							
	Flat component or basic pension							
174	Number of new pensions (in 1000)							
175	Average new pension							

(1)Data to be provided also by gender.
Source: Commission services, EPC.

Table II.AI.4: **Pension projection reporting sheet: decomposition of new public pension expenditure - earnings related for point schemes (PS)**

	9- DECOMPOSITION OF NEW PUBLIC PENSIONS EXPENDITURES - OLD AGE EARNINGS RELATED (Refer to lines 15 and 17)	2016	2020	2030	2040	2050	2060	2070
	TOTAL							
	Earnings related pension							
166	Number of new pensions (in 1000)							
167	Total pension points at retirement							
168	Average pension points accumulated per year or average contributory period							
169	Average accrual rate (=V/K)							
170	Point value (V)							
171	Point cost (K)							
172	Sustainability/adjustment factors							
173	Average number of months paid the first year							
	Flat component or basic pension							
174	Number of new pensions (in 1000)							
175	Average new pension							

(1) Data to be provided also by gender.
Source: Commission services, EPC.

Table II.AI.5: **Pension projections reporting sheet: decomposition of new private pension expenditure**

	Private occupational scheme	2016	2020	2030	2040	2050	2060	2070
	TOTAL							
170	Number of new pensions (in 1000)							
171	Average contributory period (in years)							
172	Average accrual rate							
173	Monthly average pensionable earning							
174	Sustainability/adjustment factors							
175	Average number of months paid the first year							
	Private individual scheme							
	TOTAL							
176	Number of new pensions (in 1000)							
177	Average contributory period (in years)							
178	Average accrual rate							
179	Monthly average pensionable earning							
180	Sustainability/adjustment factors							
181	Average number of months paid the first year							

(1) This block is to be provided on a voluntary basis.
Source: Commission services, EPC.

ANNEX II

Additional information on pension systems and projections

Table II.AII.1: **Pension schemes in EU Member States and projection coverage**

Country	Pension scheme	Public pensions[3]					Private pension scheme		
		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-emp	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	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	DB	MT - SA	ER	ER	ER	ER	M*	Yes	Yes*
IE	Flat rate + DB	MT - FR & SA	FR	FR - MT	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	X	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	V*	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[6]	DB	SA	ER	ER	ER	FR - 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	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	M	X	Yes*
RO	PS	SA	ER	ER	ER	ER	X	Yes	Yes
SI	DB	MT - SA*	ER	ER	ER	ER	V*	X	Yes*
SK	PS	MT - SA	ER	ER	ER	ER	X	X	Yes*
FI	DB	MT	ER	ER	ER	ER	V*	X	Yes*
SE	NDC	MT	ER	ER	ER	ER	Quasi M	Yes	Yes
UK	DB	FR & MT - SA	ER - V	X	ER*	ER	V*	X	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 2 for details on the coverage of the projections of public pension expenditure. (4) Minimum pension corresponds to Minimum pension and other social allowances for older people not included elsewhere. (5) Include 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. (6) Situation in 2016. The DB system was replaced by a DB+PS system in 2018.
DB: Defined benefit system.
NDC: Notional defined contribution scheme.
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 projection
Source: Commission services

Table II.AII.2: **Coverage of special pensions in the 2018 pension projections**

	Special pensions expenditure included in the projections	Special pensions proportion in GDP known for the base year of the projections (2016)
BE[i]	yes	yes (2.1%)
BG[i]	yes*	yes (0.8%)
CZ	yes	yes (0.2%)
DK	yes*	yes (1.3%)
DE[ii]	partly*	partly (0.4%)
EE[ii]	partly	yes (0.1%)
IE[i]	yes	yes (0.2%)
EL[ii]	yes	yes (2.7%)*
ES	yes	yes (1.5%)
FR[i]	yes	yes (1.2%)
HR[i]	yes	yes (1.6%)
IT[i]	yes	yes (0.8%)
CY[ii]	yes	no
LV[i]	partly	yes (1.1%)
LT	yes	yes (0.4%)
LU	yes	yes (2.1%)
HU	yes	yes (1.0%)
MT	yes	yes (1.0%)
NL[ii]	not applicable	no
AT	yes	no
PL	yes	yes (2.6%)
PT[i]	yes	yes (1.6%)*
RO[i]	yes*	yes (1.2%)
SI[i]	yes	no
SK[i]	yes	yes (0.4%)
FI	yes*	yes (0.6%)
SE	not applicable	no (no SP)
UK[ii]	yes*	yes (2.1%)
NO[ii]	no*	yes (0.2%)

i) countries which flagged insufficient information on special pensions in the AWG survey; ii) countries which did not participate in the AWG survey;

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 2016;

DE: Special pensions for farmers and miners are not covered by the projections, but the corresponding expenditure represented 0.4% of GDP in 2016 and will decline substantially over the projection horizon;

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 2016;

EE: Projections include the part of special pensions that is financed from social tax.

EL: a) Estimation based on available statistical data. b) Arduous professions' subgroup is included. The contribution rate for both employee and employer is higher for insured in arduous professions. c) Several reforms have been adopted in the recent years affecting special pensions;

FI: Special pensions for award winning artists and athletes (as supplementary pension), journalists (as supplementary pension), the President of the Republic, spouses of diplomats, and MPs adjustment pension (phasing out) are not covered by the projections. However, they are mostly represented in the expenditure value of 0.6% of GDP in 2016 and would not materially influence the projections, representing some 0.02% of GDP in 2016;

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

PT: Special pensions for policemen, judges and diplomats are included in the projections but excluded from the 1.6% special expenditure to GDP in 2016.

RO: Special pensions for magistrates, court of auditors, judicial employees, MPs, parliamentary public servants, diplomatic and consular officials, and clergy are not covered by the projections. However, they are mostly represented in the expenditure value of 1.2% of GDP for 2016 and would not materially influence the projections, representing altogether less than 0.2% of GDP in 2016;

UK: Public service pensions (PSP) spending is included, covered by a separate projection.

Sources: Commission services, AWG survey 2017, AR 2018 country fiches, AWG delegates 2018, EPC.

Table II.AII.3: **Key indexation and valorisation parameters of pension system in Europe (old-age pensions)**

Country	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 plus sustainability factor
EE	Full career	Social taxes	Prices and social taxes
IE	Flat rate	Not applicable	No fixed rule
EL	Full career	Price and wages	Prices and GDP (max 100% prices)
ES	Last 25 years	Wages	Index for pension revaluation
FR	25 best years (CNAVTS)	Prices	Prices
HR	Full career	Wages and prices	Prices and wages
IT	Full career	GDP	Prices
CY	Full career	Wages	Prices and wages
LV	Full career	Contribution wage sum index	Prices and wages
LT	Full career	Wage sum	Wage sum
LU	Full career	Wages	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 until 2030	Prices and wages until 2030
SI	Best consecutive 24 years	Wages	Prices and wages
SK	Full career	Wages	Prices
FI	Full career	Prices and wages	Prices and wages
SE	Wages	Wages	Wages
UK	Years of insurance contributions	Prices, wages and GDP	Prices, wages and GDP
NO	Full career	Wages	Wages

(1) BG Pensionable earnings reference is full career starting from 1997. 3 Best years before 1997
CZ Pensionable earnings reference is full career back to 1986. Currently 30 years to be considered.
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 maximum value of the valorisation rule is close to prices. 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).
FR The pensionable earnings reference is full career in AGIRC and ARRCO. Valorisation rule and indexation rules are price – 1 pp. in both AGIRC and ARRCO in 2014-15, and also in 2016-18 but with a floor at 0. AGIRC: Association générale des institutions de retraite des cadres; ARRCO: Association pour le régime de retraite complémentaire des salariés; CNAVTS: Caisse nationale de l'assurance vieillesse des travailleurs salariés.
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 (projected) upcoming three years. The index is applied in case of balanced budget of Pension Social Security System in 2 consecutive years and conditioning positive growth of GDP or Wage Sum.
LU Indexation rule is wages if sufficient financial resources 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. Different rules apply for earlier cohorts.
PT Pensionable earnings reference is full career as of 2002. 10 best years out of last 15 before 2002. Price and wage valorisation rule applies to earnings registered between 2002 and 2011. The current valorisation rule is an index weighting 75% of the CPI (excluding housing) and 25% of the average evolution of the gains underlying the contributions declared to the social security, when this evolution is higher than the CPI (without housing), up to a ceiling of CPI+0.5p.p.
RO Price valorisation and indexation after 2030.
SK Pensionable earnings reference is full career back to 1984. From 2018 onwards, pension are indexed on CPI for pensioners.(consumption basket for pensioners).
NO Indexation rule is wage growth minus 0.75 pps.
UK Triple-lock indexation (highest of average earnings, CPI or 2.5%) is a commitment of the current government, but is not enshrined in law.
Source: Commission services, EPC.

Table II.All.4: **Average retirement age (old-age pensions) and average exit age from the labour market**

Country	Weighted average retirement age (administrative data)			Labour market exit age (Cohort Simulation Model)		Difference (years)	
	male	*female*	*year*	*male*	*female*	*male*	*female*
BE	62.0	62.8	2015	61.8	61.8	0.2	1.0
BG	62.3	61.3	2015	63.8	62.6	-1.5	-1.3
CZ	62.0	60.0	2015	63.5	61.3	-1.5	-1.3
DK (1)	64.6		2014	64.7		-0.1	
DE	63.9	62.0	2015	64.6	64.0	-0.8	-2.0
EE (1)	61.5		2015	65.1		-3.5	
IE (2)				65.0	64.1		
EL	61.8	60.2	2015	62.3	61.6	-0.4	-1.3
ES	63.9	64.3	2013	63.4	64.5	0.5	-0.2
FR	61.7	62.3	2014	61.9	61.8	-0.2	0.5
HR	63.5	61.0	2015	62.4	60.7	1.1	0.3
IT	62.7	60.9	2015	63.9	63.7	-1.2	-2.8
CY (2)				64.5	64.0		
LV	61.5	61.5	2015	61.7	63.5	-0.2	-2.0
LT	62.5	60.5	2013	63.6	61.8	-1.0	-1.3
LU	60.9	61.9	2015	60.4	60.0	0.6	1.9
HU (1)	60.8		2015	61.7		-0.9	
MT (2)				62.5	61.5		
NL	65.0	65.0	2015	65.4	63.7	-0.4	1.3
AT	63.5	60.2	2015	64.0	62.0	-0.5	-1.8
PL	63.9	60.4	2015	64.0	61.3	-0.1	-0.9
PT	63.2	64.2	2015	64.8	64.1	-1.6	0.1
RO	62.5	59.5	2015	64.0	62.4	-1.5	-2.9
SI	60.9	59.5	2016	60.9	60.2	0.0	-0.7
SK	61.3	59.6	2015	61.9	61.0	-0.6	-1.3
FI	63.3	63.6	2015	63.9	63.2	-0.6	0.3
SE	64.5	64.6	2015	65.9	64.7	-1.4	-0.2
UK	68.9	68.5	2015	65.0	63.8	3.8	4.7
NO	64.9	66.1	2015	65.9	65.1	-1.0	1.0
EA s	62.5	61.9		63.2	62.7	-0.7	-0.8
EU* s	63.0	62.0		63.5	62.6	-0.5	-0.6
EU27 s	62.7	61.7		63.4	62.5	-0.7	-0.9

(1) DK, EE & HU: shows overall average, no split male/female available.
(2) IE, CY & MT: no (disaggregated) data was provided.
(3) UK: average retirement age based on data for State pensions only.
(4) FR: administrative data refers only to the base general scheme (CNAVTS).
(5) Effective retirement ages refer to 2017, the first projection year.
(6) Both series refer to the age group 51-74. Calculations are based on the lower annual age limit rather than the exact age at retirement or exit from the labour force.
Source: Commission services, EPC.

Table II.All.5: **Special pension and public pension expenditure (2016) % of GDP**

	Special pension expenditure				Public pension expenditure
	Total available	Difficult conditions	Security and defence	Other	
BE*	2.1	n.a.	0.3*	1.8*	12.1
BG*	0.8	n.a.	0.7	0.0	9.6
CZ**	0.2	n.a.	0.2	-	8.2
DK	1.3	n.a.	n.a.	1.3	10.0
DE*	0.4	0.3	-	0.1	10.1
EE	0.1	n.a.	-	n.a.	8.1
IE*	0.2	-	0.1	0.1*	5.0
EL	2.7	n.a.		n.a.	17.3
ES	1.5	0.3	0.3	0.9	12.2
FR*	1.2	0.2	0.5	0.5*	15.0
HR*	1.6	n.a.	0.3	1.3	10.6
IT*	0.8	0.1*	0.7	-	15.6
CY	n.a.	n.a.	n.a.	n.a.	10.2
LV*	1.1	0.4	0.1*	0.6	7.4
LT	0.4	-	0.2	0.2	6.9
LU	2.1	-	with "Other"	2.1	9.0
HU	1.0	0.1	0.2	0.6	9.7
MT	1.0	-	0.3	0.7	8.0
NL	n.a.	n.a.	-	-	7.3
AT	n.a.	-	-	n.a.	13.8
PL	2.6	0.8	0.9	0.9	11.2
PT*	1.6	0.1	0.0	1.5	13.5
RO*	1.2	n.a.	0.7	0.5	8.0
SI	n.a.	n.a.	n.a.	n.a.	10.9
SK*	0.4	n.a.	0.4	n.a.	8.6
FI	0.6	0.1	0.1	0.4	13.4
SE	-	-	-	-	8.2
UK	n.a.	-	n.a.	n.a.	7.7

(1) gross expenditure;
(2) bold 2014 or 2015 data; "n.a." stands for a category of special pensions which exists, but for which the figures are not available; a dash "-" indicates that a given type of special pensions does not exist in that country.
(*) the figures reflect the size of the phenomenon only partly, due to incomplete or unavailable data;
(**) in reality no special pensions.
Source: AWG survey 2017, AR 2018 country fiche (DE), AWG pension projections 2018, AWG delegates 2018.

Table II.All.6: **Special pensions span (2016) % of pensioners**

	Total available	Difficult conditions	Security and defence	Other
BE	n.a.	n.a.	n.a.	n.a.
BG	9.8	5.4	4.3	0.1
CZ**	n.a.	n.a.	n.a.	-
DK	n.a.	n.a.	n.a.	n.a.
DE	n.a.	n.a.	-	n.a.
EE	n.a.	n.a.	n.a.	n.a.
IE*	2.2	-	2.1	0.1*
EL	n.a.	n.a.		n.a.
ES	8.0	2.0	1.8	4.2
FR*	7.3	1.6	1.9	3.8
HR*	14.4	n.a.	3.1	11.3
IT	2.5	0.3	2.1	-
CY	n.a.	n.a.	n.a.	n.a.
LV*	14.0	5.8	1.5*	6.7
LT	11.7	-	2.3	9.4
LU	12.1	-	with "Other"	12.1
HU	10.1	0.5	1.1	8.5
MT***	13.8	-	3.8	10.1
NL	n.a.	n.a.	-	-
AT	n.a.	-	-	n.a.
PL	22.3	4.2	5.0	13.1
PT*	13.2	1.0	0.0	12.1
RO*	5.3	n.a.	2.9	2.4
SI*	6.2	n.a.	1.0	5.2
SK	4.8	1.5	3.0	0.3
FI	14.8	1.7	0.7	12.5
SE	-	-	-	-
UK	n.a.	-	n.a.	n.a.

(1) supplementary special pensions (paid as a top-up) beneficiaries are not included here;
(2) bold 2014 or 2015 data; n.a." stands for a category of special pensions which exists, but for which the figures are not available; a dash "-" indicates that a given type of special pensions does not exist in that country.
(*) the figures reflect the size of the phenomenon only partly, due to incomplete or unavailable data;
(**) in reality no special pensions;
(***) % of pensions, not of pensioners.
Source: AWG survey 2017, AWG delegates 2018.

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 includes:

- per capita public expenditure on health care by age and sex cohorts (age/sex specific expenditure profiles);

- 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 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. Missing health care age-gender specific cost profiles 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 either EU15 (for Greece and Ireland)

or NMS (for Romania) 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 2018 Ageing Report

Country	Source of total public expenditure data	Age-cost profiles	Death-related age-cost profiles	Quantified reforms
Austria	SHA[1] & COFOG[2]	by 5-year age group	X	X
Belgium	SHA[1] & COFOG[2]	by single age	X	X
Bulgaria	SHA[1] & COFOG[2]	by 5-year age group	X	
Croatia	SHA[1] & COFOG[2]	by single age		
Cyprus	SHA[1] & COFOG[2]	by 5-year age group		
Czech Republic	SHA[1] & COFOG[2]	by single age	X	X
Denmark	SHA[1] & COFOG[2]	by single age	X	
Estonia	SHA[1] & COFOG[2]	by 5-year age group		X
Finland	SHA[1] & COFOG[2]	by single age	X	
France	SHA[1] & COFOG[2]	by single age	X	
Germany	SHA[1] & COFOG[2]	by single age	X	
Greece	SHA[1] & COFOG[2]	imputed		
Hungary	SHA[1] & COFOG[2]	by 5-year age group	X	
Ireland	SHA[1] & COFOG[2]	imputed		
Italy	SHA[1] & COFOG[2]	by 5-year age group	X	X
Latvia	SHA[1] & COFOG[2]	by 5-year age group		X
Lithuania	SHA[1] & COFOG[2]	by single age		
Luxembourg	SHA[1] & COFOG[2]	by 5-year age group		X
Malta	SHA[1] & COFOG[2]	by 5-year age group		
Netherlands	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		
Romania	SHA[1] & COFOG[2]	imputed		
Slovak Republic	SHA[1] & COFOG[2]	by single age	X	X
Slovenia	SHA[1] & COFOG[2]	by 5-year age group	X	X
Spain	SHA[1] & COFOG[2]	by 5-year age group	X	
Sweden	SHA[1] & COFOG[2]	by single age	X	
United Kingdom	SHA[1] & COFOG[2]	by 5-year age group	X	
Norway	SHA[1] & COFOG[2]	by single age		
Total		26 country-specific age cost profiles	17 country-specific death-related cost profiles	10 countries quantified reforms

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 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.

In comparison to the 2015 EPC/EC Ageing Report, there are two changes in the data sources used to compute total public expenditure on health care: (1) ESSPROS data is no longer used, as all EU Member States and Norway are now reporting data on health expenditure under the EU Implementing Regulation 2015/359 ([145]) and SHA 2011 classification; (2) SHA 1.0 data for the HCR.1 category on gross capital formation was replaced by data from COFOG for the GF07 "Health" function excluding the GF0705 "R&D Health" category.

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 per capita 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 2015 Ageing Report, the relative growth rates of the other three components (hospitals, outpatient care and medical goods) were capped at their respective 25th and 75th percentiles.

([145]) Commission Regulation (EU) 2015/359 on healthcare expenditure and financing statistics, available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R0359&from=EN

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	HF.1 for HC.1.1 + HC.1.2 + HC.2.1 + HC.2.2	HF.1 for HC.1.3 + HC.1.4 + HC.2.3 + HC.2.4 + HC.4	HF.1 for HC.5	HF.1 for HC.6	HF1. for HC.7 + HC.9	Gross capital formation P5 for GF07 "Health" function excluding GF0705 "R&D Health"
	Data source	Eurostat or OECD	Eurostat or OECD	Eurostat or OECD	Eurostat or OECD	Eurostat or OECD	Eurostat
Average annual growth rates 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 0703 "Hospital services"	Total general government expenditure TE excluding gross capital formation P5 for GF 0702 "Outpatient services"	Total general government expenditure TE excluding gross capital formation P5 for GF 0701 "Medical products, appliances and equipment"	Total general government expenditure TE excluding gross capital formation P5 for GF 0704 "Public health services"	Total general government expenditure TE excluding gross capital formation P5 for GF 0706 "Health n.e.c."	Gross capital formation P5 for GF07 "Health" function excluding P5 for GF0705 "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 (2006-2015). (2) The relative average growth rates are calculated as a ratio of the average annual growth rates to the average GDP per capita growth rates.
Source: Commission services.

ANNEX IV

Input data used and long-term care expenditure

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;

- 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);

- 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. Table II.AIV.2 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 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 EU15 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 2018 and 2015 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. Many 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 available in SHA data. The AWG agreed thus, to preserve the accounting methodology from the 2015 Ageing Report, (updated to take into account the move from the old SHA 1.0 data standard to the new SHA 2011source) which combines SHA with ESSPROS databases, to use ESSPROS and national data on a bilateral basis to split the expenditure across types of care and to effectively eliminate any issues of double-counting of expenditure, which may arise in this case (Table II.AIV.1)

As a result of this accounting exercise, the reported levels of spending may deviate from those reported by international data, such as 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 14 countries used ESSPROS data to provide the LTC social data missing in SHA 2011. 23 country-specific age-cost profiles were agreed upon for usage, one more than in 2015. In addition, 6 countries provided information regarding the budgetary effects of policy reforms on public long-term care spending.

As Table II.AIV.2 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 18 countries out of 28

Table II.AIV.1: **Combinations of data sources for estimating long-term care expenditure**

Preferred solution: SHA, COFOG and ESSPROS, when data is available (CZ, DK, DE, ES, FR, HU, LV, LT, LU, NL, PT, RO, SI, FI, SE and NO)

LTC (health)	LTC (social)	LTC (institutional care)	LTC (home care)	LTC (cash benefits)
SHA: HC.3	**SHA**: HCR.1	**SHA**: HC.3.1 + HC.3.2 + share of HCR.1 and HC.3.3 split according to **ESSPROS or** HC.3 + HCR.1 split according to national data.	**SHA**: HC.3.4 + share of HCR.1 and HC.3.3 split according to **ESSPROS or** HC.3 + HCR.1 split according to national data.	**SHA**: share of HCR.1 according to the split according to **ESSPROS or** HC.3 + HCR.1 split according to national data **or ESSPROS.**

Alternative: When data on HCR.1 is not available, a proxy is constructed based on ESSPROS data (AT, BE, BG, CY, EE, EL, HR, IE, IT, MT, PL, SK and UK)

LTC (health)	LTC (social)	LTC (institutional care)	LTC (home care)	LTC (cash benefits)
	ESSPROS: cash and in-kind benefits according to Sickness/Health care, Disability and Old age functions, including Accommodation, Rehabilitation, Home help, Periodic care allowance, and Other benefits in-kind.			

Source: European Commission, EPC,

have information on the number of recipients and expenditure for each type of care. However, having data for every type of benefits does not necessarily mean that the authorities are aware of overlaps across benefits. It should be noted that only 7 countries out of 28 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 ([146]).

([146]) 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.2: **Availability of input data for long-term care expenditure projections**

Country	Source expenditure data	Quantified reforms	Detailed Expenditure by type of care				Detailed numbers of recipients by type of care				AR 2018 Age cost profiles	AR 2015 Age cost profiles
			LTC services ("in-kind")	LTC services in institutions (HC.3.1 + HC.3.2 + share of HC.3.3 + share of HCR.1)	LTC services at home (share of HC.3.3 + HC.3.4 + share of HCR.1)	LTC-related cash benefits (share of HCR.1)	LTC services ("in-kind")	In institutions	At home	Cash benefits	Ageing Report 2018	Ageing Report 2015
		Quantified reforms for 6 countries									23 country specific profiles	22 country specific profiles
Austria	SHA and ESSPROS					X	X			X	Imputed	Imputed
Belgium	SHA and ESSPROS		X	X	X		X	X	X		X	X
Bulgaria	SHA and ESSPROS		X	X	X	X	X	X	X	X	X	X
Croatia	SHA and ESSPROS							X			X	Imputed
Cyprus	SHA and ESSPROS										Imputed	Imputed
Czech Republic	SHA		X			X	X	X	X	X	X	X
Denmark	SHA		X				X				X	X
Estonia	SHA and ESSPROS						X	X	X	X	X	X
Finland	SHA		X	X	X	X	X	X	X	X	X	X
France	SHA		X	X	X	X	X	X	X	X	X	X
Germany	SHA	X	X	X	X	X	X	X	X	X	X	X
Greece	SHA and ESSPROS										Imputed	Imputed
Hungary	SHA		X	X	X		X	X	X		X	X
Ireland	SHA and ESSPROS										Imputed	Imputed
Italy	SHA		X	X	X	X	X	X	X	X		X
Latvia	SHA		X	X	X	X	X	X	X	X	X	X
Lithuania	SHA		X	X	X	X	X	X	X	X	X	X
Luxembourg	SHA	X	X	X	X	X	X	X	X	X		X
Malta	SHA and ESSPROS		X	X	X	X	X	X	X	X	X	X
Netherlands	SHA		X	X	X		X	X	X			X
Norway	SHA		X	X	X	X	X	X	X		X	X
Poland	SHA and ESSPROS	X	X	X	X	X	X	X	X	X	X	X
Portugal	SHA	X	X	X	X	X	X	X	X			X
Romania	SHA										Imputed	Imputed
Slovak Republic	SHA and ESSPROS	X					X	X	X	X	Imputed	Imputed
Slovenia	SHA	X	X	X	X	X	X	X	X	X	X	X
Spain	SHA		X	X	X	X	X	X	X	X	X	X
Sweden	SHA		X	X	X	X	X	X	X	X	X	X
United Kingdom	SHA		X	X	X	X	X	X	X	X	X	X

Source: European Commission, EPC

Table II.AIV.3: **Public expenditure on LTC on the basis of the SHA joint questionnaire with proxy for HC.R.1 from ESSPROS as a % of GDP (2015 or latest)**

Countries	LTC (health) (HC.3)	Institutional based (HC.3.1 + HC.3.2 + HC.3.3*)	Home based (HC.3.3* + HC.3.4)	LTC (social) (HCR.1)
Belgium	2.3	1.3	1.0	1.0
Bulgaria	0.0	0.0	0.0	0.3
Czech Republic	0.9	0.8	0.1	0.4
Denmark	2.3	0.8	1.5	0.2
Germany	1.3	0.6	0.7	0.0
Estonia	0.2	0.2	0.0	0.7
Ireland	1.4	0.8	0.6	0.7
Greece	0.0	0.0	0.0	0.1
Spain	0.7	0.5	0.2	0.0
France	1.2	0.9	0.3	0.6
Croatia	0.2	0.1	0.1	0.7
Italy	0.7	0.6	0.1	0.9
Cyprus	0.2	0.0	0.1	0.2
Latvia	0.3	0.2	0.0	0.2
Lithuania	0.5	0.2	0.4	0.5
Luxembourg	1.2	0.9	0.3	0.1
Hungary	0.2	0.2	0.0	0.5
Malta	0.8	0.1	0.7	0.1
Netherlands	2.3	2.0	0.3	1.3
Austria	1.2	0.5	0.7	2.0
Poland	0.4	0.1	0.3	0.0
Portugal	0.2	0.1	0.0	0.4
Romania	0.1	0.0	0.1	0.2
Slovenia	0.8	0.6	0.2	0.1
Slovakia	0.0	0.0	0.0	0.9
Finland	1.3	0.4	0.9	2.2
Sweden	2.7	1.9	0.8	0.5
United Kingdom	1.2	0.7	0.5	1.7
Norway	2.7	1.4	1.3	2.7

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 EU15 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 EU15 or NMS aggregates; the averages have been calculated using all available data;

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.

Graphs II.AIV.1 and II.AIV.2 display the age-related expenditure profiles (as % of GDP per beneficiary) which have been used in the projection of long-term care expenditure, also in comparison to the 2015 Ageing Report.

Graph II.AIV.1:   Expenditure profiles of long-term care services by age and gender in the EU15, spending per recipient as % of GDP per capita and comparing 2018 and 2015 Ageing Reports
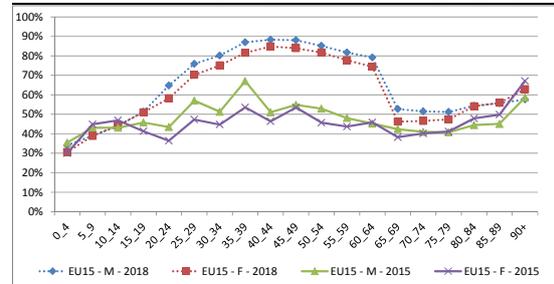
Notes: F= Females; M=Males;
EU15: Belgium, Denmark, Germany, Ireland, Greece, Spain, France, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom.
Source: European Commission, EPC.

The 2018 "age-related expenditure profiles" show that expenditure (spending per user as % of GDP per beneficiary) is relatively flat for LTC recipients, which signals that the LTC costs related to severe disability are relatively independent of age.

Graph II.AIV.2:   Expenditure profiles of long-term care recipients in the New Member States, spending per recipient as % of GDP per capita and comparing 2018 and 2015 Ageing Reports
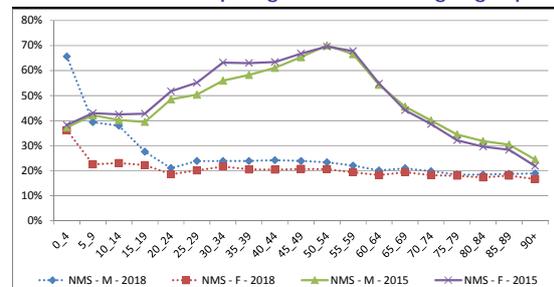
Notes: F= Females; M=Males;
NMS = New Member States: Bulgaria, Czech Republic, Estonia, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Romania, Slovenia and Slovakia.
Source: European Commission, EPC.

Age cost profiles in the EU15 are higher than those estimated in the 2015 Ageing Report, whereas for NMS the profiles show generally lower expenditure per recipient (relative to GDP per capita). This may be linked to changes in base-year levels, but also to data improvements when compiling profiles.

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+	
BE	1.6	2.2	2.2	3.2	4.7	6.4	8.1	9.3	10.4	11.6	10.6	13.1	17.2	23.7	28.0	BE
BG	1.4	0.9	1.5	1.4	1.6	1.3	1.8	1.8	3.3	4.3	6.3	8.6	12.1	15.5	24.4	BG
CZ	0.3	1.2	2.3	1.7	2.0	2.9	3.5	6.1	8.0	7.7	7.2	9.8	15.9	23.2	32.3	CZ
DK	2.2	3.4	3.3	5.1	6.5	5.6	8.8	9.0	10.8	8.3	5.4	5.5	7.9	12.9	13.1	DK
DE	1.3	2.0	2.4	2.5	4.3	5.3	7.5	10.1	14.2	15.1	12.6	13.5	17.7	27.7	41.4	DE
EE	2.0	2.6	2.2	3.2	4.0	3.3	4.8	8.8	11.8	11.6	15.1	18.7	25.3	37.8	49.8	EE
IE	1.7	1.3	2.6	2.2	2.2	4.0	4.4	5.6	7.1	8.0	8.5	11.5	11.9	18.9	27.6	IE
EL	0.6	0.7	1.8	2.5	2.4	4.3	5.1	6.3	10.4	13.5	18.3	22.2	30.9	39.3	51.9	EL
ES	0.5	1.1	1.1	1.2	1.9	2.0	2.7	3.8	5.2	6.1	7.4	8.9	14.6	21.3	32.4	ES
FR	2.0	2.1	2.1	2.6	3.4	4.7	6.9	8.0	11.8	11.1	10.8	15.1	20.2	28.1	39.1	FR
HR	1.5	0.7	0.9	1.5	2.0	3.2	5.3	5.7	7.6	9.3	11.6	18.0	24.7	31.7	39.8	HR
IT	1.2	1.8	2.0	2.3	2.7	3.3	4.6	5.5	7.1	9.3	12.3	16.8	24.3	33.6	45.4	IT
CY	1.2	1.7	2.2	2.5	3.2	3.8	5.8	7.3	9.1	12.3	14.5	19.8	25.2	37.3	47.7	CY
LV	1.2	1.4	1.7	1.8	2.8	3.9	3.8	6.0	8.7	10.3	14.2	20.4	27.2	36.4	43.8	LV
LT	0.8	2.4	2.1	1.6	2.5	2.9	2.9	4.7	7.6	9.4	11.4	14.2	20.6	32.5	49.9	LT
LU	1.4	2.4	2.8	3.5	3.9	6.2	6.0	10.0	12.0	8.9	10.3	14.6	19.1	25.2	26.6	LU
HU	1.4	1.3	1.2	1.4	2.4	2.7	4.1	7.8	8.9	10.7	12.7	16.2	22.9	31.1	40.9	HU
MT	0.8	0.3	0.4	0.8	0.8	0.6	2.6	1.8	3.5	4.2	3.7	5.7	9.8	14.3	21.0	MT
NL	0.8	1.9	2.1	2.2	3.8	3.8	4.5	8.1	8.0	10.1	6.1	8.8	13.4	18.1	20.4	NL
AT	1.8	1.5	2.7	3.0	4.5	5.5	7.9	9.8	12.0	11.7	13.3	16.2	22.2	29.9	45.5	AT
PL	1.3	1.7	1.7	2.0	2.4	4.1	4.3	6.2	8.9	10.4	12.1	16.8	22.0	29.8	39.5	PL
PT	0.7	1.4	2.4	3.2	2.9	4.7	5.6	6.6	9.1	11.8	13.8	19.3	24.3	28.8	38.2	PT
RO	1.4	1.0	1.2	1.7	1.3	2.5	3.1	6.3	10.8	10.2	11.8	16.3	27.1	34.8	49.4	RO
SI	1.9	2.1	3.2	3.6	3.5	5.2	8.2	12.2	12.8	13.2	15.6	20.6	25.7	30.2	39.4	SI
SK	1.7	1.9	1.9	2.5	3.3	4.2	5.3	8.4	12.3	14.3	18.2	24.1	34.4	50.6	66.2	SK
FI	1.5	2.0	3.2	2.8	4.6	5.2	5.1	7.2	8.2	8.6	9.6	12.2	17.1	24.9	32.3	FI
SE	1.3	2.2	2.1	2.9	2.4	3.5	4.1	6.9	7.0	6.1	5.0	5.1	7.5	12.3	18.3	SE
UK	4.1	3.2	3.9	3.8	4.9	6.9	8.2	10.4	13.1	14.3	14.8	19.1	23.8	30.2	40.3	UK
NO	2.3	1.8	2.8	2.7	3.7	4.9	7.0	7.4	8.6	7.6	8.2	12.0	12.7	13.5	18.1	NO

Source: European Commission, EPC.

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). In some countries they are far higher than in others. 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.

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, and

the number of 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.

In nearly all countries, overall coverage rates are projected to increase between 2016 and 2070, even 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.

Table II.AIV.5: **Coverage rates in the base case scenario**

	Coverage Home care		Coverage Institutional Care		Coverage Cash benefits	
	2016	2070	2016	2070	2016	2070
BE	60%	66%	15%	23%	31%	39%
BG	8%	6%	4%	4%	36%	40%
CZ	16%	26%	20%	28%	55%	78%
DK	27%	40%	14%	22%	0%	0%
DE	5%	7%	11%	17%	23%	30%
EE	21%	22%	11%	14%	105%	100%
IE	28%	40%	14%	24%	0%	0%
EL	22%	29%	11%	18%	0%	0%
ES	30%	55%	13%	21%	20%	34%
FR	20%	23%	18%	22%	12%	9%
HR	7%	8%	7%	8%	36%	34%
IT	12%	17%	13%	14%	34%	43%
CY	12%	15%	13%	16%	35%	36%
LV	9%	9%	8%	8%	10%	11%
LT	22%	35%	33%	33%	21%	26%
LU	21%	29%	11%	22%	4%	5%
HU	7%	8%	29%	29%	0%	0%
MT	52%	61%	26%	39%	30%	16%
NL	45%	56%	26%	35%	0%	0%
AT	21%	28%	11%	16%	57%	80%
PL	5%	7%	3%	5%	65%	85%
PT	2%	3%	4%	6%	33%	45%
RO	13%	17%	15%	17%	0%	0%
SI	16%	25%	16%	25%	19%	28%
SK	13%	7%	10%	13%	33%	32%
FI	46%	68%	11%	17%	82%	94%
SE	39%	47%	20%	27%	46%	57%
UK	19%	25%	10%	14%	24%	31%
NO	61%	76%	14%	24%	37%	48%
EA	19%	27%	14%	20%	22%	27%
EU*	19%	27%	13%	19%	24%	30%
EU27	19%	27%	14%	20%	24%	30%
EA s	24%	31%	14%	20%	29%	33%
EU* s	21%	28%	14%	19%	29%	34%

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 2016 is the base year for the projections, using data for enrolment rates and education expenditure. ([147])

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). ([148])

For details on the projection methodology, see the first volume of the 1018 Ageing Report ([149]).

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 2016; 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).

([147]) UOE education expenditure data is available until 2014, and they have been updated until 2016 using COFOG data.
([148]) For a more detailed presentation of the methodology see: "The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies", European Economy, No. 065/2017, European Commission.
([149]) see Part II, Chapter 5 in European Commission (DG ECFIN)-Economic Policy Committee (AWG) (2017).

Table II.AV.1: **Base enrolment rates by country, age and ISCED level**

ISCED	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	UK	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	0.33	:	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	0.03	0.00
	5	0.01	0.00	0.00	0.02	0.00	0.00	0.96	0.00	0.00	0.01	0.00	0.08	0.01	0.00	0.00	0.05	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.00
	6	0.95	0.07	0.49	0.92	0.65	0.01	0.98	0.95	0.98	1.00	0.22	0.97	0.92	0.04	0.05	0.93	0.32	1.03	1.00	0.58	0.45	0.93	0.86	0.93	0.49	0.01	0.01	0.99	0.98
	7	0.97	0.95	0.93	0.98	0.98	0.75	0.97	0.98	0.95	1.00	0.95	0.97	0.98	0.88	0.99	0.98	0.92	0.99	0.99	0.95	0.91	0.98	0.88	0.94	0.89	0.96	0.97	0.97	0.98
	8	0.98	0.96	0.93	1.00	0.97	0.95	0.97	1.00	0.97	1.00	0.98	0.97	0.99	0.96	1.02	0.95	0.96	1.01	1.01	0.99	0.93	1.01	0.89	0.96	0.94	0.98	0.98	0.96	0.99
	9	0.97	0.96	0.97	0.99	0.98	0.96	0.98	0.98	0.96	0.97	0.98	0.97	0.98	0.97	1.02	0.95	0.94	1.01	1.00	0.98	0.94	1.01	0.93	0.96	0.96	0.97	0.97	0.97	0.98
	10	0.97	0.88	0.97	0.99	0.44	0.96	1.03	0.98	0.97	0.95	0.76	0.90	1.01	0.95	0.95	0.92	0.74	1.00	1.01	0.47	0.94	0.99	0.75	0.98	0.48	0.98	0.98	0.98	0.99
	11	0.95	0.04	0.52	0.99	0.04	0.94	1.01	0.98	0.96	0.13	0.04	0.04	0.95	1.00	0.03	0.84	0.09	0.05	1.00	0.05	0.95	1.00	0.10	0.94	0.08	0.98	0.98	0.07	0.99
	12	0.22	0.01	0.05	0.97	0.00	0.96	0.63	0.06	0.14	0.01	0.00	0.01	0.08	0.92	0.00	0.18	0.02	0.00	0.34	0.00	0.95	0.25	0.02	0.08	0.04	0.98	0.95	0.00	0.98
	13	0.02	0.01	0.01	0.18	0.00	0.22	0.04	0.02	0.01	0.01	0.00	0.00	0.01	0.13	0.00	0.01	0.00	0.00	0.02	0.00	0.05	0.11	0.00	0.01	0.02	0.06	0.04	0.00	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	0.05	0.02	0.00	0.01	0.02	0.00	0.00	0.00
ISCED 2	10	0.00	0.07	0.00	0.00	0.55	0.00	0.00	:	0.00	0.03	0.27	0.08	0.00	0.00	0.06	0.04	0.21	0.00	0.00	0.52	0.00	0.00	0.16	0.00	0.46	0.00	0.00	0.00	0.00
	11	0.02	0.89	0.46	0.00	0.94	0.00	0.00	0.00	0.00	0.85	1.01	0.94	0.03	0.00	0.98	0.14	0.88	1.00	0.02	0.93	0.00	0.01	0.83	0.02	0.85	0.00	0.00	0.91	0.00
	12	0.75	0.93	0.95	0.02	0.99	0.02	0.36	0.91	0.81	0.98	1.07	0.97	0.92	0.04	1.00	0.78	0.96	0.99	0.65	0.99	0.01	0.76	0.89	0.92	0.92	0.01	0.02	0.97	0.00
	13	0.95	0.91	0.98	0.82	0.99	0.75	0.97	0.94	0.95	0.98	1.06	0.89	1.00	0.84	1.04	0.94	0.97	1.01	0.98	0.97	0.92	0.89	0.92	0.97	0.95	0.93	0.93	0.99	1.00
	14	0.33	0.43	1.00	1.00	1.00	0.98	0.98	0.96	0.96	0.95	0.78	0.11	0.96	0.98	1.05	0.86	0.77	0.07	0.99	0.49	0.95	0.97	0.75	0.97	0.96	0.98	0.98	0.07	1.01
	15	0.11	0.09	0.53	0.97	0.78	0.94	0.65	0.09	0.32	0.24	0.05	0.03	0.09	0.91	1.04	0.39	0.13	0.01	0.71	0.08	0.95	0.36	0.11	0.06	0.48	0.98	0.96	0.00	1.00
	16	0.05	0.03	0.04	0.60	0.45	0.26	0.05	0.04	0.12	0.02	0.00	0.02	0.01	0.18	0.89	0.16	0.04	0.01	0.38	0.02	0.09	0.22	0.03	0.01	0.09	0.10	0.06	0.12	0.00
	17	0.05	0.01	0.01	0.13	0.17	0.05	0.03	0.02	0.03	0.00	0.00	0.00	0.01	0.00	0.06	0.09	0.05	0.02	0.13	0.00	0.04	0.11	0.01	0.00	0.04	0.01	0.00	0.07	0.00
	18	0.03	0.01	0.01	0.01	0.06	0.02	0.03	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.02	0.01	0.04	0.00	0.02	0.03	0.05	0.00	0.01	0.01	0.00	0.03	0.00
ISCED 3-4	14	0.67	0.53	0.00	0.00	0.01	0.00	0.00	:	0.00	0.00	0.03	0.22	0.88	0.02	0.00	0.00	0.06	0.04	0.98	0.14	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.93	0.00
	15	0.87	0.82	0.45	0.01	0.20	0.02	0.38	0.84	0.62	0.71	0.96	0.94	0.91	0.05	0.00	0.53	0.83	0.98	:	0.86	0.01	0.60	0.74	0.89	0.49	0.00	0.02	1.00	0.00
	16	0.93	0.81	0.94	0.35	0.52	0.70	0.97	0.89	0.81	0.91	1.01	0.93	0.95	0.78	0.13	0.72	0.91	0.86	:	0.91	0.88	0.75	0.78	0.98	0.85	0.86	0.93	0.96	0.94
	17	0.92	0.83	0.95	0.78	0.77	0.91	0.93	0.93	0.87	0.87	0.95	0.92	0.93	0.91	0.90	0.79	0.89	0.74	:	0.76	0.93	0.87	0.76	1.00	0.86	0.96	0.97	0.92	0.94
	18	0.47	0.82	0.87	0.85	0.68	0.90	0.57	0.25	0.38	0.37	0.61	0.79	0.16	0.86	0.86	0.66	0.77	0.34	:	0.46	0.93	0.52	0.66	0.93	0.78	0.95	0.96	0.36	0.90
	19	0.26	0.07	0.50	0.57	0.48	0.40	0.22	0.18	0.23	0.14	0.07	0.20	0.02	0.42	0.29	0.40	0.48	0.18	:	0.21	0.46	0.29	0.16	0.27	0.38	0.36	0.28	0.18	0.38
	20	0.14	0.03	0.15	0.30	0.35	0.20	0.15	0.14	0.15	0.06	0.01	0.07	0.02	0.17	0.13	0.25	0.27	0.10	:	0.11	0.19	0.16	0.08	0.12	0.09	0.21	0.16	0.11	0.20
	21	0.08	0.02	0.07	0.21	0.26	0.12	0.13	0.08	0.10	0.04	0.00	0.04	0.01	0.09	0.08	0.13	0.12	0.05	:	0.07	0.12	0.09	0.08	0.11	0.03	0.19	0.14	0.08	0.11
	22	0.06	0.01	0.04	0.18	0.18	0.08	0.13	0.06	0.07	0.02	0.00	0.02	0.01	0.06	0.06	0.08	0.06	0.02	:	0.04	0.08	0.06	0.06	0.06	0.02	0.17	0.12	0.07	0.07
	23	0.05	0.02	0.02	0.14	0.13	0.06	0.08	0.07	0.06	0.02	0.00	0.01	0.00	0.04	0.05	0.05	0.04	0.01	:	0.03	0.07	0.04	0.05	0.03	0.01	0.15	0.11	0.06	0.05
	24	0.05	0.02	0.02	0.12	0.09	0.05	0.07	0.02	0.05	0.01	0.00	0.01	0.00	0.03	0.04	0.03	0.03	0.01	:	0.02	0.07	0.03	:	0.03	0.01	0.13	0.09	0.05	0.03
	25	0.05	0.02	0.01	0.10	0.05	0.05	0.05	0.02	0.04	0.01	0.00	0.00	0.00	0.03	0.03	0.03	0.02	0.00	:	0.02	0.03	0.02	0.02	0.03	0.01	0.11	0.08	0.04	0.03
ISCED 5-8	17	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.08	0.14	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
	18	0.37	0.03	0.02	0.01	0.07	0.01	0.30	0.48	0.36	0.40	0.11	0.02	0.22	0.04	0.08	0.00	0.05	0.26	0.26	0.30	0.02	0.25	0.06	0.03	0.03	0.01	0.01	0.21	0.00
	19	0.50	0.45	0.24	0.08	0.18	0.26	0.60	0.55	0.45	0.49	0.44	0.32	0.26	0.39	0.51	0.03	0.21	0.33	0.39	0.31	0.36	0.34	0.33	0.53	0.24	0.16	0.17	0.38	0.18
	20	0.53	0.48	0.43	0.23	0.27	0.36	0.65	0.55	0.49	0.46	0.46	0.37	0.33	0.47	0.55	0.07	0.29	0.36	0.45	0.31	0.48	0.39	0.34	0.60	0.37	0.28	0.24	0.41	0.35
	21	0.49	0.46	0.44	0.36	0.30	0.39	0.59	0.55	0.49	0.40	0.44	0.37	0.31	0.47	0.56	0.10	0.31	0.31	0.45	0.31	0.48	0.38	0.35	0.56	0.37	0.36	0.28	0.33	0.40
	22	0.40	0.44	0.39	0.44	0.30	0.37	0.49	0.41	0.41	0.34	0.40	0.32	0.26	0.43	0.45	0.11	0.29	0.22	0.41	0.29	0.46	0.32	0.32	0.52	0.34	0.39	0.30	0.22	0.39
	23	0.27	0.32	0.36	0.44	0.30	0.30	0.24	0.29	0.32	0.25	0.36	0.28	0.21	0.31	0.29	0.10	0.26	0.13	0.36	0.28	0.42	0.23	0.26	0.44	0.32	0.37	0.28	0.15	0.35
	24	0.18	0.24	0.28	0.42	0.29	0.25	0.16	0.22	0.25	0.17	0.26	0.23	0.16	0.24	0.23	0.08	0.20	0.09	0.29	0.25	0.26	0.16	0.17	0.36	0.21	0.34	0.24	0.11	0.29
	25	0.12	0.15	0.19	0.36	0.24	0.19	0.12	0.19	0.19	0.11	0.17	0.17	0.12	0.18	0.15	0.07	0.14	0.07	0.22	0.22	0.15	0.12	0.10	0.23	0.12	0.29	0.20	0.09	0.23
	26	0.09	0.11	0.11	0.30	0.20	0.15	0.10	0.18	0.15	0.08	0.12	0.12	0.11	0.14	0.12	0.06	0.10	0.06	0.16	0.20	0.10	0.09	0.06	0.14	0.08	0.24	0.17	0.07	0.18
	27	0.07	0.09	0.07	0.23	0.16	0.12	0.08	0.18	0.12	0.06	0.08	0.09	0.08	0.11	0.10	0.05	0.08	0.05	0.13	0.16	0.07	0.07	0.05	0.09	0.06	0.19	0.14	0.06	0.14
	28	0.06	0.08	0.06	0.18	0.13	0.10	0.07	0.18	0.10	0.04	0.06	0.07	0.07	0.10	0.08	0.04	0.06	0.04	0.10	0.14	0.06	0.06	0.04	0.06	0.04	0.17	0.12	0.05	0.12
	29	0.05	0.07	0.05	0.14	0.11	0.09	0.06	0.04	0.08	0.03	0.04	0.05	0.06	0.08	0.07	0.03	0.05	0.03	0.07	0.12	0.05	0.05	0.03	0.04	0.03	0.15	0.10	0.05	0.10
	30-34	0.03	0.05	0.03	0.09	0.06	0.06	0.04	0.03	0.05	0.03	0.02	0.03	0.05	0.05	0.05	0.02	0.03	0.02	0.05	0.07	0.03	0.04	0.02	0.02	0.02	0.11	0.07	0.04	0.07
	35-39	0.02	0.03	0.02	0.05	0.02	0.04	0.03	0.01	0.03	0.01	0.01	0.01	0.04	0.03	0.02	0.01	0.02	0.02	0.02	0.04	0.02	0.02	0.01	0.01	0.02	0.07	0.05	0.03	0.05
	40+	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	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	0.01

Source: Commission services, 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	3.0	5.8
BG	0.2	2.0	0.2	0.7	3.1
CZ	0.4	2.2	0.4	0.2	3.2
DK	0.5	5.1	0.0	1.9	7.4
DE	0.1	2.7	0.5	0.8	4.2
EE	0.1	3.3	0.6	0.9	4.8
IE	0.3	2.7	0.2	0.3	3.6
EL	0.1	2.6	0.3	0.2	3.1
ES	0.2	2.5	0.4	0.6	3.7
FR	0.4	3.1	0.7	0.6	4.8
HR	0.1	3.2	0.1	0.3	3.7
IT	0.1	2.6	0.5	0.3	3.5
CY	0.1	5.1	0.2	0.3	5.8
LV	0.8	2.6	0.3	0.8	4.5
LT	0.5	2.9	0.3	0.2	3.9
LU	0.4	2.4	0.3	0.2	3.3
HU	0.2	2.3	0.4	0.8	3.6
MT	0.0	3.7	0.1	1.7	5.4
NL	0.0	3.9	0.6	0.7	5.2
AT	0.2	3.6	0.7	0.5	4.9
PL	0.2	3.4	0.3	0.4	4.3
PT	0.1	3.4	0.6	0.4	4.5
RO	0.1	2.2	0.0	0.1	2.5
SI	0.3	3.0	0.4	0.3	4.0
SK	0.2	2.3	0.8	0.4	3.7
FI	0.3	4.0	0.6	0.9	5.9
SE	0.2	3.6	0.7	1.3	5.8
UK	0.4	2.2	0.3	2.3	5.2
NO	0.7	4.7	0.6	1.6	7.6

(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	0.9	1.9	1.5	5.8
BG	0.8	0.8	0.8	0.7	3.1
CZ	0.7	0.8	0.8	0.8	3.2
DK	2.1	1.2	1.8	2.3	7.4
DE	0.6	1.2	1.0	1.3	4.2
EE	1.4	0.7	1.0	1.5	4.8
IE	1.3	0.6	0.9	0.8	3.6
EL	1.1	0.7	0.7	0.6	3.1
ES	1.1	0.7	0.8	1.0	3.7
FR	1.1	1.2	1.2	1.2	4.8
HR	1.7	0.0	1.1	0.9	3.7
IT	1.0	0.7	1.1	0.8	3.5
CY	2.0	1.3	1.4	1.1	5.8
LV	1.6	0.8	1.0	1.1	4.5
LT	0.7	1.1	0.7	1.3	3.9
LU	1.2	0.8	0.9	0.5	3.3
HU	0.6	0.6	1.7	0.8	3.6
MT	1.5	1.2	1.4	1.4	5.4
NL	1.3	1.2	1.1	1.7	5.2
AT	0.9	1.2	1.0	1.8	4.9
PL	1.5	0.7	0.8	1.2	4.3
PT	1.5	1.1	1.0	0.9	4.5
RO	0.4	0.7	0.7	0.7	2.5
SI	1.4	0.7	0.9	1.0	4.0
SK	0.8	0.9	0.9	1.0	3.7
FI	1.3	1.1	1.6	2.0	5.9
SE	1.7	0.8	1.3	1.9	5.8
UK	1.7	0.9	1.3	1.2	5.2
NO	2.1	1.0	1.7	2.8	7.6

Source: Commission services, EPC

Table II.AV.4: **Results of the Baseline scenario (Public education expenditure as percentage of GDP)**

	2016	2020	2030	2040	2050	2060	2070
BE	5.8	5.7	5.7	5.7	5.8	5.8	5.8
BG	3.1	3.1	3.3	3.3	3.5	3.8	3.7
CZ	3.2	3.2	3.7	3.6	3.7	4.1	4.0
DK	7.4	7.0	6.7	6.8	6.7	6.5	6.6
DE	4.2	3.9	4.1	4.3	4.2	4.3	4.5
EE	4.8	4.5	4.7	4.6	4.8	5.1	5.0
IE	3.6	3.5	3.6	3.2	3.4	3.5	3.3
EL	3.1	3.0	2.6	2.3	2.4	2.5	2.4
ES	3.7	3.7	3.5	3.7	4.1	4.1	3.9
FR	4.8	4.7	4.6	4.6	4.6	4.5	4.4
HR	3.7	3.5	3.3	3.1	3.0	3.1	3.2
IT	3.5	3.4	3.1	3.1	3.3	3.3	3.3
CY	5.8	5.3	4.5	4.1	3.7	4.0	4.2
LV	4.5	4.2	4.8	4.6	4.5	5.2	5.0
LT	3.9	3.3	3.6	3.6	3.2	3.8	3.8
LU	3.3	3.1	3.1	3.2	3.3	3.3	3.4
HU	3.6	3.4	3.3	3.5	3.6	3.7	3.8
MT	5.4	4.8	4.8	4.8	4.7	5.1	5.2
NL	5.2	4.9	4.7	5.0	4.9	4.7	4.7
AT	4.9	4.6	4.7	4.7	4.6	4.8	4.9
PL	4.3	4.1	4.2	4.1	4.2	4.6	4.7
PT	4.5	4.2	3.6	3.5	3.8	3.8	3.9
RO	2.5	2.3	2.3	2.5	2.6	2.7	2.8
SI	4.0	4.0	4.2	4.1	4.5	4.7	4.6
SK	3.7	3.5	3.6	3.5	3.6	3.8	3.7
FI	5.9	5.8	5.9	5.8	5.7	5.6	5.5
SE	5.8	5.8	6.0	6.0	6.0	6.2	6.2
UK	5.2	5.1	5.1	5.1	5.0	5.0	5.0
NO	7.6	7.2	7.0	7.1	7.1	7.1	7.3
EA19	4.3	4.2	4.1	4.2	4.2	4.3	4.3
EU28	4.5	4.4	4.3	4.4	4.4	4.5	4.5

Source: Commission services, EPC

Table II.AV.5: **Results of the High Enrolment Rate scenario (Public education expenditure as percentage of GDP)**

	2016	2020	2030	2040	2050	2060	2070
BE	5.8	5.8	6.1	6.4	6.5	6.6	6.6
BG	3.1	3.1	3.5	3.7	4.1	4.3	4.2
CZ	3.2	3.3	3.9	4.1	4.4	4.8	4.6
DK	7.4	7.1	7.0	7.4	7.4	7.1	7.3
DE	4.2	4.0	4.4	4.8	4.9	5.0	5.2
EE	4.8	4.6	4.9	5.1	5.4	5.7	5.6
IE	3.6	3.6	3.8	3.6	3.8	4.0	3.8
EL	3.1	3.1	2.8	2.7	2.9	3.0	2.8
ES	3.7	3.8	3.8	4.1	4.6	4.7	4.5
FR	4.8	4.9	5.3	5.7	5.9	5.8	5.7
HR	3.7	3.6	3.7	3.8	3.8	3.9	4.0
IT	3.5	3.5	3.4	3.7	4.0	4.0	4.0
CY	5.8	5.5	5.1	5.1	4.9	5.2	5.4
LV	4.5	4.3	5.1	5.2	5.2	5.8	5.7
LT	3.9	3.4	4.0	4.2	3.9	4.5	4.5
LU	3.3	3.3	3.7	4.4	4.7	4.8	4.9
HU	3.6	3.5	3.6	4.1	4.3	4.5	4.6
MT	5.4	5.0	5.5	5.9	6.2	6.6	6.7
NL	5.2	5.0	5.0	5.4	5.4	5.2	5.3
AT	4.9	4.7	5.0	5.3	5.3	5.4	5.6
PL	4.3	4.2	4.5	4.6	4.8	5.3	5.3
PT	4.5	4.3	3.9	4.1	4.5	4.6	4.6
RO	2.5	2.4	2.7	3.1	3.4	3.5	3.5
SI	4.0	4.1	4.5	4.6	5.1	5.3	5.2
SK	3.7	3.6	4.0	4.2	4.4	4.6	4.6
FI	5.9	5.9	6.1	6.0	5.9	5.8	5.8
SE	5.8	5.9	6.3	6.6	6.7	6.9	6.9
UK	5.2	5.3	5.6	5.9	6.0	6.0	6.0
NO	7.6	7.3	7.4	7.8	7.9	7.9	8.1
EA19	4.3	4.3	4.5	4.8	5.0	5.1	5.1
EU28	4.5	4.5	4.7	5.1	5.3	5.3	5.3

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	2014	23,062.7	5.8%	2016	24,553.7	5.8%
BG	2014	1,354.8	3.2%	2016	1,461.5	3.1%
CZ	2014	5,154.1	3.2%	2016	5,537.5	3.2%
DK	2014	19,862.4	7.8%	2016	20,445.0	7.4%
DE	2014	122,493.9	4.3%	2016	130,067.6	4.2%
EE	2014	881.0	4.6%	2016	999.1	4.8%
IE	2014	9,317.1	5.3%	2016	9,844.8	3.6%
EL	2013	6,002.4	3.4%	2016	5,525.6	0.0%
ES	2014	38,002.8	3.6%	2016	40,703.2	3.7%
FR	2014	103,434.0	4.8%	2016	106,578.1	4.8%
HR	2014	1,591.2	3.6%	2016	1,685.7	2.0%
IT	2014	58,703.1	2.7%	2016	59,355.8	3.5%
CY	2014	1,015.8	5.7%	2016	1,036.3	5.8%
LV	2014	1,045.6	2.9%	2016	1,129.9	4.5%
LT	2014	1,413.0	3.3%	2016	1,505.7	3.9%
LU	2014	1,711.7	2.5%	2016	1,814.7	3.3%
HU	2014	3,770.3	3.7%	2016	4,097.6	3.6%
MT	2014	465.7	6.1%	2016	537.7	5.4%
NL	2014	34,210.6	5.3%	2016	36,301.8	5.2%
AT	2014	16,245.0	5.0%	2016	17,161.0	4.9%
PL	2014	17,683.4	4.3%	2016	18,082.6	4.3%
PT	2014	7,980.7	4.7%	2016	8,362.4	4.5%
RO	2014	3,631.3	2.5%	2016	4,202.4	2.5%
SI	2014	1,617.4	4.5%	2016	1,591.0	4.0%
SK	2014	2,737.2	3.6%	2016	2,997.5	3.7%
FI	2014	12,415.0	6.2%	2016	12,653.7	5.9%
SE	2014	25,283.5	5.7%	2016	26,778.4	5.8%
UK	2014	123,231.9	6.0%	2016	123,150.9	5.2%
NO	2014	22,404.5	7.4%	2016	22,089.1	7.6%

Source: Commission services, EPC
(1) UOE; UNESCO/OECD/EUROSTAT
(2) COFOG: Classification of the functions of the government

Part III

Statistical Annex – CROSS-COUNTRY TABLES

1. TABLES

1.1. STATISTICAL ANNEX – CROSS-COUNTRY TABLES

Main demographic and macroeconomic assumptions

Pension expenditure projections

Health care

Long-term care

Education

Unemployment benefits

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, LTC expenditure shares would be almost unchanged until 2070.

EL: 1) The values of the gross replacement rate at retirement (new pensions, earnings-related), the average accrual rates (new pensions, earnings-related) and the average contributory period (new pensions, earnings-related) are for 2017. 2) The average accrual rates (new pensions, earnings related) correspond to main pensions provision only 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 don't include pensioners under the POPS scheme). 3) The sensitivity tests relate to Private Social Security expenditure projections only.

FR: The average accrual rates (new pensions, earnings related) and the average contributory period (new pensions, earnings-related) correspond to the overall public pension system, which consists of the defined-benefit schemes and point systems.

LU: The values of the gross replacement rate at retirement (new pensions, earnings-related) and the average contributory period (new pensions, earnings-related) are for 2017.

MT: The values of the gross replacement rate at retirement (new pensions, earnings-related) and the average contributory period (new pensions, earnings-related) are for 2017.

UK: The projections for total public pension expenditure include spending on the Public Service Pension schemes (PSPs).

Table III.1.1: Fertility rate

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.1	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
BG	0.3	1.5	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8
CZ	0.2	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
DK	0.0	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8
DE	0.2	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.7
EE	0.2	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
IE	0.1	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
EL	0.3	1.4	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6
ES	0.6	1.3	1.6	1.7	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9
FR	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
HR	0.2	1.4	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7
IT	0.3	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.7
CY	0.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6
LV	0.1	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9
LT	0.2	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
LU	0.3	1.4	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7
HU	0.3	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8
MT	0.3	1.4	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
NL	0.2	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
AT	0.2	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.7
PL	0.3	1.4	1.4	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
PT	0.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6
RO	0.4	1.5	1.7	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9
SI	0.2	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8
SK	0.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8
FI	0.2	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8
SE	0.2	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0
UK	0.1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9
NO	0.1	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
EU*	0.2	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8
EA	0.2	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8
EU27	0.3	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8
EU* s	0.2	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8

Table III.1.2: Life expectancy at birth - Men

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.4	78.8	79.5	80.3	81.0	81.7	82.4	83.1	83.8	84.4	85.0	85.6	86.2
BG	11.5	71.8	72.6	73.9	75.1	76.3	77.4	78.5	79.5	80.5	81.5	82.4	83.3
CZ	8.7	76.2	76.8	77.7	78.6	79.5	80.3	81.2	82.0	82.7	83.5	84.2	84.9
DK	7.3	78.8	79.5	80.2	81.0	81.7	82.4	83.0	83.7	84.3	84.9	85.5	86.1
DE	7.4	78.7	79.4	80.1	80.9	81.6	82.3	83.0	83.6	84.3	84.9	85.5	86.1
EE	11.1	72.8	73.8	75.0	76.1	77.2	78.3	79.3	80.3	81.3	82.2	83.0	83.9
IE	6.9	79.5	80.1	80.8	81.5	82.2	82.9	83.5	84.1	84.7	85.3	85.9	86.4
EL	7.7	78.8	79.6	80.4	81.2	81.9	82.6	83.3	84.0	84.7	85.3	85.9	86.5
ES	6.4	80.5	81.0	81.6	82.3	83.0	83.6	84.2	84.8	85.3	85.9	86.4	86.9
FR	7.1	79.5	80.2	80.9	81.7	82.4	83.1	83.7	84.3	84.9	85.5	86.1	86.6
HR	9.4	75.0	75.8	76.8	77.8	78.7	79.6	80.5	81.3	82.1	82.9	83.7	84.4
IT	6.2	80.7	81.2	81.9	82.5	83.1	83.7	84.3	84.8	85.3	85.9	86.4	86.9
CY	6.4	80.6	81.4	82.1	82.7	83.3	83.8	84.4	84.9	85.5	86.0	86.5	87.0
LV	13.3	69.4	70.7	72.1	73.5	74.8	76.1	77.3	78.5	79.6	80.7	81.7	82.7
LT	13.5	69.3	70.8	72.3	73.6	75.0	76.2	77.5	78.6	79.8	80.8	81.8	82.8
LU	7.2	79.2	80.0	80.7	81.5	82.1	82.8	83.5	84.1	84.7	85.3	85.8	86.4
HU	11.1	72.8	73.7	74.9	76.0	77.1	78.2	79.3	80.3	81.2	82.1	83.0	83.9
MT	6.8	80.0	80.5	81.3	82.0	82.7	83.4	84.0	84.7	85.2	85.8	86.3	86.8
NL	6.7	79.8	80.7	81.3	82.0	82.6	83.2	83.8	84.4	85.0	85.5	86.0	86.5
AT	7.3	79.0	79.8	80.6	81.3	82.0	82.7	83.3	84.0	84.6	85.2	85.7	86.3
PL	10.5	73.9	74.9	76.1	77.1	78.2	79.2	80.2	81.1	82.0	82.8	83.7	84.4
PT	7.7	78.2	78.9	79.7	80.5	81.3	82.0	82.7	83.4	84.0	84.7	85.3	85.9
RO	11.8	71.8	72.9	74.2	75.4	76.6	77.8	78.8	79.9	80.9	81.8	82.8	83.6
SI	7.6	78.2	78.9	79.7	80.4	81.2	81.9	82.6	83.3	84.0	84.6	85.2	85.8
SK	10.5	73.7	74.6	75.7	76.8	77.8	78.9	79.8	80.8	81.7	82.6	83.4	84.2
FI	7.4	78.5	79.1	79.9	80.6	81.4	82.1	82.8	83.4	84.1	84.7	85.3	85.9
SE	6.1	80.6	81.1	81.7	82.3	82.9	83.5	84.1	84.6	85.2	85.7	86.2	86.7
UK	6.9	79.6	80.2	80.9	81.6	82.3	83.0	83.6	84.2	84.8	85.4	85.9	86.5
NO	6.4	80.2	80.8	81.4	82.1	82.7	83.3	83.9	84.4	85.0	85.5	86.1	86.6
EU*	7.8	78.3	79.1	79.9	80.7	81.5	82.2	83.0	83.6	84.3	84.9	85.5	86.1
EA	7.1	79.3	80.0	80.7	81.4	82.1	82.8	83.5	84.1	84.7	85.3	85.9	86.4
EU27	7.9	78.2	78.9	79.7	80.6	81.4	82.1	82.8	83.5	84.2	84.8	85.5	86.1
EU* s	8.5	77.0	77.8	78.7	79.5	80.4	81.2	82.0	82.7	83.5	84.2	84.8	85.5

Table III.1.3: Life expectancy at birth - Women

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.5	83.7	84.3	85.0	85.7	86.3	86.9	87.5	88.1	88.6	89.2	89.7	90.2
BG	9.3	78.5	79.2	80.2	81.2	82.1	83.0	83.9	84.7	85.6	86.3	87.1	87.8
CZ	7.2	82.1	82.6	83.4	84.1	84.8	85.5	86.2	86.8	87.5	88.1	88.7	89.3
DK	7.1	82.9	83.6	84.3	85.0	85.7	86.4	87.1	87.7	88.3	88.9	89.4	90.0
DE	6.5	83.6	84.2	84.8	85.5	86.1	86.7	87.3	87.9	88.5	89.0	89.6	90.1
EE	7.6	81.9	82.5	83.4	84.1	84.9	85.6	86.3	87.0	87.7	88.3	88.9	89.5
IE	6.8	83.5	84.2	84.9	85.5	86.2	86.9	87.5	88.1	88.7	89.2	89.8	90.3
EL	6.4	83.9	84.5	85.2	85.8	86.4	87.0	87.6	88.2	88.7	89.3	89.8	90.3
ES	5.2	86.0	86.3	86.9	87.4	87.9	88.4	88.9	89.4	89.8	90.3	90.7	91.2
FR	5.5	85.6	86.1	86.7	87.3	87.8	88.4	88.9	89.4	89.8	90.3	90.7	91.1
HR	7.8	81.1	81.8	82.6	83.4	84.1	84.9	85.6	86.3	86.9	87.6	88.2	88.9
IT	5.6	85.3	85.8	86.4	86.9	87.5	88.0	88.5	89.0	89.5	90.0	90.4	90.9
CY	5.9	84.3	85.0	85.6	86.2	86.7	87.2	87.8	88.3	88.8	89.3	89.7	90.2
LV	9.1	79.5	80.4	81.4	82.3	83.2	84.1	84.9	85.7	86.5	87.2	87.9	88.6
LT	8.9	79.9	81.0	81.9	82.8	83.6	84.5	85.2	86.0	86.7	87.4	88.1	88.8
LU	6.3	84.6	85.3	86.0	86.6	87.2	87.8	88.4	88.9	89.4	89.9	90.4	90.9
HU	9.0	79.6	80.4	81.4	82.3	83.2	84.0	84.9	85.7	86.4	87.2	87.9	88.6
MT	6.3	84.3	84.8	85.5	86.1	86.8	87.4	88.0	88.5	89.1	89.6	90.1	90.6
NL	6.8	83.3	84.1	84.8	85.5	86.1	86.7	87.3	87.9	88.5	89.0	89.6	90.1
AT	6.4	83.8	84.5	85.2	85.8	86.4	87.0	87.6	88.2	88.7	89.2	89.7	90.2
PL	7.9	81.6	82.4	83.2	84.0	84.8	85.6	86.3	87.0	87.7	88.3	88.9	89.5
PT	6.1	84.3	84.9	85.5	86.1	86.7	87.3	87.9	88.4	88.9	89.4	89.9	90.4
RO	9.4	78.9	79.9	80.9	81.8	82.7	83.6	84.5	85.3	86.1	86.9	87.6	88.3
SI	6.3	83.8	84.4	85.1	85.7	86.3	86.9	87.5	88.0	88.6	89.1	89.6	90.1
SK	8.4	80.7	81.4	82.3	83.2	84.0	84.8	85.6	86.3	87.1	87.8	88.4	89.1
FI	6.1	84.1	84.6	85.2	85.8	86.4	87.0	87.6	88.1	88.7	89.2	89.7	90.2
SE	6.0	84.3	84.8	85.4	86.1	86.6	87.2	87.8	88.3	88.9	89.4	89.9	90.3
UK	6.8	83.3	83.9	84.6	85.3	86.0	86.7	87.3	87.9	88.5	89.0	89.6	90.1
NO	6.1	84.3	84.8	85.4	86.1	86.7	87.2	87.8	88.3	88.9	89.4	89.9	90.4
EU*	6.6	83.7	84.3	85.0	85.6	86.3	86.9	87.5	88.1	88.7	89.2	89.8	90.3
EA	6.1	84.6	85.1	85.7	86.3	86.9	87.5	88.1	88.6	89.1	89.6	90.1	90.6
EU27	6.6	83.7	84.3	85.0	85.7	86.3	87.0	87.6	88.2	88.7	89.3	89.8	90.3
EU* s	7.0	82.8	83.5	84.2	84.9	85.6	86.3	86.9	87.5	88.2	88.7	89.3	89.8

Table III.1.4: Life expectancy at 65 - Men

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	5.1	18.3	18.8	19.3	19.8	20.3	20.7	21.2	21.7	22.1	22.6	23.0	23.4
BG	7.0	14.5	14.9	15.6	16.3	17.0	17.7	18.4	19.0	19.7	20.3	20.9	21.5
CZ	6.1	16.3	16.7	17.3	17.9	18.5	19.1	19.7	20.3	20.8	21.3	21.9	22.4
DK	5.2	18.1	18.5	19.0	19.5	20.0	20.5	21.0	21.5	21.9	22.4	22.8	23.3
DE	5.2	18.1	18.5	19.1	19.6	20.1	20.6	21.0	21.5	22.0	22.4	22.9	23.3
EE	6.8	15.4	16.0	16.7	17.3	18.0	18.6	19.3	19.9	20.5	21.1	21.6	22.2
IE	5.0	18.5	18.9	19.4	19.9	20.4	20.9	21.3	21.8	22.3	22.7	23.1	23.5
EL	5.1	18.7	19.2	19.7	20.2	20.7	21.2	21.6	22.1	22.6	23.0	23.4	23.8
ES	4.6	19.3	19.6	20.1	20.6	21.0	21.5	21.9	22.3	22.8	23.2	23.6	23.9
FR	4.5	19.5	19.9	20.3	20.8	21.2	21.7	22.1	22.5	22.9	23.3	23.7	24.0
HR	6.4	15.6	16.1	16.8	17.4	18.0	18.6	19.2	19.8	20.4	21.0	21.5	22.0
IT	4.6	19.1	19.5	20.0	20.4	20.9	21.3	21.7	22.1	22.6	23.0	23.4	23.7
CY	4.8	19.0	19.6	20.1	20.5	21.0	21.4	21.8	22.2	22.6	23.0	23.4	23.8
LV	7.6	14.0	14.7	15.4	16.2	16.9	17.7	18.4	19.0	19.7	20.4	21.0	21.6
LT	7.5	14.3	15.1	15.9	16.6	17.3	18.0	18.7	19.3	20.0	20.6	21.2	21.8
LU	5.0	18.5	19.0	19.5	20.0	20.5	20.9	21.4	21.8	22.3	22.7	23.1	23.5
HU	7.1	14.9	15.4	16.1	16.8	17.5	18.2	18.9	19.5	20.2	20.8	21.4	22.0
MT	4.6	19.3	19.6	20.1	20.6	21.0	21.5	21.9	22.3	22.7	23.1	23.5	23.9
NL	5.0	18.4	19.0	19.5	20.0	20.4	20.9	21.3	21.8	22.2	22.6	23.0	23.4
AT	5.2	18.3	18.9	19.4	19.9	20.4	20.8	21.3	21.7	22.2	22.6	23.0	23.5
PL	6.6	16.0	16.6	17.2	17.9	18.5	19.1	19.7	20.3	20.9	21.5	22.0	22.6
PT	5.2	18.1	18.6	19.1	19.6	20.1	20.6	21.0	21.5	22.0	22.4	22.9	23.3
RO	7.2	14.8	15.4	16.1	16.8	17.5	18.2	18.9	19.5	20.2	20.8	21.4	22.0
SI	5.4	17.7	18.1	18.7	19.2	19.7	20.3	20.8	21.3	21.7	22.2	22.7	23.1
SK	6.8	15.3	15.8	16.5	17.2	17.9	18.5	19.2	19.8	20.4	21.0	21.6	22.1
FI	5.1	18.2	18.6	19.1	19.6	20.1	20.6	21.0	21.5	22.0	22.4	22.8	23.3
SE	4.6	19.0	19.4	19.8	20.3	20.7	21.2	21.6	22.0	22.4	22.8	23.2	23.6
UK	4.8	18.8	19.2	19.7	20.1	20.6	21.1	21.5	22.0	22.4	22.8	23.2	23.6
NO	4.7	18.8	19.2	19.7	20.1	20.6	21.0	21.5	21.9	22.3	22.7	23.1	23.5
EU*	5.3	18.1	18.6	19.1	19.7	20.2	20.7	21.1	21.6	22.1	22.6	23.0	23.4
EA	4.9	18.7	19.1	19.6	20.1	20.6	21.1	21.5	21.9	22.4	22.8	23.2	23.6
EU27	5.3	18.0	18.5	19.0	19.6	20.1	20.6	21.1	21.6	22.1	22.5	23.0	23.4
EU* s	5.6	17.4	17.8	18.4	19.0	19.5	20.1	20.6	21.1	21.6	22.1	22.5	23.0

Table III.1.5: Life expectancy at 65 - Women

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.9	21.7	22.1	22.6	23.1	23.6	24.0	24.5	24.9	25.4	25.8	26.2	26.6
BG	6.8	17.9	18.3	19.0	19.7	20.3	21.0	21.6	22.3	22.9	23.5	24.1	24.7
CZ	5.8	19.9	20.3	20.9	21.4	22.0	22.6	23.1	23.6	24.2	24.7	25.2	25.7
DK	5.6	20.8	21.3	21.9	22.4	23.0	23.5	24.0	24.5	25.0	25.5	25.9	26.4
DE	5.1	21.3	21.8	22.3	22.8	23.3	23.7	24.2	24.7	25.1	25.6	26.0	26.4
EE	5.6	20.4	20.9	21.5	22.0	22.6	23.1	23.6	24.1	24.6	25.1	25.6	26.0
IE	5.5	21.1	21.6	22.2	22.7	23.2	23.8	24.3	24.8	25.2	25.7	26.2	26.6
EL	5.2	21.4	21.9	22.4	22.9	23.4	23.9	24.3	24.8	25.3	25.7	26.2	26.6
ES	4.1	23.2	23.4	23.9	24.3	24.7	25.1	25.5	25.9	26.2	26.6	27.0	27.3
FR	4.0	23.5	23.8	24.2	24.6	25.0	25.4	25.8	26.1	26.5	26.8	27.2	27.5
HR	6.2	19.1	19.6	20.2	20.8	21.4	22.0	22.6	23.2	23.7	24.3	24.8	25.3
IT	4.5	22.5	22.9	23.4	23.8	24.2	24.7	25.1	25.5	25.9	26.3	26.6	27.0
CY	5.0	21.3	21.9	22.4	22.8	23.3	23.7	24.2	24.6	25.0	25.4	25.9	26.3
LV	6.4	19.0	19.6	20.3	20.9	21.5	22.1	22.7	23.3	23.8	24.4	24.9	25.4
LT	6.3	19.3	20.0	20.6	21.2	21.8	22.4	23.0	23.5	24.1	24.6	25.1	25.6
LU	4.7	22.4	22.9	23.4	23.8	24.3	24.7	25.2	25.6	26.0	26.4	26.8	27.1
HU	6.7	18.7	19.2	19.9	20.6	21.2	21.9	22.5	23.1	23.7	24.3	24.8	25.4
MT	4.7	22.2	22.5	23.0	23.5	24.0	24.4	24.9	25.3	25.7	26.1	26.5	26.9
NL	5.2	21.2	21.8	22.3	22.8	23.3	23.8	24.2	24.7	25.2	25.6	26.0	26.4
AT	4.9	21.6	22.1	22.6	23.1	23.5	24.0	24.4	24.9	25.3	25.7	26.1	26.5
PL	5.9	20.2	20.7	21.3	21.9	22.5	23.0	23.6	24.1	24.6	25.1	25.6	26.1
PT	4.9	21.8	22.2	22.7	23.2	23.7	24.1	24.6	25.0	25.4	25.9	26.3	26.7
RO	6.9	18.2	18.8	19.5	20.2	20.8	21.5	22.1	22.8	23.4	24.0	24.5	25.1
SI	5.0	21.4	21.8	22.3	22.8	23.3	23.8	24.2	24.7	25.1	25.6	26.0	26.4
SK	6.5	19.1	19.7	20.3	21.0	21.6	22.2	22.8	23.4	24.0	24.6	25.1	25.6
FI	4.8	21.7	22.0	22.5	23.0	23.5	23.9	24.4	24.8	25.2	25.7	26.1	26.5
SE	4.9	21.7	22.1	22.6	23.1	23.6	24.0	24.5	24.9	25.3	25.8	26.2	26.6
UK	5.2	21.3	21.7	22.3	22.8	23.3	23.8	24.3	24.8	25.2	25.7	26.1	26.5
NO	4.9	21.7	22.1	22.6	23.1	23.6	24.1	24.5	25.0	25.4	25.8	26.2	26.6
EU*	5.1	21.5	22.0	22.5	23.0	23.5	24.0	24.5	24.9	25.4	25.8	26.2	26.6
EA	4.7	22.2	22.6	23.1	23.5	24.0	24.4	24.9	25.3	25.7	26.1	26.5	26.9
EU27	5.1	21.6	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.4	25.8	26.2	26.7
EU* s	5.4	20.9	21.3	21.9	22.4	22.9	23.4	23.9	24.4	24.9	25.4	25.8	26.3

Table III.1.6: Net migration (thousand)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-29.0	55.2	53.2	51.0	48.3	45.1	41.5	37.4	32.8	31.2	29.5	27.9	26.2
BG	5.6	-4.3	-11.9	-11.7	-9.1	-2.7	0.5	1.9	3.9	3.3	0.7	1.0	1.3
CZ	-10.1	18.6	21.5	16.8	17.5	17.1	20.5	16.9	14.0	12.2	8.8	8.3	8.5
DK	-27.4	36.7	33.4	30.0	26.8	22.7	18.9	14.9	10.7	11.4	11.4	10.3	9.3
DE	-606.5	750.0	327.3	277.8	268.1	236.5	206.0	209.7	199.0	200.5	175.0	160.1	143.5
EE	-2.7	2.9	2.3	1.8	1.4	1.5	1.2	0.9	0.7	0.6	0.1	0.1	0.3
IE	-4.0	14.8	9.9	6.9	7.5	9.1	11.4	13.6	13.7	12.8	12.2	11.5	10.8
EL	34.9	-23.9	-16.8	-11.3	-4.1	3.1	7.9	12.5	13.3	11.5	10.5	10.8	11.0
ES	123.8	12.9	51.2	86.1	119.4	141.7	163.4	167.8	170.9	162.4	153.8	145.3	136.8
FR	1.7	53.6	77.0	82.9	85.9	82.8	77.3	73.7	69.2	65.7	62.2	59.4	55.3
HR	26.1	-21.5	-1.7	2.6	4.2	4.1	5.0	5.8	6.0	5.4	5.2	4.7	4.6
IT	29.3	134.5	161.2	181.7	209.7	216.3	217.7	204.1	197.4	187.9	176.7	171.7	163.8
CY	2.7	1.0	1.7	2.3	2.9	3.4	3.9	4.4	4.9	4.8	4.4	4.0	3.7
LV	9.5	-9.4	-8.0	-7.1	-6.1	-2.9	-1.5	-0.2	1.2	0.9	0.0	0.0	0.1
LT	28.2	-28.2	-23.8	-20.9	-17.0	-9.8	-6.3	-2.6	1.3	1.3	0.2	0.0	0.0
LU	-6.8	10.8	10.2	9.5	8.7	7.9	7.0	6.0	5.0	4.7	4.5	4.2	4.0
HU	-7.0	18.2	19.9	17.0	16.2	17.7	20.8	17.3	15.3	15.1	13.8	11.7	11.2
MT	-2.5	3.5	3.2	2.9	2.6	2.3	2.0	1.7	1.4	1.4	1.3	1.1	1.0
NL	-61.0	85.5	66.9	62.5	59.5	52.1	43.7	36.8	29.6	29.7	28.6	28.4	24.5
AT	-53.2	73.8	67.8	61.5	55.4	47.7	40.3	32.9	26.3	26.3	24.8	22.3	20.6
PL	2.4	4.9	0.0	-3.2	-2.4	3.3	16.2	25.5	29.7	21.7	11.6	6.8	7.3
PT	24.6	-10.5	2.4	8.7	12.8	15.5	18.2	17.2	15.8	15.0	14.6	15.5	14.2
RO	66.4	-63.8	-65.1	-64.3	-51.1	-19.7	-8.9	0.0	7.7	5.1	1.6	2.3	2.6
SI	2.4	0.2	4.2	3.8	4.1	3.9	4.3	4.3	3.8	3.1	2.8	2.7	2.5
SK	-2.7	6.0	5.9	4.9	5.0	5.1	6.8	6.8	6.5	5.5	3.8	3.2	3.2
FI	-9.1	15.9	15.8	14.2	13.7	11.7	10.7	9.7	8.5	8.4	7.8	7.0	6.8
SE	-79.1	103.5	67.9	62.7	57.2	51.1	44.7	37.8	30.5	29.0	27.4	25.9	24.4
UK	-136.7	244.0	251.5	236.7	220.1	201.5	181.0	158.5	134.2	128.8	121.1	114.0	107.3
NO	-11.3	27.4	27.3	26.8	26.0	25.0	23.7	22.1	20.2	19.2	18.1	17.1	16.1
EU*	-680.1	1484.8	1127.1	1105.9	1157.2	1168.4	1154.3	1115.5	1053.3	1005.7	914.6	860.1	804.7
EA	-520.3	1148.6	811.8	819.3	877.8	873.2	855.6	836.9	801.2	773.7	712.9	675.1	628.2
EU27	-543.4	1240.8	875.6	869.2	937.2	966.9	973.4	956.9	919.1	876.9	793.4	746.1	697.4
EU* s	-24.3	53.0	40.3	39.5	41.3	41.7	41.2	39.8	37.6	35.9	32.7	30.7	28.7

Table III.1.7: Net migration as % of population

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.3	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2
BG	0.1	-0.1	-0.2	-0.2	-0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
CZ	-0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
DK	-0.5	0.6	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.1
DE	-0.7	0.9	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2
EE	-0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
IE	-0.1	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EL	0.4	-0.2	-0.2	-0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ES	0.2	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
FR	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HR	0.6	-0.5	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1
IT	0.1	0.2	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
CY	0.3	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4
LV	0.5	-0.5	-0.4	-0.4	-0.4	-0.2	-0.1	0.0	0.1	0.1	0.0	0.0	0.0
LT	1.0	-0.9	-0.9	-0.8	-0.7	-0.4	-0.3	-0.1	0.1	0.1	0.0	0.0	0.0
LU	-1.5	1.9	1.6	1.4	1.1	1.0	0.8	0.7	0.5	0.5	0.4	0.4	0.4
HU	-0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
MT	-0.6	0.8	0.7	0.6	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2
NL	-0.4	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1
AT	-0.6	0.8	0.7	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2
PL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0
PT	0.3	-0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
RO	0.3	-0.3	-0.3	-0.3	-0.3	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
SI	0.1	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
SK	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FI	-0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
SE	-0.9	1.0	0.7	0.6	0.5	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.2
UK	-0.2	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1
NO	-0.3	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2
EU*	-0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EA	-0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EU27	-0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EU* s	-0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1

Table III.1.8: Population (million)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.6	11.3	11.6	12.0	12.3	12.6	12.9	13.1	13.3	13.4	13.6	13.7	13.9
BG	-2.3	7.1	6.9	6.7	6.4	6.1	5.9	5.7	5.5	5.4	5.2	5.0	4.9
CZ	-0.6	10.6	10.7	10.7	10.7	10.6	10.5	10.5	10.5	10.4	10.3	10.1	10.0
DK	1.1	5.7	5.9	6.1	6.3	6.5	6.6	6.6	6.7	6.7	6.8	6.8	6.8
DE	-3.2	82.5	83.8	84.4	84.6	84.5	84.1	83.4	82.6	81.7	80.7	79.9	79.2
EE	-0.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2
IE	1.4	4.7	4.9	5.0	5.2	5.3	5.4	5.6	5.7	5.8	5.9	6.0	6.0
EL	-3.1	10.8	10.5	10.2	9.9	9.6	9.4	9.2	8.9	8.6	8.3	7.9	7.7
ES	3.4	46.4	46.6	46.8	47.2	47.7	48.3	48.9	49.3	49.5	49.6	49.6	49.9
FR	10.2	66.8	68.0	69.3	70.7	71.9	73.0	73.8	74.4	75.0	75.6	76.3	77.0
HR	-0.8	4.2	4.1	4.0	3.9	3.9	3.8	3.7	3.7	3.6	3.5	3.5	3.4
IT	-5.9	60.8	60.7	60.5	60.3	60.2	60.0	59.6	58.9	57.9	56.8	55.7	54.9
CY	0.2	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
LV	-0.6	2.0	1.9	1.8	1.7	1.7	1.6	1.5	1.5	1.5	1.4	1.4	1.3
LT	-1.1	2.9	2.7	2.6	2.4	2.2	2.1	2.0	2.0	1.9	1.8	1.8	1.7
LU	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0
HU	-1.0	9.8	9.8	9.7	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0	8.9
MT	0.1	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NL	2.5	17.0	17.5	18.0	18.4	18.8	19.1	19.2	19.2	19.3	19.3	19.4	19.6
AT	1.4	8.7	9.0	9.4	9.7	9.9	10.1	10.2	10.2	10.2	10.2	10.2	10.2
PL	-7.1	38.0	37.9	37.7	37.2	36.5	35.8	35.0	34.3	33.6	32.8	31.9	30.9
PT	-2.3	10.3	10.2	10.0	9.9	9.7	9.5	9.3	9.1	8.8	8.5	8.2	8.0
RO	-4.7	19.7	19.2	18.6	18.0	17.5	17.0	16.6	16.3	16.0	15.7	15.3	15.0
SI	-0.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0
SK	-0.5	5.4	5.5	5.5	5.5	5.4	5.4	5.3	5.3	5.2	5.1	5.0	4.9
FI	0.1	5.5	5.6	5.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.6	5.6
SE	4.0	9.9	10.3	10.8	11.3	11.7	12.0	12.4	12.7	13.0	13.3	13.6	13.9
UK	15.4	65.6	67.5	69.7	71.8	73.6	75.2	76.5	77.7	78.6	79.4	80.2	81.0
NO	1.8	5.2	5.4	5.7	5.9	6.1	6.3	6.4	6.6	6.7	6.8	6.9	7.0
EU*	9.3	510.9	516.1	520.7	524.1	526.8	528.5	529.1	528.4	526.7	524.4	522.0	520.3
EA	5.2	340.3	343.8	346.6	349.0	350.9	352.2	352.5	351.8	350.3	348.3	346.6	345.6
EU27	-6.1	445.3	448.7	451.0	452.4	453.2	453.3	452.6	450.8	448.1	445.0	441.8	439.2
EU* s	0.3	18.2	18.4	18.6	18.7	18.8	18.9	18.9	18.9	18.8	18.7	18.6	18.6

Table III.1.9: Children population (0-14) as % of total population

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.1	17.0	17.0	16.8	16.5	16.3	16.2	16.2	16.2	16.2	16.0	15.9	15.9
BG	0.0	14.0	14.4	14.1	13.6	13.2	13.2	13.5	13.8	13.9	13.9	13.9	14.0
CZ	-0.8	15.5	16.0	15.5	14.9	14.1	14.0	14.6	15.2	15.4	15.2	14.8	14.7
DK	-1.3	16.8	16.3	16.1	16.6	16.8	16.5	16.0	15.5	15.3	15.3	15.5	15.5
DE	0.7	13.2	13.4	13.9	14.0	13.7	13.3	13.0	13.1	13.5	13.8	13.9	13.9
EE	-1.4	16.1	16.5	15.9	15.4	14.8	14.7	14.9	15.2	15.2	15.0	14.8	14.7
IE	-5.2	22.2	22.1	20.6	18.5	17.3	17.2	17.8	18.4	18.4	17.8	17.2	17.0
EL	-2.1	14.4	13.9	12.6	11.6	11.2	11.4	11.9	12.1	12.0	11.8	11.9	12.3
ES	1.3	15.1	14.7	14.0	13.8	14.1	14.7	15.3	15.7	15.7	15.7	15.9	16.3
FR	-1.3	18.4	18.1	17.7	17.6	17.5	17.6	17.6	17.4	17.3	17.1	17.1	17.1
HR	-1.4	14.6	14.5	14.0	13.6	13.4	13.2	13.2	13.2	13.2	13.1	13.1	13.2
IT	-1.0	13.6	13.0	12.1	11.6	11.6	11.8	12.0	12.1	12.1	12.1	12.3	12.6
CY	-4.7	16.1	15.4	14.6	13.8	12.9	11.9	11.3	11.2	11.3	11.5	11.5	11.4
LV	0.1	15.4	16.3	16.5	16.1	14.6	14.0	14.5	15.5	16.2	16.2	15.8	15.4
LT	-0.1	14.7	15.4	15.9	15.2	13.7	12.6	12.9	14.2	15.4	15.7	15.2	14.7
LU	-1.5	16.4	16.2	16.3	16.4	16.2	15.8	15.3	15.0	14.9	14.9	14.9	14.9
HU	0.4	14.5	14.6	14.6	14.8	14.7	14.4	14.3	14.4	14.7	14.8	14.9	14.9
MT	0.3	14.3	14.6	15.1	15.2	14.8	14.3	14.1	14.2	14.5	14.7	14.7	14.5
NL	-0.7	16.4	15.8	15.8	16.1	16.3	16.2	15.9	15.5	15.3	15.4	15.6	15.7
AT	-0.5	14.3	14.3	14.6	14.7	14.5	14.1	13.7	13.6	13.7	13.8	13.9	13.8
PL	-1.9	15.0	15.3	14.7	14.0	13.2	12.8	12.9	13.3	13.4	13.4	13.2	13.1
PT	-2.1	14.0	13.0	11.9	11.3	11.3	11.5	11.6	11.5	11.3	11.3	11.5	11.9
RO	0.1	15.3	15.2	14.8	14.9	14.7	14.6	14.6	14.8	15.0	15.2	15.3	15.5
SI	0.0	14.9	15.3	14.8	13.9	13.4	13.6	14.2	14.8	15.0	14.8	14.7	14.9
SK	-1.2	15.3	15.4	15.0	14.3	13.7	13.5	13.7	14.0	14.2	14.1	14.1	14.2
FI	-1.5	16.3	16.2	15.8	15.5	15.4	15.2	15.1	15.1	15.0	14.9	14.8	14.7
SE	-0.3	17.5	17.9	18.0	17.8	17.5	17.3	17.4	17.6	17.6	17.5	17.4	17.2
UK	-1.7	17.7	17.7	17.3	17.0	16.8	16.7	16.5	16.4	16.3	16.2	16.0	15.9
NO	-2.1	17.8	17.5	17.1	16.9	16.8	16.5	16.2	16.0	15.8	15.8	15.8	15.7
EU*	-0.5	15.5	15.4	15.1	14.9	14.7	14.7	14.8	14.9	14.9	14.9	15.0	15.0
EA	-0.2	15.2	15.0	14.6	14.5	14.4	14.4	14.5	14.6	14.6	14.7	14.8	14.9
EU27	-0.3	15.2	15.1	14.8	14.6	14.4	14.4	14.5	14.6	14.7	14.7	14.8	14.9
EU* s	-1.0	15.7	15.7	15.3	15.0	14.6	14.4	14.4	14.6	14.7	14.7	14.6	14.6

Table III.1.10: Prime age population (25-54) as % of total population

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-4.9	40.2	39.2	38.2	37.5	37.4	37.1	36.7	36.3	36.1	36.0	35.6	35.3
BG	-9.6	42.1	41.2	39.1	36.6	34.6	33.3	31.8	31.5	32.2	32.7	32.6	32.5
CZ	-9.6	43.4	42.6	40.7	37.8	35.7	34.7	33.9	33.5	33.9	34.1	33.7	33.8
DK	-4.8	39.3	39.1	38.5	38.0	38.1	38.0	37.4	36.3	35.6	35.2	34.6	34.5
DE	-7.3	41.3	39.6	37.6	37.0	36.5	35.6	34.6	34.2	34.0	34.1	34.2	34.0
EE	-8.4	41.6	40.8	39.2	37.6	37.0	35.7	33.8	33.4	33.8	34.0	33.3	33.2
IE	-8.0	42.6	40.6	38.6	36.6	35.5	35.0	35.0	35.4	35.5	35.5	35.0	34.6
EL	-9.7	41.4	39.8	37.3	35.2	33.4	32.2	32.1	32.1	32.1	32.1	31.7	31.6
ES	-9.5	44.0	41.4	38.0	35.0	32.6	31.6	31.8	32.4	33.2	33.7	34.0	34.6
FR	-3.4	38.2	36.7	35.6	34.8	34.7	34.5	34.7	35.1	35.0	34.9	34.8	34.8
HR	-6.8	40.3	39.4	38.9	38.1	37.3	36.3	35.7	35.3	34.6	34.5	33.9	33.5
IT	-9.0	41.6	39.9	37.5	35.5	34.6	34.3	33.9	33.5	33.3	33.1	32.8	32.7
CY	-9.5	43.9	44.8	45.1	44.6	43.9	42.2	39.9	38.0	36.9	36.1	35.2	34.4
LV	-9.3	41.3	39.7	36.6	34.0	32.6	30.9	29.7	29.7	31.1	31.8	31.8	32.0
LT	-6.8	40.4	39.2	36.7	33.7	32.3	32.0	31.5	31.1	32.0	33.3	33.7	33.6
LU	-10.2	45.7	45.0	44.0	42.9	41.6	40.2	38.8	37.7	36.7	36.2	35.8	35.5
HU	-7.9	41.9	42.3	41.1	38.8	36.3	35.4	34.9	34.1	34.0	34.0	33.8	34.0
MT	-7.1	40.7	40.7	40.8	39.7	38.3	37.1	35.9	34.8	34.1	33.9	33.8	33.7
NL	-4.8	39.8	38.6	37.3	36.8	36.9	36.8	36.4	36.0	35.7	35.4	35.2	35.0
AT	-8.6	43.0	42.0	40.3	39.4	38.9	37.9	36.9	35.8	35.2	34.9	34.7	34.4
PL	-11.1	43.0	42.8	42.0	40.1	38.0	35.4	33.7	32.7	32.4	32.6	32.0	31.9
PT	-9.7	41.2	39.8	38.5	36.8	35.0	34.0	33.7	33.2	32.5	31.8	31.5	31.5
RO	-9.4	42.7	42.7	40.0	37.6	35.3	33.8	32.3	32.5	32.7	32.9	32.8	33.3
SI	-8.9	42.6	40.6	38.4	36.4	34.8	33.8	33.3	33.4	33.7	34.0	33.9	33.7
SK	-12.3	44.9	44.4	43.2	40.8	38.2	36.2	34.5	33.3	33.1	33.1	32.9	32.7
FI	-4.2	38.0	37.5	36.8	36.8	36.6	36.2	35.8	35.1	34.9	34.7	34.2	33.8
SE	-4.5	39.4	39.3	38.0	37.2	37.3	37.3	36.7	35.9	35.8	35.6	35.2	34.9
UK	-5.5	40.4	39.6	38.5	37.8	37.9	37.7	37.1	36.4	35.9	35.8	35.4	34.9
NO	-6.2	41.2	41.0	40.0	39.1	38.8	38.4	37.5	36.7	36.2	35.8	35.4	35.1
EU*	-7.2	41.2	39.9	38.2	36.8	35.9	35.2	34.7	34.4	34.3	34.3	34.1	34.0
EA	-7.1	41.1	39.4	37.4	36.1	35.3	34.6	34.3	34.2	34.1	34.2	34.1	34.0
EU27	-7.5	41.3	40.0	38.2	36.6	35.6	34.8	34.3	34.0	34.0	34.0	33.9	33.9
EU* s	-7.9	41.6	40.7	39.2	37.6	36.5	35.5	34.7	34.2	34.2	34.1	33.9	33.7

Table III.1.11: Working age population (15-64) as % of total population

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-6.7	64.6	63.7	62.6	61.3	60.4	59.9	59.6	59.2	58.9	58.5	58.2	58.0
BG	-10.3	65.4	63.7	62.4	61.6	60.6	58.6	56.3	54.5	52.8	52.8	54.1	55.1
CZ	-9.0	65.9	63.7	62.9	62.5	62.3	60.3	57.5	55.7	54.5	54.5	55.9	57.0
DK	-8.0	64.3	63.8	63.0	61.4	60.2	59.8	60.0	60.4	59.9	58.4	57.1	56.3
DE	-10.4	65.7	64.6	62.5	59.9	58.1	58.0	58.0	57.4	56.3	55.6	55.2	55.3
EE	-8.8	64.7	63.2	62.3	61.4	60.9	59.8	58.5	56.8	54.9	54.6	55.4	55.9
IE	-5.6	64.4	63.3	63.1	63.1	62.3	60.4	57.9	56.0	55.8	57.0	58.2	58.7
EL	-10.4	64.2	63.3	62.4	61.0	58.5	55.6	52.9	51.4	51.8	52.7	53.6	53.8
ES	-9.0	66.0	65.1	63.7	61.2	58.2	55.1	52.6	52.1	53.3	55.0	56.4	57.1
FR	-5.3	62.6	61.5	60.3	58.9	57.7	56.8	56.7	56.9	57.4	57.8	57.7	57.3
HR	-10.5	66.0	64.4	62.8	61.6	60.6	59.9	58.8	57.7	57.0	56.5	55.7	55.6
IT	-9.8	64.3	63.8	62.9	61.0	58.3	55.9	54.4	54.1	54.2	54.6	54.8	54.5
CY	-13.6	68.7	67.9	66.9	65.9	65.5	65.3	64.3	62.2	59.4	56.9	55.5	55.1
LV	-9.9	64.9	62.8	60.5	58.5	58.0	56.8	55.2	52.9	50.7	50.7	53.2	55.0
LT	-10.4	66.1	64.1	60.7	57.9	56.5	55.6	54.7	53.6	52.1	51.4	53.1	55.8
LU	-12.1	69.3	68.9	67.6	65.9	64.3	63.3	62.5	61.4	60.1	58.8	57.8	57.2
HU	-11.1	67.1	65.0	63.6	63.0	62.0	60.4	58.2	57.4	56.5	55.6	55.6	56.0
MT	-11.5	66.4	64.2	61.7	60.4	60.5	60.6	60.0	58.7	57.0	55.4	54.6	54.9
NL	-8.5	65.3	64.4	62.6	60.4	58.7	58.2	58.8	59.3	59.2	58.6	57.7	56.8
AT	-11.4	67.2	66.6	64.9	62.6	60.9	60.4	60.2	59.4	58.3	57.0	56.2	55.8
PL	-15.1	68.7	66.0	63.6	62.6	62.3	61.1	58.8	55.9	53.7	52.5	52.8	53.6
PT	-12.4	65.1	64.5	63.4	61.5	59.3	56.6	54.3	53.5	53.7	53.8	53.4	52.7
RO	-11.8	67.1	65.4	63.8	63.2	60.7	58.6	56.4	55.2	53.8	54.1	54.7	55.3
SI	-9.8	66.4	64.0	62.3	61.0	59.7	58.2	56.1	54.6	54.2	54.9	55.9	56.7
SK	-15.2	70.0	67.7	65.7	64.5	63.7	61.9	59.2	56.8	54.9	53.9	54.1	54.7
FI	-6.9	63.0	61.5	60.3	59.3	58.8	59.1	58.9	58.3	57.7	56.8	56.4	56.1
SE	-4.9	62.7	61.9	61.4	61.0	60.6	60.4	60.2	59.7	58.7	57.8	57.9	57.8
UK	-6.8	64.4	63.7	63.0	61.8	60.6	60.2	60.1	59.6	59.1	58.4	57.9	57.6
NO	-8.4	65.7	64.9	64.0	62.9	61.6	60.9	60.6	60.2	59.4	58.4	57.7	57.3
EU*	-9.0	65.2	64.0	62.7	61.0	59.4	58.2	57.3	56.6	56.2	56.1	56.2	56.2
EA	-8.8	64.8	63.8	62.4	60.4	58.5	57.2	56.3	55.9	55.9	56.0	56.1	56.0
EU27	-9.4	65.3	64.1	62.6	60.9	59.2	57.9	56.8	56.1	55.7	55.7	55.8	55.9
EU* s	-9.8	65.7	64.4	63.0	61.6	60.4	59.2	57.9	56.8	55.9	55.5	55.7	55.9

Table III.1.12: Elderly population (65 and over) as % of total population

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.8	18.4	19.3	20.6	22.2	23.3	23.9	24.2	24.6	25.0	25.5	25.8	26.2
BG	10.3	20.6	21.9	23.5	24.8	26.3	28.2	30.2	31.7	33.2	33.3	32.0	30.9
CZ	9.7	18.6	20.3	21.5	22.6	23.6	25.7	28.0	29.1	30.0	30.4	29.3	28.3
DK	9.3	18.9	19.8	20.8	22.0	23.1	23.8	24.0	24.1	24.9	26.3	27.4	28.3
DE	9.7	21.1	21.9	23.6	26.1	28.2	28.7	29.0	29.5	30.2	30.6	30.9	30.9
EE	10.2	19.2	20.3	21.9	23.2	24.2	25.5	26.6	28.0	29.9	30.4	29.8	29.4
IE	10.8	13.4	14.6	16.4	18.4	20.3	22.4	24.3	25.6	25.8	25.2	24.6	24.2
EL	12.5	21.4	22.8	25.1	27.4	30.3	32.9	35.2	36.5	36.2	35.4	34.5	33.9
ES	7.7	18.9	20.2	22.4	25.0	27.7	30.2	32.1	32.2	31.0	29.3	27.6	26.6
FR	6.6	19.0	20.4	22.0	23.6	24.8	25.6	25.7	25.6	25.4	25.1	25.2	25.6
HR	11.9	19.4	21.1	23.1	24.8	26.0	26.9	28.0	29.1	29.8	30.3	31.1	31.2
IT	10.7	22.1	23.2	24.9	27.4	30.1	32.3	33.5	33.8	33.6	33.3	32.9	32.9
CY	18.3	15.3	16.7	18.5	20.3	21.6	22.8	24.3	26.6	29.3	31.7	33.0	33.6
LV	9.8	19.8	20.8	23.1	25.4	27.4	29.2	30.3	31.6	33.1	33.1	31.1	29.6
LT	10.4	19.2	20.5	23.4	26.9	29.7	31.8	32.4	32.3	32.6	32.9	31.6	29.6
LU	13.6	14.3	14.9	16.1	17.7	19.5	20.9	22.2	23.6	25.0	26.3	27.3	27.9
HU	10.7	18.5	20.3	21.8	22.2	23.4	25.2	27.5	28.2	28.8	29.6	29.5	29.1
MT	11.2	19.3	21.2	23.2	24.4	24.6	25.1	25.9	27.0	28.4	29.9	30.7	30.6
NL	9.2	18.3	19.8	21.6	23.5	25.0	25.5	25.3	25.2	25.4	26.0	26.7	27.5
AT	11.9	18.5	19.0	20.5	22.6	24.6	25.5	26.1	27.0	28.0	29.2	30.0	30.4
PL	17.1	16.3	18.7	21.7	23.3	24.5	26.1	28.3	30.9	32.9	34.1	34.1	33.3
PT	14.5	20.9	22.5	24.7	27.2	29.4	31.9	34.0	35.0	35.0	34.9	35.1	35.4
RO	11.6	17.6	19.4	21.4	21.9	24.7	26.8	29.0	29.9	31.2	30.7	29.9	29.2
SI	9.8	18.7	20.7	23.0	25.2	26.9	28.3	29.7	30.6	30.8	30.2	29.4	28.5
SK	16.4	14.7	16.9	19.3	21.2	22.6	24.6	27.1	29.3	31.0	32.0	31.8	31.1
FI	8.5	20.7	22.3	23.9	25.2	25.9	25.7	26.0	26.6	27.3	28.2	28.8	29.2
SE	5.1	19.8	20.2	20.6	21.3	21.9	22.3	22.4	22.7	23.6	24.7	24.7	25.0
UK	8.5	18.0	18.6	19.7	21.3	22.6	23.2	23.4	23.9	24.6	25.4	26.1	26.5
NO	10.5	16.5	17.5	18.9	20.2	21.6	22.7	23.2	23.8	24.8	25.8	26.5	27.0
EU*	9.5	19.3	20.5	22.2	24.1	25.9	27.1	28.0	28.5	28.9	29.0	28.9	28.8
EA	9.0	20.0	21.2	22.9	25.1	27.1	28.4	29.2	29.5	29.5	29.3	29.1	29.0
EU27	9.7	19.5	20.8	22.6	24.6	26.4	27.8	28.8	29.3	29.6	29.6	29.4	29.2
EU* s	10.9	18.6	19.9	21.7	23.5	25.1	26.5	27.7	28.6	29.4	29.8	29.7	29.5

Table III.1.13: Very elderly population (80 and over) as % of total population

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	5.1	5.5	5.7	5.7	6.5	7.3	8.2	9.1	9.6	9.8	9.9	10.2	10.6
BG	10.0	4.7	4.9	5.5	6.9	8.0	8.7	9.3	10.1	11.5	13.0	13.9	14.7
CZ	9.3	4.0	4.2	5.2	6.8	8.0	8.3	8.5	9.0	10.7	12.5	13.0	13.3
DK	6.3	4.3	4.8	5.9	7.0	7.5	7.9	8.6	9.4	9.9	10.0	9.9	10.6
DE	7.4	5.9	7.0	7.5	7.6	8.3	9.6	11.4	12.6	12.3	11.9	12.3	13.3
EE	8.7	5.2	6.0	6.1	6.8	7.8	8.8	9.5	9.9	10.6	11.4	12.5	13.9
IE	8.0	3.1	3.4	4.0	4.9	5.8	6.6	7.6	8.5	9.6	10.6	11.3	11.2
EL	10.1	6.6	7.4	7.8	8.8	9.9	11.3	12.6	14.4	15.9	17.2	17.6	16.6
ES	6.7	6.1	6.3	6.8	7.7	8.5	9.8	11.2	12.6	13.9	14.8	14.2	12.8
FR	4.9	5.9	6.1	6.3	7.7	8.8	9.6	10.3	10.7	11.1	11.0	10.9	10.8
HR	8.0	4.9	5.5	5.7	6.4	7.7	9.0	9.8	10.3	10.7	11.5	12.4	13.0
IT	7.9	6.7	7.5	8.0	8.9	9.6	10.6	12.3	14.0	15.2	15.5	15.1	14.6
CY	10.6	3.4	3.9	4.6	5.7	6.6	7.5	8.3	8.8	9.3	10.3	12.0	14.0
LV	9.9	5.1	6.0	6.5	7.1	8.0	9.5	10.8	11.5	12.2	12.7	13.7	15.0
LT	8.5	5.4	6.1	6.6	7.3	8.4	10.5	12.4	13.3	13.6	13.2	13.1	13.9
LU	7.1	4.0	4.1	4.2	4.6	5.2	6.1	7.2	8.2	8.9	9.5	10.3	11.1
HU	8.0	4.3	4.6	5.3	6.2	7.6	8.2	8.2	8.9	10.3	12.0	12.2	12.3
MT	9.1	4.2	4.9	5.9	7.9	9.0	9.9	10.2	10.0	10.3	11.1	12.2	13.3
NL	6.1	4.5	4.9	5.6	7.0	7.8	8.7	9.7	10.5	10.7	10.3	10.1	10.6
AT	7.5	5.0	5.5	6.2	6.6	7.0	8.1	9.6	10.8	11.1	11.0	11.5	12.4
PL	12.0	4.2	4.5	4.6	6.0	8.1	9.7	10.1	10.1	11.0	12.8	15.0	16.2
PT	9.7	6.0	6.7	7.3	8.3	9.5	10.7	12.2	13.4	15.0	16.2	16.3	15.7
RO	9.2	4.3	4.8	5.0	5.9	7.3	8.4	8.2	9.9	11.3	12.6	12.9	13.5
SI	8.5	5.0	5.6	6.1	6.9	8.5	9.8	10.8	11.4	11.9	12.9	13.5	13.5
SK	11.2	3.2	3.4	4.0	5.0	6.6	7.8	8.5	9.0	10.2	12.0	13.4	14.3
FI	7.0	5.2	5.6	6.3	8.2	9.3	9.9	10.3	10.5	10.3	10.7	11.5	12.2
SE	5.0	5.1	5.3	6.2	7.2	7.5	7.6	8.0	8.5	8.9	9.1	9.3	10.1
UK	5.8	4.8	5.1	5.6	6.6	7.1	7.7	8.6	9.4	9.6	9.6	10.0	10.7
NO	6.5	4.2	4.3	4.9	6.1	6.8	7.4	8.0	8.8	9.4	9.7	10.0	10.7
EU*	7.1	5.4	5.9	6.4	7.3	8.2	9.2	10.3	11.2	11.8	12.1	12.3	12.5
EA	6.8	5.9	6.5	6.9	7.7	8.6	9.6	11.0	12.0	12.6	12.7	12.7	12.7
EU27	7.4	5.5	6.1	6.5	7.4	8.4	9.4	10.5	11.5	12.1	12.5	12.7	12.9
EU* s	8.1	4.9	5.4	5.9	6.9	7.9	8.9	9.8	10.6	11.3	12.0	12.5	13.0

Table III.1.14: Very elderly population (80 and over) as % of elderly population

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	10.7	30.0	29.6	27.7	29.3	31.3	34.3	37.5	39.0	39.2	38.8	39.4	40.7
BG	24.8	22.9	22.5	23.5	27.9	30.4	30.9	30.7	31.9	34.7	39.1	43.3	47.7
CZ	25.3	21.6	20.9	24.2	30.1	33.8	32.3	30.6	31.0	35.5	41.0	44.4	46.8
DK	14.7	22.8	24.0	28.1	31.8	32.4	33.2	35.9	39.0	39.8	38.1	36.2	37.6
DE	15.3	27.8	32.0	31.9	29.0	29.5	33.3	39.4	42.8	40.6	38.9	39.8	43.1
EE	20.2	27.2	29.4	28.1	29.4	32.1	34.4	35.7	35.4	35.5	37.4	41.8	47.4
IE	22.6	23.5	23.4	24.6	26.9	28.5	29.7	31.1	33.1	37.0	42.2	46.1	46.0
EL	18.3	30.8	32.2	31.0	32.1	32.6	34.2	35.8	39.4	43.9	48.6	51.0	49.1
ES	15.7	32.3	31.1	30.4	30.6	30.7	32.3	34.9	39.2	45.0	50.5	51.5	48.0
FR	11.1	31.1	30.0	28.6	32.5	35.5	37.6	40.1	41.9	43.8	43.8	43.3	42.2
HR	16.1	25.4	26.2	24.7	26.0	29.8	33.4	35.1	35.4	35.9	37.9	40.0	41.5
IT	14.0	30.5	32.3	31.9	32.6	32.0	32.9	36.6	41.3	45.3	46.5	45.7	44.5
CY	19.7	22.0	23.5	24.9	28.1	30.5	32.7	34.2	33.2	31.9	32.6	36.4	41.7
LV	25.0	25.8	28.8	28.2	27.8	29.3	32.6	35.7	36.4	36.9	38.4	44.2	50.8
LT	18.9	28.0	29.7	28.3	27.1	28.3	33.1	38.4	41.4	41.8	40.1	41.3	46.9
LU	11.9	28.0	27.8	26.2	26.0	26.7	29.0	32.3	34.7	35.6	36.3	37.7	39.9
HU	18.9	23.4	22.8	24.4	27.9	32.5	32.7	29.9	31.7	35.9	40.5	41.4	42.2
MT	21.6	22.0	23.3	25.3	32.2	36.4	39.4	39.2	36.8	36.1	37.2	39.7	43.6
NL	14.3	24.3	24.6	25.8	29.7	31.4	34.1	38.3	41.8	41.9	39.5	38.0	38.5
AT	14.2	26.7	28.8	30.1	29.2	28.6	31.6	36.8	40.0	39.6	37.7	38.5	40.9
PL	23.0	25.7	24.1	21.4	25.9	32.9	37.3	35.7	32.8	33.5	37.6	43.9	48.7
PT	15.4	28.9	29.7	29.7	30.7	32.3	33.6	35.7	38.4	42.9	46.5	46.6	44.4
RO	21.8	24.4	24.9	23.3	26.8	29.7	31.2	28.4	33.2	36.1	41.2	43.1	46.2
SI	20.5	27.0	26.9	26.3	27.6	31.7	34.6	36.2	37.3	38.7	42.6	45.9	47.5
SK	24.5	21.5	20.2	20.5	23.7	29.2	31.7	31.4	30.6	32.9	37.5	42.2	46.1
FI	16.7	25.2	25.2	26.4	32.4	35.9	38.4	39.6	39.3	37.7	37.9	39.9	41.8
SE	14.8	25.7	26.1	30.1	33.9	34.2	34.1	35.7	37.5	37.8	36.8	37.8	40.5
UK	13.4	26.9	27.4	28.5	31.1	31.3	33.1	36.8	39.2	39.2	37.9	38.4	40.3
NO	14.2	25.5	24.5	26.1	30.0	31.4	32.6	34.5	37.0	38.0	37.4	37.7	39.7
EU*	15.5	28.1	28.9	28.6	30.2	31.7	33.9	36.6	39.2	40.7	41.8	42.6	43.6
EA	14.4	29.3	30.5	30.0	30.7	31.7	34.0	37.6	40.8	42.6	43.4	43.7	43.7
EU27	15.8	28.3	29.1	28.7	30.1	31.8	34.0	36.6	39.2	41.0	42.4	43.3	44.1
EU* s	18.0	26.1	26.7	26.9	29.2	31.4	33.5	35.3	36.9	38.4	40.1	42.0	44.1

Table III.1.15: Very elderly population (80 and over) as % of working age population

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	9.8	8.5	8.9	9.1	10.6	12.1	13.7	15.3	16.2	16.6	16.9	17.5	18.4
BG	19.6	7.2	7.7	8.8	11.2	13.2	14.9	16.5	18.6	21.8	24.6	25.6	26.8
CZ	17.2	6.1	6.7	8.3	10.9	12.8	13.7	14.9	16.2	19.6	22.9	23.3	23.3
DK	12.1	6.7	7.5	9.3	11.4	12.4	13.2	14.4	15.5	16.5	17.1	17.4	18.9
DE	15.1	8.9	10.9	12.0	12.6	14.3	16.5	19.7	22.0	21.8	21.4	22.2	24.1
EE	16.9	8.1	9.4	9.9	11.1	12.7	14.6	16.2	17.4	19.4	20.9	22.5	24.9
IE	14.1	4.9	5.4	6.4	7.8	9.3	11.0	13.1	15.1	17.1	18.7	19.5	19.0
EL	20.7	10.3	11.6	12.4	14.4	16.9	20.2	23.9	28.0	30.7	32.7	32.9	31.0
ES	13.1	9.2	9.6	10.7	12.5	14.6	17.7	21.3	24.3	26.1	26.9	25.2	22.4
FR	9.5	9.4	10.0	10.4	13.0	15.2	16.9	18.1	18.9	19.4	19.0	18.9	18.9
HR	15.9	7.5	8.6	9.1	10.5	12.8	15.0	16.7	17.8	18.7	20.3	22.3	23.3
IT	16.3	10.5	11.8	12.6	14.6	16.5	19.0	22.5	25.8	28.1	28.4	27.5	26.8
CY	20.5	4.9	5.8	6.9	8.7	10.1	11.4	12.9	14.2	15.7	18.2	21.6	25.4
LV	19.5	7.9	9.5	10.8	12.1	13.8	16.8	19.6	21.8	24.1	25.0	25.8	27.3
LT	16.8	8.1	9.5	10.9	12.6	14.9	18.9	22.7	24.9	26.1	25.7	24.6	24.9
LU	13.7	5.8	6.0	6.2	7.0	8.1	9.6	11.5	13.4	14.8	16.2	17.8	19.5
HU	15.5	6.4	7.1	8.3	9.8	12.2	13.7	14.1	15.6	18.3	21.6	21.9	22.0
MT	17.9	6.4	7.7	9.5	13.0	14.8	16.3	17.0	16.9	18.0	20.1	22.3	24.3
NL	11.8	6.8	7.5	8.9	11.5	13.4	15.0	16.5	17.8	18.0	17.5	17.6	18.7
AT	14.9	7.4	8.2	9.5	10.5	11.5	13.3	15.9	18.2	19.0	19.3	20.6	22.3
PL	24.2	6.1	6.8	7.3	9.6	12.9	15.9	17.2	18.1	20.5	24.4	28.4	30.3
PT	20.5	9.3	10.4	11.6	13.6	16.0	19.0	22.4	25.1	27.9	30.2	30.6	29.8
RO	18.0	6.4	7.4	7.8	9.3	12.1	14.3	14.6	18.0	20.9	23.3	23.5	24.4
SI	16.3	7.6	8.7	9.7	11.4	14.3	16.8	19.2	20.9	22.0	23.4	24.1	23.8
SK	21.7	4.5	5.0	6.0	7.8	10.4	12.6	14.4	15.8	18.6	22.3	24.8	26.2
FI	13.5	8.3	9.1	10.4	13.7	15.8	16.7	17.5	17.9	17.8	18.8	20.3	21.7
SE	9.4	8.1	8.5	10.1	11.8	12.4	12.6	13.3	14.3	15.2	15.7	16.1	17.5
UK	11.0	7.5	8.0	8.9	10.7	11.7	12.7	14.3	15.8	16.3	16.5	17.3	18.5
NO	12.3	6.4	6.6	7.7	9.6	11.0	12.2	13.2	14.7	15.9	16.5	17.4	18.7
EU*	14.0	8.3	9.3	10.2	11.9	13.8	15.8	17.9	19.8	20.9	21.6	21.9	22.3
EA	13.6	9.1	10.1	11.0	12.7	14.6	16.9	19.5	21.5	22.5	22.7	22.6	22.6
EU27	14.6	8.4	9.4	10.4	12.1	14.2	16.3	18.6	20.5	21.8	22.5	22.8	23.0
EU* s	15.9	7.5	8.3	9.4	11.2	13.1	15.1	17.0	18.7	20.3	21.7	22.6	23.4

Table III.1.16: Potential Real GDP (growth rate)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.5	1.3	1.4	1.2	1.4	1.5	1.6	1.8	1.7	1.6	1.6	1.7	1.6
BG	1.4	2.9	2.2	1.7	1.5	1.2	1.1	1.0	0.9	1.0	1.2	1.2	1.1
CZ	1.5	2.2	1.9	1.6	1.8	1.4	1.1	1.1	1.1	1.2	1.5	1.6	1.4
DK	1.6	1.2	1.6	1.7	1.6	1.6	1.6	1.8	1.8	1.7	1.5	1.3	1.3
DE	1.2	1.8	1.4	0.8	1.0	1.0	1.2	1.3	1.1	1.0	1.1	1.2	1.3
EE	1.5	2.3	2.4	1.7	1.7	1.5	1.4	1.3	1.1	1.1	1.3	1.4	1.3
IE	2.1	5.0	3.3	1.7	1.8	1.8	1.6	1.5	1.5	1.8	2.0	2.1	1.9
EL	0.8	-1.4	-0.3	0.6	0.5	0.7	0.8	1.2	1.1	1.1	1.3	1.3	1.2
ES	1.5	0.4	0.8	1.3	1.3	1.0	1.0	1.3	1.8	2.0	2.2	2.1	1.9
FR	1.6	1.1	1.1	1.2	1.2	1.4	1.7	1.9	1.9	1.8	1.8	1.7	1.6
HR	1.2	1.1	1.0	0.6	1.0	1.3	1.6	1.9	1.6	1.3	1.2	1.1	1.0
IT	0.8	-0.3	0.5	0.6	0.3	0.3	0.5	1.1	1.3	1.6	1.2	1.4	1.1
CY	1.4	0.3	1.1	2.0	1.1	1.3	1.6	1.9	1.7	1.4	1.3	1.3	1.4
LV	1.9	1.4	4.2	3.3	2.7	1.6	1.7	1.2	0.9	0.9	1.2	1.5	1.5
LT	1.1	2.1	1.7	0.6	0.5	0.6	1.0	1.1	0.9	0.7	1.0	1.5	1.7
LU	2.3	3.0	3.8	3.1	2.5	2.3	2.1	2.0	1.8	1.7	1.7	1.7	1.7
HU	1.6	1.9	1.9	2.4	2.1	1.6	1.2	1.3	1.5	1.3	1.3	1.4	1.3
MT	2.3	6.1	4.2	3.8	3.2	2.5	2.0	1.5	1.2	1.1	1.2	1.5	1.6
NL	1.5	1.3	1.4	1.2	1.1	1.2	1.5	1.8	1.8	1.7	1.6	1.5	1.5
AT	1.5	1.4	1.7	1.7	1.5	1.7	1.7	1.5	1.3	1.2	1.2	1.2	1.3
PL	1.4	2.7	2.6	2.1	1.9	1.5	1.2	0.9	0.7	0.8	1.0	1.0	1.0
PT	0.9	0.4	0.8	1.2	1.0	0.8	0.8	0.9	0.9	1.0	1.0	0.9	0.8
RO	1.8	3.5	3.4	2.8	2.1	1.3	1.3	1.2	1.3	1.4	1.3	1.3	1.3
SI	1.5	1.0	2.1	1.9	1.6	1.5	1.3	1.2	1.2	1.4	1.6	1.6	1.4
SK	1.9	2.4	2.8	2.9	2.8	2.2	1.8	1.2	1.2	1.1	1.2	1.4	1.5
FI	1.3	0.4	0.7	0.7	1.1	1.3	1.5	1.6	1.5	1.5	1.5	1.5	1.5
SE	1.9	2.7	1.9	2.0	1.9	2.0	2.0	2.0	1.8	1.7	1.8	1.9	1.9
UK	1.7	1.5	1.6	1.7	1.8	1.8	1.8	1.9	1.8	1.6	1.6	1.6	1.6
NO	1.8	2.1	2.0	2.0	1.7	1.7	1.8	1.9	1.8	1.6	1.6	1.6	1.6
EU*	1.4	1.3	1.4	1.2	1.3	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.5
EA	1.3	1.0	1.2	1.1	1.0	1.1	1.2	1.4	1.5	1.5	1.5	1.5	1.5
EU27	1.3	1.3	1.4	1.1	1.2	1.1	1.2	1.4	1.4	1.4	1.5	1.5	1.4
EU* s	1.5	1.8	1.9	1.7	1.6	1.4	1.4	1.4	1.4	1.3	1.4	1.5	1.4

Table III.1.17: Employment 15-74 (growth rate)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.3	0.8	0.7	0.4	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1
BG	-1.0	0.9	-0.9	-1.6	-1.2	-1.3	-1.3	-1.3	-1.3	-1.0	-0.6	-0.5	-0.5
CZ	-0.4	0.9	-0.3	-0.7	-0.2	-0.5	-0.7	-0.7	-0.7	-0.5	-0.1	0.0	-0.1
DK	0.2	0.7	0.6	0.7	0.3	0.2	0.2	0.3	0.2	0.1	-0.1	-0.3	-0.2
DE	-0.3	1.5	0.5	-0.8	-0.5	-0.5	-0.2	-0.3	-0.4	-0.5	-0.5	-0.3	-0.2
EE	-0.4	1.3	0.5	-0.8	-0.3	-0.4	-0.5	-0.7	-0.8	-0.7	-0.4	-0.2	-0.3
IE	0.5	2.8	0.9	0.2	0.6	0.4	0.1	-0.1	-0.1	0.2	0.5	0.6	0.4
EL	-0.4	-0.4	-0.2	0.4	-0.3	-0.5	-0.8	-0.8	-0.8	-0.7	-0.4	-0.3	-0.4
ES	0.1	-0.3	-0.3	0.4	0.2	-0.2	-0.4	-0.3	0.2	0.4	0.6	0.6	0.4
FR	0.3	0.7	0.4	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.1
HR	-0.4	0.4	-0.3	-0.7	-0.1	-0.1	-0.2	-0.3	-0.4	-0.6	-0.6	-0.6	-0.5
IT	-0.2	-0.1	0.6	0.4	-0.3	-0.6	-0.7	-0.5	-0.3	0.0	-0.3	-0.1	-0.4
CY	0.3	0.4	0.7	1.8	0.5	0.3	0.3	0.1	0.0	-0.3	-0.4	-0.2	-0.1
LV	-0.8	0.1	-0.5	-1.7	-1.2	-1.0	-0.7	-0.9	-1.1	-1.0	-0.5	-0.2	0.0
LT	-1.0	0.8	-0.6	-2.5	-2.0	-1.6	-1.1	-0.8	-0.9	-1.1	-0.7	-0.1	0.2
LU	0.8	2.2	2.9	1.6	1.0	0.8	0.6	0.4	0.2	0.1	0.1	0.2	0.2
HU	-0.3	1.7	0.1	0.2	-0.2	-0.6	-0.9	-0.7	-0.5	-0.5	-0.5	-0.3	-0.2
MT	0.4	3.8	1.8	0.9	0.8	0.5	0.2	-0.1	-0.4	-0.5	-0.4	-0.1	0.1
NL	0.2	0.6	0.6	0.4	0.0	0.0	0.2	0.3	0.3	0.1	0.0	-0.1	-0.1
AT	0.1	1.3	1.2	0.4	0.2	0.4	0.2	0.0	-0.2	-0.4	-0.3	-0.3	-0.2
PL	-0.8	0.4	-0.3	-0.9	-0.7	-0.8	-1.0	-1.1	-1.2	-1.1	-0.8	-0.6	-0.6
PT	-0.6	0.3	-0.3	-0.1	-0.4	-0.8	-0.9	-1.0	-0.9	-0.8	-0.7	-0.7	-0.8
RO	-0.8	0.1	-0.2	-1.3	-1.4	-1.3	-1.1	-1.0	-0.8	-0.5	-0.4	-0.3	-0.3
SI	-0.2	0.5	0.5	-0.3	-0.5	-0.5	-0.7	-0.6	-0.5	-0.3	0.0	0.1	-0.1
SK	-0.3	1.0	-0.1	-0.7	-0.3	-0.4	-0.5	-0.6	-0.6	-0.6	-0.4	-0.2	0.0
FI	0.0	0.1	-0.2	-0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	-0.1
SE	0.5	1.4	0.5	0.7	0.6	0.6	0.6	0.4	0.3	0.1	0.3	0.4	0.3
UK	0.3	0.9	0.5	0.3	0.4	0.3	0.3	0.4	0.3	0.1	0.0	0.0	0.0
NO	0.3	0.2	1.2	0.7	0.4	0.3	0.4	0.4	0.2	0.1	0.0	0.1	0.1
EU*	-0.1	0.7	0.3	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
EA	0.0	0.7	0.4	0.0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0.0	-0.1
EU27	-0.1	0.7	0.3	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1
EU* s	-0.1	0.9	0.3	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4	-0.3	-0.2	-0.1	-0.1

Table III.1.18: Labour input : hours worked (growth rate)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.3	0.7	0.7	0.4	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1
BG	-0.9	0.9	-0.8	-1.5	-1.2	-1.3	-1.3	-1.3	-1.3	-1.0	-0.6	-0.5	-0.5
CZ	-0.3	1.1	-0.1	-0.7	-0.2	-0.5	-0.7	-0.7	-0.7	-0.5	-0.1	0.0	-0.1
DK	0.2	0.5	0.6	0.7	0.3	0.2	0.2	0.2	0.2	0.1	0.0	-0.3	-0.2
DE	-0.3	1.1	0.1	-0.8	-0.5	-0.5	-0.3	-0.3	-0.4	-0.5	-0.5	-0.3	-0.2
EE	-0.4	1.2	0.4	-0.8	-0.3	-0.4	-0.5	-0.7	-0.8	-0.7	-0.4	-0.3	-0.3
IE	0.5	3.1	0.8	0.2	0.5	0.4	0.1	0.0	0.0	0.2	0.5	0.6	0.4
EL	-0.4	-0.2	0.1	0.4	-0.3	-0.5	-0.8	-0.8	-0.8	-0.7	-0.4	-0.3	-0.4
ES	0.1	-0.3	-0.2	0.4	0.2	-0.2	-0.4	-0.3	0.2	0.4	0.6	0.6	0.4
FR	0.3	0.4	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1
HR	-0.4	0.2	-0.5	-0.8	-0.1	-0.1	-0.2	-0.3	-0.4	-0.6	-0.6	-0.6	-0.5
IT	-0.2	0.0	0.6	0.4	-0.3	-0.6	-0.8	-0.5	-0.3	0.0	-0.3	-0.1	-0.4
CY	0.2	0.1	0.6	1.8	0.5	0.4	0.3	0.1	0.0	-0.3	-0.4	-0.3	-0.1
LV	-0.8	-0.2	-0.6	-1.7	-1.2	-1.1	-0.7	-0.9	-1.1	-1.0	-0.5	-0.2	0.0
LT	-0.9	1.2	-0.6	-2.5	-2.1	-1.6	-1.1	-0.8	-0.9	-1.1	-0.7	-0.1	0.1
LU	0.8	2.5	2.9	1.6	1.0	0.8	0.6	0.4	0.2	0.1	0.1	0.2	0.2
HU	-0.3	1.6	0.1	0.2	-0.2	-0.6	-0.9	-0.7	-0.5	-0.5	-0.5	-0.3	-0.2
MT	0.4	3.5	1.6	0.9	0.7	0.5	0.2	-0.1	-0.4	-0.5	-0.3	-0.1	0.0
NL	0.2	0.9	0.7	0.4	0.0	0.0	0.2	0.3	0.3	0.2	0.0	-0.1	-0.1
AT	0.1	0.7	0.7	0.4	0.2	0.3	0.2	0.0	-0.2	-0.4	-0.3	-0.3	-0.2
PL	-0.8	0.5	-0.3	-0.9	-0.7	-0.8	-1.0	-1.1	-1.2	-1.0	-0.8	-0.6	-0.6
PT	-0.6	0.1	-0.2	0.0	-0.4	-0.8	-0.9	-1.0	-0.9	-0.8	-0.7	-0.7	-0.8
RO	-0.8	-0.1	-0.4	-1.3	-1.4	-1.3	-1.1	-1.0	-0.8	-0.5	-0.4	-0.3	-0.3
SI	-0.2	0.7	0.5	-0.3	-0.6	-0.5	-0.6	-0.6	-0.5	-0.3	0.0	0.1	-0.1
SK	-0.4	0.6	-0.3	-0.7	-0.3	-0.4	-0.6	-0.6	-0.6	-0.6	-0.4	-0.2	0.0
FI	0.0	0.4	-0.1	-0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	-0.1
SE	0.5	1.5	0.5	0.7	0.6	0.6	0.5	0.4	0.3	0.1	0.2	0.3	0.3
UK	0.3	1.1	0.6	0.3	0.4	0.4	0.3	0.4	0.3	0.1	0.0	0.0	0.0
NO	0.3	0.5	2.0	0.7	0.4	0.3	0.3	0.3	0.2	0.1	0.0	0.1	0.1
EU*	-0.1	0.6	0.2	-0.1	-0.1	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1
EA	-0.1	0.5	0.2	0.0	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0.0	-0.1
EU27	-0.2	0.5	0.1	-0.2	-0.2	-0.3	-0.4	-0.3	-0.3	-0.2	-0.1	-0.1	-0.1
EU* s	-0.1	0.9	0.3	-0.1	-0.2	-0.3	-0.3	-0.3	-0.4	-0.3	-0.2	-0.1	-0.1

Table III.1.19: Labour productivity per hour (growth rate)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.3	0.6	0.7	0.8	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
BG	2.3	2.0	3.0	3.3	2.7	2.5	2.4	2.3	2.2	2.0	1.9	1.7	1.5
CZ	1.8	1.1	2.0	2.3	2.0	2.0	1.9	1.8	1.7	1.7	1.6	1.6	1.5
DK	1.4	0.7	0.9	1.0	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
DE	1.5	0.7	1.3	1.6	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
EE	1.9	1.1	1.9	2.5	2.1	1.9	1.9	1.9	1.9	1.8	1.7	1.6	1.5
IE	1.6	1.8	2.4	1.5	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
EL	1.1	-1.2	-0.4	0.2	0.8	1.2	1.6	1.9	1.9	1.8	1.7	1.6	1.5
ES	1.3	0.7	1.0	0.9	1.1	1.3	1.5	1.6	1.6	1.6	1.6	1.6	1.5
FR	1.3	0.7	0.9	0.9	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
HR	1.7	0.9	1.5	1.4	1.1	1.5	1.8	2.2	2.1	1.9	1.8	1.7	1.5
IT	1.0	-0.3	-0.1	0.2	0.6	0.9	1.2	1.6	1.6	1.6	1.6	1.6	1.5
CY	1.2	0.2	0.5	0.2	0.6	0.9	1.3	1.7	1.7	1.7	1.6	1.6	1.5
LV	2.7	1.6	4.8	5.0	3.9	2.7	2.4	2.1	2.0	1.9	1.8	1.7	1.5
LT	2.0	0.8	2.3	3.1	2.5	2.2	2.1	1.9	1.9	1.8	1.7	1.6	1.5
LU	1.4	0.5	0.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
HU	1.9	0.2	1.8	2.2	2.4	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.5
MT	1.9	2.5	2.6	2.9	2.4	2.1	1.8	1.6	1.6	1.6	1.6	1.5	1.5
NL	1.3	0.4	0.7	0.8	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
AT	1.4	0.7	1.0	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
PL	2.2	2.1	2.9	3.1	2.7	2.4	2.2	2.0	1.9	1.8	1.7	1.6	1.5
PT	1.5	0.3	1.0	1.2	1.4	1.6	1.7	1.9	1.8	1.8	1.7	1.6	1.5
RO	2.6	3.6	3.8	4.2	3.5	2.6	2.4	2.2	2.1	1.9	1.8	1.7	1.5
SI	1.8	0.3	1.6	2.2	2.1	2.0	1.9	1.8	1.8	1.7	1.7	1.6	1.5
SK	2.2	1.7	3.0	3.6	3.1	2.6	2.3	1.8	1.8	1.7	1.7	1.6	1.5
FI	1.3	0.1	0.8	1.1	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
SE	1.5	1.1	1.4	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
UK	1.4	0.5	1.0	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
NO	1.5	0.5	0.6	1.3	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5
EU*	1.5	0.6	1.1	1.3	1.4	1.5	1.6	1.7	1.6	1.6	1.6	1.6	1.6
EA	1.4	0.5	0.9	1.1	1.2	1.3	1.5	1.6	1.6	1.6	1.6	1.6	1.5
EU27	1.5	0.7	1.1	1.3	1.4	1.5	1.6	1.7	1.7	1.6	1.6	1.6	1.6
EU* s	1.7	0.9	1.6	1.8	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.6	1.5

Table III.1.20: TFP (growth rate)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.8	0.3	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0
BG	1.4	1.5	1.7	1.7	1.7	1.6	1.6	1.5	1.4	1.3	1.2	1.1	1.0
CZ	1.2	1.0	1.3	1.4	1.3	1.3	1.2	1.1	1.1	1.1	1.1	1.0	1.0
DK	0.9	0.4	0.7	0.8	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
DE	1.0	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EE	1.2	0.8	1.1	1.2	1.3	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.0
IE	1.1	1.9	1.8	1.1	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
EL	0.8	-0.6	0.0	0.3	0.5	0.8	1.0	1.3	1.2	1.2	1.1	1.1	1.0
ES	0.9	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.1	1.0	1.0	1.0	1.0
FR	0.8	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0
HR	1.0	0.3	0.5	0.5	0.7	0.9	1.2	1.4	1.3	1.3	1.2	1.1	1.0
IT	0.7	-0.2	0.0	0.1	0.3	0.6	0.8	1.0	1.0	1.0	1.0	1.0	1.0
CY	0.7	-0.2	0.0	0.1	0.3	0.6	0.9	1.1	1.1	1.1	1.1	1.0	1.0
LV	1.8	3.3	3.2	3.2	2.5	1.7	1.6	1.4	1.3	1.2	1.1	1.1	1.0
LT	1.2	0.2	1.1	1.5	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.0
LU	0.9	0.4	0.7	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
HU	1.3	0.7	1.1	1.5	1.5	1.5	1.4	1.3	1.3	1.2	1.1	1.1	1.0
MT	1.2	1.7	1.6	1.6	1.5	1.3	1.2	1.0	1.0	1.0	1.0	1.0	1.0
NL	0.8	0.2	0.4	0.5	0.6	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0
AT	0.9	0.5	0.7	0.8	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
PL	1.3	1.1	1.5	1.7	1.7	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1.0
PT	1.0	0.5	0.7	0.8	0.9	1.0	1.1	1.2	1.2	1.1	1.1	1.0	1.0
RO	1.7	2.8	2.6	2.6	2.2	1.7	1.6	1.4	1.3	1.2	1.2	1.1	1.0
SI	1.2	0.9	1.3	1.4	1.4	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0
SK	1.5	2.0	2.3	2.4	2.1	1.7	1.5	1.2	1.1	1.1	1.1	1.0	1.0
FI	0.8	-0.1	0.3	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0
SE	1.0	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
UK	0.9	0.3	0.6	0.8	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
NO	0.9	-0.2	0.4	0.7	0.8	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0
EU*	0.9	0.5	0.7	0.8	0.9	0.9	1.0	1.1	1.0	1.0	1.0	1.0	1.0
EA	0.9	0.4	0.6	0.7	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0
EU27	0.9	0.5	0.7	0.8	0.9	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.0
EU* s	1.1	0.8	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0

Table III.1.21: Capital deepening (contribution to labour productivity growth)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.4	0.2	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BG	0.9	0.5	1.3	1.6	1.1	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.5
CZ	0.6	0.0	0.7	0.9	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5
DK	0.5	0.3	0.3	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
DE	0.5	-0.1	0.4	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
EE	0.7	0.3	0.8	1.3	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5
IE	0.5	-0.1	0.6	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
EL	0.4	-0.6	-0.3	-0.1	0.3	0.4	0.5	0.7	0.7	0.6	0.6	0.6	0.5
ES	0.5	0.4	0.5	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.5	0.5	0.5
FR	0.5	0.3	0.4	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
HR	0.7	0.6	1.0	0.8	0.4	0.5	0.6	0.8	0.7	0.7	0.6	0.6	0.5
IT	0.4	-0.1	0.0	0.1	0.2	0.3	0.4	0.6	0.6	0.6	0.5	0.5	0.5
CY	0.5	0.4	0.5	0.1	0.3	0.3	0.5	0.6	0.6	0.6	0.6	0.6	0.5
LV	0.9	-1.7	1.5	1.9	1.4	0.9	0.9	0.7	0.7	0.7	0.6	0.6	0.5
LT	0.8	0.6	1.2	1.6	1.0	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5
LU	0.5	0.1	0.1	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
HU	0.7	-0.5	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5
MT	0.7	0.7	0.9	1.2	0.9	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5
NL	0.5	0.1	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
AT	0.5	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
PL	0.8	1.1	1.4	1.4	1.0	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5
PT	0.5	-0.3	0.2	0.4	0.5	0.5	0.6	0.7	0.6	0.6	0.6	0.6	0.5
RO	0.9	0.8	1.1	1.6	1.3	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.5
SI	0.6	-0.6	0.3	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.5
SK	0.7	-0.3	0.8	1.3	1.1	0.9	0.8	0.6	0.6	0.6	0.6	0.6	0.5
FI	0.5	0.2	0.6	0.5	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SE	0.5	0.3	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
UK	0.5	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NO	0.5	0.6	0.3	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
EU*	0.5	0.1	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
EA	0.5	0.1	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
EU27	0.5	0.2	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
EU* s	0.6	0.1	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5

Table III.1.22: Potential real GDP per capita (growth rate)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.1	0.6	0.7	0.6	0.9	1.0	1.2	1.4	1.4	1.4	1.4	1.4	1.4
BG	2.1	3.6	3.0	2.6	2.4	2.0	1.8	1.7	1.5	1.7	1.9	2.0	1.8
CZ	1.6	2.0	1.7	1.5	1.9	1.6	1.2	1.1	1.1	1.4	1.8	1.9	1.7
DK	1.3	0.4	0.8	1.1	1.1	1.2	1.4	1.6	1.7	1.6	1.4	1.2	1.2
DE	1.2	0.9	1.2	0.7	0.9	1.0	1.4	1.4	1.4	1.3	1.3	1.4	1.5
EE	1.7	2.2	2.4	1.8	1.9	1.7	1.6	1.5	1.4	1.4	1.6	1.7	1.6
IE	1.6	4.1	2.4	1.1	1.4	1.3	1.0	0.9	1.0	1.4	1.8	1.9	1.7
EL	1.4	-0.8	0.3	1.3	1.1	1.2	1.3	1.7	1.7	1.9	2.1	2.1	1.9
ES	1.3	0.4	0.7	1.2	1.1	0.8	0.8	1.1	1.7	1.9	2.2	2.1	1.8
FR	1.3	0.7	0.7	0.8	0.8	1.0	1.4	1.7	1.7	1.7	1.6	1.5	1.4
HR	1.3	1.9	1.5	0.9	0.6	0.7	0.9	1.5	1.7	2.0	1.6	1.8	1.5
IT	1.0	-0.3	0.6	0.6	0.3	0.4	0.6	1.2	1.5	1.9	1.6	1.8	1.4
CY	1.1	-0.1	0.5	1.4	0.7	0.9	1.3	1.6	1.3	1.1	1.1	1.3	1.5
LV	2.6	2.2	5.0	4.3	3.7	2.5	2.5	1.8	1.4	1.4	1.9	2.1	2.1
LT	2.0	3.3	2.9	1.9	1.9	1.9	2.1	2.0	1.6	1.3	1.7	2.2	2.2
LU	1.1	0.7	1.6	1.2	0.9	1.0	1.0	1.1	1.1	1.1	1.2	1.3	1.4
HU	1.8	2.1	1.9	2.5	2.3	1.8	1.4	1.5	1.7	1.5	1.5	1.7	1.6
MT	2.0	4.9	3.2	3.0	2.6	2.2	1.8	1.4	1.1	0.9	1.1	1.4	1.6
NL	1.2	0.7	0.8	0.7	0.6	0.9	1.3	1.7	1.8	1.7	1.5	1.3	1.3
AT	1.2	0.3	0.9	1.0	1.0	1.3	1.4	1.3	1.3	1.2	1.3	1.3	1.4
PL	1.8	2.7	2.7	2.4	2.3	1.9	1.6	1.3	1.2	1.2	1.5	1.6	1.6
PT	1.4	0.7	1.1	1.5	1.3	1.1	1.2	1.4	1.5	1.6	1.7	1.6	1.4
RO	2.3	4.2	4.1	3.5	2.8	1.9	1.8	1.7	1.7	1.8	1.8	1.8	1.7
SI	1.6	1.0	2.0	1.9	1.6	1.6	1.3	1.3	1.4	1.7	1.9	1.9	1.6
SK	2.1	2.2	2.6	2.9	2.9	2.4	2.0	1.4	1.4	1.4	1.6	1.8	1.9
FI	1.2	0.2	0.4	0.5	0.9	1.3	1.5	1.6	1.6	1.6	1.5	1.5	1.6
SE	1.3	1.5	0.9	1.1	1.2	1.4	1.4	1.4	1.3	1.2	1.4	1.5	1.5
UK	1.3	0.8	0.9	1.0	1.2	1.3	1.4	1.6	1.5	1.4	1.4	1.4	1.4
NO	1.2	1.2	1.1	1.2	1.0	1.0	1.2	1.4	1.4	1.3	1.3	1.3	1.3
EU*	1.4	1.0	1.2	1.2	1.2	1.2	1.3	1.5	1.5	1.5	1.6	1.6	1.5
EA	1.3	0.7	1.0	0.9	0.9	1.0	1.2	1.4	1.5	1.6	1.6	1.6	1.5
EU27	1.4	1.0	1.3	1.2	1.2	1.2	1.3	1.5	1.5	1.6	1.6	1.6	1.6
EU* s	1.5	1.5	1.7	1.6	1.5	1.4	1.4	1.5	1.4	1.5	1.6	1.7	1.6

Table III.1.23: Potential real GDP per worker (growth rate)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	0.5	0.7	0.8	0.9	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
BG	2.4	2.0	3.1	3.4	2.8	2.5	2.4	2.3	2.2	2.0	1.9	1.7	1.5
CZ	1.8	1.3	2.2	2.3	2.0	2.0	1.9	1.8	1.7	1.7	1.6	1.6	1.5
DK	1.4	0.5	0.9	1.0	1.4	1.5	1.4	1.5	1.5	1.6	1.6	1.5	1.5
DE	1.4	0.3	0.9	1.6	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.5	1.5
EE	1.9	1.0	1.9	2.5	2.1	2.0	1.9	2.0	1.9	1.8	1.7	1.6	1.5
IE	1.6	2.2	2.4	1.5	1.2	1.4	1.5	1.6	1.6	1.5	1.5	1.5	1.5
EL	1.2	-0.9	-0.1	0.2	0.8	1.2	1.6	2.0	1.9	1.8	1.7	1.6	1.6
ES	1.3	0.7	1.1	1.0	1.0	1.3	1.4	1.6	1.6	1.6	1.6	1.6	1.5
FR	1.3	0.4	0.7	0.9	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
HR	1.3	0.7	1.3	1.3	0.4	0.4	0.7	1.4	1.7	2.2	1.8	2.0	1.7
IT	1.1	-0.3	-0.1	0.2	0.6	0.9	1.2	1.6	1.6	1.6	1.6	1.6	1.5
CY	1.2	-0.1	0.4	0.2	0.6	0.9	1.3	1.7	1.7	1.7	1.6	1.6	1.5
LV	2.7	1.3	4.7	5.1	3.9	2.7	2.5	2.1	2.0	1.9	1.8	1.6	1.5
LT	2.1	1.2	2.3	3.1	2.5	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.5
LU	1.4	0.8	0.9	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
HU	1.9	0.1	1.8	2.2	2.3	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.5
MT	1.9	2.1	2.3	2.9	2.3	2.0	1.8	1.6	1.6	1.6	1.6	1.5	1.5
NL	1.3	0.7	0.8	0.8	1.0	1.2	1.3	1.5	1.5	1.5	1.6	1.6	1.5
AT	1.3	0.1	0.5	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.5	1.5	1.5
PL	2.2	2.2	2.9	3.1	2.7	2.4	2.2	2.0	1.9	1.8	1.7	1.6	1.6
PT	1.5	0.1	1.0	1.2	1.4	1.6	1.8	1.9	1.9	1.8	1.7	1.6	1.6
RO	2.6	3.4	3.7	4.2	3.5	2.6	2.5	2.2	2.1	1.9	1.8	1.7	1.5
SI	1.8	0.6	1.6	2.2	2.1	2.0	1.9	1.9	1.8	1.7	1.6	1.6	1.5
SK	2.2	1.4	2.9	3.7	3.1	2.6	2.3	1.8	1.8	1.7	1.7	1.6	1.5
FI	1.3	0.4	0.9	1.1	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
SE	1.4	1.2	1.4	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
UK	1.4	0.6	1.0	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
NO	1.4	1.9	0.8	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5
EU*	1.5	0.6	1.1	1.4	1.4	1.5	1.6	1.7	1.6	1.6	1.6	1.6	1.6
EA	1.4	0.4	0.8	1.1	1.2	1.3	1.5	1.6	1.6	1.6	1.6	1.6	1.6
EU27	1.5	0.6	1.1	1.4	1.4	1.5	1.6	1.7	1.7	1.6	1.6	1.6	1.6
EU* s	1.6	0.9	1.6	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.5

Table III.1.24: Working age population (15-64) (in thousands)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	739	7,320	7,401	7,493	7,539	7,606	7,705	7,803	7,871	7,917	7,952	8,007	8,059
BG	-1,990	4,663	4,412	4,153	3,929	3,712	3,466	3,219	3,023	2,844	2,751	2,720	2,673
CZ	-1,291	6,968	6,789	6,742	6,675	6,604	6,362	6,044	5,833	5,674	5,607	5,661	5,677
DK	158	3,686	3,771	3,860	3,876	3,891	3,928	3,987	4,041	4,024	3,948	3,884	3,844
DE	-10,376	54,149	54,172	52,794	50,709	49,126	48,792	48,388	47,413	45,987	44,876	44,109	43,773
EE	-193	851	833	819	802	788	767	743	713	680	665	663	657
IE	532	3,018	3,085	3,177	3,255	3,287	3,268	3,221	3,196	3,248	3,366	3,477	3,550
EL	-2,785	6,904	6,667	6,377	6,050	5,640	5,228	4,842	4,569	4,445	4,357	4,255	4,118
ES	-2,212	30,659	30,314	29,803	28,875	27,762	26,627	25,702	25,684	26,382	27,260	28,015	28,447
FR	2,299	41,809	41,775	41,806	41,593	41,516	41,457	41,884	42,375	43,033	43,694	43,975	44,108
HR	-869	2,755	2,628	2,520	2,432	2,353	2,282	2,201	2,118	2,051	1,993	1,929	1,887
IT	-9,145	39,049	38,719	38,096	36,796	35,104	33,493	32,425	31,842	31,427	31,008	30,533	29,904
CY	-23	584	592	601	607	616	624	624	614	595	576	566	561
LV	-535	1,272	1,197	1,102	1,015	960	905	851	794	742	721	733	736
LT	-938	1,897	1,752	1,556	1,387	1,267	1,177	1,107	1,046	986	942	941	959
LU	189	404	438	473	501	525	548	567	578	583	586	588	593
HU	-1,620	6,588	6,364	6,191	6,081	5,926	5,711	5,454	5,325	5,201	5,065	5,005	4,968
MT	-4	290	292	293	296	303	307	306	302	295	288	285	286
NL	-20	11,122	11,247	11,258	11,141	11,034	11,091	11,276	11,407	11,415	11,324	11,207	11,102
AT	-191	5,866	6,024	6,100	6,077	6,054	6,101	6,145	6,084	5,972	5,826	5,730	5,675
PL	-9,543	26,075	25,017	23,957	23,271	22,737	21,868	20,594	19,160	18,014	17,214	16,807	16,533
PT	-2,515	6,724	6,572	6,355	6,065	5,755	5,395	5,070	4,862	4,732	4,587	4,402	4,208
RO	-4,906	13,193	12,563	11,862	11,356	10,598	9,983	9,379	9,003	8,610	8,480	8,383	8,287
SI	-264	1,372	1,330	1,297	1,268	1,237	1,201	1,154	1,116	1,096	1,098	1,104	1,108
SK	-1,118	3,799	3,696	3,597	3,521	3,451	3,325	3,148	2,983	2,846	2,750	2,708	2,681
FI	-307	3,463	3,425	3,406	3,382	3,366	3,383	3,360	3,314	3,269	3,213	3,182	3,155
SE	1,802	6,218	6,405	6,659	6,875	7,066	7,261	7,452	7,589	7,648	7,694	7,867	8,019
UK	4,440	42,225	42,959	43,882	44,314	44,581	45,214	45,975	46,314	46,418	46,390	46,419	46,665
NO	579	3,439	3,524	3,631	3,712	3,763	3,826	3,907	3,962	3,980	3,985	3,994	4,018
EU*	-40,687	332,922	330,438	326,229	319,688	312,866	307,470	302,918	299,168	296,134	294,231	293,154	292,235
EA	-26,869	220,550	219,529	216,402	210,879	205,398	201,394	198,614	196,763	195,650	195,087	194,480	193,682
EU27	-45,127	290,697	287,478	282,347	275,374	268,285	262,255	256,943	252,854	249,716	247,841	246,735	245,570
EU* s	-1,453	11,890	11,801	11,651	11,417	11,174	10,981	10,819	10,685	10,576	10,508	10,470	10,437

Table III.1.25: Population growth (working age:15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.3	0.4	0.3	0.2	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1
BG	0.9	-1.4	-1.4	-1.1	-1.0	-1.3	-1.6	-1.4	-1.2	-1.2	-0.4	-0.4	-0.4
CZ	0.8	-0.8	-0.5	0.1	-0.3	-0.3	-1.1	-0.9	-0.7	-0.5	0.0	0.2	-0.1
DK	-0.9	0.7	0.5	0.4	-0.1	0.2	0.2	0.3	0.2	-0.3	-0.4	-0.3	-0.2
DE	-0.9	0.8	-0.3	-0.7	-0.8	-0.4	0.0	-0.3	-0.4	-0.7	-0.4	-0.3	-0.1
EE	0.2	-0.5	-0.5	-0.3	-0.3	-0.5	-0.6	-0.7	-0.9	-0.9	-0.2	-0.1	-0.3
IE	-0.1	0.4	0.5	0.6	0.3	0.1	-0.2	-0.4	0.0	0.5	0.8	0.6	0.3
EL	0.3	-1.0	-0.9	-0.9	-1.1	-1.5	-1.5	-1.5	-0.8	-0.5	-0.4	-0.6	-0.7
ES	0.5	-0.3	-0.2	-0.5	-0.8	-0.8	-0.9	-0.5	0.3	0.6	0.7	0.4	0.2
FR	0.1	0.0	0.0	0.0	-0.1	0.0	0.1	0.2	0.3	0.3	0.3	0.1	0.1
HR	0.8	-1.3	-1.1	-0.7	-0.7	-0.5	-0.6	-0.8	-0.8	-0.6	-0.6	-0.5	-0.5
IT	-0.2	-0.2	-0.3	-0.4	-0.9	-0.9	-0.9	-0.5	-0.3	-0.3	-0.2	-0.4	-0.5
CY	-0.3	0.1	0.4	0.3	0.2	0.3	0.3	-0.2	-0.5	-0.7	-0.5	-0.2	-0.2
LV	1.6	-1.6	-1.6	-1.8	-1.3	-1.1	-1.2	-1.2	-1.4	-1.2	0.0	0.2	0.0
LT	2.1	-1.8	-2.1	-2.4	-2.0	-1.6	-1.3	-1.1	-1.2	-1.1	-0.4	0.2	0.3
LU	-2.2	2.4	1.9	1.4	1.0	0.9	0.8	0.6	0.3	0.2	0.1	0.1	0.2
HU	0.6	-0.7	-1.0	-0.4	-0.3	-0.6	-1.1	-0.7	-0.4	-0.5	-0.5	-0.1	-0.2
MT	-0.2	0.3	0.1	0.1	0.4	0.5	0.1	-0.1	-0.4	-0.5	-0.4	-0.1	0.1
NL	-0.5	0.4	0.2	0.0	-0.3	-0.2	0.3	0.3	0.2	-0.1	-0.2	-0.3	-0.1
AT	-1.2	1.0	0.6	0.1	-0.1	0.0	0.2	0.0	-0.3	-0.4	-0.5	-0.2	-0.2
PL	0.5	-0.9	-1.1	-0.7	-0.5	-0.5	-1.0	-1.3	-1.5	-1.1	-0.7	-0.4	-0.4
PT	-0.3	-0.6	-0.6	-0.7	-1.0	-1.1	-1.4	-1.1	-0.7	-0.6	-0.6	-1.0	-0.9
RO	0.8	-1.1	-1.3	-1.0	-0.8	-1.4	-1.3	-1.2	-0.8	-0.7	-0.3	-0.3	-0.3
SI	0.8	-0.8	-0.7	-0.4	-0.5	-0.4	-0.7	-0.8	-0.5	-0.2	0.1	0.1	0.0
SK	0.4	-0.6	-0.7	-0.4	-0.5	-0.5	-1.0	-1.1	-1.1	-0.9	-0.4	-0.3	-0.3
FI	0.2	-0.4	-0.2	-0.1	-0.2	0.1	0.0	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2
SE	-0.4	0.8	0.7	0.8	0.5	0.6	0.5	0.4	0.3	0.1	0.3	0.5	0.3
UK	-0.4	0.5	0.5	0.4	0.1	0.2	0.4	0.2	0.1	0.0	0.0	0.1	0.1
NO	-0.6	0.7	0.6	0.6	0.3	0.3	0.4	0.4	0.2	0.0	0.0	0.1	0.1
EU*	0.0	0.0	-0.2	-0.3	-0.5	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1
EA	-0.2	0.1	-0.2	-0.4	-0.6	-0.5	-0.3	-0.3	-0.1	-0.1	0.0	-0.1	-0.1
EU27	0.0	-0.1	-0.3	-0.4	-0.6	-0.5	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	-0.1
EU* s	0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	-0.2	-0.1

Table III.1.26: Population (20-74) (in thousands)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1,011	7,759	7,954	8,086	8,238	8,328	8,372	8,441	8,523	8,606	8,679	8,735	8,770
BG	-2,275	5,209	4,982	4,651	4,396	4,184	4,006	3,814	3,589	3,373	3,196	3,024	2,933
CZ	-1,612	7,718	7,601	7,367	7,257	7,195	7,153	7,069	6,793	6,471	6,297	6,170	6,105
DK	320	3,977	4,071	4,143	4,233	4,273	4,286	4,303	4,326	4,359	4,399	4,375	4,297
DE	-9,215	58,324	59,123	59,141	58,328	57,069	55,236	53,686	53,244	52,703	51,629	50,188	49,109
EE	-204	919	912	894	884	866	851	835	811	787	760	728	715
IE	649	3,093	3,185	3,267	3,379	3,492	3,559	3,583	3,565	3,539	3,546	3,622	3,742
EL	-2,804	7,486	7,325	7,076	6,870	6,596	6,279	5,883	5,509	5,159	4,906	4,784	4,682
ES	-2,284	32,833	32,628	32,466	32,515	32,062	31,294	30,429	29,515	28,849	29,019	29,744	30,549
FR	3,509	44,269	45,060	45,202	45,370	45,356	45,317	45,304	45,381	45,938	46,496	47,146	47,778
HR	-803	2,953	2,906	2,830	2,746	2,656	2,571	2,500	2,435	2,357	2,274	2,210	2,150
IT	-8,393	42,735	42,734	42,329	42,163	41,537	40,150	38,477	36,903	35,879	35,312	34,853	34,342
CY	39	611	632	647	662	674	683	696	705	704	692	671	650
LV	-606	1,384	1,312	1,229	1,156	1,082	1,033	987	934	888	840	795	779
LT	-994	2,016	1,909	1,754	1,608	1,472	1,366	1,284	1,212	1,157	1,108	1,058	1,023
LU	245	415	456	500	538	569	594	614	632	645	653	657	660
HU	-1,651	7,134	7,033	6,869	6,650	6,479	6,417	6,297	6,093	5,841	5,722	5,609	5,483
MT	-1	318	328	328	329	330	333	338	339	336	330	324	317
NL	450	11,899	12,180	12,305	12,392	12,356	12,241	12,166	12,218	12,369	12,466	12,449	12,349
AT	140	6,247	6,449	6,639	6,783	6,830	6,794	6,743	6,738	6,730	6,650	6,534	6,387
PL	-9,227	27,612	27,606	26,780	25,829	24,806	24,237	23,731	22,847	21,600	20,250	19,170	18,385
PT	-2,300	7,267	7,211	7,102	6,946	6,719	6,426	6,122	5,781	5,470	5,264	5,125	4,966
RO	-4,902	14,006	13,694	13,104	12,435	11,819	11,536	10,945	10,431	9,930	9,593	9,217	9,104
SI	-280	1,483	1,474	1,451	1,421	1,397	1,366	1,332	1,294	1,250	1,217	1,202	1,202
SK	-1,036	4,000	4,006	3,947	3,855	3,774	3,700	3,633	3,506	3,335	3,183	3,055	2,963
FI	-311	3,810	3,837	3,768	3,740	3,719	3,683	3,669	3,676	3,646	3,601	3,557	3,499
SE	1,753	6,802	6,930	7,072	7,320	7,568	7,777	7,952	8,100	8,259	8,403	8,487	8,555
UK	6,032	44,918	46,033	46,678	47,874	48,762	49,051	49,330	49,868	50,502	50,831	50,975	50,950
NO	809	3,612	3,746	3,855	3,980	4,079	4,159	4,221	4,280	4,351	4,401	4,418	4,422
EU*	-34,751	357,195	359,570	357,622	355,917	351,970	346,309	340,163	334,970	330,680	327,316	324,465	322,444
EA	-22,385	236,866	238,713	238,129	237,177	234,227	229,276	224,222	220,487	217,990	216,351	215,227	214,481
EU27	-40,782	312,277	313,537	310,944	308,043	303,208	297,259	290,833	285,102	280,179	276,485	273,490	271,494
EU* s	-1,241	12,757	12,842	12,772	12,711	12,570	12,368	12,149	11,963	11,810	11,690	11,588	11,516

Table III.1.27: Population growth (20-74)

Country	Avg 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.2	0.8	0.5	0.4	0.3	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1
BG	-1.1	-0.9	-1.1	-1.4	-1.0	-0.9	-0.8	-1.2	-1.3	-1.1	-1.1	-1.0	-0.3
CZ	-0.4	-0.3	-0.4	-0.5	-0.2	0.0	-0.2	-0.4	-1.1	-0.8	-0.5	-0.4	0.0
DK	0.2	1.0	0.4	0.4	0.4	0.1	0.0	0.2	0.1	0.2	0.1	-0.3	-0.4
DE	-0.3	0.6	0.3	-0.2	-0.3	-0.5	-0.7	-0.4	-0.1	-0.3	-0.4	-0.6	-0.3
EE	-0.5	-0.4	-0.1	-0.4	-0.3	-0.4	-0.3	-0.5	-0.6	-0.6	-0.8	-0.8	-0.1
IE	0.4	0.6	0.6	0.5	0.8	0.5	0.3	0.0	-0.1	-0.2	0.2	0.5	0.7
EL	-0.9	-0.7	-0.6	-0.7	-0.6	-0.9	-1.1	-1.3	-1.3	-1.3	-0.7	-0.5	-0.4
ES	-0.1	-0.2	-0.2	0.0	0.0	-0.4	-0.5	-0.6	-0.6	-0.3	0.3	0.5	0.5
FR	0.1	0.5	0.4	0.0	0.1	0.0	-0.1	0.0	0.2	0.2	0.3	0.3	0.2
HR	-0.6	-0.8	-0.2	-0.6	-0.6	-0.7	-0.6	-0.5	-0.5	-0.7	-0.7	-0.5	-0.6
IT	-0.4	-0.2	0.1	-0.1	-0.1	-0.5	-0.8	-0.9	-0.8	-0.4	-0.3	-0.3	-0.3
CY	0.1	0.8	0.7	0.4	0.6	0.2	0.3	0.4	0.3	-0.2	-0.5	-0.7	-0.5
LV	-1.1	-1.6	-1.1	-1.4	-1.4	-1.1	-0.8	-1.0	-1.1	-1.0	-1.2	-0.9	0.0
LT	-1.2	-1.3	-1.3	-1.9	-1.6	-1.7	-1.3	-1.2	-1.0	-0.9	-0.9	-0.9	-0.2
LU	0.9	2.6	2.3	1.7	1.3	1.0	0.8	0.6	0.5	0.3	0.2	0.1	0.1
HU	-0.5	-0.2	-0.4	-0.6	-0.8	-0.3	-0.2	-0.5	-1.0	-0.7	-0.3	-0.4	-0.4
MT	0.0	1.3	0.2	0.0	0.1	0.0	0.3	0.3	-0.1	-0.2	-0.3	-0.5	-0.3
NL	0.1	0.6	0.5	0.2	0.1	-0.1	-0.2	-0.1	0.2	0.2	0.1	-0.1	-0.2
AT	0.1	0.9	0.8	0.5	0.3	0.0	-0.2	-0.1	0.0	-0.1	-0.3	-0.4	-0.4
PL	-0.7	0.1	-0.1	-0.8	-0.7	-0.7	-0.4	-0.5	-0.9	-1.2	-1.3	-1.0	-0.7
PT	-0.7	-0.3	-0.2	-0.4	-0.5	-0.8	-1.0	-1.0	-1.2	-0.9	-0.6	-0.5	-0.6
RO	-0.8	-0.7	-0.5	-1.1	-1.1	-0.8	-0.4	-1.1	-1.0	-0.9	-0.7	-0.6	-0.2
SI	-0.4	-0.3	0.0	-0.5	-0.3	-0.4	-0.5	-0.4	-0.6	-0.7	-0.4	-0.1	0.0
SK	-0.5	0.1	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.9	-1.0	-0.9	-0.8	-0.4
FI	-0.2	0.2	0.0	-0.3	-0.1	-0.2	-0.2	0.0	-0.1	-0.2	-0.3	-0.3	-0.3
SE	0.4	1.0	0.3	0.5	0.7	0.6	0.4	0.5	0.3	0.4	0.3	0.1	0.3
UK	0.2	0.9	0.5	0.4	0.5	0.2	0.1	0.1	0.3	0.2	0.1	0.0	0.0
NO	0.4	1.2	0.7	0.6	0.6	0.4	0.3	0.3	0.3	0.3	0.2	0.0	0.0
EU*	-0.2	0.2	0.1	-0.1	-0.1	-0.3	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1
EA	-0.2	0.2	0.2	-0.1	-0.1	-0.3	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1	0.0
EU27	-0.3	0.1	0.1	-0.2	-0.2	-0.4	-0.4	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1
EU* s	-0.3	0.2	0.0	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.2

Table III.1.28: Labour force 15-64 (thousands)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	747	4,957	5,130	5,281	5,339	5,404	5,473	5,539	5,590	5,611	5,633	5,673	5,705
BG	-1,429	3,205	3,045	2,831	2,652	2,477	2,305	2,143	2,004	1,893	1,840	1,814	1,776
CZ	-1,094	5,235	5,110	4,999	4,946	4,832	4,620	4,437	4,297	4,174	4,131	4,154	4,141
DK	168	2,951	3,057	3,129	3,145	3,156	3,182	3,227	3,270	3,256	3,202	3,154	3,120
DE	-8,153	42,242	42,260	41,139	39,573	38,374	38,049	37,661	36,894	35,835	34,991	34,392	34,089
EE	-163	659	644	624	613	599	582	563	539	515	505	503	497
IE	363	2,128	2,166	2,200	2,251	2,291	2,297	2,275	2,262	2,294	2,365	2,438	2,491
EL	-1,627	4,698	4,594	4,470	4,320	4,116	3,878	3,633	3,437	3,324	3,241	3,164	3,071
ES	-840	22,766	22,861	22,680	22,307	21,613	20,679	19,896	19,807	20,267	20,928	21,553	21,926
FR	3,046	29,763	29,955	30,230	30,329	30,385	30,619	31,072	31,481	31,991	32,462	32,686	32,810
HR	-478	1,809	1,767	1,712	1,672	1,639	1,602	1,548	1,497	1,452	1,407	1,365	1,331
IT	-5,160	25,374	25,604	25,465	24,784	23,820	22,726	22,016	21,565	21,224	20,920	20,616	20,214
CY	15	426	445	459	467	475	481	483	478	466	453	445	440
LV	-408	970	905	830	766	717	682	651	610	572	558	562	562
LT	-693	1,434	1,325	1,183	1,052	954	895	858	819	772	736	731	741
LU	128	283	310	335	354	370	384	394	399	402	404	407	411
HU	-831	4,623	4,616	4,739	4,710	4,567	4,367	4,175	4,086	3,987	3,879	3,829	3,793
MT	27	201	211	223	232	239	243	243	240	234	229	227	227
NL	292	8,863	8,982	9,065	9,022	8,964	9,040	9,198	9,325	9,352	9,309	9,230	9,156
AT	-16	4,475	4,638	4,653	4,684	4,757	4,811	4,826	4,768	4,668	4,568	4,502	4,458
PL	-6,637	18,019	17,693	16,914	16,377	15,772	14,974	14,078	13,191	12,463	11,972	11,672	11,382
PT	-1,740	4,962	4,933	4,814	4,644	4,428	4,164	3,918	3,748	3,630	3,506	3,364	3,221
RO	-3,262	8,650	8,377	7,907	7,439	6,869	6,412	6,057	5,824	5,636	5,547	5,466	5,387
SI	-175	985	980	962	930	905	877	846	822	808	806	810	810
SK	-726	2,739	2,708	2,647	2,586	2,531	2,437	2,327	2,222	2,128	2,062	2,031	2,014
FI	-153	2,628	2,606	2,586	2,575	2,580	2,592	2,582	2,561	2,535	2,504	2,489	2,474
SE	1,400	5,113	5,257	5,431	5,595	5,752	5,918	6,079	6,183	6,215	6,264	6,399	6,513
UK	4,774	32,599	33,389	34,186	34,828	35,347	36,026	36,665	37,092	37,183	37,161	37,234	37,373
NO	480	2,683	2,763	2,849	2,917	2,961	3,014	3,078	3,122	3,134	3,138	3,147	3,163
EU*	-22,626	242,758	243,566	241,695	238,193	233,934	230,313	227,387	225,010	222,886	221,582	220,912	220,133
EA	-15,236	160,553	161,256	159,846	156,829	153,522	150,909	148,979	147,567	146,628	146,179	145,824	145,316
EU27	-27,399	210,159	210,177	207,509	203,364	198,587	194,287	190,722	187,918	185,704	184,421	183,678	182,760
EU* s	-808	8,670	8,699	8,632	8,507	8,355	8,225	8,121	8,036	7,960	7,914	7,890	7,862

Table III.1.29: Labour force 20-74 (thousands)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	863	4,950	5,125	5,305	5,431	5,509	5,573	5,640	5,691	5,721	5,743	5,780	5,813
BG	-1,414	3,252	3,113	2,911	2,736	2,566	2,409	2,257	2,111	1,996	1,924	1,878	1,838
CZ	-1,099	5,321	5,213	5,079	5,011	4,913	4,747	4,583	4,427	4,299	4,238	4,235	4,222
DK	347	2,835	2,942	3,033	3,100	3,121	3,137	3,173	3,221	3,255	3,262	3,228	3,182
DE	-7,380	41,989	42,345	41,444	40,355	39,289	38,627	38,205	37,592	36,722	35,792	35,061	34,609
EE	-174	685	668	642	631	618	602	583	561	539	524	517	511
IE	418	2,134	2,178	2,226	2,289	2,351	2,378	2,374	2,358	2,366	2,413	2,486	2,551
EL	-1,372	4,736	4,632	4,527	4,423	4,297	4,113	3,913	3,721	3,576	3,485	3,423	3,363
ES	39	22,684	22,976	23,141	23,110	22,644	21,862	21,085	20,730	20,966	21,555	22,226	22,723
FR	3,863	29,510	29,742	30,162	30,453	30,625	30,973	31,478	31,915	32,405	32,880	33,204	33,373
HR	-425	1,794	1,766	1,718	1,682	1,656	1,630	1,590	1,542	1,494	1,448	1,407	1,368
IT	-3,446	25,629	26,112	26,420	26,138	25,474	24,552	23,733	23,185	22,997	22,704	22,482	22,183
CY	44	429	450	465	476	485	492	497	498	493	484	476	472
LV	-414	995	931	857	802	750	717	686	647	611	589	581	581
LT	-710	1,461	1,349	1,197	1,075	978	918	878	840	794	757	746	751
LU	129	279	307	333	352	368	381	391	397	400	402	405	409
HU	-761	4,630	4,620	4,765	4,776	4,658	4,480	4,292	4,177	4,079	3,975	3,909	3,869
MT	26	197	208	219	228	235	239	239	237	231	226	223	223
NL	833	8,429	8,634	8,848	8,904	8,890	8,908	9,012	9,160	9,275	9,332	9,316	9,262
AT	121	4,362	4,550	4,633	4,674	4,737	4,802	4,823	4,787	4,709	4,623	4,545	4,483
PL	-6,444	18,168	17,991	17,432	16,813	16,169	15,437	14,633	13,799	13,040	12,470	12,069	11,724
PT	-1,542	5,082	5,065	5,033	4,946	4,773	4,556	4,323	4,105	3,935	3,803	3,678	3,541
RO	-3,255	8,808	8,531	8,100	7,623	7,124	6,705	6,341	6,074	5,879	5,746	5,631	5,552
SI	-171	985	981	964	936	914	887	858	833	817	812	814	814
SK	-589	2,740	2,717	2,658	2,599	2,551	2,479	2,397	2,317	2,245	2,191	2,161	2,150
FI	-41	2,595	2,577	2,548	2,545	2,561	2,575	2,584	2,577	2,570	2,562	2,555	
SE	1,353	5,110	5,240	5,395	5,557	5,717	5,875	6,034	6,145	6,196	6,249	6,350	6,463
UK	5,387	32,248	33,032	33,697	34,518	35,241	35,808	36,426	37,146	37,434	37,506	37,569	37,635
NO	516	2,650	2,747	2,831	2,906	2,961	3,009	3,065	3,113	3,139	3,148	3,155	3,166
EU*	-15,814	242,034	243,995	243,748	242,182	239,216	235,861	233,031	230,801	229,050	227,703	226,964	226,220
EA	-9,502	159,870	161,548	161,621	160,368	158,050	155,632	153,702	152,159	151,378	150,884	150,687	150,367
EU27	-21,201	209,786	210,964	210,052	207,665	203,974	200,053	196,605	193,655	191,616	190,196	189,394	188,586
EU* s	-565	8,644	8,714	8,705	8,649	8,543	8,424	8,323	8,243	8,180	8,132	8,106	8,079

Table III.1.30: Participation rate (20-74)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	63.8	64.4	65.6	65.9	66.2	66.6	66.8	66.8	66.5	66.2	66.2	66.3
BG	0.2	62.4	62.5	62.6	62.2	61.3	60.1	59.2	58.8	59.2	60.2	62.1	62.7
CZ	0.2	68.9	68.6	68.9	69.0	68.3	66.4	64.8	65.2	66.4	67.3	68.7	69.2
DK	2.8	71.3	72.3	73.2	73.2	73.0	73.2	73.7	74.5	74.7	74.1	73.8	74.0
DE	-1.5	72.0	71.6	70.1	69.2	68.8	69.9	71.2	70.6	69.7	69.3	69.9	70.5
EE	-3.0	74.5	73.3	71.8	71.4	71.4	70.8	69.8	69.2	68.5	69.0	70.9	71.5
IE	-0.8	69.0	68.4	68.1	67.7	67.3	66.8	66.3	66.2	66.9	68.1	68.6	68.2
EL	8.6	63.3	63.2	64.0	64.4	65.2	65.5	66.5	67.5	69.3	71.0	71.5	71.8
ES	5.3	69.1	70.4	71.3	71.1	70.6	69.9	69.3	70.2	72.7	74.3	74.7	74.4
FR	3.2	66.7	66.0	66.7	67.1	67.5	68.3	69.5	70.3	70.5	70.7	70.4	69.9
HR	2.9	60.7	60.7	60.7	61.2	62.4	63.4	63.6	63.3	63.4	63.7	63.6	63.6
IT	4.6	60.0	61.1	62.4	62.0	61.3	61.2	61.7	62.8	64.1	64.3	64.5	64.6
CY	2.4	70.2	71.2	71.8	71.8	71.9	72.0	71.5	70.6	70.0	69.9	71.0	72.7
LV	2.7	71.9	70.9	69.8	69.3	69.3	69.4	69.5	69.3	68.8	70.1	73.1	74.6
LT	1.0	72.4	70.7	68.3	66.8	66.4	67.2	68.4	69.3	68.6	68.3	70.5	73.4
LU	-5.4	67.4	67.4	66.6	65.5	64.7	64.2	63.6	62.8	62.0	61.6	61.6	61.9
HU	5.7	64.9	65.7	69.4	71.8	71.9	69.8	68.2	68.6	69.8	69.5	69.7	70.6
MT	8.4	62.0	63.5	66.9	69.4	71.4	71.9	70.8	69.8	68.8	68.4	69.0	70.4
NL	4.2	70.8	70.9	71.9	71.9	71.9	72.8	74.1	75.0	75.0	74.9	74.8	75.0
AT	0.4	69.8	70.6	69.8	68.9	69.3	70.7	71.5	71.0	70.0	69.5	69.6	70.2
PL	-2.0	65.8	65.2	65.1	65.1	65.2	63.7	61.7	60.4	60.4	61.6	63.0	63.8
PT	1.4	69.9	70.2	70.9	71.2	71.0	70.9	70.6	71.0	71.9	72.2	71.8	71.3
RO	-1.9	62.9	62.3	61.8	61.3	60.3	58.1	57.9	58.2	59.2	59.9	61.1	61.0
SI	1.3	66.4	66.5	66.4	65.8	65.4	64.9	64.4	64.4	65.4	66.7	67.7	67.7
SK	4.1	68.5	67.8	67.3	67.4	67.6	67.0	66.0	66.1	67.3	68.8	70.7	72.6
FI	4.9	68.1	67.2	67.6	68.1	68.9	69.9	70.4	70.3	70.7	71.4	72.0	73.0
SE	0.4	75.1	75.6	76.3	75.9	75.5	75.5	75.9	75.9	75.0	74.4	74.8	75.5
UK	2.1	71.8	71.8	72.2	72.1	72.3	73.0	73.8	74.5	74.1	73.8	73.7	73.9
NO	-1.8	73.3	73.3	73.4	73.0	72.6	72.3	72.6	72.7	72.1	71.5	71.4	71.6
EU*	2.4	67.8	67.9	68.2	68.0	68.0	68.1	68.5	68.9	69.3	69.6	70.0	70.2
EA	2.6	67.5	67.7	67.9	67.6	67.5	67.9	68.5	69.0	69.4	69.7	70.0	70.1
EU27	2.3	67.2	67.3	67.6	67.4	67.3	67.3	67.6	67.9	68.4	68.8	69.3	69.5
EU* s	1.9	67.8	67.9	68.1	68.1	68.1	68.0	67.9	67.9	68.2	68.5	69.3	69.8

Table III.1.31: Participation rate (15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.1	67.7	69.3	70.5	70.8	71.0	71.0	71.0	71.0	70.9	70.8	70.8	70.8
BG	-2.3	68.7	69.0	68.2	67.5	66.7	66.5	66.6	66.3	66.6	66.9	66.7	66.4
CZ	-2.2	75.1	75.3	74.2	74.1	73.2	72.6	73.4	73.7	73.6	73.7	73.4	72.9
DK	1.1	80.1	81.0	81.1	81.1	81.1	81.0	80.9	80.9	80.9	81.1	81.2	81.2
DE	-0.1	78.0	78.0	77.9	78.0	78.1	78.0	77.8	77.8	77.9	78.0	78.0	77.9
EE	-1.9	77.5	77.2	76.2	76.5	76.0	75.8	75.7	75.5	75.7	75.9	75.8	75.6
IE	-0.3	70.5	70.2	69.2	69.2	69.7	70.3	70.6	70.8	70.6	70.2	70.1	70.2
EL	6.5	68.0	68.9	70.1	71.4	73.0	74.2	75.0	75.2	74.8	74.4	74.4	74.6
ES	2.8	74.3	75.4	76.1	77.3	77.8	77.7	77.4	77.1	76.8	76.8	76.9	77.1
FR	3.2	71.2	71.7	72.3	72.9	73.2	73.9	74.2	74.3	74.3	74.3	74.3	74.4
HR	4.9	65.7	67.2	67.9	68.8	69.7	70.2	70.3	70.7	70.8	70.6	70.8	70.6
IT	2.6	65.0	66.1	66.8	67.4	67.9	67.9	67.9	67.7	67.5	67.5	67.5	67.6
CY	5.6	72.9	75.2	76.3	77.0	77.2	77.1	77.3	77.9	78.4	78.6	78.7	78.5
LV	0.1	76.3	75.6	75.3	75.5	74.6	75.4	76.5	76.8	77.0	77.3	76.7	76.4
LT	1.7	75.6	75.6	76.0	75.9	75.3	76.1	77.5	78.4	78.3	78.2	77.7	77.3
LU	-0.8	70.1	70.9	70.8	70.7	70.6	70.0	69.4	69.1	69.0	69.1	69.3	69.3
HU	6.2	70.2	72.5	76.5	77.5	77.1	76.5	76.5	76.7	76.7	76.6	76.5	76.3
MT	10.3	69.2	72.2	76.3	78.5	79.0	79.2	79.4	79.5	79.3	79.4	79.6	79.5
NL	2.8	79.7	79.9	80.5	81.0	81.2	81.5	81.6	81.7	81.9	82.2	82.4	82.5
AT	2.3	76.3	77.0	76.3	77.1	78.6	78.9	78.5	78.4	78.2	78.4	78.6	78.6
PL	-0.3	69.1	70.7	70.6	70.4	69.4	68.5	68.4	68.8	69.2	69.5	69.4	68.8
PT	2.8	73.8	75.1	75.7	76.6	76.9	77.2	77.3	77.1	76.7	76.4	76.4	76.6
RO	-0.6	65.6	66.7	66.7	65.5	64.8	64.2	64.6	64.7	65.5	65.4	65.2	65.0
SI	1.3	71.8	73.7	74.2	73.3	73.1	73.0	73.3	73.6	73.7	73.5	73.3	73.1
SK	3.0	72.1	73.3	73.6	73.5	73.3	73.3	73.9	74.5	74.8	75.0	75.0	75.1
FI	2.5	75.9	76.1	75.9	76.1	76.6	76.6	76.8	77.3	77.5	77.9	78.2	78.4
SE	-1.0	82.2	82.1	81.6	81.4	81.4	81.5	81.6	81.5	81.3	81.4	81.3	81.2
UK	2.9	77.2	77.7	77.9	78.6	79.3	79.7	79.7	80.1	80.1	80.1	80.2	80.1
NO	0.7	78.0	78.4	78.5	78.6	78.7	78.8	78.8	78.8	78.7	78.8	78.8	78.7
EU*	2.4	72.9	73.7	74.1	74.5	74.8	74.9	75.1	75.2	75.3	75.3	75.4	75.3
EA	2.2	72.8	73.5	73.9	74.4	74.7	74.9	75.0	75.0	74.9	74.9	75.0	75.0
EU27	2.1	72.3	73.1	73.5	73.9	74.0	74.1	74.2	74.3	74.4	74.4	74.4	74.4
EU* s	2.0	72.8	73.7	74.1	74.4	74.5	74.6	74.8	74.9	74.9	75.0	74.9	74.9

Table III.1.32: Participation rate (15-24)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.6	29.0	29.7	28.8	29.6	29.8	29.4	29.6	29.6	29.3	29.3	29.5	29.5
BG	0.3	24.3	23.8	22.9	24.0	24.5	25.0	24.4	24.1	24.1	24.4	24.4	24.6
CZ	-2.1	32.4	29.3	27.0	30.0	29.7	30.6	31.1	30.2	28.9	29.0	29.8	30.2
DK	0.5	66.3	67.2	67.0	67.4	66.8	66.7	66.8	67.0	67.0	67.0	66.9	66.8
DE	-0.6	49.9	50.9	50.0	49.1	48.9	49.5	50.0	50.1	49.9	49.5	49.2	49.3
EE	0.3	42.3	41.1	39.2	43.0	42.2	42.8	43.2	42.3	41.6	41.8	42.3	42.6
IE	4.0	38.6	39.3	38.3	40.5	42.5	42.7	42.3	41.0	40.4	40.8	41.8	42.6
EL	2.2	25.7	26.3	25.9	27.6	28.5	28.5	27.6	26.9	26.7	27.0	27.6	27.9
ES	0.7	33.3	32.5	32.8	35.0	34.6	33.9	33.8	33.3	33.2	33.6	34.0	34.0
FR	1.7	37.5	38.7	39.2	39.8	39.1	39.3	39.0	38.8	39.0	39.2	39.3	39.2
HR	2.6	37.3	41.3	38.8	40.0	40.4	39.9	40.0	40.0	39.9	39.7	39.9	39.9
IT	0.3	26.8	26.5	26.5	27.6	27.9	27.2	26.9	26.7	26.6	26.8	27.1	27.1
CY	-0.8	38.7	40.2	37.7	38.2	38.4	37.7	39.3	39.8	39.0	38.3	38.1	37.9
LV	-2.6	39.6	35.0	34.0	36.0	33.9	38.3	39.2	37.3	35.5	35.1	35.7	37.0
LT	-2.3	36.2	36.4	31.8	30.9	32.3	34.6	36.6	36.1	32.9	31.3	32.2	33.9
LU	0.4	32.0	33.6	33.1	32.6	32.3	32.0	32.4	32.6	32.7	32.6	32.4	32.3
HU	-2.1	33.2	32.3	31.0	32.1	30.5	31.2	31.7	31.8	31.5	31.2	31.1	31.1
MT	-1.5	52.3	54.1	51.5	50.8	50.4	50.8	51.8	52.0	51.5	50.9	50.7	50.8
NL	2.2	68.2	70.3	70.9	70.8	70.4	70.2	70.4	70.5	70.6	70.6	70.5	70.4
AT	-1.3	58.1	58.3	57.6	57.1	56.7	56.9	57.2	57.4	57.3	57.1	56.9	56.9
PL	-2.1	34.9	34.1	30.5	32.8	32.5	33.2	33.8	33.2	32.2	32.0	32.5	32.9
PT	2.1	33.6	34.9	35.8	36.6	36.7	36.1	35.0	34.8	35.1	35.6	35.9	35.7
RO	0.9	28.2	29.1	28.7	30.0	28.5	29.0	29.4	29.2	29.1	29.1	29.0	29.1
SI	0.3	34.1	34.2	32.0	33.2	34.7	34.9	34.6	33.8	33.1	33.3	34.0	34.3
SK	-1.1	32.4	32.3	30.0	30.8	31.7	31.7	32.0	31.6	30.9	30.8	31.1	31.3
FI	-0.2	52.9	52.8	52.0	52.9	52.8	52.5	52.8	52.8	52.6	52.6	52.7	52.7
SE	-1.4	55.5	53.6	53.2	54.0	53.9	54.1	54.4	54.1	53.8	53.8	53.9	54.0
UK	-1.2	58.6	58.5	56.8	57.8	57.9	57.4	57.5	57.5	57.3	57.3	57.4	57.4
NO	0.0	54.9	55.4	54.5	55.3	54.8	54.6	54.9	55.0	55.0	54.9	54.9	54.8
EU*	0.8	42.0	42.3	41.3	42.4	42.5	42.8	43.1	42.9	42.6	42.5	42.7	42.8
EA	0.6	39.9	40.4	39.9	40.5	40.7	41.0	41.1	41.1	40.8	40.5	40.4	40.6
EU27	0.8	39.2	39.5	38.7	39.6	39.6	40.1	40.3	40.1	39.8	39.7	39.8	40.0
EU* s	0.0	40.4	40.6	39.4	40.4	40.3	40.6	40.8	40.5	40.1	40.0	40.2	40.4

Table III.1.33: Participation rate (25-54)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.2	85.1	85.3	85.4	85.2	85.1	85.2	85.3	85.3	85.3	85.3	85.3	85.3
BG	-1.2	82.0	82.2	82.0	81.6	81.0	80.6	80.7	80.9	81.0	81.0	80.9	80.8
CZ	-0.1	88.9	89.2	89.4	89.3	88.9	88.7	88.5	88.6	88.9	89.1	88.9	88.7
DK	-0.5	87.3	87.2	86.9	86.8	86.6	86.8	86.8	86.8	86.8	86.8	86.9	86.9
DE	0.0	87.4	87.4	87.3	87.3	87.4	87.4	87.4	87.3	87.4	87.4	87.5	87.4
EE	-0.2	87.9	87.7	87.6	87.5	87.4	87.4	87.6	87.7	87.8	87.7	87.7	87.7
IE	0.1	81.2	81.2	81.2	81.4	81.2	81.3	81.5	81.4	81.3	81.2	81.2	81.3
EL	2.8	85.4	86.5	87.2	87.4	87.6	88.1	88.3	88.4	88.3	88.1	88.1	88.2
ES	2.2	87.4	88.7	89.6	89.8	89.6	89.7	89.7	89.8	89.8	89.7	89.7	89.7
FR	0.5	87.5	87.7	87.7	87.6	87.7	87.9	88.0	87.9	87.9	87.9	88.0	88.0
HR	3.1	82.0	82.9	83.5	84.0	84.2	84.8	85.1	85.1	85.2	85.1	85.1	85.2
IT	-0.9	77.5	77.8	77.6	76.9	76.5	76.6	76.7	76.7	76.7	76.7	76.6	76.6
CY	1.7	86.8	87.5	87.8	87.9	87.8	88.0	88.2	88.4	88.5	88.5	88.5	88.5
LV	4.0	87.9	88.7	90.3	91.0	91.2	91.4	91.9	92.3	92.3	92.2	92.0	91.9
LT	3.2	89.3	90.2	91.3	91.9	92.1	92.3	92.4	92.6	92.8	92.8	92.6	92.5
LU	1.5	87.1	87.6	88.1	88.3	88.4	88.5	88.5	88.5	88.6	88.6	88.7	88.6
HU	2.6	86.1	87.4	88.2	88.4	88.6	88.7	88.6	88.6	88.6	88.6	88.7	88.7
MT	9.3	82.0	85.7	88.2	90.0	90.8	91.3	91.4	91.4	91.4	91.4	91.4	91.4
NL	0.3	87.0	87.1	87.0	87.1	87.1	87.2	87.2	87.2	87.2	87.3	87.3	87.3
AT	2.2	88.4	89.0	89.6	90.0	90.4	90.6	90.5	90.5	90.6	90.6	90.6	90.6
PL	0.8	85.0	85.4	85.4	85.2	85.2	85.5	85.7	86.0	86.0	85.9	85.8	85.8
PT	1.4	89.2	89.9	90.2	90.4	90.4	90.5	90.6	90.6	90.5	90.5	90.5	90.6
RO	-0.6	81.9	81.5	81.2	81.0	81.1	81.1	81.5	81.5	81.5	81.4	81.4	81.3
SI	-0.6	90.5	90.7	90.4	90.0	89.7	89.8	90.1	90.2	90.2	90.0	89.9	89.9
SK	0.6	87.6	87.9	88.0	87.8	87.9	88.0	87.9	88.1	88.2	88.2	88.2	88.2
FI	-0.5	86.3	85.9	85.8	85.6	85.5	85.7	85.7	85.8	85.8	85.9	85.9	85.8
SE	0.6	90.9	91.1	91.5	91.6	91.5	91.5	91.4	91.5	91.5	91.5	91.5	91.5
UK	3.1	86.1	86.9	87.6	88.2	88.6	88.9	89.2	89.2	89.2	89.2	89.2	89.2
NO	1.6	86.4	86.9	87.2	87.5	87.6	87.9	87.9	87.9	87.9	87.9	88.0	88.0
EU*	1.2	85.5	85.9	86.2	86.2	86.3	86.5	86.6	86.6	86.7	86.7	86.7	86.7
EA	0.8	85.5	85.8	86.0	86.0	85.9	86.0	86.1	86.1	86.2	86.2	86.2	86.3
EU27	0.9	85.4	85.8	86.0	85.9	85.9	86.0	86.1	86.2	86.2	86.2	86.3	86.3
EU* s	1.3	86.1	86.7	87.0	87.1	87.1	87.3	87.4	87.4	87.5	87.4	87.4	87.4

Table III.1.34: Participation rate (55-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	17.6	48.2	55.6	63.5	65.8	66.3	66.0	65.7	66.0	65.6	65.8	66.2	65.8
BG	4.4	58.9	58.6	60.6	63.1	63.2	63.2	63.4	61.6	61.4	63.4	64.0	63.3
CZ	6.2	61.1	60.3	62.2	67.3	67.6	65.6	67.0	66.7	65.7	67.9	69.1	67.3
DK	5.9	71.1	75.3	76.1	76.0	76.1	75.3	75.7	76.6	76.7	77.0	77.2	77.0
DE	2.7	71.4	71.4	72.0	72.6	73.8	74.2	74.0	73.7	73.6	73.5	73.8	74.1
EE	-0.2	71.2	70.6	71.8	73.1	71.9	71.2	71.0	69.8	70.0	71.4	72.0	71.0
IE	4.8	61.0	61.9	63.2	64.8	66.2	66.2	64.6	64.3	65.4	65.8	66.1	65.8
EL	30.2	45.2	48.8	58.3	65.0	69.3	71.3	72.9	74.6	75.0	75.3	75.6	75.3
ES	22.6	59.2	66.8	73.4	78.5	81.2	81.5	81.4	81.8	82.1	82.4	82.3	81.8
FR	14.6	53.5	57.2	61.1	63.5	64.0	66.2	67.5	68.1	68.8	68.6	68.4	68.1
HR	12.5	42.3	43.5	45.4	47.3	51.2	53.3	52.9	54.0	54.8	54.2	55.1	54.7
IT	19.7	53.4	60.5	66.5	70.2	71.8	71.1	71.5	71.8	72.2	72.6	73.0	73.1
CY	17.8	59.0	61.7	65.0	66.9	68.5	69.8	71.0	72.5	73.4	74.6	76.0	76.8
LV	4.9	67.5	64.5	65.1	67.5	69.5	70.9	71.5	70.0	68.7	72.7	73.3	72.4
LT	3.8	69.9	63.4	65.1	68.8	69.3	70.6	72.1	71.7	69.8	70.7	73.4	73.7
LU	0.1	42.4	44.2	43.1	42.4	42.8	42.9	42.9	43.0	42.7	42.1	42.4	42.5
HU	29.1	52.2	55.6	76.0	80.2	80.9	79.8	80.8	81.5	81.0	81.2	81.6	81.3
MT	24.5	45.6	44.4	54.4	61.7	65.8	67.7	69.2	69.8	69.0	68.6	69.7	70.1
NL	10.4	68.4	68.0	71.0	72.0	72.2	73.3	74.6	76.1	76.9	77.9	78.3	78.8
AT	9.5	51.8	55.1	52.3	53.6	58.5	61.0	61.4	61.7	60.8	60.8	61.1	61.3
PL	4.4	48.5	50.6	51.4	53.6	53.3	52.5	51.9	52.0	51.6	52.4	54.3	53.0
PT	11.0	58.4	63.8	66.2	68.5	69.4	69.1	68.9	69.5	70.0	69.8	69.6	69.4
RO	6.7	44.0	47.5	53.2	51.5	51.2	49.9	51.0	49.7	51.2	51.4	51.6	50.7
SI	19.7	41.1	50.7	59.4	60.8	61.6	60.1	59.3	58.8	59.6	60.1	61.4	60.9
SK	21.9	54.4	55.7	59.2	63.3	65.7	66.5	69.2	71.1	72.5	74.5	75.7	76.3
FI	13.4	66.2	67.3	67.9	68.3	70.6	71.0	72.0	74.0	75.2	77.1	78.6	79.6
SE	-2.2	79.9	78.5	77.6	77.2	77.4	77.8	78.3	78.0	76.7	77.7	78.1	77.7
UK	8.3	66.0	66.7	67.8	68.9	69.7	71.1	71.6	73.7	74.1	73.9	74.6	74.2
NO	-1.1	73.9	72.5	72.8	72.1	71.5	71.7	72.5	73.1	72.7	72.6	72.9	72.8
EU*	12.2	59.1	62.4	66.0	68.0	69.0	69.2	69.4	70.1	70.6	71.1	71.5	71.3
EA	13.2	59.8	63.5	67.3	69.8	71.3	71.8	72.0	72.2	72.4	72.7	73.0	73.0
EU27	12.5	58.2	61.8	65.7	67.9	68.9	68.9	69.1	69.5	70.0	70.6	71.0	70.8
EU* s	11.6	57.6	59.6	63.2	65.4	66.8	67.1	67.6	67.9	68.0	68.7	69.4	69.1

Table III.1.35: Participation rate (20-74) - Women

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.1	58.7	59.9	61.5	62.1	62.5	63.1	63.3	63.3	63.0	62.7	62.7	62.8
BG	0.6	57.0	56.9	57.2	56.9	55.9	54.9	54.1	53.7	54.1	55.1	57.0	57.6
CZ	2.4	60.9	60.9	61.7	62.5	62.1	60.4	59.0	59.2	60.6	61.6	62.9	63.3
DK	3.9	67.4	69.0	70.0	69.8	69.3	69.5	70.2	71.1	71.6	71.3	71.0	71.3
DE	1.4	67.0	67.1	66.3	65.9	65.9	67.3	68.7	68.3	67.5	67.2	67.7	68.4
EE	-2.7	69.3	67.6	65.8	65.7	65.8	65.3	64.5	64.0	63.3	63.9	66.0	66.6
IE	2.5	61.4	61.6	62.2	62.5	62.5	62.1	61.4	61.1	61.8	63.3	64.2	63.9
EL	11.5	55.7	56.4	58.0	58.8	59.7	60.0	61.0	62.2	64.1	66.0	66.9	67.2
ES	9.7	63.7	66.3	68.3	68.9	69.1	68.7	68.3	69.1	71.4	73.1	73.7	73.4
FR	3.9	62.5	62.0	62.8	63.4	64.0	64.9	66.0	66.7	66.9	67.1	67.0	66.5
HR	5.5	55.4	55.9	56.3	57.1	58.7	60.1	60.5	60.3	60.5	60.8	60.8	60.9
IT	7.5	50.1	51.9	54.0	54.3	54.1	54.3	54.7	55.7	56.9	57.1	57.5	57.7
CY	3.8	65.1	66.7	67.7	67.9	68.0	67.8	67.0	66.1	65.6	66.0	67.2	68.9
LV	5.9	67.9	67.7	67.2	66.9	67.0	67.2	67.6	67.7	67.4	68.9	72.2	73.8
LT	3.7	68.8	66.6	64.5	63.8	63.6	64.4	65.8	67.1	66.8	66.7	69.3	72.5
LU	-2.9	61.9	62.7	62.9	62.4	61.9	61.5	61.0	60.2	59.4	58.9	58.8	59.0
HU	8.7	57.3	59.0	63.3	66.3	66.7	64.7	63.2	63.6	65.0	64.8	65.1	66.0
MT	17.4	48.6	52.6	57.9	62.0	65.1	66.4	65.9	65.1	64.1	63.8	64.5	66.0
NL	6.2	65.3	65.8	67.1	67.4	67.8	68.8	70.3	71.4	71.5	71.3	71.3	71.5
AT	3.3	65.1	65.9	64.9	64.5	66.0	68.3	69.6	69.2	68.2	67.7	67.8	68.4
PL	-1.6	58.0	57.3	57.5	57.4	57.4	55.7	53.6	52.6	52.9	54.4	55.8	56.4
PT	5.2	65.4	66.7	68.1	68.9	69.0	69.1	68.9	69.6	70.8	71.4	71.0	70.6
RO	-2.5	53.2	52.0	51.2	50.6	49.6	47.6	47.6	48.0	49.1	49.8	50.8	50.7
SI	3.0	62.8	63.2	63.7	63.4	63.1	62.9	62.7	62.7	63.7	64.9	65.8	65.8
SK	6.7	61.2	61.2	61.5	62.0	62.4	62.0	61.1	61.4	62.7	64.2	66.1	67.9
FI	5.8	65.2	64.1	64.6	65.3	66.4	67.7	68.4	68.3	68.7	69.4	70.1	71.0
SE	1.1	72.2	72.7	73.5	73.3	73.1	73.2	73.5	73.5	72.6	72.0	72.5	73.2
UK	4.7	66.1	66.6	67.6	68.0	68.5	69.4	70.5	71.3	71.0	70.8	70.7	70.8
NO	-0.5	70.0	70.2	70.6	70.4	70.2	70.1	70.5	70.7	70.1	69.4	69.3	69.5
EU*	4.9	61.4	61.8	62.4	62.6	62.8	63.3	63.9	64.4	64.9	65.5	66.1	66.3
EA	5.2	61.5	62.1	62.5	62.5	62.7	63.7	64.5	65.2	65.7	66.3	66.6	66.7
EU27	4.9	60.6	61.0	61.5	61.8	61.8	62.3	62.7	63.2	63.8	64.6	65.2	65.5
EU* s	4.3	61.9	62.4	63.1	63.5	63.8	63.8	63.9	64.0	64.3	64.8	65.6	66.1

Table III.1.36: Participation rate (15-64) - Women

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.4	63.0	65.1	66.5	67.1	67.5	67.6	67.6	67.6	67.5	67.4	67.4	67.3
BG	-3.0	64.6	64.7	63.8	63.0	62.2	61.9	61.8	61.4	61.6	62.0	61.9	61.5
CZ	-1.0	67.7	68.2	67.5	67.9	67.0	66.2	66.9	67.1	67.3	67.6	67.3	66.7
DK	1.3	77.3	78.7	78.5	78.5	78.3	78.3	78.3	78.4	78.4	78.6	78.7	78.7
DE	2.4	73.6	74.0	74.6	75.2	75.6	75.8	75.8	75.9	76.0	76.0	76.0	75.9
EE	-2.2	73.3	72.8	72.0	72.1	71.7	71.3	71.1	70.9	71.1	71.4	71.3	71.1
IE	2.3	63.7	64.1	64.0	64.5	65.5	66.0	66.1	66.2	66.2	66.0	65.9	66.0
EL	9.2	60.7	62.4	64.6	66.5	68.1	69.4	70.4	70.6	70.2	69.7	69.7	69.9
ES	7.1	69.2	71.7	73.7	75.6	76.9	77.0	76.7	76.4	76.0	76.0	76.1	76.2
FR	3.7	67.4	68.0	68.8	69.6	70.0	70.7	71.0	71.1	71.1	71.0	71.0	71.1
HR	6.8	61.1	63.0	64.3	65.6	66.8	67.4	67.5	67.9	68.0	67.9	68.0	67.8
IT	4.9	55.2	57.0	58.6	59.6	60.3	60.4	60.2	60.1	60.0	59.9	60.0	60.1
CY	7.7	68.4	71.3	72.9	74.0	74.4	74.4	74.7	75.4	75.9	76.3	76.4	76.1
LV	1.4	74.0	74.1	74.5	74.5	73.5	74.1	75.3	75.7	76.0	76.3	75.7	75.4
LT	2.7	74.0	73.5	74.7	75.3	74.7	75.4	76.6	77.4	77.4	77.4	77.1	76.7
LU	1.8	64.8	66.3	67.2	67.6	67.7	67.3	66.8	66.6	66.4	66.4	66.6	66.5
HU	8.4	63.5	66.9	71.7	73.0	72.6	71.9	72.0	72.2	72.1	72.0	72.0	71.8
MT	19.4	55.6	61.0	67.2	71.2	73.0	74.0	74.6	74.8	74.6	74.7	75.0	75.0
NL	5.2	75.0	75.7	76.7	77.6	78.2	78.8	79.1	79.4	79.6	79.8	80.0	80.1
AT	5.2	71.7	72.5	72.0	73.7	76.4	77.2	77.0	76.8	76.6	76.8	77.0	76.9
PL	-0.8	62.2	63.7	63.6	63.3	62.0	60.8	60.5	61.0	61.6	62.3	62.3	61.4
PT	5.8	70.5	72.6	74.1	75.4	76.1	76.6	76.9	76.9	76.5	76.2	76.2	76.3
RO	-1.8	56.1	56.6	56.4	54.9	53.9	53.2	53.6	53.9	54.7	54.7	54.5	54.4
SI	2.5	68.8	70.9	72.1	71.4	71.3	71.2	71.5	71.8	71.9	71.6	71.5	71.2
SK	4.8	65.6	67.5	68.5	68.6	68.5	68.5	69.1	69.7	70.1	70.3	70.3	70.4
FI	3.0	74.1	74.2	74.2	74.6	75.4	75.4	75.7	76.1	76.3	76.7	77.0	77.1
SE	-0.4	80.4	80.2	79.9	79.9	80.1	80.2	80.3	80.2	80.0	80.2	80.1	80.0
UK	5.1	72.1	73.0	73.8	74.9	75.9	76.6	76.8	77.2	77.3	77.3	77.4	77.2
NO	1.7	75.8	76.2	76.5	76.8	77.1	77.4	77.5	77.5	77.4	77.5	77.5	77.4
EU*	4.5	67.3	68.5	69.5	70.3	70.8	71.1	71.3	71.5	71.6	71.7	71.8	71.8
EA	4.6	67.3	68.6	69.6	70.6	71.3	71.7	71.8	71.9	71.8	71.8	71.9	71.9
EU27	4.1	66.6	67.8	68.8	69.5	70.0	70.1	70.3	70.5	70.6	70.7	70.7	70.7
EU* s	3.8	67.6	68.9	69.9	70.5	70.8	71.0	71.2	71.4	71.4	71.5	71.5	71.4

Table III.1.37: Participation rate (15-24) - Women

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.4	26.8	27.5	26.7	27.3	27.6	27.1	27.3	27.2	27.0	27.0	27.2	27.2
BG	-0.3	19.7	18.8	18.1	19.0	19.4	19.8	19.8	19.3	19.0	19.1	19.3	19.5
CZ	-1.4	26.5	24.4	22.4	24.9	24.6	25.4	25.8	25.1	24.0	24.1	24.7	25.1
DK	0.7	67.5	68.5	68.3	68.7	68.1	67.9	68.1	68.3	68.3	68.3	68.2	68.1
DE	-0.5	48.0	49.2	48.2	47.3	47.2	47.8	48.3	48.4	48.2	47.8	47.5	47.5
EE	0.7	38.9	38.2	36.6	39.8	39.3	39.8	40.1	39.3	38.7	38.9	39.3	39.6
IE	3.8	36.9	37.3	36.3	38.7	40.6	40.8	40.4	39.2	38.6	39.0	40.0	40.8
EL	1.6	24.3	24.5	24.0	25.7	26.5	26.5	25.5	24.9	24.6	24.9	25.6	25.8
ES	0.5	31.4	30.5	30.8	33.0	32.6	31.9	31.7	31.2	31.1	31.5	31.9	31.9
FR	1.6	34.3	35.6	36.0	36.5	35.9	36.0	35.7	35.6	35.8	35.9	36.0	35.9
HR	2.8	33.0	37.1	34.8	35.9	36.2	35.8	35.8	35.9	35.8	35.6	35.7	35.7
IT	0.2	22.8	22.5	22.5	23.4	23.8	23.1	22.8	22.7	22.6	22.8	23.0	23.0
CY	-1.4	39.7	41.1	38.4	39.0	39.2	38.1	39.9	40.5	39.6	38.8	38.6	38.3
LV	-3.3	36.1	30.9	29.9	31.9	29.8	34.0	34.8	33.2	31.5	31.2	31.7	32.8
LT	-2.0	32.3	32.4	28.1	27.3	28.8	30.8	32.7	32.3	29.6	28.0	28.9	30.3
LU	-0.2	32.0	33.3	32.8	32.3	32.0	31.6	31.9	32.1	32.2	32.1	32.0	31.8
HU	-1.9	29.0	28.3	27.0	28.1	26.6	27.2	27.7	27.8	27.5	27.2	27.1	27.1
MT	-1.2	49.7	51.3	49.1	48.1	47.9	48.4	49.3	49.6	49.1	48.5	48.3	48.5
NL	2.3	69.2	71.5	71.9	71.9	71.5	71.4	71.5	71.6	71.7	71.7	71.6	71.5
AT	-0.9	55.0	55.8	55.0	54.5	54.2	54.2	54.6	54.8	54.6	54.4	54.2	54.1
PL	-2.0	29.4	28.4	25.4	27.2	27.1	27.7	28.2	27.7	26.9	26.7	27.1	27.4
PT	2.4	31.8	33.3	34.1	35.1	35.3	34.6	33.5	33.3	33.6	34.1	34.3	34.2
RO	1.1	21.9	22.9	22.6	23.6	22.5	23.0	23.3	23.1	23.0	23.0	23.0	23.1
SI	0.3	30.3	30.4	28.5	29.5	30.9	31.1	30.9	30.1	29.5	29.6	30.2	30.6
SK	-1.3	24.8	24.2	22.6	23.1	23.9	23.9	24.1	23.7	23.3	23.1	23.4	23.6
FI	0.0	54.2	54.3	53.5	54.4	54.4	54.4	54.4	54.3	54.1	54.2	54.2	54.2
SE	-0.8	56.3	55.1	54.7	55.5	55.4	55.5	55.8	55.6	55.3	55.2	55.3	55.5
UK	-1.1	57.6	57.5	56.1	57.1	57.1	56.6	56.6	56.6	56.5	56.4	56.5	56.5
NO	-0.3	55.1	55.3	54.6	55.2	54.9	54.6	54.9	55.0	55.0	54.9	54.9	54.8
EU*	1.0	39.4	39.8	38.9	39.9	40.1	40.3	40.6	40.5	40.2	40.1	40.3	40.4
EA	0.6	37.5	38.1	37.5	38.1	38.3	38.6	38.7	38.4	38.1	38.0	38.1	38.2
EU27	0.9	36.3	36.7	36.0	36.7	36.9	37.3	37.6	37.4	37.1	37.0	37.1	37.2
EU* s	0.0	37.8	38.0	36.9	37.8	37.8	38.0	38.2	38.0	37.6	37.5	37.7	37.8

Table III.1.38: Participation rate (25-54) - Women

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.5	79.8	80.6	81.0	81.2	81.2	81.3	81.4	81.4	81.4	81.4	81.4	81.4
BG	-2.6	78.1	78.1	77.8	77.0	76.1	75.5	75.3	75.5	75.8	75.8	75.7	75.5
CZ	0.1	82.0	82.6	83.1	83.2	82.6	82.1	81.6	81.8	82.3	82.7	82.6	82.1
DK	-0.5	83.8	83.7	83.2	83.1	82.8	83.1	83.3	83.2	83.2	83.2	83.3	83.3
DE	2.3	82.7	83.1	83.6	84.2	84.6	84.9	84.9	84.8	84.7	84.8	84.9	84.9
EE	-0.3	82.0	81.6	81.6	81.7	81.7	81.4	81.3	81.4	81.7	81.8	81.7	81.6
IE	2.3	73.4	74.1	75.1	75.8	75.7	75.6	75.7	75.7	75.6	75.6	75.7	75.8
EL	4.9	77.8	80.1	81.5	82.2	82.5	82.7	82.8	82.9	82.8	82.7	82.6	82.7
ES	5.7	82.3	84.9	87.1	88.0	88.0	88.1	88.1	88.2	88.3	88.2	88.1	88.1
FR	1.6	82.7	83.3	83.7	83.8	84.0	84.3	84.4	84.4	84.4	84.4	84.4	84.4
HR	3.8	78.7	80.0	80.6	81.2	81.5	82.2	82.5	82.5	82.6	82.5	82.5	82.6
IT	0.6	66.8	67.7	68.1	67.7	67.3	67.4	67.5	67.5	67.5	67.4	67.4	67.4
CY	4.2	81.8	83.5	84.4	85.0	85.2	85.5	85.7	86.0	86.2	86.2	86.1	86.1
LV	5.7	85.6	87.3	89.2	90.2	90.6	90.9	91.1	91.5	91.7	91.7	91.6	91.3
LT	3.7	88.4	89.6	90.8	91.8	92.0	92.0	91.8	91.8	92.1	92.3	92.3	92.1
LU	4.1	81.0	82.7	83.9	84.5	84.7	84.9	85.0	85.0	85.1	85.1	85.1	85.1
HU	3.5	79.8	81.6	82.5	82.9	83.2	83.4	83.3	83.1	83.0	83.1	83.2	83.3
MT	19.0	67.3	74.6	79.7	83.3	85.1	86.2	86.4	86.3	86.2	86.2	86.3	86.3
NL	2.4	82.2	82.8	83.3	83.8	84.0	84.4	84.4	84.5	84.5	84.5	84.5	84.5
AT	4.6	84.9	86.3	87.4	88.5	89.2	89.5	89.5	89.4	89.5	89.5	89.5	89.5
PL	1.0	78.9	79.5	79.5	79.6	79.6	79.8	79.9	80.1	80.2	80.1	80.1	80.0
PT	4.3	86.6	88.2	89.2	90.1	90.4	90.8	90.9	90.9	90.8	90.8	90.8	90.9
RO	-2.5	72.3	71.3	70.3	69.5	69.3	69.2	69.9	69.9	69.9	69.8	69.9	69.8
SI	-0.9	89.0	89.1	88.9	88.4	87.9	88.0	88.2	88.4	88.4	88.2	88.1	88.1
SK	1.4	81.5	82.1	82.7	82.8	82.9	82.9	82.6	82.7	82.9	83.0	83.0	82.9
FI	0.3	82.7	82.5	82.6	82.7	82.9	83.0	83.0	83.0	83.1	83.1	83.1	83.1
SE	1.5	88.4	89.0	89.6	89.8	90.0	90.0	89.9	89.9	90.0	90.0	90.0	89.9
UK	5.3	80.1	81.3	82.5	83.6	84.5	85.0	85.4	85.4	85.5	85.5	85.5	85.5
NO	2.6	83.8	84.4	85.1	85.6	86.0	86.3	86.3	86.3	86.3	86.3	86.4	86.4
EU*	3.1	79.6	80.5	81.2	81.7	82.0	82.2	82.4	82.4	82.5	82.6	82.6	82.6
EA	2.9	79.6	80.7	81.5	81.8	82.0	82.2	82.3	82.3	82.4	82.4	82.5	82.5
EU27	2.6	79.5	80.4	81.0	81.4	81.5	81.7	81.8	81.9	82.0	82.0	82.1	82.1
EU* s	2.8	80.7	81.8	82.6	83.1	83.2	83.4	83.4	83.5	83.5	83.6	83.5	83.5

Table III.1.39: Participation rate (55-64) - Women

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	19.7	42.8	50.9	58.8	61.2	62.2	62.3	62.2	62.7	62.3	62.5	62.9	62.5
BG	5.1	54.7	54.4	56.4	59.3	59.7	59.9	60.1	58.0	57.8	59.9	60.6	59.8
CZ	9.8	51.4	50.7	52.7	60.1	61.0	58.7	60.4	60.0	59.0	61.5	62.9	61.2
DK	7.6	66.9	73.0	73.8	73.1	72.9	71.8	72.2	73.6	73.9	74.4	74.7	74.5
DE	7.9	65.9	66.6	68.5	69.9	71.7	72.6	73.1	73.2	73.2	73.1	73.5	73.8
EE	-2.0	71.4	70.4	71.8	72.2	70.5	69.6	69.1	68.0	68.2	69.7	70.3	69.3
IE	12.1	51.0	53.7	56.3	59.4	62.5	63.4	61.8	61.4	62.6	63.1	63.5	63.1
EL	37.0	34.0	38.3	50.5	58.2	62.5	65.7	68.5	70.3	70.6	70.9	71.2	71.0
ES	32.2	51.7	61.2	69.8	76.4	81.1	82.5	83.0	83.7	84.0	84.3	84.3	83.9
FR	14.1	51.3	54.2	57.9	60.4	61.2	63.6	64.7	65.3	66.1	65.8	65.6	65.4
HR	18.3	34.4	36.3	40.8	44.5	48.8	50.8	50.7	52.0	52.8	52.2	53.0	52.7
IT	25.7	41.7	49.8	58.1	62.9	65.4	65.5	65.5	65.9	66.4	66.7	67.1	67.5
CY	24.3	47.3	50.6	54.5	57.6	60.4	63.0	64.7	66.8	68.1	69.6	70.9	71.6
LV	7.1	66.0	64.1	66.9	68.6	69.2	70.6	71.9	70.7	69.4	73.4	74.0	73.1
LT	7.6	66.9	58.9	63.3	69.0	69.7	71.4	73.0	72.3	70.2	71.2	74.2	74.5
LU	5.3	34.7	36.8	37.9	38.5	39.7	40.0	40.2	40.6	40.2	39.5	39.8	39.9
HU	35.2	43.5	50.1	72.9	77.7	77.8	76.4	77.7	78.8	78.4	78.6	79.0	78.7
MT	38.1	26.9	27.6	38.2	48.4	56.0	60.3	63.1	64.6	63.6	63.4	64.4	65.0
NL	16.1	58.6	59.4	63.0	64.8	65.5	67.0	69.2	71.4	72.4	73.6	74.1	74.7
AT	16.4	42.7	44.5	41.5	44.8	54.0	58.2	59.1	59.6	58.6	58.6	59.0	59.1
PL	1.1	39.2	40.3	40.1	41.8	41.2	40.4	39.4	39.2	38.6	39.6	42.1	40.3
PT	17.7	50.8	57.4	62.0	65.0	66.7	67.2	67.4	68.4	69.1	68.9	68.7	68.5
RO	3.9	34.2	36.0	42.3	40.8	39.9	37.9	38.1	36.9	38.4	38.6	38.9	38.1
SI	24.7	35.5	46.1	57.7	60.2	61.3	59.4	58.6	58.3	59.0	59.5	60.8	60.2
SK	27.0	48.5	52.2	57.1	61.2	63.3	64.2	67.3	69.9	71.7	73.7	75.0	75.5
FI	12.7	67.2	67.4	67.4	68.3	71.2	71.9	73.0	74.9	76.0	77.7	79.1	79.9
SE	-2.6	77.1	73.9	73.2	73.4	73.5	74.2	75.1	74.9	73.3	74.5	75.0	74.6
UK	12.7	59.4	61.2	63.6	65.4	66.5	68.3	69.0	71.4	72.0	71.8	72.5	72.1
NO	1.1	70.1	69.1	69.7	69.3	68.8	69.4	70.7	71.4	71.1	71.0	71.3	71.1
EU*	16.2	52.0	55.7	60.4	63.2	64.7	65.2	65.7	66.7	67.4	67.9	68.4	68.2
EA	17.9	53.0	57.3	62.2	65.6	68.0	69.2	69.6	70.1	70.3	70.6	70.9	71.0
EU27	16.4	51.0	55.0	60.0	62.9	64.4	64.8	65.2	65.9	66.5	67.2	67.7	67.4
EU* s	15.5	50.6	53.1	57.7	60.8	62.7	63.5	64.2	64.7	64.9	65.6	66.3	66.1

Table III.1.40: Participation rate (20-74) - Men

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.8	68.9	69.0	69.7	69.8	69.8	70.1	70.3	70.2	69.9	69.6	69.6	69.7
BG	-0.6	68.0	68.2	68.1	67.6	66.7	65.3	64.2	63.8	64.1	65.1	67.0	67.5
CZ	-2.2	77.0	76.3	76.1	75.5	74.4	72.3	70.6	71.0	72.2	72.9	74.3	74.9
DK	1.5	75.2	75.6	76.4	76.7	76.7	76.8	77.3	77.7	77.7	77.0	76.5	76.7
DE	-4.4	77.0	76.1	73.8	72.4	71.8	72.6	73.6	72.9	71.8	71.4	72.0	72.5
EE	-3.8	80.2	79.4	78.0	77.3	77.0	76.2	75.2	74.4	73.6	74.0	75.9	76.4
IE	-4.5	76.8	75.4	74.2	73.1	72.2	71.5	71.1	71.2	71.9	72.7	72.9	72.2
EL	5.0	71.2	70.4	70.3	70.3	70.9	71.2	72.1	72.9	74.5	75.9	76.0	76.2
ES	0.8	74.5	74.6	74.3	73.3	72.2	71.0	70.3	71.4	73.9	75.4	75.8	75.4
FR	2.2	71.0	70.2	70.8	71.0	71.2	71.9	73.0	74.0	74.2	74.3	73.8	73.2
HR	0.0	66.3	65.8	65.2	65.4	66.1	66.8	66.7	66.3	66.3	66.5	66.4	66.3
IT	1.1	70.1	70.6	71.0	69.8	68.6	68.0	68.6	69.8	71.0	71.2	71.3	71.2
CY	0.7	75.7	76.1	76.2	76.1	76.2	76.5	76.2	75.4	74.5	73.9	74.8	76.4
LV	-1.0	76.3	74.6	72.7	72.0	71.8	71.7	71.5	70.9	70.1	71.4	74.1	75.3
LT	-2.3	76.6	75.3	72.5	70.2	69.6	70.2	71.2	71.6	70.6	70.0	71.7	74.3
LU	-7.8	72.7	71.9	70.2	68.6	67.4	66.8	66.2	65.4	64.7	64.4	64.6	64.9
HU	2.0	73.1	72.8	75.7	77.5	77.2	75.0	73.2	73.5	74.6	74.1	74.2	75.0
MT	-0.3	75.0	74.0	75.5	76.5	77.4	77.1	75.5	74.3	73.3	72.7	73.3	74.7
NL	2.0	76.4	76.0	76.7	76.3	76.1	76.7	77.8	78.5	78.4	78.3	78.2	78.3
AT	-2.7	74.6	75.2	74.7	73.4	72.7	73.1	73.5	72.9	71.8	71.3	71.3	72.0
PL	-2.9	73.9	73.4	72.9	72.9	73.1	71.7	69.7	68.2	67.8	68.7	69.9	71.0
PT	-3.0	74.9	74.1	73.8	73.7	73.2	72.8	72.4	72.5	73.1	73.1	72.5	71.9
RO	-1.5	72.8	72.8	72.5	72.1	70.9	68.6	68.3	68.4	69.3	70.0	71.3	71.3
SI	-0.4	70.0	69.8	69.0	68.2	67.6	66.9	66.1	66.0	67.0	68.5	69.6	69.6
SK	1.2	76.0	74.6	73.3	72.9	72.8	72.1	70.9	70.8	71.9	73.4	75.3	77.2
FI	3.9	71.1	70.2	70.6	70.8	71.3	72.1	72.5	72.3	72.6	73.2	73.9	75.0
SE	-0.3	78.0	78.4	79.0	78.5	78.0	77.9	78.1	78.1	77.3	76.7	77.0	77.8
UK	-0.8	77.6	77.0	76.8	76.3	76.1	76.6	77.2	77.6	77.2	76.7	76.6	76.8
NO	-2.9	76.6	76.4	76.2	75.5	74.9	74.5	74.7	74.7	74.1	73.6	73.5	73.7
EU*	-0.3	74.1	73.7	73.4	72.8	72.4	72.3	72.6	72.9	73.1	73.3	73.6	73.8
EA	-0.3	73.5	73.1	72.6	71.9	71.3	71.5	72.0	72.4	72.8	73.0	73.2	73.2
EU27	-0.4	73.6	73.2	72.9	72.3	71.8	71.6	71.8	72.0	72.4	72.7	73.0	73.2
EU* s	-0.6	74.0	73.5	73.2	72.8	72.5	72.1	71.9	71.9	72.0	72.2	72.9	73.3

Table III.1.41: Participation rate (15-64) - Men

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.7	72.4	73.5	74.4	74.5	74.5	74.4	74.3	74.3	74.2	74.2	74.2	74.1
BG	-1.7	72.8	73.2	72.4	71.8	71.1	70.9	71.1	71.0	71.2	71.5	71.3	71.1
CZ	-3.4	82.3	82.1	80.6	80.1	79.1	78.8	79.7	80.0	79.7	79.5	79.2	78.9
DK	0.8	82.8	83.4	83.5	83.7	83.8	83.6	83.5	83.4	83.3	83.5	83.6	83.6
DE	-2.6	82.4	81.9	81.2	80.8	80.5	80.1	79.8	79.7	79.8	79.9	79.9	79.7
EE	-1.8	81.8	81.7	80.4	80.7	80.3	80.2	80.3	80.1	80.2	80.3	80.1	80.0
IE	-3.3	77.5	76.4	74.5	73.8	73.9	74.5	75.0	75.2	74.9	74.3	74.1	74.2
EL	3.2	75.6	75.7	75.7	76.4	77.8	78.8	79.5	79.6	79.1	78.7	78.7	78.9
ES	-1.4	79.3	79.1	78.5	78.8	78.8	78.4	78.1	77.9	77.6	77.6	77.7	77.9
FR	2.5	75.1	75.5	75.8	76.3	76.4	77.0	77.4	77.5	77.5	77.5	77.5	77.6
HR	2.9	70.3	71.5	71.6	71.8	72.5	73.0	73.0	73.4	73.4	73.2	73.4	73.2
IT	-0.1	74.8	75.3	75.0	75.0	75.3	75.1	75.2	75.0	74.7	74.6	74.6	74.7
CY	3.2	77.6	79.4	79.9	80.2	80.2	80.0	80.0	80.5	80.8	80.9	80.9	80.7
LV	-1.4	78.7	77.2	76.2	76.4	75.8	76.6	77.6	77.9	78.1	78.3	77.6	77.3
LT	0.6	77.3	77.9	77.4	76.5	76.0	76.8	78.4	79.3	79.2	78.9	78.3	77.9
LU	-3.2	75.2	75.3	74.3	73.8	73.4	72.7	72.0	71.7	71.6	71.8	72.0	72.1
HU	3.7	77.0	78.2	81.3	81.9	81.5	80.9	81.0	81.1	81.1	81.0	80.9	80.7
MT	1.8	82.1	82.7	85.0	85.4	84.7	84.1	84.0	84.0	83.9	83.9	84.0	83.8
NL	0.3	84.4	84.0	84.2	84.3	84.2	84.1	84.0	84.0	84.2	84.5	84.6	84.7
AT	-0.7	80.8	81.4	80.5	80.4	80.7	80.5	80.1	79.9	79.8	80.0	80.2	80.1
PL	0.0	76.0	77.7	77.5	77.3	76.6	76.0	76.0	76.4	76.5	76.6	76.4	76.0
PT	-0.5	77.2	77.6	77.4	77.8	77.8	77.7	77.6	77.3	76.9	76.6	76.6	76.8
RO	0.8	74.8	76.5	76.6	75.8	75.4	75.0	75.3	75.3	76.1	76.0	75.8	75.6
SI	0.3	74.7	76.4	76.2	75.1	74.9	74.8	75.1	75.4	75.5	75.3	75.1	74.9
SK	1.1	78.5	79.0	78.6	78.2	78.0	78.0	78.7	79.1	79.3	79.5	79.5	79.7
FI	2.1	77.6	77.9	77.6	77.6	77.9	77.8	78.0	78.4	78.7	79.1	79.5	79.7
SE	-1.6	84.0	83.9	83.2	82.8	82.7	82.7	82.8	82.7	82.5	82.6	82.5	82.4
UK	0.6	82.3	82.4	82.0	82.2	82.6	82.7	82.6	82.9	82.9	82.9	83.0	82.9
NO	-0.2	80.2	80.5	80.3	80.3	80.2	80.2	80.1	80.1	80.0	80.0	80.1	80.0
EU*	0.2	78.5	78.9	78.7	78.7	78.7	78.6	78.7	78.8	78.8	78.8	78.8	78.8
EA	-0.3	78.3	78.3	78.1	78.1	78.1	78.1	78.1	78.0	78.0	77.9	78.0	78.0
EU27	0.0	78.0	78.3	78.1	78.1	78.0	77.9	78.0	78.0	78.0	78.0	78.0	78.0
EU* s	0.1	78.0	78.5	78.3	78.2	78.1	78.0	78.2	78.3	78.3	78.3	78.3	78.2

Table III.1.42: Participation rate (15-24) - Men

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.7	31.1	31.9	30.9	31.8	31.9	31.6	31.8	31.8	31.5	31.6	31.8	31.8
BG	0.8	28.6	28.4	27.4	28.7	29.2	29.9	29.8	29.1	28.8	28.8	29.1	29.4
CZ	-2.7	37.9	34.1	31.5	35.0	34.5	35.7	36.2	35.1	33.7	33.8	34.7	35.2
DK	0.3	65.3	66.0	65.8	66.1	65.6	65.4	65.6	65.8	65.8	65.8	65.7	65.6
DE	-0.7	51.6	52.6	51.7	50.8	50.5	51.2	51.7	51.8	51.6	51.2	50.9	50.9
EE	-0.1	45.5	44.0	41.7	46.1	45.1	45.7	46.1	45.1	44.3	44.6	45.1	45.5
IE	4.3	40.1	41.2	40.2	42.3	44.2	44.6	44.1	42.8	42.1	42.5	43.5	44.3
EL	2.6	27.1	28.1	27.7	29.4	30.3	30.3	29.4	28.7	28.5	28.8	29.5	29.7
ES	0.8	35.2	34.3	34.6	36.9	36.5	35.8	35.7	35.2	35.1	35.6	36.0	35.9
FR	1.7	40.6	41.7	42.2	42.8	42.0	42.3	42.0	41.9	42.1	42.3	42.4	42.2
HR	2.4	41.4	45.2	42.6	43.9	44.3	43.8	43.9	43.9	43.8	43.6	43.8	43.8
IT	0.4	30.5	30.2	30.3	31.4	31.8	31.0	30.6	30.4	30.4	30.6	30.9	30.9
CY	-0.1	37.6	39.3	37.0	37.6	37.7	37.4	38.8	39.2	38.5	37.9	37.7	37.5
LV	-1.9	42.9	38.9	37.8	39.9	37.8	42.5	43.4	41.4	39.4	39.0	39.7	41.0
LT	-2.5	39.8	40.1	35.2	34.3	35.7	38.2	40.4	39.9	36.4	34.5	35.6	37.4
LU	0.9	31.9	33.9	33.5	33.0	32.7	32.4	32.8	33.0	33.1	33.0	32.9	32.8
HU	-2.2	37.1	36.1	34.8	36.0	34.3	35.0	35.5	35.7	35.3	35.0	34.9	34.9
MT	-1.7	54.8	56.8	53.8	53.2	52.8	53.1	54.1	54.3	53.8	53.2	52.9	53.1
NL	2.1	67.3	69.2	69.8	69.7	69.3	69.2	69.3	69.4	69.6	69.6	69.5	69.3
AT	-1.6	61.1	60.7	60.1	59.6	59.3	59.5	59.8	60.0	59.9	59.7	59.5	59.5
PL	-2.0	40.2	39.5	35.4	38.2	37.7	38.5	39.2	38.6	37.5	37.2	37.8	38.2
PT	1.8	35.3	36.3	37.3	38.1	38.1	37.5	36.5	36.2	36.6	37.0	37.3	37.2
RO	1.1	34.1	35.1	34.7	36.2	34.4	35.1	35.5	35.3	35.1	35.1	35.1	35.2
SI	0.3	37.7	37.8	35.3	36.7	38.4	38.6	38.3	37.3	36.6	36.8	37.5	38.0
SK	-0.9	39.7	39.9	37.2	38.2	39.2	39.3	39.6	39.1	38.3	38.1	38.5	38.8
FI	-0.4	51.7	51.4	50.5	51.4	51.4	51.0	51.4	51.4	51.2	51.2	51.3	51.3
SE	-2.0	54.7	52.3	51.7	52.7	52.5	52.7	53.1	52.8	52.4	52.4	52.5	52.7
UK	-1.3	59.5	59.4	57.5	58.6	58.7	58.2	58.3	58.3	58.1	58.1	58.2	58.2
NO	0.2	54.6	55.5	54.4	55.3	54.8	54.5	54.9	55.0	54.9	54.9	54.9	54.8
EU*	0.6	44.5	44.6	43.6	44.7	44.8	45.1	45.4	45.2	44.9	44.8	45.0	45.1
EA	0.6	42.2	42.7	42.1	42.8	42.9	43.3	43.3	43.0	42.7	42.7	42.8	42.9
EU27	0.6	41.9	42.2	41.3	42.3	42.2	42.7	42.9	42.7	42.3	42.2	42.4	42.5
EU* s	0.0	42.9	43.0	41.7	42.8	42.7	43.1	43.3	43.0	42.5	42.4	42.7	42.9

Table III.1.43: Participation rate (25-54) - Men

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.2	90.3	90.0	89.7	89.3	89.1	89.1	89.1	89.2	89.2	89.1	89.1	89.1
BG	0.1	85.6	86.1	86.0	85.9	85.6	85.5	85.7	85.9	85.9	85.8	85.7	85.7
CZ	-0.3	95.4	95.5	95.4	95.2	95.0	95.0	95.1	95.3	95.3	95.2	95.1	95.1
DK	-0.5	90.8	90.7	90.6	90.4	90.3	90.3	90.2	90.2	90.2	90.3	90.3	90.3
DE	-2.1	92.0	91.4	90.8	90.4	90.0	89.8	89.8	89.8	89.9	90.0	89.9	89.9
EE	0.0	93.7	93.6	93.3	93.0	93.0	93.3	93.7	93.9	93.7	93.6	93.6	93.6
IE	-2.8	89.3	88.6	87.5	87.0	86.7	86.7	86.9	86.9	86.7	86.5	86.4	86.5
EL	-0.2	93.3	93.0	93.0	92.6	92.6	93.2	93.4	93.4	93.2	93.0	93.0	93.1
ES	-1.3	92.5	92.3	92.0	91.6	91.3	91.2	91.3	91.3	91.2	91.1	91.2	91.2
FR	-1.0	92.4	92.2	91.8	91.5	91.3	91.5	91.4	91.4	91.4	91.4	91.4	91.4
HR	2.4	85.3	85.7	86.4	86.7	86.7	87.2	87.6	87.6	87.7	87.6	87.6	87.6
IT	-3.0	88.2	87.7	86.9	85.9	85.3	85.4	85.5	85.4	85.4	85.3	85.3	85.3
CY	-1.5	92.3	92.0	91.5	91.1	90.6	90.6	90.6	90.7	90.8	90.8	90.8	90.7
LV	2.2	90.2	90.0	91.4	91.7	91.7	92.0	92.7	93.1	93.0	92.7	92.5	92.4
LT	2.7	90.2	90.9	91.7	92.0	92.2	92.7	93.1	93.4	93.5	93.2	93.0	92.9
LU	-0.8	93.0	92.5	92.2	92.0	92.0	92.1	92.0	92.1	92.1	92.2	92.2	92.2
HU	1.5	92.3	93.1	93.7	93.8	93.8	93.8	93.8	93.8	93.9	93.9	93.9	93.8
MT	0.3	96.0	96.2	96.2	96.2	96.1	96.1	96.1	96.3	96.4	96.4	96.3	96.3
NL	-1.8	91.7	91.3	90.7	90.3	90.0	89.9	89.8	89.8	89.9	89.9	90.0	89.9
AT	-0.1	91.8	91.7	91.7	91.6	91.5	91.6	91.5	91.6	91.7	91.7	91.7	91.6
PL	0.4	90.8	91.2	91.1	90.7	90.6	91.0	91.3	91.6	91.6	91.4	91.3	91.3
PT	-1.7	91.9	91.6	91.2	90.7	90.4	90.3	90.3	90.3	90.2	90.2	90.2	90.3
RO	1.9	91.0	91.2	91.7	91.9	92.3	92.5	92.8	92.9	92.9	92.9	92.9	92.9
SI	-0.3	91.9	92.2	91.9	91.6	91.4	91.6	91.8	92.0	91.9	91.7	91.6	91.7
SK	-0.2	93.5	93.4	93.0	92.6	92.6	92.9	93.1	93.3	93.3	93.2	93.2	93.3
FI	-1.3	89.7	89.2	88.8	88.4	88.1	88.3	88.3	88.4	88.5	88.5	88.5	88.5
SE	-0.3	93.3	93.2	93.3	93.2	93.1	93.0	92.9	93.0	93.0	93.0	93.0	93.0
UK	0.7	92.2	92.5	92.7	92.8	92.8	92.8	92.8	92.9	92.9	92.8	92.8	92.8
NO	0.7	88.8	89.2	89.2	89.3	89.3	89.5	89.4	89.4	89.5	89.5	89.5	89.5
EU*	-0.7	91.4	91.3	91.1	90.7	90.5	90.6	90.6	90.7	90.7	90.7	90.7	90.7
EA	-1.5	91.4	91.0	90.5	90.0	89.7	89.7	89.8	89.8	89.8	89.8	89.8	89.8
EU27	-1.0	91.3	91.1	90.8	90.4	90.1	90.2	90.2	90.3	90.3	90.3	90.3	90.3
EU* s	-0.3	91.5	91.4	91.3	90.9	91.0	91.2	91.3	91.3	91.2	91.2	91.2

Table III.1.44: Participation rate (55-64) - Men

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	15.4	53.7	60.3	68.2	70.3	70.4	69.7	69.3	69.4	68.9	69.2	69.5	69.1
BG	3.1	63.6	63.2	65.0	67.0	66.8	66.5	66.6	65.1	65.0	66.8	67.3	66.7
CZ	2.1	71.3	70.0	71.6	74.5	74.1	72.2	73.5	73.4	72.4	74.2	75.1	73.4
DK	4.1	75.4	77.7	78.5	78.9	79.4	78.8	79.3	79.6	79.5	79.6	79.8	79.6
DE	-2.6	77.1	76.3	75.6	75.3	76.0	75.7	74.9	74.1	74.0	73.9	74.2	74.5
EE	1.7	70.9	70.8	71.9	74.1	73.2	72.8	72.8	71.6	71.7	73.1	73.6	72.6
IE	-2.8	71.1	70.4	70.3	70.6	70.1	69.3	67.8	67.4	68.2	68.4	68.7	68.4
EL	22.0	57.6	60.8	67.4	72.6	76.9	77.4	78.0	79.3	79.6	79.8	80.0	79.6
ES	12.8	67.0	72.6	77.2	80.6	81.2	80.4	79.7	79.7	80.0	80.4	80.3	79.7
FR	14.9	56.0	60.5	64.5	66.8	67.0	69.1	70.5	71.1	71.6	71.3	71.1	70.9
HR	6.1	50.7	51.3	50.4	50.3	53.7	55.8	55.1	56.1	56.9	56.3	57.1	56.8
IT	12.7	65.9	71.9	75.5	77.8	78.5	77.0	77.7	77.7	77.8	78.4	78.6	78.6
CY	11.2	70.9	73.1	76.4	77.9	78.7	78.5	78.5	78.9	79.2	80.2	81.3	82.1
LV	2.2	69.4	64.9	62.8	66.2	69.8	71.3	71.1	69.4	68.1	72.0	72.6	71.7
LT	-0.8	73.7	69.0	67.3	68.5	68.9	69.6	71.2	71.1	69.4	70.2	72.5	72.9
LU	-4.7	49.8	51.2	48.0	46.1	45.8	45.7	45.6	45.4	45.2	44.7	44.9	45.2
HU	21.4	62.5	61.8	79.4	82.8	84.1	83.3	83.9	84.2	83.7	83.9	84.1	83.9
MT	10.6	64.3	61.1	70.4	74.6	75.2	74.9	75.0	74.8	74.0	73.5	74.7	74.9
NL	4.6	78.3	76.7	79.0	79.4	79.1	79.7	80.0	80.7	81.3	82.1	82.4	82.8
AT	2.3	61.2	66.0	63.3	62.6	63.2	63.8	63.7	63.8	62.9	62.9	63.2	63.5
PL	6.6	58.9	61.8	63.6	66.1	66.1	65.1	64.7	64.7	64.3	64.9	66.3	65.5
PT	3.3	67.0	71.0	70.9	72.3	72.4	71.2	70.5	70.7	71.0	70.7	70.5	70.3
RO	8.2	54.9	59.9	64.2	62.2	62.4	61.8	63.4	61.9	63.4	63.8	64.0	63.1
SI	14.8	46.7	55.3	61.0	61.4	62.0	60.7	59.9	59.3	60.2	60.7	62.1	61.5
SK	16.2	60.9	59.6	61.4	65.4	68.1	68.8	71.0	72.4	73.4	75.3	76.5	77.1
FI	14.2	65.2	67.2	68.4	68.3	70.0	70.2	71.0	73.1	74.4	76.4	78.2	79.4
SE	-1.8	82.7	83.0	81.9	80.9	81.1	81.3	81.4	81.1	80.0	80.8	81.1	80.9
UK	3.6	72.8	72.4	72.2	72.6	72.9	74.0	74.1	76.1	76.2	76.0	76.8	76.4
NO	-3.2	77.7	75.8	75.8	74.8	74.1	73.9	74.2	74.7	74.3	74.2	74.6	74.4
EU*	7.7	66.7	69.3	71.7	73.0	73.5	73.2	73.2	73.6	73.9	74.2	74.6	74.4
EA	8.0	66.9	70.0	72.5	74.1	74.7	74.5	74.4	74.3	74.5	74.8	75.0	75.0
EU27	8.2	65.9	68.9	71.6	73.1	73.5	73.1	73.1	73.2	73.4	73.9	74.2	74.0
EU* s	7.2	65.0	66.4	68.8	70.2	71.0	70.9	71.1	71.2	71.2	71.8	72.4	72.2

Table III.1.45: Average effective exit age (Total)

Country	Ch 17-70	2017	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	61.8	63.4	63.9	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
BG	1.2	63.2	63.4	63.8	64.1	64.2	64.4	64.4	64.4	64.4	64.4	64.4	64.4
CZ	1.1	62.4	62.3	62.6	63.3	63.4	63.4	63.5	63.5	63.5	63.5	63.5	63.5
DK	3.3	64.7	65.6	65.8	66.3	66.5	66.6	66.8	67.1	67.5	67.9	67.9	68.0
DE	1.2	64.3	64.5	64.9	65.4	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
EE	0.0	65.1	64.6	64.9	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
IE	1.5	64.6	65.2	65.8	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
EL	6.2	61.9	62.9	64.1	64.9	65.5	66.1	66.7	67.0	67.2	67.4	67.7	68.1
ES	2.5	64.0	65.3	66.0	66.3	66.3	66.3	66.3	66.3	66.4	66.4	66.4	66.4
FR	2.6	61.9	62.6	63.2	63.5	63.8	64.3	64.5	64.5	64.5	64.5	64.5	64.5
HR	2.4	61.5	61.8	62.1	62.7	63.3	63.9	63.9	63.9	63.9	63.9	63.9	63.9
IT	4.6	63.8	66.2	66.2	66.5	66.8	67.0	67.5	67.6	68.3	68.1	68.5	68.4
CY	3.5	64.3	64.1	64.4	64.6	64.9	65.2	65.5	65.9	66.4	66.9	67.3	67.7
LV	2.6	62.7	63.6	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2
LT	1.0	63.0	62.5	63.6	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
LU	0.1	60.2	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3
HU	3.3	61.7	62.8	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1
MT	1.4	62.0	61.8	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3
NL	3.7	64.6	65.2	65.9	66.2	66.5	66.7	67.0	67.3	67.6	68.0	68.1	68.3
AT	0.7	63.0	62.6	62.4	62.8	63.7	63.7	63.7	63.7	63.7	63.7	63.7	63.7
PL	0.3	62.6	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
PT	2.0	64.4	65.4	65.8	66.1	66.2	66.3	66.3	66.4	66.4	66.4	66.4	66.4
RO	0.1	63.2	63.2	63.2	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3	63.3
SI	2.1	60.5	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6
SK	5.8	61.4	61.8	62.1	62.5	63.1	63.7	64.3	64.9	65.5	66.1	66.7	67.2
FI	4.2	63.6	63.6	63.9	64.3	64.7	65.1	65.6	66.0	66.6	67.1	67.4	67.8
SE	-0.3	65.3	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
UK	1.4	64.4	64.7	64.7	65.1	65.1	65.1	65.4	65.8	65.8	65.8	65.8	65.8
NO	0.0	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5	65.5
EU*	2.2	63.5	64.2	64.5	64.9	65.0	65.1	65.3	65.4	65.5	65.6	65.6	65.6
EA	2.6	63.4	64.4	64.8	65.2	65.4	65.5	65.7	65.8	65.9	65.9	66.0	66.0
EU27	2.3	63.3	64.1	64.5	64.8	65.0	65.2	65.3	65.4	65.5	65.5	65.6	65.6
EU* s	2.2	63.1	63.6	64.1	64.3	64.5	64.7	64.8	64.9	65.0	65.1	65.2	65.2

Table III.1.46: Average effective exit age (Men)

Country	Ch 17-70	2017	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	61.8	63.3	63.8	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
BG	0.9	63.8	64.0	64.4	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7
CZ	0.3	63.5	63.5	63.6	63.6	63.7	63.8	63.9	64.0	64.0	63.9	63.9	63.8
DK	2.7	65.2	65.8	66.2	66.9	67.0	67.1	67.2	67.5	67.7	67.9	67.9	68.0
DE	1.0	64.6	64.7	65.0	65.6	65.7	65.7	65.7	65.7	65.7	65.7	65.7	65.7
EE	0.2	65.2	64.8	65.2	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
IE	1.0	65.0	65.3	65.8	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
EL	5.6	62.3	63.0	64.2	65.0	65.7	66.3	66.9	67.0	67.2	67.2	67.4	67.8
ES	2.8	63.4	64.8	65.7	66.0	66.0	66.1	66.1	66.1	66.1	66.1	66.2	66.2
FR	2.8	61.9	62.8	63.3	63.6	63.9	64.5	64.7	64.7	64.7	64.7	64.7	64.7
HR	1.6	62.4	62.5	62.7	62.9	63.5	64.0	64.0	64.0	64.0	64.0	64.0	64.0
IT	3.9	63.9	65.9	65.7	66.1	66.2	66.3	66.9	66.9	67.7	67.6	67.9	67.8
CY	3.9	64.5	64.9	65.3	65.7	65.9	66.1	66.3	66.6	67.1	67.5	68.0	68.4
LV	3.4	61.7	62.9	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2	65.2
LT	-0.1	64.3	63.2	64.1	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
LU	0.1	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4	60.4
HU	2.8	62.5	63.2	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
MT	1.5	62.5	62.1	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
NL	3.6	65.4	66.1	66.8	67.1	67.4	67.6	67.9	68.2	68.5	68.8	68.9	69.0
AT	0.2	64.0	64.0	64.1	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2
PL	0.5	64.0	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5
PT	1.8	64.8	65.3	65.9	66.3	66.4	66.5	66.6	66.6	66.6	66.6	66.6	66.6
RO	0.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
SI	1.8	60.9	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7	62.7
SK	5.4	61.9	62.0	62.3	62.7	63.3	63.9	64.4	65.0	65.5	66.2	66.7	67.3
FI	4.0	63.9	63.9	64.1	64.4	64.8	65.2	65.7	66.1	66.6	67.2	67.5	67.9
SE	-0.3	65.9	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6	65.6
UK	0.8	65.0	64.8	64.8	65.1	65.1	65.1	65.4	65.8	65.8	65.8	65.8	65.8
NO	0.0	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9	65.9
EU*	2.0	63.9	64.4	64.8	65.1	65.2	65.3	65.5	65.6	65.7	65.7	65.8	65.8
EA	2.5	63.6	64.4	64.8	65.2	65.4	65.6	65.8	65.8	66.0	66.0	66.0	66.1
EU27	2.1	63.7	64.4	64.8	65.1	65.2	65.4	65.6	65.6	65.7	65.7	65.8	65.8
EU* s	2.0	63.5	63.9	64.5	64.7	64.8	65.0	65.1	65.2	65.3	65.4	65.4	65.5

Table III.1.47: Average effective exit age (Women)

Country	Ch 17-70	2017	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	61.8	63.5	63.9	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3	64.3
BG	1.5	62.6	62.8	63.1	63.6	63.8	64.1	64.1	64.1	64.1	64.1	64.1	64.1
CZ	1.9	61.3	61.2	61.8	63.0	63.0	63.0	63.0	63.1	63.1	63.1	63.1	63.2
DK	3.8	64.2	65.4	65.4	65.7	65.9	66.1	66.4	66.8	67.3	67.9	67.9	68.0
DE	1.3	64.0	64.3	64.8	65.2	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
EE	-0.2	65.0	64.5	64.7	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
IE	1.9	64.1	65.1	65.8	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
EL	6.8	61.6	62.8	64.1	64.7	65.4	66.0	66.6	66.9	67.2	67.6	68.0	68.3
ES	2.2	64.5	65.8	66.3	66.5	66.5	66.6	66.6	66.6	66.6	66.6	66.6	66.7
FR	2.5	61.8	62.5	63.0	63.3	63.7	64.1	64.3	64.3	64.3	64.3	64.3	64.3
HR	3.0	60.7	61.1	61.6	62.5	63.2	63.7	63.7	63.7	63.7	63.7	63.7	63.7
IT	5.4	63.7	66.6	66.7	66.8	67.3	67.7	67.9	68.2	68.8	68.6	69.0	69.1
CY	3.1	64.0	63.3	63.4	63.7	64.0	64.4	64.8	65.2	65.7	66.2	66.7	67.1
LV	1.8	63.5	64.2	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
LT	2.0	61.8	61.8	63.3	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
LU	0.1	60.0	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1
HU	3.8	61.0	62.4	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
MT	1.2	61.5	61.5	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6
NL	3.8	63.7	64.3	65.0	65.3	65.6	65.8	66.1	66.5	66.8	67.1	67.3	67.5
AT	1.2	62.0	61.2	60.7	61.4	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	61.3
PT	2.2	64.1	65.4	65.7	65.9	66.0	66.1	66.1	66.2	66.2	66.2	66.3	66.3
RO	0.2	62.4	62.4	62.5	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6
SI	2.3	60.2	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5	62.5
SK	6.1	61.0	61.5	62.0	62.4	63.0	63.6	64.2	64.9	65.5	66.1	66.6	67.1
FI	4.4	63.2	63.4	63.7	64.1	64.6	65.0	65.4	65.9	66.5	67.1	67.4	67.6
SE	-0.3	64.7	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4	64.4
UK	2.0	63.8	64.5	64.5	65.1	65.1	65.1	65.4	65.8	65.8	65.8	65.8	65.8
NO	0.0	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1
EU*	2.4	63.1	63.9	64.3	64.6	64.8	65.0	65.1	65.2	65.4	65.4	65.4	65.5
EA	2.8	63.3	64.3	64.8	65.1	65.3	65.5	65.7	65.7	65.9	65.9	66.0	66.0
EU27	2.5	63.0	63.8	64.3	64.6	64.8	65.0	65.1	65.2	65.3	65.3	65.4	65.4
EU* s	2.4	62.6	63.2	63.7	64.0	64.2	64.4	64.5	64.6	64.7	64.8	64.9	65.0

Table III.1.48: Employment rate (15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.8	62.4	64.0	64.8	65.0	65.3	65.3	65.3	65.4	65.3	65.2	65.3	65.2
BG	-1.5	63.5	65.1	63.8	63.0	62.2	62.0	62.1	61.9	62.1	62.4	62.2	62.0
CZ	-2.2	72.1	72.9	71.2	71.0	70.1	69.6	70.4	70.6	70.5	70.6	70.3	69.9
DK	2.4	75.0	76.8	77.2	77.4	77.4	77.3	77.2	77.2	77.2	77.4	77.5	77.4
DE	-0.6	74.7	75.1	74.4	74.3	74.4	74.3	74.1	74.1	74.2	74.3	74.3	74.2
EE	-2.6	72.2	71.4	69.9	70.0	69.7	69.6	69.7	69.6	69.7	69.9	69.8	69.6
IE	0.8	64.8	66.3	64.9	64.6	65.2	65.7	66.0	66.2	66.0	65.7	65.5	65.6
EL	16.8	51.8	57.4	61.1	63.3	65.3	67.0	68.5	69.3	68.9	68.5	68.5	68.7
ES	11.4	59.6	63.0	64.2	66.3	68.0	69.1	70.1	71.0	70.8	70.7	70.9	71.0
FR	4.6	63.9	65.1	65.9	66.7	67.1	67.8	68.2	68.4	68.5	68.4	68.5	68.5
HR	8.0	57.0	59.4	59.6	60.7	62.2	63.3	64.1	65.1	65.2	65.0	65.2	65.0
IT	5.0	57.3	59.0	60.5	61.4	62.0	62.2	62.4	62.4	62.2	62.1	62.2	62.3
CY	10.7	63.0	66.7	70.5	72.2	72.5	72.5	72.6	73.2	73.6	73.9	73.9	73.7
LV	1.6	68.8	68.8	67.9	68.1	67.7	68.7	70.1	70.7	71.0	71.2	70.6	70.3
LT	1.7	69.5	70.3	70.0	69.7	69.3	70.0	71.4	72.2	72.1	72.0	71.6	71.2
LU	0.1	65.7	66.8	67.2	67.2	67.1	66.5	66.0	65.7	65.6	65.6	65.8	65.9
HU	6.0	66.6	69.6	72.9	73.6	73.2	72.7	72.7	72.9	72.8	72.8	72.7	72.5
MT	8.8	66.2	68.8	72.2	74.1	74.6	74.7	74.9	75.0	74.9	75.0	75.1	75.1
NL	3.9	74.9	75.8	76.8	77.3	77.6	77.8	77.9	78.0	78.2	78.5	78.6	78.7
AT	3.1	71.6	72.7	72.4	73.3	74.8	75.0	74.7	74.6	74.4	74.6	74.8	74.7
PL	0.1	64.8	67.3	66.7	66.3	65.3	64.5	64.4	64.8	65.2	65.5	65.4	64.8
PT	5.2	65.3	67.6	68.7	69.7	70.3	70.7	71.0	71.0	70.7	70.4	70.4	70.5
RO	-0.6	61.6	63.3	62.7	61.5	60.8	60.3	60.6	60.7	61.4	61.4	61.2	61.0
SI	2.8	66.0	68.7	69.7	69.0	68.8	68.7	69.0	69.3	69.4	69.1	69.0	68.8
SK	4.0	65.1	67.1	66.9	66.7	66.9	67.1	67.9	68.6	68.9	69.1	69.1	69.2
FI	3.5	69.0	70.5	70.2	70.4	70.8	70.8	71.0	71.4	71.7	72.0	72.3	72.5
SE	0.2	76.4	77.2	76.8	76.7	76.7	76.8	76.9	76.8	76.6	76.7	76.7	76.6
UK	1.8	73.3	73.3	73.2	73.7	74.3	74.7	74.8	75.1	75.1	75.1	75.2	75.1
NO	1.8	74.3	75.8	75.9	76.0	76.1	76.2	76.2	76.2	76.1	76.1	76.2	76.1
EU*	3.9	66.6	68.1	68.5	69.0	69.4	69.7	70.1	70.4	70.4	70.4	70.5	70.4
EA	4.5	65.4	67.0	67.6	68.3	68.9	69.4	69.7	69.9	69.9	69.9	69.9	69.9
EU27	3.9	65.6	67.3	67.7	68.3	68.6	68.9	69.2	69.5	69.5	69.5	69.6	69.5
EU* s	3.5	66.5	68.2	68.7	69.0	69.3	69.5	69.8	70.0	70.1	70.1	70.1	70.0

Table III.1.49: Employment rate (20-74)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.4	58.9	59.6	60.5	60.8	61.1	61.5	61.8	61.8	61.5	61.2	61.2	61.3
BG	0.9	57.8	59.0	58.7	58.3	57.4	56.3	55.4	55.1	55.5	56.4	58.1	58.7
CZ	0.2	66.3	66.5	66.4	66.3	65.6	63.8	62.3	62.6	63.8	64.7	66.0	66.4
DK	3.9	67.3	68.9	70.2	70.3	70.2	70.3	70.9	71.5	71.8	71.3	71.0	71.2
DE	-1.8	69.1	69.1	67.1	66.1	65.8	66.8	68.0	67.5	66.6	66.3	66.8	67.3
EE	-3.5	69.8	68.2	66.3	65.8	65.9	65.5	64.7	64.2	63.6	64.0	65.8	66.3
IE	0.3	63.8	64.9	64.2	63.7	63.4	62.9	62.4	62.3	62.9	64.0	64.6	64.1
EL	18.1	48.4	52.8	55.9	57.2	58.5	59.4	61.0	62.5	64.1	65.7	66.2	66.5
ES	13.1	55.8	59.3	60.7	61.6	62.3	62.7	63.3	65.1	67.3	68.8	69.2	68.9
FR	4.5	60.2	60.2	61.2	61.7	62.2	63.1	64.3	65.1	65.3	65.5	65.2	64.7
HR	5.8	53.3	54.2	53.8	54.6	56.2	57.7	58.5	58.8	58.9	59.1	59.1	59.1
IT	6.9	53.2	54.8	56.9	56.9	56.5	56.5	57.1	58.3	59.5	59.7	59.9	60.0
CY	7.5	61.1	63.5	66.6	67.6	67.8	67.8	67.4	66.6	66.1	66.0	67.0	68.6
LV	3.9	65.0	64.8	63.2	63.0	63.3	63.7	64.1	64.2	63.8	65.0	67.6	69.0
LT	1.0	66.8	65.8	63.0	61.6	61.3	62.0	63.2	64.0	63.4	63.2	65.1	67.8
LU	-4.4	63.5	63.8	63.4	62.5	61.7	61.2	60.7	59.9	59.2	58.8	58.8	59.1
HU	5.6	61.7	63.2	66.2	68.4	68.5	66.5	65.0	65.3	66.5	66.2	66.4	67.2
MT	7.3	59.6	60.9	63.6	65.9	67.8	68.3	67.3	66.3	65.4	65.0	65.6	66.9
NL	5.0	67.0	67.7	68.9	68.9	69.1	69.9	71.1	72.0	72.0	71.9	71.8	72.0
AT	1.3	65.8	66.9	66.6	65.9	66.3	67.6	68.4	67.9	66.9	66.5	66.5	67.1
PL	-1.6	61.9	62.2	61.7	61.5	61.6	60.2	58.3	57.1	57.1	58.3	59.5	60.3
PT	3.9	62.3	63.6	64.7	65.3	65.4	65.5	65.5	66.0	66.8	67.1	66.7	66.3
RO	-1.8	59.4	59.4	58.6	57.9	57.0	55.0	54.8	55.1	56.0	56.6	57.7	57.6
SI	2.7	61.1	62.1	62.5	62.1	61.7	61.2	60.8	60.7	61.6	62.9	63.9	63.8
SK	5.3	62.1	62.3	61.4	61.5	61.9	61.6	60.9	61.2	62.4	63.9	65.6	67.4
FI	5.7	62.6	62.8	63.1	63.5	64.3	65.3	65.8	65.7	66.1	66.7	67.4	68.3
SE	1.4	70.5	71.8	72.6	72.3	71.9	71.9	72.2	72.2	71.4	70.8	71.2	71.9
UK	1.3	68.8	68.3	68.5	68.3	68.5	69.2	70.0	70.6	70.3	70.0	69.9	70.0
NO	-0.8	70.3	71.2	71.3	70.9	70.5	70.3	70.6	70.7	70.1	69.5	69.4	69.6
EU*	3.8	62.2	63.0	63.4	63.4	63.5	63.8	64.3	64.9	65.2	65.5	65.8	66.0
EA	4.8	60.9	62.0	62.4	62.5	62.6	63.2	64.1	64.7	65.1	65.4	65.6	65.7
EU27	4.0	61.2	62.2	62.6	62.6	62.7	62.9	63.4	63.8	64.3	64.7	65.1	65.3
EU* s	3.4	62.3	63.1	63.4	63.6	63.7	63.7	63.7	63.9	64.1	64.5	65.1	65.6

Table III.1.50: Employment rate (15-74)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.0	54.9	55.6	56.1	56.5	56.7	57.1	57.3	57.3	57.1	56.8	56.8	56.9
BG	-0.2	54.7	55.8	55.0	54.5	53.7	52.8	52.1	51.7	51.8	52.5	54.0	54.5
CZ	-1.3	62.9	62.9	61.8	61.8	61.1	59.6	58.5	58.7	59.4	59.9	61.0	61.5
DK	3.8	66.0	67.6	68.8	69.1	68.9	68.9	69.4	70.1	70.3	69.9	69.6	69.8
DE	-2.0	66.3	66.5	64.6	63.6	63.1	64.0	65.1	64.7	63.9	63.6	63.9	64.3
EE	-4.3	66.2	64.4	61.9	61.7	61.7	61.4	60.9	60.3	59.6	59.8	61.4	61.9
IE	0.4	59.5	60.5	59.2	58.8	58.9	58.9	58.7	58.4	58.7	59.4	59.9	59.8
EL	17.0	45.4	49.5	52.2	53.7	55.2	56.3	57.7	58.8	60.0	61.3	61.9	62.4
ES	11.4	52.6	55.6	56.6	57.9	58.6	59.0	59.3	60.6	62.3	63.6	64.1	63.9
FR	4.3	55.9	56.0	56.8	57.5	57.9	58.7	59.7	60.4	60.6	60.8	60.6	60.2
HR	5.8	50.0	51.2	50.6	51.5	53.0	54.5	55.3	55.6	55.7	55.8	55.8	55.8
IT	6.4	50.0	51.5	53.4	53.7	53.5	53.5	54.0	54.9	55.9	56.0	56.3	56.4
CY	8.2	57.0	59.8	62.9	64.0	64.3	64.4	64.2	63.8	63.3	63.1	63.9	65.2
LV	1.9	61.7	61.1	59.2	58.8	58.5	59.3	60.2	60.3	59.6	60.2	62.2	63.5
LT	0.2	62.4	62.1	59.2	57.5	56.9	57.7	59.4	60.5	59.7	58.9	60.2	62.6
LU	-3.9	59.5	60.1	59.9	59.0	58.2	57.6	57.1	56.4	55.7	55.4	55.4	55.5
HU	4.4	58.0	59.4	62.1	64.2	64.0	62.2	60.7	61.1	62.1	61.7	61.8	62.4
MT	6.2	57.1	58.5	60.9	62.8	64.4	64.7	63.9	63.1	62.3	61.7	62.1	63.3
NL	5.0	65.8	66.8	68.0	68.1	68.1	68.8	69.9	70.7	70.8	70.7	70.7	70.8
AT	1.1	63.7	64.7	64.5	63.8	64.1	65.2	66.0	65.6	64.7	64.3	64.3	64.8
PL	-1.9	58.1	58.7	57.7	57.7	57.6	56.5	55.0	53.9	53.7	54.5	55.5	56.2
PT	4.3	58.3	59.7	60.9	61.9	62.2	62.3	62.1	62.4	63.0	63.3	63.0	62.6
RO	-2.0	55.7	55.9	54.9	54.6	53.5	51.7	51.5	51.7	52.4	52.9	53.8	53.7
SI	1.6	58.0	59.0	58.7	58.2	58.0	57.8	57.4	57.2	57.7	58.6	59.5	59.6
SK	4.3	58.3	58.7	57.5	57.5	57.9	57.7	57.3	57.6	58.4	59.5	61.0	62.6
FI	5.2	59.8	60.1	60.2	60.6	61.3	62.2	62.7	62.7	63.0	63.6	64.2	65.1
SE	0.8	67.2	68.2	68.6	68.3	68.0	68.0	68.4	68.4	67.6	67.0	67.3	67.9
UK	0.9	65.8	65.4	65.2	65.2	65.3	65.9	66.6	67.2	66.9	66.6	66.6	66.7
NO	-0.4	67.3	68.4	68.4	68.2	67.8	67.5	67.7	67.9	67.4	66.9	66.7	66.9
EU*	3.4	58.9	59.8	59.9	60.1	60.2	60.5	60.9	61.4	61.6	61.8	62.1	62.3
EA	4.3	57.7	58.7	59.1	59.2	59.3	59.9	60.6	61.1	61.4	61.6	61.8	61.9
EU27	3.5	57.9	58.9	59.1	59.3	59.3	59.5	60.0	60.3	60.6	60.9	61.3	61.5
EU* s	2.8	59.0	59.8	59.9	60.1	60.2	60.2	60.4	60.5	60.6	60.8	61.3	61.8

Table III.1.51: Unemployment rate (15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.0	7.9	7.7	8.1	8.2	8.1	8.0	8.0	7.9	7.9	7.9	7.9	7.9
BG	-0.9	7.6	5.7	6.5	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
CZ	0.1	4.0	3.2	3.9	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
DK	-1.7	6.4	5.3	4.8	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
DE	0.6	4.2	3.8	4.5	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
EE	1.1	6.8	7.5	8.3	8.4	8.3	8.1	8.0	7.9	7.9	7.9	7.9	7.9
IE	-1.5	8.1	5.5	6.3	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
EL	-15.9	23.8	16.7	12.8	11.4	10.5	9.6	8.8	7.9	7.9	7.9	7.9	7.9
ES	-11.9	19.7	16.4	15.7	14.2	12.6	11.0	9.5	7.9	7.9	7.9	7.9	7.9
FR	-2.4	10.2	9.3	8.8	8.5	8.4	8.2	8.1	7.9	7.9	7.9	7.9	7.9
HR	-5.3	13.2	11.6	12.3	11.7	10.8	9.8	8.9	7.9	7.9	7.9	7.9	7.9
IT	-4.0	11.9	10.8	9.5	8.9	8.6	8.4	8.1	7.9	7.9	7.9	7.9	7.9
CY	-7.4	13.5	11.3	7.5	6.2	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
LV	-1.9	9.8	9.1	9.8	9.7	9.2	8.8	8.3	7.9	7.9	7.9	7.9	7.9
LT	-0.1	8.0	7.1	7.9	8.1	8.0	8.0	7.9	7.9	7.9	7.9	7.9	7.9
LU	-1.2	6.2	5.7	5.2	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
HU	-0.2	5.2	4.0	4.8	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
MT	1.4	4.2	4.6	5.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
NL	-1.5	6.1	5.0	4.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
AT	-1.3	6.1	5.6	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
PL	-0.4	6.3	4.8	5.6	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
PT	-3.6	11.5	9.9	9.3	8.9	8.7	8.4	8.2	7.9	7.9	7.9	7.9	7.9
RO	0.1	6.1	5.1	5.9	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
SI	-2.2	8.1	6.8	6.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
SK	-1.8	9.7	8.4	9.2	9.1	8.8	8.5	8.2	7.9	7.9	7.9	7.9	7.9
FI	-1.5	9.1	7.4	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
SE	-1.4	7.1	5.9	5.8	5.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
UK	1.2	5.0	5.6	6.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
NO	-1.5	4.8	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
EU*	-2.2	8.7	7.6	7.6	7.4	7.1	6.9	6.7	6.5	6.5	6.5	6.5	6.5
EA	-3.4	10.2	8.8	8.5	8.1	7.8	7.4	7.1	6.7	6.8	6.8	6.8	6.8
EU27	-2.7	9.3	7.9	7.8	7.6	7.3	7.0	6.8	6.5	6.5	6.5	6.5	6.6
EU* s	-2.3	8.8	7.5	7.4	7.2	7.0	6.9	6.7	6.5	6.5	6.5	6.5	6.5

Table III.1.52: Unemployment rate (20-74)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.1	7.6	7.5	7.8	7.8	7.7	7.6	7.6	7.5	7.5	7.5	7.5	7.5
BG	-1.1	7.4	5.5	6.2	6.4	6.4	6.3	6.3	6.3	6.3	6.3	6.4	6.4
CZ	0.1	3.8	3.0	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
DK	-1.7	5.5	4.6	4.2	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8
DE	0.4	4.0	3.6	4.3	4.5	4.4	4.4	4.5	4.4	4.4	4.4	4.4	4.4
EE	1.0	6.3	6.9	7.6	7.8	7.6	7.5	7.4	7.2	7.2	7.2	7.3	7.3
IE	-1.6	7.5	5.1	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
EL	-16.0	23.4	16.4	12.6	11.1	10.2	9.3	8.4	7.5	7.5	7.5	7.5	7.4
ES	-11.8	19.2	15.8	14.9	13.3	11.8	10.2	8.7	7.3	7.4	7.4	7.4	7.4
FR	-2.4	9.7	8.8	8.3	8.0	7.9	7.7	7.5	7.4	7.4	7.4	7.4	7.4
HR	-5.1	12.2	10.8	11.4	10.8	9.9	9.0	8.0	7.1	7.1	7.1	7.1	7.1
IT	-4.3	11.4	10.3	8.9	8.2	7.9	7.6	7.4	7.2	7.1	7.1	7.1	7.0
CY	-7.4	12.9	10.9	7.2	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5
LV	-2.0	9.5	8.7	9.4	9.1	8.7	8.2	7.8	7.3	7.3	7.4	7.5	7.5
LT	-0.1	7.8	6.9	7.7	7.8	7.7	7.7	7.7	7.6	7.6	7.6	7.6	7.7
LU	-1.2	5.8	5.3	4.8	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
HU	-0.3	5.0	3.8	4.6	4.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
MT	1.2	3.8	4.1	4.9	5.1	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
NL	-1.5	5.4	4.5	4.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
AT	-1.4	5.7	5.2	4.6	4.4	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.4
PL	-0.6	6.0	4.6	5.2	5.5	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.4
PT	-3.8	10.9	9.4	8.7	8.2	7.9	7.6	7.3	7.1	7.1	7.1	7.1	7.1
RO	-0.1	5.5	4.6	5.3	5.6	5.5	5.4	5.4	5.4	5.4	5.5	5.5	5.5
SI	-2.2	8.0	6.7	6.0	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
SK	-2.2	9.3	8.1	8.8	8.8	8.5	8.1	7.7	7.4	7.3	7.2	7.2	7.2
FI	-1.6	8.0	6.5	6.6	6.6	6.7	6.6	6.6	6.6	6.5	6.5	6.5	6.4
SE	-1.3	6.1	5.0	4.9	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
UK	1.0	4.2	4.8	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
NO	-1.3	4.1	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
EU*	-2.3	8.2	7.2	7.1	6.8	6.6	6.3	6.1	5.9	5.9	5.9	5.9	5.9
EA	-3.5	9.8	8.4	8.0	7.6	7.2	6.9	6.6	6.3	6.3	6.3	6.3	6.3
EU27	-2.8	8.8	7.5	7.4	7.1	6.8	6.5	6.2	6.0	6.0	6.0	6.0	6.0
EU* s	-2.4	8.3	7.1	6.9	6.7	6.5	6.3	6.1	5.9	5.9	5.9	5.9	5.9

Table III.1.53: Unemployment rate (15-74)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.1	7.8	7.7	8.0	8.0	7.9	7.8	7.7	7.7	7.7	7.7	7.7	7.7
BG	-1.1	7.5	5.6	6.3	6.5	6.5	6.5	6.4	6.4	6.4	6.4	6.5	6.5
CZ	0.1	4.0	3.1	3.8	4.1	4.1	4.0	4.0	4.0	4.0	4.0	4.1	4.1
DK	-1.9	6.2	5.1	4.6	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.2	4.2
DE	0.5	4.1	3.7	4.4	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
EE	1.1	6.5	7.1	7.9	8.0	7.9	7.8	7.6	7.5	7.4	7.5	7.6	7.6
IE	-1.7	7.9	5.4	6.1	6.3	6.2	6.2	6.1	6.1	6.2	6.2	6.3	6.2
EL	-16.2	23.6	16.6	12.7	11.2	10.2	9.3	8.4	7.5	7.6	7.6	7.5	7.5
ES	-12.0	19.6	16.2	15.3	13.7	12.0	10.5	9.0	7.5	7.6	7.6	7.6	7.6
FR	-2.5	10.2	9.2	8.7	8.4	8.2	8.0	7.9	7.7	7.7	7.7	7.7	7.7
HR	-5.5	13.0	11.4	12.0	11.5	10.5	9.5	8.5	7.5	7.5	7.5	7.5	7.5
IT	-4.4	11.7	10.6	9.2	8.5	8.1	7.8	7.6	7.4	7.4	7.3	7.3	7.3
CY	-7.6	13.2	11.1	7.4	6.1	5.9	5.9	5.8	5.8	5.7	5.7	5.7	5.6
LV	-2.0	9.5	8.7	9.4	9.2	8.7	8.3	7.8	7.4	7.3	7.4	7.5	7.6
LT	-0.1	7.9	7.0	7.8	7.9	7.8	7.8	7.7	7.7	7.7	7.7	7.7	7.8
LU	-1.3	6.2	5.7	5.1	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
HU	-0.2	5.1	4.0	4.7	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
MT	1.3	4.2	4.5	5.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
NL	-1.6	6.0	5.0	4.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
AT	-1.4	6.0	5.5	4.9	4.7	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.6
PL	-0.5	6.2	4.7	5.4	5.7	5.7	5.6	5.6	5.6	5.6	5.6	5.6	5.6
PT	-4.0	11.2	9.6	8.9	8.4	8.1	7.8	7.5	7.3	7.3	7.3	7.3	7.2
RO	0.0	5.9	4.9	5.6	5.9	5.9	5.8	5.8	5.8	5.8	5.9	5.9	5.9
SI	-2.2	8.0	6.7	6.0	5.8	5.8	5.8	5.7	5.7	5.8	5.8	5.8	5.8
SK	-2.2	9.6	8.3	9.1	9.0	8.7	8.3	7.9	7.6	7.5	7.4	7.4	7.4
FI	-1.8	8.9	7.2	7.3	7.4	7.4	7.4	7.3	7.3	7.2	7.2	7.1	7.1
SE	-1.4	7.0	5.8	5.7	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
UK	1.1	4.9	5.5	6.0	6.1	6.1	6.1	6.1	6.1	6.0	6.0	6.0	6.0
NO	-1.5	4.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
EU*	-2.3	8.5	7.5	7.4	7.2	6.9	6.6	6.4	6.2	6.2	6.2	6.2	6.2
EA	-3.5	10.0	8.6	8.3	7.8	7.5	7.1	6.8	6.5	6.5	6.5	6.5	6.5
EU27	-2.8	9.1	7.8	7.6	7.3	7.0	6.8	6.5	6.2	6.2	6.3	6.3	6.3
EU* s	-2.4	8.6	7.4	7.2	7.0	6.8	6.6	6.4	6.2	6.2	6.2	6.2	6.2

Table III.1.54: Employment (20-74) (in millions)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.8	4.6	4.7	4.9	5.0	5.1	5.1	5.2	5.3	5.3	5.3	5.3	5.4
BG	-1.3	3.0	2.9	2.7	2.6	2.4	2.3	2.1	2.0	1.9	1.8	1.8	1.7
CZ	-1.1	5.1	5.1	4.9	4.8	4.7	4.6	4.4	4.3	4.1	4.1	4.1	4.1
DK	0.4	2.7	2.8	2.9	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1
DE	-7.2	40.3	40.8	39.7	38.6	37.6	36.9	36.5	35.9	35.1	34.2	33.5	33.1
EE	-0.2	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
IE	0.4	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4
EL	-0.5	3.6	3.9	4.0	3.9	3.9	3.7	3.6	3.4	3.3	3.2	3.2	3.1
ES	2.7	18.3	19.3	19.7	20.0	20.0	19.6	19.2	19.2	19.4	20.0	20.6	21.0
FR	4.3	26.6	27.1	27.7	28.0	28.2	28.6	29.1	29.6	30.0	30.5	30.8	30.9
HR	-0.3	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.3
IT	-2.1	22.7	23.4	24.1	24.0	23.5	22.7	22.0	21.5	21.4	21.1	20.9	20.6
CY	0.1	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
LV	-0.4	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5
LT	-0.7	1.3	1.3	1.1	1.0	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7
LU	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
HU	-0.7	4.4	4.4	4.5	4.5	4.4	4.3	4.1	4.0	3.9	3.8	3.7	3.7
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	0.2
NL	0.9	8.0	8.2	8.5	8.5	8.5	8.6	8.7	8.8	8.9	9.0	8.9	8.9
AT	0.2	4.1	4.3	4.4	4.5	4.5	4.6	4.6	4.6	4.5	4.4	4.3	4.3
PL	-6.0	17.1	17.2	16.5	15.9	15.3	14.6	13.8	13.1	12.3	11.8	11.4	11.1
PT	-1.2	4.5	4.6	4.6	4.5	4.4	4.2	4.0	3.8	3.7	3.5	3.4	3.3
RO	-3.1	8.3	8.1	7.7	7.2	6.7	6.3	6.0	5.7	5.6	5.4	5.3	5.2
SI	-0.1	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8
SK	-0.5	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.1	2.1	2.0	2.0	2.0
FI	0.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
SE	1.4	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.8	5.9	6.0	6.0	6.2
UK	4.8	30.9	31.4	32.0	32.7	33.4	33.9	34.5	35.2	35.5	35.6	35.6	35.7
NO	0.5	2.5	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.1	3.1	3.1
EU*	-9.2	222.1	226.5	226.6	225.7	223.5	221.0	218.9	217.2	215.6	214.3	213.6	212.9
EA	-3.3	144.3	148.0	148.7	148.2	146.6	144.9	143.6	142.6	141.9	141.4	141.2	140.9
EU27	-14.0	191.2	195.1	194.6	192.9	190.1	187.0	184.3	182.0	180.1	178.7	178.0	177.2
EU* s	-0.3	7.9	8.1	8.1	8.1	8.0	7.9	7.8	7.8	7.7	7.7	7.6	7.6

Table III.1.55: Employment (15-64) (in millions)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.7	4.6	4.7	4.9	4.9	5.0	5.0	5.1	5.1	5.2	5.2	5.2	5.3
BG	-1.3	3.0	2.9	2.6	2.5	2.3	2.2	2.0	1.9	1.8	1.7	1.7	1.7
CZ	-1.1	5.0	4.9	4.8	4.7	4.6	4.4	4.3	4.1	4.0	4.0	4.0	4.0
DK	0.2	2.8	2.9	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.0	3.0
DE	-8.0	40.5	40.7	39.3	37.7	36.5	36.2	35.9	35.1	34.1	33.3	32.8	32.5
EE	-0.2	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
IE	0.4	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.3
EL	-0.8	3.6	3.8	3.9	3.8	3.7	3.5	3.3	3.2	3.1	3.0	2.9	2.8
ES	1.9	18.3	19.1	19.1	19.1	18.9	18.4	18.0	18.2	18.7	19.3	19.9	20.2
FR	3.5	26.7	27.2	27.6	27.7	27.8	28.1	28.6	29.0	29.5	29.9	30.1	30.2
HR	-0.3	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2
IT	-3.7	22.4	22.8	23.0	22.6	21.8	20.8	20.2	19.9	19.5	19.3	19.0	18.6
CY	0.0	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4
LV	-0.4	0.9	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5
LT	-0.6	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7
LU	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
HU	-0.8	4.4	4.4	4.5	4.5	4.3	4.1	4.0	3.9	3.8	3.7	3.6	3.6
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	0.2
NL	0.4	8.3	8.5	8.6	8.6	8.6	8.6	8.8	8.9	8.9	8.9	8.8	8.7
AT	0.0	4.2	4.4	4.4	4.5	4.5	4.6	4.6	4.5	4.4	4.3	4.3	4.2
PL	-6.2	16.9	16.8	16.0	15.4	14.9	14.1	13.3	12.4	11.7	11.3	11.0	10.7
PT	-1.4	4.4	4.4	4.4	4.2	4.0	3.8	3.6	3.5	3.3	3.2	3.1	3.0
RO	-3.1	8.1	7.9	7.4	7.0	6.4	6.0	5.7	5.5	5.3	5.2	5.1	5.1
SI	-0.1	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8
SK	-0.6	2.5	2.5	2.4	2.3	2.3	2.2	2.1	2.0	2.0	1.9	1.9	1.9
FI	-0.1	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3
SE	1.4	4.7	4.9	5.1	5.3	5.4	5.6	5.7	5.8	5.9	5.9	6.0	6.1
UK	4.1	31.0	31.5	32.1	32.7	33.1	33.8	34.4	34.8	34.9	34.8	34.9	35.0
NO	0.5	2.6	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.1
EU*	-15.8	221.7	225.0	223.4	220.6	217.2	214.4	212.2	210.5	208.5	207.2	206.6	205.8
EA	-8.8	144.2	147.1	146.3	144.1	141.6	139.7	138.5	137.6	136.7	136.3	135.9	135.4
EU27	-19.9	190.7	193.5	191.3	187.9	184.1	180.6	177.8	175.7	173.6	172.4	171.6	170.8
EU* s	-0.6	7.9	8.0	8.0	7.9	7.8	7.7	7.6	7.5	7.4	7.4	7.4	7.4

Table III.1.56: Share of young (15-24) in employment (15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.2	6.7%	6.6%	6.5%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.9%	6.9%	6.9%
BG	1.7	4.6%	4.5%	4.8%	5.5%	5.8%	5.9%	5.9%	5.8%	6.0%	6.2%	6.3%	6.3%
CZ	1.5	5.9%	5.1%	5.4%	6.6%	6.6%	7.0%	6.9%	6.5%	6.5%	7.0%	7.4%	7.4%
DK	-0.9	15.5%	15.0%	14.6%	14.2%	13.8%	14.5%	15.0%	14.9%	14.6%	14.5%	14.4%	14.5%
DE	1.0	10.0%	9.8%	9.3%	9.5%	10.2%	10.7%	10.8%	10.6%	10.5%	10.5%	10.7%	10.9%
EE	2.0	7.8%	7.3%	7.9%	9.3%	9.1%	9.3%	9.1%	8.9%	9.2%	9.7%	9.8%	9.7%
IE	3.0	8.5%	9.5%	10.2%	11.8%	12.1%	11.2%	10.4%	10.0%	10.4%	11.1%	11.5%	11.4%
EL	1.9	4.1%	4.9%	5.4%	5.9%	5.8%	5.5%	5.3%	5.5%	5.7%	6.0%	6.1%	6.0%
ES	3.3	4.6%	5.0%	5.7%	6.4%	6.4%	6.7%	7.3%	7.7%	8.0%	8.2%	8.1%	7.9%
FR	0.9	8.5%	9.3%	9.6%	9.7%	9.5%	9.6%	9.5%	9.5%	9.6%	9.5%	9.4%	9.3%
HR	0.8	7.8%	8.5%	7.6%	8.1%	8.0%	7.9%	8.1%	8.2%	8.2%	8.3%	8.5%	8.5%
IT	1.0	4.4%	4.4%	4.7%	5.0%	5.0%	4.8%	4.9%	5.0%	5.2%	5.3%	5.4%	5.4%
CY	-2.0	8.3%	7.3%	6.5%	6.6%	6.3%	6.2%	6.3%	6.0%	5.8%	5.9%	6.1%	6.3%
LV	2.2	7.3%	6.0%	6.7%	8.0%	8.4%	9.8%	9.0%	8.0%	8.1%	8.7%	9.2%	9.5%
LT	-0.2	8.1%	7.0%	5.7%	6.4%	7.6%	8.3%	7.8%	6.6%	5.9%	6.4%	7.4%	7.9%
LU	0.7	6.8%	6.9%	6.5%	6.5%	6.6%	6.8%	7.2%	7.3%	7.4%	7.4%	7.4%	7.5%
HU	-0.3	7.3%	6.7%	6.1%	6.2%	6.0%	6.6%	6.9%	6.9%	6.8%	6.9%	7.0%	7.0%
MT	-1.9	12.8%	11.4%	9.5%	9.4%	9.7%	10.2%	10.5%	10.3%	10.2%	10.3%	10.7%	11.0%
NL	0.1	15.3%	16.0%	15.7%	15.1%	15.1%	15.5%	16.0%	16.0%	15.8%	15.5%	15.3%	15.4%
AT	-0.1	12.3%	11.4%	11.0%	11.1%	11.4%	11.8%	11.9%	11.9%	11.8%	11.8%	12.0%	12.2%
PL	0.3	7.3%	6.5%	5.9%	6.7%	6.7%	7.0%	7.0%	6.8%	6.8%	7.2%	7.5%	7.6%
PT	0.6	6.1%	6.5%	6.7%	6.5%	6.2%	5.9%	6.0%	6.3%	6.6%	6.7%	6.8%	6.7%
RO	1.4	5.9%	6.2%	6.2%	6.3%	6.1%	6.7%	6.9%	6.9%	7.1%	7.1%	7.2%	7.3%
SI	2.1	6.3%	6.3%	6.4%	7.6%	8.1%	7.9%	7.6%	7.6%	7.8%	8.3%	8.5%	8.5%
SK	0.4	6.4%	5.8%	5.4%	5.9%	6.2%	6.2%	6.3%	6.3%	6.3%	6.6%	6.8%	6.8%
FI	-0.2	11.2%	11.1%	11.1%	11.7%	11.4%	11.1%	11.2%	11.1%	11.0%	11.1%	11.1%	11.1%
SE	1.1	11.1%	10.4%	11.0%	11.8%	11.9%	12.0%	11.9%	11.6%	11.7%	12.0%	12.1%	12.2%
UK	-1.1	13.3%	12.6%	12.0%	12.7%	12.5%	12.2%	12.2%	12.1%	12.1%	12.2%	12.3%	12.2%
NO	-0.4	12.7%	12.6%	12.1%	12.2%	12.0%	12.1%	12.3%	12.2%	12.2%	12.2%	12.3%	12.3%
EU*	1.0	8.7%	8.6%	8.5%	9.0%	9.1%	9.3%	9.4%	9.4%	9.5%	9.6%	9.6%	9.7%
EA	1.2	8.0%	8.2%	8.2%	8.5%	8.6%	8.9%	9.0%	9.1%	9.2%	9.2%	9.2%	9.2%
EU27	1.2	7.9%	8.0%	7.9%	8.3%	8.4%	8.7%	8.8%	8.9%	8.9%	9.0%	9.1%	9.1%
EU* s	0.7	8.4%	8.1%	8.0%	8.5%	8.5%	8.7%	8.7%	8.6%	8.6%	8.8%	9.0%	9.1%

Table III.1.57: Share of prime age (25-54) in employment (15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-5.0	78.9%	76.3%	74.3%	74.1%	74.7%	74.9%	74.6%	74.2%	74.4%	74.6%	74.1%	73.9%
BG	-5.0	77.2%	77.5%	75.9%	72.3%	69.8%	69.2%	68.8%	70.9%	74.7%	75.5%	73.6%	72.2%
CZ	-5.6	78.2%	79.5%	78.4%	73.3%	70.0%	70.5%	71.5%	72.7%	75.6%	76.2%	73.6%	72.6%
DK	-1.3	67.2%	66.3%	65.9%	66.5%	67.9%	68.5%	67.3%	64.9%	64.1%	64.7%	65.1%	65.9%
DE	-1.3	70.7%	68.8%	67.6%	69.3%	70.4%	69.0%	67.3%	67.1%	68.0%	69.2%	69.8%	69.4%
EE	-3.8	73.7%	74.0%	73.2%	71.1%	70.7%	69.7%	67.8%	69.1%	72.3%	72.9%	70.6%	69.9%
IE	-8.2	76.8%	74.7%	72.2%	68.9%	67.0%	67.5%	70.2%	73.2%	73.8%	72.5%	70.2%	68.6%
EL	-12.3	82.0%	79.6%	74.9%	70.8%	68.8%	68.9%	71.5%	73.5%	73.4%	72.2%	70.2%	69.7%
ES	-9.0	80.1%	76.0%	71.3%	67.2%	65.2%	66.8%	70.6%	73.0%	73.3%	72.1%	70.7%	71.1%
FR	-3.5	76.1%	74.0%	72.4%	71.8%	72.8%	73.1%	73.3%	73.7%	73.0%	72.3%	72.2%	72.6%
HR	-4.2	77.6%	76.6%	77.3%	76.6%	75.2%	74.0%	74.1%	74.1%	73.6%	74.1%	73.8%	73.4%
IT	-9.9	77.9%	73.9%	69.2%	66.4%	66.8%	69.3%	70.4%	70.4%	69.9%	69.1%	68.0%	68.0%
CY	-6.9	77.7%	77.9%	78.2%	77.9%	76.7%	74.3%	71.2%	69.6%	70.5%	71.9%	71.7%	70.8%
LV	-3.4	73.8%	74.4%	72.9%	70.3%	68.9%	66.3%	65.0%	67.8%	73.8%	75.1%	72.2%	70.4%
LT	0.0	72.6%	73.3%	72.9%	70.9%	70.3%	70.2%	69.0%	69.0%	73.1%	77.1%	76.1%	72.6%
LU	-2.8	82.7%	81.5%	81.5%	81.7%	81.5%	80.7%	79.8%	79.2%	79.0%	79.5%	79.8%	79.9%
HU	-6.2	77.1%	78.7%	74.7%	70.7%	67.8%	68.4%	69.8%	69.0%	69.9%	71.2%	70.9%	71.0%
MT	-2.2	73.4%	75.9%	77.0%	75.9%	73.3%	71.1%	69.5%	68.6%	69.4%	71.1%	71.7%	71.2%
NL	-1.5	67.6%	66.2%	65.0%	66.3%	68.2%	68.4%	67.0%	65.6%	65.0%	64.9%	65.4%	66.1%
AT	-3.3	74.7%	73.3%	73.3%	73.8%	73.8%	72.5%	71.0%	70.0%	70.2%	71.1%	71.5%	71.3%
PL	-2.8	77.6%	78.9%	80.5%	78.2%	75.5%	73.0%	72.4%	73.6%	75.8%	77.2%	75.7%	74.8%
PT	-6.4	77.8%	75.0%	73.2%	71.4%	70.1%	71.3%	73.5%	73.6%	72.1%	70.8%	70.6%	71.4%
RO	-4.2	80.2%	80.3%	77.0%	74.1%	73.3%	73.4%	72.9%	74.7%	76.5%	76.4%	75.7%	76.1%
SI	-7.9	81.2%	78.3%	75.3%	73.4%	71.6%	71.6%	73.0%	75.0%	76.1%	76.1%	74.5%	73.3%
SK	-8.2	78.9%	79.3%	79.3%	76.5%	72.5%	70.7%	69.7%	69.9%	71.7%	73.0%	72.2%	70.7%
FI	-2.9	69.9%	69.8%	70.0%	70.8%	70.6%	69.5%	68.7%	67.9%	68.0%	68.3%	67.6%	67.0%
SE	-1.6	70.7%	71.4%	70.3%	69.7%	70.4%	70.5%	69.4%	68.4%	69.7%	70.4%	69.5%	69.1%
UK	-2.3	71.1%	70.6%	70.0%	70.0%	71.3%	71.2%	70.3%	69.2%	69.0%	69.5%	69.2%	68.8%
NO	-1.3	69.9%	70.2%	69.7%	69.3%	70.4%	70.6%	69.3%	68.3%	68.3%	68.7%	68.6%	68.6%
EU*	-4.5	74.9%	73.3%	71.6%	70.5%	70.5%	70.5%	70.4%	70.5%	70.9%	71.0%	70.5%	70.4%
EA	-4.8	75.1%	72.6%	70.4%	69.5%	69.8%	70.0%	70.3%	70.6%	70.7%	70.6%	70.3%	70.3%
EU27	-4.7	75.5%	73.8%	71.8%	70.6%	70.3%	70.3%	70.5%	70.8%	71.2%	71.3%	70.8%	70.7%
EU* s	-4.7	75.8%	75.1%	73.7%	72.1%	71.3%	70.9%	70.7%	71.0%	72.0%	72.5%	71.6%	71.1%

Table III.1.58: Share of older (55-64) in employment (15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.8	14.4%	17.0%	19.2%	19.0%	18.5%	18.3%	18.6%	19.0%	18.8%	18.5%	19.0%	19.2%
BG	3.3	18.2%	18.1%	19.4%	22.2%	24.4%	24.9%	25.3%	23.3%	19.3%	18.3%	20.2%	21.5%
CZ	4.1	15.9%	15.3%	16.2%	20.1%	23.4%	22.5%	21.6%	20.8%	17.9%	16.8%	19.1%	20.0%
DK	2.3	17.3%	18.7%	19.5%	19.3%	18.3%	17.0%	17.7%	20.2%	21.2%	20.8%	20.5%	19.6%
DE	0.3	19.3%	21.4%	23.2%	21.2%	19.4%	20.2%	21.9%	22.3%	21.5%	20.4%	19.6%	19.7%
EE	1.8	18.5%	18.7%	18.8%	19.6%	20.2%	21.0%	23.0%	21.9%	18.4%	17.5%	19.6%	20.3%
IE	5.2	14.7%	15.9%	17.5%	19.3%	21.0%	21.3%	19.4%	16.7%	15.8%	16.5%	18.3%	19.9%
EL	10.4	13.9%	15.5%	19.8%	23.3%	25.4%	25.6%	23.2%	21.0%	20.9%	21.8%	23.7%	24.3%
ES	5.7	15.4%	19.0%	23.0%	26.4%	28.4%	26.5%	22.1%	19.3%	18.7%	19.7%	21.2%	21.1%
FR	2.6	15.5%	16.7%	17.9%	18.5%	17.7%	17.3%	17.2%	16.8%	17.4%	18.2%	18.4%	18.1%
HR	3.4	14.7%	14.8%	15.1%	15.3%	16.7%	18.1%	17.9%	17.6%	18.2%	17.6%	17.7%	18.1%
IT	9.0	17.6%	21.7%	26.1%	28.5%	28.2%	25.9%	24.7%	24.6%	24.9%	25.6%	26.6%	26.6%
CY	8.9	13.9%	14.7%	15.3%	15.5%	17.0%	19.6%	22.5%	24.4%	23.6%	22.2%	22.2%	22.8%
LV	1.2	18.9%	19.6%	20.4%	21.7%	22.7%	23.9%	26.1%	24.2%	18.1%	16.2%	18.6%	20.1%
LT	0.2	19.2%	19.7%	21.3%	22.7%	22.1%	21.5%	23.2%	24.4%	21.0%	16.4%	16.5%	19.5%
LU	2.2	10.5%	11.6%	12.0%	11.8%	11.9%	12.4%	13.0%	13.5%	13.6%	13.2%	12.8%	12.6%
HU	6.4	15.6%	14.6%	19.2%	23.1%	26.3%	25.0%	23.3%	24.2%	23.3%	21.9%	22.2%	22.0%
MT	4.1	13.7%	12.7%	13.5%	14.8%	17.0%	18.7%	20.0%	21.1%	20.5%	18.6%	17.6%	17.8%
NL	1.5	17.1%	17.9%	19.3%	18.6%	16.7%	16.1%	17.0%	18.4%	19.2%	19.7%	19.3%	18.6%
AT	3.5	13.0%	15.3%	15.6%	15.1%	14.8%	15.8%	17.0%	18.2%	18.0%	17.1%	16.5%	16.4%
PL	2.5	15.1%	14.6%	13.6%	15.1%	17.7%	20.0%	20.6%	19.6%	17.4%	15.6%	16.8%	17.6%
PT	5.8	16.1%	18.5%	20.1%	22.1%	23.7%	22.7%	20.5%	20.1%	21.4%	22.5%	22.7%	21.9%
RO	2.8	13.8%	13.5%	16.8%	19.6%	20.6%	19.9%	20.2%	18.3%	16.5%	16.4%	17.1%	16.6%
SI	5.8	12.5%	15.5%	18.3%	19.0%	20.3%	20.5%	19.4%	17.4%	16.1%	15.7%	17.0%	18.3%
SK	7.8	14.7%	14.8%	15.3%	17.6%	21.2%	23.1%	24.0%	23.8%	22.0%	20.4%	21.0%	22.5%
FI	3.0	18.9%	19.1%	18.9%	17.6%	18.0%	19.4%	20.1%	21.0%	21.0%	20.6%	21.3%	21.9%
SE	0.6	18.2%	18.2%	18.7%	18.5%	17.7%	17.5%	18.7%	20.0%	18.6%	17.7%	18.4%	18.8%
UK	3.5	15.6%	16.9%	17.9%	17.3%	16.2%	16.6%	17.6%	18.7%	18.9%	18.3%	18.6%	19.0%
NO	1.7	17.4%	17.3%	18.2%	18.4%	17.6%	17.4%	18.5%	19.5%	19.5%	19.1%	19.1%	19.1%
EU*	3.5	16.5%	18.1%	19.9%	20.5%	20.5%	20.3%	20.2%	20.1%	19.7%	19.4%	19.8%	19.9%
EA	3.6	16.9%	19.2%	21.4%	22.0%	21.6%	21.1%	20.7%	20.4%	20.2%	20.2%	20.5%	20.5%
EU27	3.5	16.6%	18.2%	20.2%	21.1%	21.2%	20.9%	20.7%	20.3%	19.8%	19.7%	20.1%	20.1%
EU* s	4.0	15.8%	16.8%	18.3%	19.4%	20.2%	20.4%	20.6%	20.4%	19.4%	18.7%	19.4%	19.8%

Table III.1.59: Share of older population (55-64) in population (15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.3	19.8	20.7	20.7	19.9	19.2	19.2	19.5	19.9	19.8	19.4	19.8	20.1
BG	1.3	21.1	21.2	21.7	23.7	25.7	26.0	26.4	24.9	20.8	19.2	20.9	22.5
CZ	2.1	19.5	19.1	19.3	22.0	25.2	24.7	23.5	22.8	19.9	18.1	20.1	21.5
DK	1.2	19.0	19.7	20.4	20.2	19.2	17.9	18.6	21.0	22.0	21.5	21.1	20.2
DE	-0.5	21.1	23.3	25.0	22.7	20.4	21.2	23.0	23.4	22.6	21.5	20.6	20.6
EE	1.4	20.4	20.7	20.2	20.7	21.5	22.5	24.7	23.9	20.0	18.7	20.8	21.8
IE	4.2	16.7	17.7	18.9	20.2	21.7	22.2	20.8	18.1	16.8	17.2	19.0	20.9
EL	3.9	19.7	21.1	23.1	25.0	26.1	26.1	23.4	20.9	20.5	21.1	22.9	23.6
ES	0.9	18.7	20.9	23.2	25.2	26.6	24.7	20.6	17.9	17.2	18.1	19.5	19.5
FR	-0.7	19.9	20.3	20.6	20.6	19.7	18.8	18.4	17.8	18.3	19.2	19.5	19.2
HR	0.9	21.8	22.1	21.6	21.2	21.9	23.0	22.9	22.4	22.8	22.2	22.0	22.6
IT	3.4	20.1	22.3	24.8	26.1	25.4	23.5	22.4	22.2	22.3	22.7	23.5	23.5
CY	6.3	16.8	17.6	17.8	17.7	19.0	21.5	24.3	26.0	25.0	23.2	22.8	23.1
LV	-0.2	21.1	22.8	23.3	23.9	24.1	25.1	27.6	26.2	20.0	17.1	19.3	20.9
LT	-0.4	20.7	23.5	24.8	24.9	23.8	23.0	24.8	26.5	23.4	18.1	17.4	20.3
LU	3.2	16.9	18.2	19.3	19.3	19.2	19.8	20.6	21.2	21.5	21.1	20.5	20.1
HU	-0.3	20.7	18.9	19.2	22.2	24.8	23.7	21.9	22.5	21.9	20.5	20.6	20.5
MT	-0.9	20.5	20.3	18.5	18.3	19.9	21.2	22.4	23.3	22.9	20.9	19.6	19.7
NL	-0.5	20.2	21.2	22.0	21.1	19.0	18.1	18.8	20.0	20.7	21.0	20.5	19.6
AT	1.9	18.9	21.1	22.6	21.4	19.6	20.1	21.5	22.7	22.8	21.7	20.9	20.8
PL	1.4	21.0	20.2	18.4	19.5	22.7	25.7	26.6	25.5	22.9	20.4	21.2	22.4
PT	3.8	20.2	21.6	22.8	24.5	26.1	25.2	22.9	22.2	23.3	24.4	24.7	24.0
RO	0.6	20.0	18.4	20.5	24.2	25.3	24.8	24.8	23.1	20.4	20.3	21.0	20.6
SI	0.2	21.4	22.1	22.5	22.6	23.7	24.5	23.6	21.5	19.6	18.9	20.0	21.6
SK	2.5	19.3	19.3	18.9	20.3	23.5	25.1	25.3	24.6	22.4	20.3	20.6	21.8
FI	0.0	21.3	21.3	20.8	19.3	19.3	20.6	21.1	21.6	21.3	20.5	20.9	21.3
SE	0.9	18.4	18.7	19.3	19.2	18.3	18.0	19.2	20.5	19.4	18.2	18.8	19.3
UK	2.2	18.0	19.4	20.3	19.4	18.1	18.3	19.2	20.0	20.1	19.4	19.6	20.2
NO	2.4	17.8	18.3	19.2	19.7	19.0	18.7	19.7	20.6	20.7	20.2	20.2	20.2
EU*	0.9	19.8	20.9	21.9	22.1	21.8	21.6	21.4	21.1	20.6	20.2	20.5	20.7
EA	0.7	20.0	21.6	23.0	23.0	22.2	21.6	21.2	20.8	20.5	20.5	20.7	20.7
EU27	0.7	20.1	21.1	22.2	22.5	22.4	22.1	21.8	21.4	20.7	20.4	20.7	20.8
EU* s	1.4	19.8	20.5	21.1	21.6	22.1	22.3	22.5	22.2	21.1	20.2	20.6	21.2

Table III.1.60: Old-age dependency ratio 15-64

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	16.7	28.4	30.2	32.9	36.2	38.6	39.9	40.7	41.5	42.4	43.5	44.3	45.2
BG	24.7	31.5	34.4	37.6	40.3	43.4	48.1	53.7	58.1	62.9	63.0	59.2	56.2
CZ	21.6	28.1	31.9	34.2	36.2	37.9	42.6	48.7	52.2	55.1	55.7	52.5	49.7
DK	20.8	29.5	31.1	33.0	35.9	38.3	39.8	40.1	39.9	41.5	45.0	47.9	50.2
DE	23.7	32.2	34.0	37.7	43.5	48.4	49.4	49.9	51.3	53.7	55.1	56.0	55.9
EE	23.0	29.7	32.2	35.1	37.8	39.7	42.6	45.5	49.2	54.5	55.7	53.8	52.7
IE	20.4	20.9	23.1	25.9	29.1	32.7	37.1	41.9	45.7	46.3	44.2	42.2	41.2
EL	29.7	33.4	36.1	40.1	44.9	51.8	59.2	66.6	71.0	70.0	67.2	64.5	63.1
ES	18.0	28.6	31.0	35.1	40.8	47.5	54.7	61.1	61.9	58.1	53.2	48.9	46.6
FR	14.4	30.4	33.2	36.5	40.0	42.9	45.1	45.2	45.0	44.2	43.3	43.7	44.8
HR	26.9	29.3	32.8	36.9	40.3	43.0	45.0	47.6	50.4	52.2	53.7	55.9	56.2
IT	25.8	34.5	36.4	39.6	45.0	51.5	57.9	61.6	62.5	62.0	61.0	60.1	60.3
CY	38.7	22.2	24.6	27.6	30.8	33.0	34.9	37.8	42.7	49.3	55.7	59.4	61.0
LV	23.3	30.5	33.1	38.1	43.5	47.2	51.4	55.0	59.8	65.4	65.2	58.4	53.8
LT	24.1	29.0	31.9	38.6	46.4	52.6	57.2	59.2	60.2	62.5	63.9	59.6	53.1
LU	28.2	20.6	21.7	23.8	26.9	30.3	32.9	35.5	38.5	41.6	44.6	47.3	48.9
HU	24.5	27.5	31.3	34.2	35.2	37.7	41.8	47.2	49.1	50.9	53.2	53.0	52.0
MT	26.6	29.1	33.0	37.7	40.4	40.7	41.4	43.2	46.0	49.9	53.9	56.2	55.8
NL	20.3	28.1	30.7	34.5	38.9	42.6	43.9	42.5	42.5	42.9	44.3	46.2	48.4
AT	26.9	27.6	28.6	31.5	36.1	40.3	42.3	43.3	45.5	48.1	51.3	53.3	54.4
PL	38.5	23.7	28.4	34.1	37.3	39.2	42.6	48.2	55.3	61.2	64.9	64.6	62.2
PT	35.1	32.1	34.9	39.0	44.2	49.6	56.4	62.7	65.4	65.1	64.9	65.7	67.2
RO	26.6	26.3	29.6	33.5	34.7	40.6	45.7	51.4	54.2	58.0	56.7	54.7	52.8
SI	22.1	28.1	32.3	36.9	41.3	45.1	48.6	52.9	55.9	56.8	55.0	52.5	50.2
SK	35.8	21.0	24.9	29.4	32.9	35.4	39.7	45.8	51.5	56.5	59.4	58.8	56.8
FI	19.1	32.8	36.3	39.6	42.4	44.0	43.5	44.1	45.7	47.3	49.7	51.0	52.0
SE	11.6	31.6	32.6	33.5	34.9	36.2	37.0	37.2	38.1	40.3	42.7	42.7	43.2
UK	18.0	27.9	29.3	31.3	34.4	37.2	38.5	38.9	40.2	41.7	43.5	45.1	46.0
NO	22.1	25.2	27.0	29.5	32.1	35.1	37.3	38.3	39.6	41.8	44.1	46.0	47.2
EU*	21.6	29.6	32.1	35.5	39.5	43.5	46.6	48.9	50.4	51.4	51.6	51.4	51.2
EA	20.9	30.9	33.1	36.7	41.5	46.2	49.7	51.7	52.7	52.8	52.3	51.8	51.8
EU27	22.4	29.9	32.5	36.1	40.3	44.6	48.0	50.7	52.3	53.1	53.1	52.6	52.2
EU* s	24.5	28.4	31.1	34.6	38.2	41.7	45.0	48.1	50.7	52.9	53.9	53.5	52.8

Table III.1.61: Old-age dependency ratio 20-64

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	18.7	31.1	33.1	36.3	39.8	42.5	44.0	44.8	45.7	46.7	48.1	48.9	49.8
BG	28.1	33.8	37.0	40.9	44.0	47.4	52.4	58.6	63.6	69.2	69.5	65.2	61.8
CZ	24.7	30.1	34.3	37.5	39.6	41.5	46.6	53.0	57.0	60.7	61.8	58.1	54.8
DK	22.8	32.5	34.2	36.3	39.2	42.0	43.9	44.3	44.0	45.7	49.4	52.7	55.3
DE	26.4	34.8	36.6	40.6	47.1	52.9	54.0	54.4	55.8	58.4	60.1	61.2	61.3
EE	26.1	31.9	34.8	38.6	41.4	43.6	46.7	49.6	53.9	60.1	61.6	59.4	58.0
IE	22.8	23.1	25.7	29.3	32.9	36.6	41.2	46.3	50.7	51.8	49.6	47.3	45.9
EL	32.6	36.2	39.2	43.9	48.9	56.2	63.8	72.0	77.3	76.5	73.6	70.4	68.7
ES	20.7	30.9	33.7	38.5	44.4	51.7	59.9	67.3	68.6	64.7	59.2	54.2	51.6
FR	16.0	33.7	36.9	40.6	44.4	47.7	50.2	50.3	50.2	49.3	48.2	48.5	49.7
HR	29.3	32.0	35.5	40.2	43.9	46.6	48.8	51.7	54.8	56.8	58.5	60.9	61.3
IT	28.3	37.2	39.4	42.9	48.6	55.5	62.4	66.6	67.7	67.4	66.4	65.3	65.5
CY	41.3	24.3	26.6	29.8	33.1	35.4	37.4	40.4	45.4	52.4	59.5	63.7	65.5
LV	27.3	32.7	35.8	41.8	47.9	52.8	57.0	60.2	65.5	72.3	72.9	65.5	59.9
LT	27.2	31.6	34.4	41.9	51.1	58.4	63.3	64.5	65.0	67.9	70.6	66.3	58.8
LU	31.0	22.5	23.4	25.7	29.1	32.9	35.9	38.8	42.0	45.4	48.7	51.7	53.5
HU	27.6	29.8	33.9	37.2	38.2	41.1	45.8	51.8	53.7	55.8	58.5	58.3	57.3
MT	29.8	31.7	35.5	40.7	43.9	44.4	45.3	47.3	50.2	54.4	59.1	61.8	61.5
NL	22.4	31.0	33.8	37.7	42.5	46.7	48.4	47.6	46.9	47.3	48.7	50.8	53.3
AT	29.7	29.9	30.8	34.0	39.1	43.9	46.1	47.2	49.5	52.3	55.9	58.3	59.6
PL	42.7	25.6	30.6	37.2	40.5	42.6	46.3	52.1	59.9	66.8	71.2	71.0	68.3
PT	37.8	35.0	38.1	42.3	47.7	53.3	60.6	67.7	70.9	70.7	70.4	71.3	72.8
RO	29.8	28.6	32.2	36.6	37.6	44.4	50.1	56.4	59.6	63.9	62.6	60.4	58.4
SI	25.1	30.1	34.8	40.3	45.3	49.3	52.9	57.6	61.2	62.6	60.9	58.0	55.3
SK	39.8	22.7	26.9	31.9	35.9	38.6	43.1	49.7	56.1	61.8	65.3	64.8	62.5
FI	21.2	35.9	39.8	43.6	46.7	48.3	47.8	48.4	50.1	51.9	54.7	56.1	57.2
SE	13.5	34.5	35.8	37.1	38.7	40.2	41.1	41.2	42.1	44.6	47.5	47.6	48.0
UK	20.0	30.7	32.0	34.5	38.0	41.0	42.5	42.9	44.2	46.0	48.0	49.8	50.7
NO	24.2	27.8	29.7	32.4	35.2	38.5	41.0	42.1	43.5	45.9	48.5	50.6	52.0
EU*	24.2	32.2	34.9	38.8	43.2	47.6	51.1	53.6	55.3	56.5	56.8	56.6	56.4
EA	23.3	33.6	36.1	40.1	45.3	50.6	54.4	56.7	57.9	58.0	57.5	57.0	56.9
EU27	25.0	32.5	35.3	39.5	44.0	48.7	52.6	55.5	57.3	58.4	58.4	57.9	57.5
EU* s	27.2	30.8	33.7	37.8	41.8	45.6	49.2	52.6	55.4	58.0	59.3	58.8	58.1

Table III.1.62: Total dependency ratio

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	17.8	54.7	57.0	59.7	63.1	65.6	67.0	67.9	68.9	69.8	71.0	71.7	72.5
BG	28.7	52.9	57.0	60.2	62.4	65.2	70.6	77.7	83.5	89.3	89.3	84.8	81.6
CZ	23.9	51.6	57.0	58.9	60.1	60.6	65.5	74.0	79.5	83.4	83.6	79.0	75.6
DK	22.2	55.5	56.7	58.6	62.9	66.2	67.4	66.7	65.5	67.1	71.2	75.0	77.7
DE	28.7	52.3	54.8	59.9	66.9	72.0	72.3	72.4	74.2	77.6	79.9	81.2	81.0
EE	24.4	54.6	58.2	60.6	62.8	64.1	67.2	71.0	76.0	82.2	83.2	80.5	79.0
IE	14.9	55.4	57.9	58.5	58.5	60.5	65.6	72.7	78.5	79.2	75.4	71.8	70.2
EL	30.2	55.8	58.0	60.3	63.9	71.0	79.7	89.1	94.6	93.2	89.6	86.7	86.0
ES	23.8	51.5	53.7	57.0	63.3	71.7	81.4	90.3	91.9	87.6	81.8	77.2	75.3
FR	14.8	59.8	62.7	65.8	69.9	73.3	76.1	76.2	75.7	74.3	73.0	73.4	74.6
HR	28.5	51.5	55.4	59.2	62.4	65.0	67.0	69.9	73.2	75.3	77.0	79.5	80.0
IT	27.8	55.6	56.8	58.9	64.0	71.4	79.0	83.7	84.9	84.4	83.3	82.6	83.5
CY	36.1	45.6	47.3	49.5	51.8	52.7	53.1	55.4	60.7	68.4	75.9	80.1	81.7
LV	27.7	54.2	59.1	65.4	70.9	72.4	76.1	81.3	89.2	97.3	97.1	88.1	81.8
LT	28.1	51.2	56.0	64.7	72.7	76.9	79.9	82.7	86.6	92.0	94.4	88.2	79.3
LU	30.6	44.3	45.2	47.9	51.8	55.6	57.9	60.1	63.0	66.4	69.9	73.1	74.9
HU	29.5	49.1	53.8	57.2	58.8	61.4	65.7	71.8	74.3	76.8	79.8	79.7	78.6
MT	31.7	50.6	55.7	62.1	65.6	65.2	65.0	66.7	70.2	75.3	80.5	83.1	82.3
NL	22.9	53.2	55.3	59.6	65.5	70.5	71.8	70.1	68.7	68.8	70.7	73.4	76.1
AT	30.4	48.8	50.1	54.1	59.7	64.1	65.6	66.1	68.4	71.6	75.6	78.0	79.2
PL	41.1	45.6	51.6	57.2	59.7	60.5	63.6	70.1	79.0	86.3	90.3	89.6	86.7
PT	36.2	53.6	55.1	57.7	62.6	68.6	76.7	84.1	87.0	86.2	85.8	87.3	89.7
RO	31.7	49.1	52.8	56.6	58.2	64.8	70.6	77.4	81.1	85.9	84.7	82.7	80.8
SI	26.0	50.5	56.2	60.6	64.0	67.6	71.9	78.3	83.0	84.5	82.0	78.8	76.5
SK	39.7	42.9	47.8	52.3	55.1	57.0	61.5	68.9	76.2	82.3	85.6	84.9	82.7
FI	19.5	58.7	62.6	65.8	68.6	70.1	69.1	69.8	71.6	73.3	75.9	77.3	78.3
SE	13.5	59.5	61.5	62.8	64.0	65.1	65.7	66.1	67.5	70.3	73.0	72.8	73.0
UK	18.3	55.4	57.0	58.8	61.9	65.0	66.2	66.5	67.7	69.3	71.2	72.8	73.7
NO	22.3	52.3	54.0	56.2	59.0	62.3	64.3	64.9	66.1	68.5	71.1	73.3	74.6
EU*	24.6	53.5	56.2	59.6	64.0	68.4	71.9	74.7	76.6	77.9	78.2	78.1	78.0
EA	24.1	54.3	56.6	60.2	65.5	70.8	74.9	77.5	78.8	79.0	78.5	78.2	78.4
EU27	25.7	53.2	56.1	59.7	64.3	68.9	72.9	76.1	78.3	79.5	79.5	79.1	78.9
EU* s	26.7	52.3	55.4	58.9	62.5	65.9	69.3	73.1	76.4	79.2	80.4	79.8	79.0

Table III.1.63: Total economic dependency ratio

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	10.8	145.9	143.3	142.9	143.7	146.0	148.2	149.5	150.7	152.3	154.0	155.2	156.7
BG	44.5	136.0	134.5	142.5	147.9	153.9	160.7	169.2	179.0	186.2	187.2	184.2	180.6
CZ	38.5	105.7	109.9	117.9	120.8	123.4	129.9	137.4	144.8	150.4	151.1	147.4	144.2
DK	9.5	100.8	98.0	98.2	100.7	103.4	104.8	104.5	103.1	102.4	103.4	106.6	110.2
DE	33.3	99.1	100.2	107.6	113.9	118.8	121.3	122.1	123.6	126.4	129.5	131.7	132.5
EE	42.1	103.1	110.1	119.1	121.6	123.9	127.7	132.5	138.6	144.7	147.4	146.8	145.2
IE	13.2	132.9	130.5	134.3	133.2	132.9	136.5	143.8	151.8	155.6	154.0	149.4	146.1
EL	-50.9	195.6	170.7	156.9	150.7	148.5	150.5	154.0	156.9	158.2	154.8	149.4	144.6
ES	-17.8	152.1	139.3	135.8	133.6	136.8	143.9	151.6	153.7	151.9	145.4	138.5	134.3
FR	-1.7	147.1	146.5	146.7	148.4	150.2	151.4	149.6	147.8	145.9	144.3	144.1	145.4
HR	1.7	162.2	156.8	161.0	160.5	157.7	154.2	152.9	153.1	156.1	159.1	161.7	163.9
IT	-1.7	166.5	158.0	150.3	150.3	155.4	163.2	169.8	172.3	169.9	168.1	165.5	164.7
CY	0.9	125.9	115.8	107.0	104.4	104.3	104.7	105.6	108.6	113.9	120.2	125.0	126.8
LV	30.4	116.4	122.4	132.4	136.2	139.2	139.7	141.9	148.5	156.2	157.9	153.7	146.8
LT	34.6	111.5	116.3	130.6	140.0	146.2	148.1	147.8	150.2	156.3	160.0	155.2	146.2
LU	43.7	118.7	116.1	118.4	123.8	129.6	135.0	140.1	145.3	150.8	155.8	159.7	162.4
HU	17.2	121.9	118.9	112.7	111.2	114.2	120.3	127.6	131.7	135.1	139.0	139.9	139.1
MT	15.4	124.1	123.1	123.0	121.2	119.0	118.1	119.3	123.4	130.2	136.7	139.8	139.5
NL	6.3	100.2	98.0	99.1	103.2	107.2	108.6	107.3	104.7	103.0	102.9	104.3	106.5
AT	23.5	104.8	102.8	105.8	109.9	111.7	112.1	113.4	116.0	119.6	123.1	126.1	128.3
PL	55.6	121.2	119.8	126.8	132.5	137.5	143.8	151.8	161.4	170.5	176.1	177.5	176.8
PT	14.5	126.3	120.3	116.5	115.7	119.3	125.0	131.3	136.5	139.3	139.5	139.4	140.8
RO	48.0	134.0	133.4	139.5	147.2	156.7	165.6	174.4	180.6	184.4	184.9	184.2	182.0
SI	26.0	125.6	124.8	127.4	132.9	137.8	144.2	151.5	157.2	159.4	157.7	154.0	151.6
SK	26.4	117.7	117.8	125.0	129.2	131.0	134.5	139.1	143.6	147.9	149.8	148.2	144.1
FI	4.8	123.6	124.2	129.8	132.1	132.2	130.6	129.2	128.4	128.2	128.2	128.4	128.4
SE	16.5	101.5	102.1	104.6	106.4	107.5	108.1	108.8	110.6	113.8	116.4	117.4	118.0
UK	14.9	104.8	107.7	110.7	111.8	113.1	114.2	114.4	113.5	114.3	116.0	117.8	119.7
NO	21.1	97.8	95.4	98.0	100.9	104.2	106.5	107.8	109.0	111.3	114.1	116.8	118.9
EU*	13.5	125.6	123.6	125.5	127.8	131.0	134.3	136.8	138.2	139.2	139.5	139.2	139.2
EA	8.7	131.7	128.2	129.1	131.4	134.9	138.4	140.7	141.8	142.0	141.5	140.7	140.4
EU27	14.1	129.1	126.2	127.9	130.6	134.2	138.0	141.0	143.1	144.2	144.3	143.6	143.2
EU* s	17.9	125.9	123.6	125.8	128.0	130.6	133.7	137.2	140.6	143.7	145.1	144.7	143.8

Table III.1.64: Economic old-age dependency ratio (15-64)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	21.4	44.7	46.4	49.4	52.7	55.9	58.1	59.3	60.4	61.8	63.6	64.8	66.2
BG	38.7	47.5	49.9	55.3	59.9	65.1	72.0	80.1	87.5	94.7	95.2	90.5	86.1
CZ	31.5	36.7	41.0	45.7	48.9	51.5	57.5	65.0	70.1	74.3	75.4	71.7	68.2
DK	19.7	36.0	37.4	39.1	41.4	43.9	45.7	46.3	46.1	46.9	49.3	52.5	55.7
DE	29.7	40.6	42.3	47.2	53.5	59.4	61.6	62.6	64.1	66.6	68.6	70.0	70.3
EE	35.1	35.7	39.6	45.4	49.1	51.9	55.8	59.7	64.7	71.4	73.8	72.3	70.8
IE	28.2	29.2	31.5	35.6	39.8	44.3	49.9	56.2	61.9	63.9	62.1	59.3	57.4
EL	18.4	62.4	61.0	63.4	67.4	73.7	80.9	88.2	92.8	92.6	89.1	84.5	80.8
ES	13.1	47.2	47.3	50.8	55.9	63.0	71.4	79.1	80.5	76.8	70.4	64.1	60.2
FR	15.1	46.3	49.6	53.4	57.4	60.9	63.1	62.7	62.1	61.0	59.8	60.1	61.4
HR	31.4	50.1	53.3	59.5	63.7	66.1	67.2	69.4	72.3	75.1	77.5	80.5	81.5
IT	27.3	58.1	58.7	60.5	66.4	74.7	83.5	89.4	91.2	89.7	88.1	85.9	85.4
CY	41.2	32.8	34.5	36.8	39.8	42.4	44.9	48.0	53.1	60.0	67.3	72.1	74.0
LV	31.0	40.7	44.1	51.4	57.6	63.3	68.0	71.5	76.9	83.6	84.2	77.8	71.7
LT	33.5	38.7	42.8	53.1	63.3	72.2	78.1	79.6	80.0	82.8	84.9	80.2	72.2
LU	42.0	31.0	31.9	34.6	39.1	44.2	48.5	52.8	57.5	62.2	66.8	70.6	73.0
HU	28.3	40.4	44.0	45.5	45.7	48.6	54.0	61.1	64.1	66.6	69.7	69.8	68.7
MT	30.4	42.5	46.5	51.5	53.6	53.4	54.2	56.3	59.8	64.9	70.2	73.2	72.9
NL	17.8	35.2	37.0	40.3	44.8	48.7	50.4	49.8	48.8	48.4	49.1	50.7	53.0
AT	30.9	36.9	37.5	40.2	45.5	50.2	52.3	53.8	56.5	59.6	63.3	66.0	67.8
PL	57.0	34.9	39.8	47.2	52.6	56.6	62.0	69.8	79.6	88.3	93.8	94.3	91.9
PT	38.4	44.9	47.5	50.6	55.1	61.0	68.5	76.0	80.6	81.8	81.8	82.1	83.4
RO	42.4	39.1	43.3	49.1	52.3	61.3	69.3	78.2	83.0	88.0	86.7	84.3	81.5
SI	29.6	41.4	46.0	51.6	57.8	63.2	68.2	74.0	78.0	79.4	77.4	74.1	71.0
SK	42.5	31.4	36.1	42.7	47.9	51.3	56.4	63.4	69.6	75.2	78.3	77.3	73.9
FI	19.2	44.7	48.6	53.6	57.1	58.6	57.8	57.8	58.7	59.9	61.8	63.1	63.9
SE	15.0	37.6	38.7	40.1	41.8	43.4	44.4	44.9	46.0	48.5	51.3	52.0	52.7
UK	21.3	34.5	36.8	39.7	42.9	45.9	47.6	48.2	48.8	50.2	52.3	54.4	55.8
NO	27.0	30.2	31.7	34.8	38.0	41.6	44.4	46.0	47.7	50.1	53.0	55.4	57.2
EU*	24.7	42.2	44.5	48.4	52.9	57.7	61.6	64.4	66.2	67.2	67.5	67.2	67.0
EA	22.5	45.3	47.0	50.8	56.0	61.5	65.7	68.4	69.6	69.6	68.9	68.1	67.8
EU27	25.8	43.5	45.7	49.9	54.6	59.8	64.2	67.5	69.6	70.7	70.6	69.9	69.3
EU* s	29.6	40.8	43.3	47.6	51.9	56.2	60.4	64.4	67.7	70.5	71.8	71.4	70.4

Table III.1.65: Economic old-age dependency ratio (15-74)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	19.8	44.3	46.0	48.6	51.2	54.2	56.4	57.6	58.7	59.9	61.6	62.9	64.2
BG	36.0	46.5	48.5	53.4	57.5	62.3	68.2	75.3	82.3	88.9	90.2	86.6	82.5
CZ	30.4	35.9	40.0	44.6	47.9	50.3	55.5	62.4	67.5	71.5	72.8	69.7	66.3
DK	16.2	34.8	36.3	37.7	39.5	41.6	43.2	43.9	43.7	43.9	45.3	48.0	51.0
DE	27.3	39.7	41.0	45.6	51.0	56.1	58.8	59.8	61.0	63.0	65.0	66.5	67.0
EE	33.7	33.8	37.6	43.3	46.8	49.4	52.9	56.5	61.1	66.8	69.7	69.0	67.5
IE	26.1	28.3	30.5	34.2	37.9	41.9	46.8	52.4	57.7	60.2	59.1	56.4	54.4
EL	11.7	61.3	60.0	62.1	65.3	69.9	75.6	81.1	84.9	85.2	82.0	77.3	73.0
ES	10.4	46.8	46.4	49.0	53.0	59.1	66.3	73.3	75.6	73.0	67.2	61.2	57.2
FR	13.4	45.7	48.9	52.4	56.0	59.2	61.1	60.6	60.0	58.9	57.8	57.9	59.1
HR	28.2	49.5	52.4	58.1	62.0	64.1	64.8	66.2	68.8	71.5	73.8	76.5	77.7
IT	19.7	57.0	56.9	57.6	62.2	69.0	76.4	81.9	83.7	81.7	80.1	77.7	76.7
CY	36.0	32.1	33.8	35.9	38.7	41.2	43.5	46.1	50.4	56.1	62.2	66.5	68.1
LV	29.1	39.3	42.4	49.1	54.2	59.5	63.6	66.8	71.5	77.0	78.5	74.1	68.4
LT	32.9	37.6	41.7	52.0	61.4	69.6	75.3	77.0	77.4	79.7	81.7	77.8	70.5
LU	41.2	30.9	31.7	34.3	38.7	43.7	48.0	52.3	56.8	61.5	66.0	69.7	72.1
HU	26.7	40.0	43.6	44.9	44.7	47.2	52.1	58.8	62.1	64.5	67.3	67.7	66.7
MT	30.0	41.9	45.9	51.2	53.1	52.9	53.5	55.5	58.9	63.8	69.0	72.0	71.9
NL	14.5	34.4	35.8	38.6	42.5	45.9	47.6	47.3	46.2	45.5	45.8	47.0	48.9
AT	28.2	36.4	36.8	38.9	43.9	48.5	50.3	51.7	54.0	56.7	60.0	62.7	64.6
PL	54.0	34.3	38.8	45.4	50.8	54.7	59.6	66.6	75.4	83.5	89.1	90.3	88.3
PT	31.4	43.2	45.6	47.7	50.9	55.7	61.6	67.8	72.4	74.3	74.2	73.9	74.6
RO	39.8	37.8	41.8	47.1	50.3	58.0	65.0	73.2	78.0	82.7	82.1	80.2	77.6
SI	28.7	41.0	45.5	50.9	56.6	61.7	66.6	72.0	76.0	77.5	75.8	72.6	69.7
SK	37.1	31.2	35.7	42.2	47.2	50.5	55.0	60.9	66.1	70.4	72.7	71.7	68.3
FI	15.9	43.4	47.2	52.1	55.3	56.7	55.8	55.4	55.8	56.5	57.8	58.8	59.4
SE	14.5	36.3	37.3	38.7	40.3	41.8	42.9	43.4	44.4	46.6	49.3	50.2	50.8
UK	19.7	33.4	35.7	38.5	41.3	44.0	45.8	46.4	46.6	47.8	49.6	51.5	53.0
NO	25.5	29.1	30.5	33.5	36.5	39.8	42.6	44.1	45.7	47.9	50.5	52.8	54.6
EU*	22.0	41.4	43.4	46.8	50.7	54.9	58.5	61.2	62.8	63.7	63.9	63.6	63.4
EA	19.4	44.5	45.9	49.1	53.5	58.3	62.2	64.6	65.8	65.8	65.1	64.3	63.9
EU27	22.8	42.7	44.6	48.2	52.3	56.9	60.9	64.0	65.9	66.8	66.8	66.1	65.5
EU* s	26.9	39.9	42.3	46.2	50.0	53.9	57.6	61.1	64.2	66.7	68.1	67.7	66.8

Table III.1.66: Public pensions, gross as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.9	12.1	12.6	13.4	13.8	14.2	14.5	14.6	14.7	14.8	14.9	15.0	15.0
BG	1.4	9.6	9.1	8.9	9.0	9.4	9.8	10.4	11.1	11.5	11.6	11.3	10.9
CZ	2.8	8.2	8.1	8.1	8.2	8.5	9.2	10.1	10.8	11.5	11.6	11.3	10.9
DK	-1.9	10.0	9.3	8.8	8.6	8.4	8.2	7.9	7.8	7.6	7.5	7.8	8.1
DE	2.4	10.1	10.3	10.8	11.5	11.9	12.0	12.1	12.2	12.4	12.5	12.5	12.5
EE	-1.8	8.1	7.8	7.3	7.2	7.1	7.1	7.1	7.1	7.1	6.9	6.6	6.4
IE	1.6	5.0	5.1	5.5	5.8	6.3	6.7	7.1	7.4	7.5	7.2	6.9	6.6
EL	-6.6	17.3	13.4	12.2	12.0	12.3	12.9	12.6	12.5	11.9	11.5	11.3	10.6
ES	-1.5	12.2	12.3	12.4	12.6	13.2	13.9	14.4	13.9	12.6	11.4	10.9	10.7
FR	-3.3	15.0	15.0	15.3	15.4	15.3	15.1	14.4	13.8	13.1	12.5	12.1	11.8
HR	-3.8	10.6	10.4	10.5	10.0	9.1	8.3	7.8	7.4	7.2	7.0	6.9	6.8
IT	-1.7	15.6	15.6	16.4	17.2	18.2	18.7	18.4	17.3	15.9	15.1	14.3	13.9
CY	2.3	10.2	10.2	10.6	10.9	11.5	11.5	11.4	11.3	11.8	12.0	12.1	12.4
LV	-2.6	7.4	6.8	6.2	6.2	6.3	6.3	6.1	6.1	6.1	5.6	5.1	4.7
LT	-1.7	6.9	7.0	6.9	7.1	7.2	7.0	6.8	6.5	6.3	6.0	5.6	5.2
LU	8.9	9.0	9.0	9.4	10.2	10.8	11.5	12.2	13.0	14.3	16.0	17.2	17.9
HU	1.5	9.7	9.0	8.7	8.4	8.6	9.4	10.3	10.6	10.8	11.1	11.2	11.2
MT	2.9	8.0	7.8	7.4	7.1	7.1	7.3	7.9	8.7	9.6	10.5	10.9	10.9
NL	0.6	7.3	7.0	7.1	7.5	8.1	8.5	8.4	8.2	8.0	7.9	7.9	7.9
AT	0.5	13.8	13.9	14.0	14.4	15.0	14.9	14.6	14.6	14.7	14.7	14.5	14.3
PL	-1.0	11.2	11.1	11.2	11.0	10.8	10.8	11.0	11.2	11.3	11.1	10.6	10.2
PT	-2.2	13.5	13.6	13.9	14.3	14.7	14.7	14.5	13.7	12.8	12.0	11.4	11.4
RO	0.7	8.0	7.3	6.9	6.6	7.2	7.7	8.3	8.7	9.0	8.9	8.9	8.7
SI	3.9	10.9	11.0	11.1	12.0	13.1	14.2	15.1	15.6	15.6	15.2	14.9	14.9
SK	1.2	8.6	8.3	7.8	7.6	7.6	7.8	8.3	8.8	9.4	9.9	10.0	9.8
FI	0.6	13.4	13.8	14.5	14.8	14.5	13.9	13.4	13.2	13.2	13.5	13.8	13.9
SE	-1.2	8.2	7.6	7.4	7.2	7.0	6.8	6.6	6.6	6.8	7.0	6.9	7.0
UK	1.7	7.7	7.7	8.0	8.0	8.4	8.6	8.3	8.3	8.6	8.9	9.2	9.5
NO	2.1	10.7	11.0	11.5	11.7	11.9	11.9	11.9	12.0	12.2	12.5	12.7	12.8
EU*	-0.2	11.2	11.1	11.4	11.6	11.9	12.0	11.9	11.7	11.5	11.3	11.1	11.0
EA	-0.4	12.3	12.3	12.6	13.0	13.4	13.5	13.4	13.1	12.7	12.4	12.1	11.9
EU27	-0.5	11.9	11.8	12.0	12.3	12.6	12.7	12.6	12.4	12.1	11.8	11.6	11.4
EU* s	0.2	10.3	10.0	10.0	10.2	10.4	10.6	10.7	10.7	10.8	10.7	10.6	10.5

Table III.1.67: Old-age and early pensions, gross as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.7	9.8	10.1	10.9	11.5	12.1	12.7	12.9	13.0	13.2	13.4	13.5	13.5
BG	1.0	7.7	7.1	6.7	6.6	6.8	7.0	7.5	8.1	8.7	8.9	8.8	8.7
CZ	2.7	6.8	6.7	6.7	6.8	7.0	7.7	8.6	9.4	10.0	10.2	9.8	9.5
DK	-0.6	6.0	5.9	5.8	5.8	5.8	5.7	5.5	5.4	5.2	5.0	5.2	5.5
DE	3.0	7.8	8.1	8.6	9.4	9.9	10.1	10.2	10.3	10.6	10.7	10.8	10.8
EE	-1.3	6.7	6.3	6.0	5.9	5.9	6.0	6.0	6.0	6.1	6.0	5.7	5.4
IE	1.9	2.0	2.1	2.3	2.4	2.7	3.1	3.6	4.0	4.3	4.3	4.1	4.0
EL	-4.5	12.9	10.2	9.2	9.1	9.4	9.9	9.8	9.8	9.3	9.0	8.9	8.3
ES	-0.7	8.7	9.0	9.2	9.4	10.0	10.8	11.3	10.9	9.8	8.6	8.1	8.0
FR	-2.2	12.3	12.3	12.8	13.0	12.9	12.8	12.3	11.7	11.2	10.7	10.3	10.1
HR	-2.1	6.9	6.9	7.2	6.9	6.2	5.6	5.3	5.1	5.0	4.9	4.8	4.8
IT	-0.9	12.7	12.7	13.4	14.2	15.1	15.6	15.3	14.4	13.2	12.6	12.1	11.8
CY	2.0	8.5	8.4	8.6	8.8	9.4	9.4	9.3	9.3	9.9	10.0	10.1	10.4
LV	-2.4	6.6	6.1	5.5	5.6	5.8	5.8	5.6	5.6	5.6	5.2	4.6	4.2
LT	-1.4	4.9	4.9	4.8	4.9	5.0	5.0	4.8	4.6	4.5	4.3	3.9	3.5
LU	8.3	6.7	6.7	7.0	7.7	8.3	8.9	9.5	10.1	11.2	12.9	14.1	14.9
HU	2.2	8.0	7.4	7.2	7.0	7.3	8.2	9.2	9.5	9.7	10.1	10.2	10.2
MT	4.3	5.0	5.1	5.1	5.0	5.2	5.6	6.2	7.0	8.0	8.8	9.3	9.3
NL	0.4	5.3	5.0	5.2	5.7	6.2	6.6	6.4	6.1	5.9	5.7	5.7	5.6
AT	1.9	10.5	10.9	11.3	11.8	12.3	12.4	12.3	12.4	12.6	12.6	12.5	12.4
PL	-0.4	9.9	10.1	10.4	10.2	10.0	10.0	10.2	10.4	10.5	10.4	10.0	9.5
PT	-1.5	11.2	11.3	11.6	12.1	12.5	12.5	12.3	11.6	10.8	10.1	9.6	9.7
RO	0.7	5.9	5.4	5.2	4.9	5.4	5.9	6.4	6.7	7.1	6.9	6.8	6.7
SI	3.5	8.3	8.5	8.6	9.4	10.3	11.1	11.9	12.3	12.3	12.0	11.8	11.9
SK	0.7	6.7	6.5	6.0	5.9	5.8	5.9	6.4	6.7	7.1	7.6	7.6	7.4
FI	0.7	11.2	11.8	12.4	12.7	12.5	11.8	11.3	11.2	11.2	11.5	11.8	11.9
SE	-0.6	6.9	6.7	6.5	6.3	6.1	6.0	5.8	5.8	6.0	6.3	6.2	6.3
UK	2.1	4.9	5.0	5.3	5.4	5.8	6.1	5.9	6.0	6.2	6.5	6.8	7.0
NO	2.7	7.4	7.7	8.2	8.6	9.0	9.2	9.2	9.3	9.5	9.8	10.0	10.2
EU*	0.4	8.6	8.7	9.0	9.3	9.6	9.8	9.7	9.5	9.4	9.3	9.1	9.1
EA	0.3	9.6	9.7	10.1	10.5	11.0	11.1	11.1	10.8	10.5	10.3	10.1	9.9
EU27	0.2	9.3	9.3	9.7	10.0	10.3	10.5	10.5	10.3	10.1	9.9	9.7	9.5
EU* s	0.7	7.9	7.8	7.8	8.0	8.3	8.5	8.6	8.7	8.8	8.8	8.7	8.6

Table III.1.68: Disability pensions, gross as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.1	1.3	1.6	1.7	1.6	1.5	1.4	1.3	1.3	1.2	1.2	1.2	1.2
BG	0.5	1.3	1.5	1.7	1.9	2.2	2.4	2.5	2.5	2.4	2.2	2.0	1.7
CZ	-0.1	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.8
DK	0.6	2.0	1.8	1.8	1.8	1.9	2.0	2.1	2.2	2.3	2.5	2.5	2.5
DE	-0.1	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
EE	-1.3	1.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.8
EL	-0.4	1.2	1.0	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9
ES	-0.2	1.2	1.1	1.1	1.1	1.1	1.1	0.9	0.8	0.8	0.8	0.9	1.0
FR	-0.3	1.1	1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8
HR	-1.0	1.8	1.8	1.7	1.5	1.4	1.3	1.1	1.0	1.0	0.9	0.9	0.9
IT	-0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
CY	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
LV	-0.3	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4
LT	0.1	1.4	1.5	1.6	1.7	1.7	1.6	1.6	1.6	1.5	1.4	1.4	1.4
LU	0.3	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.1	1.2	1.2	1.1	1.1
HU	-0.2	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.6
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	0.2
NL	0.2	1.9	1.9	1.8	1.7	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.1
AT	-0.3	1.1	0.8	0.6	0.7	0.7	0.7	0.6	0.6	0.6	0.7	0.7	0.7
PL	-0.3	0.8	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
PT	-0.2	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.5
RO	0.0	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6
SI	0.2	1.3	1.2	1.3	1.3	1.4	1.5	1.6	1.7	1.7	1.6	1.6	1.5
SK	0.1	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.0	1.1	1.1
FI	0.1	1.4	1.2	1.3	1.3	1.2	1.3	1.4	1.4	1.4	1.4	1.4	1.5
SE	-0.3	1.0	0.8	0.8	0.8	0.7	0.8	0.8	0.7	0.7	0.7	0.7	0.7
UK	0.0	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	-0.6	3.2	3.2	3.2	3.0	2.8	2.6	2.6	2.7	2.7	2.6	2.6	2.6
EU*	-0.1	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
EA	-0.1	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
EU27	-0.1	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
EU* s	-0.1	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9

Table III.1.69: Survivors pensions, gross as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.7	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3
BG	-0.1	0.3	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	0.7	0.7	0.7	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	0.0
DE	-0.4	1.6	1.5	1.5	1.5	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.1
EE	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
IE	0.2	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.7
EL	-1.2	2.4	1.9	1.8	1.7	1.7	1.7	1.6	1.5	1.4	1.3	1.2	1.1
ES	-0.5	2.3	2.2	2.1	2.0	2.1	2.1	2.1	2.1	2.0	1.9	1.9	1.8
FR	-0.8	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.1	1.1	1.0	0.9	0.8
HR	-0.7	1.8	1.7	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.2	1.2	1.2
IT	-0.8	2.5	2.5	2.6	2.6	2.7	2.8	2.7	2.6	2.4	2.2	2.0	1.8
CY	0.2	1.5	1.6	1.7	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.7
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	0.1
LT	-0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1
LU	0.3	1.6	1.6	1.6	1.6	1.6	1.7	1.8	1.8	1.9	1.9	1.9	1.9
HU	-0.5	0.9	0.8	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
MT	-0.4	1.4	1.3	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.9
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	0.1
AT	-1.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8
PL	-0.3	0.5	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
PT	-0.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.5	1.4	1.3	1.2
RO	0.2	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6
SI	0.3	1.3	1.2	1.2	1.3	1.4	1.5	1.6	1.6	1.6	1.6	1.6	1.5
SK	0.3	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.9	1.0	1.1	1.2	1.2
FI	-0.2	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6
SE	-0.3	0.3	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UK	0.0	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	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EU*	-0.5	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.8	0.8
EA	-0.6	1.7	1.6	1.5	1.5	1.5	1.5	1.4	1.3	1.3	1.2	1.1	1.1
EU27	-0.6	1.5	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.1	1.1	1.0	0.9
EU* s	-0.3	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8

Table III.1.70: Other pensions, gross as % of GDP

Country	Ch 16-70	2016	2020	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	0.0
BG	0.0	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
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	0.0
DK	-1.9	2.0	1.6	1.2	1.0	0.7	0.5	0.3	0.2	0.1	0.1	0.1	0.1
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	0.0
EE	0.8	0.1	1.1	1.2	1.2	1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.9
IE	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
EL	-0.5	0.8	0.3	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	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	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	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	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	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	0.0
LT	-0.2	0.3	0.3	0.2	0.2	0.2	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	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	0.1
MT	-1.0	1.5	1.3	0.9	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4
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	0.0
AT	0.0	0.4	0.4	0.3	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	0.0
PT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RO	-0.2	1.0	0.8	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8
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	0.0
SK	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
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	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	0.0
UK	-0.4	2.8	2.7	2.7	2.6	2.6	2.5	2.4	2.4	2.4	2.4	2.4	2.5
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	0.0
EU*	-0.1	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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	0.1
EU27	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
EU* s	-0.1	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Table III.1.71: Earnings-related pensions (old age and early pensions), gross as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.8	9.7	10.0	10.8	11.4	12.0	12.6	12.8	12.9	13.1	13.3	13.4	13.4
BG	0.9	7.7	7.0	6.7	6.6	6.8	7.0	7.5	8.1	8.6	8.9	8.8	8.6
CZ	1.9	5.3	5.1	5.1	5.1	5.2	5.8	6.5	7.1	7.6	7.7	7.5	7.2
DK	-1.3	1.3	1.2	0.9	0.7	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0
DE	3.0	7.8	8.1	8.6	9.4	9.9	10.1	10.2	10.3	10.6	10.7	10.8	10.8
EE	-1.7	4.0	3.7	3.4	3.3	3.1	3.1	3.0	2.9	2.9	2.7	2.5	2.4
IE	2.0	1.7	1.8	1.9	2.1	2.4	2.8	3.3	3.7	4.0	4.0	3.8	3.7
EL	-2.3	8.1	6.1	5.5	5.5	5.6	6.0	5.9	6.0	5.8	5.8	6.0	5.7
ES	-0.8	8.6	8.9	9.1	9.2	9.8	10.6	11.1	10.7	9.6	8.4	7.9	7.8
FR	-2.3	12.1	12.2	12.5	12.7	12.7	12.5	12.0	11.5	11.0	10.5	10.1	9.9
HR	-2.1	6.9	6.9	7.2	6.9	6.2	5.6	5.3	5.1	5.0	4.9	4.8	4.8
IT	-1.0	12.4	12.4	13.1	13.9	14.8	15.2	15.0	14.0	12.8	12.2	11.7	11.4
CY	2.1	8.1	8.0	8.2	8.5	9.1	9.1	9.1	9.0	9.5	9.6	9.8	10.2
LV	-2.4	6.6	6.1	5.5	5.6	5.8	5.8	5.6	5.6	5.6	5.2	4.6	4.2
LT	-0.7	1.9	1.9	1.8	1.9	1.9	1.9	1.8	1.7	1.6	1.6	1.4	1.2
LU	8.3	6.7	6.7	7.0	7.7	8.3	8.9	9.5	10.1	11.2	12.9	14.1	14.9
HU	2.2	7.9	7.4	7.2	7.0	7.3	8.2	9.2	9.5	9.7	10.1	10.2	10.2
MT	4.5	4.5	4.6	4.6	4.6	4.8	5.2	5.8	6.6	7.6	8.4	8.9	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	0.0
AT	1.9	10.5	10.9	11.3	11.8	12.3	12.4	12.3	12.4	12.6	12.6	12.5	12.4
PL	-0.1	8.5	9.0	9.3	9.2	9.0	8.9	9.0	9.1	9.2	9.1	8.8	8.4
PT	-1.4	10.7	10.9	11.2	11.7	12.1	12.1	11.9	11.1	10.3	9.6	9.2	9.2
RO	0.7	5.9	5.4	5.1	4.9	5.3	5.8	6.3	6.7	7.0	6.9	6.8	6.6
SI	3.5	8.3	8.5	8.6	9.4	10.3	11.1	11.9	12.3	12.3	12.0	11.8	11.9
SK	0.7	6.7	6.5	6.0	5.9	5.8	5.9	6.4	6.7	7.1	7.6	7.6	7.4
FI	0.7	10.5	11.1	11.8	12.1	11.9	11.2	10.7	10.5	10.6	10.8	11.1	11.2
SE	-1.5	6.4	6.2	5.9	5.7	5.5	5.2	4.9	4.8	4.9	5.0	4.9	4.9
UK	-1.1	1.1	1.0	0.8	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0
NO	4.5	4.8	5.1	5.8	6.6	7.4	8.0	8.2	8.4	8.7	9.0	9.2	9.3
EU*	-0.3	7.4	7.5	7.7	7.9	8.0	8.1	8.0	7.8	7.6	7.5	7.3	7.2
EA	0.3	9.1	9.1	9.5	9.9	10.3	10.5	10.4	10.2	9.9	9.7	9.5	9.3
EU27	0.1	8.6	8.7	9.0	9.3	9.6	9.7	9.7	9.5	9.3	9.1	8.9	8.8
EU* s	0.6	6.8	6.7	6.8	6.9	7.1	7.3	7.4	7.5	7.5	7.5	7.5	7.4

Table III.1.72: Private occupational pensions, gross as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	:	:	:	:	:	:	:	:	:	:
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:
DK	2.6	4.4	5.1	4.7	4.9	5.5	6.0	6.2	6.3	6.3	6.3	6.5	7.0
DE	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	:	:	:	:	:	:	:	:	:	:	:	:	:
IE	-0.6	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.4	1.1	0.9	0.7	0.6
EL	:	:	:	:	:	:	:	:	:	:	:	:	:
ES	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3
FR	:	:	:	:	:	:	:	:	:	:	:	:	:
HR	:	:	:	:	:	:	:	:	:	:	:	:	:
IT	:	:	:	:	:	:	:	:	:	:	:	:	:
CY	:	:	:	:	:	:	:	:	:	:	:	:	:
LV	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	:	:	:	:	:	:	:	:	:	:	:
LU	:	:	:	:	:	:	:	:	:	:	:	:	:
HU	:	:	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:	:
NL	0.1	5.8	5.7	6.6	7.7	8.1	8.2	7.6	7.0	6.4	6.2	6.0	6.0
AT	:	:	:	:	:	:	:	:	:	:	:	:	:
PL	:	:	:	:	:	:	:	:	:	:	:	:	:
PT	0.0	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
RO	:	:	:	:	:	:	:	:	:	:	:	:	:
SI	:	:	:	:	:	:	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:	:	:	:	:	:	:
FI	:	:	:	:	:	:	:	:	:	:	:	:	:
SE	0.2	1.9	2.1	2.4	2.6	2.8	2.7	2.5	2.4	2.4	2.3	2.1	2.1
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:	:	:
EU*	0.1	0.5	0.5	0.5	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6
EA	0.0	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
EU27	0.1	0.5	0.6	0.6	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7
EU* s	0.4	2.3	2.4	2.6	2.9	3.1	3.2	3.1	3.0	2.8	2.7	2.7	2.7

Table III.1.73: Private individual pensions, gross as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	:	:	:	:	:	:	:	:	:	:	:	:	:
CZ	:	:	:	:	:	:	:	:	:	:	:	:	:
DK	:	:	:	:	:	:	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	1.8	0.0	0.1	0.1	0.3	0.5	0.7	0.9	1.3	1.7	1.8	1.8	1.8
IE	:	:	:	:	:	:	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:	:	:	:	:	:	:
ES	0.1	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.4	0.4
FR	:	:	:	:	:	:	:	:	:	:	:	:	:
HR	1.6	0.0	0.0	0.1	0.3	0.5	0.8	1.0	1.2	1.3	1.4	1.5	1.6
IT	:	:	:	:	:	:	:	:	:	:	:	:	:
CY	:	:	:	:	:	:	:	:	:	:	:	:	:
LV	:	:	0.0	0.1	0.3	0.4	0.7	1.0	1.5	2.0	2.3	2.5	2.6
LT	1.9	0.0	0.0	0.1	0.2	0.4	0.6	0.8	1.0	1.4	1.8	1.9	1.9
LU	:	:	:	:	:	:	:	:	:	:	:	:	:
HU	:	:	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:	:
NL	:	:	:	:	:	:	:	:	:	:	:	:	:
AT	:	:	:	:	:	:	:	:	:	:	:	:	:
PL	:	:	:	:	:	:	:	:	:	:	:	:	:
PT	:	:	:	:	:	:	:	:	:	:	:	:	:
RO	1.1	0.0	0.0	0.1	0.2	0.3	0.5	0.7	0.8	1.0	1.0	1.1	1.1
SI	:	:	:	:	:	:	:	:	:	:	:	:	:
SK	:	:	:	:	:	:	:	:	:	:	:	:	:
FI	:	:	:	:	:	:	:	:	:	:	:	:	:
SE	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.2	1.3	1.3	1.2	1.2
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:	:	:
EU*	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
EA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
EU27	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
EU* s	1.3	0.2	0.2	0.2	0.4	0.5	0.7	0.9	1.1	1.3	1.4	1.5	1.5

Table III.1.74: New pensions (Old-age and early pensions), gross as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.1	0.5	0.5	0.4	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	0.2
CZ	0.1	0.3	0.3	0.3	0.3	0.4	0.5	0.5	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	0.2
EE	-0.1	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
IE	0.0	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
EL	0.0	0.4	0.4	0.3	0.5	0.6	0.6	0.5	0.5	0.4	0.5	0.5	0.4
ES	-0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
FR	0.0	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4
HR	-0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
IT	0.2	0.4	0.5	0.6	0.8	0.7	0.7	0.6	0.6	0.5	0.7	0.6	0.6
CY	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.3	0.5	0.6
LV	-0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LT	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LU	0.1	0.5	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.5
HU	0.0	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.2
MT	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3
NL	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3
AT	0.0	0.4	0.4	0.5	0.5	0.6	0.4	0.4	0.5	0.5	0.4	0.4	0.4
PL	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
PT	0.0	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.3	0.3	0.3
RO	0.0	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
SI	0.0	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
SK	-0.1	0.3	0.2	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.3	0.3
FI	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
SE	-0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3
UK	0.0	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	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.4
EU*	0.0	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2
EA	0.0	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
EU27	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
EU* s	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Table III.1.75: Public pensions, net as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	10.6	11.0	11.7	12.1	12.4	12.6	12.7	12.7	12.8	12.9	13.0	13.0
BG	1.4	9.6	9.1	8.9	9.0	9.4	9.8	10.4	11.1	11.5	11.6	11.3	10.9
CZ	2.8	8.2	8.1	8.1	8.2	8.5	9.2	10.1	10.8	11.5	11.6	11.3	10.9
DK	-1.2	7.1	6.6	6.3	6.2	6.1	5.9	5.8	5.7	5.6	5.6	5.7	6.0
DE	1.6	8.3	8.5	8.8	9.3	9.6	9.6	9.6	9.7	9.9	10.0	9.9	9.9
EE	:	:	:	:	:	:	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:	:	:	:	:	:	:
ES	-1.4	11.3	11.4	11.6	11.7	12.3	13.0	13.4	12.9	11.8	10.6	10.1	10.0
FR	-2.9	13.4	13.4	13.6	13.8	13.7	13.4	12.9	12.3	11.7	11.2	10.8	10.5
HR	-3.7	10.5	10.3	10.4	9.9	9.0	8.2	7.7	7.4	7.1	7.0	6.9	6.7
IT	-1.4	12.7	12.7	13.3	14.0	14.8	15.2	15.0	14.1	12.9	12.3	11.6	11.3
CY	:	:	:	:	:	:	:	:	:	:	:	:	:
LV	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	:	:	:	:	:	:	:	:	:	:	:
LU	7.6	7.7	7.6	8.0	8.6	9.2	9.8	10.4	11.0	12.1	13.6	14.6	15.2
HU	:	:	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:	:
NL	0.5	6.2	5.9	6.0	6.4	7.0	7.3	7.2	7.0	6.8	6.7	6.7	6.7
AT	:	:	:	:	:	:	:	:	:	:	:	:	:
PL	-0.5	7.9	8.1	8.3	8.2	8.1	8.0	8.1	8.1	8.2	8.1	7.8	7.5
PT	-1.9	12.0	12.1	12.3	12.7	13.1	13.1	12.8	12.2	11.3	10.6	10.2	10.1
RO	0.9	7.7	7.2	6.9	6.6	7.1	7.6	8.2	8.6	8.9	8.8	8.8	8.6
SI	3.9	10.9	10.9	11.1	12.0	13.0	14.1	15.0	15.5	15.5	15.1	14.8	14.8
SK	1.2	8.6	8.3	7.8	7.6	7.6	7.8	8.3	8.8	9.4	9.9	10.0	9.8
FI	0.4	10.5	10.8	11.3	11.6	11.4	10.9	10.5	10.4	10.4	10.6	10.8	10.9
SE	-0.8	6.3	5.8	5.6	5.5	5.3	5.2	5.1	5.1	5.3	5.5	5.5	5.5
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:	:	:
EU*	-0.6	7.9	7.8	8.0	8.1	8.2	8.3	8.2	8.0	7.7	7.5	7.4	7.2
EA	-0.5	9.7	9.7	10.0	10.3	10.5	10.6	10.5	10.2	9.9	9.6	9.4	9.3
EU27	-0.5	9.3	9.3	9.5	9.7	9.9	10.0	9.9	9.7	9.4	9.2	9.0	8.8
EU* s	0.5	9.4	9.3	9.5	9.6	9.9	10.0	10.2	10.2	10.2	10.1	10.0	9.9

Table III.1.76: Public pensions, contributions as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	:	:	:	:	:	:	:	:	:	:	:	:	:
BG	0.9	4.2	4.9	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
CZ	0.0	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
DK	-0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DE	2.6	10.4	10.4	11.0	11.7	12.1	12.2	12.4	12.5	12.8	12.9	12.9	12.9
EE	-0.7	5.7	5.5	5.4	5.2	5.2	5.1	5.1	5.0	5.0	5.0	5.0	5.0
IE	2.2	3.8	3.8	4.1	4.3	4.7	5.2	5.6	6.1	6.3	6.3	6.1	6.0
EL	-2.9	13.7	12.6	12.1	12.3	12.5	12.6	12.4	12.2	11.9	11.5	11.2	10.8
ES	-1.0	12.5	12.6	12.8	12.8	12.8	12.7	12.6	12.4	12.1	11.9	11.7	11.5
FR	-0.1	11.9	11.8	11.8	11.7	11.8	11.8	11.7	11.7	11.7	11.7	11.7	11.9
HR	-0.1	5.8	5.8	5.7	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
IT	0.2	10.7	10.9	10.9	10.9	10.9	11.0	11.0	11.0	11.0	11.0	11.0	10.9
CY	2.5	7.8	8.3	8.8	9.4	9.9	10.4	10.4	10.4	10.4	10.5	10.4	10.3
LV	-0.2	6.8	7.5	7.0	6.7	6.6	6.6	6.5	6.5	6.5	6.5	6.5	6.5
LT	-0.7	7.2	6.9	6.6	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
LU	-0.3	9.5	9.2	9.1	9.2	9.3	9.3	9.4	9.4	9.3	9.3	9.3	9.3
HU	-1.0	9.4	8.3	8.5	8.5	8.5	8.5	8.5	8.4	8.4	8.4	8.4	8.5
MT	-1.8	8.1	7.0	7.0	6.9	6.8	6.7	6.6	6.6	6.5	6.5	6.4	6.3
NL	0.5	7.0	7.0	7.0	7.6	8.1	8.5	8.3	8.0	7.7	7.6	7.5	7.5
AT	0.2	9.4	9.7	9.7	9.8	9.7	9.7	9.7	9.6	9.6	9.6	9.6	9.6
PL	0.3	7.9	8.1	8.2	8.3	8.4	8.4	8.4	8.3	8.3	8.3	8.3	8.3
PT	-0.8	13.1	12.8	12.4	11.9	11.4	11.1	10.9	11.0	11.4	11.8	12.1	12.3
RO	0.3	5.6	5.8	5.5	5.4	5.2	5.2	5.2	5.3	5.3	5.5	5.7	5.9
SI	-0.5	9.1	8.9	8.9	8.8	8.7	8.7	8.6	8.6	8.7	8.7	8.7	8.7
SK	-0.1	6.9	6.8	6.6	6.6	6.6	6.7	6.7	6.7	6.8	6.8	6.8	6.8
FI	1.9	17.6	16.8	17.5	18.1	18.0	17.8	17.7	17.7	17.9	18.3	18.9	19.4
SE	-0.2	5.9	5.8	5.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	2.1	10.7	11.0	11.5	11.7	11.9	11.9	11.9	12.0	12.2	12.5	12.7	12.8
EU*	0.1	8.1	8.1	8.2	8.3	8.4	8.3	8.3	8.3	8.3	8.2	8.2	8.2
EA	0.6	10.3	10.3	10.4	10.7	10.8	10.9	10.9	10.9	10.9	10.9	10.9	10.9
EU27	0.4	9.7	9.7	9.8	9.9	10.0	10.1	10.0	10.0	10.1	10.0	10.0	10.1
EU* s	0.0	8.4	8.3	8.3	8.3	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4

Table III.1.77: Public pensions, net/Public pensions, gross, %

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.6	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%	87%
BG	0.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CZ	0.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DK	2.5	71%	71%	72%	72%	72%	73%	73%	74%	74%	74%	74%	74%
DE	-3.2	83%	82%	81%	81%	81%	80%	79%	80%	80%	80%	79%	79%
EE	:	:	:	:	:	:	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:	:	:	:	:	:	:
EL	:	:	:	:	:	:	:	:	:	:	:	:	:
ES	0.0	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%
FR	0.0	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%
HR	0.0	99%	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%	81%
CY	:	:	:	:	:	:	:	:	:	:	:	:	:
LV	:	:	:	:	:	:	:	:	:	:	:	:	:
LT	:	:	:	:	:	:	:	:	:	:	:	:	:
LU	0.0	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
HU	:	:	:	:	:	:	:	:	:	:	:	:	:
MT	:	:	:	:	:	:	:	:	:	:	:	:	:
NL	-0.2	85%	85%	85%	86%	86%	86%	86%	85%	85%	85%	85%	85%
AT	:	:	:	:	:	:	:	:	:	:	:	:	:
PL	2.4	71%	73%	74%	75%	74%	74%	73%	73%	73%	73%	73%	73%
PT	0.0	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%
RO	2.6	96%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
SI	0.0	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
SK	0.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
FI	0.0	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%	78%
SE	2.4	77%	76%	76%	76%	77%	77%	78%	78%	79%	79%	79%	79%
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:	:	:
EU*	-4.3	70%	70%	70%	70%	69%	69%	69%	68%	67%	67%	66%	66%
EA	-1.2	79%	79%	79%	79%	79%	78%	78%	78%	78%	78%	78%	78%
EU27	-1.0	79%	79%	79%	79%	78%	78%	78%	78%	78%	78%	78%	78%
EU* s	0.3	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%

Table III.1.78: Pensioners (Public, in 1000 persons)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1,425	2,793	2,969	3,199	3,340	3,450	3,586	3,694	3,803	3,899	4,011	4,112	4,218
BG	-576	2,181	2,135	2,098	2,031	1,965	1,899	1,865	1,857	1,831	1,780	1,692	1,605
CZ	406	2,907	2,988	2,998	3,053	3,138	3,291	3,431	3,521	3,572	3,539	3,426	3,313
DK	157	1,341	1,342	1,367	1,396	1,425	1,437	1,436	1,450	1,436	1,412	1,443	1,497
DE	5,680	22,598	23,688	25,258	26,863	28,245	28,564	28,547	28,626	28,751	28,679	28,523	28,277
EE	-37	416	340	324	337	348	362	373	386	403	402	389	379
IE	878	914	1,000	1,095	1,195	1,326	1,460	1,585	1,691	1,765	1,792	1,785	1,792
EL	-39	2,619	2,615	2,569	2,609	2,720	2,901	2,926	2,975	2,873	2,800	2,759	2,580
ES	4,262	9,492	10,042	10,894	11,942	13,317	14,701	15,837	16,255	15,936	15,237	14,422	13,754
FR	5,378	19,403	20,203	21,325	22,519	23,323	23,790	24,057	24,145	24,110	24,124	24,417	24,781
HR	-90	1,233	1,238	1,247	1,244	1,200	1,172	1,168	1,165	1,158	1,154	1,152	1,143
IT	143	15,088	14,918	15,175	15,790	16,721	17,460	17,923	17,824	17,282	16,668	15,852	15,231
CY	172	152	169	190	206	226	239	263	284	315	324	325	324
LV	-98	569	545	538	552	558	562	556	558	562	544	506	472
LT	-265	908	876	870	889	892	875	839	804	778	746	694	643
LU	401	191	214	248	288	323	356	387	419	464	518	561	593
HU	432	2,542	2,572	2,660	2,720	2,802	2,928	3,035	3,057	3,078	3,087	3,036	2,974
MT	89	86	96	107	115	123	131	139	148	158	167	173	175
NL	826	4,040	4,189	4,457	4,779	5,007	5,183	5,097	4,985	4,891	4,872	4,873	4,867
AT	1,188	2,373	2,507	2,699	2,884	3,122	3,270	3,360	3,434	3,494	3,530	3,542	3,561
PL	2,455	9,233	9,949	10,449	10,799	11,183	11,705	12,256	12,650	12,787	12,609	12,167	11,688
PT	69	2,718	2,747	2,814	2,918	3,051	3,153	3,221	3,226	3,128	2,993	2,884	2,788
RO	-48	5,152	5,186	5,150	5,131	5,337	5,527	5,608	5,627	5,616	5,467	5,296	5,104
SI	120	616	658	680	721	759	790	810	812	799	775	752	736
SK	181	1,364	1,401	1,427	1,480	1,510	1,558	1,617	1,653	1,675	1,673	1,621	1,546
FI	295	1,449	1,544	1,601	1,656	1,673	1,660	1,656	1,662	1,677	1,708	1,730	1,744
SE	2,348	2,501	2,634	2,833	3,049	3,234	3,405	3,567	3,796	4,124	4,421	4,616	4,849
UK	6,403	13,165	12,846	13,843	14,186	15,382	16,210	15,943	16,296	16,844	17,608	18,389	19,569
NO	1,237	1,215	1,314	1,446	1,578	1,704	1,812	1,915	2,033	2,167	2,283	2,374	2,452
EU*	32,154	128,045	131,611	138,116	144,692	152,361	158,173	161,196	163,109	163,407	162,639	161,135	160,194
EA	20,668	87,790	90,722	95,472	101,083	106,695	110,600	112,886	113,689	112,962	111,562	109,919	108,457
EU27	25,751	114,880	118,765	124,273	130,506	136,979	141,963	145,253	146,813	146,563	145,031	142,746	140,631
EU* s	1,148	4,573	4,700	4,933	5,168	5,441	5,649	5,757	5,825	5,836	5,809	5,755	5,721

Table III.1.79: Public pensioners aged 65+ (1000 persons)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1671.0	2,017	2,190	2,416	2,657	2,864	3,047	3,166	3,276	3,374	3,494	3,591	3,688
BG	-138.8	1,506	1,553	1,565	1,525	1,488	1,465	1,482	1,518	1,559	1,547	1,461	1,367
CZ	754.4	1,953	2,106	2,224	2,324	2,390	2,547	2,763	2,886	2,971	2,984	2,854	2,707
DK	259.8	1,063	1,126	1,171	1,216	1,249	1,259	1,253	1,259	1,244	1,227	1,264	1,323
DE	6591.3	19,428	20,570	22,142	23,966	25,670	26,031	25,906	25,939	26,201	26,241	26,203	26,019
EE	86.9	255	270	283	297	307	321	332	345	363	366	353	342
IE	806.2	592	669	750	836	956	1,088	1,224	1,347	1,426	1,439	1,412	1,398
EL	448.7	1,973	2,080	2,197	2,330	2,490	2,668	2,728	2,782	2,699	2,630	2,591	2,421
ES	4687.7	7,503	8,018	8,920	10,039	11,437	12,919	14,290	14,864	14,552	13,798	12,899	12,190
FR	6933.4	13,261	14,435	15,796	17,241	18,400	19,247	19,520	19,616	19,566	19,490	19,713	20,195
HR	155.2	846	919	978	1,019	1,017	1,003	1,000	1,006	1,003	1,002	1,011	1,001
IT	1933.3	12,607	12,849	13,395	14,206	15,354	16,356	16,967	16,961	16,470	15,902	15,124	14,541
CY	177.1	132	153	175	192	212	224	248	269	300	309	310	310
LV	-18.2	404	397	415	436	449	461	462	468	481	467	425	386
LT	:	:	582	625	670	693	700	680	653	639	625	581	526
LU	344.7	134	152	175	207	242	272	297	318	342	384	438	478
HU	776.3	1,725	1,892	2,012	2,052	2,140	2,285	2,478	2,523	2,557	2,601	2,561	2,501
MT	91.5	66	76	89	100	106	112	120	128	138	148	155	157
NL	838.5	3,229	3,382	3,650	3,969	4,199	4,377	4,293	4,182	4,090	4,072	4,073	4,067
AT	:	:	:	:	:	:	:	:	:	:	:	:	:
PL	4162.7	6,135	7,222	8,285	8,763	9,034	9,489	10,107	10,784	11,191	11,260	10,890	10,298
PT	402.3	2,126	2,231	2,350	2,492	2,643	2,777	2,892	2,927	2,835	2,704	2,606	2,528
RO	423.9	3,537	3,640	3,719	3,593	3,780	4,007	4,230	4,307	4,433	4,315	4,145	3,961
SI	187.1	436	484	535	583	623	653	681	695	694	673	648	623
SK	569.0	794	913	1,049	1,151	1,209	1,277	1,366	1,430	1,474	1,490	1,442	1,363
FI	440.2	1,142	1,259	1,363	1,447	1,483	1,470	1,470	1,485	1,505	1,545	1,569	1,583
SE	2325.9	2,107	2,273	2,474	2,675	2,862	3,035	3,188	3,396	3,714	4,037	4,217	4,433
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	1254.6	872	967	1,105	1,244	1,388	1,510	1,605	1,712	1,841	1,961	2,055	2,127
EU*	34987.2	82,997	89,363	96,554	103,654	110,808	116,421	120,414	122,582	123,121	122,121	119,944	117,984
EA	26267.7	64,126	68,630	74,128	80,489	86,848	91,332	93,913	94,904	94,451	93,148	91,541	90,394
EU27	34987.2	82,997	89,363	96,554	103,654	110,808	116,421	120,414	122,582	123,121	122,121	119,944	117,984
EU* s	1232.2	3,399	3,517	3,798	4,076	4,358	4,580	4,736	4,822	4,839	4,798	4,713	4,631

Table III.1.80: Share of public pensioners below age 65 as % of all public pensioners

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-15.2	28%	26%	24%	20%	17%	15%	14%	14%	13%	13%	13%	13%
BG	-16.1	31%	27%	25%	25%	24%	23%	21%	18%	15%	13%	14%	15%
CZ	-14.5	33%	30%	26%	24%	24%	23%	19%	18%	17%	16%	17%	18%
DK	-9.1	21%	16%	14%	13%	12%	12%	13%	13%	13%	13%	12%	12%
DE	-6.0	14%	13%	12%	11%	9%	9%	9%	9%	9%	8%	8%	8%
EE	-29.0	39%	21%	13%	12%	12%	11%	11%	11%	10%	9%	9%	10%
IE	-13.2	35%	33%	31%	30%	28%	25%	23%	20%	19%	20%	21%	22%
EL	-18.5	25%	20%	14%	11%	8%	8%	7%	6%	6%	6%	6%	6%
ES	-9.6	21%	20%	18%	16%	14%	12%	10%	9%	9%	9%	11%	11%
FR	-13.1	32%	29%	26%	23%	21%	19%	19%	19%	19%	19%	19%	19%
HR	-19.0	31%	26%	22%	18%	15%	14%	14%	14%	13%	13%	12%	12%
IT	-11.9	16%	14%	12%	10%	8%	6%	5%	5%	5%	5%	5%	5%
CY	-8.6	13%	10%	8%	7%	6%	6%	6%	5%	5%	5%	5%	4%
LV	-10.8	29%	27%	23%	21%	20%	18%	17%	16%	15%	14%	16%	18%
LT	:	:	:	34%	28%	25%	22%	20%	19%	19%	18%	16%	16%	18%
LU	-10.7	30%	29%	29%	28%	25%	23%	23%	24%	26%	26%	22%	19%
HU	-16.3	32%	26%	24%	25%	24%	22%	18%	17%	17%	16%	16%	16%
MT	-13.3	23%	20%	16%	13%	14%	14%	14%	14%	13%	11%	10%	10%
NL	-3.7	20%	19%	18%	17%	16%	16%	16%	16%	16%	16%	16%	16%
AT	:	:	:	:	:	:	:	:	:	:	:	:	:
PL	-21.7	34%	27%	21%	19%	19%	19%	18%	15%	12%	11%	10%	12%
PT	-12.5	22%	19%	16%	15%	13%	12%	10%	9%	9%	10%	10%	9%
RO	-8.9	31%	30%	28%	30%	29%	28%	25%	23%	21%	21%	22%	22%
SI	-13.9	29%	26%	21%	19%	18%	17%	16%	14%	13%	13%	14%	15%
SK	-30.0	42%	35%	27%	22%	20%	18%	16%	14%	12%	11%	11%	12%
FI	-11.9	21%	18%	15%	13%	11%	11%	11%	11%	10%	10%	9%	9%
SE	-7.2	16%	14%	13%	12%	12%	11%	11%	11%	10%	9%	9%	9%
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	-15.0	28%	26%	24%	21%	19%	17%	16%	16%	15%	14%	13%	13%
EU*	-8.8	35%	32%	30%	28%	27%	26%	25%	25%	25%	25%	26%	26%
EA	-10.3	27%	24%	22%	20%	19%	17%	17%	17%	16%	17%	17%	17%
EU27	-11.6	28%	25%	22%	21%	19%	18%	17%	17%	16%	16%	16%	16%
EU* s	-13.6	27%	23%	20%	18%	17%	16%	15%	14%	13%	13%	13%	13%

Table III.1.81: Benefit ratio % (Public pensions)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.4	41.8	42.3	42.9	43.6	44.1	43.9	43.6	42.8	42.3	41.6	41.1	40.4
BG	-1.1	31.2	29.6	27.9	27.5	27.9	28.4	28.9	29.2	29.4	29.5	29.7	30.1
CZ	-2.6	39.9	38.0	36.7	35.9	35.4	35.4	35.9	36.5	36.9	37.3	37.5	37.3
DK	-7.3	41.7	40.6	39.3	38.2	36.9	35.9	35.2	34.8	34.7	35.0	34.8	34.5
DE	-6.4	42.0	42.0	41.0	39.7	38.3	37.6	37.4	37.1	36.7	36.3	35.7	35.5
EE	-13.1	33.1	34.6	32.3	30.1	28.4	26.9	25.4	23.7	22.3	21.1	20.4	19.9
IE	0.0	26.8	26.3	26.3	26.4	26.5	26.5	26.6	26.6	26.7	26.8	26.8	26.8
EL	-35.3	77.0	64.2	61.2	59.4	57.1	54.1	50.5	47.4	44.6	43.1	42.3	41.6
ES	-20.2	57.7	55.1	51.5	48.2	45.3	42.7	40.2	37.7	35.4	34.3	35.6	37.6
FR	-14.5	50.5	49.6	48.8	47.1	45.6	44.4	42.8	41.3	40.0	38.8	37.4	35.9
HR	-13.9	31.6	31.2	29.9	28.1	26.5	24.7	22.9	21.4	20.2	19.3	18.5	17.8
IT	-12.6	58.9	60.7	64.1	64.4	62.9	59.7	55.5	51.4	48.4	47.0	46.5	46.3
CY	-22.1	62.9	58.2	57.1	56.4	55.4	53.0	48.2	44.3	41.5	40.2	40.0	40.8
LV	-11.9	24.0	22.8	19.8	18.1	17.3	16.4	15.5	14.6	13.6	12.7	12.1	12.1
LT	-12.1	31.4	33.1	30.0	27.1	24.9	23.4	22.4	21.5	20.4	19.4	19.1	19.3
LU	0.6	51.8	53.8	54.4	53.1	52.4	52.0	51.8	51.5	52.0	52.7	52.8	52.4
HU	-7.7	40.4	37.1	34.8	32.8	31.8	32.0	32.6	32.3	32.0	32.0	32.3	32.7
MT	-9.9	49.2	47.6	42.7	39.5	38.0	37.7	38.2	39.0	39.7	40.0	39.7	39.3
NL	-1.7	35.7	32.9	32.0	31.8	32.7	33.4	33.8	34.2	34.4	34.3	34.1	34.0
AT	-11.6	50.5	50.5	49.4	48.5	47.4	45.8	44.2	42.8	41.9	41.0	40.0	38.9
PL	-25.6	48.5	44.8	41.6	38.1	34.9	31.9	29.3	27.3	25.8	24.6	23.7	22.9
PT	-23.5	57.5	57.9	57.2	56.2	53.5	49.7	45.5	41.0	37.8	35.8	34.4	34.0
RO	-9.5	35.5	31.9	29.4	26.6	25.9	25.8	25.9	25.8	26.1	25.9	25.8	26.0
SI	-0.8	31.8	30.1	29.5	29.3	29.6	29.9	30.0	30.0	30.0	30.0	30.4	31.0
SK	-8.2	46.6	44.4	40.3	37.5	35.9	35.0	34.8	34.7	35.3	36.5	37.7	38.4
FI	-7.4	53.5	53.1	53.0	52.4	51.2	49.7	48.1	47.1	46.6	46.1	46.1	46.1
SE	-16.5	38.6	36.2	33.5	31.2	29.5	28.0	26.7	25.4	24.3	23.5	22.8	22.1
UK	0.8	27.8	28.4	28.2	28.5	28.8	28.9	28.9	29.1	29.4	29.5	29.6	28.5
NO	-14.9	50.6	50.0	48.6	46.7	44.6	42.7	41.1	39.6	38.2	37.2	36.4	35.8
EU*	-10.6	43.5	42.0	40.5	39.1	38.0	36.9	35.7	34.7	33.9	33.4	33.1	32.9
EA	-10.6	44.1	43.0	41.7	40.4	39.3	38.1	36.7	35.4	34.5	33.9	33.6	33.5
EU27	-11.0	44.1	42.5	41.0	39.5	38.3	37.2	36.0	34.9	34.0	33.5	33.2	33.1
EU* s	-10.6	43.5	42.0	40.5	39.1	38.0	36.9	35.7	34.7	33.9	33.4	33.1	32.9

Table III.1.82: Gross replacement rate at retirement % (Old-age earnings-related pensions)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-3.1	40.2	40.5	40.7	42.3	41.2	40.2	39.9	39.1	38.8	37.8	37.6	37.1
BG	3.4	35.8	40.6	37.2	41.8	41.8	40.8	39.4	39.3	39.5	39.4	39.3	39.2
CZ	-2.0	43.1	39.5	39.8	40.3	38.4	40.0	42.7	43.3	43.6	45.0	43.7	41.1
DK	-0.2	27.2	27.9	28.1	28.0	27.9	27.7	27.6	27.4	27.5	27.3	27.2	27.1
DE	-4.6	37.8	38.2	37.4	36.5	35.4	34.9	34.8	34.5	34.2	33.9	33.4	33.2
EE	-15.4	41.2	42.6	39.0	36.9	35.3	33.5	31.1	29.0	27.7	26.9	26.2	25.8
IE	-2.1	36.6	34.3	34.5	34.7	34.9	34.8	34.6	34.4	34.3	34.4	34.4	34.4
EL	-14.7	68.4	66.5	62.1	61.6	61.5	59.2	58.7	56.2	53.3	53.8	52.3	53.7
ES	-33.7	78.7	71.8	63.0	57.8	55.7	53.8	51.3	49.2	47.5	46.4	45.8	45.0
FR	-9.9	45.4	52.8	50.1	48.5	44.2	47.9	41.1	40.1	37.9	37.6	38.6	35.6
HR	-13.8	30.8	30.5	26.1	21.0	20.7	20.0	19.5	18.9	18.4	17.8	17.5	17.0
IT	-14.6	64.4	65.5	59.5	57.8	52.9	49.5	46.4	45.2	46.1	48.6	48.1	49.8
CY	10.0	40.6	46.0	48.0	48.4	45.1	43.1	40.9	41.3	40.2	43.4	43.9	50.6
LV	-30.0	51.7	46.0	41.1	34.9	32.0	26.7	24.4	22.5	21.1	20.4	20.7	21.7
LT	:	:	:	35.2	31.5	27.5	24.5	22.5	21.1	20.0	19.0	18.1	17.6	17.5
LU	-9.9	72.9	66.2	60.4	61.3	63.7	64.3	62.9	61.8	62.6	63.6	63.4	63.0
HU	3.7	45.5	46.1	46.0	47.6	48.3	49.3	48.4	48.9	48.7	48.6	49.2	49.2
MT	-2.7	50.0	51.1	47.9	50.4	49.7	49.3	48.8	48.2	48.0	47.8	47.7	47.3
NL	:	:	:	:	:	:	:	:	:	:	:	:	:
AT	-1.9	44.4	42.7	49.7	52.2	50.5	48.5	47.5	45.7	45.3	44.0	43.1	42.5
PL	-38.4	61.4	57.8	50.5	41.4	32.9	27.6	24.9	24.0	23.7	23.5	23.3	23.0
PT	-12.4	68.3	69.3	77.3	76.0	71.4	66.0	62.3	58.6	56.3	55.7	55.1	55.9
RO	-0.7	30.2	31.6	31.6	31.5	30.3	29.9	30.1	30.4	30.3	30.2	29.8	29.5
SI	1.0	34.7	36.3	36.5	36.4	36.3	36.2	36.1	36.0	35.9	35.9	35.8	35.7
SK	1.3	49.0	51.0	49.5	47.3	45.1	43.4	43.2	43.5	48.0	51.9	51.4	50.2
FI	0.7	41.3	40.5	41.5	39.2	38.5	38.4	39.8	41.7	41.5	41.9	42.5	42.0
SE	-10.3	32.6	32.6	30.7	29.2	26.5	24.8	22.8	23.8	23.3	22.3	22.3	22.3
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:	:	:
EU*	-7.0	45.1	46.3	44.6	43.5	41.7	40.5	39.2	38.6	38.2	38.3	38.1	38.1
EA	-6.5	45.6	47.2	45.8	44.7	43.0	41.7	40.3	39.3	38.8	39.1	38.8	39.0
EU27	-7.0	45.1	46.3	44.6	43.5	41.7	40.5	39.2	38.6	38.2	38.3	38.1	38.1
EU* s	-8.8	46.9	46.3	44.6	43.5	41.7	40.5	39.2	38.6	38.2	38.3	38.1	38.1

Table III.1.83: Average accrual rates % (new pensions, earnings related)

Country	Ch 16-70	2016	2020	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	1.4
BG	0.4	1.1	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
CZ	-0.1	1.4	1.3	1.3	1.3	1.2	1.3	1.4	1.4	1.4	1.5	1.4	1.3
DK	:	:	:	:	:	:	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	-0.2	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
IE	:	:	:	:	:	:	:	:	:	:	:	:	:
EL	-0.4	1.9	1.8	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5
ES	-0.8	2.3	2.1	1.9	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5
FR	0.0	1.5	1.5	1.6	1.7	1.6	1.7	1.6	1.7	1.6	1.6	1.6	1.5
HR	-0.5	1.0	1.0	0.8	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
IT	-0.3	1.9	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6
CY	-0.1	1.3	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.3
LV	-0.4	1.0	1.0	1.1	1.0	0.9	0.8	0.7	0.7	0.7	0.6	0.6	0.6
LT	-0.1	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3
LU	-0.2	1.8	1.8	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
HU	-0.3	2.4	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
MT	:	:	2.0	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
NL	:	:	:	:	:	:	:	:	:	:	:	:	:
AT	-0.1	1.3	1.2	1.4	1.5	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.2
PL	-0.2	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7
PT	0.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2
RO	:	:	:	:	:	:	:	:	:	:	:	:	:
SI	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SK	-0.1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	1.0	1.1	1.1	1.1	1.1
FI	-0.1	1.6	1.6	1.6	1.5	1.5	1.4	1.5	1.5	1.5	1.6	1.6	1.6
SE	-0.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	0.0	0.9	0.9	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9
EU*	-0.1	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
EA	-0.1	1.3	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2
EU27	-0.1	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
EU* s	-0.2	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

Table III.1.84: Average contributory period, years (new pensions, earnings-related)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	37.4	37.5	40.4	40.7	40.1	40.0	40.1	40.0	40.0	39.9	39.9	39.9
BG	2.1	35.2	36.1	37.1	38.2	38.3	38.3	38.1	38.0	37.9	37.7	37.5	37.3
CZ	1.4	43.8	44.3	44.3	44.8	45.2	45.2	45.2	45.2	45.2	45.2	45.2	45.2
DK	:	:	:	:	:	:	:	:	:	:	:	:	:
DE	:	:	:	:	:	:	:	:	:	:	:	:	:
EE	:	:	:	:	:	:	:	:	:	:	:	:	:
IE	:	:	:	:	:	:	:	:	:	:	:	:	:
EL	6.8	30.6	30.5	30.3	31.2	31.8	33.1	34.4	35.1	35.3	36.4	36.9	37.4
ES	3.5	36.7	37.5	38.4	38.9	39.0	39.1	39.3	39.5	39.6	39.8	40.0	40.3
FR	-0.9	34.5	36.1	33.2	31.8	32.4	32.6	32.5	32.2	32.3	33.5	33.2	33.6
HR	3.4	31.1	31.5	31.9	32.6	33.6	34.4	34.4	34.5	34.4	34.4	34.5	34.4
IT	3.7	34.7	35.6	34.7	35.2	34.7	35.0	35.3	35.4	36.1	37.6	37.9	38.4
CY	:	:	:	:	:	:	:	:	:	:	:	:	:
LV	1.3	36.5	37.1	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8
LT	:	:	:	:	:	:	:	:	:	:	:	:	:
LU	6.0	31.2	30.5	30.9	31.9	33.4	34.9	35.9	36.4	36.9	37.3	37.2	37.1
HU	4.7	32.8	34.5	35.0	37.2	37.6	37.8	37.1	37.4	37.4	37.6	37.9	37.5
MT	3.3	35.2	35.5	36.3	36.5	36.7	36.9	37.1	37.3	37.5	37.9	38.1	38.6
NL	:	:	:	:	:	:	:	:	:	:	:	:	:
AT	0.9	35.3	35.6	35.6	35.8	36.2	36.1	36.1	36.2	36.3	36.3	36.2	36.2
PL	0.8	34.8	34.8	35.3	35.4	35.3	35.6	35.2	35.3	35.6	35.9	35.8	35.6
PT	4.7	33.2	35.1	37.2	37.3	37.6	37.7	37.5	37.5	37.6	37.7	37.9	37.8
RO	1.5	31.0	31.2	31.6	32.1	31.5	31.5	31.8	32.3	32.7	32.8	32.6	32.5
SI	0.8	37.9	39.0	38.9	38.9	38.9	38.9	38.7	38.6	38.6	38.7	38.7	38.7
SK	5.2	41.5	41.6	41.9	42.2	42.7	43.4	44.3	44.7	45.5	45.9	46.4	46.7
FI	2.2	33.9	34.3	35.1	35.3	35.4	35.3	35.7	36.2	36.1	36.2	36.3	36.1
SE	0.8	39.9	40.5	40.0	39.9	39.4	37.1	37.9	39.6	39.5	39.2	40.4	40.7
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	-2.2	35.9	37.5	36.7	36.3	36.2	34.8	33.3	32.6	32.7	33.5	33.6	33.8
EU*	2.7	35.4	35.9	36.3	36.7	36.9	37.0	37.2	37.5	37.6	37.9	38.0	38.1
EA	2.9	32.7	33.3	33.6	33.8	34.0	34.3	34.6	34.8	35.0	35.3	35.5	35.6
EU27	2.7	35.4	35.9	36.3	36.7	36.9	37.0	37.2	37.5	37.6	37.9	38.0	38.1
EU* s	2.7	35.4	35.9	36.3	36.7	36.9	37.0	37.2	37.5	37.6	37.9	38.0	38.1

Table III.1.85: Contributors (Public pensions, in 1000 persons)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	811.7	4,605	4,775	4,926	5,045	5,121	5,185	5,250	5,302	5,330	5,352	5,386	5,417
BG	-1033.9	2,765	2,763	2,635	2,537	2,415	2,269	2,126	1,989	1,881	1,814	1,769	1,731
CZ	-1062.8	5,145	5,080	4,917	4,840	4,748	4,588	4,429	4,277	4,155	4,099	4,096	4,082
DK	-320.5	447	315	220	170	146	136	135	123	128	129	126	126
DE	-6176.0	35,496	36,052	34,957	33,944	33,169	32,639	32,278	31,753	31,027	30,264	29,678	29,320
EE	-167.7	648	627	600	589	578	563	546	526	506	493	485	480
IE	561.1	2,553	2,681	2,726	2,806	2,874	2,901	2,893	2,875	2,888	2,949	3,038	3,114
EL	-626.2	4,519	4,834	4,948	4,921	4,829	4,665	4,482	4,303	4,136	4,031	3,960	3,892
ES	1948.8	18,540	19,423	19,627	19,821	19,651	19,217	18,776	18,721	18,921	19,447	20,043	20,489
FR	4260.6	26,604	26,895	27,381	27,662	28,008	28,360	28,697	29,122	29,617	30,002	30,356	30,865
HR	-264.3	1,453	1,468	1,420	1,400	1,393	1,386	1,367	1,339	1,298	1,258	1,222	1,189
IT	-2205.0	23,397	24,141	24,653	24,633	24,106	23,430	22,731	22,311	22,107	21,802	21,515	21,192
CY	91.8	441	468	502	530	545	556	562	564	558	550	538	532
LV	-376.5	960	927	851	781	732	705	681	649	613	588	581	583
LT	:	:	1,191	1,048	941	858	805	769	735	696	664	654	659
LU	233.9	436	488	543	576	602	624	640	650	655	659	664	669
HU	-638.4	4,349	4,471	4,575	4,572	4,463	4,296	4,117	4,005	3,911	3,812	3,749	3,711
MT	26.6	195	205	215	224	232	236	237	234	229	224	221	221
NL	948.0	8,892	9,325	9,610	9,636	9,599	9,619	9,727	9,877	9,979	10,014	9,937	9,840
AT	194.7	3,945	4,119	4,226	4,290	4,348	4,422	4,469	4,430	4,355	4,275	4,201	4,140
PL	-5879.4	16,525	16,608	16,035	15,488	14,927	14,249	13,483	12,691	11,975	11,426	11,014	10,645
PT	-1149.5	4,009	4,013	3,994	3,944	3,817	3,654	3,480	3,315	3,176	3,069	2,969	2,859
RO	-1085.7	5,591	6,249	5,834	5,429	5,029	4,728	4,495	4,364	4,280	4,295	4,363	4,506
SI	-142.0	891	900	890	860	836	810	784	763	750	748	750	749
SK	-409.1	2,176	2,201	2,160	2,122	2,088	2,036	1,968	1,902	1,844	1,800	1,776	1,767
FI	-4.9	2,273	2,301	2,288	2,288	2,300	2,320	2,324	2,319	2,307	2,289	2,274	2,268
SE	1589.3	5,762	5,876	6,064	6,247	6,442	6,635	6,810	6,929	6,976	7,044	7,220	7,351
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:	:	:
EU*	-10216.8	182,617	188,398	187,844	186,297	183,855	181,034	178,258	176,069	174,299	173,098	172,585	172,400
EA	-1521.2	140,579	145,568	146,146	145,613	144,291	142,747	141,296	140,351	139,695	139,222	139,026	139,058
EU27	-10216.8	182,617	188,398	187,844	186,297	183,855	181,034	178,258	176,069	174,299	173,098	172,585	172,400
EU* s	-638.5	7,024	6,978	6,957	6,900	6,809	6,705	6,602	6,521	6,456	6,411	6,392	6,385

Table III.1.86: Support ratio (contributors/100 pensioners, Public pensions)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-36.5	164.9	160.8	154.0	151.0	148.4	144.6	142.1	139.4	136.7	133.5	131.0	128.4
BG	-18.9	126.8	129.4	125.6	124.9	122.9	119.5	114.0	107.1	102.7	101.9	104.5	107.9
CZ	-53.8	177.0	170.0	164.0	158.5	151.3	139.4	129.1	121.5	116.3	115.8	119.6	123.2
DK	-24.9	33.3	23.5	16.1	12.2	10.3	9.5	9.4	8.5	8.9	9.1	8.7	8.4
DE	-53.4	157.1	152.2	138.4	126.4	117.4	114.3	113.1	110.9	107.9	105.5	104.1	103.7
EE	-29.0	155.6	184.3	185.0	174.9	166.0	155.7	146.6	136.3	125.7	122.4	124.7	126.7
IE	-105.6	279.4	268.0	248.9	234.8	216.7	198.7	182.5	170.0	163.6	164.6	170.2	173.8
EL	-21.6	172.5	184.9	192.6	188.6	177.6	160.8	144.7	143.9	144.0	143.5	150.9
ES	-46.4	195.3	193.4	180.2	166.0	147.6	130.7	118.6	115.2	118.7	127.6	139.0	149.0
FR	-12.6	137.1	133.1	128.4	122.8	120.1	119.2	119.3	120.6	122.8	124.4	124.3	124.6
HR	-13.8	117.8	118.6	113.9	112.6	116.1	118.3	117.0	115.0	112.0	109.0	106.1	104.0
IT	-15.9	155.1	161.8	162.5	156.0	144.2	134.2	126.8	125.2	127.9	130.8	135.7	139.1
CY	-125.2	289.6	277.3	264.9	257.8	241.0	232.5	213.6	198.6	177.2	169.9	165.5	164.5
LV	-45.0	168.7	170.1	158.2	141.5	131.1	125.4	122.3	116.4	109.0	108.2	114.8	123.7
LT	:	:	135.9	120.5	105.8	96.2	92.0	91.7	91.5	89.5	89.1	94.3	102.5
LU	-114.9	227.9	228.5	218.7	199.8	186.5	175.4	165.6	155.3	141.1	127.1	118.3	113.0
HU	-46.3	171.1	173.8	172.0	168.1	159.3	146.7	135.7	131.0	127.1	123.5	123.5	124.8
MT	-100.5	227.3	214.2	201.0	195.6	188.8	180.1	169.8	158.1	145.4	134.6	128.3	126.8
NL	-17.9	220.1	222.6	215.6	201.6	191.7	185.6	190.8	198.1	204.0	205.6	203.9	202.2
AT	-50.0	166.2	164.3	156.6	148.8	139.2	135.2	133.0	129.0	124.6	121.1	118.6	116.3
PL	-87.9	179.0	166.9	153.5	143.4	133.5	121.7	110.0	100.3	93.6	90.6	90.5	91.1
PT	-44.9	147.5	146.1	141.9	135.1	125.1	115.9	108.1	102.7	101.5	102.5	103.0	102.6
RO	-20.3	108.5	120.5	113.3	105.8	94.2	85.5	80.1	77.5	76.2	78.6	82.4	88.3
SI	-42.8	144.6	136.7	131.0	119.2	110.1	102.5	96.7	93.9	93.9	96.4	99.7	101.7
SK	-45.2	159.5	157.1	151.4	143.3	138.3	130.7	121.8	115.1	110.1	107.6	109.5	114.3
FI	-26.8	156.9	149.1	142.9	138.2	137.5	139.8	140.4	139.5	137.5	134.1	131.5	130.1
SE	-78.8	230.4	223.1	214.1	204.9	199.2	194.9	190.9	182.5	169.2	159.3	156.4	151.6
UK	:	:	:	:	:	:	:	:	:	:	:	:	:
NO	:	:	:	:	:	:	:	:	:	:	:	:	:
EU*	-35.0	142.6	143.1	136.0	128.8	120.7	114.5	110.6	107.9	106.7	106.4	107.1	107.6
EA	-31.9	160.1	160.5	153.1	144.1	135.2	129.1	125.2	123.5	123.7	124.8	126.5	128.2
EU27	-36.4	159.0	158.6	151.2	142.7	134.2	127.5	122.7	119.9	118.9	119.4	120.9	122.6
EU* s	-49.9	171.9	169.1	161.7	153.2	144.8	137.4	131.2	126.1	121.8	119.9	120.4	122.0

Table III.1.87: Public pensions, gross as % of GDP - High life expectancy (+2 years)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.7	12.1	12.6	13.4	13.9	14.4	14.7	14.9	15.0	15.3	15.5	15.7	15.8
BG	2.1	9.6	9.1	9.0	9.1	9.6	10.1	10.7	11.5	12.0	12.2	12.0	11.7
CZ	3.5	8.2	8.1	8.2	8.3	8.6	9.4	10.3	11.2	11.9	12.2	12.0	11.7
DK	-1.8	10.0	9.3	8.8	8.6	8.5	8.3	8.0	7.9	7.7	7.7	7.9	8.2
DE	2.7	10.1	10.3	10.8	11.5	12.0	12.1	12.2	12.4	12.6	12.8	12.8	12.8
EE	-1.4	8.1	7.8	7.3	7.3	7.2	7.3	7.3	7.3	7.4	7.3	7.0	6.8
IE	1.9	5.0	5.1	5.5	5.9	6.3	6.8	7.2	7.6	7.7	7.5	7.2	6.9
EL	-6.7	17.3	13.4	12.2	11.8	12.3	12.5	12.3	12.4	11.9	11.3	11.2	10.6
ES	-1.4	12.2	12.3	12.5	12.7	13.4	14.1	14.6	14.0	12.8	11.5	10.9	10.7
FR	-2.7	15.0	15.0	15.4	15.6	15.5	15.3	14.7	14.1	13.5	13.0	12.6	12.3
HR	-3.3	10.6	10.4	10.6	10.1	9.3	8.6	8.1	7.8	7.6	7.5	7.4	7.3
IT	-1.6	15.6	15.6	16.4	17.1	18.0	18.4	18.1	17.3	16.1	15.2	14.6	14.0
CY	2.1	10.2	10.2	10.4	11.0	11.3	11.5	11.0	11.2	11.5	11.9	12.3	12.3
LV	-2.5	7.4	6.8	6.2	6.2	6.3	6.3	6.1	6.1	6.1	5.7	5.2	4.9
LT	-1.4	6.9	7.0	6.9	7.1	7.2	7.1	6.9	6.7	6.5	6.3	5.9	5.5
LU	9.4	9.0	9.0	9.5	10.2	10.9	11.6	12.4	13.2	14.6	16.3	17.6	18.4
HU	2.1	9.7	9.0	8.7	8.5	8.7	9.6	10.6	10.9	11.2	11.6	11.7	11.8
MT	3.3	8.0	7.8	7.3	7.0	7.1	7.4	8.0	8.8	9.8	10.7	11.3	11.4
NL	0.5	7.3	7.0	7.0	7.4	8.1	8.5	8.5	8.2	8.0	8.0	7.9	7.8
AT	1.2	13.8	13.9	14.0	14.5	15.1	15.1	14.9	14.9	15.1	15.3	15.2	15.0
PL	-0.7	11.2	11.1	11.2	11.0	10.9	11.0	11.1	11.4	11.5	11.3	10.9	10.5
PT	-1.7	13.5	13.7	14.4	15.1	15.9	16.2	15.7	14.9	13.8	12.6	11.8	11.8
RO	1.1	8.0	7.3	7.0	6.7	7.2	7.8	8.4	8.9	9.3	9.2	9.2	9.1
SI	4.9	10.9	11.0	11.2	12.1	13.2	14.3	15.3	15.9	16.0	15.8	15.6	15.8
SK	1.4	8.6	8.3	7.8	7.6	7.6	7.8	8.2	8.7	9.3	9.8	10.1	10.0
FI	0.7	13.4	13.8	14.5	14.9	14.6	13.9	13.4	13.2	13.2	13.5	13.9	14.1
SE	-0.9	8.2	7.6	7.4	7.2	7.0	6.9	6.7	6.7	6.9	7.1	7.2	7.2
UK	2.2	7.7	7.7	8.0	8.1	8.5	8.8	8.5	8.6	8.9	9.3	9.7	10.0
NO	2.3	10.7	11.0	11.5	11.8	12.0	12.0	12.0	12.2	12.4	12.7	12.9	13.0
EU*	0.2	11.2	11.1	11.4	11.7	12.0	12.2	12.1	11.9	11.7	11.6	11.5	11.4
EA	-0.1	12.3	12.3	12.6	13.1	13.5	13.6	13.6	13.3	13.0	12.6	12.4	12.2
EU27	-0.2	11.9	11.8	12.1	12.4	12.7	12.9	12.8	12.6	12.4	12.1	11.9	11.7
EU* s	0.6	10.3	10.0	10.1	10.2	10.5	10.8	10.9	11.0	11.0	11.0	11.0	10.9

Table III.1.88: Public pensions, gross as % of GDP - Lower fertility (-20%)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.9	12.1	12.6	13.4	13.8	14.2	14.7	15.1	15.3	15.7	16.1	16.6	17.0
BG	3.6	9.6	9.1	8.9	9.0	9.4	10.0	10.7	11.7	12.5	13.0	13.1	13.2
CZ	4.6	8.2	8.1	8.1	8.2	8.5	9.3	10.4	11.4	12.3	12.8	12.8	12.8
DK	-0.8	10.0	9.3	8.8	8.6	8.5	8.3	8.2	8.2	8.2	8.2	8.6	9.1
DE	3.6	10.1	10.3	10.8	11.4	11.9	12.1	12.4	12.6	12.9	13.2	13.5	13.6
EE	-1.5	8.1	7.8	7.3	7.2	7.1	7.1	7.1	7.2	7.2	7.1	6.8	6.6
IE	2.6	5.0	5.1	5.5	5.8	6.3	6.8	7.4	7.9	8.0	7.9	7.7	7.6
EL	-5.3	17.3	13.4	12.2	12.0	12.3	13.0	12.9	13.1	12.6	12.4	12.5	12.0
ES	-1.3	12.2	12.3	12.5	12.6	13.3	14.3	15.0	14.7	13.7	12.4	11.3	10.8
FR	-1.4	15.0	15.0	15.4	15.5	15.4	15.5	15.0	14.6	14.1	13.8	13.7	13.6
HR	-2.6	10.6	10.4	10.5	10.0	9.1	8.5	8.1	7.9	7.8	7.8	7.9	8.0
IT	-0.5	15.6	15.6	16.4	17.3	18.3	18.9	18.8	17.9	16.7	16.0	15.4	15.1
CY	3.8	10.2	10.2	10.6	10.9	11.5	11.6	11.7	11.8	12.5	12.9	13.3	14.0
LV	-2.2	7.4	6.8	6.2	6.2	6.3	6.3	6.2	6.2	6.3	5.9	5.4	5.1
LT	-1.7	6.9	7.0	6.9	7.1	7.1	7.0	6.8	6.5	6.3	6.0	5.6	5.2
LU	11.3	9.0	9.0	9.4	10.2	10.9	11.7	12.5	13.6	15.2	17.4	19.1	20.3
HU	3.4	9.7	9.0	8.7	8.4	8.6	9.5	10.6	11.1	11.6	12.2	12.7	13.1
MT	4.6	8.0	7.8	7.4	7.1	7.1	7.5	8.2	9.2	10.4	11.5	12.3	12.7
NL	1.7	7.3	7.0	7.1	7.5	8.2	8.7	8.7	8.7	8.6	8.7	8.8	9.0
AT	1.8	13.8	13.9	14.0	14.4	15.1	15.2	15.2	15.4	15.8	15.9	15.8	15.6
PL	0.6	11.2	11.1	11.2	11.0	10.8	11.0	11.4	11.8	12.1	12.2	12.0	11.8
PT	-0.5	13.5	13.6	13.9	14.3	14.7	14.9	14.9	14.3	13.7	13.1	12.8	13.1
RO	2.6	8.0	7.2	6.9	6.6	7.1	7.8	8.6	9.3	9.9	10.1	10.4	10.6
SI	6.5	10.9	11.0	11.1	12.0	13.1	14.4	15.6	16.5	16.8	16.8	16.9	17.4
SK	2.8	8.6	8.3	7.8	7.6	7.6	7.9	8.6	9.2	10.1	10.9	11.3	11.3
FI	2.4	13.4	13.8	14.5	14.8	14.6	14.2	13.9	13.9	14.2	14.7	15.3	15.8
SE	-0.1	8.2	7.6	7.4	7.1	7.0	6.9	6.9	7.0	7.3	7.7	7.8	8.0
UK	3.4	7.7	7.7	8.0	8.0	8.5	8.8	8.7	8.9	9.3	9.9	10.6	11.1
NO	4.0	10.7	11.0	11.5	11.7	12.0	12.2	12.3	12.7	13.1	13.7	14.2	14.7
EU*	1.2	11.2	11.1	11.4	11.6	12.0	12.3	12.3	12.3	12.3	12.3	12.3	12.4
EA	0.9	12.3	12.3	12.6	13.0	13.5	13.8	13.8	13.7	13.5	13.3	13.2	13.2
EU27	0.8	11.9	11.8	12.0	12.3	12.7	13.0	13.1	13.0	12.9	12.8	12.7	12.7
EU* s	1.6	10.3	10.0	10.0	10.2	10.5	10.8	11.1	11.3	11.5	11.7	11.8	11.9

Table III.1.89: Public pensions, gross as % of GDP - Higher TFP growth (+0.4 p.p.)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.2	12.1	12.6	13.4	13.8	14.1	14.2	14.1	13.8	13.7	13.5	13.5	13.3
BG	0.8	9.6	9.1	8.9	9.0	9.3	9.7	10.1	10.7	11.1	11.1	10.8	10.4
CZ	2.3	8.2	8.1	8.1	8.2	8.4	9.1	9.8	10.5	11.0	11.2	10.8	10.4
DK	-1.8	10.0	9.3	8.8	8.6	8.4	8.1	7.9	7.8	7.6	7.6	7.8	8.1
DE	2.3	10.1	10.3	10.8	11.4	11.8	11.9	12.0	12.1	12.3	12.4	12.4	12.4
EE	-2.1	8.1	7.8	7.3	7.2	7.1	7.1	7.0	6.9	6.9	6.7	6.4	6.1
IE	1.4	5.0	5.1	5.5	5.8	6.2	6.7	7.0	7.3	7.3	7.1	6.7	6.4
EL	-7.8	17.3	13.4	12.2	12.0	12.2	12.5	12.0	11.8	11.0	10.5	10.2	9.5
ES	-1.9	12.2	12.3	12.5	12.6	13.0	13.8	14.0	13.2	11.9	11.1	10.6	10.3
FR	-4.8	15.0	15.1	15.4	15.5	15.2	14.7	13.7	12.7	11.8	11.1	10.6	10.3
HR	-4.2	10.6	10.4	10.5	10.0	9.1	8.2	7.6	7.2	6.9	6.7	6.5	6.4
IT	-2.9	15.6	15.6	16.4	17.2	18.0	18.2	17.5	16.2	14.7	13.9	13.2	12.8
CY	1.7	10.2	10.2	10.6	10.9	11.4	11.3	11.1	10.9	11.4	11.5	11.6	11.9
LV	-2.8	7.4	6.8	6.2	6.2	6.2	6.1	5.9	5.8	5.8	5.4	4.9	4.5
LT	-1.8	6.9	7.0	6.9	7.1	7.1	7.0	6.7	6.4	6.2	5.9	5.5	5.1
LU	7.7	9.0	9.0	9.4	10.1	10.7	11.3	11.8	12.4	13.6	15.1	16.1	16.8
HU	0.6	9.7	9.0	8.7	8.4	8.5	9.1	9.9	10.0	10.1	10.3	10.3	10.3
MT	2.2	8.0	7.8	7.5	7.1	7.0	7.3	7.7	8.4	9.2	9.9	10.2	10.2
NL	0.5	7.3	7.0	7.1	7.6	8.1	8.5	8.4	8.2	8.0	7.9	7.8	7.8
AT	0.3	13.8	13.9	14.0	14.4	15.0	14.7	14.3	14.1	14.1	14.2	14.1	14.1
PL	-1.8	11.2	11.1	11.2	11.0	10.7	10.6	10.6	10.6	10.6	10.4	9.9	9.4
PT	-3.9	13.5	13.6	13.9	14.3	14.5	14.3	13.6	12.6	11.5	10.5	9.9	9.7
RO	-0.2	8.0	7.2	6.9	6.6	6.9	7.3	7.7	8.0	8.3	8.1	8.0	7.8
SI	3.4	10.9	11.0	11.1	12.0	13.0	14.0	14.8	15.2	15.1	14.7	14.4	14.3
SK	0.4	8.6	8.3	7.8	7.6	7.4	7.6	8.0	8.3	8.8	9.2	9.3	9.0
FI	-0.4	13.4	13.8	14.5	14.7	14.4	13.6	12.9	12.5	12.5	12.6	12.8	12.9
SE	-1.2	8.2	7.6	7.4	7.2	7.0	6.8	6.6	6.6	6.7	6.9	6.9	7.0
UK	1.3	7.7	7.7	8.0	8.0	8.3	8.5	8.2	8.1	8.3	8.6	8.9	9.0
NO	2.1	10.7	11.0	11.5	11.7	11.9	11.9	11.9	12.0	12.2	12.5	12.7	12.8
EU*	-0.8	11.2	11.1	11.4	11.6	11.8	11.8	11.6	11.2	10.9	10.7	10.5	10.4
EA	-1.1	12.3	12.3	12.6	13.0	13.3	13.3	13.0	12.5	12.0	11.7	11.4	11.1
EU27	-1.2	11.9	11.8	12.1	12.3	12.5	12.5	12.3	11.9	11.5	11.2	10.9	10.7
EU* s	-0.4	10.3	10.0	10.0	10.2	10.3	10.4	10.4	10.3	10.2	10.1	10.0	9.9

Table III.1.90: Public pensions, gross as % of GDP - Lower TFP growth (-0.4 p.p.)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	5.0	12.1	12.6	13.4	13.9	14.4	14.9	15.3	15.6	16.0	16.4	16.8	17.2
BG	2.0	9.6	9.1	8.9	9.1	9.5	10.0	10.7	11.5	12.1	12.2	11.9	11.6
CZ	3.3	8.2	8.1	8.1	8.2	8.5	9.3	10.3	11.2	11.9	12.2	11.9	11.5
DK	-2.0	10.0	9.3	8.8	8.6	8.4	8.2	7.9	7.8	7.6	7.5	7.7	8.0
DE	2.5	10.1	10.3	10.8	11.5	11.9	12.0	12.1	12.3	12.5	12.6	12.6	12.6
EE	-1.5	8.1	7.8	7.3	7.2	7.1	7.2	7.2	7.2	7.3	7.2	6.9	6.7
IE	1.8	5.0	5.1	5.5	5.8	6.3	6.8	7.2	7.6	7.6	7.4	7.1	6.8
EL	-5.2	17.3	13.4	12.2	12.1	12.5	13.2	13.3	13.5	13.1	12.8	12.7	12.1
ES	-1.3	12.2	12.3	12.5	12.7	13.4	14.4	15.2	14.9	13.7	12.3	11.2	10.8
FR	-1.4	15.0	15.0	15.3	15.5	15.6	15.5	15.2	14.8	14.4	14.1	13.8	13.6
HR	-3.2	10.6	10.4	10.5	10.0	9.2	8.5	8.0	7.7	7.6	7.5	7.4	7.3
IT	-0.4	15.6	15.6	16.4	17.3	18.5	19.2	19.3	18.5	17.2	16.5	15.7	15.2
CY	2.9	10.2	10.2	10.6	10.9	11.6	11.7	11.8	11.7	12.3	12.5	12.7	13.0
LV	-2.4	7.4	6.8	6.2	6.2	6.3	6.3	6.2	6.2	6.3	5.9	5.3	5.0
LT	-1.6	6.9	7.0	6.9	7.1	7.2	7.1	6.8	6.6	6.4	6.1	5.7	5.3
LU	10.2	9.0	9.0	9.4	10.2	11.0	11.8	12.6	13.6	15.1	17.0	18.3	19.2
HU	2.6	9.7	9.0	8.7	8.4	8.7	9.7	10.8	11.3	11.7	12.1	12.3	12.3
MT	3.8	8.0	7.8	7.4	7.1	7.1	7.5	8.2	9.1	10.2	11.1	11.7	11.8
NL	0.6	7.3	7.0	7.1	7.5	8.1	8.5	8.4	8.2	8.0	7.9	7.9	7.9
AT	1.0	13.8	13.9	13.9	14.4	15.0	15.0	15.0	15.1	15.3	15.3	15.1	14.8
PL	-0.1	11.2	11.1	11.2	11.0	11.0	11.1	11.5	11.8	12.1	12.0	11.5	11.1
PT	0.0	13.5	13.6	13.9	14.4	14.9	15.3	15.4	15.1	14.5	13.9	13.5	13.5
RO	1.6	8.0	7.2	6.9	6.6	7.1	7.7	8.5	9.1	9.7	9.7	9.7	9.6
SI	4.5	10.9	11.0	11.1	12.1	13.2	14.4	15.4	16.0	16.1	15.8	15.5	15.5
SK	2.1	8.6	8.3	7.8	7.6	7.6	7.9	8.4	8.6	9.2	10.0	10.6	10.9	10.7
FI	1.7	13.4	13.8	14.5	14.8	14.7	14.2	13.9	13.9	14.1	14.4	14.8	15.0
SE	-1.2	8.2	7.6	7.4	7.2	7.0	6.8	6.7	6.7	6.8	7.0	7.0	7.0
UK	2.3	7.7	7.7	8.0	8.0	8.4	8.7	8.5	8.5	8.9	9.3	9.7	10.0
NO	2.1	10.7	11.0	11.5	11.7	11.9	11.9	11.9	12.0	12.2	12.5	12.7	12.8
EU*	0.6	11.2	11.1	11.4	11.7	12.0	12.3	12.3	12.2	12.1	12.0	11.9	11.8
EA	0.5	12.3	12.3	12.6	13.1	13.5	13.8	13.9	13.7	13.5	13.2	12.9	12.7
EU27	0.3	11.9	11.8	12.0	12.4	12.7	13.0	13.1	13.0	12.8	12.6	12.3	12.2
EU* s	1.0	10.3	10.0	10.0	10.2	10.5	10.8	11.1	11.2	11.4	11.4	11.3	11.2

Table III.1.91: Public pensions, gross as % of GDP - Higher employment rate (+2 p.p)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.5	12.1	12.5	13.2	13.5	13.9	14.2	14.2	14.3	14.4	14.5	14.6	14.6
BG	1.3	9.6	9.0	8.7	8.8	9.2	9.6	10.2	10.9	11.4	11.4	11.2	10.9
CZ	2.4	8.2	8.0	8.0	8.0	8.3	8.9	9.8	10.5	11.1	11.3	11.0	10.6
DK	-2.1	10.0	9.3	8.7	8.4	8.2	7.9	7.7	7.6	7.4	7.4	7.6	7.9
DE	2.3	10.1	10.3	10.6	11.2	11.6	11.7	11.8	12.0	12.2	12.3	12.3	12.3
EE	-1.8	8.1	7.7	7.2	7.1	7.0	7.1	7.0	7.0	7.1	6.9	6.6	6.3
IE	1.4	5.0	5.1	5.4	5.7	6.1	6.5	6.9	7.2	7.2	7.0	6.6	6.4
EL	-6.7	17.3	13.4	11.9	11.7	12.0	12.6	12.3	12.3	11.6	11.3	11.2	10.6
ES	-1.5	12.2	12.2	12.3	12.3	13.0	13.7	14.2	13.7	12.5	11.3	10.8	10.7
FR	-3.6	15.0	14.9	15.0	15.0	14.9	14.6	14.0	13.3	12.6	12.1	11.8	11.5
HR	-4.0	10.6	10.3	10.3	9.6	8.8	8.0	7.5	7.2	7.0	6.8	6.7	6.6
IT	-1.7	15.6	15.6	16.1	16.9	17.9	18.4	18.1	17.0	15.7	15.0	14.3	13.9
CY	2.2	10.2	10.1	10.4	10.6	11.2	11.2	11.1	11.0	11.5	11.7	11.9	12.3
LV	-2.7	7.4	6.8	6.1	6.1	6.3	6.2	6.1	6.0	6.0	5.6	5.1	4.7
LT	-1.7	6.9	7.0	6.9	7.1	7.2	7.0	6.8	6.5	6.3	6.0	5.6	5.2
LU	8.8	9.0	8.9	9.3	9.9	10.6	11.2	11.9	12.6	14.0	15.8	17.1	17.8
HU	1.3	9.7	8.9	8.6	8.2	8.4	9.1	10.1	10.3	10.6	10.9	10.9	11.0
MT	2.6	8.0	7.7	7.2	6.9	6.8	7.1	7.7	8.4	9.3	10.1	10.6	10.6
NL	0.4	7.3	7.0	7.0	7.3	7.9	8.3	8.2	8.0	7.8	7.7	7.7	7.7
AT	0.1	13.8	13.8	13.6	13.8	14.2	13.9	13.6	13.6	13.7	13.9	13.9	13.9
PL	-0.9	11.2	11.1	11.2	11.0	10.8	10.9	11.1	11.3	11.4	11.2	10.7	10.3
PT	-2.4	13.5	13.5	13.7	14.0	14.4	14.4	14.1	13.4	12.5	11.7	11.2	11.1
RO	0.6	8.0	7.2	6.8	6.5	7.0	7.5	8.1	8.5	8.9	8.8	8.7	8.6
SI	3.6	10.9	10.9	11.0	11.8	12.8	13.8	14.7	15.2	15.2	14.9	14.6	14.5
SK	1.1	8.6	8.2	7.7	7.5	7.5	7.7	8.3	8.7	9.3	9.8	10.0	9.7
FI	0.4	13.4	13.7	14.2	14.4	14.2	13.5	13.1	12.9	13.0	13.3	13.6	13.7
SE	-1.4	8.2	7.6	7.2	7.0	6.8	6.6	6.4	6.4	6.6	6.8	6.8	6.8
UK	1.5	7.7	7.6	7.8	7.8	8.2	8.4	8.1	8.1	8.3	8.7	9.0	9.2
NO	1.8	10.7	10.9	11.3	11.4	11.6	11.6	11.6	11.7	11.9	12.2	12.4	12.5
EU*	-0.4	11.2	11.1	11.2	11.3	11.6	11.8	11.6	11.4	11.2	11.1	10.9	10.9
EA	-0.6	12.3	12.2	12.4	12.7	13.1	13.2	13.1	12.8	12.4	12.1	11.9	11.7
EU27	-0.7	11.9	11.7	11.8	12.0	12.3	12.4	12.4	12.1	11.8	11.6	11.4	11.2
EU* s	0.1	10.3	9.9	9.9	9.9	10.2	10.4	10.5	10.5	10.5	10.5	10.4	10.3

Table III.1.92: Public pensions, gross as % of GDP - Lower employment rate (-2 p.p)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.3	12.1	12.7	13.7	14.2	14.6	14.9	15.0	15.0	15.2	15.3	15.4	15.4
BG	1.4	9.6	9.1	9.1	9.3	9.7	10.1	10.6	11.3	11.7	11.7	11.4	11.0
CZ	3.1	8.2	8.1	8.3	8.5	8.7	9.5	10.4	11.2	11.8	12.0	11.7	11.3
DK	-1.7	10.0	9.3	9.0	8.8	8.6	8.4	8.1	8.0	7.8	7.8	8.0	8.3
DE	2.6	10.1	10.4	11.0	11.7	12.1	12.2	12.3	12.4	12.6	12.7	12.7	12.6
EE	-1.8	8.1	7.8	7.4	7.3	7.2	7.2	7.1	7.1	7.1	7.0	6.6	6.4
IE	1.8	5.0	5.1	5.6	6.0	6.5	6.9	7.3	7.7	7.7	7.5	7.1	6.8
EL	-6.6	17.3	13.5	12.4	12.4	12.6	13.2	12.9	12.8	12.1	11.7	11.5	10.7
ES	-1.4	12.2	12.4	12.7	13.0	13.6	14.5	14.9	14.4	13.1	11.7	10.9	10.7
FR	-3.1	15.0	15.1	15.6	15.8	15.7	15.4	14.8	14.1	13.3	12.7	12.3	12.0
HR	-3.6	10.6	10.5	10.8	10.3	9.4	8.6	8.1	7.7	7.4	7.3	7.2	7.0
IT	-1.8	15.6	15.7	16.7	17.6	18.6	19.0	18.7	17.6	16.1	15.2	14.4	13.9
CY	2.4	10.2	10.2	10.8	11.2	11.8	11.8	11.7	11.6	12.2	12.3	12.4	12.5
LV	-2.6	7.4	6.8	6.2	6.3	6.4	6.3	6.2	6.1	6.1	5.7	5.2	4.8
LT	-1.7	6.9	7.0	6.9	7.1	7.2	7.0	6.8	6.5	6.3	6.0	5.6	5.2
LU	9.0	9.0	9.0	9.6	10.5	11.2	11.9	12.6	13.4	14.7	16.3	17.3	18.0
HU	1.9	9.7	9.0	8.9	8.6	8.9	9.7	10.7	11.0	11.2	11.5	11.6	11.6
MT	2.8	8.0	7.8	7.4	7.1	7.1	7.4	7.9	8.7	9.6	10.4	10.8	10.9
NL	0.8	7.3	7.0	7.2	7.7	8.3	8.7	8.6	8.4	8.2	8.1	8.1	8.1
AT	0.8	13.8	13.9	14.3	15.1	15.8	15.8	15.6	15.6	15.6	15.5	15.1	14.6
PL	-1.1	11.2	11.1	11.2	11.0	10.8	10.8	10.9	11.1	11.2	11.0	10.5	10.1
PT	-1.9	13.5	13.7	14.1	14.7	15.1	15.1	14.8	14.0	13.1	12.3	11.7	11.6
RO	0.8	8.0	7.3	7.1	6.8	7.4	7.9	8.5	8.9	9.2	9.1	9.0	8.8
SI	4.3	10.9	11.0	11.3	12.3	13.4	14.5	15.5	16.0	15.9	15.6	15.3	15.2
SK	1.2	8.6	8.3	7.9	7.8	7.7	7.9	8.4	8.9	9.4	10.0	10.1	9.8
FI	0.7	13.4	13.9	14.7	15.2	14.9	14.2	13.7	13.5	13.5	13.7	14.0	14.1
SE	-1.0	8.2	7.7	7.5	7.4	7.2	7.0	6.8	6.8	6.9	7.1	7.1	7.1
UK	2.0	7.7	7.7	8.1	8.2	8.6	8.9	8.6	8.6	8.8	9.2	9.5	9.7
NO	2.5	10.7	11.1	11.7	12.1	12.2	12.2	12.2	12.3	12.6	12.8	13.0	13.2
EU*	0.0	11.2	11.2	11.6	11.9	12.2	12.3	12.2	12.0	11.7	11.5	11.3	11.2
EA	-0.2	12.3	12.3	12.8	13.3	13.7	13.9	13.7	13.4	13.0	12.6	12.3	12.0
EU27	-0.3	11.9	11.8	12.2	12.6	12.9	13.0	13.0	12.7	12.3	12.0	11.7	11.5
EU* s	0.4	10.3	10.0	10.2	10.4	10.7	10.9	11.0	11.0	11.0	10.9	10.8	10.7

Table III.1.93: Public pensions, gross as % of GDP - Higher employment rate of older workers (+10 p.p.)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.6	12.1	12.4	12.6	12.6	12.9	13.2	13.3	13.3	13.4	13.5	13.6	13.7
BG	0.8	9.6	8.9	8.3	8.2	8.5	8.9	9.5	10.2	10.7	11.0	10.7	10.4
CZ	3.0	8.2	8.0	7.7	7.6	7.9	8.4	9.2	10.4	11.4	11.8	11.6	11.2
DK	-2.4	10.0	9.2	8.5	8.1	7.9	7.7	7.5	7.4	7.2	7.1	7.3	7.6
DE	2.0	10.1	10.2	10.4	10.9	11.3	11.5	11.5	11.7	11.9	12.0	12.1	12.1
EE	-1.8	8.1	7.7	7.2	7.1	7.0	7.0	7.0	7.0	7.1	6.9	6.6	6.3
IE	1.2	5.0	5.1	5.3	5.5	5.9	6.3	6.7	7.0	7.0	6.8	6.5	6.2
EL	-6.7	17.3	13.3	11.7	11.3	11.5	12.0	11.9	11.9	11.3	11.0	11.0	10.6
ES	-2.1	12.2	12.1	11.6	11.3	11.7	12.5	13.1	12.9	11.8	11.1	10.5	10.0
FR	-3.7	15.0	14.9	14.9	14.8	14.6	14.4	13.8	13.2	12.6	12.0	11.6	11.3
HR	-4.4	10.6	10.2	9.9	9.2	8.4	7.7	7.2	6.8	6.6	6.5	6.3	6.2
IT	-1.5	15.6	15.2	14.8	15.4	16.7	17.8	17.8	17.2	16.0	15.2	14.6	14.2
CY	1.9	10.2	10.1	10.2	10.4	11.0	10.9	10.7	10.6	11.0	11.2	11.5	12.1
LV	-2.6	7.4	6.8	6.1	6.1	6.3	6.3	6.2	6.1	6.1	5.7	5.2	4.8
LT	-1.7	6.9	7.0	6.9	7.0	7.1	7.0	6.7	6.5	6.3	6.0	5.5	5.1
LU	8.7	9.0	8.9	9.2	9.7	10.3	10.9	11.5	12.2	13.6	15.4	16.8	17.7
HU	1.0	9.7	8.9	8.4	8.0	8.1	8.9	9.7	10.0	10.2	10.5	10.6	10.7
MT	2.3	8.0	7.7	7.1	6.7	6.6	6.9	7.4	8.1	8.9	9.8	10.2	10.3
NL	0.4	7.3	6.9	6.8	7.1	7.7	8.2	8.2	8.0	7.8	7.7	7.7	7.7
AT	-0.2	13.8	13.7	13.4	13.3	13.5	13.2	12.9	12.8	13.0	13.2	13.4	13.6
PL	-1.0	11.2	11.1	11.2	11.0	10.9	10.8	11.0	11.1	11.2	11.1	10.7	10.2
PT	-2.8	13.5	13.5	13.4	13.6	13.9	13.9	13.7	13.0	12.1	11.3	10.8	10.7
RO	0.2	8.0	7.2	6.6	6.2	6.7	7.1	7.6	8.0	8.4	8.4	8.3	8.2
SI	3.4	10.9	10.8	10.5	11.0	12.1	13.2	14.2	14.8	15.0	14.8	14.5	14.3
SK	0.6	8.6	8.2	7.5	7.2	7.1	7.3	7.8	8.2	8.7	9.3	9.4	9.2
FI	-0.6	13.4	13.5	12.9	12.6	12.6	12.4	12.0	11.9	12.0	12.3	12.6	12.8
SE	-1.5	8.2	7.6	7.1	6.8	6.7	6.5	6.3	6.3	6.5	6.6	6.6	6.6
UK	1.2	7.7	7.6	7.7	7.6	8.0	8.2	7.9	7.9	8.1	8.4	8.7	8.9
NO	1.4	10.7	10.9	11.0	11.1	11.2	11.2	11.2	11.3	11.5	11.7	11.9	12.1
EU*	-0.6	11.2	11.0	10.9	10.9	11.2	11.4	11.3	11.2	11.0	10.9	10.7	10.6
EA	-0.8	12.3	12.1	12.0	12.1	12.5	12.8	12.7	12.5	12.2	11.9	11.7	11.5
EU27	-0.9	11.9	11.6	11.5	11.5	11.8	12.0	12.0	11.9	11.6	11.4	11.2	11.0
EU* s	-0.2	10.3	9.9	9.6	9.5	9.7	10.0	10.1	10.2	10.2	10.2	10.2	10.1

Table III.1.94: Public pensions, gross as % of GDP - Higher migration (+33%)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.3	12.1	12.5	13.1	13.5	13.7	13.9	13.9	13.9	14.0	14.1	14.3	14.5
BG	1.4	9.6	9.1	9.0	9.2	9.6	10.0	10.6	11.3	11.7	11.8	11.4	11.0
CZ	2.5	8.2	8.1	8.0	8.1	8.3	9.0	9.8	10.5	11.1	11.3	11.0	10.7
DK	-2.1	10.0	9.2	8.6	8.3	8.1	7.8	7.6	7.5	7.3	7.3	7.5	7.9
DE	2.0	10.1	10.2	10.6	11.2	11.5	11.6	11.6	11.7	11.9	12.0	12.1	12.1
EE	-1.7	8.1	7.7	7.3	7.2	7.1	7.1	7.1	7.1	7.1	7.0	6.7	6.4
IE	1.5	5.0	5.1	5.5	5.8	6.2	6.6	7.0	7.3	7.3	7.1	6.7	6.5
EL	-6.9	17.3	13.5	12.3	12.2	12.5	13.1	12.8	12.6	11.9	11.5	11.2	10.4
ES	-1.7	12.2	12.3	12.5	12.6	13.2	13.8	14.1	13.4	12.1	11.1	10.7	10.5
FR	-3.7	15.0	15.0	15.3	15.4	15.2	14.9	14.2	13.5	12.7	12.2	11.7	11.4
HR	-4.0	10.6	10.4	10.5	9.9	9.0	8.2	7.7	7.3	7.0	6.8	6.7	6.6
IT	-2.2	15.6	15.6	16.2	17.0	17.8	18.1	17.7	16.6	15.2	14.5	13.8	13.4
CY	1.4	10.2	10.1	10.3	10.6	11.1	10.9	10.7	10.5	10.9	10.9	11.1	11.5
LV	-2.6	7.4	6.8	6.2	6.3	6.4	6.4	6.2	6.2	6.2	5.8	5.2	4.7
LT	-2.3	6.9	7.1	7.0	7.1	7.0	6.9	6.6	6.2	6.0	5.6	5.0	4.6
LU	7.5	9.0	8.7	8.8	9.4	9.8	10.2	10.7	11.3	12.6	14.3	15.7	16.5
HU	1.3	9.7	9.0	8.7	8.3	8.5	9.3	10.2	10.4	10.6	10.9	11.0	11.0
MT	2.0	8.0	7.6	7.1	6.7	6.7	6.8	7.3	7.9	8.7	9.5	10.0	10.1
NL	0.2	7.3	6.9	7.0	7.4	7.9	8.2	8.0	7.8	7.6	7.5	7.5	7.5
AT	-0.8	13.8	13.7	13.5	13.8	14.2	13.9	13.5	13.4	13.5	13.5	13.3	13.0
PL	-1.1	11.2	11.1	11.2	11.0	10.8	10.8	11.0	11.1	11.2	11.0	10.6	10.1
PT	-2.6	13.5	13.6	13.9	14.3	14.6	14.6	14.2	13.4	12.5	11.6	11.1	11.0
RO	0.8	8.0	7.3	7.1	6.8	7.4	8.0	8.6	9.0	9.3	9.1	9.0	8.8
SI	3.3	10.9	10.9	11.0	11.9	12.8	13.8	14.6	15.0	14.9	14.6	14.3	14.3
SK	1.0	8.6	8.2	7.8	7.6	7.5	7.7	8.2	8.6	9.2	9.7	9.8	9.6
FI	0.1	13.4	13.7	14.3	14.5	14.2	13.5	13.0	12.8	12.8	13.0	13.3	13.5
SE	-1.4	8.2	7.5	7.2	6.9	6.7	6.5	6.2	6.2	6.4	6.6	6.6	6.7
UK	1.3	7.7	7.6	7.8	7.8	8.1	8.3	7.9	7.9	8.1	8.4	8.7	9.0
NO	1.6	10.7	10.9	11.2	11.3	11.4	11.3	11.2	11.3	11.5	11.8	12.1	12.3
EU*	-0.6	11.2	11.1	11.3	11.4	11.7	11.7	11.5	11.3	11.0	10.9	10.7	10.7
EA	-0.8	12.3	12.2	12.5	12.8	13.1	13.2	13.0	12.6	12.2	11.9	11.7	11.5
EU27	-0.9	11.9	11.7	11.9	12.1	12.4	12.4	12.3	12.0	11.6	11.4	11.2	11.0
EU* s	-0.2	10.3	10.0	9.9	10.0	10.2	10.4	10.4	10.4	10.3	10.3	10.2	10.1

Table III.1.95: Public pensions, gross as % of GDP - Lower migration (-33%)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.5	12.1	12.7	13.7	14.3	14.8	15.2	15.4	15.5	15.6	15.6	15.7	15.7
BG	1.3	9.6	9.1	8.9	8.9	9.3	9.6	10.2	10.9	11.3	11.4	11.2	10.9
CZ	3.1	8.2	8.1	8.2	8.3	8.6	9.4	10.4	11.2	11.9	12.0	11.7	11.3
DK	-1.7	10.0	9.4	9.0	8.9	8.7	8.5	8.3	8.1	8.0	7.8	8.0	8.3
DE	2.9	10.1	10.4	11.0	11.8	12.3	12.4	12.6	12.7	13.0	13.1	13.0	13.0
EE	-1.8	8.1	7.8	7.3	7.2	7.1	7.1	7.1	7.1	7.1	6.9	6.6	6.3
IE	1.8	5.0	5.1	5.5	5.8	6.3	6.8	7.2	7.6	7.6	7.3	7.0	6.8
EL	-6.3	17.3	13.3	12.0	11.8	12.1	12.7	12.4	12.4	11.9	11.6	11.5	11.0
ES	-1.4	12.2	12.3	12.5	12.7	13.4	14.3	15.0	14.7	13.6	12.2	11.1	10.8
FR	-2.8	15.0	15.0	15.4	15.6	15.5	15.3	14.7	14.1	13.5	12.9	12.5	12.2
HR	-3.5	10.6	10.4	10.5	10.0	9.2	8.4	8.0	7.6	7.4	7.3	7.2	7.0
IT	-1.2	15.6	15.7	16.6	17.5	18.7	19.3	19.1	18.1	16.7	15.8	15.0	14.4
CY	3.5	10.2	10.3	10.8	11.2	12.0	12.1	12.2	12.2	13.0	13.2	13.5	13.7
LV	-2.6	7.4	6.8	6.1	6.1	6.2	6.2	6.0	6.0	5.9	5.6	5.1	4.8
LT	-1.1	6.9	6.9	6.8	7.0	7.2	7.1	6.9	6.7	6.6	6.4	6.1	5.7
LU	10.9	9.0	9.3	10.1	11.2	12.3	13.3	14.3	15.3	16.8	18.3	19.4	19.9
HU	1.8	9.7	9.0	8.7	8.4	8.7	9.5	10.5	10.8	11.1	11.4	11.5	11.5
MT	3.5	8.0	7.9	7.5	7.3	7.3	7.6	8.3	9.2	10.2	11.2	11.6	11.6
NL	0.9	7.3	7.0	7.2	7.7	8.4	8.8	8.7	8.6	8.4	8.3	8.3	8.2
AT	1.6	13.8	14.1	14.4	15.1	15.9	15.9	15.8	15.8	15.9	15.9	15.7	15.4
PL	-0.9	11.2	11.1	11.2	11.0	10.8	10.8	11.0	11.2	11.3	11.2	10.7	10.3
PT	-1.8	13.5	13.6	13.9	14.4	14.8	14.9	14.7	14.0	13.1	12.3	11.8	11.8
RO	0.6	8.0	7.2	6.8	6.5	7.0	7.5	8.0	8.4	8.8	8.8	8.7	8.6
SI	4.6	10.9	11.0	11.2	12.2	13.4	14.6	15.6	16.3	16.3	16.0	15.6	15.6
SK	1.4	8.6	8.3	7.8	7.7	7.6	7.9	8.5	8.9	9.6	10.1	10.3	10.0
FI	1.0	13.4	13.9	14.6	15.0	14.8	14.3	13.8	13.7	13.7	14.0	14.2	14.4
SE	-0.9	8.2	7.7	7.6	7.5	7.3	7.2	7.0	7.0	7.2	7.4	7.3	7.3
UK	2.3	7.7	7.7	8.1	8.2	8.7	9.0	8.8	8.8	9.1	9.5	9.8	10.0
NO	2.8	10.7	11.1	11.8	12.2	12.5	12.6	12.6	12.8	13.0	13.2	13.4	13.5
EU*	0.2	11.2	11.2	11.5	11.8	12.2	12.4	12.3	12.2	12.0	11.8	11.6	11.4
EA	0.0	12.3	12.3	12.8	13.2	13.7	13.9	13.9	13.6	13.3	12.9	12.5	12.3
EU27	-0.1	11.9	11.9	12.2	12.5	12.9	13.1	13.1	12.9	12.6	12.3	12.0	11.8
EU* s	0.7	10.3	10.0	10.1	10.3	10.7	10.9	11.1	11.2	11.2	11.2	11.1	10.9

Table III.1.96: Public pensions, gross as % of GDP - TFP risk scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.0	12.1	12.6	13.5	14.0	14.4	14.9	15.1	15.3	15.5	15.7	16.0	16.2
BG	1.7	9.6	9.1	9.0	9.2	9.7	10.1	10.7	11.4	11.9	11.9	11.6	11.3
CZ	3.0	8.2	8.1	8.2	8.4	8.7	9.4	10.3	11.1	11.7	11.9	11.6	11.2
DK	-2.0	10.0	9.3	8.8	8.6	8.4	8.1	7.9	7.7	7.6	7.5	7.7	8.0
DE	2.5	10.1	10.3	10.8	11.5	11.9	12.0	12.1	12.2	12.4	12.6	12.6	12.5
EE	-1.5	8.1	7.8	7.4	7.3	7.2	7.3	7.3	7.3	7.3	7.2	6.9	6.6
IE	1.6	5.0	5.1	5.5	5.7	6.1	6.6	7.0	7.3	7.4	7.2	6.8	6.6
EL	-5.7	17.3	13.6	12.5	12.5	13.0	13.7	13.5	13.5	12.9	12.5	12.3	11.6
ES	-1.4	12.2	12.3	12.5	12.7	13.4	14.3	14.9	14.5	13.3	11.8	11.0	10.7
FR	-2.4	15.0	15.0	15.3	15.5	15.5	15.4	14.9	14.4	13.8	13.3	12.9	12.6
HR	-3.6	10.6	10.4	10.5	10.0	9.1	8.4	7.9	7.5	7.3	7.2	7.1	7.0
IT	-1.1	15.6	15.7	16.5	17.3	18.4	19.0	18.9	17.9	16.6	15.8	15.0	14.5
CY	2.5	10.2	10.2	10.6	10.9	11.6	11.6	11.6	11.5	12.1	12.2	12.4	12.7
LV	-2.4	7.4	6.8	6.3	6.4	6.6	6.5	6.4	6.3	6.3	5.8	5.3	4.9
LT	-1.6	6.9	7.0	7.0	7.2	7.2	7.1	6.8	6.5	6.3	6.0	5.6	5.2
LU	9.5	9.0	9.0	9.5	10.4	11.2	11.9	12.7	13.5	14.8	16.6	17.8	18.6
HU	2.1	9.7	9.1	9.0	8.9	9.3	10.2	11.1	11.3	11.5	11.7	11.8	11.8
MT	3.4	8.0	7.8	7.4	7.1	7.2	7.6	8.2	9.0	10.0	10.9	11.4	11.4
NL	0.6	7.3	7.0	7.1	7.5	8.1	8.5	8.4	8.2	8.0	7.9	7.9	7.9
AT	0.8	13.8	13.9	14.2	14.8	15.6	15.7	15.5	15.4	15.5	15.4	15.1	14.6
PL	-0.5	11.2	11.2	11.5	11.6	11.6	11.7	11.8	11.9	11.9	11.7	11.2	10.7
PT	-1.2	13.5	13.7	14.0	14.5	15.0	15.2	15.1	14.5	13.7	12.9	12.4	12.4
RO	1.2	8.0	7.2	7.0	6.8	7.5	8.1	8.7	9.1	9.5	9.4	9.3	9.2
SI	4.2	10.9	11.0	11.3	12.3	13.4	14.5	15.4	15.9	15.9	15.5	15.2	15.2
SK	1.7	8.6	8.3	8.0	8.1	8.1	8.4	8.9	9.3	9.9	10.4	10.6	10.3
FI	1.2	13.4	13.9	14.7	15.2	15.2	14.6	14.1	13.8	13.9	14.1	14.4	14.5
SE	-1.2	8.2	7.6	7.4	7.2	7.0	6.8	6.6	6.6	6.8	7.0	7.0	7.0
UK	2.2	7.7	7.7	8.1	8.2	8.6	8.9	8.6	8.6	8.9	9.3	9.6	9.9
NO	2.1	10.7	11.0	11.5	11.7	11.9	11.9	11.9	11.9	12.2	12.5	12.7	12.8
EU*	0.2	11.2	11.2	11.5	11.8	12.1	12.3	12.3	12.1	11.9	11.7	11.6	11.4
EA	0.0	12.3	12.3	12.7	13.1	13.6	13.8	13.7	13.5	13.1	12.8	12.5	12.3
EU27	-0.1	11.9	11.8	12.1	12.4	12.8	13.0	13.0	12.8	12.5	12.2	12.0	11.8
EU* s	0.6	10.3	10.0	10.1	10.4	10.7	10.9	11.1	11.1	11.2	11.1	11.0	10.9

Table III.1.97: Public pensions, gross as % of GDP - Policy scenario linking retirement age to increases in life expectancy

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.8	12.1	12.6	13.4	13.8	14.2	14.5	14.6	14.4	14.2	14.2	14.1	13.9
BG	0.1	9.6	9.1	8.8	8.8	8.9	9.1	9.5	10.0	10.3	10.5	10.2	9.7
CZ	1.2	8.2	8.0	8.0	8.1	8.2	8.5	9.1	9.8	10.1	10.3	10.0	9.3
DK	-1.9	10.0	9.3	8.8	8.6	8.4	8.2	7.9	7.8	7.6	7.5	7.8	8.1
DE	1.7	10.1	10.3	10.7	11.3	11.7	11.7	11.7	11.7	11.8	11.9	11.9	11.8
EE	-1.8	8.1	7.8	7.3	7.2	7.1	7.1	7.1	7.1	7.1	6.9	6.6	6.4
IE	1.1	5.0	5.1	5.5	5.5	5.8	6.0	6.4	6.7	6.8	6.7	6.4	6.1
EL	-6.6	17.3	13.4	12.2	12.0	12.3	12.9	12.6	12.5	11.9	11.5	11.3	10.6
ES	-2.0	12.2	12.3	12.5	12.6	13.3	14.1	14.6	14.0	12.8	11.4	10.8	10.1
FR	-4.9	15.0	15.0	15.2	15.2	15.0	14.6	13.9	13.1	12.4	11.6	10.8	10.2
HR	-4.6	10.6	10.4	10.4	9.9	9.0	8.2	7.5	7.0	6.6	6.3	6.1	5.9
IT	-1.7	15.6	15.6	16.4	17.2	18.2	18.7	18.4	17.3	15.9	15.1	14.3	13.9
CY	2.3	10.2	10.2	10.6	10.9	11.5	11.5	11.4	11.3	11.8	12.0	12.1	12.4
LV	-2.8	7.4	6.8	6.2	6.2	6.1	6.0	5.8	5.5	5.6	5.4	5.0	4.5
LT	-1.7	6.9	7.1	7.1	7.1	7.0	6.8	6.5	6.2	6.0	5.8	5.5	5.1
LU	7.1	9.0	8.8	9.0	9.8	10.3	10.8	11.2	11.8	12.6	14.0	15.2	16.1
HU	-0.1	9.7	9.0	8.7	8.2	8.4	8.7	9.4	9.8	9.7	9.7	9.6	9.6
MT	1.7	8.0	7.7	7.3	6.9	6.8	6.9	7.3	7.9	8.6	9.2	9.6	9.7
NL	0.6	7.3	7.0	7.1	7.5	8.1	8.5	8.4	8.2	8.0	7.9	7.9	7.9
AT	-1.9	13.8	13.8	13.7	14.0	14.5	14.3	13.9	13.6	13.3	12.9	12.4	12.0
PL	-1.4	11.2	10.4	10.5	10.4	10.2	10.1	10.3	10.5	10.8	10.8	10.4	9.8
PT	-2.6	13.5	13.6	13.9	14.3	14.7	14.7	14.4	13.6	12.6	11.7	11.1	10.9
RO	-0.6	8.0	7.3	6.9	6.5	6.6	7.1	7.5	7.9	8.0	8.0	7.8	7.4
SI	2.6	10.9	11.0	11.1	12.0	13.1	14.0	14.8	15.1	15.0	14.5	13.9	13.6
SK	1.2	8.6	8.3	7.8	7.6	7.6	7.8	8.3	8.8	9.4	9.9	10.0	9.8
FI	0.6	13.4	13.8	14.5	14.8	14.5	13.9	13.4	13.2	13.2	13.5	13.8	13.9
SE	-1.9	8.2	7.6	7.1	6.8	6.6	6.4	6.1	6.1	6.2	6.2	6.3	6.3
UK	1.2	7.7	7.6	7.9	7.9	8.2	8.4	8.0	8.0	8.2	8.5	8.7	8.9
NO	1.1	10.7	11.0	11.3	11.5	11.5	11.4	11.3	11.3	11.4	11.6	11.7	11.7
EU*	-0.9	11.2	11.1	11.3	11.5	11.7	11.7	11.6	11.3	11.0	10.8	10.5	10.3
EA	-1.2	12.3	12.2	12.5	12.9	13.2	13.3	13.1	12.7	12.3	11.8	11.4	11.1
EU27	-1.3	11.9	11.7	11.9	12.2	12.4	12.4	12.3	12.0	11.6	11.3	10.9	10.6
EU* s	-0.5	10.3	10.0	9.9	10.0	10.2	10.3	10.4	10.3	10.2	10.1	10.0	9.8

Table III.1.98: Public pensions, gross as % of GDP - p.p. ch. from 2016

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.9		0.5	1.3	1.7	2.1	2.4	2.5	2.5	2.6	2.7	2.9	2.9
BG	1.4		-0.5	-0.7	-0.5	-0.2	0.2	0.8	1.5	1.9	2.0	1.7	1.4
CZ	2.8		-0.1	-0.1	0.0	0.3	1.0	1.9	2.7	3.3	3.5	3.1	2.8
DK	-1.9		-0.7	-1.1	-1.4	-1.6	-1.8	-2.1	-2.2	-2.3	-2.4	-2.2	-1.9
DE	2.4		0.3	0.7	1.4	1.8	1.9	2.0	2.1	2.3	2.5	2.5	2.4
EE	-1.8		-0.4	-0.8	-0.9	-1.0	-1.0	-1.0	-1.1	-1.0	-1.2	-1.5	-1.8
IE	1.6		0.1	0.5	0.8	1.3	1.7	2.1	2.4	2.5	2.2	1.9	1.6
EL	-6.6		-3.9	-5.1	-5.3	-5.0	-4.4	-4.7	-4.8	-5.4	-5.8	-5.9	-6.6
ES	-1.5		0.1	0.3	0.4	1.0	1.8	2.2	1.7	0.5	-0.8	-1.3	-1.5
FR	-3.3		-0.1	0.3	0.4	0.3	0.0	-0.6	-1.3	-1.9	-2.5	-2.9	-3.3
HR	-3.8		-0.2	-0.1	-0.6	-1.5	-2.2	-2.8	-3.1	-3.4	-3.5	-3.7	-3.8
IT	-1.7		0.0	0.8	1.6	2.6	3.1	2.8	1.7	0.3	-0.5	-1.3	-1.7
CY	2.3		0.0	0.4	0.7	1.4	1.3	1.2	1.1	1.7	1.8	2.0	2.3
LV	-2.6		-0.6	-1.2	-1.2	-1.0	-1.1	-1.2	-1.3	-1.3	-1.7	-2.2	-2.6
LT	-1.7		0.1	0.1	0.2	0.3	0.2	-0.1	-0.4	-0.6	-0.8	-1.3	-1.7
LU	8.9		-0.1	0.4	1.1	1.8	2.5	3.2	3.9	5.3	6.9	8.2	8.9
HU	1.5		-0.7	-1.0	-1.3	-1.1	-0.3	0.6	0.9	1.1	1.4	1.5	1.5
MT	2.9		-0.2	-0.6	-1.0	-1.0	-0.7	-0.1	0.7	1.6	2.4	2.9	2.9
NL	0.6		-0.3	-0.2	0.2	0.8	1.2	1.1	0.9	0.7	0.6	0.6	0.6
AT	0.5		0.1	0.2	0.6	1.2	1.1	0.8	0.7	0.9	0.9	0.7	0.5
PL	-1.0		-0.1	0.0	-0.2	-0.4	-0.3	-0.2	0.0	0.1	-0.1	-0.5	-1.0
PT	-2.2		0.1	0.3	0.8	1.2	1.2	0.9	0.1	-0.8	-1.6	-2.1	-2.2
RO	0.7		-0.7	-1.0	-1.3	-0.8	-0.3	0.3	0.7	1.0	0.9	0.9	0.7
SI	3.9		0.0	0.2	1.1	2.1	3.2	4.1	4.6	4.6	4.3	4.0	3.9
SK	1.2		-0.3	-0.8	-0.9	-1.0	-0.8	-0.2	0.2	0.8	1.3	1.4	1.2
FI	0.6		0.4	1.1	1.4	1.2	0.5	0.0	-0.2	-0.1	0.1	0.4	0.6
SE	-1.2		-0.5	-0.8	-1.0	-1.2	-1.3	-1.5	-1.6	-1.4	-1.2	-1.2	-1.2
UK	1.7		-0.1	0.3	0.3	0.7	0.9	0.6	0.6	0.8	1.2	1.5	1.7
NO	2.1		0.3	0.8	1.0	1.2	1.2	1.2	1.3	1.5	1.8	2.0	2.1
EU*	-0.2		-0.1	0.2	0.4	0.7	0.8	0.7	0.5	0.3	0.1	-0.1	-0.2
EA	-0.4		0.0	0.3	0.7	1.1	1.3	1.1	0.8	0.4	0.1	-0.2	-0.4
EU27	-0.5		-0.1	0.2	0.4	0.7	0.9	0.8	0.5	0.2	-0.1	-0.3	-0.5
EU* s	0.2		-0.3	-0.2	-0.1	0.2	0.4	0.5	0.5	0.5	0.5	0.3	0.2

Table III.1.99: Public pensions, gross as % of GDP - p.p. ch. from 2016 due to Dependency Ratio

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.6		0.8	2.0	3.3	4.2	4.7	5.0	5.3	5.6	6.0	6.3	6.6
BG	6.0		0.9	1.9	2.6	3.2	4.3	5.4	6.3	7.3	7.3	6.6	6.0
CZ	5.4		1.1	1.9	2.3	2.7	3.8	5.1	5.8	6.5	6.7	6.0	5.4
DK	4.6		0.5	1.1	1.8	2.4	2.8	2.9	2.8	3.1	3.7	4.2	4.6
DE	6.6		0.5	1.6	3.4	4.8	5.0	5.1	5.4	6.0	6.4	6.6	6.6
EE	4.6		0.7	1.6	2.1	2.5	3.0	3.5	4.1	4.9	5.1	4.8	4.6
IE	4.2		0.6	1.3	2.0	2.6	3.4	4.2	4.9	5.1	4.8	4.4	4.2
EL	9.1		1.4	3.1	4.4	6.2	7.9	9.6	10.5	10.4	9.9	9.4	9.1
ES	7.6		1.1	2.9	4.8	6.9	8.9	10.7	10.9	10.2	9.1	8.1	7.6
FR	6.2		1.5	3.0	4.4	5.5	6.3	6.4	6.3	6.1	5.8	5.9	6.2
HR	6.3		1.1	2.5	3.5	4.1	4.5	5.0	5.5	5.8	6.0	6.3	6.3
IT	10.3		0.9	2.3	4.5	6.9	9.2	10.4	10.8	10.7	10.5	10.2	10.3
CY	11.6		1.0	2.2	3.4	4.1	4.8	5.7	7.1	8.9	10.5	11.3	11.6
LV	4.4		0.7	1.8	2.7	3.4	3.9	4.2	4.8	5.4	5.5	4.9	4.4
LT	5.0		0.6	2.1	3.7	4.7	5.3	5.4	5.5	5.7	6.0	5.6	5.0
LU	10.4		0.4	1.2	2.5	3.8	4.8	5.7	6.8	7.8	8.8	9.8	10.4
HU	6.4		1.3	2.2	2.4	3.1	4.1	5.3	5.7	6.1	6.6	6.6	6.4
MT	5.7		1.0	2.1	2.7	2.8	2.9	3.2	3.7	4.4	5.3	5.8	5.7
NL	4.2		0.7	1.5	2.4	3.1	3.4	3.3	3.2	3.2	3.5	3.8	4.2
AT	10.1		0.4	1.8	3.9	5.6	6.3	6.7	7.4	8.2	9.2	9.8	10.1
PL	11.7		2.2	4.6	5.6	6.2	7.1	8.4	10.1	11.4	12.1	12.1	11.7
PT	10.9		1.2	2.7	4.5	6.1	8.2	9.9	10.6	10.5	10.5	10.6	10.9
RO	5.6		1.0	2.0	2.2	3.4	4.3	5.3	5.8	6.4	6.2	5.9	5.6
SI	7.5		1.7	3.4	4.8	5.9	6.8	8.1	9.0	9.4	9.0	8.2	7.5
SK	8.8		1.6	3.1	4.1	4.7	5.6	6.8	7.8	8.7	9.3	9.2	8.8
FI	6.6		1.4	2.8	3.8	4.3	4.1	4.3	4.8	5.3	6.0	6.3	6.6
SE	2.4		0.3	0.6	0.9	1.2	1.3	1.4	1.5	1.9	2.3	2.3	2.4
UK	3.1		0.2	0.7	1.2	1.7	1.9	2.0	2.2	2.5	2.8	3.0	3.1
NO	7.6		0.7	1.8	2.7	3.8	4.6	4.9	5.3	6.0	6.7	7.2	7.6
EU*	6.5		0.9	2.1	3.3	4.5	5.3	5.9	6.3	6.5	6.6	6.6	6.5
EA	7.1		0.9	2.3	3.9	5.4	6.4	7.0	7.3	7.3	7.2	7.1	7.1
EU27	6.7		1.0	2.2	3.5	4.7	5.6	6.3	6.6	6.9	6.9	6.8	6.7
EU* s	6.9		1.0	2.1	3.2	4.1	5.0	5.7	6.2	6.7	6.9	6.9	6.9

Table III.1.100: Public pensions, gross as % of GDP - p.p. ch. from 2016 due to Coverage Ratio

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-1.9		-0.1	-0.4	-1.2	-1.7	-1.8	-1.9	-1.8	-1.9	-1.9	-1.9	-1.9
BG	-3.0		-0.5	-0.9	-1.3	-1.8	-2.4	-2.9	-3.1	-3.5	-3.4	-3.1	-3.0
CZ	-1.9		-0.6	-1.0	-1.3	-1.3	-1.6	-1.9	-2.0	-2.2	-2.3	-2.0	-1.9
DK	-3.9		-0.7	-1.3	-1.9	-2.3	-2.6	-2.8	-2.8	-3.1	-3.7	-3.9	-3.9
DE	-1.3		-0.1	-0.2	-0.6	-0.9	-1.0	-1.0	-1.0	-1.2	-1.2	-1.3	-1.3
EE	-3.0		-1.9	-2.7	-2.8	-2.8	-2.9	-2.9	-2.9	-3.0	-3.0	-3.0	-3.0
IE	-0.9		-0.2	-0.4	-0.7	-0.8	-1.0	-1.2	-1.3	-1.2	-1.0	-0.9	-0.9
EL	-1.9		-0.8	-1.8	-2.3	-2.7	-2.6	-3.0	-2.9	-2.8	-2.4	-1.8	-1.9
ES	-0.4		-0.2	-0.5	-0.8	-0.8	-0.8	-0.9	-0.6	-0.4	-0.3	-0.3	-0.4
FR	-2.9		-0.7	-1.3	-1.8	-2.3	-2.7	-2.8	-2.8	-2.8	-2.7	-2.8	-2.9
HR	-3.3		-0.6	-1.3	-1.9	-2.5	-2.9	-3.1	-3.2	-3.3	-3.3	-3.4	-3.3
IT	-4.5		-0.9	-1.7	-2.5	-3.0	-3.5	-3.6	-3.6	-3.8	-3.9	-4.2	-4.5
CY	-2.4		-0.1	-0.3	-0.7	-0.5	-0.5	-0.5	-0.8	-0.9	-1.6	-2.1	-2.4
LV	-1.4		-0.5	-0.9	-1.1	-1.2	-1.3	-1.4	-1.5	-1.5	-1.6	-1.4	-1.4
LT	-1.8		-0.4	-0.9	-1.2	-1.4	-1.6	-1.7	-1.8	-1.8	-2.0	-2.0	-1.8
LU	-0.8		-0.2	-0.3	-0.6	-1.1	-1.5	-1.8	-2.0	-1.8	-1.3	-1.0	-0.8
HU	-1.8		-0.8	-1.0	-0.9	-1.0	-1.2	-1.6	-1.6	-1.7	-1.9	-1.9	-1.8
MT	0.6		-0.2	-0.4	-0.4	-0.2	0.1	0.2	0.3	0.4	0.4	0.5	0.6
NL	-2.7		-0.4	-0.8	-1.1	-1.4	-1.4	-1.5	-1.7	-1.9	-2.1	-2.4	-2.7
AT	-3.3		-0.1	-0.6	-1.5	-1.8	-2.0	-2.0	-2.3	-2.5	-3.0	-3.2	-3.3
PL	-3.0		-0.7	-1.7	-2.0	-1.9	-1.9	-2.0	-2.4	-2.7	-3.0	-3.1	-3.0
PT	-3.3		-0.7	-1.4	-1.9	-2.2	-2.7	-3.0	-3.0	-3.0	-3.1	-3.2	-3.3
RO	-1.7		-0.5	-1.0	-1.0	-1.3	-1.5	-1.8	-1.8	-2.0	-2.0	-1.8	-1.7
SI	-2.1		-0.5	-1.3	-1.6	-1.8	-1.8	-2.1	-2.4	-2.6	-2.6	-2.4	-2.1
SK	-4.1		-0.9	-1.9	-2.3	-2.6	-2.9	-3.3	-3.6	-3.9	-4.0	-4.1	-4.1
FI	-2.5		-0.3	-0.9	-1.4	-1.6	-1.7	-1.8	-2.0	-2.2	-2.4	-2.4	-2.5
SE	0.6		-0.1	0.0	0.0	-0.1	0.0	0.1	0.2	0.3	0.4	0.5	0.6
UK	-1.1		-0.5	-0.6	-1.0	-1.0	-1.0	-1.3	-1.4	-1.4	-1.4	-1.4	-1.1
NO	-0.9		-0.2	-0.4	-0.6	-0.9	-1.1	-1.0	-0.9	-0.8	-0.9	-0.9	-0.9
EU*	-2.1		-0.5	-0.9	-1.3	-1.6	-1.8	-1.9	-2.0	-2.1	-2.1	-2.1	-2.1
EA	-2.2		-0.4	-0.8	-1.3	-1.7	-1.9	-2.0	-2.0	-2.1	-2.0	-2.1	-2.2
EU27	-2.1		-0.4	-0.9	-1.3	-1.6	-1.7	-1.9	-1.9	-2.0	-2.0	-2.0	-2.1
EU* s	-2.1		-0.5	-1.0	-1.3	-1.6	-1.7	-1.9	-2.0	-2.1	-2.2	-2.1	-2.1

Table III.1.101: Public pensions, gross as % of GDP - p.p. ch. from 2016 due to Benefit Ratio

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.7		0.2	0.3	0.5	0.7	0.6	0.4	0.2	0.0	-0.3	-0.4	-0.7
BG	-1.1		-0.5	-1.2	-1.3	-1.2	-1.1	-1.0	-1.0	-1.0	-1.1	-1.1	-1.1
CZ	-0.5		-0.4	-0.7	-0.9	-1.0	-1.0	-0.9	-0.7	-0.6	-0.5	-0.4	-0.5
DK	-1.6		-0.2	-0.5	-0.8	-1.0	-1.3	-1.5	-1.6	-1.6	-1.5	-1.5	-1.6
DE	-2.4		-0.1	-0.6	-0.9	-1.4	-1.6	-1.7	-1.8	-1.9	-2.0	-2.3	-2.4
EE	-3.0		1.1	0.6	0.1	-0.3	-0.8	-1.2	-1.7	-2.2	-2.6	-2.8	-3.0
IE	-1.4		-0.1	-0.1	-0.2	-0.2	-0.3	-0.5	-0.6	-0.9	-1.1	-1.3	-1.4
EL	-8.3		-3.0	-3.8	-4.2	-4.6	-5.2	-6.1	-6.9	-7.6	-7.9	-8.1	-8.3
ES	-4.9		0.1	-0.5	-1.4	-2.1	-2.9	-3.8	-4.7	-5.5	-5.9	-5.5	-4.9
FR	-4.8		-0.4	-0.6	-1.1	-1.6	-2.0	-2.5	-3.0	-3.5	-3.9	-4.3	-4.8
HR	-4.9		-0.2	-0.6	-1.2	-1.8	-2.4	-3.0	-3.5	-4.0	-4.3	-4.6	-4.9
IT	-4.0		0.7	1.6	1.7	1.3	0.4	-0.9	-2.3	-3.3	-3.8	-3.9	-4.0
CY	-4.1		-0.3	-0.4	-0.5	-0.7	-1.2	-2.2	-3.2	-3.9	-4.2	-4.3	-4.1
LV	-4.7		-0.7	-1.7	-2.3	-2.6	-2.9	-3.2	-3.6	-4.0	-4.4	-4.7	-4.7
LT	-4.0		-0.1	-0.9	-1.7	-2.3	-2.7	-3.0	-3.2	-3.6	-3.9	-4.0	-4.0
LU	-0.6		-0.2	-0.3	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.6
HU	-1.6		-0.7	-1.1	-1.6	-1.9	-1.8	-1.7	-1.7	-1.8	-1.8	-1.8	-1.6
MT	-2.3		-0.7	-1.6	-2.2	-2.5	-2.5	-2.4	-2.3	-2.1	-2.1	-2.1	-2.3
NL	0.0		-0.3	-0.5	-0.5	-0.3	-0.2	-0.1	0.0	0.1	0.1	0.1	0.0
AT	-4.6		0.0	-0.6	-0.9	-1.3	-1.9	-2.5	-3.0	-3.3	-3.7	-4.1	-4.6
PL	-8.1		-0.9	-1.7	-2.6	-3.6	-4.5	-5.4	-6.2	-6.8	-7.3	-7.7	-8.1
PT	-7.1		0.1	0.0	-0.3	-1.0	-2.0	-3.3	-4.7	-5.8	-6.5	-7.0	-7.1
RO	-2.6		-0.9	-1.6	-2.3	-2.5	-2.6	-2.6	-2.6	-2.5	-2.6	-2.6	-2.6
SI	-0.3		-0.6	-0.9	-1.0	-0.9	-0.8	-0.7	-0.7	-0.8	-0.7	-0.6	-0.3
SK	-1.5		-0.5	-1.3	-1.9	-2.3	-2.4	-2.5	-2.5	-2.3	-2.0	-1.7	-1.5
FI	-2.0		-0.3	-0.3	-0.5	-1.0	-1.3	-1.7	-1.9	-2.0	-2.1	-2.0	-2.0
SE	-4.0		-0.6	-1.2	-1.7	-2.1	-2.4	-2.8	-3.1	-3.4	-3.6	-3.8	-4.0
UK	0.0		0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.0
NO	-3.9		0.0	-0.3	-0.7	-1.2	-1.7	-2.2	-2.6	-3.0	-3.4	-3.6	-3.9
EU*	-3.3		-0.2	-0.5	-0.8	-1.2	-1.7	-2.1	-2.6	-2.9	-3.1	-3.2	-3.3
EA	-3.5		-0.1	-0.4	-0.7	-1.2	-1.7	-2.2	-2.7	-3.1	-3.3	-3.4	-3.5
EU27	-3.7		-0.2	-0.5	-0.9	-1.4	-1.9	-2.4	-2.9	-3.3	-3.5	-3.6	-3.7
EU* s	-3.0		-0.3	-0.7	-1.1	-1.4	-1.7	-2.0	-2.4	-2.7	-2.9	-3.0	-3.0

Table III.1.102: Public pensions, gross as % of GDP - p.p. ch. from 2016 due to Labour Martket Ratio

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.9		-0.3	-0.6	-0.8	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9
BG	-0.2		-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.5	-0.4	-0.3	-0.2
CZ	0.0		-0.2	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.1	0.0
DK	-0.8		-0.2	-0.3	-0.4	-0.5	-0.5	-0.5	-0.5	-0.6	-0.7	-0.8	-0.8
DE	-0.3		-0.1	0.0	-0.2	-0.4	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3
EE	0.2		0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.1	0.2
IE	-0.1		-0.1	-0.1	-0.1	-0.1	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1
EL	-4.9		-1.6	-2.6	-3.1	-3.6	-4.1	-4.6	-4.9	-4.8	-4.7	-4.8	-4.9
ES	-2.8		-0.8	-1.3	-1.9	-2.3	-2.7	-3.0	-3.0	-2.9	-2.8	-2.8	-2.8
FR	-1.4		-0.3	-0.6	-0.8	-1.0	-1.2	-1.3	-1.4	-1.4	-1.4	-1.4	-1.4
HR	-1.5		-0.4	-0.6	-0.8	-1.0	-1.2	-1.4	-1.5	-1.5	-1.5	-1.6	-1.5
IT	-2.8		-0.6	-1.3	-1.8	-2.1	-2.4	-2.5	-2.5	-2.6	-2.6	-2.7	-2.8
CY	-2.1		-0.5	-1.0	-1.3	-1.3	-1.3	-1.4	-1.6	-1.8	-2.0	-2.1	-2.1
LV	-0.5		-0.1	-0.1	-0.3	-0.3	-0.4	-0.4	-0.5	-0.7	-0.7	-0.5	-0.5
LT	-0.3		0.0	0.0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.4	-0.4	-0.3
LU	-0.1		-0.1	-0.1	-0.2	-0.2	-0.1	0.0	0.0	0.1	0.0	0.0	-0.1
HU	-1.1		-0.4	-0.9	-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1
MT	-1.0		-0.2	-0.6	-0.8	-0.8	-0.9	-0.9	-0.9	-0.9	-0.9	-1.0	-1.0
NL	-0.8		-0.1	-0.3	-0.4	-0.5	-0.5	-0.5	-0.5	-0.6	-0.7	-0.7	-0.8
AT	-1.1		-0.2	-0.4	-0.6	-0.9	-1.0	-0.9	-1.0	-1.0	-1.1	-1.1	-1.1
PL	-0.4		-0.5	-0.7	-0.5	-0.4	-0.3	-0.3	-0.5	-0.6	-0.7	-0.6	-0.4
PT	-1.9		-0.4	-0.8	-1.2	-1.4	-1.7	-2.0	-2.0	-1.7	-1.7	-1.8	-1.9
RO	-0.1		-0.2	-0.2	0.0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.2	-0.2	-0.1
SI	-0.7		-0.4	-0.8	-0.7	-0.7	-0.6	-0.7	-0.9	-1.0	-0.9	-0.8	-0.7
SK	-1.2		-0.3	-0.3	-0.3	-0.3	-0.4	-0.6	-0.8	-1.0	-1.2	-1.2	-1.2
FI	-1.3		-0.3	-0.3	-0.3	-0.5	-0.5	-0.6	-0.8	-0.9	-1.2	-1.2	-1.3
SE	-0.1		-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1
UK	-0.3		0.0	0.0	-0.1	-0.1	-0.2	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3
NO	-0.3		-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.3
EU*	-1.0		-0.3	-0.4	-0.6	-0.8	-0.8	-0.9	-0.9	-1.0	-1.0	-1.0	-1.0
EA	-1.4		-0.4	-0.6	-0.9	-1.1	-1.2	-1.3	-1.3	-1.4	-1.4	-1.4	-1.4
EU27	-1.1		-0.3	-0.5	-0.7	-0.8	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0	-1.1
EU* s	-1.0		-0.3	-0.5	-0.6	-0.7	-0.8	-0.9	-0.9	-1.0	-1.0	-1.0	-1.0

Table III.1.103: Public pensions, gross as % of GDP - p.p. ch. from 2016 due to Interaction effect (residual)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.2		0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
BG	-0.4		-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4
CZ	-0.3		-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
DK	-0.2		0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2
DE	-0.3		0.0	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
EE	-0.7		-0.3	-0.4	-0.5	-0.5	-0.5	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
IE	-0.2		0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
EL	-0.7		0.1	-0.1	-0.2	-0.3	-0.4	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7
ES	-0.9		-0.1	-0.2	-0.4	-0.6	-0.7	-0.8	-0.9	-0.9	-0.9	-0.9	-0.9
FR	-0.3		-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
HR	-0.4		-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4
IT	-0.7		-0.1	-0.2	-0.3	-0.5	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
CY	-0.8		-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.5	-0.6	-0.7	-0.8	-0.8
LV	-0.5		-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5
LT	-0.6		0.0	-0.3	-0.4	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
LU	-0.2		0.0	0.0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
HU	-0.3		-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
MT	-0.2		-0.1	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
NL	-0.2		0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
AT	-0.5		0.0	-0.1	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5
PL	-1.2		-0.3	-0.6	-0.6	-0.7	-0.8	-0.9	-1.1	-1.1	-1.2	-1.2	-1.2
PT	-0.8		-0.1	-0.2	-0.3	-0.4	-0.6	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8
RO	-0.5		-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5
SI	-0.5		-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5
SK	-0.8		-0.2	-0.4	-0.5	-0.5	-0.6	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8
FI	-0.2		-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
SE	-0.1		0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
UK	-0.1		0.1	0.1	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1
NO	-0.3		0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3
EU*	-0.3		0.0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
EA	-0.4		0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
EU27	-0.4		-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4
EU* s	-0.5		-0.1	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5

Table III.1.104: Health care spending as % of GDP - AWG reference scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.4	5.9	5.9	6.0	6.0	6.1	6.2	6.2	6.3	6.3	6.3	6.3	6.3
BG	0.3	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.6	5.6	5.5	5.4	5.2
CZ	1.1	5.4	5.6	5.7	5.9	6.1	6.2	6.3	6.5	6.5	6.6	6.6	6.5
DK	1.0	6.9	7.0	7.2	7.3	7.4	7.4	7.5	7.6	7.7	7.7	7.8	7.9
DE	0.7	7.4	7.5	7.6	7.7	7.8	8.0	8.1	8.2	8.1	8.1	8.1	8.1
EE	0.3	5.3	5.2	5.1	5.2	5.3	5.4	5.5	5.6	5.6	5.6	5.6	5.6
IE	1.0	4.1	4.3	4.4	4.6	4.8	4.9	5.0	5.1	5.1	5.2	5.2	5.1
EL	1.2	5.0	5.1	5.3	5.5	5.7	5.9	6.1	6.2	6.3	6.3	6.2	6.2
ES	0.5	5.9	6.0	6.2	6.4	6.5	6.7	6.8	6.8	6.8	6.7	6.6	6.4
FR	0.5	7.9	8.0	8.1	8.2	8.3	8.4	8.4	8.4	8.4	8.4	8.3	8.3
HR	0.7	5.2	5.4	5.4	5.5	5.6	5.7	5.8	5.8	5.9	5.9	5.9	5.9
IT	0.7	6.3	6.2	6.3	6.5	6.7	6.9	7.1	7.2	7.2	7.1	7.0	7.0
CY	0.4	2.8	2.9	2.9	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.2	3.2
LV	0.6	3.7	3.9	4.1	4.2	4.3	4.4	4.4	4.5	4.5	4.4	4.4	4.3
LT	0.4	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.7	4.7	4.6	4.6	4.5
LU	1.2	3.9	4.0	4.0	4.2	4.3	4.4	4.6	4.7	4.8	4.9	5.0	5.1
HU	0.8	4.9	5.1	5.2	5.4	5.5	5.6	5.7	5.8	5.8	5.8	5.8	5.7
MT	2.7	5.6	6.0	6.4	6.8	7.1	7.3	7.4	7.5	7.7	7.8	8.1	8.3
NL	0.8	6.2	6.4	6.6	6.7	6.8	6.9	6.9	7.0	7.0	7.0	7.0	7.0
AT	1.3	7.0	7.0	7.2	7.3	7.5	7.7	7.9	8.0	8.1	8.2	8.2	8.3
PL	0.8	4.3	4.3	4.4	4.5	4.7	4.8	4.9	5.0	5.1	5.2	5.2	5.2
PT	2.4	5.9	6.2	6.5	6.9	7.2	7.5	7.8	8.0	8.2	8.3	8.3	8.3
RO	0.9	4.3	4.4	4.6	4.8	5.0	5.1	5.2	5.3	5.3	5.3	5.3	5.2
SI	1.0	5.6	5.8	6.1	6.3	6.5	6.7	6.8	6.8	6.8	6.8	6.8	6.7
SK	1.2	5.6	5.8	6.0	6.2	6.5	6.6	6.8	6.9	6.9	7.0	6.9	6.8
FI	0.8	6.1	6.2	6.4	6.5	6.6	6.6	6.7	6.7	6.7	6.7	6.8	6.9
SE	0.7	6.9	7.0	7.1	7.2	7.3	7.4	7.4	7.5	7.5	7.6	7.6	7.7
UK	1.4	7.9	8.1	8.2	8.4	8.6	8.8	8.9	9.1	9.2	9.2	9.3	9.4
NO	1.2	7.7	7.9	8.0	8.2	8.3	8.4	8.6	8.6	8.7	8.8	8.9	8.9
EU*	0.9	6.8	6.9	7.0	7.2	7.3	7.4	7.6	7.6	7.7	7.7	7.7	7.7
EA	0.7	6.8	6.8	7.0	7.1	7.2	7.4	7.5	7.5	7.5	7.5	7.5	7.4
EU27	0.7	6.6	6.7	6.8	6.9	7.0	7.2	7.3	7.3	7.4	7.3	7.3	7.3
EU* s	0.9	5.5	5.7	5.8	6.0	6.1	6.2	6.3	6.4	6.5	6.5	6.5	6.5

Table III.1.105: Health care spending as % of GDP - AWG risk scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.9	5.9	6.0	6.1	6.2	6.3	6.5	6.6	6.7	6.7	6.8	6.8	6.9
BG	1.3	5.0	5.3	5.6	5.9	6.1	6.3	6.5	6.6	6.6	6.5	6.4	6.3
CZ	1.9	5.4	5.7	6.0	6.3	6.6	6.8	7.0	7.2	7.3	7.4	7.4	7.3
DK	1.8	6.9	7.1	7.4	7.6	7.7	7.9	8.1	8.3	8.4	8.5	8.6	8.7
DE	1.5	7.4	7.6	7.8	8.0	8.2	8.5	8.7	8.8	8.9	8.8	8.9	8.9
EE	1.1	5.3	5.3	5.4	5.6	5.8	6.0	6.2	6.3	6.4	6.4	6.5	6.4
IE	1.7	4.1	4.4	4.6	4.9	5.2	5.4	5.5	5.6	5.7	5.8	5.8	5.8
EL	2.0	5.0	5.3	5.5	5.8	6.1	6.4	6.6	6.8	7.0	7.0	7.0	6.9
ES	1.2	5.9	6.1	6.4	6.6	6.8	7.1	7.2	7.3	7.4	7.3	7.2	7.1
FR	1.2	7.9	8.1	8.3	8.5	8.6	8.8	8.9	9.0	9.1	9.1	9.1	9.1
HR	1.5	5.2	5.5	5.6	5.8	6.0	6.2	6.4	6.5	6.6	6.7	6.7	6.7
IT	1.1	6.3	6.2	6.5	6.7	6.9	7.1	7.3	7.5	7.6	7.5	7.5	7.5
CY	0.6	2.8	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.3	3.4	3.4	3.4
LV	1.8	3.7	4.1	4.5	4.8	5.1	5.3	5.5	5.6	5.6	5.6	5.6	5.5
LT	1.2	4.1	4.4	4.6	4.8	5.0	5.3	5.4	5.5	5.5	5.4	5.4	5.3
LU	1.7	3.9	4.1	4.2	4.4	4.5	4.7	4.9	5.1	5.3	5.4	5.5	5.6
HU	1.8	4.9	5.2	5.5	5.8	6.1	6.3	6.5	6.6	6.7	6.8	6.8	6.7
MT	4.3	5.6	6.2	6.9	7.5	8.1	8.5	8.7	8.9	9.1	9.3	9.6	9.9
NL	1.4	6.2	6.5	6.7	6.9	7.0	7.2	7.3	7.4	7.5	7.6	7.6	7.6
AT	2.1	7.0	7.1	7.3	7.6	7.9	8.2	8.4	8.6	8.8	8.9	9.0	9.1
PL	1.7	4.3	4.5	4.7	4.9	5.2	5.4	5.6	5.8	5.9	6.0	6.1	6.0
PT	3.3	5.9	6.3	6.7	7.2	7.7	8.1	8.5	8.8	9.0	9.2	9.3	9.2
RO	2.1	4.3	4.6	5.1	5.4	5.8	6.0	6.2	6.4	6.5	6.5	6.5	6.4
SI	2.0	5.6	6.0	6.3	6.7	7.1	7.3	7.5	7.6	7.7	7.7	7.7	7.6
SK	2.6	5.6	5.9	6.4	6.9	7.3	7.6	7.9	8.1	8.2	8.3	8.3	8.1
FI	1.4	6.1	6.3	6.5	6.6	6.8	7.0	7.1	7.2	7.2	7.3	7.4	7.5
SE	1.5	6.9	7.1	7.3	7.5	7.7	7.8	8.0	8.1	8.2	8.3	8.4	8.5
UK	2.4	7.9	8.1	8.4	8.7	9.0	9.3	9.6	9.8	10.0	10.1	10.2	10.3
NO	2.1	7.7	8.0	8.3	8.5	8.8	9.0	9.2	9.4	9.5	9.6	9.7	9.8
EU*	1.6	6.8	7.0	7.2	7.4	7.7	7.9	8.1	8.3	8.4	8.4	8.4	8.4
EA	1.4	6.8	6.9	7.2	7.4	7.6	7.8	8.0	8.1	8.2	8.2	8.2	8.1
EU27	1.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	7.9	8.0	8.0	8.0	8.0
EU* s	1.8	5.5	5.8	6.0	6.3	6.6	6.8	7.0	7.1	7.2	7.3	7.3	7.3

Table III.1.106: Health care spending as % of GDP - TFP risk scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.4	5.9	5.9	6.0	6.0	6.1	6.2	6.2	6.2	6.3	6.3	6.3	6.3
BG	0.2	5.0	5.1	5.2	5.3	5.4	5.5	5.5	5.6	5.5	5.4	5.3	5.2
CZ	1.0	5.4	5.5	5.7	5.9	6.0	6.2	6.3	6.4	6.5	6.5	6.5	6.4
DK	1.0	6.9	7.0	7.2	7.3	7.3	7.4	7.5	7.6	7.6	7.7	7.8	7.8
DE	0.7	7.4	7.5	7.6	7.7	7.8	7.9	8.1	8.1	8.1	8.1	8.0	8.1
EE	0.2	5.3	5.2	5.1	5.2	5.3	5.4	5.5	5.5	5.6	5.6	5.6	5.5
IE	1.0	4.1	4.3	4.4	4.6	4.8	4.9	5.0	5.1	5.2	5.2	5.2	5.2
EL	1.1	5.0	5.1	5.3	5.5	5.7	5.9	6.0	6.1	6.2	6.2	6.2	6.1
ES	0.5	5.9	6.0	6.2	6.4	6.5	6.7	6.8	6.8	6.8	6.7	6.5	6.4
FR	0.4	7.9	8.0	8.1	8.2	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
HR	0.7	5.2	5.4	5.4	5.5	5.6	5.7	5.8	5.8	5.9	5.9	5.9	5.9
IT	0.7	6.3	6.2	6.3	6.5	6.7	6.9	7.1	7.1	7.1	7.1	7.0	7.0
CY	0.4	2.8	2.9	2.9	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.2
LV	0.5	3.7	3.9	4.1	4.2	4.3	4.3	4.4	4.4	4.4	4.4	4.3	4.3
LT	0.3	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.7	4.6	4.5	4.5	4.4
LU	1.1	3.9	4.0	4.0	4.1	4.3	4.4	4.5	4.7	4.8	4.9	4.9	5.0
HU	0.8	4.9	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.8	5.7	5.7
MT	2.6	5.6	6.0	6.4	6.8	7.1	7.3	7.4	7.5	7.6	7.8	8.0	8.2
NL	0.8	6.2	6.4	6.5	6.7	6.8	6.9	6.9	7.0	7.0	7.0	7.0	7.0
AT	1.3	7.0	7.0	7.1	7.3	7.5	7.7	7.8	8.0	8.0	8.1	8.2	8.2
PL	0.8	4.3	4.3	4.4	4.5	4.6	4.7	4.9	5.0	5.1	5.1	5.1	5.1
PT	2.3	5.9	6.2	6.5	6.9	7.2	7.5	7.8	8.0	8.2	8.3	8.3	8.2
RO	0.9	4.3	4.4	4.6	4.8	4.9	5.0	5.2	5.2	5.3	5.3	5.2	5.1
SI	1.0	5.6	5.8	6.0	6.3	6.5	6.6	6.7	6.7	6.8	6.7	6.7	6.6
SK	1.1	5.6	5.8	6.0	6.2	6.4	6.5	6.7	6.8	6.9	6.9	6.8	6.7
FI	0.7	6.1	6.2	6.3	6.5	6.5	6.6	6.6	6.6	6.6	6.7	6.7	6.8
SE	0.7	6.9	7.0	7.1	7.2	7.3	7.3	7.4	7.4	7.5	7.5	7.6	7.6
UK	1.4	7.9	8.1	8.2	8.4	8.6	8.7	8.9	9.0	9.1	9.1	9.2	9.3
NO	1.2	7.7	7.9	8.0	8.2	8.3	8.4	8.5	8.6	8.7	8.7	8.8	8.8
EU*	0.8	6.8	6.9	7.0	7.1	7.3	7.4	7.5	7.6	7.6	7.6	7.6	7.6
EA	0.6	6.8	6.8	7.0	7.1	7.2	7.4	7.5	7.5	7.5	7.5	7.4	7.4
EU27	0.7	6.6	6.7	6.8	6.9	7.0	7.2	7.3	7.3	7.3	7.3	7.3	7.3
EU* s	0.9	5.5	5.7	5.8	5.9	6.1	6.2	6.3	6.4	6.4	6.4	6.4	6.4

Table III.1.107: Health care spending as % of GDP - Demographic scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.8	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.6	6.7	6.7	6.8
BG	0.4	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.6	5.6	5.5	5.4	5.3
CZ	1.4	5.4	5.6	5.8	6.0	6.2	6.4	6.5	6.7	6.8	6.9	6.9	6.8
DK	1.2	6.9	7.0	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1
DE	0.9	7.4	7.5	7.6	7.7	7.9	8.0	8.2	8.3	8.3	8.3	8.3	8.3
EE	0.4	5.3	5.2	5.1	5.2	5.3	5.4	5.5	5.6	5.6	5.7	5.7	5.7
IE	1.1	4.1	4.2	4.4	4.6	4.7	4.9	5.0	5.1	5.2	5.2	5.2	5.2
EL	1.3	5.0	5.1	5.3	5.5	5.7	5.9	6.1	6.2	6.3	6.3	6.3	6.2
ES	0.6	5.9	6.0	6.2	6.4	6.6	6.7	6.8	6.8	6.8	6.7	6.6	6.5
FR	0.7	7.9	8.0	8.1	8.3	8.4	8.4	8.5	8.5	8.5	8.5	8.5	8.6
HR	1.0	5.2	5.4	5.5	5.6	5.7	5.9	5.9	6.0	6.1	6.1	6.2	6.2
IT	0.9	6.3	6.2	6.4	6.6	6.8	7.0	7.2	7.3	7.3	7.3	7.2	7.2
CY	0.4	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.2
LV	0.5	3.7	3.9	4.0	4.1	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.3
LT	0.5	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.7	4.7	4.6	4.6	4.6
LU	1.4	3.9	4.0	4.0	4.2	4.3	4.5	4.6	4.8	4.9	5.0	5.1	5.2
HU	1.1	4.9	5.0	5.2	5.4	5.5	5.7	5.8	5.9	6.0	6.0	6.0	6.0
MT	2.8	5.6	5.9	6.3	6.7	7.0	7.2	7.4	7.5	7.7	7.9	8.2	8.4
NL	1.0	6.2	6.4	6.6	6.7	6.9	7.0	7.0	7.1	7.1	7.1	7.2	7.2
AT	1.6	7.0	7.0	7.2	7.4	7.6	7.8	8.0	8.1	8.3	8.3	8.4	8.6
PL	1.0	4.3	4.3	4.4	4.5	4.7	4.8	5.0	5.1	5.2	5.3	5.3	5.3
PT	2.7	5.9	6.2	6.6	6.9	7.3	7.7	8.0	8.2	8.4	8.6	8.7	8.6
RO	0.9	4.3	4.4	4.5	4.7	4.9	5.0	5.1	5.2	5.3	5.3	5.2	5.2
SI	1.1	5.6	5.8	6.0	6.3	6.5	6.7	6.8	6.8	6.8	6.9	6.8	6.8
SK	1.5	5.6	5.8	6.0	6.3	6.5	6.7	6.9	7.0	7.1	7.2	7.2	7.1
FI	1.1	6.1	6.3	6.4	6.6	6.7	6.8	6.8	6.9	6.9	7.0	7.1	7.2
SE	0.9	6.9	7.0	7.1	7.2	7.3	7.4	7.4	7.5	7.6	7.7	7.7	7.8
UK	1.7	7.9	8.1	8.2	8.4	8.7	8.9	9.0	9.2	9.3	9.4	9.5	9.6
NO	1.5	7.7	7.9	8.1	8.2	8.4	8.6	8.7	8.8	8.9	9.0	9.1	9.2
EU*	1.1	6.8	6.9	7.0	7.2	7.4	7.5	7.7	7.8	7.8	7.8	7.9	7.9
EA	0.9	6.8	6.8	7.0	7.2	7.3	7.5	7.6	7.6	7.7	7.7	7.7	7.7
EU27	0.9	6.6	6.7	6.8	7.0	7.1	7.3	7.4	7.4	7.5	7.5	7.5	7.5
EU* s	1.1	5.5	5.7	5.8	6.0	6.1	6.3	6.4	6.5	6.6	6.6	6.6	6.6

Table III.1.108: Health care spending as % of GDP - High Life expectancy scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.0	5.9	6.0	6.1	6.2	6.4	6.5	6.6	6.7	6.8	6.8	6.9	7.0
BG	0.4	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.6	5.6	5.5	5.5	5.4
CZ	1.6	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	6.9	7.0	7.1	7.0
DK	1.4	6.9	7.0	7.2	7.3	7.5	7.6	7.7	7.8	7.9	8.0	8.1	8.3
DE	1.1	7.4	7.5	7.6	7.8	7.9	8.1	8.3	8.4	8.4	8.4	8.5	8.5
EE	0.4	5.3	5.2	5.1	5.2	5.3	5.5	5.6	5.6	5.7	5.7	5.8	5.8
IE	1.2	4.1	4.2	4.4	4.6	4.8	4.9	5.1	5.2	5.3	5.3	5.4	5.4
EL	1.5	5.0	5.1	5.3	5.5	5.8	6.0	6.1	6.3	6.4	6.5	6.5	6.4
ES	0.7	5.9	6.0	6.2	6.4	6.6	6.7	6.8	6.9	6.9	6.8	6.7	6.6
FR	0.8	7.9	8.0	8.1	8.3	8.4	8.5	8.5	8.6	8.6	8.6	8.7	8.7
HR	1.1	5.2	5.4	5.5	5.6	5.8	5.9	6.0	6.1	6.1	6.2	6.3	6.3
IT	1.1	6.3	6.2	6.4	6.6	6.9	7.1	7.3	7.4	7.4	7.4	7.4	7.4
CY	0.4	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.2	3.2
LV	0.6	3.7	3.9	4.0	4.1	4.2	4.3	4.3	4.4	4.4	4.4	4.3	4.3
LT	0.6	4.1	4.2	4.3	4.4	4.5	4.7	4.8	4.8	4.8	4.7	4.7	4.7
LU	1.5	3.9	4.0	4.1	4.2	4.3	4.5	4.7	4.9	5.0	5.1	5.3	5.4
HU	1.2	4.9	5.1	5.2	5.4	5.5	5.7	5.9	6.0	6.1	6.1	6.1	6.1
MT	3.2	5.6	5.9	6.3	6.7	7.1	7.4	7.6	7.7	7.9	8.2	8.5	8.8
NL	1.2	6.2	6.4	6.6	6.8	6.9	7.0	7.1	7.2	7.2	7.3	7.3	7.4
AT	1.8	7.0	7.0	7.2	7.4	7.6	7.9	8.1	8.3	8.4	8.5	8.6	8.8
PL	1.1	4.3	4.3	4.4	4.5	4.7	4.9	5.0	5.2	5.3	5.4	5.4	5.4
PT	3.1	5.9	6.2	6.6	7.0	7.4	7.8	8.1	8.4	8.7	8.9	9.0	9.0
RO	1.1	4.3	4.4	4.5	4.7	4.9	5.1	5.2	5.3	5.3	5.4	5.4	5.3
SI	1.3	5.6	5.8	6.1	6.3	6.5	6.7	6.8	6.9	7.0	7.0	7.0	7.0
SK	1.7	5.6	5.8	6.0	6.3	6.5	6.7	6.9	7.1	7.2	7.3	7.3	7.2
FI	1.3	6.1	6.3	6.4	6.6	6.8	6.9	6.9	7.0	7.0	7.1	7.2	7.4
SE	1.1	6.9	7.0	7.1	7.3	7.4	7.4	7.5	7.6	7.7	7.8	7.9	8.0
UK	2.0	7.9	8.1	8.3	8.5	8.7	9.0	9.2	9.3	9.5	9.7	9.8	10.0
NO	1.7	7.7	7.9	8.1	8.3	8.4	8.6	8.8	8.9	9.1	9.2	9.3	9.4
EU*	1.3	6.8	6.9	7.1	7.2	7.4	7.6	7.7	7.9	7.9	8.0	8.0	8.1
EA	1.1	6.8	6.8	7.0	7.2	7.3	7.5	7.7	7.7	7.8	7.8	7.8	7.8
EU27	1.1	6.6	6.7	6.8	7.0	7.1	7.3	7.4	7.5	7.6	7.6	7.6	7.7
EU* s	1.3	5.5	5.7	5.8	6.0	6.2	6.3	6.5	6.6	6.7	6.7	6.8	6.8

Table III.1.109: Health care spending as % of GDP - Healthy ageing scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	-0.2	5.9	5.9	5.8	5.8	5.8	5.9	5.9	5.8	5.8	5.8	5.8	5.8
BG	-0.4	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.0	5.0	4.9	4.7	4.6
CZ	0.4	5.4	5.5	5.5	5.6	5.7	5.8	5.8	5.9	5.9	5.9	5.9	5.8
DK	0.4	6.9	7.0	7.0	7.1	7.1	7.1	7.1	7.1	7.2	7.2	7.2	7.3
DE	0.1	7.4	7.4	7.5	7.5	7.5	7.6	7.7	7.7	7.6	7.5	7.5	7.4
EE	-0.3	5.3	5.1	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.0
IE	0.6	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.7	4.8	4.8	4.7	4.7
EL	0.7	5.0	5.1	5.2	5.3	5.5	5.6	5.7	5.8	5.8	5.8	5.7	5.6
ES	0.1	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.5	6.4	6.3	6.2	6.0
FR	-0.2	7.9	7.9	7.9	8.0	8.0	8.0	7.9	7.9	7.8	7.8	7.7	7.6
HR	0.1	5.2	5.3	5.3	5.3	5.3	5.4	5.4	5.3	5.3	5.3	5.3	5.3
IT	0.2	6.3	6.1	6.3	6.4	6.6	6.7	6.8	6.8	6.8	6.7	6.6	6.5
CY	0.2	2.8	2.8	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0
LV	0.0	3.7	3.9	3.9	3.9	3.9	4.0	4.0	4.0	4.0	3.9	3.9	3.8
LT	-0.1	4.1	4.1	4.2	4.2	4.3	4.3	4.3	4.3	4.3	4.2	4.1	4.0
LU	0.7	3.9	4.0	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.5	4.6	4.6
HU	0.1	4.9	5.0	5.0	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.1	5.0
MT	1.7	5.6	5.9	6.1	6.4	6.6	6.7	6.8	6.8	6.8	6.9	7.1	7.3
NL	0.3	6.2	6.3	6.4	6.5	6.6	6.6	6.6	6.6	6.6	6.5	6.5	6.5
AT	0.6	7.0	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.5	7.5	7.6	7.6
PL	0.3	4.3	4.2	4.2	4.3	4.3	4.4	4.5	4.5	4.6	4.6	4.6	4.6
PT	1.5	5.9	6.1	6.3	6.6	6.8	7.1	7.3	7.4	7.5	7.6	7.5	7.4
RO	0.3	4.3	4.3	4.4	4.5	4.6	4.6	4.7	4.7	4.7	4.7	4.6	4.5
SI	0.4	5.6	5.8	5.9	6.0	6.2	6.3	6.3	6.3	6.3	6.2	6.2	6.1
SK	0.0	5.6	5.6	5.7	5.8	5.9	5.9	6.0	6.0	5.9	5.9	5.8	5.6
FI	0.2	6.1	6.2	6.2	6.3	6.3	6.3	6.3	6.2	6.2	6.2	6.2	6.3
SE	0.2	6.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.1	7.1	7.1
UK	0.7	7.9	8.0	8.1	8.2	8.3	8.4	8.4	8.5	8.5	8.5	8.6	8.6
NO	0.5	7.7	7.8	7.8	7.9	8.0	8.0	8.1	8.1	8.1	8.1	8.2	8.2
EU*	0.2	6.8	6.8	6.9	6.9	7.0	7.1	7.1	7.2	7.2	7.1	7.1	7.0
EA	0.1	6.8	6.8	6.8	6.9	7.0	7.0	7.1	7.1	7.0	7.0	6.9	6.9
EU27	0.1	6.6	6.6	6.7	6.7	6.8	6.8	6.9	6.9	6.9	6.8	6.7	6.7
EU* s	0.3	5.5	5.6	5.7	5.7	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.8

Table III.1.110: Health care spending as % of GDP - Death-related cost scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.6	5.9	5.9	6.0	6.1	6.2	6.3	6.4	6.4	6.4	6.4	6.5	6.5
BG	0.4	5.0	5.1	5.2	5.3	5.4	5.5	5.5	5.6	5.5	5.5	5.4	5.3
CZ	1.0	5.4	5.5	5.7	5.9	6.1	6.2	6.3	6.5	6.5	6.5	6.5	6.5
DK	0.9	6.9	7.0	7.1	7.2	7.3	7.4	7.4	7.5	7.6	7.6	7.7	7.8
DE	0.7	7.4	7.5	7.6	7.7	7.8	7.9	8.1	8.1	8.1	8.1	8.1	8.1
EE	:	5.3	:	:	:	:	:	:	:	:	:	:	:
IE	:	4.1	:	:	:	:	:	:	:	:	:	:	:
EL	:	5.0	:	:	:	:	:	:	:	:	:	:	:
ES	0.5	5.9	6.0	6.2	6.3	6.5	6.6	6.7	6.8	6.7	6.6	6.5	6.4
FR	0.5	7.9	8.0	8.1	8.2	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
HR	:	5.2	:	:	:	:	:	:	:	:	:	:	:
IT	0.8	6.3	6.1	6.4	6.6	6.8	7.0	7.1	7.2	7.2	7.2	7.2	7.1
CY	:	2.8	:	:	:	:	:	:	:	:	:	:	:
LV	:	3.7	:	:	:	:	:	:	:	:	:	:	:
LT	:	4.1	:	:	:	:	:	:	:	:	:	:	:
LU	:	3.9	:	:	:	:	:	:	:	:	:	:	:
HU	0.8	4.9	5.0	5.2	5.3	5.5	5.6	5.7	5.8	5.8	5.8	5.7	5.7
MT	:	5.6	:	:	:	:	:	:	:	:	:	:	:
NL	0.7	6.2	6.4	6.5	6.7	6.8	6.8	6.9	6.9	6.9	6.9	6.9	7.0
AT	1.4	7.0	7.0	7.2	7.3	7.5	7.7	7.9	8.0	8.1	8.2	8.3	8.4
PL	0.7	4.3	4.3	4.3	4.4	4.6	4.7	4.8	4.9	5.0	5.1	5.1	5.1
PT	:	5.9	:	:	:	:	:	:	:	:	:	:	:
RO	:	4.3	:	:	:	:	:	:	:	:	:	:	:
SI	1.0	5.6	5.8	6.0	6.2	6.4	6.6	6.7	6.7	6.7	6.7	6.7	6.6
SK	1.3	5.6	5.7	6.0	6.2	6.4	6.6	6.7	6.9	6.9	7.0	7.0	6.9
FI	0.9	6.1	6.2	6.4	6.5	6.6	6.7	6.7	6.7	6.8	6.8	6.9	7.0
SE	0.6	6.9	7.0	7.1	7.2	7.2	7.3	7.3	7.3	7.4	7.5	7.5	7.6
UK	1.4	7.9	8.1	8.2	8.4	8.6	8.7	8.9	9.0	9.1	9.2	9.2	9.3
NO	:	7.7	:	:	:	:	:	:	:	:	:	:	:
EU*	:	6.8	:	:	:	:	:	:	:	:	:	:	:
EA	:	6.8	:	:	:	:	:	:	:	:	:	:	:
EU27	:	6.6	:	:	:	:	:	:	:	:	:	:	:
EU* s	1.5	5.5	6.3	6.4	6.6	6.7	6.8	6.9	7.0	7.0	7.0	7.0	7.0

Table III.1.111: Health care spending as % of GDP - Income elasticity scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.0	5.9	6.0	6.1	6.3	6.4	6.5	6.7	6.7	6.8	6.8	6.9	7.0
BG	0.7	5.0	5.1	5.3	5.5	5.6	5.7	5.8	5.9	5.9	5.8	5.7	5.7
CZ	1.7	5.4	5.6	5.9	6.1	6.4	6.6	6.8	6.9	7.1	7.1	7.1	7.1
DK	1.5	6.9	7.1	7.3	7.4	7.5	7.7	7.8	7.9	8.0	8.1	8.2	8.4
DE	1.2	7.4	7.5	7.7	7.8	8.0	8.2	8.4	8.5	8.5	8.5	8.5	8.6
EE	0.6	5.3	5.2	5.2	5.3	5.5	5.6	5.7	5.8	5.9	5.9	6.0	6.0
IE	1.3	4.1	4.3	4.5	4.7	4.9	5.1	5.2	5.3	5.4	5.4	5.4	5.4
EL	1.5	5.0	5.1	5.4	5.6	5.8	6.1	6.3	6.4	6.5	6.6	6.6	6.5
ES	0.8	5.9	6.0	6.2	6.5	6.6	6.8	6.9	7.0	7.0	6.9	6.8	6.7
FR	1.0	7.9	8.0	8.2	8.3	8.5	8.6	8.7	8.7	8.8	8.8	8.8	8.8
HR	1.2	5.2	5.4	5.6	5.7	5.9	6.0	6.1	6.2	6.3	6.4	6.4	6.5
IT	1.0	6.3	6.2	6.4	6.7	6.9	7.1	7.3	7.4	7.4	7.4	7.4	7.4
CY	0.4	2.8	2.9	2.9	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.2	3.2
LV	0.9	3.7	4.0	4.1	4.3	4.4	4.5	4.6	4.7	4.7	4.7	4.6	4.6
LT	0.8	4.1	4.2	4.4	4.5	4.7	4.8	5.0	5.0	4.9	4.9	4.9	4.9
LU	1.5	3.9	4.0	4.1	4.2	4.4	4.6	4.8	4.9	5.1	5.2	5.3	5.4
HU	1.4	4.9	5.1	5.3	5.5	5.7	5.9	6.0	6.2	6.3	6.3	6.3	6.3
MT	3.3	5.6	6.0	6.5	6.9	7.3	7.6	7.8	7.9	8.1	8.4	8.7	8.9
NL	1.2	6.2	6.4	6.6	6.8	6.9	7.1	7.2	7.2	7.3	7.3	7.4	7.4
AT	1.8	7.0	7.0	7.2	7.5	7.7	7.9	8.2	8.4	8.5	8.6	8.7	8.8
PL	1.3	4.3	4.4	4.5	4.7	4.8	5.0	5.2	5.4	5.5	5.6	5.6	5.6
PT	3.0	5.9	6.2	6.6	7.1	7.5	7.9	8.2	8.5	8.7	8.9	9.0	8.9
RO	1.3	4.3	4.4	4.7	4.9	5.1	5.3	5.5	5.6	5.6	5.6	5.6	5.6
SI	1.4	5.6	5.9	6.1	6.4	6.7	6.9	7.0	7.1	7.1	7.1	7.1	7.1
SK	2.0	5.6	5.8	6.1	6.5	6.8	7.0	7.2	7.4	7.5	7.6	7.6	7.5
FI	1.3	6.1	6.3	6.5	6.6	6.8	6.9	7.0	7.0	7.1	7.2	7.3	7.4
SE	1.2	6.9	7.0	7.2	7.3	7.5	7.5	7.6	7.7	7.8	7.9	8.0	8.1
UK	2.0	7.9	8.1	8.3	8.5	8.8	9.0	9.2	9.4	9.6	9.7	9.8	10.0
NO	1.8	7.7	7.9	8.1	8.4	8.6	8.7	8.9	9.1	9.2	9.3	9.4	9.5
EU*	1.3	6.8	6.9	7.1	7.3	7.5	7.7	7.8	8.0	8.0	8.1	8.1	8.1
EA	1.1	6.8	6.9	7.1	7.2	7.4	7.6	7.7	7.8	7.9	7.9	7.9	7.9
EU27	1.1	6.6	6.7	6.9	7.1	7.2	7.4	7.5	7.6	7.7	7.7	7.7	7.8
EU* s	1.4	5.5	5.7	5.9	6.1	6.3	6.5	6.6	6.7	6.8	6.9	6.9	6.9

Table III.1.112: Health care spending as % of GDP - EU28 cost convergence scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.0	5.9	6.0	6.1	6.2	6.4	6.5	6.6	6.7	6.7	6.8	6.9	7.0
BG	2.1	5.0	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7	6.9	7.1
CZ	1.8	5.4	5.6	5.9	6.1	6.3	6.6	6.8	7.0	7.1	7.2	7.2	7.3
DK	1.2	6.9	7.0	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.1
DE	1.0	7.4	7.5	7.6	7.7	7.9	8.1	8.2	8.3	8.3	8.3	8.3	8.4
EE	1.2	5.3	5.2	5.2	5.3	5.5	5.7	5.8	6.0	6.1	6.3	6.4	6.5
IE	2.2	4.1	4.3	4.5	4.8	5.1	5.4	5.6	5.8	6.0	6.1	6.2	6.3
EL	2.4	5.0	5.2	5.5	5.8	6.1	6.4	6.7	6.9	7.1	7.3	7.3	7.4
ES	1.1	5.9	6.0	6.2	6.5	6.7	6.9	7.1	7.2	7.2	7.2	7.1	7.0
FR	0.8	7.9	8.0	8.1	8.3	8.4	8.5	8.5	8.5	8.6	8.6	8.6	8.6
HR	1.9	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.5	6.7	6.8	7.0	7.1
IT	1.0	6.3	6.2	6.4	6.6	6.9	7.1	7.3	7.4	7.4	7.4	7.3	7.3
CY	4.4	2.8	3.0	3.2	3.4	3.7	4.1	4.4	4.9	5.3	5.9	6.5	7.2
LV	3.3	3.7	4.0	4.3	4.5	4.8	5.2	5.5	5.8	6.1	6.4	6.7	7.0
LT	2.8	4.1	4.3	4.5	4.8	5.1	5.5	5.8	6.1	6.3	6.4	6.7	6.9
LU	2.8	3.9	4.1	4.2	4.5	4.8	5.0	5.3	5.6	5.9	6.2	6.4	6.7
HU	2.1	4.9	5.1	5.3	5.6	5.8	6.0	6.2	6.4	6.6	6.8	6.9	7.0
MT	3.5	5.6	6.0	6.4	6.9	7.3	7.5	7.8	8.0	8.2	8.5	8.8	9.1
NL	1.1	6.2	6.4	6.6	6.8	6.9	7.0	7.1	7.1	7.2	7.2	7.3	7.3
AT	1.6	7.0	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.3	8.4	8.5	8.6
PL	2.5	4.3	4.4	4.5	4.8	5.1	5.4	5.6	5.9	6.2	6.4	6.7	6.9
PT	3.4	5.9	6.2	6.7	7.1	7.5	8.0	8.3	8.6	8.9	9.1	9.3	9.3
RO	2.6	4.3	4.5	4.7	5.0	5.3	5.6	5.9	6.1	6.4	6.6	6.7	6.8
SI	1.4	5.6	5.8	6.1	6.3	6.6	6.8	6.9	7.0	7.0	7.1	7.1	7.0
SK	2.0	5.6	5.8	6.0	6.3	6.5	6.8	7.0	7.2	7.3	7.4	7.5	7.6
FI	1.3	6.1	6.3	6.5	6.6	6.8	6.9	7.0	7.0	7.1	7.2	7.3	7.4
SE	1.0	6.9	7.0	7.1	7.3	7.3	7.4	7.5	7.6	7.7	7.7	7.8	7.9
UK	1.7	7.9	8.1	8.2	8.4	8.7	8.9	9.0	9.2	9.3	9.4	9.5	9.7
NO	1.6	7.7	7.9	8.1	8.3	8.4	8.6	8.7	8.8	9.0	9.1	9.2	9.3
EU*	1.3	6.8	6.9	7.1	7.3	7.4	7.6	7.8	7.9	8.0	8.0	8.1	8.1
EA	1.1	6.8	6.9	7.0	7.2	7.4	7.5	7.7	7.8	7.8	7.8	7.9	7.9
EU27	1.2	6.6	6.7	6.9	7.0	7.2	7.4	7.5	7.6	7.7	7.7	7.8	7.8
EU* s	2.0	5.5	5.7	5.9	6.1	6.4	6.6	6.8	7.0	7.1	7.3	7.4	7.5

Table III.1.113: Health care spending as % of GDP - Labour intensity scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.3	5.9	6.0	6.1	6.3	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2
BG	1.2	5.0	4.9	5.2	5.4	5.7	5.9	6.2	6.4	6.6	6.5	6.4	6.2
CZ	2.5	5.4	5.5	6.0	6.2	6.5	6.9	7.3	7.8	8.0	8.1	8.0	7.9
DK	1.7	6.9	7.0	7.2	7.4	7.6	7.7	7.8	7.9	8.0	8.1	8.3	8.6
DE	2.1	7.4	7.5	7.8	8.1	8.4	8.7	8.9	9.1	9.2	9.3	9.4	9.5
EE	1.0	5.3	5.0	5.1	5.2	5.4	5.6	5.8	6.1	6.3	6.4	6.4	6.3
IE	1.2	4.1	4.1	4.3	4.5	4.6	4.9	5.1	5.4	5.5	5.5	5.5	5.4
EL	0.5	5.0	4.9	4.8	4.9	5.0	5.3	5.5	5.6	5.8	5.7	5.6	5.4
ES	0.6	5.9	6.0	6.2	6.3	6.6	6.9	7.3	7.4	7.3	7.0	6.7	6.5
FR	0.8	7.9	8.0	8.2	8.4	8.6	8.7	8.7	8.6	8.6	8.6	8.5	8.6
HR	1.2	5.2	5.3	5.6	5.7	5.8	5.8	5.9	5.9	6.1	6.2	6.3	6.4
IT	1.0	6.3	6.0	6.1	6.3	6.7	7.1	7.4	7.6	7.5	7.4	7.3	7.3
CY	0.5	2.8	2.8	2.8	2.8	2.8	2.9	2.9	3.0	3.1	3.2	3.3	3.3
LV	0.8	3.7	3.8	4.0	4.1	4.3	4.4	4.5	4.6	4.8	4.8	4.7	4.5
LT	0.6	4.1	3.9	4.1	4.4	4.6	4.8	4.9	5.0	5.0	5.0	4.9	4.7
LU	2.1	3.9	3.9	3.9	4.1	4.3	4.6	4.9	5.2	5.4	5.6	5.8	6.0
HU	1.5	4.9	4.9	5.0	5.1	5.3	5.6	5.9	6.1	6.3	6.4	6.5	6.4
MT	3.0	5.6	5.6	6.0	6.3	6.5	6.7	6.9	7.1	7.5	8.0	8.3	8.6
NL	1.3	6.2	6.4	6.6	6.9	7.2	7.3	7.4	7.3	7.3	7.3	7.4	7.6
AT	2.8	7.0	7.1	7.4	7.7	8.0	8.3	8.5	8.8	9.1	9.3	9.5	9.7
PL	2.3	4.3	4.3	4.5	4.7	5.0	5.3	5.6	6.0	6.4	6.6	6.6	6.6
PT	3.4	5.9	6.0	6.3	6.7	7.2	7.7	8.2	8.7	9.0	9.2	9.3	9.3
RO	1.8	4.3	4.3	4.5	4.8	5.2	5.5	5.9	6.1	6.2	6.2	6.2	6.1
SI	1.7	5.6	5.7	5.9	6.3	6.7	7.0	7.3	7.6	7.6	7.6	7.5	7.4
SK	2.4	5.6	5.7	6.2	6.5	6.8	7.2	7.5	7.8	8.1	8.2	8.1	7.9
FI	1.3	6.1	6.2	6.7	6.9	7.0	7.1	7.1	7.1	7.1	7.2	7.3	7.4
SE	1.6	6.9	7.0	7.3	7.5	7.6	7.7	7.8	7.9	8.1	8.3	8.4	8.5
UK	2.3	7.9	8.1	8.3	8.6	8.9	9.1	9.3	9.4	9.6	9.8	10.0	10.2
NO	2.7	7.7	7.8	8.1	8.5	8.8	9.0	9.2	9.4	9.7	9.9	10.1	10.3
EU*	1.6	6.8	6.9	7.1	7.3	7.6	7.9	8.0	8.2	8.3	8.3	8.3	8.4
EA	1.3	6.8	6.8	7.0	7.3	7.5	7.8	8.0	8.1	8.1	8.1	8.1	8.1
EU27	1.4	6.6	6.6	6.8	7.1	7.3	7.6	7.8	7.9	8.0	8.0	8.0	8.0
EU* s	1.6	5.5	5.6	5.8	6.0	6.2	6.5	6.7	6.9	7.0	7.1	7.1	7.1

Table III.1.114: Health care spending as % of GDP - Sector-specific composite indexation scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.4	5.9	6.1	6.4	6.7	7.0	7.3	7.6	7.8	8.0	8.2	8.3	8.4
BG	1.5	5.0	5.2	5.5	5.8	6.1	6.3	6.5	6.6	6.6	6.6	6.5	6.4
CZ	2.7	5.4	5.7	6.1	6.5	6.9	7.2	7.5	7.8	7.9	8.1	8.1	8.1
DK	3.9	6.9	7.3	7.7	8.1	8.5	8.9	9.3	9.7	10.1	10.4	10.6	10.7
DE	1.8	7.4	7.6	7.9	8.0	8.3	8.6	8.8	9.0	9.0	9.1	9.1	9.2
EE	1.4	5.3	5.3	5.4	5.7	6.0	6.2	6.4	6.5	6.6	6.7	6.8	6.8
IE	1.5	4.1	4.3	4.5	4.8	5.0	5.2	5.4	5.5	5.6	5.6	5.7	5.7
EL	2.6	5.0	5.3	5.7	6.0	6.4	6.7	7.0	7.3	7.5	7.6	7.6	7.5
ES	2.2	5.9	6.2	6.6	7.0	7.3	7.6	7.9	8.1	8.2	8.3	8.2	8.1
FR	2.2	7.9	8.1	8.4	8.7	9.0	9.2	9.5	9.7	9.8	10.0	10.0	10.0
HR	1.7	5.2	5.5	5.7	5.9	6.1	6.3	6.5	6.6	6.7	6.8	6.9	6.9
IT	1.5	6.3	6.2	6.5	6.8	7.0	7.3	7.5	7.7	7.8	7.8	7.8	7.8
CY	1.0	2.8	2.9	3.0	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.8	3.8
LV	0.6	3.7	3.9	4.0	4.1	4.2	4.3	4.4	4.4	4.4	4.4	4.4	4.4
LT	0.7	4.1	4.2	4.4	4.5	4.6	4.8	4.9	4.9	4.9	4.8	4.8	4.8
LU	2.1	3.9	4.1	4.3	4.5	4.7	4.9	5.2	5.4	5.6	5.7	5.9	6.0
HU	1.3	4.9	5.1	5.3	5.5	5.7	5.8	6.0	6.1	6.2	6.3	6.3	6.2
MT	4.3	5.6	6.1	6.7	7.3	7.8	8.2	8.5	8.7	9.0	9.3	9.6	9.9
NL	2.8	6.2	6.6	6.9	7.2	7.5	7.8	8.1	8.4	8.6	8.8	8.9	9.0
AT	2.7	7.0	7.1	7.4	7.7	8.1	8.4	8.8	9.0	9.2	9.4	9.5	9.6
PL	1.4	4.3	4.4	4.5	4.7	4.9	5.1	5.3	5.5	5.6	5.7	5.7	5.7
PT	4.7	5.9	6.4	7.0	7.6	8.2	8.8	9.3	9.8	10.2	10.5	10.6	10.6
RO	1.6	4.3	4.5	4.8	5.1	5.3	5.5	5.7	5.8	5.9	5.9	5.9	5.8
SI	2.1	5.6	5.9	6.3	6.7	7.1	7.3	7.5	7.7	7.8	7.8	7.8	7.8
SK	2.5	5.6	5.9	6.3	6.7	7.1	7.4	7.7	7.9	8.1	8.2	8.2	8.1
FI	2.6	6.1	6.4	6.7	7.0	7.3	7.6	7.8	8.1	8.3	8.4	8.6	8.7
SE	1.9	6.9	7.1	7.3	7.6	7.8	8.0	8.1	8.3	8.5	8.6	8.7	8.8
UK	4.2	7.9	8.2	8.6	9.1	9.7	10.2	10.7	11.1	11.5	11.7	12.0	12.2
NO	4.1	7.7	8.2	8.7	9.2	9.6	10.0	10.4	10.8	11.1	11.4	11.6	11.7
EU*	2.5	6.8	7.0	7.3	7.6	8.0	8.3	8.6	8.8	9.0	9.1	9.2	9.3
EA	2.1	6.8	7.0	7.3	7.5	7.8	8.1	8.4	8.6	8.7	8.8	8.8	8.8
EU27	2.1	6.6	6.8	7.1	7.3	7.6	7.9	8.1	8.4	8.5	8.6	8.6	8.7
EU* s	2.2	5.5	5.8	6.1	6.4	6.7	6.9	7.2	7.4	7.5	7.7	7.7	7.8

Table III.1.115: Health care spending as % of GDP - Non-demographic determinants scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.1	5.9	6.0	6.2	6.5	6.7	6.9	7.2	7.4	7.6	7.8	7.9	8.0
BG	2.4	5.0	5.3	5.7	6.1	6.5	6.8	7.1	7.3	7.4	7.5	7.5	7.4
CZ	3.2	5.4	5.7	6.1	6.6	7.0	7.4	7.7	8.0	8.3	8.5	8.6	8.6
DK	3.0	6.9	7.2	7.5	7.7	8.0	8.3	8.6	8.9	9.2	9.4	9.7	9.9
DE	2.6	7.4	7.6	7.9	8.2	8.5	8.8	9.2	9.5	9.7	9.8	9.9	10.0
EE	2.1	5.3	5.4	5.5	5.8	6.1	6.4	6.7	6.9	7.1	7.2	7.4	7.4
IE	2.4	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.0	6.2	6.4	6.5	6.5
EL	3.0	5.0	5.3	5.6	6.0	6.3	6.7	7.0	7.4	7.6	7.8	8.0	7.9
ES	2.0	5.9	6.1	6.4	6.8	7.1	7.3	7.5	7.7	7.9	8.0	8.0	7.9
FR	2.5	7.9	8.1	8.4	8.6	8.9	9.2	9.4	9.7	9.9	10.1	10.3	10.3
HR	2.7	5.2	5.5	5.8	6.0	6.3	6.7	7.0	7.3	7.5	7.7	7.9	8.0
IT	2.0	6.3	6.2	6.5	6.8	7.1	7.4	7.7	7.9	8.1	8.2	8.3	8.3
CY	0.9	2.8	2.9	3.0	3.1	3.1	3.2	3.4	3.5	3.5	3.6	3.7	3.7
LV	2.8	3.7	4.1	4.6	5.1	5.4	5.8	6.1	6.2	6.4	6.4	6.5	6.5
LT	2.2	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.1	6.1	6.2	6.2	6.3
LU	2.4	3.9	4.1	4.3	4.5	4.7	5.0	5.2	5.5	5.7	5.9	6.1	6.2
HU	3.0	4.9	5.2	5.6	6.1	6.4	6.8	7.1	7.4	7.7	7.8	7.9	7.9
MT	5.9	5.6	6.2	7.0	7.8	8.5	9.1	9.5	9.8	10.2	10.6	11.1	11.4
NL	2.4	6.2	6.5	6.8	7.0	7.2	7.5	7.7	8.0	8.2	8.4	8.5	8.6
AT	3.3	7.0	7.1	7.4	7.8	8.1	8.6	9.0	9.3	9.6	9.8	10.0	10.2
PL	2.7	4.3	4.5	4.8	5.2	5.5	5.9	6.2	6.5	6.7	6.9	7.0	7.1
PT	4.8	5.9	6.3	6.9	7.5	8.0	8.6	9.1	9.6	10.0	10.4	10.6	10.7
RO	3.3	4.3	4.7	5.2	5.7	6.1	6.5	6.8	7.1	7.3	7.5	7.5	7.5
SI	3.1	5.6	6.0	6.5	6.9	7.4	7.7	8.0	8.2	8.4	8.6	8.7	8.7
SK	4.3	5.6	6.0	6.6	7.2	7.9	8.4	8.8	9.2	9.5	9.8	9.9	9.9
FI	2.5	6.1	6.3	6.6	6.8	7.1	7.4	7.6	7.8	8.0	8.2	8.5	8.6
SE	2.6	6.9	7.1	7.4	7.7	7.9	8.2	8.4	8.7	8.9	9.2	9.3	9.5
UK	3.8	7.9	8.2	8.5	8.9	9.3	9.7	10.2	10.6	10.9	11.2	11.5	11.7
NO	3.5	7.7	8.0	8.4	8.8	9.1	9.5	9.8	10.1	10.5	10.7	11.0	11.1
EU*	2.8	6.8	7.0	7.3	7.6	7.9	8.3	8.6	8.9	9.1	9.3	9.5	9.6
EA	2.5	6.8	7.0	7.3	7.5	7.8	8.1	8.4	8.7	8.9	9.1	9.2	9.2
EU27	2.5	6.6	6.8	7.1	7.4	7.7	8.0	8.3	8.6	8.8	8.9	9.0	9.1
EU* s	2.9	5.5	5.8	6.1	6.5	6.9	7.2	7.5	7.8	8.0	8.2	8.3	8.4

Table III.1.116: Long-term care spending as % of GDP - AWG reference scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.7	2.3	2.4	2.5	2.6	2.9	3.2	3.4	3.6	3.7	3.8	3.9	4.0
BG	0.1	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5
CZ	1.6	1.3	1.4	1.6	1.8	2.0	2.1	2.3	2.4	2.6	2.8	2.9	2.9
DK	2.2	2.5	2.6	3.0	3.3	3.6	3.8	3.9	4.1	4.3	4.4	4.6	4.7
DE	0.6	1.3	1.5	1.6	1.7	1.7	1.8	1.9	2.0	2.0	2.0	1.9	1.9
EE	0.5	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4
IE	1.9	1.3	1.4	1.5	1.7	1.9	2.1	2.4	2.7	2.9	3.1	3.2	3.3
EL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
ES	1.3	0.9	1.0	1.1	1.2	1.3	1.5	1.7	1.9	2.1	2.2	2.3	2.2
FR	0.6	1.7	1.8	1.8	1.9	2.1	2.3	2.4	2.4	2.4	2.4	2.4	2.4
HR	0.3	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
IT	1.2	1.7	1.8	1.9	2.0	2.1	2.3	2.6	2.8	3.0	3.1	3.0	3.0
CY	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6
LV	0.1	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
LT	1.0	1.0	1.0	1.2	1.3	1.5	1.7	1.9	2.0	2.1	2.2	2.1	2.0
LU	2.8	1.3	1.4	1.4	1.6	1.8	2.0	2.4	2.8	3.2	3.5	3.8	4.1
HU	0.4	0.7	0.7	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.1	1.1	1.1
MT	1.4	0.9	1.0	1.1	1.3	1.5	1.6	1.7	1.8	1.8	2.0	2.1	2.3
NL	2.5	3.5	3.7	4.0	4.4	4.9	5.3	5.6	5.8	6.0	6.0	5.9	6.0
AT	1.9	1.9	2.0	2.1	2.3	2.4	2.6	2.9	3.2	3.5	3.6	3.6	3.8
PL	0.8	0.5	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.3
PT	0.9	0.5	0.6	0.7	0.7	0.8	0.9	1.1	1.2	1.3	1.4	1.4	1.4
RO	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6
SI	0.9	0.9	1.0	1.0	1.1	1.3	1.4	1.6	1.7	1.7	1.8	1.8	1.8
SK	0.6	0.9	0.9	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.5
FI	2.1	2.2	2.3	2.7	3.0	3.4	3.6	3.7	3.8	3.8	3.9	4.0	4.2
SE	1.7	3.2	3.3	3.5	3.8	4.0	4.1	4.2	4.3	4.5	4.7	4.8	4.9
UK	1.3	1.5	1.6	1.7	1.8	2.0	2.1	2.2	2.4	2.5	2.6	2.6	2.8
NO	3.4	3.7	3.8	4.1	4.4	4.9	5.3	5.6	5.9	6.3	6.6	6.9	7.1
EU*	1.2	1.6	1.7	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.7	2.7	2.7
EA	1.1	1.6	1.7	1.8	1.9	2.1	2.2	2.4	2.6	2.7	2.7	2.7	2.7
EU27	1.1	1.6	1.7	1.8	1.9	2.1	2.3	2.4	2.5	2.7	2.7	2.7	2.7
EU* s	1.1	1.3	1.3	1.4	1.6	1.7	1.9	2.0	2.1	2.2	2.3	2.3	2.4

Table III.1.117: Long-term care spending as % of GDP - AWG risk scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.5	2.3	2.5	2.6	2.8	3.2	3.6	4.0	4.4	4.7	5.0	5.3	5.8
BG	1.0	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	1.0	1.1	1.2	1.4
CZ	2.4	1.3	1.4	1.6	1.8	2.1	2.3	2.5	2.7	3.0	3.3	3.6	3.7
DK	4.8	2.5	2.7	3.2	3.7	4.2	4.6	5.0	5.4	5.9	6.3	6.8	7.3
DE	2.1	1.3	1.6	1.7	1.9	2.1	2.3	2.6	2.8	3.0	3.1	3.2	3.4
EE	2.9	0.9	1.0	1.1	1.3	1.5	1.7	1.9	2.2	2.5	2.9	3.3	3.8
IE	3.4	1.3	1.4	1.6	1.9	2.2	2.6	3.0	3.4	3.9	4.3	4.6	4.8
EL	4.8	0.1	0.1	0.2	0.2	0.3	0.5	0.7	1.0	1.4	2.1	3.1	4.9
ES	3.5	0.9	1.1	1.3	1.4	1.6	2.0	2.4	2.9	3.4	3.8	4.2	4.4
FR	2.8	1.7	1.9	2.0	2.2	2.6	3.0	3.2	3.5	3.8	4.0	4.2	4.5
HR	1.1	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.4	1.6	1.8	2.0
IT	2.2	1.7	1.8	2.0	2.1	2.3	2.6	2.9	3.3	3.6	3.8	3.9	3.9
CY	2.9	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.4	1.8	2.4	3.2
LV	2.6	0.4	0.5	0.5	0.6	0.8	0.9	1.1	1.4	1.7	2.1	2.5	3.0
LT	3.6	1.0	1.1	1.3	1.6	1.9	2.3	2.8	3.3	3.7	4.1	4.4	4.6
LU	5.2	1.3	1.4	1.5	1.8	2.1	2.5	3.1	3.7	4.4	5.0	5.7	6.5
HU	4.1	0.7	0.8	0.9	1.1	1.3	1.6	1.9	2.3	2.8	3.4	4.1	4.8
MT	3.3	0.9	1.0	1.2	1.4	1.7	1.9	2.1	2.4	2.6	3.0	3.6	4.2
NL	4.7	3.5	3.7	4.2	4.7	5.3	5.9	6.3	6.8	7.2	7.5	7.8	8.3
AT	3.4	1.9	2.0	2.2	2.5	2.7	3.0	3.4	3.9	4.3	4.6	4.9	5.3
PL	1.6	0.5	0.5	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.6	1.9	2.1
PT	2.6	0.5	0.6	0.7	0.9	1.0	1.2	1.5	1.8	2.1	2.4	2.8	3.2
RO	4.3	0.3	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.9	2.5	3.4	4.6
SI	3.5	0.9	1.0	1.2	1.4	1.7	2.1	2.5	2.9	3.3	3.7	4.0	4.4
SK	2.0	0.9	1.0	1.1	1.2	1.4	1.5	1.7	1.9	2.1	2.4	2.7	2.9
FI	2.9	2.2	2.4	2.7	3.2	3.6	3.9	4.1	4.2	4.3	4.5	4.7	5.1
SE	2.5	3.2	3.3	3.6	3.9	4.2	4.3	4.4	4.6	4.9	5.2	5.4	5.7
UK	1.8	1.5	1.6	1.7	1.9	2.1	2.2	2.4	2.6	2.8	3.0	3.1	3.3
NO	5.2	3.7	3.8	4.2	4.6	5.2	5.7	6.1	6.6	7.2	7.8	8.3	8.9
EU*	2.7	1.6	1.7	1.9	2.1	2.4	2.6	2.9	3.2	3.5	3.8	4.0	4.3
EA	2.9	1.6	1.8	1.9	2.2	2.4	2.7	3.1	3.4	3.7	4.0	4.2	4.5
EU27	2.9	1.6	1.7	1.9	2.2	2.4	2.7	3.0	3.4	3.7	3.9	4.2	4.5
EU* s	3.1	1.3	1.4	1.5	1.7	2.0	2.2	2.5	2.8	3.2	3.5	3.9	4.3

Table III.1.118: Long-term care spending as % of GDP - TFP risk scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.7	2.3	2.4	2.5	2.6	2.9	3.2	3.4	3.6	3.7	3.8	3.9	4.0
BG	0.1	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.5
CZ	1.5	1.3	1.4	1.6	1.8	1.9	2.1	2.2	2.4	2.6	2.7	2.9	2.9
DK	2.2	2.5	2.6	3.0	3.3	3.6	3.8	3.9	4.1	4.3	4.4	4.6	4.7
DE	1.4	1.3	1.5	1.7	1.8	1.9	2.1	2.3	2.5	2.6	2.6	2.6	2.6
EE	0.5	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4
IE	2.0	1.3	1.4	1.5	1.7	1.9	2.1	2.4	2.7	2.9	3.1	3.3	3.3
EL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
ES	1.3	0.9	1.0	1.1	1.2	1.3	1.5	1.7	1.9	2.1	2.2	2.3	2.2
FR	0.7	1.7	1.8	1.8	1.9	2.2	2.3	2.4	2.4	2.5	2.5	2.4	2.4
HR	0.3	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
IT	1.2	1.7	1.8	1.9	2.0	2.1	2.3	2.5	2.8	3.0	3.0	3.0	2.9
CY	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6
LV	0.1	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
LT	1.0	1.0	1.0	1.2	1.3	1.5	1.7	1.8	2.0	2.1	2.1	2.1	2.0
LU	2.8	1.3	1.4	1.4	1.6	1.7	2.0	2.4	2.8	3.1	3.5	3.7	4.0
HU	0.4	0.7	0.7	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.1	1.1	1.1
MT	1.4	0.9	1.0	1.1	1.3	1.5	1.6	1.7	1.7	1.8	1.9	2.1	2.3
NL	2.5	3.5	3.7	4.0	4.4	4.9	5.3	5.6	5.8	6.0	6.0	5.9	6.0
AT	1.9	1.9	2.0	2.1	2.3	2.4	2.6	2.9	3.2	3.5	3.6	3.6	3.8
PL	0.8	0.5	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.3
PT	0.9	0.5	0.6	0.7	0.7	0.8	0.9	1.1	1.2	1.3	1.3	1.4	1.4
RO	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6
SI	0.9	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.7	1.8	1.9	1.9	1.9
SK	0.6	0.9	0.9	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.5
FI	2.1	2.2	2.3	2.7	3.0	3.4	3.6	3.7	3.8	3.8	3.9	4.0	4.2
SE	1.7	3.2	3.3	3.5	3.8	4.0	4.1	4.2	4.3	4.5	4.7	4.8	4.9
UK	1.2	1.5	1.6	1.7	1.8	2.0	2.1	2.2	2.4	2.5	2.6	2.6	2.7
NO	3.4	3.7	3.8	4.1	4.4	4.9	5.3	5.6	5.9	6.3	6.6	6.9	7.1
EU*	1.3	1.6	1.7	1.8	1.9	2.1	2.3	2.4	2.6	2.7	2.8	2.8	2.9
EA	1.3	1.6	1.7	1.8	2.0	2.1	2.3	2.5	2.7	2.8	2.9	2.9	2.9
EU27	1.3	1.6	1.7	1.8	2.0	2.1	2.3	2.5	2.7	2.8	2.9	2.9	2.9
EU* s	1.1	1.3	1.3	1.5	1.6	1.7	1.9	2.0	2.1	2.2	2.3	2.3	2.4

Table III.1.119: Long-term care spending as % of GDP - Demographic scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.7	2.3	2.4	2.5	2.7	2.9	3.2	3.4	3.6	3.7	3.8	3.9	4.0
BG	0.1	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CZ	1.3	1.3	1.4	1.6	1.7	1.9	2.0	2.1	2.1	2.3	2.4	2.6	2.7
DK	2.2	2.5	2.7	3.0	3.3	3.6	3.8	3.9	4.2	4.4	4.5	4.6	4.7
DE	1.3	1.3	1.5	1.7	1.8	1.9	2.0	2.2	2.4	2.5	2.5	2.5	2.5
EE	0.4	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3
IE	1.9	1.3	1.4	1.6	1.7	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.3
EL	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	1.3	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.3	2.3
FR	0.8	1.7	1.8	1.8	1.9	2.1	2.3	2.4	2.5	2.5	2.6	2.5	2.5
HR	0.4	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3
IT	1.3	1.7	1.8	1.9	2.1	2.2	2.4	2.6	2.8	3.0	3.1	3.1	3.0
CY	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6
LV	0.1	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
LT	1.0	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.0	2.0	2.0	2.0
LU	2.3	1.3	1.4	1.5	1.6	1.8	2.0	2.3	2.6	2.9	3.1	3.4	3.6
HU	0.4	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1
MT	1.4	0.9	1.0	1.2	1.4	1.6	1.7	1.8	1.8	1.9	1.9	2.1	2.3
NL	2.7	3.5	3.7	4.1	4.5	4.9	5.3	5.6	6.0	6.2	6.3	6.2	6.3
AT	1.7	1.9	2.0	2.1	2.2	2.4	2.6	2.8	3.1	3.3	3.4	3.5	3.6
PL	0.6	0.5	0.5	0.6	0.7	0.7	0.8	0.9	0.9	0.9	1.0	1.1	1.1
PT	0.8	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.3
RO	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
SI	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.7	1.8	1.8
SK	0.5	0.9	0.9	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4
FI	2.2	2.2	2.4	2.6	3.0	3.3	3.6	3.7	3.8	3.9	3.9	4.1	4.4
SE	1.6	3.2	3.3	3.5	3.8	4.0	4.1	4.2	4.3	4.5	4.6	4.7	4.9
UK	1.1	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.5	2.5	2.6	2.7
NO	3.1	3.7	3.8	4.1	4.4	4.8	5.2	5.5	5.8	6.1	6.4	6.6	6.8
EU*	1.3	1.6	1.7	1.8	1.9	2.1	2.3	2.4	2.6	2.7	2.8	2.8	2.9
EA	1.3	1.6	1.7	1.9	2.0	2.1	2.3	2.5	2.7	2.8	2.9	2.9	2.9
EU27	1.3	1.6	1.7	1.8	2.0	2.1	2.3	2.5	2.6	2.8	2.8	2.9	2.9
EU* s	1.1	1.3	1.3	1.5	1.6	1.7	1.8	2.0	2.1	2.2	2.3	2.3	2.4

Table III.1.120: Long-term care spending as % of GDP - Base case scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.9	2.3	2.4	2.5	2.7	3.0	3.3	3.5	3.8	3.9	4.0	4.1	4.2
BG	0.2	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
CZ	1.7	1.3	1.4	1.6	1.8	2.0	2.2	2.3	2.4	2.6	2.8	3.0	3.0
DK	2.5	2.5	2.6	3.0	3.3	3.7	3.9	4.1	4.3	4.5	4.6	4.8	5.0
DE	1.4	1.3	1.5	1.7	1.8	1.9	2.1	2.3	2.5	2.6	2.6	2.6	2.7
EE	0.5	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4
IE	2.0	1.3	1.4	1.5	1.7	1.9	2.1	2.4	2.7	3.0	3.2	3.3	3.4
EL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
ES	1.3	0.9	1.0	1.1	1.2	1.3	1.5	1.7	1.9	2.1	2.2	2.3	2.2
FR	0.8	1.7	1.8	1.9	2.0	2.2	2.4	2.5	2.5	2.6	2.6	2.5	2.6
HR	0.4	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3
IT	1.3	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.8	3.0	3.1	3.1	3.0
CY	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6
LV	0.2	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
LT	1.0	1.0	1.0	1.2	1.3	1.5	1.7	1.9	2.0	2.1	2.2	2.1	2.0
LU	2.9	1.3	1.4	1.4	1.6	1.8	2.0	2.4	2.8	3.2	3.5	3.8	4.1
HU	0.5	0.7	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.2	1.2
MT	1.4	0.9	1.0	1.1	1.3	1.5	1.6	1.7	1.7	1.8	2.0	2.1	2.3
NL	3.0	3.5	3.7	4.1	4.6	5.1	5.6	5.9	6.2	6.4	6.4	6.4	6.5
AT	2.2	1.9	2.0	2.1	2.3	2.5	2.7	3.0	3.3	3.6	3.8	3.9	4.1
PL	0.8	0.5	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.3
PT	0.9	0.5	0.6	0.7	0.7	0.8	0.9	1.1	1.2	1.3	1.4	1.4	1.4
RO	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6
SI	1.0	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.7	1.8	1.9	1.9	1.9
SK	0.7	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.4	1.5	1.5	1.6	1.6
FI	2.3	2.2	2.4	2.7	3.1	3.5	3.7	3.8	3.9	4.0	4.1	4.2	4.5
SE	2.1	3.2	3.3	3.6	3.9	4.1	4.3	4.4	4.5	4.8	5.0	5.1	5.3
UK	1.3	1.5	1.6	1.7	1.8	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8
NO	3.9	3.7	3.8	4.1	4.5	5.0	5.5	5.8	6.2	6.6	7.0	7.3	7.6
EU*	1.4	1.6	1.7	1.8	2.0	2.2	2.3	2.5	2.7	2.8	2.9	2.9	3.0
EA	1.4	1.6	1.7	1.9	2.0	2.2	2.4	2.6	2.8	2.9	3.0	3.0	3.0
EU27	1.5	1.6	1.7	1.9	2.0	2.2	2.4	2.6	2.7	2.9	3.0	3.0	3.1
EU* s	1.2	1.3	1.3	1.5	1.6	1.8	1.9	2.0	2.2	2.3	2.4	2.4	2.5

Table III.1.121: Long-term care spending as % of GDP - High Life expectancy scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.4	2.3	2.4	2.6	2.7	3.1	3.4	3.7	4.0	4.2	4.4	4.5	4.7
BG	0.2	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
CZ	2.0	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.1	3.3	3.4
DK	3.0	2.5	2.7	3.0	3.4	3.8	4.0	4.2	4.5	4.8	5.0	5.2	5.5
DE	1.8	1.3	1.5	1.7	1.9	2.0	2.2	2.4	2.7	2.8	2.9	2.9	3.1
EE	0.6	0.9	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5
IE	2.4	1.3	1.4	1.5	1.7	2.0	2.2	2.5	2.9	3.2	3.5	3.7	3.8
EL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
ES	1.7	0.9	1.0	1.1	1.2	1.4	1.6	1.8	2.1	2.4	2.6	2.7	2.7
FR	1.1	1.7	1.8	1.9	2.0	2.3	2.4	2.6	2.7	2.7	2.8	2.8	2.8
HR	0.5	0.9	0.9	1.0	1.0	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.4
IT	1.6	1.7	1.8	1.9	2.1	2.2	2.5	2.7	3.0	3.2	3.4	3.4	3.4
CY	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6
LV	0.2	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
LT	1.3	1.0	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.3	2.4	2.4	2.3
LU	3.5	1.3	1.4	1.5	1.6	1.8	2.1	2.6	3.0	3.5	3.9	4.3	4.8
HU	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.2	1.2	1.3	1.3
MT	1.7	0.9	1.0	1.2	1.3	1.5	1.7	1.8	1.9	2.0	2.2	2.4	2.6
NL	3.7	3.5	3.7	4.2	4.7	5.2	5.8	6.2	6.6	6.9	7.0	7.1	7.2
AT	2.7	1.9	2.0	2.1	2.4	2.6	2.8	3.2	3.6	3.9	4.1	4.3	4.6
PL	1.0	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.4	1.5
PT	1.1	0.5	0.6	0.7	0.7	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.6
RO	0.4	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7
SI	1.2	0.9	1.0	1.1	1.2	1.4	1.5	1.7	1.9	2.0	2.0	2.1	2.1
SK	0.7	0.9	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.6	1.6
FI	2.8	2.2	2.4	2.7	3.1	3.6	3.9	4.1	4.2	4.3	4.4	4.7	5.0
SE	2.7	3.2	3.3	3.6	3.9	4.3	4.4	4.6	4.8	5.1	5.4	5.6	5.9
UK	1.6	1.5	1.6	1.7	1.9	2.0	2.2	2.4	2.6	2.7	2.9	3.0	3.1
NO	4.8	3.7	3.8	4.2	4.6	5.2	5.7	6.1	6.6	7.1	7.7	8.1	8.6
EU*	1.8	1.6	1.7	1.8	2.0	2.2	2.4	2.6	2.9	3.1	3.2	3.3	3.4
EA	1.8	1.6	1.7	1.9	2.0	2.2	2.5	2.7	3.0	3.1	3.2	3.3	3.4
EU27	1.8	1.6	1.7	1.9	2.0	2.2	2.5	2.7	2.9	3.1	3.2	3.3	3.4
EU* s	1.5	1.3	1.3	1.5	1.6	1.8	2.0	2.1	2.3	2.5	2.6	2.7	2.8

Table III.1.122: Long-term care spending as % of GDP - Healthy ageing scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.5	2.3	2.4	2.5	2.6	2.8	3.1	3.3	3.5	3.6	3.6	3.7	3.8
BG	0.1	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CZ	1.2	1.3	1.4	1.5	1.7	1.8	2.0	2.1	2.2	2.3	2.4	2.5	2.5
DK	2.0	2.5	2.6	2.9	3.2	3.5	3.7	3.8	4.0	4.2	4.3	4.4	4.5
DE	1.1	1.3	1.5	1.6	1.8	1.8	2.0	2.1	2.3	2.4	2.4	2.4	2.4
EE	0.3	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2
IE	1.6	1.3	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	2.8	2.9	3.0
EL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
ES	1.1	0.9	1.0	1.1	1.1	1.3	1.4	1.6	1.8	2.0	2.1	2.1	2.0
FR	0.6	1.7	1.8	1.8	1.9	2.1	2.2	2.3	2.4	2.4	2.4	2.3	2.3
HR	0.2	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
IT	1.0	1.7	1.8	1.9	2.0	2.1	2.2	2.4	2.6	2.8	2.9	2.8	2.7
CY	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
LV	0.0	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
LT	0.8	1.0	1.0	1.1	1.3	1.4	1.6	1.7	1.8	1.9	1.9	1.9	1.8
LU	2.5	1.3	1.4	1.4	1.5	1.7	1.9	2.2	2.6	2.9	3.2	3.5	3.7
HU	0.3	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0
MT	1.1	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.6	1.6	1.8	1.9	2.0
NL	2.1	3.5	3.6	3.9	4.3	4.7	5.1	5.3	5.5	5.7	5.6	5.6	5.6
AT	1.7	1.9	1.9	2.1	2.2	2.4	2.5	2.8	3.1	3.3	3.4	3.4	3.6
PL	0.7	0.5	0.5	0.6	0.6	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.2
PT	0.8	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.3
RO	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
SI	0.8	0.9	1.0	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.7	1.7	1.7
SK	0.3	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
FI	1.8	2.2	2.3	2.6	3.0	3.3	3.5	3.6	3.6	3.7	3.7	3.8	4.0
SE	1.4	3.2	3.3	3.5	3.7	3.9	4.0	4.0	4.1	4.3	4.5	4.6	4.6
UK	1.0	1.5	1.5	1.6	1.8	1.9	2.0	2.1	2.2	2.4	2.4	2.4	2.5
NO	3.0	3.7	3.7	4.0	4.3	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.8
EU*	1.1	1.6	1.7	1.8	1.9	2.0	2.2	2.3	2.5	2.6	2.6	2.6	2.7
EA	1.1	1.6	1.7	1.8	1.9	2.1	2.2	2.4	2.6	2.7	2.7	2.7	2.7
EU27	1.1	1.6	1.7	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.7	2.7	2.7
EU* s	0.9	1.3	1.3	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.1	2.2	2.2

Table III.1.123: Long-term care spending as % of GDP - Shift to formal care scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	2.3	2.3	2.5	2.8	3.0	3.3	3.6	3.9	4.1	4.3	4.3	4.5	4.6
BG	0.5	0.4	0.5	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9
CZ	2.3	1.3	1.6	2.0	2.3	2.5	2.7	2.8	3.0	3.2	3.4	3.6	3.6
DK	3.3	2.5	2.9	3.6	4.0	4.3	4.6	4.8	5.0	5.2	5.4	5.6	5.8
DE	2.3	1.3	1.8	2.3	2.5	2.6	2.8	3.1	3.3	3.4	3.4	3.4	3.6
EE	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.4	1.5	1.6	1.6	1.7
IE	2.5	1.3	1.5	1.8	2.1	2.3	2.6	2.8	3.2	3.5	3.7	3.8	3.9
EL	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ES	1.6	0.9	1.1	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.5	2.6	2.5
FR	1.3	1.7	2.0	2.3	2.4	2.7	2.9	3.0	3.0	3.1	3.1	3.1	3.1
HR	0.9	0.9	1.1	1.3	1.4	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8
IT	1.8	1.7	2.0	2.2	2.4	2.6	2.8	3.1	3.3	3.5	3.6	3.6	3.5
CY	0.4	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7
LV	0.5	0.4	0.5	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9
LT	1.3	1.0	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.4	2.4	2.4	2.3
LU	3.5	1.3	1.5	1.7	1.9	2.1	2.4	2.8	3.2	3.7	4.0	4.4	4.7
HU	0.8	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.5
MT	1.6	0.9	1.0	1.2	1.4	1.6	1.8	1.8	1.9	2.0	2.1	2.3	2.5
NL	3.7	3.5	3.9	4.6	5.2	5.7	6.2	6.6	6.9	7.1	7.1	7.1	7.2
AT	3.0	1.9	2.2	2.6	2.9	3.1	3.3	3.7	4.1	4.4	4.5	4.6	4.9
PL	1.6	0.5	0.7	1.0	1.1	1.2	1.4	1.5	1.6	1.7	1.9	2.0	2.1
PT	2.5	0.5	1.0	1.6	1.9	2.0	2.3	2.5	2.7	2.8	3.0	3.0	3.0
RO	0.5	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8
SI	1.3	0.9	1.1	1.3	1.5	1.6	1.8	2.0	2.1	2.2	2.2	2.2	2.2
SK	1.3	0.9	1.1	1.4	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.2	2.2
FI	2.7	2.2	2.5	3.0	3.4	3.8	4.1	4.2	4.3	4.4	4.5	4.7	4.9
SE	2.9	3.2	3.5	4.2	4.6	4.9	5.0	5.1	5.3	5.6	5.8	5.9	6.1
UK	2.0	1.5	1.8	2.2	2.4	2.6	2.7	2.9	3.0	3.2	3.3	3.3	3.5
NO	4.6	3.7	4.0	4.6	5.1	5.6	6.1	6.4	6.8	7.2	7.7	8.0	8.3
EU*	2.0	1.6	1.9	2.3	2.5	2.7	2.9	3.1	3.3	3.4	3.5	3.5	3.6
EA	2.0	1.6	1.9	2.3	2.5	2.7	2.9	3.2	3.4	3.5	3.6	3.6	3.6
EU27	2.1	1.6	1.9	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.6	3.6	3.7
EU* s	1.8	1.3	1.5	1.8	2.0	2.2	2.3	2.5	2.6	2.8	2.9	3.0	3.0

Table III.1.124: Long-term care spending as % of GDP - Coverage convergence scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	1.9	2.3	2.4	2.5	2.7	3.0	3.3	3.5	3.8	3.9	4.0	4.1	4.2
BG	0.7	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.1
CZ	1.8	1.3	1.4	1.6	1.8	2.0	2.2	2.4	2.5	2.7	2.9	3.1	3.1
DK	5.2	2.5	2.7	3.3	3.8	4.3	4.7	5.2	5.6	6.1	6.6	7.1	7.7
DE	2.1	1.3	1.6	1.8	1.9	2.1	2.3	2.6	2.8	3.0	3.1	3.2	3.4
EE	0.5	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.4
IE	3.7	1.3	1.4	1.7	2.0	2.3	2.7	3.1	3.6	4.1	4.5	4.9	5.1
EL	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
ES	2.0	0.9	1.1	1.2	1.3	1.5	1.8	2.0	2.4	2.6	2.8	2.9	2.9
FR	2.3	1.7	1.8	2.0	2.2	2.5	2.8	3.1	3.3	3.5	3.7	3.8	4.0
HR	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.3	1.3	1.4	1.4	1.5	1.6
IT	1.5	1.7	1.8	1.9	2.1	2.2	2.5	2.7	2.9	3.2	3.3	3.3	3.2
CY	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6
LV	0.9	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
LT	1.0	1.0	1.0	1.2	1.3	1.5	1.7	1.9	2.0	2.1	2.2	2.1	2.0
LU	4.6	1.3	1.4	1.5	1.7	2.0	2.4	2.9	3.5	4.1	4.7	5.2	5.9
HU	1.6	0.7	0.7	0.8	0.9	1.0	1.1	1.3	1.4	1.6	1.9	2.1	2.3
MT	1.9	0.9	1.0	1.2	1.4	1.6	1.7	1.9	2.0	2.1	2.3	2.5	2.8
NL	3.3	3.5	3.7	4.2	4.7	5.2	5.7	6.1	6.4	6.6	6.7	6.7	6.9
AT	2.2	1.9	2.0	2.1	2.3	2.5	2.7	3.0	3.3	3.6	3.8	3.9	4.1
PL	0.8	0.5	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.3
PT	1.8	0.5	0.6	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.3
RO	1.0	0.3	0.3	0.4	0.5	0.5	0.6	0.7	0.9	1.0	1.1	1.2	1.3
SI	1.1	0.9	1.0	1.1	1.2	1.4	1.6	1.7	1.8	1.9	2.0	2.0	2.1
SK	0.9	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.8
FI	2.3	2.2	2.4	2.7	3.1	3.5	3.7	3.8	3.9	4.0	4.1	4.2	4.5
SE	2.5	3.2	3.3	3.7	4.0	4.3	4.4	4.5	4.8	5.1	5.3	5.5	5.7
UK	1.3	1.5	1.6	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.6	2.7	2.8
NO	3.9	3.7	3.8	4.1	4.5	5.0	5.5	5.8	6.2	6.6	7.0	7.3	7.6
EU*	2.0	1.6	1.7	1.9	2.1	2.3	2.5	2.8	3.0	3.2	3.4	3.5	3.6
EA	2.2	1.6	1.7	1.9	2.1	2.4	2.6	2.9	3.2	3.4	3.5	3.6	3.8
EU27	2.2	1.6	1.7	1.9	2.1	2.4	2.6	2.9	3.1	3.4	3.5	3.6	3.8
EU* s	1.8	1.3	1.4	1.5	1.7	1.9	2.1	2.3	2.4	2.6	2.8	2.9	3.1

Table III.1.125: Long-term care spending as % of GDP - Cost convergence scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.9	2.3	2.5	2.7	2.9	3.3	3.7	4.2	4.6	4.9	5.2	5.6	6.2
BG	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7
CZ	2.6	1.3	1.4	1.7	1.9	2.1	2.4	2.6	2.8	3.1	3.5	3.8	3.9
DK	2.5	2.5	2.6	3.0	3.3	3.7	3.9	4.1	4.3	4.5	4.6	4.8	5.0
DE	1.7	1.3	1.5	1.7	1.8	2.0	2.1	2.4	2.6	2.8	2.8	2.8	2.9
EE	3.2	0.9	1.0	1.1	1.3	1.5	1.8	2.1	2.4	2.7	3.1	3.6	4.1
IE	2.0	1.3	1.4	1.5	1.7	1.9	2.1	2.4	2.7	3.0	3.2	3.3	3.4
EL	3.4	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.8	1.1	1.5	2.3	3.5
ES	2.7	0.9	1.1	1.2	1.3	1.5	1.7	2.1	2.5	2.9	3.2	3.5	3.6
FR	1.3	1.7	1.8	1.9	2.1	2.3	2.5	2.6	2.8	2.8	2.9	2.9	3.0
HR	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.4	1.6	1.7
IT	2.1	1.7	1.8	2.0	2.1	2.3	2.6	2.9	3.3	3.6	3.8	3.8	3.9
CY	2.9	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.4	1.8	2.4	3.2
LV	0.9	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.4
LT	4.1	1.0	1.1	1.4	1.7	2.0	2.4	2.9	3.4	4.0	4.4	4.7	5.1
LU	3.4	1.3	1.4	1.5	1.6	1.9	2.2	2.6	3.0	3.5	3.9	4.2	4.6
HU	2.2	0.7	0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.1	2.4	2.6	2.9
MT	2.8	0.9	1.0	1.2	1.4	1.7	1.9	2.0	2.2	2.4	2.8	3.2	3.7
NL	5.0	3.5	3.7	4.2	4.8	5.4	6.0	6.5	7.0	7.4	7.7	8.0	8.5
AT	3.7	1.9	2.0	2.2	2.5	2.8	3.1	3.5	4.0	4.5	4.8	5.1	5.6
PL	1.8	0.5	0.5	0.6	0.8	0.9	1.1	1.2	1.4	1.5	1.7	2.0	2.2
PT	1.7	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0	2.3
RO	2.0	0.3	0.3	0.4	0.4	0.5	0.6	0.8	0.9	1.2	1.5	1.9	2.3
SI	3.3	0.9	1.0	1.2	1.4	1.7	2.1	2.4	2.8	3.2	3.6	3.9	4.3
SK	1.8	0.9	1.0	1.1	1.3	1.4	1.6	1.8	1.9	2.1	2.4	2.6	2.7
FI	3.2	2.2	2.4	2.8	3.2	3.7	4.0	4.2	4.3	4.5	4.7	5.0	5.4
SE	2.5	3.2	3.3	3.6	3.9	4.2	4.3	4.4	4.6	4.9	5.2	5.4	5.7
UK	1.9	1.5	1.6	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.0	3.2	3.4
NO	5.8	3.7	3.8	4.2	4.7	5.3	5.9	6.4	6.9	7.5	8.2	8.8	9.5
EU*	2.2	1.6	1.7	1.9	2.1	2.3	2.5	2.8	3.0	3.2	3.4	3.6	3.8
EA	2.3	1.6	1.7	1.9	2.1	2.3	2.6	2.8	3.1	3.4	3.5	3.7	3.9
EU27	2.3	1.6	1.7	1.9	2.1	2.3	2.6	2.8	3.1	3.3	3.5	3.7	3.9
EU* s	2.5	1.3	1.4	1.5	1.7	1.9	2.2	2.4	2.6	2.9	3.2	3.4	3.8

Table III.1.126: Long-term care spending as % of GDP - Cost and coverage convergence scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.9	2.3	2.5	2.7	2.9	3.3	3.7	4.2	4.6	4.9	5.2	5.6	6.2
BG	1.1	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.3	1.5
CZ	2.7	1.3	1.4	1.7	1.9	2.2	2.4	2.6	2.9	3.2	3.6	3.9	4.0
DK	5.2	2.5	2.7	3.3	3.8	4.3	4.7	5.2	5.6	6.1	6.6	7.1	7.7
DE	2.3	1.3	1.6	1.8	2.0	2.1	2.4	2.7	3.0	3.2	3.3	3.4	3.6
EE	3.2	0.9	1.0	1.1	1.3	1.5	1.8	2.1	2.4	2.7	3.1	3.6	4.1
IE	3.7	1.3	1.4	1.7	2.0	2.3	2.7	3.1	3.6	4.1	4.5	4.9	5.1
EL	5.1	0.1	0.1	0.2	0.2	0.3	0.5	0.7	1.0	1.5	2.2	3.3	5.2
ES	3.7	0.9	1.1	1.3	1.4	1.7	2.1	2.5	3.0	3.6	4.0	4.4	4.7
FR	3.0	1.7	1.9	2.0	2.3	2.7	3.0	3.3	3.6	3.9	4.2	4.4	4.7
HR	1.3	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	2.0	2.2
IT	2.4	1.7	1.8	2.0	2.2	2.4	2.7	3.0	3.4	3.7	4.0	4.1	4.1
CY	3.1	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.4	1.9	2.5	3.4
LV	2.8	0.4	0.5	0.6	0.7	0.8	1.0	1.2	1.5	1.8	2.2	2.7	3.3
LT	4.1	1.0	1.1	1.4	1.7	2.0	2.4	2.9	3.4	4.0	4.4	4.7	5.1
LU	5.6	1.3	1.4	1.6	1.8	2.1	2.6	3.2	3.9	4.6	5.3	6.0	6.9
HU	4.5	0.7	0.8	0.9	1.1	1.4	1.7	2.0	2.5	3.0	3.7	4.5	5.2
MT	3.6	0.9	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.2	3.8	4.5
NL	5.5	3.5	3.8	4.3	4.8	5.5	6.2	6.7	7.2	7.7	8.0	8.4	9.0
AT	3.7	1.9	2.0	2.2	2.5	2.8	3.1	3.5	4.0	4.5	4.8	5.1	5.6
PL	1.8	0.5	0.5	0.6	0.8	0.9	1.1	1.2	1.4	1.5	1.8	2.0	2.3
PT	2.8	0.5	0.6	0.7	0.9	1.1	1.3	1.5	1.8	2.2	2.5	2.9	3.3
RO	4.7	0.3	0.3	0.4	0.5	0.7	0.9	1.2	1.5	2.0	2.7	3.7	5.0
SI	3.7	0.9	1.1	1.2	1.5	1.8	2.2	2.6	3.0	3.4	3.8	4.3	4.7
SK	2.3	0.9	1.0	1.1	1.3	1.4	1.6	1.8	2.1	2.3	2.6	2.9	3.2
FI	3.2	2.2	2.4	2.8	3.2	3.7	4.0	4.2	4.3	4.5	4.7	5.0	5.4
SE	2.9	3.2	3.3	3.7	4.0	4.3	4.5	4.6	4.8	5.2	5.5	5.7	6.1
UK	2.0	1.5	1.6	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.2	3.5
NO	5.8	3.7	3.8	4.2	4.7	5.3	5.9	6.4	6.9	7.6	8.2	8.8	9.5
EU*	3.0	1.6	1.7	1.9	2.2	2.4	2.7	3.0	3.4	3.7	4.0	4.2	4.6
EA	3.2	1.6	1.8	2.0	2.2	2.5	2.8	3.2	3.6	3.9	4.2	4.4	4.8
EU27	3.2	1.6	1.8	2.0	2.2	2.5	2.8	3.1	3.5	3.9	4.1	4.4	4.8
EU* s	3.4	1.3	1.4	1.6	1.8	2.1	2.3	2.6	3.0	3.3	3.7	4.1	4.6

Table III.1.127: Number of dependent people (in thousands) - AWG reference scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	701	997	1,045	1,110	1,181	1,280	1,379	1,467	1,538	1,581	1,610	1,645	1,698
BG	1	136	137	142	142	142	142	141	142	143	143	141	137
CZ	566	572	613	684	762	840	890	914	944	1,005	1,079	1,137	1,138
DK	174	160	173	203	228	249	264	277	293	309	319	326	334
DE	1,412	2,749	2,940	3,194	3,340	3,427	3,631	3,929	4,181	4,266	4,154	4,067	4,161
EE	30	172	177	182	185	190	195	199	199	199	200	201	202
IE	190	104	114	129	146	166	186	206	228	249	270	286	294
EL	170	368	388	408	424	447	476	507	535	559	571	563	538
ES	2,413	1,549	1,719	1,882	1,994	2,231	2,513	2,816	3,203	3,564	3,837	4,005	3,962
FR	1,381	3,018	3,117	3,276	3,433	3,731	3,966	4,122	4,248	4,334	4,386	4,380	4,400
HR	15	156	159	165	165	172	177	178	176	173	171	172	171
IT	1,561	3,245	3,422	3,620	3,805	4,063	4,319	4,641	4,981	5,197	5,207	5,028	4,806
CY	53	39	42	47	52	57	62	66	71	75	80	86	92
LV	-1	44	44	44	44	44	45	45	45	45	44	44	42
LT	-4	203	206	212	213	214	220	227	231	228	219	208	199
LU	42	15	17	20	23	26	31	36	41	45	49	53	57
HU	70	315	325	338	352	364	372	377	383	389	393	392	385
MT	21	17	19	23	26	29	31	31	32	32	34	35	37
NL	675	823	883	1,004	1,115	1,226	1,318	1,392	1,455	1,487	1,482	1,472	1,498
AT	773	731	780	859	945	1,024	1,118	1,234	1,347	1,417	1,438	1,452	1,504
PL	1,344	1,873	1,986	2,129	2,287	2,471	2,680	2,814	2,868	2,901	2,993	3,128	3,217
PT	165	333	351	373	394	419	447	473	495	512	520	516	498
RO	147	429	440	455	470	494	519	532	544	565	586	587	575
SI	91	111	120	130	141	155	170	183	190	195	199	202	202
SK	112	285	298	318	338	356	371	380	387	394	400	402	397
FI	361	549	583	635	698	763	811	827	834	841	849	871	910
SE	551	539	571	642	714	778	819	852	901	956	1,002	1,040	1,090
UK	3,385	3,492	3,707	4,049	4,431	4,844	5,217	5,574	5,969	6,284	6,457	6,605	6,877
NO	449	367	387	434	485	540	588	630	673	715	751	781	815
EU*	16,400	23,023	24,376	26,275	28,048	30,205	32,367	34,439	36,461	37,945	38,693	39,045	39,423
EA	10,146	15,352	16,266	17,468	18,497	19,850	21,288	22,779	24,242	25,221	25,549	25,518	25,498
EU27	13,015	19,531	20,670	22,226	23,617	25,361	27,150	28,864	30,491	31,661	32,236	32,441	32,546
EU* s	586	822	871	938	1,002	1,079	1,156	1,230	1,302	1,355	1,382	1,394	1,408

Table III.1.128: Number of dependent people receiving institutional care (in thousands) - AWG reference scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	163	144	153	163	175	200	224	248	268	279	286	293	307
BG	0	13	13	13	13	13	13	13	13	13	13	13	12
CZ	117	126	134	149	164	180	192	197	203	214	228	241	243
DK	65	54	58	68	77	86	92	97	103	110	114	116	119
DE	525	775	834	918	980	999	1,060	1,171	1,279	1,339	1,314	1,270	1,300
EE	7	13	14	14	15	16	17	18	18	19	19	20	20
IE	74	35	38	43	49	56	64	72	80	89	98	105	109
EL	80	125	133	141	147	156	168	181	193	205	212	212	204
ES	431	328	358	387	402	442	490	541	610	675	726	760	759
FR	667	1,100	1,148	1,204	1,266	1,420	1,541	1,624	1,690	1,736	1,764	1,757	1,767
HR	6	21	22	23	23	25	26	27	27	26	26	27	27
IT	226	685	710	738	762	802	841	892	947	983	984	951	911
CY	13	8	9	10	12	13	14	15	16	17	19	20	22
LV	-1	13	13	13	13	13	13	13	13	13	12	12	12
LT	-19	89	89	90	89	88	87	87	85	83	78	73	70
LU	18	5	5	6	7	9	10	13	15	17	19	21	23
HU	45	255	262	272	282	290	296	299	303	306	308	307	301
MT	9	4	5	6	7	8	9	10	10	10	11	12	13
NL	279	303	323	365	405	451	493	526	559	580	584	576	582
AT	104	91	96	106	117	127	138	154	172	184	187	188	195
PL	86	86	94	103	113	125	139	147	150	153	159	167	172
PT	19	33	36	38	41	44	48	50	53	55	55	55	52
RO	69	223	228	236	244	257	269	274	280	290	299	298	291
SI	30	35	38	41	45	49	55	59	61	63	64	65	65
SK	53	50	53	58	65	72	78	82	86	90	96	101	103
FI	44	42	45	51	58	66	72	74	76	77	78	81	86
SE	119	103	109	122	138	154	162	169	180	193	203	211	222
UK	746	644	685	752	832	926	1,008	1,087	1,183	1,263	1,303	1,330	1,390
NO	86	45	48	54	62	73	84	92	101	110	118	125	131
EU*	3,975	5,402	5,706	6,131	6,542	7,088	7,621	8,140	8,672	9,079	9,258	9,283	9,377
EA	2,722	3,876	4,100	4,393	4,656	5,031	5,424	5,830	6,230	6,512	6,605	6,573	6,599
EU27	3,229	4,757	5,021	5,379	5,710	6,162	6,613	7,053	7,489	7,817	7,956	7,953	7,987
EU* s	142	193	204	219	234	253	272	291	310	324	331	332	335

Table III.1.129: Number of dependent people receiving home care (in thousands) - AWG reference scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	311	560	583	618	655	700	742	778	804	820	832	849	871
BG	-4	22	22	22	21	20	19	19	19	19	18	18	17
CZ	124	100	109	125	143	159	169	175	183	197	214	224	224
DK	109	106	115	135	150	163	172	180	189	199	205	209	215
DE	170	379	404	437	453	466	494	529	557	562	545	537	549
EE	7	26	27	28	28	29	30	31	31	32	32	33	33
IE	116	69	76	86	97	109	122	134	147	160	172	181	185
EL	91	243	255	266	277	291	309	326	342	354	358	351	334
ES	1,250	737	826	908	972	1,099	1,248	1,412	1,617	1,805	1,945	2,024	1,987
FR	702	1,207	1,262	1,347	1,447	1,597	1,713	1,789	1,847	1,884	1,903	1,901	1,910
HR	6	22	23	24	24	26	28	28	28	28	27	28	28
IT	440	674	722	778	830	900	969	1,054	1,144	1,203	1,209	1,166	1,114
CY	13	8	9	10	11	12	13	14	15	16	17	19	21
LV	-1	15	15	15	15	15	15	15	15	15	14	14	14
LT	15	59	62	65	67	69	73	78	83	83	81	77	74
LU	20	9	10	11	13	15	17	20	22	24	26	27	29
HU	25	60	62	66	70	73	76	78	80	83	85	86	85
MT	12	8	9	11	13	15	16	16	16	17	18	19	20
NL	395	521	560	640	710	775	825	866	897	906	899	895	916
AT	166	175	186	203	222	240	260	285	309	323	326	330	341
PL	123	122	132	145	159	176	195	207	212	217	226	238	245
PT	12	16	17	19	20	22	24	25	27	28	29	29	28
RO	78	206	211	219	226	238	250	258	264	275	287	289	284
SI	30	34	37	40	44	49	54	58	61	62	64	65	65
SK	-15	68	69	70	70	69	69	67	65	62	58	55	52
FI	162	183	197	218	246	276	298	306	310	313	317	327	345
SE	197	198	210	238	263	285	299	311	329	348	363	377	395
UK	1,195	1,243	1,322	1,446	1,584	1,729	1,860	1,987	2,122	2,226	2,284	2,340	2,438
NO	220	200	212	238	263	290	312	333	353	373	389	403	420
EU*	5,749	7,068	7,531	8,190	8,829	9,617	10,357	11,047	11,735	12,260	12,555	12,707	12,817
EA	3,897	4,989	5,323	5,771	6,190	6,748	7,289	7,803	8,308	8,669	8,845	8,898	8,886
EU27	4,554	5,825	6,209	6,744	7,245	7,888	8,497	9,060	9,613	10,034	10,271	10,368	10,379
EU* s	205	252	269	293	315	343	370	395	419	438	448	454	458

Table III.1.130: Number of dependent people receiving cash benefits (in thousands) - AWG reference scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	227	293	309	329	351	380	413	441	465	481	492	503	520
BG	6	102	103	108	108	109	109	109	110	111	112	111	108
CZ	325	346	370	410	456	501	529	541	558	594	637	671	671
DK	0	0	0	0	0	0	0	0	0	0	0	0	0
DE	716	1,595	1,702	1,839	1,907	1,962	2,077	2,228	2,345	2,365	2,295	2,260	2,312
EE	16	133	136	140	142	145	148	150	149	149	149	149	148
IE	0	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	0
ES	732	484	536	588	620	690	774	862	977	1,084	1,166	1,220	1,216
FR	12	711	707	725	720	713	711	708	712	715	718	722	723
HR	3	112	114	117	118	121	123	123	121	119	117	117	115
IT	895	1,887	1,991	2,104	2,212	2,361	2,510	2,696	2,890	3,012	3,015	2,910	2,782
CY	27	23	25	27	30	32	35	37	39	41	44	47	50
LV	1	16	16	16	17	17	17	17	18	18	17	17	17
LT	0	55	56	57	57	58	60	62	63	62	60	58	55
LU	3	2	2	2	3	3	3	4	4	4	5	5	5
HU	0	0	0	0	0	0	0	0	0	0	0	0	0
MT	1	5	5	6	6	6	6	6	5	5	5	5	5
NL	0	0	0	0	0	0	0	0	0	0	0	0	0
AT	503	465	498	550	606	658	719	795	867	911	925	935	969
PL	1,135	1,665	1,760	1,882	2,015	2,169	2,346	2,460	2,505	2,531	2,608	2,723	2,800
PT	134	284	298	316	333	353	376	397	415	429	436	433	417
RO	0	0	0	0	0	0	0	0	0	0	0	0	0
SI	31	42	45	49	52	56	61	66	68	70	72	73	73
SK	75	167	177	190	203	215	224	231	237	242	246	246	242
FI	155	324	341	366	394	422	441	447	449	451	454	463	479
SE	236	237	251	282	313	340	358	372	392	416	436	452	473
UK	1,445	1,605	1,700	1,851	2,015	2,189	2,349	2,500	2,664	2,795	2,870	2,935	3,049
NO	143	121	128	143	159	177	192	205	219	233	244	253	264
EU*	6,676	10,554	11,140	11,954	12,677	13,500	14,389	15,251	16,054	16,606	16,879	17,055	17,229
EA	3,527	6,487	6,842	7,303	7,651	8,070	8,575	9,146	9,703	10,040	10,099	10,046	10,013
EU27	5,231	8,949	9,440	10,103	10,662	11,311	12,040	12,751	13,390	13,810	14,009	14,120	14,180
EU* s	238	377	398	427	453	482	514	545	573	593	603	609	615

Table III.1.131: Education spending as % of GDP - Baseline

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.0	5.8	5.7	5.7	5.7	5.7	5.7	5.7	5.8	5.8	5.8	5.8	5.8
BG	0.6	3.1	3.1	3.2	3.3	3.3	3.3	3.4	3.5	3.7	3.8	3.7	3.7
CZ	0.8	3.2	3.2	3.6	3.7	3.6	3.6	3.6	3.7	4.0	4.1	4.1	4.0
DK	-0.7	7.4	7.0	6.7	6.7	6.8	6.8	6.8	6.7	6.6	6.5	6.5	6.6
DE	0.3	4.2	3.9	3.9	4.1	4.2	4.3	4.2	4.2	4.2	4.3	4.4	4.5
EE	0.2	4.8	4.5	4.7	4.7	4.6	4.6	4.6	4.8	5.0	5.1	5.0	5.0
IE	-0.2	3.6	3.5	3.7	3.6	3.3	3.2	3.2	3.4	3.5	3.5	3.4	3.3
EL	-0.8	3.1	3.0	2.8	2.6	2.4	2.3	2.3	2.4	2.5	2.5	2.4	2.4
ES	0.3	3.7	3.7	3.7	3.5	3.5	3.7	3.9	4.1	4.2	4.1	4.0	3.9
FR	-0.4	4.8	4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.5	4.5	4.4	4.4
HR	-0.5	3.7	3.5	3.4	3.3	3.2	3.1	3.0	3.0	3.1	3.1	3.1	3.2
IT	-0.3	3.5	3.4	3.2	3.1	3.0	3.1	3.2	3.3	3.3	3.3	3.3	3.3
CY	-1.6	5.8	5.3	4.8	4.5	4.3	4.1	3.8	3.7	3.8	4.0	4.1	4.2
LV	0.5	4.5	4.2	4.5	4.8	4.9	4.6	4.4	4.5	4.9	5.2	5.2	5.0
LT	-0.1	3.9	3.3	3.4	3.6	3.8	3.6	3.3	3.2	3.4	3.8	3.9	3.8
LU	0.1	3.3	3.1	3.0	3.1	3.2	3.2	3.3	3.3	3.3	3.3	3.4	3.4
HU	0.2	3.6	3.4	3.3	3.3	3.4	3.5	3.6	3.6	3.6	3.7	3.8	3.8
MT	-0.2	5.4	4.8	4.7	4.8	4.8	4.8	4.7	4.7	4.8	5.1	5.2	5.2
NL	-0.5	5.2	4.9	4.7	4.7	4.8	5.0	5.0	4.9	4.8	4.7	4.7	4.7
AT	0.0	4.9	4.6	4.5	4.7	4.7	4.7	4.7	4.6	4.7	4.8	4.9	4.9
PL	0.4	4.3	4.1	4.1	4.2	4.1	4.1	4.1	4.2	4.5	4.6	4.7	4.7
PT	-0.6	4.5	4.2	3.9	3.6	3.5	3.5	3.7	3.8	3.9	3.8	3.8	3.9
RO	0.3	2.5	2.3	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.8
SI	0.6	4.0	4.0	4.1	4.2	4.2	4.1	4.2	4.5	4.7	4.7	4.7	4.6
SK	0.0	3.7	3.5	3.6	3.6	3.6	3.5	3.5	3.6	3.7	3.8	3.8	3.7
FI	-0.4	5.9	5.8	5.9	5.9	5.9	5.8	5.7	5.7	5.6	5.6	5.6	5.5
SE	0.4	5.8	5.8	5.9	6.0	6.0	6.0	6.0	6.0	6.1	6.2	6.2	6.2
UK	-0.2	5.2	5.1	5.2	5.1	5.1	5.1	5.1	5.0	5.0	5.0	5.0	5.0
NO	-0.3	7.6	7.2	7.0	7.0	7.1	7.1	7.1	7.1	7.1	7.1	7.2	7.3
EU*	0.0	4.5	4.4	4.3	4.3	4.4	4.4	4.4	4.4	4.5	4.5	4.5	4.5
EA	0.0	4.3	4.2	4.1	4.1	4.1	4.2	4.2	4.2	4.3	4.3	4.3	4.3
EU27	0.0	4.4	4.2	4.2	4.2	4.2	4.3	4.3	4.3	4.4	4.4	4.4	4.4
EU* s	-0.1	4.4	4.2	4.2	4.2	4.2	4.2	4.2	4.1	4.2	4.3	4.3	4.4	4.3

Table III.1.132: Number of students (in thousands)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	401	2,439	2,482	2,546	2,600	2,637	2,674	2,709	2,746	2,781	2,807	2,824	2,840
BG	-321	1,055	1,028	1,014	973	914	860	826	810	801	784	760	734
CZ	-23	1,683	1,721	1,807	1,819	1,761	1,679	1,636	1,658	1,711	1,736	1,712	1,659
DK	30	1,307	1,283	1,275	1,297	1,336	1,366	1,376	1,360	1,338	1,327	1,329	1,337
DE	-746	13,773	13,457	13,463	13,730	13,897	13,752	13,405	13,074	12,921	12,943	13,024	13,027
EE	-35	223	221	223	219	212	205	200	199	200	198	194	188
IE	156	1,196	1,270	1,320	1,307	1,248	1,211	1,224	1,280	1,340	1,370	1,367	1,352
EL	-716	1,850	1,783	1,684	1,539	1,394	1,301	1,268	1,269	1,260	1,224	1,174	1,133
ES	1,332	8,429	8,474	8,415	8,284	8,233	8,423	8,790	9,187	9,475	9,605	9,663	9,761
FR	809	12,751	12,784	12,801	12,794	12,896	13,099	13,321	13,475	13,509	13,483	13,485	13,560
HR	-202	656	617	589	562	539	519	503	491	482	473	463	454
IT	-1,643	9,102	8,968	8,572	8,091	7,760	7,655	7,699	7,770	7,760	7,653	7,523	7,459
CY	-27	149	140	134	131	129	124	118	115	116	119	121	122
LV	-89	323	301	307	306	291	263	240	234	240	245	243	234
LT	-213	505	444	420	408	380	333	291	275	283	298	302	291
LU	55	93	97	104	114	124	131	135	137	139	142	145	148
HU	-182	1,573	1,505	1,480	1,477	1,481	1,465	1,433	1,406	1,397	1,399	1,399	1,390
MT	12	69	68	72	76	79	79	77	77	78	80	81	81
NL	36	3,637	3,513	3,454	3,498	3,602	3,705	3,750	3,721	3,660	3,622	3,632	3,673
AT	108	1,458	1,443	1,478	1,541	1,592	1,607	1,592	1,569	1,558	1,561	1,567	1,566
PL	-1,885	6,627	6,351	6,254	6,130	5,829	5,483	5,199	5,069	5,049	5,022	4,914	4,742
PT	-672	1,769	1,667	1,528	1,393	1,304	1,270	1,262	1,247	1,212	1,163	1,120	1,096
RO	-860	3,203	3,008	2,842	2,715	2,615	2,532	2,471	2,427	2,407	2,389	2,368	2,343
SI	1	345	353	365	366	351	337	335	343	353	356	352	346
SK	-145	857	842	842	829	797	761	739	735	739	739	728	712
FI	-94	1,231	1,228	1,220	1,217	1,210	1,197	1,186	1,174	1,165	1,157	1,147	1,137
SE	835	2,121	2,230	2,355	2,466	2,549	2,604	2,653	2,713	2,787	2,857	2,913	2,956
UK	1,758	13,432	13,666	14,003	14,215	14,392	14,588	14,752	14,881	14,997	15,083	15,135	15,190
NO	186	1,165	1,162	1,174	1,201	1,232	1,260	1,280	1,292	1,304	1,318	1,335	1,351
EU*	-2,321	91,854	90,945	90,569	90,095	89,551	89,222	89,189	89,441	89,756	89,837	89,686	89,533
EA	-1,471	60,198	59,536	58,949	58,441	58,136	58,126	58,341	58,625	58,788	58,766	58,693	58,727
EU27	-4,079	78,422	77,279	76,566	75,880	75,159	74,634	74,436	74,560	74,759	74,754	74,550	74,343
EU* s	-83	3,280	3,248	3,235	3,218	3,198	3,186	3,185	3,194	3,206	3,208	3,203	3,198

Table III.1.133: Number of students as % of population 5-24

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.7	93.7	93.9	93.8	93.1	93.6	93.9	93.9	94.1	94.2	94.2	94.2	94.4
BG	-1.6	78.5	79.2	78.1	76.7	76.6	76.7	77.3	77.7	77.7	77.3	77.0	77.0
CZ	0.4	79.7	82.0	81.6	79.9	80.6	79.7	79.7	80.7	81.3	80.8	80.3	80.1
DK	0.5	93.5	94.0	94.0	93.9	94.6	93.5	92.9	93.0	93.5	93.9	94.1	94.1
DE	-1.3	86.6	85.4	86.0	86.0	85.6	85.0	85.1	85.3	85.5	85.6	85.5	85.3
EE	-3.2	81.9	81.9	79.8	77.3	78.6	78.4	78.6	79.2	79.4	79.0	78.8	78.8
IE	-3.2	99.0	97.7	96.5	94.7	94.2	96.0	97.7	98.5	97.9	96.7	95.8	95.8
EL	-1.6	85.4	84.7	84.1	83.0	83.5	83.9	84.5	84.5	84.2	83.8	83.5	83.8
ES	-2.0	90.4	89.8	88.3	87.7	89.2	89.5	89.4	89.2	88.8	88.4	88.2	88.4
FR	-1.2	78.3	77.2	76.7	76.6	77.1	77.0	77.3	77.2	77.0	76.8	76.9	77.1
HR	-1.1	74.0	72.7	73.8	72.3	72.5	72.9	72.8	72.7	73.0	73.0	72.8	72.9
IT	-0.4	78.3	78.5	77.7	76.7	77.3	78.3	78.5	78.6	78.3	77.9	77.7	77.9
CY	3.8	73.5	75.6	76.8	75.9	76.5	76.0	75.2	76.1	77.4	77.8	77.7	77.4
LV	-3.3	82.9	81.8	80.1	80.0	81.2	78.7	79.0	80.0	80.5	80.5	80.2	79.6
LT	-0.1	81.7	81.6	83.2	83.0	82.6	81.5	80.7	81.6	83.1	83.2	82.5	81.6
LU	0.3	70.5	69.8	70.6	71.2	71.5	71.2	70.6	70.3	70.4	70.6	70.8	70.8
HU	0.3	75.8	76.2	75.8	75.5	76.5	75.9	75.6	75.7	76.1	76.2	76.2	76.1
MT	2.3	74.4	75.0	78.0	78.3	77.5	76.2	75.3	75.8	76.9	77.5	77.3	76.7
NL	-1.8	90.8	88.4	87.8	88.7	89.2	88.9	88.5	88.3	88.3	88.5	88.8	88.9
AT	0.7	79.6	79.8	80.3	80.5	80.4	79.8	79.6	79.7	80.1	80.3	80.4	80.2
PL	1.1	81.8	83.0	83.3	82.1	82.7	82.3	82.4	83.0	83.4	83.3	83.0	82.9
PT	-0.1	83.4	82.3	81.7	81.6	82.4	83.4	84.1	83.9	83.4	83.0	83.0	83.3
RO	-1.1	75.6	74.8	74.1	74.0	75.1	74.2	74.5	74.7	74.7	74.7	74.6	74.5
SI	-0.8	86.6	86.6	87.2	86.2	85.6	85.9	86.2	86.6	86.7	86.4	86.0	85.9
SK	1.2	72.9	74.5	75.3	74.2	73.7	73.7	73.8	74.4	74.8	74.7	74.3	74.1
FI	0.6	99.3	100.5	100.0	99.0	99.6	100.0	99.6	99.7	99.8	99.8	99.8	99.9
SE	0.1	91.6	94.1	92.3	91.0	91.3	91.4	91.5	91.9	92.0	91.8	91.6	91.7
UK	1.0	85.5	85.8	86.8	85.3	85.5	86.2	86.1	86.1	86.2	86.3	86.3	86.5
NO	1.2	89.9	89.7	90.1	89.6	90.3	90.5	90.2	90.3	90.6	90.8	91.0	91.1
EU*	0.0	83.7	83.5	83.4	82.8	83.3	83.4	83.5	83.7	83.7	83.6	83.5	83.6
EA	-0.8	84.1	83.4	83.1	82.8	83.2	83.3	83.4	83.5	83.4	83.3	83.2	83.3
EU27	-0.3	83.4	83.1	82.8	82.4	82.9	82.9	83.0	83.2	83.2	83.1	83.0	83.1
EU* s	-0.3	83.0	83.1	83.0	82.3	82.7	82.5	82.5	82.8	83.0	82.9	82.8	82.7

Table III.1.134: Education spending as % of GDP - High enrolment rate scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.8	5.8	5.8	6.0	6.1	6.3	6.4	6.5	6.5	6.6	6.6	6.6	6.6
BG	1.2	3.1	3.1	3.4	3.5	3.6	3.7	3.9	4.1	4.3	4.3	4.3	4.2
CZ	1.5	3.2	3.3	3.7	3.9	4.0	4.1	4.2	4.4	4.6	4.8	4.7	4.6
DK	-0.1	7.4	7.1	6.9	7.0	7.2	7.4	7.5	7.4	7.2	7.1	7.2	7.3
DE	1.0	4.2	4.0	4.1	4.4	4.7	4.8	4.9	4.9	4.9	5.0	5.1	5.2
EE	0.8	4.8	4.6	4.8	4.9	5.0	5.1	5.2	5.4	5.6	5.7	5.7	5.6
IE	0.2	3.6	3.6	3.8	3.8	3.6	3.6	3.6	3.8	3.9	4.0	3.9	3.8
EL	-0.3	3.1	3.1	3.0	2.8	2.7	2.7	2.8	2.9	3.0	3.0	2.9	2.8
ES	0.8	3.7	3.8	3.8	3.8	3.9	4.1	4.4	4.6	4.7	4.7	4.5	4.5
FR	0.9	4.8	4.9	5.1	5.3	5.5	5.7	5.9	5.9	5.8	5.8	5.7	5.7
HR	0.3	3.7	3.6	3.7	3.7	3.7	3.8	3.8	3.8	3.9	3.9	3.9	4.0
IT	0.5	3.5	3.5	3.5	3.4	3.5	3.7	3.9	4.0	4.0	4.0	4.0	4.0
CY	-0.4	5.8	5.5	5.2	5.1	5.2	5.1	5.1	4.9	5.0	5.2	5.3	5.4
LV	1.2	4.5	4.3	4.7	5.1	5.3	5.2	5.0	5.2	5.5	5.8	5.9	5.7
LT	0.6	3.9	3.4	3.6	4.0	4.2	4.2	4.0	3.9	4.1	4.5	4.7	4.5
LU	1.6	3.3	3.3	3.4	3.7	4.1	4.4	4.7	4.7	4.8	4.8	4.9	4.9
HU	0.9	3.6	3.5	3.5	3.6	3.8	4.1	4.3	4.3	4.4	4.5	4.5	4.6
MT	1.3	5.4	5.0	5.2	5.5	5.8	5.9	6.1	6.2	6.3	6.6	6.7	6.7
NL	0.1	5.2	5.0	4.9	5.0	5.2	5.4	5.5	5.4	5.3	5.2	5.2	5.3
AT	0.7	4.9	4.7	4.8	5.0	5.2	5.3	5.3	5.3	5.4	5.4	5.5	5.6
PL	1.0	4.3	4.2	4.3	4.5	4.5	4.6	4.7	4.8	5.1	5.3	5.3	5.3
PT	0.1	4.5	4.3	4.1	3.9	3.9	4.1	4.4	4.5	4.6	4.6	4.6	4.6
RO	1.0	2.5	2.4	2.5	2.7	2.8	3.1	3.3	3.4	3.4	3.5	3.5	3.5
SI	1.2	4.0	4.1	4.3	4.5	4.5	4.6	4.8	5.1	5.3	5.3	5.3	5.2
SK	0.9	3.7	3.6	3.9	4.0	4.1	4.2	4.4	4.4	4.6	4.6	4.7	4.6
FI	-0.1	5.9	5.9	6.0	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.8
SE	1.1	5.8	5.9	6.1	6.3	6.5	6.6	6.7	6.7	6.8	6.9	6.9	6.9
UK	0.8	5.2	5.3	5.5	5.6	5.8	5.9	6.0	6.0	5.9	6.0	6.0	6.0
NO	0.5	7.6	7.3	7.3	7.4	7.6	7.8	7.9	7.9	7.9	7.9	8.0	8.1
EU*	0.8	4.5	4.5	4.6	4.7	4.9	5.1	5.2	5.3	5.3	5.3	5.3	5.3
EA	0.8	4.3	4.3	4.3	4.5	4.7	4.8	5.0	5.0	5.1	5.1	5.1	5.1
EU27	0.8	4.4	4.3	4.4	4.6	4.7	4.9	5.1	5.1	5.1	5.2	5.2	5.2
EU* s	0.7	4.4	4.3	4.4	4.5	4.7	4.8	4.9	4.9	5.0	5.1	5.1	5.1

Table III.1.135: Unemployment benefit spending as % of GDP

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	0.0	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
BG	-0.1	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
CZ	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DK	-0.2	0.9	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
DE	0.1	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
EE	0.0	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
IE	-0.2	1.1	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
EL	-0.3	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ES	-0.9	1.3	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.5	0.5	0.5
FR	-0.4	1.6	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2
HR	-0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
IT	-0.3	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
CY	-0.3	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
LV	-0.1	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
LT	0.0	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
LU	-0.1	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
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	0.1
MT	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NL	-0.3	1.3	1.1	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
AT	-0.2	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
PL	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PT	-0.3	0.9	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
RO	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SI	-0.1	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
SK	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FI	-0.4	2.2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
SE	-0.1	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
UK	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NO	-0.2	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
EU*	-0.2	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
EA	-0.2	1.1	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
EU27	-0.2	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
EU* s	-0.2	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Table III.1.136: Total cost of ageing as % of GDP - AWG reference scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	5.0	27.6	28.0	29.0	29.7	30.4	31.1	31.4	31.7	31.9	32.2	32.4	32.6
BG	2.3	18.5	17.9	18.1	18.4	18.9	19.4	20.2	21.1	21.7	21.7	21.3	20.7
CZ	6.2	18.2	18.4	19.1	19.7	20.3	21.3	22.4	23.6	24.7	25.2	25.0	24.4
DK	0.3	27.6	26.7	26.3	26.4	26.7	26.8	26.8	26.8	26.8	26.8	27.3	28.0
DE	4.2	23.5	23.8	24.6	25.6	26.3	26.7	27.0	27.3	27.5	27.7	27.7	27.7
EE	-0.8	19.3	18.6	18.3	18.3	18.4	18.5	18.6	18.8	19.2	19.2	18.8	18.5
IE	4.1	15.2	15.0	16.0	16.6	17.2	17.8	18.6	19.4	19.9	20.0	19.6	19.3
EL	-6.4	25.8	21.9	20.5	20.4	20.6	21.3	21.2	21.4	20.9	20.6	20.3	19.5
ES	-0.2	24.0	24.1	24.4	24.6	25.4	26.5	27.3	27.1	26.2	24.9	24.2	23.8
FR	-3.0	31.0	30.9	31.2	31.5	31.6	31.5	31.0	30.3	29.6	29.0	28.4	28.0
HR	-3.4	20.7	20.4	20.6	20.1	19.2	18.4	17.9	17.6	17.4	17.4	17.3	17.2
IT	-0.4	28.0	27.8	28.5	29.5	30.7	31.6	31.7	31.0	29.8	29.1	28.2	27.6
CY	1.0	19.5	19.0	18.8	18.9	18.9	19.2	18.9	18.7	19.4	19.7	20.1	20.5
LV	-1.4	16.4	15.7	15.6	16.1	16.4	16.2	15.8	15.9	16.3	16.2	15.6	15.0
LT	-0.4	16.0	15.7	15.9	16.7	17.1	17.1	16.8	16.6	16.7	16.7	16.3	15.6
LU	12.9	18.1	18.0	18.3	19.4	20.5	21.7	22.8	24.1	26.0	28.1	29.8	30.9
HU	3.0	19.0	18.2	18.0	17.8	18.3	19.4	20.6	21.0	21.4	21.9	22.0	22.0
MT	6.8	20.2	19.8	19.9	20.3	20.8	21.4	22.0	23.0	24.2	25.6	26.6	27.0
NL	3.0	23.6	23.0	23.4	24.3	25.6	26.6	26.8	26.8	26.6	26.5	26.4	26.6
AT	3.6	28.5	28.3	28.5	29.4	30.4	30.6	30.8	31.1	31.6	31.9	32.0	32.1
PL	1.0	20.4	20.1	20.3	20.5	20.5	20.7	21.0	21.5	22.0	22.2	21.9	21.4
PT	0.1	25.4	25.3	25.6	26.2	26.8	27.3	27.6	27.3	26.7	26.1	25.6	25.5
RO	2.2	15.1	14.4	14.3	14.2	15.0	15.8	16.6	17.2	17.7	17.6	17.6	17.3
SI	6.3	21.9	22.1	22.6	23.9	25.3	26.6	27.9	28.8	29.1	28.8	28.4	28.2
SK	3.0	18.9	18.6	18.5	18.8	18.9	19.3	20.0	20.7	21.5	22.2	22.3	21.9
FI	2.6	29.8	30.0	31.2	32.0	32.2	31.8	31.3	31.1	31.2	31.5	32.0	32.4
SE	1.6	24.4	24.0	24.2	24.4	24.6	24.5	24.4	24.6	25.2	25.7	25.8	26.0
UK	4.3	22.5	22.6	23.2	23.5	24.2	24.8	24.7	24.9	25.4	25.9	26.4	26.8
NO	6.3	30.2	30.2	31.0	31.8	32.5	33.1	33.5	34.0	34.7	35.4	36.0	36.5
EU*	1.7	25.0	24.8	25.2	25.7	26.3	26.8	26.9	26.9	26.9	26.8	26.7	26.6
EA	1.1	26.0	25.9	26.4	27.0	27.7	28.2	28.3	28.2	28.0	27.6	27.3	27.1
EU27	1.1	25.4	25.2	25.6	26.1	26.7	27.2	27.4	27.3	27.2	27.0	26.7	26.6
EU* s	2.1	22.1	21.7	22.0	22.4	22.9	23.4	23.7	23.9	24.2	24.3	24.3	24.2

Table III.1.137: Total cost of ageing as % of GDP - AWG risk scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.3	27.6	28.1	29.3	30.1	31.0	31.8	32.4	32.9	33.4	33.8	34.3	34.9
BG	4.1	18.5	18.1	18.6	19.1	19.7	20.4	21.3	22.3	23.1	23.3	23.0	22.6
CZ	7.8	18.2	18.5	19.4	20.1	20.9	22.0	23.3	24.6	25.9	26.6	26.5	26.1
DK	3.8	27.6	26.9	26.8	27.1	27.7	28.1	28.4	28.8	29.1	29.5	30.3	31.4
DE	6.4	23.5	24.0	25.0	26.2	27.1	27.7	28.3	28.8	29.3	29.6	29.7	30.0
EE	2.4	19.3	18.8	18.7	19.0	19.3	19.7	20.1	20.6	21.2	21.6	21.7	21.8
IE	6.2	15.2	15.2	16.3	17.1	17.9	18.7	19.7	20.7	21.5	21.7	21.6	21.4
EL	-0.8	25.8	22.1	20.8	20.8	21.2	22.1	22.3	22.9	22.9	23.2	24.0	25.0
ES	2.6	24.0	24.3	24.7	25.0	26.0	27.4	28.5	28.6	28.0	27.1	26.7	26.6
FR	0.0	31.0	31.0	31.6	32.0	32.4	32.7	32.4	32.0	31.7	31.3	31.0	31.0
HR	-1.8	20.7	20.5	20.8	20.4	19.6	19.0	18.7	18.5	18.5	18.5	18.7	18.8
IT	1.0	28.0	27.9	28.7	29.7	31.1	32.0	32.4	31.8	30.8	30.2	29.5	29.1
CY	3.9	19.5	19.1	19.0	19.1	19.7	19.6	19.5	19.6	20.5	21.3	22.2	23.4
LV	2.2	16.4	15.9	16.2	16.9	17.5	17.5	17.4	17.8	18.5	18.8	18.7	18.6
LT	3.1	16.0	15.9	16.4	17.3	18.0	18.3	18.4	18.6	19.1	19.5	19.4	19.0
LU	15.7	18.1	18.1	18.6	19.8	21.1	22.5	23.9	25.5	27.7	30.2	32.2	33.8
HU	7.6	19.0	18.4	18.5	18.6	19.4	20.8	22.3	23.2	24.0	25.1	25.9	26.6
MT	10.3	20.2	20.0	20.5	21.1	22.0	22.8	23.7	24.9	26.5	28.2	29.6	30.4
NL	5.9	23.6	23.2	23.7	24.8	26.2	27.5	28.0	28.2	28.4	28.6	28.9	29.5
AT	5.8	28.5	28.4	28.8	29.8	31.0	31.5	31.8	32.4	33.2	33.7	34.0	34.3
PL	2.7	20.4	20.2	20.7	20.9	21.1	21.5	22.0	22.6	23.2	23.5	23.4	23.1
PT	2.8	25.4	25.5	25.9	26.6	27.5	28.2	28.7	28.6	28.3	28.0	27.9	28.2
RO	7.4	15.1	14.7	14.8	15.0	16.1	17.1	18.2	19.1	20.1	20.8	21.6	22.5
SI	9.9	21.9	22.3	23.1	24.7	26.3	28.0	29.6	30.8	31.5	31.6	31.6	31.8
SK	5.8	18.9	18.8	19.0	19.5	20.0	20.6	21.6	22.5	23.5	24.5	24.8	24.7
FI	4.0	29.8	30.1	31.4	32.3	32.6	32.4	32.0	32.0	32.2	32.7	33.3	33.8
SE	3.1	24.4	24.1	24.4	24.8	25.1	25.2	25.2	25.6	26.2	26.9	27.1	27.6
UK	5.8	22.5	22.7	23.4	23.9	24.7	25.4	25.5	25.9	26.5	27.2	27.7	28.3
NO	9.0	30.2	30.4	31.3	32.3	33.3	34.1	34.7	35.4	36.4	37.4	38.3	39.2
EU*	4.0	25.0	24.9	25.5	26.2	27.0	27.6	28.0	28.3	28.5	28.6	28.7	28.9
EA	3.6	26.0	26.0	26.7	27.5	28.4	29.1	29.5	29.7	29.7	29.6	29.5	29.6
EU27	3.6	25.4	25.3	25.9	26.6	27.4	28.1	28.5	28.8	28.9	28.9	28.9	29.0
EU* s	4.8	22.1	21.9	22.3	22.9	23.7	24.3	24.8	25.4	25.9	26.3	26.6	26.9

Table III.1.138: Total cost of ageing as % of GDP - TFP risk scenario

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.1	27.6	28.0	29.1	29.8	30.6	31.4	31.9	32.3	32.6	33.0	33.3	33.7
BG	2.5	18.5	17.9	18.2	18.6	19.1	19.7	20.4	21.3	21.9	22.0	21.5	21.0
CZ	6.4	18.2	18.4	19.2	19.8	20.5	21.5	22.6	23.8	24.9	25.4	25.2	24.6
DK	0.2	27.6	26.7	26.3	26.4	26.6	26.8	26.7	26.7	26.7	26.7	27.2	27.8
DE	4.9	23.5	23.8	24.7	25.8	26.5	27.0	27.4	27.8	28.1	28.3	28.3	28.5
EE	-0.6	19.3	18.7	18.4	18.4	18.5	18.6	18.8	19.0	19.3	19.4	19.0	18.7
IE	4.1	15.2	15.0	16.0	16.5	17.1	17.7	18.5	19.4	19.9	20.0	19.6	19.3
EL	-5.5	25.8	22.0	20.9	20.8	21.3	22.1	22.1	22.3	21.9	21.5	21.2	20.4
ES	-0.2	24.0	24.1	24.5	24.7	25.6	26.8	27.8	27.7	26.8	25.3	24.3	23.8
FR	-2.1	31.0	30.9	31.3	31.5	31.8	31.9	31.5	30.9	30.3	29.7	29.3	28.9
HR	-3.2	20.7	20.4	20.6	20.1	19.2	18.5	18.0	17.7	17.5	17.5	17.5	17.4
IT	0.2	28.0	27.8	28.6	29.6	30.9	31.9	32.2	31.6	30.5	29.7	28.8	28.2
CY	1.3	19.5	19.1	18.8	18.9	19.4	19.3	19.0	18.9	19.6	20.0	20.4	20.8
LV	-1.3	16.4	15.7	15.7	16.2	16.6	16.4	16.0	16.1	16.4	16.3	15.7	15.1
LT	-0.4	16.0	15.7	15.9	16.7	17.1	17.1	16.7	16.5	16.6	16.6	16.2	15.6
LU	13.4	18.1	18.0	18.4	19.6	20.8	22.0	23.3	24.6	26.5	28.6	30.3	31.5
HU	3.5	19.0	18.3	18.3	18.3	19.0	20.2	21.3	21.6	22.0	22.4	22.5	22.5
MT	7.2	20.2	19.8	19.9	20.3	20.9	21.5	22.2	23.2	24.6	26.0	27.0	27.4
NL	3.0	23.6	23.0	23.4	24.3	25.6	26.6	26.8	26.8	26.6	26.5	26.4	26.6
AT	3.8	28.5	28.4	28.7	29.8	31.0	31.4	31.6	32.0	32.4	32.6	32.5	32.3
PL	1.4	20.4	20.2	20.7	21.0	21.2	21.4	21.8	22.2	22.6	22.7	22.3	21.8
PT	1.1	25.4	25.4	25.8	26.3	27.2	27.8	28.2	28.0	27.6	27.0	26.5	26.5
RO	2.6	15.1	14.4	14.3	14.4	15.3	16.2	17.0	17.5	18.0	18.0	18.0	17.7
SI	6.6	21.9	22.1	22.8	24.2	25.6	27.0	28.3	29.1	29.4	29.1	28.7	28.5
SK	3.4	18.9	18.7	18.8	19.2	19.4	19.8	20.5	21.1	22.0	22.7	22.8	22.3
FI	3.1	29.8	30.0	31.5	32.5	32.8	32.4	31.9	31.7	31.7	32.0	32.5	32.9
SE	1.6	24.4	24.0	24.2	24.4	24.6	24.6	24.4	24.7	25.2	25.7	25.8	26.0
UK	4.6	22.5	22.6	23.3	23.7	24.4	24.9	24.9	25.1	25.6	26.2	26.7	27.1
NO	6.2	30.2	30.2	31.0	31.7	32.5	33.0	33.4	33.9	34.6	35.3	35.9	36.5
EU*	2.1	25.0	24.8	25.3	25.9	26.6	27.1	27.3	27.4	27.4	27.3	27.1	27.1
EA	1.7	26.0	25.9	26.5	27.2	27.9	28.5	28.7	28.7	28.5	28.2	27.9	27.7
EU27	1.7	25.4	25.2	25.7	26.3	27.0	27.5	27.8	27.8	27.7	27.5	27.2	27.1
EU* s	2.4	22.1	21.8	22.1	22.6	23.2	23.7	24.0	24.3	24.5	24.7	24.6	24.5

Table III.1.139: Total cost of ageing as % of GDP - High life expectancy (+2 years)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.2	27.6	28.0	29.1	29.7	30.6	31.3	31.8	32.2	32.7	33.1	33.4	33.8
BG	3.0	18.5	17.9	18.2	18.5	19.1	19.6	20.5	21.4	22.1	22.3	21.9	21.5
CZ	7.3	18.2	18.4	19.2	19.8	20.4	21.5	22.7	24.0	25.3	26.0	25.9	25.5
DK	0.7	27.6	26.7	26.4	26.5	26.8	26.9	26.9	26.9	27.0	27.2	27.6	28.4
DE	5.6	23.5	23.8	24.7	25.8	26.6	27.2	27.7	28.1	28.5	28.8	28.9	29.1
EE	-0.4	19.3	18.6	18.3	18.4	18.5	18.7	18.8	19.1	19.5	19.5	19.3	19.0
IE	4.8	15.2	15.0	16.0	16.6	17.2	18.0	18.8	19.7	20.3	20.5	20.2	20.0
EL	-6.3	25.8	21.9	20.5	20.1	20.6	20.9	20.9	21.2	20.9	20.4	20.2	19.5
ES	0.2	24.0	24.1	24.5	24.7	25.5	26.7	27.6	27.4	26.5	25.3	24.5	24.2
FR	-2.2	31.0	30.9	31.3	31.6	31.8	31.8	31.3	30.7	30.1	29.5	29.1	28.8
HR	-2.9	20.7	20.4	20.6	20.2	19.4	18.7	18.2	18.0	17.8	17.8	17.8	17.8
IT	-0.1	28.0	27.8	28.5	29.4	30.4	31.3	31.5	31.1	30.1	29.3	28.6	28.0
CY	0.7	19.5	19.0	18.6	19.0	19.2	19.2	18.5	18.6	19.0	19.5	20.2	20.3
LV	-1.3	16.4	15.7	15.6	16.0	16.4	16.2	15.8	16.0	16.4	16.3	15.7	15.1
LT	0.2	16.0	15.7	16.0	16.7	17.2	17.2	17.0	16.9	17.1	17.2	16.8	16.2
LU	13.8	18.1	18.0	18.4	19.4	20.6	21.8	23.1	24.5	26.5	28.8	30.6	31.9
HU	3.7	19.0	18.2	18.1	17.9	18.5	19.6	20.9	21.4	21.8	22.4	22.6	22.7
MT	7.6	20.2	19.7	19.8	20.2	20.8	21.5	22.2	23.2	24.6	26.1	27.3	27.8
NL	3.4	23.6	23.0	23.4	24.2	25.6	26.7	27.1	27.1	27.0	27.0	26.8	26.9
AT	4.7	28.5	28.3	28.6	29.5	30.6	30.9	31.2	31.7	32.4	32.8	33.0	33.2
PL	1.5	20.4	20.1	20.4	20.5	20.5	20.8	21.2	21.7	22.3	22.5	22.2	21.8
PT	0.9	25.4	25.5	26.2	27.0	28.0	28.8	28.9	28.6	27.9	26.9	26.3	26.3
RO	2.7	15.1	14.4	14.3	14.3	15.1	15.9	16.8	17.4	18.0	18.0	18.0	17.8
SI	7.6	21.9	22.1	22.7	24.1	25.5	26.9	28.3	29.3	29.7	29.6	29.4	29.5
SK	3.0	18.9	18.6	18.5	18.7	18.8	19.2	19.8	20.5	21.2	21.9	22.2	21.9
FI	3.0	29.8	30.0	31.3	32.1	32.3	31.9	31.4	31.1	31.3	31.7	32.3	32.8
SE	2.3	24.4	24.0	24.2	24.5	24.7	24.7	24.7	25.0	25.6	26.2	26.4	26.7
UK	5.2	22.5	22.6	23.2	23.6	24.4	25.0	25.1	25.4	26.0	26.6	27.2	27.7
NO	7.2	30.2	30.2	31.0	31.8	32.7	33.4	33.9	34.5	35.2	36.1	36.8	37.4
EU*	2.4	25.0	24.8	25.3	25.8	26.5	27.0	27.2	27.4	27.4	27.4	27.4	27.4
EA	1.9	26.0	25.9	26.4	27.1	27.9	28.4	28.7	28.7	28.6	28.3	28.1	27.9
EU27	1.9	25.4	25.2	25.7	26.2	26.9	27.4	27.7	27.8	27.8	27.6	27.4	27.3
EU* s	2.7	22.1	21.7	22.0	22.5	23.0	23.5	23.9	24.2	24.6	24.8	24.8	24.8

Table III.1.140: Total cost of ageing as % of GDP - Lower fertility (-20%)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.3	27.6	28.1	28.9	29.3	29.9	30.7	31.5	32.2	32.8	33.4	34.1	34.9
BG	4.3	18.5	17.9	18.0	18.1	18.5	19.1	20.2	21.4	22.3	22.8	22.7	22.8
CZ	8.4	18.2	18.4	19.1	19.5	19.9	21.0	22.5	24.1	25.6	26.5	26.7	26.6
DK	1.7	27.6	26.7	26.2	26.1	26.3	26.4	26.6	26.9	27.1	27.4	28.2	29.4
DE	6.4	23.5	23.9	24.7	25.5	26.3	26.8	27.5	28.1	28.6	29.1	29.4	29.9
EE	-0.8	19.3	18.6	18.2	18.0	17.9	18.0	18.3	18.5	18.9	19.0	18.8	18.6
IE	5.5	15.2	15.0	15.9	16.4	16.9	17.7	18.8	19.8	20.5	20.8	20.7	20.7
EL	-5.0	25.8	21.9	20.5	20.2	20.4	21.2	21.4	21.8	21.6	21.5	21.4	20.9
ES	0.0	24.0	24.1	24.4	24.4	25.2	26.4	27.6	27.8	27.1	25.8	24.6	24.0
FR	-0.8	31.0	31.0	31.2	31.2	31.3	31.5	31.3	31.1	30.7	30.4	30.2	30.2
HR	-2.2	20.7	20.4	20.3	19.8	18.9	18.3	18.0	17.9	17.9	18.1	18.3	18.5
IT	1.0	28.0	27.8	28.5	29.3	30.5	31.5	32.0	31.5	30.6	30.0	29.3	29.0
CY	1.7	19.5	19.0	18.6	18.3	18.6	18.6	18.6	18.6	19.5	19.9	20.5	21.3
LV	-1.5	16.4	15.7	15.4	15.6	15.6	15.5	15.4	15.6	16.0	15.8	15.3	14.9
LT	-0.3	16.0	15.7	15.8	16.4	16.6	16.6	16.5	16.5	16.6	16.6	16.2	15.7
LU	15.9	18.1	18.1	18.3	19.2	20.3	21.6	23.1	24.8	27.1	29.9	32.1	34.0
HU	4.9	19.0	18.2	17.9	17.6	18.0	19.1	20.6	21.4	22.1	22.9	23.5	23.9
MT	8.9	20.2	19.7	19.7	19.8	20.3	21.0	22.0	23.2	24.8	26.6	28.1	29.1
NL	4.8	23.6	23.1	23.3	24.1	25.3	26.4	26.9	27.2	27.4	27.5	27.8	28.3
AT	5.4	28.5	28.3	28.4	29.1	30.1	30.6	31.1	31.9	32.8	33.3	33.5	33.9
PL	2.5	20.4	20.1	20.2	20.1	20.0	20.3	21.0	21.8	22.5	22.9	22.9	22.9
PT	2.2	25.4	25.4	25.6	25.9	26.6	27.2	27.8	27.8	27.6	27.3	27.2	27.6
RO	4.2	15.1	14.4	14.2	14.0	14.8	15.6	16.7	17.6	18.5	18.8	19.1	19.3
SI	9.0	21.9	22.1	22.5	23.7	24.9	26.4	28.1	29.5	30.2	30.3	30.4	30.9
SK	4.7	18.9	18.6	18.5	18.5	18.6	19.1	20.0	21.0	22.1	23.2	23.7	23.6
FI	4.9	29.8	30.0	31.1	31.7	31.9	31.6	31.5	31.7	32.1	32.8	33.7	34.7
SE	3.1	24.4	24.0	24.1	24.1	24.2	24.3	24.4	24.8	25.7	26.4	26.9	27.6
UK	6.2	22.5	22.5	22.9	23.1	23.7	24.5	24.7	25.2	26.0	26.9	27.8	28.8
NO	8.7	30.2	30.3	30.9	31.4	32.1	32.8	33.5	34.4	35.5	36.7	37.8	39.0
EU*	3.5	25.0	24.8	25.2	25.5	26.0	26.7	27.1	27.5	27.7	27.9	28.1	28.4
EA	2.9	26.0	25.9	26.4	26.8	27.5	28.2	28.6	28.9	28.9	28.9	28.8	28.9
EU27	2.9	25.4	25.2	25.6	25.9	26.5	27.1	27.6	28.0	28.1	28.2	28.1	28.3
EU* s	3.7	22.1	21.7	21.9	22.1	22.5	23.1	23.7	24.3	24.8	25.2	25.5	25.8

Table III.1.141: Total cost of ageing as % of GDP - Higher TFP growth (+0.4 p.p.)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.3	27.6	28.0	29.0	29.6	30.3	30.7	30.9	30.8	30.9	30.9	30.9	30.9
BG	1.8	18.5	17.9	18.1	18.4	18.8	19.3	19.9	20.7	21.3	21.3	20.8	20.2
CZ	5.5	18.2	18.4	19.1	19.7	20.2	21.1	22.1	23.2	24.2	24.6	24.3	23.8
DK	0.6	27.6	26.7	26.3	26.4	26.7	26.9	26.8	26.9	26.9	27.0	27.5	28.2
DE	5.1	23.5	24.0	24.8	25.9	26.7	27.1	27.5	27.9	28.2	28.4	28.5	28.6
EE	-1.1	19.3	18.6	18.3	18.3	18.4	18.5	18.5	18.7	19.0	19.0	18.6	18.2
IE	4.6	15.9	15.7	16.7	17.4	18.0	18.7	19.6	20.5	21.0	21.1	20.8	20.5
EL	-7.5	25.8	21.9	20.5	20.3	20.5	21.0	20.7	20.7	20.0	19.6	19.2	18.4
ES	-0.6	24.0	24.1	24.5	24.6	25.3	26.3	26.9	26.5	25.5	24.6	24.0	23.4
FR	-4.2	31.0	31.0	31.4	31.6	31.5	31.2	30.4	29.4	28.5	27.8	27.1	26.8
HR	-3.8	20.7	20.4	20.5	20.0	19.1	18.3	17.8	17.4	17.2	17.0	17.0	16.8
IT	-1.8	28.0	27.7	28.4	29.3	30.3	30.9	30.7	29.7	28.3	27.5	26.6	26.1
CY	0.5	19.5	19.0	18.8	18.8	19.3	19.0	18.6	18.3	19.0	19.3	19.6	20.1
LV	-1.6	16.4	15.7	15.6	16.1	16.3	16.0	15.6	15.7	16.1	16.0	15.4	14.8
LT	-0.4	16.0	15.7	15.9	16.7	17.1	17.1	16.8	16.6	16.7	16.7	16.3	15.6
LU	12.0	18.1	18.0	18.4	19.4	20.5	21.5	22.6	23.7	25.5	27.4	28.9	30.0
HU	2.1	19.0	18.2	18.0	17.8	18.2	19.2	20.2	20.5	20.7	21.1	21.2	21.1
MT	6.1	20.2	19.8	20.0	20.3	20.8	21.3	21.8	22.6	23.8	25.1	26.0	26.3
NL	3.0	23.6	23.0	23.4	24.4	25.6	26.7	26.9	26.8	26.7	26.5	26.4	26.6
AT	3.3	28.5	28.4	28.6	29.5	30.4	30.6	30.6	30.8	31.2	31.5	31.6	31.9
PL	-0.1	20.4	19.9	20.2	20.3	20.2	20.2	20.4	20.8	21.1	21.2	20.8	20.3
PT	-1.5	25.4	25.3	25.6	26.1	26.6	26.9	26.8	26.2	25.4	24.6	24.0	23.9
RO	1.4	15.1	14.4	14.2	14.2	14.8	15.4	16.1	16.6	17.0	16.9	16.8	16.5
SI	5.9	21.9	22.1	22.7	24.0	25.3	26.5	27.7	28.5	28.7	28.4	28.0	27.8
SK	2.2	18.9	18.6	18.6	18.7	18.8	19.1	19.7	20.2	21.0	21.6	21.6	21.1
FI	1.6	29.8	30.0	31.2	32.0	32.1	31.5	30.8	30.5	30.5	30.7	31.1	31.4
SE	1.7	24.4	23.9	24.2	24.4	24.6	24.5	24.4	24.7	25.2	25.8	25.9	26.1
UK	3.9	22.5	22.6	23.2	23.5	24.2	24.7	24.6	24.8	25.2	25.7	26.1	26.5
NO	6.4	30.2	30.2	31.0	31.8	32.6	33.1	33.5	34.0	34.7	35.5	36.1	36.6
EU*	1.3	25.0	24.8	25.3	25.8	26.3	26.7	26.7	26.6	26.5	26.4	26.3	26.2
EA	0.7	26.0	25.9	26.5	27.1	27.7	28.1	28.1	27.9	27.6	27.2	26.9	26.7
EU27	0.7	25.4	25.2	25.7	26.2	26.7	27.1	27.1	27.0	26.8	26.6	26.3	26.2
EU* s	1.5	22.1	21.8	22.0	22.4	22.9	23.2	23.4	23.6	23.7	23.8	23.8	23.6

Table III.1.142: Total cost of ageing as % of GDP - Lower TFP growth (-0.4 p.p.)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	7.1	27.6	28.0	29.0	29.7	30.6	31.4	32.0	32.6	33.1	33.7	34.1	34.6
BG	2.9	18.5	17.9	18.1	18.5	19.0	19.6	20.5	21.5	22.2	22.3	21.9	21.3
CZ	6.7	18.2	18.4	19.1	19.7	20.3	21.4	22.6	23.9	25.1	25.7	25.5	24.9
DK	0.2	27.6	26.7	26.3	26.4	26.7	26.8	26.8	26.7	26.7	26.7	27.2	27.8
DE	5.0	23.5	23.8	24.7	25.8	26.6	27.0	27.4	27.8	28.1	28.3	28.4	28.5
EE	-0.6	19.3	18.6	18.3	18.3	18.4	18.6	18.7	19.0	19.4	19.4	19.1	18.8
IE	4.2	15.2	15.0	16.0	16.6	17.2	17.9	18.7	19.6	20.1	20.1	19.8	19.4
EL	-5.0	25.8	21.9	20.5	20.4	20.8	21.7	21.9	22.3	22.1	21.8	21.6	20.8
ES	-0.2	24.0	24.1	24.5	24.7	25.6	26.9	28.1	28.1	27.2	25.8	24.4	23.8
FR	-1.1	31.0	30.9	31.3	31.6	31.9	32.0	31.7	31.4	30.9	30.5	30.1	29.9
HR	-2.9	20.7	20.4	20.6	20.1	19.2	18.5	18.1	17.8	17.7	17.7	17.7	17.7
IT	0.8	28.0	27.8	28.5	29.5	31.0	32.1	32.6	32.2	31.1	30.4	29.5	28.9
CY	1.6	19.5	19.0	18.8	18.9	19.4	19.4	19.2	19.1	19.9	20.3	20.7	21.1
LV	-1.2	16.4	15.7	15.6	16.1	16.4	16.2	15.9	16.1	16.5	16.4	15.8	15.2
LT	-0.3	16.0	15.7	15.9	16.7	17.1	17.1	16.8	16.7	16.7	16.8	16.3	15.7
LU	14.3	18.1	18.0	18.4	19.5	20.7	22.0	23.4	24.9	26.9	29.3	31.1	32.4
HU	4.0	19.0	18.2	18.0	17.9	18.4	19.7	21.1	21.7	22.3	22.8	23.0	23.0
MT	7.6	20.2	19.8	19.9	20.3	20.9	21.5	22.3	23.3	24.7	26.2	27.3	27.8
NL	3.0	23.6	23.0	23.4	24.3	25.6	26.6	26.8	26.8	26.6	26.5	26.4	26.6
AT	4.0	28.5	28.3	28.5	29.4	30.4	30.8	31.1	31.6	32.2	32.5	32.5	32.5
PL	1.9	20.4	20.1	20.3	20.5	20.6	20.9	21.5	22.2	22.8	23.0	22.7	22.2
PT	2.2	25.4	25.3	25.6	26.2	27.1	27.9	28.5	28.6	28.3	27.9	27.5	27.6
RO	3.1	15.1	14.4	14.2	14.2	15.0	15.8	16.8	17.6	18.3	18.4	18.4	18.2
SI	7.6	21.9	22.6	23.2	24.6	26.0	27.5	28.9	29.9	30.2	30.0	29.6	29.4
SK	3.8	18.9	18.6	18.5	18.8	18.9	19.4	20.3	21.1	22.1	22.9	23.1	22.7
FI	3.7	29.8	30.0	31.2	32.1	32.3	32.1	31.8	31.8	32.0	32.4	32.9	33.4
SE	1.6	24.4	24.0	24.2	24.4	24.6	24.6	24.5	24.7	25.2	25.7	25.8	26.0
UK	4.7	22.5	22.6	23.2	23.6	24.3	24.8	24.9	25.1	25.6	26.2	26.7	27.3
NO	6.2	30.2	30.2	31.0	31.8	32.5	33.1	33.5	33.9	34.6	35.3	35.9	36.5
EU*	2.5	25.0	24.8	25.3	25.8	26.5	27.0	27.3	27.5	27.6	27.6	27.5	27.4
EA	2.1	26.0	25.9	26.4	27.1	27.9	28.5	28.9	29.0	28.8	28.6	28.3	28.1
EU27	2.1	25.4	25.2	25.7	26.2	26.9	27.5	27.9	28.0	28.0	27.9	27.6	27.5
EU* s	2.8	22.1	21.7	22.0	22.4	23.0	23.6	24.0	24.4	24.8	25.0	25.0	24.9

Table III.1.143: Total cost of ageing as % of GDP - Higher employment rate (+2 p.p)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.9	27.6	27.8	28.4	28.6	29.4	30.0	30.3	30.6	30.8	31.0	31.2	31.5
BG	2.0	18.5	17.8	17.8	18.0	18.5	19.0	19.7	20.6	21.3	21.3	20.9	20.4
CZ	5.6	18.2	18.3	18.9	19.3	19.9	20.8	21.9	23.1	24.2	24.7	24.4	23.9
DK	-0.4	27.6	26.5	25.9	25.7	26.0	26.1	26.1	26.1	26.1	26.1	26.6	27.3
DE	4.3	23.5	23.7	24.2	25.0	25.8	26.3	26.7	27.0	27.4	27.6	27.7	27.8
EE	-1.0	19.3	18.6	18.1	18.1	18.1	18.3	18.4	18.6	19.0	18.9	18.6	18.3
IE	3.3	15.2	14.9	15.6	15.9	16.5	17.2	17.9	18.7	19.2	19.2	18.9	18.5
EL	-6.5	25.8	21.8	20.3	20.0	20.2	20.9	20.9	21.0	20.6	20.3	20.1	19.4
ES	-0.5	24.0	24.0	24.1	24.0	24.9	26.0	26.9	26.7	25.7	24.5	23.9	23.5
FR	-3.7	31.0	30.7	30.6	30.5	30.6	30.6	30.0	29.3	28.7	28.0	27.6	27.3
HR	-3.8	20.7	20.3	20.2	19.6	18.7	18.0	17.5	17.2	17.1	17.0	17.0	16.9
IT	-0.7	28.0	27.7	28.1	28.8	30.1	31.0	31.2	30.5	29.4	28.6	27.8	27.4
CY	0.7	19.5	18.9	18.5	18.4	18.9	18.7	18.4	18.2	18.9	19.3	19.7	20.3
LV	-1.7	16.4	15.7	15.5	15.8	16.1	15.9	15.6	15.7	16.0	15.9	15.3	14.7
LT	-0.5	16.0	15.7	15.8	16.5	17.0	16.9	16.6	16.5	16.5	16.5	16.1	15.5
LU	12.6	18.1	17.9	18.1	18.9	20.0	21.2	22.3	23.6	25.5	27.8	29.5	30.7
HU	2.6	19.0	18.1	17.8	17.5	18.0	19.1	20.2	20.6	21.0	21.5	21.6	21.6
MT	6.3	20.2	19.6	19.6	19.9	20.4	20.9	21.6	22.5	23.7	25.1	26.1	26.5
NL	2.1	23.6	22.9	22.9	23.5	24.7	25.7	25.9	25.9	25.8	25.6	25.6	25.7
AT	2.7	28.5	28.1	27.9	28.3	29.1	29.2	29.3	29.7	30.2	30.6	30.8	31.2
PL	1.0	20.4	20.0	20.3	20.3	20.3	20.6	20.9	21.5	21.9	22.1	21.8	21.3
PT	-0.4	25.4	25.2	25.2	25.6	26.2	26.7	27.0	26.7	26.1	25.5	25.0	25.0
RO	2.0	15.1	14.4	14.1	14.0	14.7	15.5	16.3	16.9	17.4	17.4	17.3	17.1
SI	5.8	21.9	22.0	22.3	23.5	24.8	26.1	27.4	28.3	28.5	28.3	27.9	27.7
SK	2.7	18.9	18.5	18.3	18.5	18.7	19.1	19.8	20.5	21.3	22.0	22.1	21.7
FI	1.6	29.8	29.8	30.5	30.9	31.0	30.6	30.2	30.0	30.1	30.5	31.0	31.4
SE	1.1	24.4	23.9	23.9	23.9	24.1	24.1	23.9	24.2	24.7	25.2	25.3	25.5
UK	3.8	22.5	22.5	22.9	23.1	23.8	24.3	24.3	24.5	25.0	25.5	25.9	26.3
NO	5.5	30.2	30.1	30.5	31.0	31.8	32.4	32.8	33.2	33.9	34.6	35.2	35.8
EU*	1.2	25.0	24.7	24.8	25.1	25.7	26.2	26.3	26.4	26.3	26.3	26.2	26.2
EA	0.7	26.0	25.7	25.9	26.3	27.0	27.5	27.7	27.6	27.4	27.1	26.8	26.7
EU27	0.7	25.4	25.1	25.2	25.5	26.1	26.5	26.7	26.8	26.6	26.5	26.3	26.1
EU* s	1.6	22.1	21.6	21.6	21.9	22.4	22.8	23.1	23.4	23.6	23.8	23.8	23.7

Table III.1.144: Total cost of ageing as % of GDP - Lower employment rate (+2 p.p)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.1	27.6	28.2	29.7	30.8	31.5	32.2	32.6	32.8	33.1	33.3	33.5	33.7
BG	2.6	18.5	18.0	18.5	19.0	19.4	19.9	20.6	21.5	22.1	22.1	21.6	21.1
CZ	6.8	18.2	18.5	19.4	20.1	20.8	21.8	22.9	24.2	25.3	25.8	25.6	25.0
DK	1.1	27.6	26.8	26.8	27.2	27.5	27.6	27.5	27.6	27.5	27.6	28.0	28.7
DE	5.6	23.5	24.0	25.2	26.5	27.3	27.7	28.1	28.5	28.8	29.0	29.0	29.1
EE	-0.6	19.3	18.7	18.5	18.6	18.7	18.8	18.9	19.1	19.4	19.4	19.1	18.7
IE	4.8	15.2	15.2	16.4	17.3	17.9	18.6	19.4	20.2	20.7	20.8	20.4	20.0
EL	-6.3	25.8	22.0	20.8	20.8	21.0	21.7	21.6	21.8	21.3	20.9	20.6	19.6
ES	0.1	24.0	24.3	24.9	25.3	26.1	27.3	28.1	27.9	26.9	25.5	24.5	24.1
FR	-2.1	31.0	31.1	31.9	32.5	32.6	32.5	31.9	31.2	30.4	29.8	29.2	28.9
HR	-3.0	20.7	20.5	20.9	20.6	19.7	18.9	18.3	18.0	17.8	17.7	17.7	17.6
IT	-0.1	28.0	27.9	29.0	30.2	31.4	32.2	32.4	31.6	30.4	29.5	28.6	27.9
CY	1.3	19.5	19.1	19.2	19.3	19.9	19.7	19.4	19.2	19.9	20.2	20.6	20.8
LV	-1.2	16.4	15.7	15.8	16.4	16.7	16.4	16.1	16.2	16.5	16.4	15.9	15.2
LT	-0.2	16.0	15.7	16.1	16.8	17.3	17.3	17.0	16.8	16.9	16.9	16.5	15.8
LU	13.7	18.1	18.2	18.9	20.2	21.3	22.5	23.8	25.1	27.0	29.1	30.6	31.7
HU	3.5	19.0	18.3	18.3	18.2	18.7	19.9	21.1	21.6	21.9	22.4	22.5	22.5
MT	7.0	20.2	19.8	20.1	20.6	21.1	21.7	22.3	23.2	24.5	25.8	26.8	27.2
NL	4.0	23.6	23.2	24.0	25.3	26.5	27.6	27.7	27.7	27.6	27.4	27.4	27.5
AT	4.5	28.5	28.5	29.2	30.6	31.8	32.1	32.3	32.7	33.1	33.3	33.1	33.0
PL	1.1	20.4	20.1	20.4	20.6	20.6	20.8	21.1	21.6	22.1	22.2	21.9	21.5
PT	0.7	25.4	25.5	26.1	26.8	27.5	28.0	28.2	27.9	27.3	26.7	26.2	26.1
RO	2.5	15.1	14.5	14.5	14.5	15.3	16.2	17.0	17.5	18.0	17.9	17.8	17.6
SI	7.1	21.9	22.2	23.0	24.5	25.9	27.3	28.6	29.5	29.8	29.5	29.1	28.9
SK	3.2	18.9	18.7	18.8	19.1	19.2	19.6	20.3	20.9	21.7	22.4	22.6	22.1
FI	3.6	29.8	30.2	32.0	33.3	33.4	33.0	32.5	32.2	32.3	32.5	33.0	33.4
SE	2.1	24.4	24.0	24.5	25.0	25.1	25.0	24.9	25.1	25.7	26.2	26.3	26.5
UK	4.8	22.5	22.7	23.5	24.0	24.7	25.2	25.2	25.4	25.9	26.4	26.9	27.3
NO	7.3	30.2	30.4	31.6	32.7	33.5	34.0	34.4	34.9	35.6	36.4	37.0	37.5
EU*	2.4	25.0	24.9	25.7	26.5	27.1	27.5	27.7	27.7	27.7	27.6	27.4	27.4
EA	2.0	26.0	26.0	26.9	27.9	28.6	29.1	29.3	29.2	28.9	28.5	28.2	28.0
EU27	1.9	25.4	25.3	26.1	26.9	27.5	28.0	28.2	28.2	28.0	27.8	27.5	27.4
EU* s	2.6	22.1	21.8	22.4	23.0	23.5	24.0	24.3	24.5	24.8	24.9	24.8	24.7

Table III.1.145: Total cost of ageing as % of GDP - Higher employment rate of older workers (+10 p.p.)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.1	27.6	27.7	27.9	27.9	28.5	29.2	29.6	29.8	30.0	30.2	30.4	30.7
BG	1.5	18.5	17.7	17.4	17.4	17.8	18.3	19.0	19.9	20.6	20.9	20.5	19.9
CZ	6.2	18.2	18.3	18.6	18.8	19.4	20.2	21.2	22.8	24.3	25.1	25.0	24.4
DK	-0.7	27.6	26.5	25.7	25.5	25.8	25.9	25.9	25.9	25.8	25.8	26.3	26.9
DE	4.2	23.5	23.7	24.2	24.9	25.7	26.2	26.6	26.9	27.2	27.4	27.6	27.8
EE	-1.1	19.3	18.5	18.0	18.0	18.0	18.2	18.3	18.5	18.8	18.8	18.5	18.2
IE	3.3	15.2	14.9	15.6	16.0	16.5	17.1	17.9	18.7	19.2	19.3	18.9	18.5
EL	-6.6	25.8	21.7	19.9	19.5	19.7	20.3	20.4	20.6	20.2	20.0	19.8	19.3
ES	-1.2	24.0	23.9	23.5	23.0	23.6	24.7	25.8	25.8	25.1	24.3	23.5	22.8
FR	-3.7	31.0	30.7	30.6	30.5	30.6	30.6	30.0	29.4	28.8	28.2	27.6	27.3
HR	-4.2	20.7	20.2	19.8	19.1	18.3	17.6	17.1	16.8	16.6	16.6	16.5	16.5
IT	-0.4	28.0	27.3	26.8	27.4	29.0	30.4	30.9	30.6	29.7	28.9	28.2	27.7
CY	0.4	19.5	18.9	18.4	18.2	18.6	18.4	18.0	17.8	18.4	18.7	19.2	20.0
LV	-1.6	16.4	15.6	15.4	15.6	16.0	15.9	15.5	15.7	16.0	15.9	15.4	14.8
LT	-0.6	16.0	15.6	15.7	16.3	16.8	16.7	16.5	16.3	16.4	16.4	16.0	15.4
LU	12.4	18.1	17.9	18.0	18.8	19.8	20.9	22.0	23.2	25.1	27.4	29.2	30.5
HU	2.2	19.0	18.0	17.6	17.3	17.7	18.7	19.8	20.2	20.6	21.0	21.2	21.2
MT	5.9	20.2	19.6	19.4	19.6	20.1	20.6	21.2	22.0	23.2	24.6	25.6	26.0
NL	2.4	23.6	22.9	22.9	23.5	24.8	25.8	26.2	26.1	26.0	25.8	25.7	25.9
AT	2.4	28.5	28.1	27.7	28.0	28.6	28.6	28.7	29.0	29.5	30.0	30.4	30.9
PL	0.7	20.4	20.0	20.3	20.2	20.3	20.4	20.7	21.1	21.6	21.8	21.6	21.1
PT	-0.8	25.4	25.2	25.0	25.2	25.8	26.3	26.5	26.3	25.8	25.1	24.7	24.6
RO	1.5	15.1	14.3	13.9	13.7	14.3	15.1	15.8	16.4	16.9	16.9	16.9	16.7
SI	6.1	21.9	22.4	22.4	23.3	24.6	26.0	27.3	28.4	28.8	28.7	28.4	28.0
SK	2.1	18.9	18.5	18.1	18.1	18.2	18.6	19.2	19.8	20.6	21.3	21.5	21.0
FI	1.0	29.8	29.6	29.3	29.4	29.4	29.8	29.4	29.3	29.4	29.8	30.3	30.7
SE	0.8	24.4	23.8	23.7	23.6	23.8	23.8	23.7	23.9	24.4	24.8	25.0	25.2
UK	3.4	22.5	22.5	22.8	22.8	23.5	24.0	24.0	24.2	24.6	25.1	25.5	26.0
NO	4.9	30.2	30.0	30.3	30.6	31.4	31.9	32.3	32.7	33.3	34.0	34.6	35.1
EU*	1.1	25.0	24.6	24.6	24.7	25.3	25.8	26.1	26.2	26.2	26.1	26.1	26.0
EA	0.6	26.0	25.6	25.6	25.9	26.6	27.2	27.4	27.4	27.3	27.0	26.8	26.6
EU27	0.6	25.4	25.0	24.9	25.1	25.7	26.2	26.5	26.6	26.5	26.4	26.2	26.0
EU* s	1.4	22.1	21.6	21.4	21.5	22.0	22.4	22.8	23.1	23.3	23.5	23.5	23.5

Table III.1.146: Total cost of ageing as % of GDP - Higher migration (+33%)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	4.1	27.6	27.9	28.7	29.1	29.7	30.2	30.4	30.6	30.8	31.0	31.3	31.7
BG	2.3	18.5	18.0	18.2	18.6	19.1	19.7	20.4	21.3	21.9	21.9	21.4	20.8
CZ	5.8	18.2	18.4	19.0	19.5	20.1	21.0	22.0	23.1	24.2	24.7	24.5	24.0
DK	-0.1	27.6	26.6	26.1	26.0	26.2	26.3	26.2	26.2	26.2	26.3	26.8	27.6
DE	4.3	23.5	23.7	24.4	25.4	26.0	26.4	26.8	27.0	27.3	27.5	27.7	27.9
EE	-0.8	19.3	18.6	18.3	18.3	18.4	18.5	18.6	18.8	19.2	19.2	18.9	18.6
IE	3.9	15.2	15.0	16.0	16.6	17.2	17.8	18.5	19.3	19.7	19.8	19.5	19.1
EL	-6.7	25.8	22.0	20.7	20.6	20.9	21.5	21.4	21.5	21.0	20.5	20.1	19.1
ES	-0.7	24.0	24.2	24.5	24.6	25.4	26.4	27.0	26.6	25.4	24.4	23.8	23.3
FR	-3.4	31.0	30.9	31.2	31.4	31.5	31.4	30.7	30.0	29.2	28.5	27.9	27.6
HR	-3.7	20.7	20.4	20.6	20.0	19.1	18.3	17.7	17.4	17.1	17.0	17.0	16.9
IT	-1.1	28.0	27.7	28.3	29.2	30.3	30.9	30.9	30.1	28.9	28.2	27.4	27.0
CY	0.0	19.5	18.8	18.4	18.3	18.7	18.5	18.1	17.7	18.2	18.5	18.9	19.5
LV	-1.2	16.4	15.7	15.7	16.2	16.6	16.4	16.1	16.2	16.7	16.6	15.9	15.2
LT	-0.8	16.0	15.8	16.0	16.8	17.2	17.1	16.8	16.6	16.6	16.6	16.0	15.2
LU	11.3	18.1	17.6	17.6	18.5	19.3	20.2	21.1	22.2	24.0	26.2	28.0	29.4
HU	2.7	19.0	18.1	18.0	17.8	18.2	19.3	20.4	20.8	21.1	21.5	21.7	21.7
MT	5.6	20.2	19.6	19.5	19.8	20.3	20.7	21.2	22.0	23.1	24.4	25.4	25.8
NL	2.3	23.6	23.0	23.2	24.1	25.2	26.1	26.2	26.1	25.9	25.7	25.7	25.9
AT	2.0	28.5	28.0	27.9	28.6	29.3	29.4	29.4	29.6	30.0	30.3	30.4	30.5
PL	0.8	20.4	20.0	20.2	20.3	20.4	20.5	20.9	21.3	21.8	21.9	21.6	21.2
PT	-0.4	25.4	25.3	25.6	26.1	26.7	27.2	27.3	26.9	26.3	25.6	25.0	24.9
RO	2.3	15.1	14.5	14.4	14.4	15.3	16.2	17.0	17.5	18.0	17.9	17.7	17.4
SI	5.7	21.9	22.0	22.5	23.8	25.0	26.2	27.4	28.1	28.3	28.1	27.7	27.5
SK	2.7	18.9	18.6	18.5	18.7	18.8	19.2	19.9	20.5	21.3	21.9	22.0	21.6
FI	2.0	29.8	29.9	31.0	31.7	31.8	31.3	30.7	30.5	30.6	30.9	31.3	31.8
SE	1.0	24.4	23.8	23.9	24.0	24.1	24.0	23.8	24.0	24.5	25.0	25.2	25.5
UK	3.6	22.5	22.5	23.0	23.2	23.8	24.3	24.1	24.3	24.6	25.1	25.6	26.1
NO	5.3	30.2	30.0	30.6	31.2	31.8	32.2	32.5	32.9	33.5	34.3	34.9	35.5
EU*	1.3	25.0	24.7	25.1	25.5	26.0	26.4	26.5	26.4	26.3	26.3	26.2	26.2
EA	0.8	26.0	25.8	26.3	26.8	27.4	27.8	27.9	27.7	27.4	27.2	26.9	26.8
EU27	0.8	25.4	25.1	25.5	26.0	26.5	26.9	27.0	26.9	26.7	26.5	26.3	26.2
EU* s	1.6	22.1	21.7	21.8	22.2	22.7	23.0	23.3	23.4	23.6	23.8	23.7	23.7

Table III.1.147: Total cost of ageing as % of GDP - Lower migration (-33%)

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	6.0	27.6	28.2	29.4	30.2	31.2	32.0	32.5	32.8	33.2	33.4	33.5	33.6
BG	2.2	18.5	17.9	18.0	18.3	18.7	19.2	19.9	20.8	21.4	21.5	21.1	20.7
CZ	6.6	18.2	18.4	19.2	19.9	20.5	21.6	22.8	24.1	25.3	25.8	25.5	24.9
DK	0.8	27.6	26.8	26.6	26.8	27.2	27.4	27.4	27.5	27.4	27.4	27.8	28.4
DE	5.7	23.5	24.0	25.0	26.2	27.1	27.6	28.1	28.5	28.9	29.1	29.1	29.2
EE	-0.9	19.3	18.6	18.4	18.4	18.4	18.5	18.6	18.8	19.2	19.1	18.8	18.4
IE	4.3	15.2	15.1	16.0	16.6	17.2	17.9	18.7	19.6	20.1	20.1	19.8	19.5
EL	-6.0	25.8	21.8	20.4	20.1	20.4	21.1	21.0	21.3	20.9	20.6	20.5	19.8
ES	0.1	24.0	24.1	24.5	24.6	25.6	26.9	27.9	28.0	27.3	25.9	24.7	24.1
FR	-2.3	31.0	30.9	31.4	31.6	31.8	31.8	31.3	30.7	30.1	29.5	29.0	28.7
HR	-3.1	20.7	20.3	20.5	20.1	19.3	18.6	18.1	17.8	17.7	17.7	17.7	17.6
IT	0.4	28.0	27.9	28.7	29.8	31.3	32.3	32.6	32.0	30.9	30.1	29.1	28.4
CY	2.4	19.5	19.2	19.2	19.4	20.1	20.0	19.8	19.8	20.8	21.3	21.7	22.0
LV	-1.6	16.4	15.7	15.5	15.9	16.2	16.0	15.6	15.7	16.0	15.8	15.3	14.8
LT	0.1	16.0	15.6	15.8	16.5	16.9	17.0	16.8	16.7	16.8	16.9	16.6	16.1
LU	15.7	18.1	18.5	19.3	20.8	22.3	23.9	25.6	27.3	29.3	31.4	32.8	33.7
HU	3.3	19.0	18.2	18.1	17.9	18.4	19.6	20.8	21.3	21.7	22.2	22.4	22.3
MT	7.9	20.2	19.9	20.1	20.6	21.2	21.8	22.6	23.7	25.2	26.7	27.7	28.0
NL	3.8	23.6	23.1	23.6	24.6	26.0	27.2	27.5	27.5	27.5	27.4	27.3	27.4
AT	5.2	28.5	28.6	29.1	30.3	31.6	32.0	32.3	32.9	33.4	33.7	33.6	33.6
PL	1.1	20.4	20.1	20.3	20.4	20.5	20.6	21.0	21.6	22.1	22.2	21.9	21.5
PT	0.8	25.4	25.3	25.7	26.2	27.0	27.5	27.9	27.7	27.2	26.6	26.2	26.1
RO	2.1	15.1	14.4	14.1	14.0	14.8	15.6	16.3	16.9	17.4	17.4	17.4	17.2
SI	7.3	21.9	22.1	22.8	24.2	25.7	27.2	28.6	29.7	30.1	29.9	29.4	29.2
SK	3.2	18.9	18.6	18.6	18.8	19.0	19.4	20.2	20.9	21.8	22.5	22.6	22.1
FI	3.3	29.8	30.1	31.4	32.4	32.7	32.3	31.9	31.7	31.9	32.2	32.6	33.0
SE	2.3	24.4	24.1	24.5	24.9	25.2	25.2	25.2	25.4	26.0	26.5	26.6	26.7
UK	5.1	22.5	22.7	23.5	23.9	24.7	25.3	25.4	25.7	26.3	26.9	27.3	27.7
NO	7.5	30.2	30.4	31.4	32.4	33.4	34.1	34.7	35.3	36.1	36.8	37.3	37.8
EU*	2.4	25.0	24.9	25.5	26.0	26.7	27.3	27.5	27.7	27.7	27.6	27.5	27.4
EA	2.0	26.0	26.0	26.6	27.4	28.2	28.8	29.1	29.1	28.9	28.6	28.2	28.0
EU27	1.9	25.4	25.3	25.8	26.4	27.1	27.7	28.0	28.1	28.0	27.8	27.5	27.3
EU* s	2.7	22.1	21.8	22.1	22.6	23.2	23.8	24.2	24.5	24.8	25.0	24.9	24.8

Table III.1.148: Total cost of ageing as % of GDP - Policy scenario linking retirement age to increases in life expectancy

Country	Ch 16-70	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070
BE	3.5	27.6	28.0	29.0	29.7	30.4	31.1	31.4	31.3	31.3	31.2	31.1	31.1
BG	0.6	18.5	17.9	18.0	18.1	18.3	18.6	19.1	19.7	20.2	20.3	19.8	19.1
CZ	4.0	18.2	18.3	19.0	19.5	19.9	20.4	21.2	22.2	23.0	23.4	23.1	22.2
DK	0.3	27.6	26.7	26.3	26.4	26.7	26.8	26.8	26.8	26.8	26.8	27.3	28.0
DE	3.8	23.5	23.8	24.6	25.6	26.2	26.6	26.9	27.1	27.2	27.3	27.3	27.3
EE	-1.4	19.3	18.6	18.2	18.2	18.2	18.2	18.3	18.4	18.6	18.6	18.3	17.9
IE	3.3	15.2	15.0	15.9	16.3	16.6	17.1	17.8	18.5	19.0	19.2	18.9	18.4
EL	-6.4	25.8	21.9	20.5	20.4	20.6	21.3	21.2	21.4	20.9	20.6	20.3	19.5
ES	-0.9	24.0	24.1	24.5	24.6	25.5	26.6	27.5	27.3	26.3	24.9	24.0	23.1
FR	-4.6	31.0	30.9	31.1	31.3	31.3	31.1	30.5	29.6	28.9	28.0	27.1	26.4
HR	-4.5	20.7	20.3	20.4	19.9	19.0	18.2	17.6	17.0	16.7	16.5	16.3	16.1
IT	-0.4	28.0	27.8	28.5	29.5	30.7	31.6	31.7	31.0	29.8	29.1	28.2	27.6
CY	1.0	19.5	19.0	18.8	18.9	19.4	19.2	18.9	18.7	19.4	19.7	20.1	20.5
LV	-2.1	16.4	15.7	15.6	16.0	16.1	15.7	15.2	15.1	15.5	15.5	15.1	14.3
LT	-0.9	16.0	15.7	16.0	16.5	16.8	16.6	16.3	16.0	15.9	15.9	15.7	15.1
LU	10.5	18.1	17.8	17.9	19.0	19.9	20.8	21.7	22.7	24.0	25.8	27.4	28.6
HU	1.0	19.0	18.2	18.0	17.7	18.1	18.7	19.6	20.1	20.1	20.2	20.1	20.0
MT	5.1	20.2	19.6	19.8	20.1	20.5	20.9	21.3	21.9	22.9	24.0	24.9	25.3
NL	3.0	23.6	23.0	23.4	24.3	25.6	26.6	26.8	26.8	26.6	26.5	26.4	26.6
AT	0.8	28.5	28.3	28.2	28.9	29.8	30.0	30.0	30.0	30.0	29.8	29.5	29.3
PL	0.0	20.4	19.4	19.7	19.8	19.7	19.7	20.0	20.5	21.0	21.3	21.1	20.4
PT	-0.5	25.4	25.3	25.6	26.2	26.8	27.3	27.5	27.1	26.5	25.7	25.1	24.9
RO	0.6	15.1	14.4	14.2	14.0	14.4	15.1	15.7	16.1	16.4	16.4	16.1	15.7
SI	4.8	21.9	22.1	22.6	24.0	25.3	26.5	27.6	28.3	28.4	27.9	27.3	26.7
SK	3.0	18.9	18.6	18.5	18.8	18.9	19.3	20.0	20.7	21.5	22.2	22.3	21.9
FI	2.6	29.8	30.0	31.2	32.0	32.2	31.8	31.3	31.1	31.2	31.5	32.0	32.4
SE	0.0	24.4	23.8	23.8	23.8	23.9	23.7	23.5	23.6	23.9	24.1	24.3	24.4
UK	3.2	22.5	22.5	23.1	23.3	23.9	24.3	24.2	24.4	24.8	25.1	25.5	25.8
NO	4.0	30.2	30.1	30.7	31.3	31.8	32.2	32.4	32.7	33.1	33.5	33.9	34.3
EU*	0.7	25.0	24.7	25.1	25.6	26.1	26.4	26.5	26.4	26.3	26.1	25.9	25.7
EA	0.3	26.0	25.9	26.3	26.9	27.6	28.0	28.1	27.9	27.6	27.2	26.7	26.3
EU27	0.2	25.4	25.2	25.5	26.0	26.5	26.9	27.0	26.9	26.7	26.4	26.0	25.7
EU* s	1.0	22.1	21.7	21.9	22.2	22.7	23.0	23.2	23.3	23.5	23.5	23.4	23.2

Part IV

Statistical Annex – COUNTRY FICHES

1. BELGIUM

Belgium				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,1	1,73	1,73	1,75	1,76	1,78	1,80	1,82
Life expectancy at birth								
males	7,4	78,8	79,5	81,0	82,4	83,8	85,0	86,2
females	6,5	83,7	84,3	85,7	86,9	88,1	89,2	90,2
Life expectancy at 65								
males	5,1	18,3	18,8	19,8	20,7	21,7	22,6	23,4
females	4,9	21,7	22,1	23,1	24,0	24,9	25,8	26,6
Net migration (thousand)	-29,0	55,2	53,2	48,3	41,5	32,8	29,5	26,2
Net migration as % of population	-0,3	0,5	0,5	0,4	0,3	0,2	0,2	0,2
Population (million)	2,6	11,3	11,6	12,3	12,9	13,3	13,6	13,9
Children population (0-14) as % of total population	-1,1	17,0	17,0	16,5	16,2	16,2	16,0	15,9
Prime age population (25-54) as % of total population	-4,9	40,2	39,2	37,5	37,1	36,3	36,0	35,3
Working age population (15-64) as % of total population	-6,7	64,6	63,7	61,3	59,9	59,2	58,5	58,0
Elderly population (65 and over) as % of total population	7,8	18,4	19,3	22,2	23,9	24,6	25,5	26,2
Very elderly population (80 and over) as % of total population	5,1	5,5	5,7	6,5	8,2	9,6	9,9	10,6
Very elderly population (80 and over) as % of elderly population	10,7	30,0	29,6	29,3	34,3	39,0	38,8	40,7
Very elderly population (80 and over) as % of working age population	9,8	8,5	8,9	10,6	13,7	16,2	16,9	18,4
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,5	1,3	1,4	1,4	1,6	1,7	1,6	1,6
Employment 15-74 (growth rate)	0,3	0,8	0,7	0,5	0,2	0,2	0,1	0,1
Labour input : hours worked (growth rate)	0,3	0,7	0,7	0,5	0,2	0,2	0,1	0,1
Labour productivity per hour (growth rate)	1,3	0,6	0,7	1,0	1,4	1,5	1,5	1,5
TFP (growth rate)	0,8	0,3	0,5	0,7	0,9	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,4	0,2	0,2	0,3	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,1	0,6	0,7	0,9	1,2	1,4	1,4	1,4
Potential GDP per worker (growth rate)	1,2	0,5	0,7	0,9	1,4	1,5	1,5	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	739	7.320	7.401	7.539	7.705	7.871	7.952	8.059
Population growth (working age:15-64)	-0,3	0,4	0,3	0,1	0,3	0,2	0,1	0,1
Population (20-74) (in thousands)	1.011	7.759	7.954	8.238	8.372	8.523	8.679	8.770
Population growth (20-74)	-0,7	0,8	0,5	0,3	0,1	0,2	0,2	0,1
Labour force 15-64 (thousands)	747	4.957	5.130	5.339	5.473	5.590	5.633	5.705
Labour force 20-74 (thousands)	863	4.950	5.125	5.431	5.573	5.691	5.743	5.813
Participation rate (20-74)	2,5	63,8	64,4	65,9	66,6	66,8	66,2	66,3
Participation rate (15-64)	3,1	67,7	69,3	70,8	71,0	71,0	70,8	70,8
young (15-24)	0,6	29,0	29,7	29,6	29,4	29,6	29,3	29,5
prime-age (25-54)	0,2	85,1	85,3	85,2	85,2	85,3	85,3	85,3
older (55-64)	17,6	48,2	55,6	65,8	66,0	66,0	65,8	65,8
Participation rate (20-74) - FEMALES	4,1	58,7	59,9	62,1	63,1	63,3	62,7	62,8
Participation rate (15-64) - FEMALES	4,4	63,0	65,1	67,1	67,6	67,6	67,4	67,3
young (15-24)	0,4	26,8	27,5	27,3	27,1	27,2	27,0	27,2
prime-age (25-54)	1,5	79,8	80,6	81,2	81,3	81,4	81,4	81,4
older (55-64)	19,7	42,8	50,9	61,2	62,3	62,7	62,5	62,5
Participation rate (20-74) - MALES	0,8	68,9	69,0	69,8	70,1	70,2	69,6	69,7
Participation rate (15-64) - MALES	1,7	72,4	73,5	74,5	74,4	74,3	74,2	74,1
young (15-24)	0,7	31,1	31,9	31,8	31,6	31,8	31,6	31,8
prime-age (25-54)	-1,2	90,3	90,0	89,3	89,1	89,2	89,1	89,1
older (55-64)	15,4	53,7	60,3	70,3	69,7	69,4	69,2	69,1
Average effective exit age (TOTAL) (1)	2,5	61,8	63,4	64,3	64,3	64,3	64,3	64,3
Men	2,5	61,8	63,3	64,3	64,3	64,3	64,3	64,3
Women	2,5	61,8	63,5	64,3	64,3	64,3	64,3	64,3
Employment rate (15-64)	2,8	62,4	64,0	65,0	65,3	65,4	65,2	65,2
Employment rate (20-74)	2,4	58,9	59,6	60,8	61,5	61,8	61,2	61,3
Employment rate (15-74)	2,0	54,9	55,6	56,5	57,1	57,3	56,8	56,9
Unemployment rate (15-64)	0,0	7,9	7,7	8,2	8,0	7,9	7,9	7,9
Unemployment rate (20-74)	-0,1	7,6	7,5	7,8	7,6	7,5	7,5	7,5
Unemployment rate (15-74)	-0,1	7,8	7,7	8,0	7,8	7,7	7,7	7,7
Employment (20-74) (in millions)	0,8	4,6	4,7	5,0	5,1	5,3	5,3	5,4
Employment (15-64) (in millions)	0,7	4,6	4,7	4,9	5,0	5,1	5,2	5,3
share of young (15-24)	0,2	7%	7%	7%	7%	7%	7%	7%
share of prime-age (25-54)	-5,0	79%	76%	74%	75%	74%	75%	74%
share of older (55-64)	4,8	14%	17%	19%	18%	19%	19%	19%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0,3	19,8	20,7	19,9	19,2	19,9	19,4	20,1
Old-age dependency ratio 15-64 (3)	16,7	28,4	30,2	36,2	39,9	41,5	43,5	45,2
Old-age dependency ratio 20-64 (3)	18,7	31,1	33,1	39,8	44,0	45,7	48,1	49,8
Total dependency ratio (4)	17,8	54,7	57,0	63,1	67,0	68,9	71,0	72,5
Total economic dependency ratio (5)	10,8	145,9	143,3	143,7	148,2	150,7	154,0	156,7
Economic old-age dependency ratio (15-64) (6)	21,4	44,7	46,4	52,7	58,1	60,4	63,6	66,2
Economic old-age dependency ratio (15-74) (7)	19,8	44,3	46,0	51,2	56,4	58,7	61,6	64,2

Belgium		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	2,9	12,1	12,6	13,8	14,5	14,7	14,9	15,0
Of which : Old-age and early pensions	3,7	9,8	10,1	11,5	12,7	13,0	13,4	13,5
Disability pensions	-0,1	1,3	1,6	1,6	1,4	1,3	1,2	1,2
Survivors pensions	-0,7	1,0	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	0,0
Earnings-related pensions (old age and early pensions), gross	3,8	9,7	10,0	11,4	12,6	12,9	13,3	13,4
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,1	0,5	0,5	0,5	0,6	0,6	0,6	0,6
Public pensions, net	2,5	10,6	11,0	12,1	12,6	12,7	12,9	13,0
Public pensions, contributions	:	:	:	:	:	:	:	:
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	-0,6	87,3%	87,3%	87,2%	86,9%	86,8%	86,7%	86,7%
Pensioners (Public, in 1000 persons)	1.425	2.793	2.969	3.340	3.586	3.803	4.011	4.218
Public pensioners aged 65+ (1000 persons)	1.671	2.017	2.190	2.657	3.047	3.276	3.494	3.688
Share of pensioners below age 65 as % of all pensioners (Public)	-15,2	28%	26%	20%	15%	14%	13%	13%
Benefit ratio % (Public pensions)	-1,4	41,8	42,3	43,6	43,9	42,8	41,6	40,4
Gross replacement rate at retirement % (Old-age earnings-related)	-3,1	40,2	40,5	42,3	40,2	39,1	37,8	37,1
Average accrual rates % (new pensions, earnings related)	0,0	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Average contributory period, years (new pensions, earnings-related)	2,5	37,4	37,5	40,7	40,0	40,0	39,9	39,9
Contributors (Public pensions, in 1000 persons)	812	4.605	4.775	5.045	5.185	5.302	5.352	5.417
Support ratio (contributors/100 pensioners, Public pensions)	-36	165	161	151	145	139	133	128
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,8	0,0	0,0	0,1	0,2	0,4	0,6	0,8
Lower fertility (-20%)	2,0	0,0	0,0	0,0	0,2	0,7	1,2	2,0
Higher TFP growth (+0.4 p.p.)	-1,8	0,0	0,0	0,0	-0,3	-0,9	-1,3	-1,8
Lower TFP growth (-0.4 p.p.)	2,1	0,0	0,0	0,0	0,4	0,9	1,5	2,1
Higher employment rate (+2 p.p.)	-0,4	0,0	-0,1	-0,4	-0,4	-0,4	-0,4	-0,4
Lower employment rate (+2 p.p.)	0,4	0,0	0,1	0,4	0,4	0,4	0,4	0,4
Higher employment rate of older workers (+10 p.p.)	-1,4	0,0	-0,3	-1,3	-1,3	-1,3	-1,4	-1,4
Higher migration (+33%)	-0,6	0,0	-0,1	-0,4	-0,6	-0,8	-0,7	-0,6
Lower migration (-33%)	0,6	0,0	0,1	0,4	0,7	0,8	0,8	0,6
TFP risk scenario (-0.2 p.p.)	1,1	0,0	0,0	0,1	0,3	0,6	0,9	1,1
Policy scenario linking retirement age to life expectancy	-1,1	0,0	0,0	0,0	0,0	-0,3	-0,7	-1,1
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2,9	12,1	12,6	13,8	14,5	14,7	14,9	15,0
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	2,9		0,5	1,7	2,4	2,5	2,7	2,9
Dependency ratio	6,6		0,8	3,3	4,7	5,3	6,0	6,6
Coverage ratio	-1,9		-0,1	-1,2	-1,8	-1,8	-1,9	-1,9
Of which : Old-age	0,6		0,1	0,1	0,3	0,5	0,6	0,6
Early-age	-6,0		-0,2	-1,5	-4,7	-5,6	-6,0	-6,0
Cohort effect	-6,4		-0,6	-3,4	-4,9	-5,2	-6,0	-6,4
Benefit ratio	-0,7		0,2	0,5	0,6	0,2	-0,3	-0,7
Labour market ratio	-0,9		-0,3	-0,8	-0,9	-0,9	-0,9	-0,9
Of which : Employment rate	-0,6		-0,3	-0,6	-0,7	-0,7	-0,7	-0,6
Labour intensity	0,1		0,0	0,1	0,1	0,1	0,1	0,1
Career shift	-0,3		0,0	-0,3	-0,3	-0,3	-0,3	-0,3
Interaction effect (residual)	-0,2		0,0	-0,1	-0,2	-0,2	-0,2	-0,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	2,9		0,5	1,2	0,7	0,1	0,2	0,2
Dependency ratio	6,6		0,8	2,5	1,4	0,5	0,8	0,5
Coverage ratio	-1,9		-0,1	-1,0	-0,7	0,0	-0,1	0,0
Of which : Old-age	0,6		0,1	-0,1	0,2	0,2	0,1	0,1
Early-age	-6,0		-0,2	-1,2	-3,2	-0,9	-0,4	0,0
Cohort effect	-6,4		-0,6	-2,8	-1,5	-0,3	-0,8	-0,3
Benefit ratio	-0,7		0,2	0,3	0,1	-0,4	-0,4	-0,4
Labour market ratio	-0,9		-0,3	-0,5	-0,1	0,0	0,0	0,0
Of which : Employment rate	-0,6		-0,3	-0,3	-0,1	0,0	0,0	0,0
Labour intensity	0,1		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,3		0,0	-0,3	0,0	0,0	0,0	0,0
Interaction effect (residual)	-0,2		0,0	-0,1	0,0	0,0	0,0	0,0

Belgium				EC (DG ECFIN) - EPC (AWG) 2018 projections			

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.4	5.9	5.9	6.0	6.2	6.3	6.3	6.3
AWG risk scenario	0.9	5.9	6.0	6.2	6.5	6.7	6.8	6.9
TFP risk scenario	0.4	5.9	5.9	6.0	6.2	6.2	6.3	6.3
Demographic scenario	0.8	5.9	6.0	6.2	6.4	6.6	6.7	6.8
High Life expectancy scenario (variation of Demographic sc.)	1.0	5.9	6.0	6.2	6.5	6.7	6.8	7.0
Healthy ageing scenario	-0.2	5.9	5.9	5.8	5.9	5.8	5.8	5.8
Death-related cost scenario	0.6	5.9	5.9	6.1	6.3	6.4	6.4	6.5
Income elasticity scenario	1.0	5.9	6.0	6.3	6.5	6.7	6.8	7.0
EU28 cost convergence scenario	1.0	5.9	6.0	6.2	6.5	6.7	6.8	7.0
Labour intensity scenario	1.3	5.9	6.0	6.3	6.6	6.8	7.0	7.2
Sector-specific composite indexation scenario	2.4	5.9	6.1	6.7	7.3	7.8	8.2	8.4
Non-demographic determinants scenario	2.1	5.9	6.0	6.5	6.9	7.4	7.8	8.0

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.7	2.3	2.4	2.6	3.2	3.6	3.8	4.0
AWG risk scenario	3.5	2.3	2.5	2.8	3.6	4.4	5.0	5.8
TFP risk scenario	1.7	2.3	2.4	2.6	3.2	3.6	3.8	4.0
Demographic scenario	1.7	2.3	2.4	2.7	3.2	3.6	3.8	4.0
Base case scenario	1.9	2.3	2.4	2.7	3.3	3.8	4.0	4.2
High Life expectancy scenario (variation of Base case sc.)	2.4	2.3	2.4	2.7	3.4	4.0	4.4	4.7
Healthy ageing scenario	1.5	2.3	2.4	2.6	3.1	3.5	3.6	3.8
Shift to formal care scenario	2.3	2.3	2.5	3.0	3.6	4.1	4.3	4.6
Coverage convergence scenario	1.9	2.3	2.4	2.7	3.3	3.8	4.0	4.2
Cost convergence scenario	3.9	2.3	2.5	2.9	3.7	4.6	5.2	6.2
Cost and coverage convergence scenario	3.9	2.3	2.5	2.9	3.7	4.6	5.2	6.2
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	70%	997	1,045	1,181	1,379	1,538	1,610	1,698
of which: receiving institutional care	114%	144	153	175	224	268	286	307
receiving home care	56%	560	583	655	742	804	832	871
receiving cash benefits	77%	293	309	351	413	465	492	520

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.0	5.8	5.7	5.7	5.7	5.8	5.8	5.8
Number of students (in thousands)								
Total (students/staff in 2016 = 10,3)	16.4%	2,439	2,482	2,600	2,674	2,746	2,807	2,840
as % of population 5-24	0.7	93.7	93.9	93.1	93.9	94.1	94.2	94.4
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.4	0.7	0.8	0.8	0.8

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	1.4	1.3	1.4	1.4	1.4	1.4	1.4

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	5.0	27.6	28.0	29.7	31.1	31.7	32.2	32.6
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.3	0.0	0.1	0.4	0.7	1.2	1.7	2.3
TFP risk scenario (-0.2 p.p.)	1.1	0.0	0.0	0.1	0.3	0.6	0.8	1.1
High life expectancy (+2 years) (8)	1.2	0.0	0.0	0.1	0.2	0.6	0.9	1.2
Lower fertility (-20%)	2.4	0.0	0.0	-0.3	-0.4	0.5	1.3	2.4
Higher TFP growth (+0.4 p.p.)	-1.7	0.0	0.0	0.0	-0.3	-0.8	-1.3	-1.7
Lower TFP growth (-0.4 p.p.)	2.1	0.0	0.0	0.0	0.3	0.9	1.5	2.1
Higher employment rate (+2 p.p)	-1.1	0.0	-0.2	-1.0	-1.1	-1.1	-1.1	-1.1
Lower employment rate (+2 p.p)	1.2	0.0	0.2	1.1	1.1	1.1	1.2	1.2
Higher employment rate of older workers (+10 p.p.)	-1.9	0.0	-0.4	-1.7	-1.8	-1.8	-1.9	-1.9
Higher migration (+33%)	-0.9	0.0	-0.2	-0.5	-0.9	-1.1	-1.1	-0.9
Lower migration (-33%)	1.0	0.0	0.2	0.6	0.9	1.2	1.2	1.0
Policy scenario linking retirement age to life expectancy	-1.5	0.0	0.0	0.0	0.0	-0.3	-0.9	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

2. BULGARIA

Bulgaria				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,3	1,51	1,62	1,69	1,73	1,76	1,78	1,80
Life expectancy at birth								
males	11,5	71,8	72,6	75,1	77,4	79,5	81,5	83,3
females	9,3	78,5	79,2	81,2	83,0	84,7	86,3	87,8
Life expectancy at 65								
males	7,0	14,5	14,9	16,3	17,7	19,0	20,3	21,5
females	6,8	17,9	18,3	19,7	21,0	22,3	23,5	24,7
Net migration (thousand)	5,6	-4,3	-11,9	-9,1	0,5	3,9	0,7	1,3
Net migration as % of population	0,1	-0,1	-0,2	-0,1	0,0	0,1	0,0	0,0
Population (million)	-2,3	7,1	6,9	6,4	5,9	5,5	5,2	4,9
Children population (0-14) as % of total population	0,0	14,0	14,4	13,6	13,2	13,8	13,9	14,0
Prime age population (25-54) as % of total population	-9,6	42,1	41,2	36,6	33,3	31,5	32,7	32,5
Working age population (15-64) as % of total population	-10,3	65,4	63,7	61,6	58,6	54,5	52,8	55,1
Elderly population (65 and over) as % of total population	10,3	20,6	21,9	24,8	28,2	31,7	33,3	30,9
Very elderly population (80 and over) as % of total population	10,0	4,7	4,9	6,9	8,7	10,1	13,0	14,7
Very elderly population (80 and over) as % of elderly population	24,8	22,9	22,5	27,9	30,9	31,9	39,1	47,7
Very elderly population (80 and over) as % of working age population	19,6	7,2	7,7	11,2	14,9	18,6	24,6	26,8
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,4	2,9	2,2	1,5	1,1	0,9	1,2	1,1
Employment 15-74 (growth rate)	-1,0	0,9	-0,9	-1,2	-1,3	-1,3	-0,6	-0,5
Labour input : hours worked (growth rate)	-0,9	0,9	-0,8	-1,2	-1,3	-1,3	-0,6	-0,5
Labour productivity per hour (growth rate)	2,3	2,0	3,0	2,7	2,4	2,2	1,9	1,5
TFP (growth rate)	1,4	1,5	1,7	1,7	1,6	1,4	1,2	1,0
Capital deepening (contribution to labour productivity growth)	0,9	0,5	1,3	1,1	0,9	0,8	0,7	0,5
Potential GDP per capita (growth rate)	2,1	3,6	3,0	2,4	1,8	1,5	1,9	1,8
Potential GDP per worker (growth rate)	2,4	2,0	3,1	2,8	2,4	2,2	1,9	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-1.990	4.663	4.412	3.929	3.466	3.023	2.751	2.673
Population growth (working age:15-64)	0,9	-1,4	-1,4	-1,0	-1,6	-1,2	-0,4	-0,4
Population (20-74) (in thousands)	-2.275	5.209	4.982	4.396	4.006	3.589	3.196	2.933
Population growth (20-74)	0,6	-0,9	-1,1	-1,0	-0,8	-1,3	-1,1	-0,3
Labour force 15-64 (thousands)	-1.429	3.205	3.045	2.652	2.305	2.004	1.840	1.776
Labour force 20-74 (thousands)	-1.414	3.252	3.113	2.736	2.409	2.111	1.924	1.838
Participation rate (20-74)	0,2	62,4	62,5	62,2	60,1	58,8	60,2	62,7
Participation rate (15-64)	-2,3	68,7	69,0	67,5	66,5	66,3	66,9	66,4
young (15-24)	0,3	24,3	23,8	24,0	25,0	24,4	24,1	24,6
prime-age (25-54)	-1,2	82,0	82,2	81,6	80,6	80,9	81,0	80,8
older (55-64)	4,4	58,9	58,6	63,1	63,2	61,6	63,4	63,3
Participation rate (20-74) - FEMALES	0,6	57,0	56,9	56,9	54,9	53,7	55,1	57,6
Participation rate (15-64) - FEMALES	-3,0	64,6	64,7	63,0	61,9	61,4	62,0	61,5
young (15-24)	-0,3	19,7	18,8	19,0	19,8	19,3	19,1	19,5
prime-age (25-54)	-2,6	78,1	78,1	77,0	75,5	75,5	75,8	75,5
older (55-64)	5,1	54,7	54,4	59,3	59,9	58,0	59,9	59,8
Participation rate (20-74) - MALES	-0,6	68,0	68,2	67,6	65,3	63,8	65,1	67,5
Participation rate (15-64) - MALES	-1,7	72,8	73,2	71,8	70,9	71,0	71,5	71,1
young (15-24)	0,8	28,6	28,4	28,7	29,9	29,1	28,8	29,4
prime-age (25-54)	0,1	85,6	86,1	85,9	85,5	85,9	85,8	85,7
older (55-64)	3,1	63,6	63,2	67,0	66,5	65,1	66,8	66,7
Average effective exit age (TOTAL) (1)	1,2	63,2	63,4	64,1	64,4	64,4	64,4	64,4
Men	0,9	63,8	64,0	64,7	64,7	64,7	64,7	64,7
Women	1,5	62,6	62,8	63,6	64,1	64,1	64,1	64,1
Employment rate (15-64)	-1,5	63,5	65,1	63,0	62,0	61,9	62,4	62,0
Employment rate (20-74)	0,9	57,8	59,0	58,3	56,3	55,1	56,4	58,7
Employment rate (15-74)	-0,2	54,7	55,8	54,5	52,8	51,7	52,5	54,5
Unemployment rate (15-64)	-0,9	7,6	5,7	6,7	6,7	6,7	6,7	6,7
Unemployment rate (20-74)	-1,1	7,4	5,5	6,4	6,3	6,3	6,3	6,4
Unemployment rate (15-74)	-1,1	7,5	5,6	6,5	6,5	6,4	6,4	6,5
Employment (20-74) (in millions)	-1,3	3,0	2,9	2,6	2,3	2,0	1,8	1,7
Employment (15-64) (in millions)	-1,3	3,0	2,9	2,5	2,2	1,9	1,7	1,7
share of young (15-24)	1,7	5%	4%	5%	6%	6%	6%	6%
share of prime-age (25-54)	-5,0	77%	77%	72%	69%	71%	76%	72%
share of older (55-64)	3,3	18%	18%	22%	25%	23%	18%	22%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	1,3	21,1	21,2	23,7	26,0	24,9	19,2	22,5
Old-age dependency ratio 15-64 (3)	24,7	31,5	34,4	40,3	48,1	58,1	63,0	56,2
Old-age dependency ratio 20-64 (3)	28,1	33,8	37,0	44,0	52,4	63,6	69,5	61,8
Total dependency ratio (4)	28,7	52,9	57,0	62,4	70,6	83,5	89,3	81,6
Total economic dependency ratio (5)	44,5	136,0	134,5	147,9	160,7	179,0	187,2	180,6
Economic old-age dependency ratio (15-64) (6)	38,7	47,5	49,9	59,9	72,0	87,5	95,2	86,1
Economic old-age dependency ratio (15-74) (7)	36,0	46,5	48,5	57,5	68,2	82,3	90,2	82,5

Bulgaria		**EC (DG ECFIN) - EPC (AWG) 2018 projections**						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	1,4	9,6	9,1	9,0	9,8	11,1	11,6	10,9
Of which : Old-age and early pensions	1,0	7,7	7,1	6,6	7,0	8,1	8,9	8,7
Disability pensions	0,5	1,3	1,5	1,9	2,4	2,5	2,2	1,7
Survivors pensions	-0,1	0,3	0,3	0,4	0,3	0,3	0,2	0,2
Other	0,0	0,3	0,2	0,1	0,1	0,2	0,2	0,3
Earnings-related pensions (old age and early pensions), gross	0,9	7,7	7,0	6,6	7,0	8,1	8,9	8,6
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	0,2
Public pensions, net	1,4	9,6	9,1	9,0	9,8	11,1	11,6	10,9
Public pensions, contributions	0,9	4,2	4,9	5,1	5,1	5,1	5,1	5,1
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Pensioners (Public, in 1000 persons)	-576	2.181	2.135	2.031	1.899	1.857	1.780	1.605
Public pensioners aged 65+ (1000 persons)	-139	1.506	1.553	1.525	1.465	1.518	1.547	1.367
Share of pensioners below age 65 as % of all pensioners (Public)	-16,1	31%	27%	25%	23%	18%	13%	15%
Benefit ratio % (Public pensions)	-1,1	31,2	29,6	27,5	28,4	29,2	29,5	30,1
Gross replacement rate at retirement % (Old-age earnings-related)	3,4	35,8	40,6	41,8	40,8	39,3	39,4	39,2
Average accrual rates % (new pensions, earnings related)	0,4	1,1	1,2	1,5	1,5	1,5	1,5	1,5
Average contributory period, years (new pensions, earnings-related)	2,1	35,2	36,1	38,2	38,3	38,0	37,7	37,3
Contributors (Public pensions, in 1000 persons)	-1.034	2.765	2.763	2.537	2.269	1.989	1.814	1.731
Support ratio (contributors/100 pensioners, Public pensions)	-19	127	129	125	119	107	102	108
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,7	0,0	0,0	0,1	0,2	0,4	0,6	0,7
Lower fertility (-20%)	2,3	0,0	0,0	0,0	0,1	0,7	1,4	2,3
Higher TFP growth (+0.4 p.p.)	-0,5	0,0	0,0	0,0	-0,2	-0,4	-0,5	-0,5
Lower TFP growth (-0.4 p.p.)	0,6	0,0	0,0	0,0	0,2	0,5	0,6	0,6
Higher employment rate (+2 p.p.)	-0,1	0,0	-0,1	-0,3	-0,2	-0,2	-0,1	-0,1
Lower employment rate (+2 p.p.)	0,1	0,0	0,1	0,3	0,3	0,2	0,2	0,1
Higher employment rate of older workers (+10 p.p.)	-0,6	0,0	-0,2	-0,9	-0,9	-0,9	-0,6	-0,6
Higher migration (+33%)	0,0	0,0	0,0	0,1	0,2	0,2	0,2	0,0
Lower migration (-33%)	0,0	0,0	0,0	-0,1	-0,2	-0,2	-0,1	0,0
TFP risk scenario (-0.2 p.p.)	0,3	0,0	0,0	0,2	0,3	0,3	0,3	0,3
Policy scenario linking retirement age to life expectancy	-1,3	0,0	0,0	-0,3	-0,7	-1,1	-1,1	-1,3
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	1,4	9,6	9,1	9,0	9,8	11,1	11,6	10,9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	1,4		-0,5	-0,5	0,2	1,5	2,0	1,4
Dependency ratio	6,0		0,9	2,6	4,3	6,3	7,3	6,0
Coverage ratio	-3,0		-0,5	-1,3	-2,4	-3,1	-3,4	-3,0
Of which : Old-age	-0,9		0,0	-0,6	-1,4	-1,5	-1,2	-0,9
Early-age	-5,3		-1,1	-2,4	-3,1	-2,9	-4,8	-5,3
Cohort effect	-4,3		-0,6	-0,9	-2,0	-5,0	-6,9	-4,3
Benefit ratio	-1,1		-0,5	-1,3	-1,1	-1,0	-1,1	-1,1
Labour market ratio	-0,2		-0,3	-0,3	-0,2	-0,3	-0,4	-0,2
Of which : Employment rate	0,0		-0,3	-0,1	0,1	0,1	-0,1	0,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,2		-0,1	-0,2	-0,3	-0,4	-0,3	-0,2
Interaction effect (residual)	-0,4		-0,1	-0,2	-0,3	-0,4	-0,4	-0,4
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	1,4	-0,5	0,0	0,8	1,2	0,5	-0,6	
Dependency ratio	6,0	0,9	1,6	1,7	2,0	1,0	-1,3	
Coverage ratio	-3,0	-0,5	-0,8	-1,1	-0,7	-0,3	0,5	
Of which : Old-age	-0,9	0,0	-0,5	-0,8	-0,2	0,4	0,2	
Early-age	-5,3	-1,1	-1,3	-0,8	0,3	-1,9	-0,5	
Cohort effect	-4,3	-0,6	-0,3	-1,0	-3,0	-1,9	2,6	
Benefit ratio	-1,1	-0,5	-0,8	0,2	0,1	0,0	0,0	
Labour market ratio	-0,2	-0,3	0,1	0,0	-0,1	-0,1	0,3	
Of which : Employment rate	0,0	-0,3	0,2	0,2	0,0	-0,2	0,1	
Labour intensity	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Career shift	-0,2	-0,1	-0,1	-0,1	-0,1	0,1	0,1	
Interaction effect (residual)	-0,4	-0,1	-0,1	-0,1	-0,1	0,0	0,0	

Bulgaria				EC (DG ECFIN) - EPC (AWG) 2018 projections				

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.3	5.0	5.1	5.3	5.5	5.6	5.5	5.2
AWG risk scenario	1.3	5.0	5.3	5.9	6.3	6.6	6.5	6.3
TFP risk scenario	0.2	5.0	5.1	5.3	5.5	5.6	5.4	5.2
Demographic scenario	0.4	5.0	5.1	5.3	5.5	5.6	5.5	5.3
High Life expectancy scenario (variation of Demographic sc.)	0.4	5.0	5.1	5.3	5.5	5.6	5.5	5.4
Healthy ageing scenario	-0.4	5.0	5.0	5.0	5.1	5.0	4.9	4.6
Death-related cost scenario	0.4	5.0	5.1	5.3	5.5	5.6	5.5	5.3
Income elasticity scenario	0.7	5.0	5.1	5.5	5.7	5.9	5.8	5.7
EU28 cost convergence scenario	2.1	5.0	5.1	5.5	5.9	6.3	6.7	7.1
Labour intensity scenario	1.2	5.0	4.9	5.4	5.9	6.4	6.5	6.2
Sector-specific composite indexation scenario	1.5	5.0	5.2	5.8	6.3	6.6	6.6	6.4
Non-demographic determinants scenario	2.4	5.0	5.3	6.1	6.8	7.3	7.5	7.4

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.1	0.4	0.4	0.5	0.5	0.5	0.6	0.5
AWG risk scenario	1.0	0.4	0.4	0.5	0.7	0.8	1.1	1.4
TFP risk scenario	0.1	0.4	0.4	0.5	0.5	0.5	0.6	0.5
Demographic scenario	0.1	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Base case scenario	0.2	0.4	0.4	0.5	0.5	0.5	0.6	0.6
High Life expectancy scenario (variation of Base case sc.)	0.2	0.4	0.4	0.5	0.5	0.6	0.6	0.6
Healthy ageing scenario	0.1	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Shift to formal care scenario	0.5	0.4	0.5	0.7	0.8	0.9	0.9	0.9
Coverage convergence scenario	0.7	0.4	0.4	0.5	0.6	0.8	1.0	1.1
Cost convergence scenario	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.7
Cost and coverage convergence scenario	1.1	0.4	0.4	0.5	0.7	0.9	1.2	1.5
Number of recipients (in thousands)	**Ch 16-70**	**2016**	**2020**	**2030**	**2040**	**2050**	**2060**	**2070**
AWG reference scenario	1%	136	137	142	142	142	143	137
of which: receiving institutional care	-4%	13	13	13	13	13	13	12
receiving home care	-20%	22	22	21	19	19	18	17
receiving cash benefits	6%	102	103	108	109	110	112	108

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.6	3.1	3.1	3.3	3.3	3.5	3.8	3.7
Number of students (in thousands)								
Total (students/staff in 2016 = 13,4)	-30.4%	1,055	1,028	973	860	810	784	734
as % of population 5-24	-1.6	78.5	79.2	76.7	76.7	77.7	77.3	77.0
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.6	0.0	0.1	0.2	0.4	0.5	0.6	0.6

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.1	0.4	0.3	0.3	0.3	0.3	0.3	0.3

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.3	18.5	17.9	18.4	19.4	21.1	21.7	20.7
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	1.8	0.0	0.2	0.6	1.0	1.3	1.6	1.8
TFP risk scenario (-0.2 p.p.)	0.3	0.0	0.0	0.1	0.3	0.3	0.3	0.3
High life expectancy (+2 years) (8)	0.7	0.0	0.0	0.1	0.2	0.4	0.6	0.7
Lower fertility (-20%)	2.0	0.0	0.0	-0.3	-0.3	0.3	1.1	2.0
Higher TFP growth (+0.4 p.p.)	-0.5	0.0	0.0	0.0	-0.2	-0.3	-0.5	-0.5
Lower TFP growth (-0.4 p.p.)	0.6	0.0	0.0	0.0	0.2	0.4	0.6	0.6
Higher employment rate (+2 p.p)	-0.3	0.0	-0.1	-0.5	-0.5	-0.4	-0.4	-0.3
Lower employment rate (+2 p.p)	0.3	0.0	0.1	0.5	0.5	0.5	0.4	0.3
Higher employment rate of older workers (+10 p.p.)	-0.8	0.0	-0.2	-1.1	-1.1	-1.2	-0.9	-0.8
Higher migration (+33%)	0.1	0.0	0.0	0.2	0.2	0.3	0.2	0.1
Lower migration (-33%)	-0.1	0.0	0.0	-0.2	-0.2	-0.3	-0.2	-0.1
Policy scenario linking retirement age to life expectancy	-1.7	0.0	0.0	-0.3	-0.8	-1.4	-1.4	-1.7

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

3. THE CZECH REPUBLIC

The Czech Republic		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,62	1,68	1,74	1,76	1,78	1,80	1,82
Life expectancy at birth								
males	8,7	76,2	76,8	78,6	80,3	82,0	83,5	84,9
females	7,2	82,1	82,6	84,1	85,5	86,8	88,1	89,3
Life expectancy at 65								
males	6,1	16,3	16,7	17,9	19,1	20,3	21,3	22,4
females	5,8	19,9	20,3	21,4	22,6	23,6	24,7	25,7
Net migration (thousand)	-10,1	18,6	21,5	17,5	20,5	14,0	8,8	8,5
Net migration as % of population	-0,1	0,2	0,2	0,2	0,2	0,1	0,1	0,1
Population (million)	-0,6	10,6	10,7	10,7	10,5	10,5	10,3	10,0
Children population (0-14) as % of total population	-0,8	15,5	16,0	14,9	14,0	15,2	15,2	14,7
Prime age population (25-54) as % of total population	-9,6	43,4	42,6	37,8	34,7	33,5	34,1	33,8
Working age population (15-64) as % of total population	-9,0	65,9	63,7	62,5	60,3	55,7	54,5	57,0
Elderly population (65 and over) as % of total population	9,7	18,6	20,3	22,6	25,7	29,1	30,4	28,3
Very elderly population (80 and over) as % of total population	9,3	4,0	4,2	6,8	8,3	9,0	12,5	13,3
Very elderly population (80 and over) as % of elderly population	25,3	21,6	20,9	30,1	32,3	31,0	41,0	46,8
Very elderly population (80 and over) as % of working age population	17,2	6,1	6,7	10,9	13,7	16,2	22,9	23,3
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,5	2,2	1,9	1,8	1,1	1,1	1,5	1,4
Employment 15-74 (growth rate)	-0,4	0,9	-0,3	-0,2	-0,7	-0,7	-0,1	-0,1
Labour input : hours worked (growth rate)	-0,3	1,1	-0,1	-0,2	-0,7	-0,7	-0,1	-0,1
Labour productivity per hour (growth rate)	1,8	1,1	2,0	2,0	1,9	1,7	1,6	1,5
TFP (growth rate)	1,2	1,0	1,3	1,3	1,2	1,1	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,6	0,0	0,7	0,7	0,7	0,6	0,6	0,5
Potential GDP per capita (growth rate)	1,6	2,0	1,7	1,9	1,2	1,1	1,8	1,7
Potential GDP per worker (growth rate)	1,8	1,3	2,2	2,0	1,9	1,7	1,6	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-1.291	6.968	6.789	6.675	6.362	5.833	5.607	5.677
Population growth (working age:15-64)	0,8	-0,8	-0,5	-0,3	-1,1	-0,7	0,0	-0,1
Population (20-74) (in thousands)	-1.612	7.718	7.601	7.257	7.153	6.793	6.297	6.105
Population growth (20-74)	0,3	-0,3	-0,4	-0,2	-0,2	-1,1	-0,5	0,0
Labour force 15-64 (thousands)	-1.094	5.235	5.110	4.946	4.620	4.297	4.131	4.141
Labour force 20-74 (thousands)	-1.099	5.321	5.213	5.011	4.747	4.427	4.238	4.222
Participation rate (20-74)	0,2	68,9	68,6	69,0	66,4	65,2	67,3	69,2
Participation rate (15-64)	-2,2	75,1	75,3	74,1	72,6	73,7	73,7	72,9
young (15-24)	-2,1	32,4	29,3	30,0	30,6	30,2	29,0	30,2
prime-age (25-54)	-0,1	88,9	89,2	89,3	88,7	88,6	89,1	88,7
older (55-64)	6,2	61,1	60,3	67,3	65,6	66,7	67,9	67,3
Participation rate (20-74) - FEMALES	2,4	60,9	60,9	62,5	60,4	59,2	61,6	63,3
Participation rate (15-64) - FEMALES	-1,0	67,7	68,2	67,9	66,2	67,1	67,6	66,7
young (15-24)	-1,4	26,5	24,4	24,9	25,4	25,1	24,1	25,1
prime-age (25-54)	0,1	82,0	82,6	83,2	82,1	81,8	82,7	82,1
older (55-64)	9,8	51,4	50,7	60,1	58,7	60,0	61,5	61,2
Participation rate (20-74) - MALES	-2,2	77,0	76,3	75,5	72,3	71,0	72,9	74,9
Participation rate (15-64) - MALES	-3,4	82,3	82,1	80,1	78,8	80,0	79,5	78,9
young (15-24)	-2,7	37,9	34,1	35,0	35,7	35,1	33,8	35,2
prime-age (25-54)	-0,3	95,4	95,5	95,2	95,0	95,3	95,2	95,1
older (55-64)	2,1	71,3	70,0	74,5	72,2	73,4	74,2	73,4
Average effective exit age (TOTAL) (1)	1,1	62,4	62,3	63,3	63,4	63,5	63,5	63,5
Men	0,3	63,5	63,5	63,6	63,8	64,0	63,9	63,8
Women	1,9	61,3	61,2	63,0	63,0	63,1	63,1	63,2
Employment rate (15-64)	-2,2	72,1	72,9	71,0	69,6	70,6	70,6	69,9
Employment rate (20-74)	0,2	66,3	66,5	66,3	63,8	62,6	64,7	66,4
Employment rate (15-74)	-1,3	62,9	62,9	61,8	59,6	58,7	59,9	61,5
Unemployment rate (15-64)	0,1	4,0	3,2	4,2	4,2	4,2	4,2	4,2
Unemployment rate (20-74)	0,1	3,8	3,0	3,9	3,9	3,9	3,9	3,9
Unemployment rate (15-74)	0,1	4,0	3,1	4,1	4,0	4,0	4,0	4,1
Employment (20-74) (in millions)	-1,1	5,1	5,1	4,8	4,6	4,3	4,1	4,1
Employment (15-64) (in millions)	-1,1	5,0	4,9	4,7	4,4	4,1	4,0	4,0
share of young (15-24)	1,5	6%	5%	7%	7%	7%	7%	7%
share of prime-age (25-54)	-5,6	78%	80%	73%	71%	73%	76%	73%
share of older (55-64)	4,1	16%	15%	20%	22%	21%	17%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2,1	19,5	19,1	22,0	24,7	22,8	18,1	21,5
Old-age dependency ratio 15-64 (3)	21,6	28,1	31,9	36,2	42,6	52,2	55,7	49,7
Old-age dependency ratio 20-64 (3)	24,7	30,1	34,3	39,6	46,6	57,0	61,8	54,8
Total dependency ratio (4)	23,9	51,6	57,0	60,1	65,8	79,5	83,6	75,6
Total economic dependency ratio (5)	38,5	105,7	109,9	120,8	129,9	144,8	151,1	144,2
Economic old-age dependency ratio (15-64) (6)	31,5	36,7	41,0	48,9	57,5	70,1	75,4	68,2
Economic old-age dependency ratio (15-74) (7)	30,4	35,9	40,0	47,9	55,5	67,5	72,8	66,3

The Czech Republic		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	2,8	8,2	8,1	8,2	9,2	10,8	11,6	10,9
Of which : Old-age and early pensions	2,7	6,8	6,7	6,8	7,7	9,4	10,2	9,5
Disability pensions	-0,1	0,9	0,8	0,8	0,8	0,8	0,7	0,8
Survivors pensions	0,2	0,5	0,6	0,6	0,7	0,7	0,7	0,7
Other	0,0	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	5,3	5,1	5,1	5,8	7,1	7,7	7,2
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,1	0,3	0,3	0,3	0,5	0,5	0,4	0,4
Public pensions, net	2,8	8,2	8,1	8,2	9,2	10,8	11,6	10,9
Public pensions, contributions	0,0	7,9	7,9	7,9	7,9	7,9	7,9	7,9
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Pensioners (Public, in 1000 persons)	406	2.907	2.988	3.053	3.291	3.521	3.539	3.313
Public pensioners aged 65+ (1000 persons)	754	1.953	2.106	2.324	2.547	2.886	2.984	2.707
Share of pensioners below age 65 as % of all pensioners (Public)	-14,5	33%	30%	24%	23%	18%	16%	18%
Benefit ratio % (Public pensions)	-2,6	39,9	38,0	35,9	35,4	36,5	37,3	37,3
Gross replacement rate at retirement % (Old-age earnings-related)	-2,0	43,1	39,5	40,3	40,0	43,3	45,0	41,1
Average accrual rates % (new pensions, earnings related)	-0,1	1,4	1,3	1,3	1,3	1,4	1,5	1,3
Average contributory period, years (new pensions, earnings-related)	1,4	43,8	44,3	44,8	45,2	45,2	45,2	45,2
Contributors (Public pensions, in 1000 persons)	-1.063	5.145	5.080	4.840	4.588	4.277	4.099	4.082
Support ratio (contributors/100 pensioners, Public pensions)	-54	177	170	159	139	121	116	123
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,7	0,0	0,0	0,1	0,2	0,3	0,5	0,7
Lower fertility (-20%)	1,8	0,0	0,0	0,0	0,1	0,6	1,2	1,8
Higher TFP growth (+0.4 p.p.)	-0,5	0,0	0,0	0,0	-0,1	-0,3	-0,5	-0,5
Lower TFP growth (-0.4 p.p.)	0,6	0,0	0,0	0,0	0,1	0,4	0,5	0,6
Higher employment rate (+2 p.p.)	-0,3	0,0	0,0	-0,2	-0,3	-0,3	-0,3	-0,3
Lower employment rate (+2 p.p.)	0,4	0,0	0,0	0,2	0,3	0,3	0,4	0,4
Higher employment rate of older workers (+10 p.p.)	0,3	0,0	-0,1	-0,6	-0,8	-0,4	0,2	0,3
Higher migration (+33%)	-0,3	0,0	0,0	-0,1	-0,2	-0,3	-0,4	-0,3
Lower migration (-33%)	0,3	0,0	0,0	0,1	0,2	0,4	0,4	0,3
TFP risk scenario (-0.2 p.p.)	0,3	0,0	0,0	0,2	0,3	0,3	0,3	0,3
Policy scenario linking retirement age to life expectancy	-1,6	0,0	0,0	-0,2	-0,7	-1,1	-1,4	-1,6
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2,8	8,2	8,1	8,2	9,2	10,8	11,6	10,9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	2,8		-0,1	0,0	1,0	2,7	3,5	2,8
Dependency ratio	5,4		1,1	2,3	3,8	5,8	6,7	5,4
Coverage ratio	-1,9		-0,6	-1,3	-1,6	-2,0	-2,3	-1,9
Of which : Old-age	-0,2		-0,2	-0,3	-0,5	-0,4	-0,3	-0,2
Early-age	-2,5		-0,4	-3,0	-2,6	-2,0	-2,3	-2,5
Cohort effect	-3,4		-1,0	-0,5	-1,6	-4,6	-5,9	-3,4
Benefit ratio	-0,5		-0,4	-0,9	-1,0	-0,7	-0,5	-0,5
Labour market ratio	0,0		-0,2	0,0	0,0	-0,1	-0,2	0,0
Of which : Employment rate	0,0		-0,1	0,0	0,1	0,0	-0,2	0,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	0,0		0,0	0,0	-0,1	-0,1	-0,1	0,0
Interaction effect (residual)	-0,3		-0,1	-0,2	-0,2	-0,3	-0,3	-0,3
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	2,8	-0,1	0,1	1,0	1,7	0,8	-0,7	
Dependency ratio	5,4	1,1	1,2	1,4	2,0	0,9	-1,3	
Coverage ratio	-1,9	-0,6	-0,7	-0,3	-0,5	-0,2	0,4	
Of which : Old-age	-0,2	-0,2	-0,1	-0,2	0,1	0,1	0,1	
Early-age	-2,5	-0,4	-2,7	0,4	0,6	-0,3	-0,2	
Cohort effect	-3,4	-1,0	0,5	-1,1	-3,0	-1,4	2,5	
Benefit ratio	-0,5	-0,4	-0,5	-0,2	0,3	0,2	0,0	
Labour market ratio	0,0	-0,2	0,2	0,0	-0,1	-0,1	0,3	
Of which : Employment rate	0,0	-0,1	0,1	0,2	-0,1	-0,2	0,2	
Labour intensity	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Career shift	0,0	0,0	0,0	-0,1	0,0	0,0	0,1	
Interaction effect (residual)	-0,3	-0,1	-0,1	0,0	0,0	0,0	0,0	

The Czech Republic		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.1	5.4	5.6	5.9	6.2	6.5	6.6	6.5
AWG risk scenario	1.9	5.4	5.7	6.3	6.8	7.2	7.4	7.3
TFP risk scenario	1.0	5.4	5.5	5.9	6.2	6.4	6.5	6.4
Demographic scenario	1.4	5.4	5.6	6.0	6.4	6.7	6.9	6.8
High Life expectancy scenario (variation of Demographic sc.)	1.6	5.4	5.6	6.0	6.4	6.8	7.0	7.0
Healthy ageing scenario	0.4	5.4	5.5	5.6	5.8	5.9	5.9	5.8
Death-related cost scenario	1.0	5.4	5.5	5.9	6.2	6.5	6.5	6.5
Income elasticity scenario	1.7	5.4	5.6	6.1	6.6	6.9	7.1	7.1
EU28 cost convergence scenario	1.8	5.4	5.6	6.1	6.6	7.0	7.2	7.3
Labour intensity scenario	2.5	5.4	5.5	6.2	6.9	7.8	8.1	7.9
Sector-specific composite indexation scenario	2.7	5.4	5.7	6.5	7.2	7.8	8.1	8.1
Non-demographic determinants scenario	3.2	5.4	5.7	6.6	7.4	8.0	8.5	8.6
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.6	1.3	1.4	1.8	2.1	2.4	2.8	2.9
AWG risk scenario	2.4	1.3	1.4	1.8	2.3	2.7	3.3	3.7
TFP risk scenario	1.5	1.3	1.4	1.8	2.1	2.4	2.7	2.9
Demographic scenario	1.3	1.3	1.4	1.7	2.0	2.1	2.4	2.7
Base case scenario	1.7	1.3	1.4	1.8	2.2	2.4	2.8	3.0
High Life expectancy scenario (variation of Base case sc.)	2.0	1.3	1.4	1.8	2.2	2.6	3.1	3.4
Healthy ageing scenario	1.2	1.3	1.4	1.7	2.0	2.2	2.4	2.5
Shift to formal care scenario	2.3	1.3	1.6	2.3	2.7	3.0	3.4	3.6
Coverage convergence scenario	1.8	1.3	1.4	1.8	2.2	2.5	2.9	3.1
Cost convergence scenario	2.6	1.3	1.4	1.9	2.4	2.8	3.5	3.9
Cost and coverage convergence scenario	2.7	1.3	1.4	1.9	2.4	2.9	3.6	4.0
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	99%	572	613	762	890	944	1,079	1,138
of which: receiving institutional care	93%	126	134	164	192	203	228	243
receiving home care	124%	100	109	143	169	183	214	224
receiving cash benefits	94%	346	370	456	529	558	637	671
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	3.2	3.2	3.7	3.6	3.7	4.1	4.0
Number of students (in thousands)								
Total (students/staff in 2016 = 14,9)	-1.4%	1,683	1,721	1,819	1,679	1,658	1,736	1,659
as % of population 5-24	0.4	79.7	82.0	79.9	79.7	80.7	80.8	80.1
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.7	0.0	0.1	0.3	0.5	0.7	0.7	0.7
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	6.2	18.2	18.4	19.7	21.3	23.6	25.2	24.4
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	1.6	0.0	0.1	0.4	0.8	1.0	1.4	1.6
TFP risk scenario (-0.2 p.p.)	0.2	0.0	0.0	0.1	0.2	0.2	0.2	0.2
High life expectancy (+2 years) (8)	1.1	0.0	0.0	0.1	0.2	0.4	0.7	1.1
Lower fertility (-20%)	2.2	0.0	0.0	-0.2	-0.2	0.5	1.3	2.2
Higher TFP growth (+0.4 p.p.)	-0.7	0.0	0.0	0.0	-0.2	-0.4	-0.6	-0.7
Lower TFP growth (-0.4 p.p.)	0.5	0.0	0.0	0.0	0.1	0.3	0.5	0.5
Higher employment rate (+2 p.p)	-0.5	0.0	-0.1	-0.4	-0.5	-0.5	-0.6	-0.5
Lower employment rate (+2 p.p)	0.6	0.0	0.1	0.5	0.5	0.6	0.6	0.6
Higher employment rate of older workers (+10 p.p.)	0.0	0.0	-0.1	-0.9	-1.1	-0.8	-0.1	0.0
Higher migration (+33%)	-0.4	0.0	0.0	-0.2	-0.3	-0.5	-0.5	-0.4
Lower migration (-33%)	0.5	0.0	0.0	0.2	0.3	0.5	0.6	0.5
Policy scenario linking retirement age to life expectancy	-2.2	0.0	-0.1	-0.2	-0.9	-1.4	-1.8	-2.2

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

4. DENMARK

Denmark				EC (DG ECFIN) - EPC (AWG) 2018 projections			
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,0	1,79	1,71	1,73	1,75	1,77	1,79	1,82
Life expectancy at birth								
males	7,3	78,8	79,5	81,0	82,4	83,7	84,9	86,1
females	7,1	82,9	83,6	85,0	86,4	87,7	88,9	90,0
Life expectancy at 65								
males	5,2	18,1	18,5	19,5	20,5	21,5	22,4	23,3
females	5,6	20,8	21,3	22,4	23,5	24,5	25,5	26,4
Net migration (thousand)	-27,4	36,7	33,4	26,8	18,9	10,7	11,4	9,3
Net migration as % of population	-0,5	0,6	0,6	0,4	0,3	0,2	0,2	0,1
Population (million)	1,1	5,7	5,9	6,3	6,6	6,7	6,8	6,8
Children population (0-14) as % of total population	-1,3	16,8	16,3	16,6	16,5	15,5	15,3	15,5
Prime age population (25-54) as % of total population	-4,8	39,3	39,1	38,0	38,0	36,3	35,2	34,5
Working age population (15-64) as % of total population	-8,0	64,3	63,8	61,4	59,8	60,4	58,4	56,3
Elderly population (65 and over) as % of total population	9,3	18,9	19,8	22,0	23,8	24,1	26,3	28,3
Very elderly population (80 and over) as % of total population	6,3	4,3	4,8	7,0	7,9	9,4	10,0	10,6
Very elderly population (80 and over) as % of elderly population	14,7	22,8	24,0	31,8	33,2	39,0	38,1	37,6
Very elderly population (80 and over) as % of working age population	12,1	6,7	7,5	11,4	13,2	15,5	17,1	18,9
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,6	1,2	1,6	1,6	1,6	1,8	1,5	1,3
Employment 15-74 (growth rate)	0,2	0,7	0,6	0,3	0,2	0,2	-0,1	-0,2
Labour input : hours worked (growth rate)	0,2	0,5	0,6	0,3	0,2	0,2	0,0	-0,2
Labour productivity per hour (growth rate)	1,4	0,7	0,9	1,3	1,5	1,5	1,5	1,5
TFP (growth rate)	0,9	0,4	0,7	0,9	1,0	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,3	0,3	0,4	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,3	0,4	0,8	1,1	1,4	1,7	1,4	1,2
Potential GDP per worker (growth rate)	1,4	0,4	0,9	1,4	1,4	1,5	1,6	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	158	3.686	3.771	3.876	3.928	4.041	3.948	3.844
Population growth (working age:15-64)	-0,9	0,7	0,5	-0,1	0,2	0,2	-0,4	-0,2
Population (20-74) (in thousands)	320	3.977	4.071	4.233	4.286	4.326	4.399	4.297
Population growth (20-74)	-1,3	1,0	0,4	0,4	0,0	0,1	0,1	-0,4
Labour force 15-64 (thousands)	168	2.951	3.057	3.145	3.182	3.270	3.202	3.120
Labour force 20-74 (thousands)	347	2.835	2.942	3.100	3.137	3.221	3.262	3.182
Participation rate (20-74)	2,8	71,3	72,3	73,2	73,2	74,5	74,1	74,0
Participation rate (15-64)	1,1	80,1	81,0	81,1	81,0	80,9	81,1	81,2
young (15-24)	0,5	66,3	67,2	67,4	66,7	67,0	67,0	66,8
prime-age (25-54)	-0,5	87,3	87,2	86,8	86,8	86,8	86,8	86,9
older (55-64)	5,9	71,1	75,3	76,0	75,3	76,6	77,0	77,0
Participation rate (20-74) - FEMALES	3,9	67,4	69,0	69,8	69,5	71,1	71,3	71,3
Participation rate (15-64) - FEMALES	1,3	77,3	78,7	78,5	78,3	78,4	78,6	78,7
young (15-24)	0,7	67,5	68,5	68,7	67,9	68,3	68,3	68,1
prime-age (25-54)	-0,5	83,8	83,7	83,1	83,1	83,2	83,2	83,3
older (55-64)	7,6	66,9	72,0	73,1	71,8	73,6	74,4	74,5
Participation rate (20-74) - MALES	1,5	75,2	75,6	76,7	76,8	77,7	77,0	76,7
Participation rate (15-64) - MALES	0,8	82,8	83,4	83,7	83,6	83,4	83,5	83,6
young (15-24)	0,3	65,3	66,0	66,1	65,4	65,8	65,8	65,6
prime-age (25-54)	-0,5	90,8	90,7	90,4	90,3	90,2	90,3	90,3
older (55-64)	4,1	75,4	77,7	78,9	78,8	79,6	79,6	79,6
Average effective exit age (TOTAL) (1)	3,3	64,7	65,6	66,3	66,6	67,1	67,9	68,0
Men	2,7	65,2	65,8	66,9	67,1	67,5	67,9	68,0
Women	3,8	64,2	65,4	65,7	66,1	66,8	67,9	68,0
Employment rate (15-64)	2,4	75,0	76,8	77,4	77,3	77,2	77,4	77,4
Employment rate (20-74)	3,9	67,3	68,9	70,3	70,3	71,5	71,3	71,2
Employment rate (15-74)	3,8	66,0	67,6	69,1	68,9	70,1	69,9	69,8
Unemployment rate (15-64)	-1,7	6,4	5,3	4,6	4,6	4,6	4,6	4,6
Unemployment rate (20-74)	-1,7	5,5	4,6	4,0	3,9	3,9	3,8	3,8
Unemployment rate (15-74)	-1,9	6,2	5,1	4,4	4,4	4,4	4,3	4,2
Employment (20-74) (in millions)	0,4	2,7	2,8	3,0	3,0	3,1	3,1	3,1
Employment (15-64) (in millions)	0,2	2,8	2,9	3,0	3,0	3,1	3,1	3,0
share of young (15-24)	-0,9	15%	15%	14%	14%	15%	14%	15%
share of prime-age (25-54)	-1,3	67%	66%	67%	69%	65%	65%	66%
share of older (55-64)	2,3	17%	19%	19%	17%	20%	21%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	1,2	19,0	19,7	20,2	17,9	21,0	21,5	20,2
Old-age dependency ratio 15-64 (3)	20,8	29,5	31,1	35,9	39,8	39,9	45,0	50,2
Old-age dependency ratio 20-64 (3)	22,8	32,5	34,2	39,2	43,9	44,0	49,4	55,3
Total dependency ratio (4)	22,2	55,5	56,7	62,9	67,4	65,5	71,2	77,7
Total economic dependency ratio (5)	9,5	100,8	98,0	100,7	104,8	103,1	103,4	110,2
Economic old-age dependency ratio (15-64) (6)	19,7	36,0	37,4	41,4	45,7	46,1	49,3	55,7
Economic old-age dependency ratio (15-74) (7)	16,2	34,8	36,3	39,5	43,2	43,7	45,3	51,0

Denmark		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-1,9	10,0	9,3	8,6	8,2	7,8	7,5	8,1
Of which : Old-age and early pensions	-0,6	6,0	5,9	5,8	5,7	5,4	5,0	5,5
Disability pensions	0,6	2,0	1,8	1,8	2,0	2,2	2,5	2,5
Survivors pensions	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Other	-1,9	2,0	1,6	1,0	0,5	0,2	0,1	0,1
Earnings-related pensions (old age and early pensions), gross	-1,3	1,3	1,2	0,7	0,3	0,1	0,0	0,0
Private occupational pensions, gross	2,6	4,4	5,1	4,9	6,0	6,3	6,3	7,0
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	:	:	:	:	:	:	:	:
Public pensions, net	-1,2	7,1	6,6	6,2	5,9	5,7	5,6	6,0
Public pensions, contributions	-0,1	0,1	0,1	0,0	0,0	0,0	0,0	0,0
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	2,5	71,3%	71,3%	72,1%	72,8%	73,6%	73,7%	73,8%
Pensioners (Public, in 1000 persons)	157	1.341	1.342	1.396	1.437	1.450	1.412	1.497
Public pensioners aged 65+ (1000 persons)	260	1.063	1.126	1.216	1.259	1.259	1.227	1.323
Share of pensioners below age 65 as % of all pensioners (Public)	-9,1	21%	16%	13%	12%	13%	13%	12%
Benefit ratio % (Public pensions)	-7,3	41,7	40,6	38,2	35,9	34,8	35,0	34,5
Gross replacement rate at retirement % (Old-age earnings-related)	-0,2	27,2	27,9	28,0	27,7	27,4	27,3	27,1
Average accrual rates % (new pensions, earnings related)	:	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:	:
Contributors (Public pensions, in 1000 persons)	-320	447	315	170	136	123	129	126
Support ratio (contributors/100 pensioners, Public pensions)	-25	33	23	12	9	8	9	8
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,1	0,0	0,0	0,0	0,1	0,1	0,2	0,1
Lower fertility (-20%)	1,1	0,0	0,0	0,0	0,2	0,4	0,7	1,1
Higher TFP growth (+0.4 p.p.)	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,1
Lower TFP growth (-0.4 p.p.)	-0,1	0,0	0,0	0,0	0,0	0,0	0,0	-0,1
Higher employment rate (+2 p.p.)	-0,2	0,0	0,0	-0,2	-0,2	-0,2	-0,2	-0,2
Lower employment rate (+2 p.p.)	0,2	0,0	0,0	0,2	0,2	0,2	0,2	0,2
Higher employment rate of older workers (+10 p.p.)	-0,5	0,0	-0,1	-0,5	-0,4	-0,4	-0,4	-0,5
Higher migration (+33%)	-0,2	0,0	-0,1	-0,3	-0,3	-0,3	-0,3	-0,2
Lower migration (-33%)	0,2	0,0	0,1	0,3	0,4	0,4	0,3	0,2
TFP risk scenario (-0.2 p.p.)	-0,1	0,0	0,0	0,0	0,0	0,0	0,0	-0,1
Policy scenario linking retirement age to life expectancy	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1,9	10,0	9,3	8,6	8,2	7,8	7,5	8,1
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-1,9		-0,7	-1,4	-1,8	-2,2	-2,4	-1,9
Dependency ratio	4,6		0,5	1,8	2,8	2,8	3,7	4,6
Coverage ratio	-3,9		-0,7	-1,9	-2,6	-2,8	-3,7	-3,9
Of which : Old-age	-2,9		-0,2	-1,0	-1,7	-1,9	-2,9	-2,9
Early-age	-4,4		-2,5	-4,1	-3,9	-4,5	-4,5	-4,4
Cohort effect	-4,2		-0,4	-1,9	-3,1	-2,1	-3,0	-4,2
Benefit ratio	-1,6		-0,2	-0,8	-1,3	-1,6	-1,5	-1,6
Labour market ratio	-0,8		-0,2	-0,4	-0,5	-0,5	-0,7	-0,8
Of which : Employment rate	-0,3		-0,2	-0,3	-0,3	-0,3	-0,3	-0,3
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,5		0,0	-0,1	-0,2	-0,2	-0,4	-0,5
Interaction effect (residual)	-0,2		0,0	-0,1	-0,1	-0,1	-0,2	-0,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-1,9	-0,7	-0,7	-0,4	-0,4	-0,2	0,5	
Dependency ratio	4,6	0,5	1,3	1,0	0,0	0,9	0,9	
Coverage ratio	-3,9	-0,7	-1,2	-0,7	-0,2	-0,9	-0,2	
Of which : Old-age	-2,9	-0,2	-0,8	-0,7	-0,3	-0,9	-0,1	
Early-age	-4,4	-2,5	-1,6	0,2	-0,6	-0,1	0,2	
Cohort effect	-4,2	-0,4	-1,5	-1,3	1,0	-0,9	-1,2	
Benefit ratio	-1,6	-0,2	-0,5	-0,5	-0,3	0,1	-0,1	
Labour market ratio	-0,8	-0,2	-0,2	-0,1	0,1	-0,3	0,0	
Of which : Employment rate	-0,3	-0,2	0,0	0,0	0,0	0,0	0,0	
Labour intensity	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Career shift	-0,5	0,0	-0,2	-0,1	0,0	-0,2	0,0	
Interaction effect (residual)	-0,2	0,0	-0,1	0,0	0,0	-0,1	0,0	

Denmark				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.0	6.9	7.0	7.3	7.4	7.6	7.7	7.9
AWG risk scenario	1.8	6.9	7.1	7.6	7.9	8.3	8.5	8.7
TFP risk scenario	1.0	6.9	7.0	7.3	7.4	7.6	7.7	7.8
Demographic scenario	1.2	6.9	7.0	7.3	7.5	7.7	7.9	8.1
High Life expectancy scenario (variation of Demographic sc.)	1.4	6.9	7.0	7.3	7.6	7.8	8.0	8.3
Healthy ageing scenario	0.4	6.9	7.0	7.1	7.1	7.1	7.2	7.3
Death-related cost scenario	0.9	6.9	7.0	7.2	7.4	7.5	7.6	7.8
Income elasticity scenario	1.5	6.9	7.1	7.4	7.7	7.9	8.1	8.4
EU28 cost convergence scenario	1.2	6.9	7.0	7.3	7.5	7.7	7.9	8.1
Labour intensity scenario	1.7	6.9	7.0	7.4	7.7	7.9	8.1	8.6
Sector-specific composite indexation scenario	3.9	6.9	7.3	8.1	8.9	9.7	10.4	10.7
Non-demographic determinants scenario	3.0	6.9	7.2	7.7	8.3	8.9	9.4	9.9
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.2	2.5	2.6	3.3	3.8	4.1	4.4	4.7
AWG risk scenario	4.8	2.5	2.7	3.7	4.6	5.4	6.3	7.3
TFP risk scenario	2.2	2.5	2.6	3.3	3.8	4.1	4.4	4.7
Demographic scenario	2.2	2.5	2.7	3.3	3.8	4.2	4.5	4.7
Base case scenario	2.5	2.5	2.6	3.3	3.9	4.3	4.6	5.0
High Life expectancy scenario (variation of Base case sc.)	3.0	2.5	2.7	3.4	4.0	4.5	5.0	5.5
Healthy ageing scenario	2.0	2.5	2.6	3.2	3.7	4.0	4.3	4.5
Shift to formal care scenario	3.3	2.5	2.9	4.0	4.6	5.0	5.4	5.8
Coverage convergence scenario	5.2	2.5	2.7	3.8	4.7	5.6	6.6	7.7
Cost convergence scenario	2.5	2.5	2.6	3.3	3.9	4.3	4.6	5.0
Cost and coverage convergence scenario	5.2	2.5	2.7	3.8	4.7	5.6	6.6	7.7
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	109%	160	173	228	264	293	319	334
of which: receiving institutional care	121%	54	58	77	92	103	114	119
receiving home care	103%	106	115	150	172	189	205	215
receiving cash benefits	:	0	0	0	0	0	0	0
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.7	7.4	7.0	6.7	6.8	6.7	6.5	6.6
Number of students (in thousands)								
Total (students/staff in 2016 = 10,3)	2.3%	1,307	1,283	1,297	1,366	1,360	1,327	1,337
as % of population 5-24	0.5	93.5	94.0	93.9	93.5	93.0	93.9	94.1
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.7	0.0	0.1	0.3	0.6	0.7	0.6	0.7
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.2	0.9	0.7	0.6	0.6	0.6	0.6	0.6
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.3	27.6	26.7	26.4	26.8	26.8	26.8	28.0
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	3.4	0.0	0.2	0.7	1.3	2.0	2.7	3.4
TFP risk scenario (-0.2 p.p.)	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
High life expectancy (+2 years) (8)	0.4	0.0	0.0	0.0	0.1	0.1	0.4	0.4
Lower fertility (-20%)	1.4	0.0	0.0	-0.4	-0.4	0.1	0.6	1.4
Higher TFP growth (+0.4 p.p.)	0.2	0.0	0.0	0.0	0.1	0.1	0.2	0.2
Lower TFP growth (-0.4 p.p.)	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
Higher employment rate (+2 p.p)	-0.7	0.0	-0.1	-0.7	-0.7	-0.7	-0.7	-0.7
Lower employment rate (+2 p.p)	0.8	0.0	0.1	0.8	0.8	0.8	0.8	0.8
Higher employment rate of older workers (+10 p.p.)	-1.0	0.0	-0.2	-0.9	-0.9	-0.9	-1.0	-1.0
Higher migration (+33%)	-0.4	0.0	-0.1	-0.4	-0.5	-0.6	-0.5	-0.4
Lower migration (-33%)	0.5	0.0	0.1	0.4	0.6	0.7	0.6	0.5
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

5. GERMANY

Germany			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,49	1,50	1,53	1,57	1,60	1,64	1,68
Life expectancy at birth								
males	7,4	78,7	79,4	80,9	82,3	83,6	84,9	86,1
females	6,5	83,6	84,2	85,5	86,7	87,9	89,0	90,1
Life expectancy at 65								
males	5,2	18,1	18,5	19,6	20,6	21,5	22,4	23,3
females	5,1	21,3	21,8	22,8	23,7	24,7	25,6	26,4
Net migration (thousand)	-606,5	750,0	327,3	268,1	206,0	199,0	175,0	143,5
Net migration as % of population	-0,7	0,9	0,4	0,3	0,2	0,2	0,2	0,2
Population (million)	-3,2	82,5	83,8	84,6	84,1	82,6	80,7	79,2
Children population (0-14) as % of total population	0,7	13,2	13,4	14,0	13,3	13,1	13,8	13,9
Prime age population (25-54) as % of total population	-7,3	41,3	39,6	37,0	35,6	34,2	34,1	34,0
Working age population (15-64) as % of total population	-10,4	65,7	64,6	59,9	58,0	57,4	55,6	55,3
Elderly population (65 and over) as % of total population	9,7	21,1	21,9	26,1	28,7	29,5	30,6	30,9
Very elderly population (80 and over) as % of total population	7,4	5,9	7,0	7,6	9,6	12,6	11,9	13,3
Very elderly population (80 and over) as % of elderly population	15,3	27,8	32,0	29,0	33,3	42,8	38,9	43,1
Very elderly population (80 and over) as % of working age population	15,1	8,9	10,9	12,6	16,5	22,0	21,4	24,1
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,2	1,8	1,4	1,0	1,2	1,1	1,1	1,3
Employment 15-74 (growth rate)	-0,3	1,5	0,5	-0,5	-0,2	-0,4	-0,5	-0,2
Labour input : hours worked (growth rate)	-0,3	1,1	0,1	-0,5	-0,3	-0,4	-0,5	-0,2
Labour productivity per hour (growth rate)	1,5	0,7	1,3	1,4	1,5	1,5	1,5	1,5
TFP (growth rate)	1,0	0,8	0,9	0,9	1,0	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	-0,1	0,4	0,5	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,2	0,9	1,2	0,9	1,4	1,4	1,3	1,5
Potential GDP per worker (growth rate)	1,4	0,9	0,9	1,4	1,5	1,5	1,6	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-10.376	54.149	54.172	50.709	48.792	47.413	44.876	43.773
Population growth (working age:15-64)	-0,9	0,8	-0,3	-0,8	0,0	-0,4	-0,4	-0,1
Population (20-74) (in thousands)	-9.215	58.324	59.123	58.328	55.236	53.244	51.629	49.109
Population growth (20-74)	-0,9	0,6	0,3	-0,3	-0,7	-0,1	-0,4	-0,3
Labour force 15-64 (thousands)	-8.153	42.242	42.260	39.573	38.049	36.894	34.991	34.089
Labour force 20-74 (thousands)	-7.380	41.989	42.345	40.355	38.627	37.592	35.792	34.609
Participation rate (20-74)	-1,5	72,0	71,6	69,2	69,9	70,6	69,3	70,5
Participation rate (15-64)	-0,1	78,0	78,0	78,0	78,0	77,8	78,0	77,9
young (15-24)	-0,6	49,9	50,9	49,1	49,5	50,1	49,5	49,3
prime-age (25-54)	0,0	87,4	87,4	87,3	87,4	87,3	87,4	87,4
older (55-64)	2,7	71,4	71,4	72,6	74,2	73,7	73,5	74,1
Participation rate (20-74) - FEMALES	1,4	67,0	67,1	65,9	67,3	68,3	67,2	68,4
Participation rate (15-64) - FEMALES	2,4	73,6	74,0	75,2	75,8	75,9	76,0	75,9
young (15-24)	-0,5	48,0	49,2	47,3	47,8	48,4	47,8	47,5
prime-age (25-54)	2,3	82,7	83,1	84,2	84,9	84,8	84,8	84,9
older (55-64)	7,9	65,9	66,6	69,9	72,6	73,2	73,1	73,8
Participation rate (20-74) - MALES	-4,4	77,0	76,1	72,4	72,6	72,9	71,4	72,5
Participation rate (15-64) - MALES	-2,6	82,4	81,9	80,8	80,1	79,7	79,9	79,7
young (15-24)	-0,7	51,6	52,6	50,8	51,2	51,8	51,2	50,9
prime-age (25-54)	-2,1	92,0	91,4	90,4	89,8	89,8	90,0	89,9
older (55-64)	-2,6	77,1	76,3	75,3	75,7	74,1	73,9	74,5
Average effective exit age (TOTAL) (1)	1,2	64,3	64,5	65,4	65,5	65,5	65,5	65,5
Men	1,0	64,6	64,7	65,6	65,7	65,7	65,7	65,7
Women	1,3	64,0	64,3	65,2	65,3	65,3	65,3	65,3
Employment rate (15-64)	-0,6	74,7	75,1	74,3	74,3	74,1	74,3	74,2
Employment rate (20-74)	-1,8	69,1	69,1	66,1	66,8	67,5	66,3	67,3
Employment rate (15-74)	-2,0	66,3	66,5	63,6	64,0	64,7	63,6	64,3
Unemployment rate (15-64)	0,6	4,2	3,8	4,8	4,8	4,8	4,8	4,8
Unemployment rate (20-74)	0,4	4,0	3,6	4,5	4,4	4,4	4,4	4,4
Unemployment rate (15-74)	0,5	4,1	3,7	4,6	4,6	4,6	4,6	4,6
Employment (20-74) (in millions)	-7,2	40,3	40,8	38,6	36,9	35,9	34,2	33,1
Employment (15-64) (in millions)	-8,0	40,5	40,7	37,7	36,2	35,1	33,3	32,5
share of young (15-24)	1,0	10%	10%	9%	11%	11%	10%	11%
share of prime-age (25-54)	-1,3	71%	69%	69%	69%	67%	69%	69%
share of older (55-64)	0,3	19%	21%	21%	20%	22%	20%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-0,5	21,1	23,3	22,7	21,2	23,4	21,5	20,6
Old-age dependency ratio 15-64 (3)	23,7	32,2	34,0	43,5	49,4	51,3	55,1	55,9
Old-age dependency ratio 20-64 (3)	26,4	34,8	36,6	47,1	54,0	55,8	60,1	61,3
Total dependency ratio (4)	28,7	52,3	54,8	66,9	72,3	74,2	79,9	81,0
Total economic dependency ratio (5)	33,3	99,1	100,2	113,9	121,3	123,6	129,5	132,5
Economic old-age dependency ratio (15-64) (6)	29,7	40,6	42,3	53,5	61,6	64,1	68,6	70,3
Economic old-age dependency ratio (15-74) (7)	27,3	39,7	41,0	51,0	58,8	61,0	65,0	67,0

Germany			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	2,4	10,1	10,3	11,5	12,0	12,2	12,5	12,5
Of which : Old-age and early pensions	3,0	7,8	8,1	9,4	10,1	10,3	10,7	10,8
Disability pensions	-0,1	0,7	0,7	0,6	0,6	0,6	0,6	0,6
Survivors pensions	-0,4	1,6	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	0,0
Earnings-related pensions (old age and early pensions), gross	3,0	7,8	8,1	9,4	10,1	10,3	10,7	10,8
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	0,2
Public pensions, net	1,6	8,3	8,5	9,3	9,6	9,7	10,0	9,9
Public pensions, contributions	2,6	10,4	10,4	11,7	12,2	12,5	12,9	12,9
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	-3,2	82,6%	82,1%	81,2%	79,9%	79,5%	79,6%	79,4%
Pensioners (Public, in 1000 persons)	5.680	22.598	23.688	26.863	28.564	28.626	28.679	28.277
Public pensioners aged 65+ (1000 persons)	6.591	19.428	20.570	23.966	26.031	25.939	26.241	26.019
Share of pensioners below age 65 as % of all pensioners (Public)	-6,0	14%	13%	11%	9%	9%	8%	8%
Benefit ratio % (Public pensions)	-6,4	42,0	42,0	39,7	37,6	37,1	36,3	35,5
Gross replacement rate at retirement % (Old-age earnings-related)	-4,6	37,8	38,2	36,5	34,9	34,5	33,9	33,2
Average accrual rates % (new pensions, earnings related)	:	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:	:
Contributors (Public pensions, in 1000 persons)	-6.176	35.496	36.052	33.944	32.639	31.753	30.264	29.320
Support ratio (contributors/100 pensioners, Public pensions)	-53	157	152	126	114	111	106	104
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,3	0,0	0,0	0,1	0,1	0,2	0,3	0,3
Lower fertility (-20%)	1,2	0,0	0,0	0,0	0,2	0,4	0,7	1,2
Higher TFP growth (+0.4 p.p.)	-0,1	0,0	0,0	0,0	0,0	-0,1	-0,1	-0,1
Lower TFP growth (-0.4 p.p.)	0,1	0,0	0,0	0,0	0,1	0,1	0,1	0,1
Higher employment rate (+2 p.p.)	-0,2	0,0	0,0	-0,2	-0,2	-0,2	-0,2	-0,2
Lower employment rate (+2 p.p.)	0,1	0,0	0,0	0,2	0,2	0,2	0,2	0,1
Higher employment rate of older workers (+10 p.p.)	-0,4	0,0	-0,1	-0,6	-0,5	-0,5	-0,5	-0,4
Higher migration (+33%)	-0,4	0,0	-0,1	-0,3	-0,4	-0,5	-0,5	-0,4
Lower migration (-33%)	0,5	0,0	0,1	0,3	0,5	0,5	0,5	0,5
TFP risk scenario (-0.2 p.p.)	0,1	0,0	0,0	0,0	0,0	0,0	0,0	0,1
Policy scenario linking retirement age to life expectancy	-0,7	0,0	0,0	-0,1	-0,3	-0,5	-0,6	-0,7
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2,4	10,1	10,3	11,5	12,0	12,2	12,5	12,5
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	2,4		0,3	1,4	1,9	2,1	2,5	2,4
Dependency ratio	6,6		0,5	3,4	5,0	5,4	6,4	6,6
Coverage ratio	-1,3		-0,1	-0,6	-1,0	-1,0	-1,2	-1,3
Of which : Old-age	-0,5		0,0	-0,3	-0,3	-0,5	-0,5	-0,5
Early-age	-0,5		-0,6	0,2	-1,0	-0,4	0,1	-0,5
Cohort effect	-6,5		-0,1	-3,3	-4,5	-4,5	-6,3	-6,5
Benefit ratio	-2,4		-0,1	-0,9	-1,6	-1,8	-2,0	-2,4
Labour market ratio	-0,3		-0,1	-0,2	-0,2	-0,2	-0,3	-0,3
Of which : Employment rate	0,0		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	0,0
Career shift	-0,3		-0,1	-0,3	-0,3	-0,3	-0,3	-0,3
Interaction effect (residual)	-0,3		0,0	-0,2	-0,3	-0,3	-0,3	-0,3
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	2,4		0,3	1,1	0,5	0,2	0,4	-0,1
Dependency ratio	6,6		0,5	2,9	1,7	0,4	0,9	0,3
Coverage ratio	-1,3		-0,1	-0,6	-0,3	-0,1	-0,2	0,0
Of which : Old-age	-0,5		0,0	-0,3	-0,1	-0,2	-0,1	0,0
Early-age	-0,5		-0,6	0,8	-1,3	0,7	0,5	-0,6
Cohort effect	-6,5		-0,1	-3,2	-1,2	-0,1	-1,8	-0,2
Benefit ratio	-2,4		-0,1	-0,8	-0,7	-0,2	-0,3	-0,3
Labour market ratio	-0,3		-0,1	-0,1	0,0	0,0	-0,1	0,0
Of which : Employment rate	0,0		0,0	0,0	-0,1	0,1	0,0	0,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,3		-0,1	-0,2	0,0	0,0	-0,1	0,1
Interaction effect (residual)	-0,3		0,0	-0,2	-0,1	0,0	0,0	0,0

Germany					EC (DG ECFIN) - EPC (AWG) 2018 projections			

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.7	7.4	7.5	7.7	8.0	8.2	8.1	8.1
AWG risk scenario	1.5	7.4	7.6	8.0	8.5	8.8	8.8	8.9
TFP risk scenario	0.7	7.4	7.5	7.7	7.9	8.1	8.1	8.1
Demographic scenario	0.9	7.4	7.5	7.7	8.0	8.3	8.3	8.3
High Life expectancy scenario (variation of Demographic sc.)	1.1	7.4	7.5	7.8	8.1	8.4	8.4	8.5
Healthy ageing scenario	0.1	7.4	7.4	7.5	7.6	7.7	7.5	7.4
Death-related cost scenario	0.7	7.4	7.5	7.7	7.9	8.1	8.1	8.1
Income elasticity scenario	1.2	7.4	7.5	7.8	8.2	8.5	8.5	8.6
EU28 cost convergence scenario	1.0	7.4	7.5	7.7	8.1	8.3	8.3	8.4
Labour intensity scenario	2.1	7.4	7.5	8.1	8.7	9.1	9.3	9.5
Sector-specific composite indexation scenario	1.8	7.4	7.6	8.0	8.6	9.0	9.1	9.2
Non-demographic determinants scenario	2.6	7.4	7.6	8.2	8.8	9.5	9.8	10.0

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.6	1.3	1.5	1.7	1.8	2.0	2.0	1.9
AWG risk scenario	2.1	1.3	1.6	1.9	2.3	2.8	3.1	3.4
TFP risk scenario	1.4	1.3	1.5	1.8	2.1	2.5	2.6	2.6
Demographic scenario	1.3	1.3	1.5	1.8	2.0	2.4	2.5	2.5
Base case scenario	1.4	1.3	1.5	1.8	2.1	2.5	2.6	2.7
High Life expectancy scenario (variation of Base case sc.)	1.8	1.3	1.5	1.9	2.2	2.7	2.9	3.1
Healthy ageing scenario	1.1	1.3	1.5	1.8	2.0	2.3	2.4	2.4
Shift to formal care scenario	2.3	1.3	1.8	2.5	2.8	3.3	3.4	3.6
Coverage convergence scenario	2.1	1.3	1.6	1.9	2.3	2.8	3.1	3.4
Cost convergence scenario	1.7	1.3	1.5	1.8	2.1	2.6	2.8	2.9
Cost and coverage convergence scenario	2.3	1.3	1.6	2.0	2.4	3.0	3.3	3.6

Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	51%	2,749	2,940	3,340	3,631	4,181	4,154	4,161
of which: receiving institutional care	68%	775	834	980	1,060	1,279	1,314	1,300
receiving home care	45%	379	404	453	494	557	545	549
receiving cash benefits	45%	1,595	1,702	1,907	2,077	2,345	2,295	2,312

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.3	4.2	3.9	4.1	4.3	4.2	4.3	4.5
Number of students (in thousands)								
Total (students/staff in 2016 = 10,5)	-5.4%	13,773	13,457	13,730	13,752	13,074	12,943	13,027
as % of population 5-24	-1.3	86.6	85.4	86.0	85.0	85.3	85.6	85.3

Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.7	0.0	0.1	0.3	0.6	0.7	0.7	0.7

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.1	0.6	0.6	0.7	0.7	0.7	0.7	0.7

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	4.2	23.5	23.8	25.6	26.7	27.3	27.7	27.7

Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.3	0.0	0.2	0.6	1.0	1.5	1.9	2.3
TFP risk scenario (-0.2 p.p.)	0.8	0.0	0.0	0.1	0.3	0.5	0.6	0.8
High life expectancy (+2 years) (8)	1.4	0.0	0.0	0.2	0.5	0.8	1.1	1.4
Lower fertility (-20%)	2.2	0.0	0.1	-0.1	0.1	0.8	1.4	2.2
Higher TFP growth (+0.4 p.p.)	0.9	0.0	0.2	0.3	0.4	0.6	0.7	0.9
Lower TFP growth (-0.4 p.p.)	0.8	0.0	0.2	0.2	0.3	0.5	0.6	0.8
Higher employment rate (+2 p.p)	0.1	0.0	-0.1	-0.6	-0.4	-0.2	-0.1	0.1
Lower employment rate (+2 p.p)	1.4	0.0	0.2	0.9	1.0	1.2	1.3	1.4
Higher employment rate of older workers (+10 p.p.)	0.1	0.0	-0.1	-0.7	-0.5	-0.4	-0.2	0.1
Higher migration (+33%)	0.1	0.0	-0.1	-0.2	-0.3	-0.2	-0.1	0.1
Lower migration (-33%)	1.5	0.0	0.2	0.6	0.9	1.3	1.4	1.5
Policy scenario linking retirement age to life expectancy	-0.4	0.0	0.0	0.0	-0.1	-0.2	-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
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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

6. ESTONIA

Estonia				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,58	1,67	1,75	1,77	1,78	1,80	1,81
Life expectancy at birth								
males	11,1	72,8	73,8	76,1	78,3	80,3	82,2	83,9
females	7,6	81,9	82,5	84,1	85,6	87,0	88,3	89,5
Life expectancy at 65								
males	6,8	15,4	16,0	17,3	18,6	19,9	21,1	22,2
females	5,6	20,4	20,9	22,0	23,1	24,1	25,1	26,0
Net migration (thousand)	-2,7	2,9	2,3	1,4	1,2	0,7	0,1	0,3
Net migration as % of population	-0,2	0,2	0,2	0,1	0,1	0,1	0,0	0,0
Population (million)	-0,1	1,3	1,3	1,3	1,3	1,3	1,2	1,2
Children population (0-14) as % of total population	-1,4	16,1	16,5	15,4	14,7	15,2	15,0	14,7
Prime age population (25-54) as % of total population	-8,4	41,6	40,8	37,6	35,7	33,4	34,0	33,2
Working age population (15-64) as % of total population	-8,8	64,7	63,2	61,4	59,8	56,8	54,6	55,9
Elderly population (65 and over) as % of total population	10,2	19,2	20,3	23,2	25,5	28,0	30,4	29,4
Very elderly population (80 and over) as % of total population	8,7	5,2	6,0	6,8	8,8	9,9	11,4	13,9
Very elderly population (80 and over) as % of elderly population	20,2	27,2	29,4	29,4	34,4	35,4	37,4	47,4
Very elderly population (80 and over) as % of working age population	16,9	8,1	9,4	11,1	14,6	17,4	20,9	24,9
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,5	2,3	2,4	1,7	1,4	1,1	1,3	1,3
Employment 15-74 (growth rate)	-0,4	1,3	0,5	-0,3	-0,5	-0,8	-0,4	-0,3
Labour input : hours worked (growth rate)	-0,4	1,2	0,4	-0,3	-0,5	-0,8	-0,4	-0,3
Labour productivity per hour (growth rate)	1,9	1,1	1,9	2,1	1,9	1,9	1,7	1,5
TFP (growth rate)	1,2	0,8	1,1	1,3	1,3	1,2	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,7	0,3	0,8	0,8	0,7	0,7	0,6	0,5
Potential GDP per capita (growth rate)	1,7	2,2	2,4	1,9	1,6	1,4	1,6	1,6
Potential GDP per worker (growth rate)	1,9	1,0	1,9	2,1	1,9	1,9	1,7	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-193	851	833	802	767	713	665	657
Population growth (working age:15-64)	0,2	-0,5	-0,5	-0,3	-0,6	-0,9	-0,2	-0,3
Population (20-74) (in thousands)	-204	919	912	884	851	811	760	715
Population growth (20-74)	0,3	-0,4	-0,1	-0,3	-0,3	-0,6	-0,8	-0,1
Labour force 15-64 (thousands)	-163	659	644	613	582	539	505	497
Labour force 20-74 (thousands)	-174	685	668	631	602	561	524	511
Participation rate (20-74)	-3,0	74,5	73,3	71,4	70,8	69,2	69,0	71,5
Participation rate (15-64)	-1,9	77,5	77,2	76,5	75,8	75,5	75,9	75,6
young (15-24)	0,3	42,3	41,1	43,0	42,8	42,3	41,8	42,6
prime-age (25-54)	-0,2	87,9	87,7	87,5	87,4	87,7	87,7	87,7
older (55-64)	-0,2	71,2	70,6	73,1	71,2	69,8	71,4	71,0
Participation rate (20-74) - FEMALES	-2,7	69,3	67,6	65,7	65,3	64,0	63,9	66,6
Participation rate (15-64) - FEMALES	-2,2	73,3	72,8	72,1	71,3	70,9	71,4	71,1
young (15-24)	0,7	38,9	38,2	39,8	39,8	39,3	38,9	39,6
prime-age (25-54)	-0,3	82,0	81,6	81,7	81,4	81,4	81,8	81,6
older (55-64)	-2,0	71,4	70,4	72,2	69,6	68,0	69,7	69,3
Participation rate (20-74) - MALES	-3,8	80,2	79,4	77,3	76,2	74,4	74,0	76,4
Participation rate (15-64) - MALES	-1,8	81,8	81,7	80,7	80,2	80,1	80,3	80,0
young (15-24)	-0,1	45,5	44,0	46,1	45,7	45,1	44,6	45,5
prime-age (25-54)	0,0	93,7	93,6	93,0	93,3	93,9	93,6	93,6
older (55-64)	1,7	70,9	70,8	74,1	72,8	71,6	73,1	72,6
Average effective exit age (TOTAL) (1)	0,0	65,1	64,6	65,0	65,0	65,0	65,0	65,0
Men	0,2	65,2	64,8	65,3	65,3	65,3	65,3	65,3
Women	-0,2	65,0	64,5	64,8	64,8	64,8	64,8	64,8
Employment rate (15-64)	-2,6	72,2	71,4	70,0	69,6	69,6	69,9	69,6
Employment rate (20-74)	-3,5	69,8	68,2	65,8	65,5	64,2	64,0	66,3
Employment rate (15-74)	-4,3	66,2	64,4	61,7	61,4	60,3	59,8	61,9
Unemployment rate (15-64)	1,1	6,8	7,5	8,4	8,1	7,9	7,9	7,9
Unemployment rate (20-74)	1,0	6,3	6,9	7,8	7,5	7,2	7,2	7,3
Unemployment rate (15-74)	1,1	6,5	7,1	8,0	7,8	7,5	7,5	7,6
Employment (20-74) (in millions)	-0,2	0,6	0,6	0,6	0,6	0,5	0,5	0,5
Employment (15-64) (in millions)	-0,2	0,6	0,6	0,6	0,5	0,5	0,5	0,5
share of young (15-24)	2,0	8%	7%	9%	9%	9%	10%	10%
share of prime-age (25-54)	-3,8	74%	74%	71%	70%	69%	73%	70%
share of older (55-64)	1,8	19%	19%	20%	21%	22%	17%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	1,4	20,4	20,7	20,7	22,5	23,9	18,7	21,8
Old-age dependency ratio 15-64 (3)	23,0	29,7	32,2	37,8	42,6	49,2	55,7	52,7
Old-age dependency ratio 20-64 (3)	26,1	31,9	34,8	41,4	46,7	53,9	61,6	58,0
Total dependency ratio (4)	24,4	54,6	58,2	62,8	67,2	76,0	83,2	79,0
Total economic dependency ratio (5)	42,1	103,1	110,1	121,6	127,7	138,6	147,4	145,2
Economic old-age dependency ratio (15-64) (6)	35,1	35,7	39,6	49,1	55,8	64,7	73,8	70,8
Economic old-age dependency ratio (15-74) (7)	33,7	33,8	37,6	46,8	52,9	61,1	69,7	67,5

Estonia				**EC (DG ECFIN) - EPC (AWG) 2018 projections**				
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-1,8	8,1	7,8	7,2	7,1	7,1	6,9	6,4
Of which : Old-age and early pensions	-1,3	6,7	6,3	5,9	6,0	6,0	6,0	5,4
Disability pensions	-1,3	1,3	0,2	0,0	0,0	0,0	0,0	0,0
Survivors pensions	0,0	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Other	0,8	0,1	1,1	1,2	1,1	1,0	0,9	0,9
Earnings-related pensions (old age and early pensions), gross	-1,7	4,0	3,7	3,3	3,1	2,9	2,7	2,4
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	1,8	0,0	0,1	0,3	0,7	1,3	1,8	1,8
New pensions, gross (Old-age and early pensions)	-0,1	0,3	0,2	0,3	0,3	0,3	0,2	0,2
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	-0,7	5,7	5,5	5,2	5,1	5,0	5,0	5,0
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	-37	416	340	337	362	386	402	379
Public pensioners aged 65+ (1000 persons)	87	255	270	297	321	345	366	342
Share of pensioners below age 65 as % of all pensioners (Public)	-29,0	39%	21%	12%	11%	11%	9%	10%
Benefit ratio % (Public pensions)	-13,1	33,1	34,6	30,1	26,9	23,7	21,1	19,9
Gross replacement rate at retirement % (Old-age earnings-related)	-15,4	41,2	42,6	36,9	33,5	29,0	26,9	25,8
Average accrual rates % (new pensions, earnings related)	-0,2	0,5	0,5	0,5	0,4	0,4	0,3	0,3
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:	:
Contributors (Public pensions, in 1000 persons)	-168	648	627	589	563	526	493	480
Support ratio (contributors/100 pensioners, Public pensions)	-29	156	184	175	156	136	122	127
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,4	0,0	0,0	0,1	0,2	0,2	0,3	0,4
Lower fertility (-20%)	0,2	0,0	0,0	0,0	0,0	0,1	0,2	0,2
Higher TFP growth (+0.4 p.p.)	-0,3	0,0	0,0	0,0	-0,1	-0,2	-0,2	-0,3
Lower TFP growth (-0.4 p.p.)	0,3	0,0	0,0	0,0	0,1	0,2	0,3	0,3
Higher employment rate (+2 p.p.)	0,0	0,0	0,0	-0,1	-0,1	0,0	0,0	0,0
Lower employment rate (+2 p.p.)	0,0	0,0	0,0	0,1	0,1	0,0	0,0	0,0
Higher employment rate of older workers (+10 p.p.)	0,0	0,0	-0,1	-0,1	-0,1	0,0	0,0	0,0
Higher migration (+33%)	0,1	0,0	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	0,0	-0,1
TFP risk scenario (-0.2 p.p.)	0,3	0,0	0,0	0,1	0,2	0,2	0,3	0,3
Policy scenario linking retirement age to life expectancy	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1,8	8,1	7,8	7,2	7,1	7,1	6,9	6,4
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-1,8		-0,4	-0,9	-1,0	-1,1	-1,2	-1,8
Dependency ratio	4,6		0,7	2,1	3,0	4,1	5,1	4,6
Coverage ratio	-3,0		-1,9	-2,8	-2,9	-2,9	-3,0	-3,0
Of which : Old-age	-0,2		0,0	-0,2	-0,2	-0,2	-0,2	-0,2
Early-age	-7,1		-4,5	-8,0	-8,3	-7,0	-6,9	-7,1
Cohort effect	-3,5		-0,6	-1,6	-1,6	-3,1	-4,4	-3,5
Benefit ratio	-3,0		1,1	0,1	-0,8	-1,7	-2,6	-3,0
Labour market ratio	0,2		0,0	0,2	0,2	0,1	0,0	0,2
Of which : Employment rate	0,1		0,0	0,1	0,2	0,2	0,1	0,1
Labour intensity	0,0		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	0,0
Interaction effect (residual)	-0,7		-0,3	-0,5	-0,5	-0,6	-0,7	-0,7
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-1,8		-0,4	-0,6	-0,1	0,0	-0,1	-0,6
Dependency ratio	4,6		0,7	1,4	0,9	1,1	1,0	-0,4
Coverage ratio	-3,0		-1,9	-1,0	0,0	0,0	-0,1	0,1
Of which : Old-age	-0,2		0,0	-0,2	0,0	0,0	0,1	0,0
Early-age	-7,1		-4,5	-3,5	-0,3	1,3	0,1	-0,2
Cohort effect	-3,5		-0,6	-1,0	-0,1	-1,5	-1,3	0,9
Benefit ratio	-3,0		1,1	-1,0	-0,9	-1,0	-0,9	-0,4
Labour market ratio	0,2		0,0	0,1	0,0	0,0	-0,1	0,1
Of which : Employment rate	0,1		0,0	0,1	0,0	0,0	-0,1	0,1
Labour intensity	0,0		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	0,1
Interaction effect (residual)	-0,7		-0,3	-0,1	-0,1	-0,1	-0,1	0,0

Estonia				EC (DG ECFIN) - EPC (AWG) 2018 projections				

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.3	5.3	5.2	5.2	5.4	5.6	5.6	5.6
AWG risk scenario	1.1	5.3	5.3	5.6	6.0	6.3	6.4	6.4
TFP risk scenario	0.2	5.3	5.2	5.2	5.4	5.5	5.6	5.5
Demographic scenario	0.4	5.3	5.2	5.2	5.4	5.6	5.7	5.7
High Life expectancy scenario (variation of Demographic sc.)	0.4	5.3	5.2	5.2	5.5	5.6	5.7	5.8
Healthy ageing scenario	-0.3	5.3	5.1	5.0	5.1	5.1	5.1	5.0
Death-related cost scenario	:	5.3	:	:	:	:	:	:
Income elasticity scenario	0.6	5.3	5.2	5.3	5.6	5.8	5.9	6.0
EU28 cost convergence scenario	1.2	5.3	5.2	5.3	5.7	6.0	6.3	6.5
Labour intensity scenario	1.0	5.3	5.0	5.2	5.6	6.1	6.4	6.3
Sector-specific composite indexation scenario	1.4	5.3	5.3	5.7	6.2	6.5	6.7	6.8
Non-demographic determinants scenario	2.1	5.3	5.4	5.8	6.4	6.9	7.2	7.4

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.5	0.9	0.9	1.0	1.1	1.2	1.3	1.4
AWG risk scenario	2.9	0.9	1.0	1.3	1.7	2.2	2.9	3.8
TFP risk scenario	0.5	0.9	0.9	1.0	1.1	1.2	1.3	1.4
Demographic scenario	0.4	0.9	0.9	1.0	1.1	1.2	1.3	1.3
Base case scenario	0.5	0.9	0.9	1.0	1.1	1.2	1.3	1.4
High Life expectancy scenario (variation of Base case sc.)	0.6	0.9	0.9	1.0	1.2	1.3	1.4	1.5
Healthy ageing scenario	0.3	0.9	0.9	1.0	1.0	1.1	1.1	1.2
Shift to formal care scenario	0.8	0.9	1.0	1.2	1.3	1.4	1.6	1.7
Coverage convergence scenario	0.5	0.9	0.9	1.0	1.1	1.2	1.3	1.4
Cost convergence scenario	3.2	0.9	1.0	1.3	1.8	2.4	3.1	4.1
Cost and coverage convergence scenario	3.2	0.9	1.0	1.3	1.8	2.4	3.1	4.1
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	18%	172	177	185	195	199	200	202
of which: receiving institutional care	54%	13	14	15	17	18	19	20
receiving home care	28%	26	27	28	30	31	32	33
receiving cash benefits	12%	133	136	142	148	149	149	148

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.2	4.8	4.5	4.7	4.6	4.8	5.1	5.0
Number of students (in thousands)								
Total (students/staff in 2016 = 10,4)	-15.6%	223	221	219	205	199	198	188
as % of population 5-24	-3.2	81.9	81.9	77.3	78.4	79.2	79.0	78.8
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.6	0.0	0.1	0.3	0.5	0.6	0.6	0.6

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	0.2	0.2	0.3	0.2	0.2	0.2	0.2

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-0.8	19.3	18.6	18.3	18.5	18.8	19.2	18.5
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	3.3	0.0	0.2	0.7	1.2	1.7	2.4	3.3
TFP risk scenario (-0.2 p.p.)	0.2	0.0	0.0	0.1	0.1	0.1	0.2	0.2
High life expectancy (+2 years) (8)	0.5	0.0	0.0	0.1	0.1	0.3	0.4	0.5
Lower fertility (-20%)	0.1	0.0	0.0	-0.3	-0.5	-0.3	-0.2	0.1
Higher TFP growth (+0.4 p.p.)	-0.3	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.3
Lower TFP growth (-0.4 p.p.)	0.3	0.0	0.0	0.0	0.0	0.1	0.2	0.3
Higher employment rate (+2 p.p)	-0.2	0.0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
Lower employment rate (+2 p.p)	0.2	0.0	0.1	0.3	0.3	0.2	0.2	0.2
Higher employment rate of older workers (+10 p.p.)	-0.3	0.0	-0.1	-0.4	-0.3	-0.4	-0.3	-0.3
Higher migration (+33%)	0.1	0.0	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	0.0	-0.1
Policy scenario linking retirement age to life expectancy	-0.6	0.0	0.0	-0.2	-0.3	-0.4	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

7. IRELAND

Ireland				EC (DG ECFIN) - EPC (AWG) 2018 projections			
Main demographic and macroeconomic assumptions							
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,1	1,89	1,96	1,96	1,96	1,96	1,96	1,97
Life expectancy at birth								
males	6,9	79,5	80,1	81,5	82,9	84,1	85,3	86,4
females	6,8	83,5	84,2	85,5	86,9	88,1	89,2	90,3
Life expectancy at 65								
males	5,0	18,5	18,9	19,9	20,9	21,8	22,7	23,5
females	5,5	21,1	21,6	22,7	23,8	24,8	25,7	26,6
Net migration (thousand)	-4,0	14,8	9,9	7,5	11,4	13,7	12,2	10,8
Net migration as % of population	-0,1	0,3	0,2	0,1	0,2	0,2	0,2	0,2
Population (million)	1,4	4,7	4,9	5,2	5,4	5,7	5,9	6,0
Children population (0-14) as % of total population	-5,2	22,2	22,1	18,5	17,2	18,4	17,8	17,0
Prime age population (25-54) as % of total population	-8,0	42,6	40,6	36,6	35,0	35,4	35,5	34,6
Working age population (15-64) as % of total population	-5,6	64,4	63,3	63,1	60,4	56,0	57,0	58,7
Elderly population (65 and over) as % of total population	10,8	13,4	14,6	18,4	22,4	25,6	25,2	24,2
Very elderly population (80 and over) as % of total population	8,0	3,1	3,4	4,9	6,6	8,5	10,6	11,2
Very elderly population (80 and over) as % of elderly population	22,6	23,5	23,4	26,9	29,7	33,1	42,2	46,0
Very elderly population (80 and over) as % of working age population	14,1	4,9	5,4	7,8	11,0	15,1	18,7	19,0
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	2,1	5,0	3,3	1,8	1,6	1,5	2,0	1,9
Employment 15-74 (growth rate)	0,5	2,8	0,9	0,6	0,1	-0,1	0,5	0,4
Labour input : hours worked (growth rate)	0,5	3,1	0,8	0,5	0,1	0,0	0,5	0,4
Labour productivity per hour (growth rate)	1,6	1,8	2,4	1,3	1,5	1,5	1,5	1,5
TFP (growth rate)	1,1	1,9	1,8	0,9	1,0	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	-0,1	0,6	0,4	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,6	4,1	2,4	1,4	1,0	1,0	1,8	1,7
Potential GDP per worker (growth rate)	1,6	2,2	2,4	1,2	1,5	1,6	1,5	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	532	3.018	3.085	3.255	3.268	3.196	3.366	3.550
Population growth (working age:15-64)	-0,1	0,4	0,5	0,3	-0,2	0,0	0,8	0,3
Population (20-74) (in thousands)	649	3.093	3.185	3.379	3.559	3.565	3.546	3.742
Population growth (20-74)	0,1	0,6	0,6	0,8	0,3	-0,1	0,2	0,7
Labour force 15-64 (thousands)	363	2.128	2.166	2.251	2.297	2.262	2.365	2.491
Labour force 20-74 (thousands)	418	2.134	2.178	2.289	2.378	2.358	2.413	2.551
Participation rate (20-74)	-0,8	69,0	68,4	67,7	66,8	66,2	68,1	68,2
Participation rate (15-64)	-0,3	70,5	70,2	69,2	70,3	70,8	70,2	70,2
young (15-24)	4,0	38,6	39,3	40,5	42,7	41,0	40,8	42,6
prime-age (25-54)	0,1	81,2	81,2	81,4	81,3	81,4	81,2	81,3
older (55-64)	4,8	61,0	61,9	64,8	66,2	64,3	65,8	65,8
Participation rate (20-74) - FEMALES	2,5	61,4	61,6	62,5	62,1	61,1	63,3	63,9
Participation rate (15-64) - FEMALES	2,3	63,7	64,1	64,5	66,0	66,2	66,0	66,0
young (15-24)	3,8	36,9	37,3	38,7	40,8	39,2	39,0	40,8
prime-age (25-54)	2,3	73,4	74,1	75,8	75,6	75,7	75,6	75,8
older (55-64)	12,1	51,0	53,7	59,4	63,4	61,4	63,1	63,1
Participation rate (20-74) - MALES	-4,5	76,8	75,4	73,1	71,5	71,2	72,7	72,2
Participation rate (15-64) - MALES	-3,3	77,5	76,4	73,8	74,5	75,2	74,3	74,2
young (15-24)	4,3	40,1	41,2	42,3	44,6	42,8	42,5	44,3
prime-age (25-54)	-2,8	89,3	88,6	87,0	86,7	86,9	86,5	86,5
older (55-64)	-2,8	71,1	70,4	70,6	69,3	67,4	68,4	68,4
Average effective exit age (TOTAL) (1)	1,5	64,6	65,2	66,0	66,0	66,0	66,0	66,0
Men	1,0	65,0	65,3	66,0	66,0	66,0	66,0	66,0
Women	1,9	64,1	65,1	66,1	66,1	66,1	66,1	66,1
Employment rate (15-64)	0,8	64,8	66,3	64,6	65,7	66,2	65,7	65,6
Employment rate (20-74)	0,3	63,8	64,9	63,7	62,9	62,3	64,0	64,1
Employment rate (15-74)	0,4	59,5	60,5	58,8	58,9	58,4	59,4	59,8
Unemployment rate (15-64)	-1,5	8,1	5,5	6,5	6,5	6,5	6,5	6,5
Unemployment rate (20-74)	-1,6	7,5	5,4	5,9	5,9	5,9	5,9	5,9
Unemployment rate (15-74)	-1,7	7,9	5,4	6,3	6,2	6,1	6,2	6,2
Employment (20-74) (in millions)	0,4	2,0	2,1	2,2	2,2	2,2	2,3	2,4
Employment (15-64) (in millions)	0,4	2,0	2,0	2,1	2,1	2,1	2,2	2,3
share of young (15-24)	3,0	8%	9%	12%	11%	10%	11%	11%
share of prime-age (25-54)	-8,2	77%	75%	69%	67%	73%	72%	69%
share of older (55-64)	5,2	15%	16%	19%	21%	17%	16%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	4,2	16,7	17,7	20,2	22,2	18,1	17,2	20,9
Old-age dependency ratio 15-64 (3)	20,4	20,9	23,1	29,1	37,1	45,7	44,2	41,2
Old-age dependency ratio 20-64 (3)	22,8	23,1	25,7	32,9	41,2	50,7	49,6	45,9
Total dependency ratio (4)	14,9	55,4	57,9	58,5	65,6	78,5	75,4	70,2
Total economic dependency ratio (5)	13,2	132,9	130,5	133,2	136,5	151,8	154,0	146,1
Economic old-age dependency ratio (15-64) (6)	28,2	29,2	31,5	39,8	49,9	61,9	62,1	57,4
Economic old-age dependency ratio (15-74) (7)	26,1	28,3	30,5	37,9	46,8	57,7	59,1	54,4

Ireland				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross (including POPS)	1,6	5,0	5,1	5,8	6,7	7,4	7,2	6,6
Of which : Old-age and early pensions	1,9	2,0	2,1	2,4	3,1	4,0	4,3	4,0
Disability pensions	0,1	0,7	0,7	0,8	0,8	0,8	0,8	0,8
Survivors pensions	0,2	0,5	0,5	0,6	0,7	0,7	0,8	0,7
Other	0,0	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Earnings-related pensions (old age and early pensions), gross	2,0	1,7	1,8	2,1	2,8	3,7	4,0	3,7
Private occupational pensions, gross	-0,6	1,2	1,3	1,5	1,5	1,4	0,9	0,6
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,0	0,2	0,1	0,2	0,2	0,2	0,2	0,2
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	2,2	3,8	3,8	4,3	5,2	6,1	6,3	6,0
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	878	914	1.000	1.195	1.460	1.691	1.792	1.792
Public pensioners aged 65+ (1000 persons)	806	592	669	836	1.088	1.347	1.439	1.398
Share of pensioners below age 65 as % of all pensioners (Public)	-13,2	35%	33%	30%	25%	20%	20%	22%
Benefit ratio % (Public pensions)	0,0	26,8	26,3	26,4	26,5	26,6	26,8	26,8
Gross replacement rate at retirement % (Old-age earnings-related)	-2,1	36,6	34,3	34,7	34,8	34,4	34,4	34,4
Average accrual rates % (new pensions, earnings related)	:	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:	:
Contributors (Public pensions, in 1000 persons)	561	2.553	2.681	2.806	2.901	2.875	2.949	3.114
Support ratio (contributors/100 pensioners, Public pensions)	-106	279	268	235	199	170	165	174
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,3	0,0	0,0	0,0	0,1	0,2	0,3	0,3
Lower fertility (-20%)	1,0	0,0	0,0	0,0	0,1	0,4	0,7	1,0
Higher TFP growth (+0.4 p.p.)	-0,2	0,0	0,0	0,0	-0,1	-0,1	-0,2	-0,2
Lower TFP growth (-0.4 p.p.)	0,2	0,0	0,0	0,0	0,1	0,2	0,2	0,2
Higher employment rate (+2 p.p.)	-0,2	0,0	0,0	-0,2	-0,2	-0,2	-0,3	-0,2
Lower employment rate (+2 p.p.)	0,2	0,0	0,0	0,2	0,2	0,2	0,2	0,2
Higher employment rate of older workers (+10 p.p.)	-0,4	0,0	-0,1	-0,3	-0,4	-0,4	-0,4	-0,4
Higher migration (+33%)	-0,1	0,0	0,0	0,0	-0,1	-0,1	-0,1	-0,1
Lower migration (-33%)	0,2	0,0	0,0	0,0	0,1	0,1	0,1	0,2
TFP risk scenario (-0.2 p.p.)	0,0	0,0	0,0	-0,1	-0,1	-0,1	0,0	0,0
Policy scenario linking retirement age to life expectancy	-0,5	0,0	0,0	-0,3	-0,7	-0,8	-0,6	-0,5
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	1,6	5,0	5,1	5,8	6,7	7,4	7,2	6,6
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	1,6		0,1	0,8	1,7	2,4	2,2	1,6
Dependency ratio	4,2		0,6	2,0	3,4	4,9	4,8	4,2
Coverage ratio	-0,9		-0,2	-0,7	-1,0	-1,3	-1,0	-0,9
Of which : Old-age	0,2		0,0	-0,3	-0,2	0,0	0,3	0,2
Early-age	-0,6		-0,2	-0,7	-0,5	0,3	-0,2	-0,6
Cohort effect	-2,6		-0,2	-0,8	-2,2	-4,6	-3,9	-2,6
Benefit ratio	-1,4		-0,1	-0,2	-0,3	-0,6	-1,1	-1,4
Labour market ratio	-0,1		-0,1	-0,1	-0,2	-0,3	-0,2	-0,1
Of which : Employment rate	-0,1		-0,1	-0,1	-0,1	-0,1	-0,1	-0,1
Labour intensity	0,0		0,0	0,0	0,1	0,0	0,0	0,0
Career shift	-0,1		0,0	-0,1	-0,2	-0,2	-0,1	-0,1
Interaction effect (residual)	-0,2		0,0	-0,1	-0,2	-0,2	-0,2	-0,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	1,6	0,1	0,7	0,9	0,7	-0,2	-0,6	
Dependency ratio	4,2	0,6	1,4	1,4	1,5	-0,2	-0,5	
Coverage ratio	-0,9	-0,2	-0,6	-0,3	-0,3	0,3	0,1	
Of which : Old-age	0,2	0,0	-0,3	0,1	0,2	0,4	-0,1	
Early-age	-0,6	-0,2	-0,5	0,2	0,8	-0,5	-0,4	
Cohort effect	-2,6	-0,2	-0,6	-1,4	-2,4	0,6	1,3	
Benefit ratio	-1,4	-0,1	-0,1	-0,1	-0,3	-0,5	-0,3	
Labour market ratio	-0,1	-0,1	0,0	-0,1	-0,1	0,1	0,1	
Of which : Employment rate	-0,1	-0,1	0,1	0,0	-0,1	0,0	0,1	
Labour intensity	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Career shift	-0,1	0,0	-0,1	-0,1	0,0	0,1	0,0	
Interaction effect (residual)	-0,2	0,0	-0,1	-0,1	-0,1	0,0	0,0	

Ireland		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.0	4.1	4.3	4.6	4.9	5.1	5.2	5.1
AWG risk scenario	1.7	4.1	4.4	4.9	5.4	5.6	5.8	5.8
TFP risk scenario	1.0	4.1	4.3	4.6	4.9	5.1	5.2	5.2
Demographic scenario	1.1	4.1	4.2	4.6	4.9	5.1	5.2	5.2
High Life expectancy scenario (variation of Demographic sc.)	1.2	4.1	4.2	4.6	4.9	5.2	5.3	5.4
Healthy ageing scenario	0.6	4.1	4.2	4.4	4.6	4.7	4.8	4.7
Death-related cost scenario	:	4.1	:	:	:	:	:	:
Income elasticity scenario	1.3	4.1	4.3	4.7	5.1	5.3	5.4	5.4
EU28 cost convergence scenario	2.2	4.1	4.3	4.8	5.4	5.8	6.1	6.3
Labour intensity scenario	1.2	4.1	4.1	4.5	4.9	5.4	5.5	5.4
Sector-specific composite indexation scenario	1.5	4.1	4.3	4.8	5.2	5.5	5.6	5.7
Non-demographic determinants scenario	2.4	4.1	4.4	5.0	5.6	6.0	6.4	6.5
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.9	1.3	1.4	1.7	2.1	2.7	3.1	3.3
AWG risk scenario	3.4	1.3	1.4	1.9	2.6	3.4	4.3	4.8
TFP risk scenario	2.0	1.3	1.4	1.7	2.1	2.7	3.1	3.3
Demographic scenario	1.9	1.3	1.4	1.7	2.2	2.6	3.0	3.3
Base case scenario	2.0	1.3	1.4	1.7	2.1	2.7	3.2	3.4
High Life expectancy scenario (variation of Base case sc.)	2.4	1.3	1.4	1.7	2.2	2.9	3.5	3.8
Healthy ageing scenario	1.6	1.3	1.3	1.6	2.0	2.4	2.8	3.0
Shift to formal care scenario	2.5	1.3	1.5	2.1	2.6	3.2	3.7	3.9
Coverage convergence scenario	3.7	1.3	1.4	2.0	2.7	3.6	4.5	5.1
Cost convergence scenario	2.0	1.3	1.4	1.7	2.1	2.7	3.2	3.4
Cost and coverage convergence scenario	3.7	1.3	1.4	2.0	2.7	3.6	4.5	5.1
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	182%	104	114	146	186	228	270	294
of which: receiving institutional care	212%	35	38	49	64	80	98	109
receiving home care	167%	69	76	97	122	147	172	185
receiving cash benefits	:	0	0	0	0	0	0	0
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.2	3.6	3.5	3.6	3.2	3.4	3.5	3.3
Number of students (in thousands)								
Total (students/staff in 2016 = 15,1)	13.0%	1,196	1,270	1,307	1,211	1,280	1,370	1,352
as % of population 5-24	-3.2	99.0	97.7	94.7	96.0	98.5	96.7	95.8
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.4	0.0	0.1	0.2	0.4	0.4	0.4	0.4
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.2	1.1	0.8	0.9	0.9	0.9	0.9	0.9
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	4.1	15.2	15.0	16.6	17.8	19.4	20.0	19.3
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.1	0.0	0.2	0.5	0.9	1.3	1.8	2.1
TFP risk scenario (-0.2 p.p.)	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.0	0.0
High life expectancy (+2 years) (8)	0.7	0.0	0.0	0.0	0.1	0.3	0.5	0.7
Lower fertility (-20%)	1.4	0.0	0.0	-0.2	-0.1	0.4	0.9	1.4
Higher TFP growth (+0.4 p.p.)	0.6	0.7	0.7	0.8	0.9	1.0	1.2	1.2
Lower TFP growth (-0.4 p.p.)	0.2	0.0	0.0	0.0	0.0	0.1	0.2	0.2
Higher employment rate (+2 p.p)	-0.8	0.0	-0.1	-0.7	-0.7	-0.7	-0.8	-0.8
Lower employment rate (+2 p.p)	0.8	0.0	0.1	0.7	0.7	0.8	0.8	0.8
Higher employment rate of older workers (+10 p.p.)	-0.7	0.0	-0.1	-0.6	-0.7	-0.8	-0.7	-0.7
Higher migration (+33%)	-0.2	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.2
Lower migration (-33%)	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Policy scenario linking retirement age to life expectancy	-0.8	0.0	0.0	-0.3	-0.8	-0.9	-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
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 don't include pensioners under the POPS scheme).
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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

8. GREECE

Greece				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,3	1,39	1,33	1,40	1,46	1,52	1,58	1,64
Life expectancy at birth								
males	7,7	78,8	79,6	81,2	82,6	84,0	85,3	86,5
females	6,4	83,9	84,5	85,8	87,0	88,2	89,3	90,3
Life expectancy at 65								
males	5,1	18,7	19,2	20,2	21,2	22,1	23,0	23,8
females	5,2	21,4	21,9	22,9	23,9	24,8	25,7	26,6
Net migration (thousand)	34,9	-23,9	-16,8	-4,1	7,9	13,3	10,5	11,0
Net migration as % of population	0,4	-0,2	-0,2	0,0	0,1	0,1	0,1	0,1
Population (million)	-3,1	10,8	10,5	9,9	9,4	8,9	8,3	7,7
Children population (0-14) as % of total population	-2,1	14,4	13,9	11,6	11,4	12,1	11,8	12,3
Prime age population (25-54) as % of total population	-9,7	41,4	39,8	35,2	32,2	32,1	32,1	31,6
Working age population (15-64) as % of total population	-10,4	64,2	63,3	61,0	55,6	51,4	52,7	53,8
Elderly population (65 and over) as % of total population	12,5	21,4	22,8	27,4	32,9	36,5	35,4	33,9
Very elderly population (80 and over) as % of total population	10,1	6,6	7,4	8,8	11,3	14,4	17,2	16,6
Very elderly population (80 and over) as % of elderly population	18,3	30,8	32,2	32,1	34,2	39,4	48,6	49,1
Very elderly population (80 and over) as % of working age population	20,7	10,3	11,6	14,4	20,2	28,0	32,7	31,0
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	0,8	-1,4	-0,3	0,5	0,8	1,1	1,3	1,2
Employment 15-74 (growth rate)	-0,4	-0,4	-0,2	-0,3	-0,8	-0,8	-0,4	-0,4
Labour input : hours worked (growth rate)	-0,4	-0,2	0,1	-0,3	-0,8	-0,8	-0,4	-0,4
Labour productivity per hour (growth rate)	1,1	-1,2	-0,4	0,8	1,6	1,9	1,7	1,5
TFP (growth rate)	0,8	-0,6	0,0	0,5	1,0	1,2	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,4	-0,6	-0,3	0,3	0,5	0,7	0,6	0,5
Potential GDP per capita (growth rate)	1,4	-0,8	0,3	1,1	1,3	1,7	2,1	1,9
Potential GDP per worker (growth rate)	1,2	-0,9	-0,1	0,8	1,6	1,9	1,7	1,6
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-2.785	6.904	6.667	6.050	5.228	4.569	4.357	4.118
Population growth (working age:15-64)	0,3	-1,0	-0,9	-1,1	-1,5	-0,8	-0,4	-0,7
Population (20-74) (in thousands)	-2.804	7.486	7.325	6.870	6.279	5.509	4.906	4.682
Population growth (20-74)	0,3	-0,7	-0,6	-0,6	-1,1	-1,3	-0,7	-0,4
Labour force 15-64 (thousands)	-1.627	4.698	4.594	4.320	3.878	3.437	3.241	3.071
Labour force 20-74 (thousands)	-1.372	4.736	4.632	4.423	4.113	3.721	3.485	3.363
Participation rate (20-74)	8,6	63,3	63,2	64,4	65,5	67,5	71,0	71,8
Participation rate (15-64)	6,5	68,0	68,9	71,4	74,2	75,2	74,4	74,6
young (15-24)	2,2	25,7	26,3	27,6	28,5	26,9	27,0	27,9
prime-age (25-54)	2,8	85,4	86,5	87,4	88,1	88,4	88,1	88,2
older (55-64)	30,2	45,2	48,8	65,0	71,3	74,6	75,3	75,3
Participation rate (20-74) - FEMALES	11,5	55,7	56,4	58,8	60,0	62,2	66,0	67,2
Participation rate (15-64) - FEMALES	9,2	60,7	62,4	66,5	69,4	70,6	69,7	69,9
young (15-24)	1,6	24,3	24,5	25,7	26,5	24,9	24,9	25,8
prime-age (25-54)	4,9	77,8	80,1	82,2	82,7	82,9	82,7	82,7
older (55-64)	37,0	34,0	38,3	58,2	65,7	70,3	70,9	71,0
Participation rate (20-74) - MALES	5,0	71,2	70,4	70,3	71,2	72,9	75,9	76,2
Participation rate (15-64) - MALES	3,2	75,6	75,7	76,4	78,8	79,6	78,7	78,9
young (15-24)	2,6	27,1	28,1	29,4	30,3	28,7	28,8	29,7
prime-age (25-54)	-0,2	93,3	93,0	92,6	93,2	93,4	93,0	93,1
older (55-64)	22,0	57,6	60,8	72,6	77,4	79,3	79,8	79,6
Average effective exit age (TOTAL) (1)	6,2	61,9	62,9	64,9	66,1	67,0	67,4	68,1
Men	5,6	62,3	63,0	65,0	66,3	67,0	67,2	67,8
Women	6,8	61,6	62,8	64,7	66,0	66,9	67,6	68,3
Employment rate (15-64)	16,8	51,8	57,4	63,3	67,0	69,3	68,5	68,7
Employment rate (20-74)	18,1	48,4	52,8	57,2	59,4	62,5	65,7	66,5
Employment rate (15-74)	17,0	45,4	49,5	53,7	56,3	58,8	61,3	62,4
Unemployment rate (15-64)	-15,9	23,8	16,7	11,4	9,6	7,9	7,9	7,9
Unemployment rate (20-74)	-16,0	23,4	16,4	11,1	9,3	7,5	7,5	7,4
Unemployment rate (15-74)	-16,2	23,6	16,6	11,2	9,3	7,5	7,6	7,5
Employment (20-74) (in millions)	-0,5	3,6	3,9	3,9	3,7	3,4	3,2	3,1
Employment (15-64) (in millions)	-0,8	3,6	3,8	3,8	3,5	3,2	3,0	2,8
share of young (15-24)	1,9	4%	5%	6%	6%	5%	6%	6%
share of prime-age (25-54)	-12,3	82%	80%	71%	69%	73%	72%	70%
share of older (55-64)	10,4	14%	15%	23%	26%	21%	22%	24%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3,9	19,7	21,1	25,0	26,1	20,9	21,1	23,6
Old-age dependency ratio 15-64 (3)	29,7	33,4	36,1	44,9	59,2	71,0	67,2	63,1
Old-age dependency ratio 20-64 (3)	32,6	36,2	39,2	48,9	63,8	77,3	73,6	68,7
Total dependency ratio (4)	30,2	55,8	58,0	63,9	79,7	94,6	89,6	86,0
Total economic dependency ratio (5)	-50,9	195,6	170,7	150,7	150,5	156,9	154,8	144,6
Economic old-age dependency ratio (15-64) (6)	18,4	62,4	61,0	67,4	80,9	92,8	89,1	80,8
Economic old-age dependency ratio (15-74) (7)	11,7	61,3	60,0	65,3	75,6	84,9	82,0	73,0

Greece			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-6,6	17,3	13,4	12,0	12,9	12,5	11,5	10,6
Of which : Old-age and early pensions	-4,5	12,9	10,2	9,1	9,9	9,8	9,0	8,3
Disability pensions	-0,4	1,2	1,0	0,9	0,9	0,9	0,9	0,9
Survivors pensions	-1,2	2,4	1,9	1,7	1,7	1,5	1,3	1,1
Other	-0,5	0,8	0,3	0,3	0,3	0,3	0,3	0,3
Earnings-related pensions (old age and early pensions), gross	-2,3	8,1	6,1	5,5	6,0	6,0	5,8	5,7
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,0	0,4	0,4	0,5	0,6	0,5	0,5	0,4
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	-2,9	13,7	12,6	12,3	12,6	12,2	11,5	10,8
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	-39	2.619	2.615	2.609	2.901	2.975	2.800	2.580
Public pensioners aged 65+ (1000 persons)	449	1.973	2.080	2.330	2.668	2.782	2.630	2.421
Share of pensioners below age 65 as % of all pensioners (Public)	-18,5	25%	20%	11%	8%	6%	6%	6%
Benefit ratio % (Public pensions)	-35,3	77,0	64,2	59,4	54,1	47,4	43,1	41,6
Gross replacement rate at retirement % (Old-age earnings-related)	-14,7	68,4	66,5	61,6	59,2	56,2	53,8	53,7
Average accrual rates % (new pensions, earnings related)	-0,4	1,9	1,8	1,8	1,7	1,6	1,5	1,5
Average contributory period, years (new pensions, earnings-related)	6,8	30,6	30,5	31,2	33,1	35,1	36,4	37,4
Contributors (Public pensions, in 1000 persons)	-626	4.519	4.834	4.921	4.665	4.303	4.031	3.892
Support ratio (contributors/100 pensioners, Public pensions)	-22	173	185	189	161	145	144	151
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,0	0,0	0,0	-0,3	-0,4	-0,2	-0,2	0,0
Lower fertility (-20%)	1,3	0,0	0,0	0,0	0,1	0,6	0,9	1,3
Higher TFP growth (+0.4 p.p.)	-1,1	0,0	0,0	0,0	-0,3	-0,8	-1,0	-1,1
Lower TFP growth (-0.4 p.p.)	1,4	0,0	0,0	0,0	0,4	1,0	1,3	1,4
Higher employment rate (+2 p.p.)	0,0	0,0	-0,1	-0,3	-0,3	-0,3	-0,2	0,0
Lower employment rate (+2 p.p.)	0,0	0,0	0,1	0,3	0,3	0,3	0,2	0,0
Higher employment rate of older workers (+10 p.p.)	-0,1	0,0	-0,2	-0,7	-0,8	-0,7	-0,5	-0,1
Higher migration (+33%)	-0,3	0,0	0,1	0,2	0,2	0,1	0,0	-0,3
Lower migration (-33%)	0,3	0,0	-0,1	-0,2	-0,2	-0,1	0,1	0,3
TFP risk scenario (-0.2 p.p.)	1,0	0,0	0,1	0,5	0,9	1,0	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	0,0
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-6,6	17,3	13,4	12,0	12,9	12,5	11,5	10,6
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-6,6		-3,9	-5,3	-4,4	-4,8	-5,8	-6,6
Dependency ratio	9,1		1,4	4,4	7,9	10,5	9,9	9,1
Coverage ratio	-1,9		-0,8	-2,3	-2,6	-2,9	-2,4	-1,9
Of which : Old-age	:		:	:	:	:	:	:
Early-age	:		:	:	:	:	:	:
Cohort effect	-6,0		0,0	-1,2	-4,7	-8,6	-7,1	-6,0
Benefit ratio	-8,3		-3,0	-4,2	-5,2	-6,9	-7,9	-8,3
Labour market ratio	-4,9		-1,6	-3,1	-4,1	-4,9	-4,7	-4,9
Of which : Employment rate	-4,0		-1,7	-2,9	-3,5	-4,1	-4,0	-4,0
Labour intensity	0,1		0,0	0,1	0,1	0,1	0,1	0,1
Career shift	-1,0		0,0	-0,2	-0,6	-0,9	-0,8	-1,0
Interaction effect (residual)	-0,7		0,1	-0,2	-0,4	-0,6	-0,7	-0,7
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-6,6		-3,9	-1,4	0,8	-0,3	-1,0	-0,9
Dependency ratio	9,1		1,4	3,0	3,5	2,6	-0,6	-0,8
Coverage ratio	-1,9		-0,8	-1,6	-0,3	-0,3	0,5	0,4
Of which : Old-age	0,0		:	:	:	:	:	:
Early-age	0,0		:	:	:	:	:	:
Cohort effect	-6,0		0,0	-1,2	-3,6	-3,8	1,5	1,1
Benefit ratio	-8,3		-3,0	-1,2	-1,1	-1,6	-1,1	-0,3
Labour market ratio	-4,9		-1,6	-1,4	-1,0	-0,8	0,1	-0,2
Of which : Employment rate	-4,0		-1,7	-1,2	-0,6	-0,5	0,1	0,0
Labour intensity	0,1		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-1,0		0,0	-0,2	-0,4	-0,3	0,1	-0,2
Interaction effect (residual)	-0,7		0,1	-0,2	-0,3	-0,2	0,0	0,0

Greece				EC (DG ECFIN) - EPC (AWG) 2018 projections			
Health care							
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.2	5.0	5.1	5.5	5.9	6.2	6.3	6.2
AWG risk scenario	2.0	5.0	5.3	5.8	6.4	6.8	7.0	6.9
TFP risk scenario	1.1	5.0	5.1	5.5	5.9	6.1	6.2	6.1
Demographic scenario	1.3	5.0	5.1	5.5	5.9	6.2	6.3	6.2
High Life expectancy scenario (variation of Demographic sc.)	1.5	5.0	5.1	5.5	6.0	6.3	6.5	6.4
Healthy ageing scenario	0.7	5.0	5.1	5.3	5.6	5.8	5.8	5.6
Death-related cost scenario	:	5.0	:	:	:	:	:	:
Income elasticity scenario	1.5	5.0	5.1	5.6	6.1	6.4	6.6	6.5
EU28 cost convergence scenario	2.4	5.0	5.2	5.8	6.4	6.9	7.3	7.4
Labour intensity scenario	0.5	5.0	4.9	4.9	5.3	5.6	5.7	5.4
Sector-specific composite indexation scenario	2.6	5.0	5.3	6.0	6.7	7.3	7.6	7.5
Non-demographic determinants scenario	3.0	5.0	5.3	6.0	6.7	7.4	7.8	7.9
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
AWG risk scenario	4.8	0.1	0.1	0.2	0.5	1.0	2.1	4.9
TFP risk scenario	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Demographic scenario	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Base case scenario	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
High Life expectancy scenario (variation of Base case sc.)	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Healthy ageing scenario	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Shift to formal care scenario	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Coverage convergence scenario	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.3
Cost convergence scenario	3.4	0.1	0.1	0.2	0.4	0.8	1.5	3.5
Cost and coverage convergence scenario	5.1	0.1	0.1	0.2	0.5	1.0	2.2	5.2
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	46%	368	388	424	476	535	571	538
of which: receiving institutional care	64%	125	133	147	168	193	212	204
receiving home care	37%	243	255	277	309	342	358	334
receiving cash benefits	:	0	0	0	0	0	0	0
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.8	3.1	3.0	2.6	2.3	2.4	2.5	2.4
Number of students (in thousands)								
Total (students/staff in 2016 = 10,9)	-38.7%	1,850	1,783	1,539	1,301	1,269	1,224	1,133
as % of population 5-24	-1.6	85.4	84.7	83.0	83.9	84.5	83.8	83.8
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.5	0.0	0.1	0.2	0.4	0.5	0.5	0.5
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-6.4	25.8	21.9	20.4	21.3	21.4	20.6	19.5
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	5.5	0.0	0.2	0.4	0.8	1.5	2.6	5.5
TFP risk scenario (-0.2 p.p.)	0.9	0.0	0.1	0.5	0.8	0.9	0.9	0.9
High life expectancy (+2 years) (8)	0.0	0.0	0.0	-0.3	-0.4	-0.2	-0.2	0.0
Lower fertility (-20%)	1.4	0.0	0.0	-0.2	-0.1	0.4	0.9	1.4
Higher TFP growth (+0.4 p.p.)	-1.1	0.0	0.0	0.0	-0.3	-0.7	-1.0	-1.1
Lower TFP growth (-0.4 p.p.)	1.4	0.0	0.0	0.0	0.4	1.0	1.3	1.4
Higher employment rate (+2 p.p)	-0.1	0.0	-0.1	-0.4	-0.4	-0.3	-0.3	-0.1
Lower employment rate (+2 p.p)	0.1	0.0	0.1	0.4	0.4	0.4	0.3	0.1
Higher employment rate of older workers (+10 p.p.)	-0.2	0.0	-0.2	-0.9	-1.0	-0.8	-0.6	-0.2
Higher migration (+33%)	-0.4	0.0	0.1	0.2	0.2	0.2	0.0	-0.4
Lower migration (-33%)	0.4	0.0	-0.1	-0.2	-0.2	-0.1	0.1	0.4
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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 (new pensions, earnings-related), the average accrual rates (new pensions, earnings-related) and the average contributory period (new pensions, earnings-related) are for 2017.
The average accrual rates (new pensions, earnings related) correspond to main pensions provision only 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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

9. SPAIN

Spain					EC (DG ECFIN) - EPC (AWG) 2018 projections		
Main demographic and macroeconomic assumptions							

Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,6	1,31	1,57	1,80	1,87	1,88	1,88	1,88
Life expectancy at birth								
males	6,4	80,5	81,0	82,3	83,6	84,8	85,9	86,9
females	5,2	86,0	86,3	87,4	88,4	89,4	90,3	91,2
Life expectancy at 65								
males	4,6	19,3	19,6	20,6	21,5	22,3	23,2	23,9
females	4,1	23,2	23,4	24,3	25,1	25,9	26,6	27,3
Net migration (thousand)	123,8	12,9	51,2	119,4	163,4	170,9	153,8	136,8
Net migration as % of population	0,2	0,0	0,1	0,3	0,3	0,3	0,3	0,3
Population (million)	3,4	46,4	46,6	47,2	48,3	49,3	49,6	49,9
Children population (0-14) as % of total population	1,3	15,1	14,7	13,8	14,7	15,7	15,7	16,3
Prime age population (25-54) as % of total population	-9,5	44,0	41,4	35,0	31,6	32,4	33,7	34,6
Working age population (15-64) as % of total population	-9,0	66,0	65,1	61,2	55,1	52,1	55,0	57,1
Elderly population (65 and over) as % of total population	7,7	18,9	20,2	25,0	30,2	32,2	29,3	26,6
Very elderly population (80 and over) as % of total population	6,7	6,1	6,3	7,7	9,8	12,6	14,8	12,8
Very elderly population (80 and over) as % of elderly population	15,7	32,3	31,1	30,6	32,3	39,2	50,5	48,0
Very elderly population (80 and over) as % of working age population	13,1	9,2	9,6	12,5	17,7	24,3	26,9	22,4

Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,5	0,4	0,8	1,3	1,0	1,8	2,2	1,9
Employment 15-74 (growth rate)	0,1	-0,3	-0,3	0,2	-0,4	0,2	0,6	0,4
Labour input : hours worked (growth rate)	0,1	-0,3	-0,2	0,2	-0,4	0,2	0,6	0,4
Labour productivity per hour (growth rate)	1,3	0,7	1,0	1,1	1,5	1,6	1,6	1,5
TFP (growth rate)	0,9	0,4	0,5	0,7	0,9	1,1	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,4	0,5	0,4	0,5	0,6	0,5	0,5
Potential GDP per capita (growth rate)	1,3	0,4	0,7	1,1	0,8	1,7	2,2	1,8
Potential GDP per worker (growth rate)	1,3	0,7	1,1	1,0	1,4	1,6	1,6	1,5

Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-2.212	30.659	30.314	28.875	26.627	25.684	27.260	28.447
Population growth (working age:15-64)	0,5	-0,3	-0,2	-0,8	-0,9	0,3	0,7	0,2
Population (20-74) (in thousands)	-2.284	32.833	32.628	32.515	31.294	29.515	29.019	30.549
Population growth (20-74)	0,7	-0,2	-0,2	0,0	-0,5	-0,6	0,3	0,5
Labour force 15-64 (thousands)	-840	22.766	22.861	22.307	20.679	19.807	20.928	21.926
Labour force 20-74 (thousands)	39	22.684	22.976	23.110	21.862	20.730	21.555	22.723
Participation rate (20-74)	5,3	69,1	70,4	71,1	69,9	70,2	74,3	74,4
Participation rate (15-64)	2,8	74,3	75,4	77,3	77,7	77,1	76,8	77,1
young (15-24)	0,7	33,3	32,5	35,0	33,9	33,3	33,6	34,0
prime-age (25-54)	2,2	87,4	88,7	89,8	89,7	89,8	89,7	89,7
older (55-64)	22,6	59,2	66,8	78,5	81,5	81,8	82,4	81,8
Participation rate (20-74) - FEMALES	9,7	63,7	66,3	68,9	68,7	69,1	73,1	73,4
Participation rate (15-64) - FEMALES	7,1	69,2	71,7	75,6	77,0	76,4	76,0	76,2
young (15-24)	0,5	31,4	30,5	33,0	31,9	31,2	31,5	31,9
prime-age (25-54)	5,7	82,3	84,9	88,0	88,1	88,2	88,2	88,1
older (55-64)	32,2	51,7	61,2	76,4	82,5	83,7	84,3	83,9
Participation rate (20-74) - MALES	0,8	74,5	74,6	73,3	71,0	71,4	75,4	75,4
Participation rate (15-64) - MALES	-1,4	79,3	79,1	78,8	78,4	77,9	77,6	77,9
young (15-24)	0,8	35,2	34,3	36,9	35,8	35,2	35,6	35,9
prime-age (25-54)	-1,3	92,5	92,3	91,6	91,2	91,3	91,1	91,2
older (55-64)	12,8	67,0	72,6	80,6	80,4	79,7	80,4	79,7
Average effective exit age (TOTAL) (1)	2,5	64,0	65,3	66,3	66,3	66,3	66,4	66,4
Men	2,8	63,4	64,8	66,0	66,1	66,1	66,1	66,2
Women	2,2	64,5	65,8	66,5	66,6	66,6	66,6	66,7
Employment rate (15-64)	11,4	59,6	63,0	66,3	69,1	71,0	70,7	71,0
Employment rate (20-74)	13,1	55,8	59,3	61,6	62,7	65,1	68,8	68,9
Employment rate (15-74)	11,4	52,6	55,6	57,9	59,0	60,6	63,6	63,9
Unemployment rate (15-64)	-11,9	19,7	16,4	14,2	11,0	7,9	7,9	7,9
Unemployment rate (20-74)	-11,8	19,2	15,8	13,3	10,2	7,3	7,4	7,4
Unemployment rate (15-74)	-12,0	19,6	16,2	13,7	10,5	7,5	7,6	7,6
Employment (20-74) (in millions)	2,7	18,3	19,3	20,0	19,6	19,2	20,0	21,0
Employment (15-64) (in millions)	1,9	18,3	19,1	19,1	18,4	18,2	19,3	20,2
share of young (15-24)	3,3	5%	5%	6%	7%	8%	8%	8%
share of prime-age (25-54)	-9,0	80%	76%	67%	67%	73%	72%	71%
share of older (55-64)	5,7	15%	19%	26%	27%	19%	20%	21%

Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0,9	18,7	20,9	25,2	24,7	17,9	18,1	19,5
Old-age dependency ratio 15-64 (3)	18,0	28,6	31,0	40,8	54,7	61,9	53,2	46,6
Old-age dependency ratio 20-64 (3)	20,7	30,9	33,7	44,4	59,9	68,6	59,2	51,6
Total dependency ratio (4)	23,8	51,5	53,7	63,3	81,4	91,9	81,8	75,3
Total economic dependency ratio (5)	-17,8	152,1	139,3	133,6	143,9	153,7	145,4	134,3
Economic old-age dependency ratio (15-64) (6)	13,1	47,2	47,3	55,9	71,4	80,5	70,4	60,2
Economic old-age dependency ratio (15-74) (7)	10,4	46,8	46,4	53,0	66,3	75,6	67,2	57,2

Spain				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-1,5	12,2	12,3	12,6	13,9	13,9	11,4	10,7
Of which : Old-age and early pensions	-0,7	8,7	9,0	9,4	10,8	10,9	8,6	8,0
Disability pensions	-0,2	1,2	1,1	1,1	1,1	0,8	0,8	1,0
Survivors pensions	-0,5	2,3	2,2	2,0	2,1	2,1	1,9	1,8
Other	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Earnings-related pensions (old age and early pensions), gross	-0,8	8,6	8,9	9,2	10,6	10,7	8,4	7,8
Private occupational pensions, gross	0,2	0,2	0,2	0,3	0,5	0,5	0,4	0,3
Private individual pensions, gross	0,1	0,3	0,4	0,5	0,6	0,6	0,5	0,4
New pensions, gross (Old-age and early pensions)	-0,1	0,3	0,3	0,3	0,3	0,2	0,2	0,2
Public pensions, net	-1,4	11,3	11,4	11,7	13,0	12,9	10,6	10,0
Public pensions, contributions	-1,0	12,5	12,6	12,8	12,7	12,4	11,9	11,5
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	93,2%	93,2%	93,2%	93,2%	93,2%	93,2%	93,2%
Pensioners (Public, in 1000 persons)	4.262	9.492	10.042	11.942	14.701	16.255	15.237	13.754
Public pensioners aged 65+ (1000 persons)	4.688	7.503	8.018	10.039	12.919	14.864	13.798	12.190
Share of pensioners below age 65 as % of all pensioners (Public)	-9,6	21%	20%	16%	12%	9%	9%	11%
Benefit ratio % (Public pensions)	-20,2	57,7	55,1	48,2	42,7	37,7	34,3	37,6
Gross replacement rate at retirement % (Old-age earnings-related)	-33,7	78,7	71,8	57,8	53,8	49,2	46,4	45,0
Average accrual rates % (new pensions, earnings related)	-0,8	2,3	2,1	1,7	1,6	1,5	1,5	1,5
Average contributory period, years (new pensions, earnings-related)	3,5	36,7	37,5	38,9	39,1	39,5	39,8	40,3
Contributors (Public pensions, in 1000 persons)	1.949	18.540	19.423	19.821	19.217	18.721	19.447	20.489
Support ratio (contributors/100 pensioners, Public pensions)	-46	195	193	166	131	115	128	149
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,0	0,0	0,0	0,1	0,2	0,2	0,1	0,0
Lower fertility (-20%)	0,1	0,0	0,0	0,1	0,3	0,9	1,0	0,1
Higher TFP growth (+0.4 p.p.)	-0,4	0,0	0,0	0,0	-0,2	-0,6	-0,3	-0,4
Lower TFP growth (-0.4 p.p.)	0,1	0,0	0,0	0,1	0,5	1,0	0,9	0,1
Higher employment rate (+2 p.p.)	0,0	0,0	-0,1	-0,2	-0,2	-0,2	-0,1	0,0
Lower employment rate (+2 p.p.)	0,0	0,0	0,1	0,4	0,5	0,5	0,3	0,0
Higher employment rate of older workers (+10 p.p.)	-0,7	0,0	-0,2	-1,3	-1,5	-1,0	-0,3	-0,7
Higher migration (+33%)	-0,2	0,0	0,0	0,0	-0,1	-0,5	-0,3	-0,2
Lower migration (-33%)	0,1	0,0	0,0	0,1	0,4	0,8	0,8	0,1
TFP risk scenario (-0.2 p.p.)	0,1	0,0	0,0	0,2	0,4	0,6	0,4	0,1
Policy scenario linking retirement age to life expectancy	-0,6	0,0	0,0	0,1	0,1	0,2	0,1	-0,6
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1,5	12,2	12,3	12,6	13,9	13,9	11,4	10,7
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-1,5		0,1	0,4	1,8	1,7	-0,8	-1,5
Dependency ratio	7,6		1,1	4,8	8,9	10,9	9,1	7,6
Coverage ratio	-0,4		-0,2	-0,8	-0,8	-0,6	-0,3	-0,4
Of which : Old-age	1,1		0,0	0,0	0,5	1,3	1,5	1,1
Early-age	-1,3		-0,7	-2,6	-0,8	-0,6	-1,7	-1,3
Cohort effect	-6,1		0,1	-1,4	-6,2	-10,6	-7,7	-6,1
Benefit ratio	-4,9		0,1	-1,4	-2,9	-4,7	-5,9	-4,9
Labour market ratio	-2,8		-0,8	-1,9	-2,7	-3,0	-2,8	-2,8
Of which : Employment rate	-2,4		-0,7	-1,4	-1,9	-2,5	-2,5	-2,4
Labour intensity	0,1		0,0	0,1	0,1	0,1	0,1	0,1
Career shift	-0,5		-0,1	-0,6	-0,8	-0,7	-0,4	-0,5
Interaction effect (residual)	-0,9		-0,1	-0,4	-0,7	-0,9	-0,9	-0,9
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-1,5		0,1	0,3	1,4	-0,1	-2,5	-0,7
Dependency ratio	7,6		1,1	3,7	4,1	2,0	-1,9	-1,5
Coverage ratio	-0,4		-0,2	-0,6	-0,1	0,2	0,4	-0,1
Of which : Old-age	1,1		0,0	0,0	0,5	0,8	0,2	-0,4
Early-age	-1,3		-0,7	-1,9	1,9	0,1	-1,1	0,4
Cohort effect	-6,1		0,1	-1,5	-4,8	-4,4	2,9	1,6
Benefit ratio	-4,9		0,1	-1,4	-1,5	-1,8	-1,2	1,1
Labour market ratio	-2,8		-0,8	-1,0	-0,8	-0,4	0,3	-0,1
Of which : Employment rate	-2,4		-0,7	-0,6	-0,6	-0,5	0,0	0,0
Labour intensity	0,1		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,5		-0,1	-0,4	-0,3	0,2	0,2	-0,1
Interaction effect (residual)	-0,9		-0,1	-0,3	-0,3	-0,1	0,0	-0,1

Spain		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.5	5.9	6.0	6.4	6.7	6.8	6.7	6.4
AWG risk scenario	1.2	5.9	6.1	6.6	7.1	7.3	7.3	7.1
TFP risk scenario	0.5	5.9	6.0	6.4	6.7	6.8	6.7	6.4
Demographic scenario	0.6	5.9	6.0	6.4	6.7	6.8	6.7	6.5
High Life expectancy scenario (variation of Demographic sc.)	0.7	5.9	6.0	6.4	6.7	6.9	6.8	6.6
Healthy ageing scenario	0.1	5.9	6.0	6.2	6.4	6.5	6.3	6.0
Death-related cost scenario	0.5	5.9	6.0	6.3	6.6	6.8	6.6	6.4
Income elasticity scenario	0.8	5.9	6.0	6.5	6.8	7.0	6.9	6.7
EU28 cost convergence scenario	1.1	5.9	6.0	6.5	6.9	7.2	7.2	7.0
Labour intensity scenario	0.6	5.9	6.0	6.3	6.9	7.4	7.0	6.5
Sector-specific composite indexation scenario	2.2	5.9	6.2	7.0	7.6	8.1	8.3	8.1
Non-demographic determinants scenario	2.0	5.9	6.1	6.8	7.3	7.7	8.0	7.9
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.3	0.9	1.0	1.2	1.5	1.9	2.2	2.2
AWG risk scenario	3.5	0.9	1.1	1.4	2.0	2.9	3.8	4.4
TFP risk scenario	1.3	0.9	1.0	1.2	1.5	1.9	2.2	2.2
Demographic scenario	1.3	0.9	1.0	1.2	1.5	1.8	2.2	2.3
Base case scenario	1.3	0.9	1.0	1.2	1.5	1.9	2.2	2.2
High Life expectancy scenario (variation of Base case sc.)	1.7	0.9	1.0	1.2	1.6	2.1	2.6	2.7
Healthy ageing scenario	1.1	0.9	1.0	1.1	1.4	1.8	2.1	2.0
Shift to formal care scenario	1.6	0.9	1.1	1.4	1.8	2.2	2.5	2.5
Coverage convergence scenario	2.0	0.9	1.1	1.3	1.8	2.4	2.8	2.9
Cost convergence scenario	2.7	0.9	1.1	1.3	1.7	2.5	3.2	3.6
Cost and coverage convergence scenario	3.7	0.9	1.1	1.4	2.1	3.0	4.0	4.7
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	156%	1,549	1,719	1,994	2,513	3,203	3,837	3,962
of which: receiving institutional care	131%	328	358	402	490	610	726	759
receiving home care	170%	737	826	972	1,248	1,617	1,945	1,987
receiving cash benefits	151%	484	536	620	774	977	1,166	1,216
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.3	3.7	3.7	3.5	3.7	4.1	4.1	3.9
Number of students (in thousands)								
Total (students/staff in 2016 = 12,6)	15.8%	8,429	8,474	8,284	8,423	9,187	9,605	9,761
as % of population 5-24	-2.0	90.4	89.8	87.7	89.5	89.2	88.4	88.4
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.5	0.0	0.1	0.2	0.4	0.5	0.6	0.5
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.9	1.3	1.1	0.9	0.7	0.5	0.5	0.5
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-0.2	24.0	24.1	24.6	26.5	27.1	24.9	23.8
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.8	0.0	0.1	0.5	0.9	1.5	2.2	2.8
TFP risk scenario (-0.2 p.p.)	0.0	0.0	0.0	0.2	0.4	0.6	0.4	0.0
High life expectancy (+2 years) (8)	0.4	0.0	0.0	0.1	0.2	0.3	0.4	0.4
Lower fertility (-20%)	0.2	0.0	0.0	-0.1	0.0	0.6	0.9	0.2
Higher TFP growth (+0.4 p.p.)	-0.3	0.0	0.0	0.1	-0.2	-0.6	-0.3	-0.3
Lower TFP growth (-0.4 p.p.)	0.1	0.0	0.0	0.1	0.5	1.0	0.9	0.1
Higher employment rate (+2 p.p)	-0.3	0.0	-0.1	-0.5	-0.5	-0.5	-0.4	-0.3
Lower employment rate (+2 p.p)	0.3	0.0	0.1	0.7	0.8	0.8	0.6	0.3
Higher employment rate of older workers (+10 p.p.)	-0.9	0.0	-0.3	-1.5	-1.8	-1.3	-0.6	-0.9
Higher migration (+33%)	-0.5	0.0	0.0	0.1	-0.1	-0.5	-0.5	-0.5
Lower migration (-33%)	0.4	0.0	0.0	0.1	0.4	0.9	1.0	0.4
Policy scenario linking retirement age to life expectancy	-0.7	0.0	0.0	0.1	0.1	0.2	0.0	-0.7

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

10. FRANCE

France						EC (DG ECFIN) - EPC (AWG) 2018 projections		
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,0	2,01	2,01	2,00	1,99	1,99	1,99	1,99
Life expectancy at birth								
males	7,1	79,5	80,2	81,7	83,1	84,3	85,5	86,6
females	5,5	85,6	86,1	87,3	88,4	89,4	90,3	91,1
Life expectancy at 65								
males	4,5	19,5	19,9	20,8	21,7	22,5	23,3	24,0
females	4,0	23,5	23,8	24,6	25,4	26,1	26,8	27,5
Net migration (thousand)	1,7	53,6	77,0	85,9	77,3	69,2	62,2	55,3
Net migration as % of population	0,0	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Population (million)	10,2	66,8	68,0	70,7	73,0	74,4	75,6	77,0
Children population (0-14) as % of total population	-1,3	18,4	18,1	17,6	17,6	17,4	17,1	17,1
Prime age population (25-54) as % of total population	-3,4	38,2	36,7	34,8	34,5	35,1	34,9	34,8
Working age population (15-64) as % of total population	-5,3	62,6	61,5	58,9	56,8	56,9	57,8	57,3
Elderly population (65 and over) as % of total population	6,6	19,0	20,4	23,6	25,6	25,6	25,1	25,6
Very elderly population (80 and over) as % of total population	4,9	5,9	6,1	7,7	9,6	10,7	11,0	10,8
Very elderly population (80 and over) as % of elderly population	11,1	31,1	30,0	32,5	37,6	41,9	43,8	42,2
Very elderly population (80 and over) as % of working age population	9,5	9,4	10,0	13,0	16,9	18,9	19,0	18,9
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,6	1,1	1,1	1,2	1,7	1,9	1,8	1,6
Employment 15-74 (growth rate)	0,3	0,7	0,4	0,2	0,3	0,3	0,3	0,1
Labour input : hours worked (growth rate)	0,3	0,4	0,2	0,2	0,3	0,3	0,3	0,1
Labour productivity per hour (growth rate)	1,3	0,7	0,9	1,0	1,4	1,5	1,5	1,5
TFP (growth rate)	0,8	0,4	0,5	0,7	0,9	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,3	0,4	0,4	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,3	0,7	0,7	0,8	1,4	1,7	1,6	1,4
Potential GDP per worker (growth rate)	1,3	0,4	0,7	1,0	1,4	1,5	1,5	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	2.299	41.809	41.775	41.593	41.457	42.375	43.694	44.108
Population growth (working age:15-64)	0,1	0,0	0,0	-0,1	0,1	0,3	0,3	0,1
Population (20-74) (in thousands)	3.509	44.269	45.060	45.370	45.317	45.381	46.496	47.778
Population growth (20-74)	-0,2	0,5	0,4	0,1	-0,1	0,2	0,3	0,2
Labour force 15-64 (thousands)	3.046	29.763	29.955	30.329	30.619	31.481	32.462	32.810
Labour force 20-74 (thousands)	3.863	29.510	29.742	30.453	30.973	31.915	32.880	33.373
Participation rate (20-74)	3,2	66,7	66,0	67,1	68,3	70,3	70,7	69,9
Participation rate (15-64)	3,2	71,2	71,7	72,9	73,9	74,3	74,3	74,4
young (15-24)	1,7	37,5	38,7	39,8	39,3	38,8	39,2	39,2
prime-age (25-54)	0,5	87,5	87,7	87,6	87,9	87,9	87,9	88,0
older (55-64)	14,6	53,5	57,2	63,5	66,2	68,1	68,6	68,1
Participation rate (20-74) - FEMALES	3,9	62,5	62,0	63,4	64,9	66,7	67,1	66,5
Participation rate (15-64) - FEMALES	3,7	67,4	68,0	69,6	70,7	71,1	71,0	71,1
young (15-24)	1,6	34,3	35,6	36,5	36,0	35,6	35,9	35,9
prime-age (25-54)	1,6	82,7	83,3	83,8	84,3	84,4	84,4	84,4
older (55-64)	14,1	51,3	54,2	60,4	63,6	65,3	65,8	65,4
Participation rate (20-74) - MALES	2,2	71,0	70,2	71,0	71,9	74,0	74,3	73,2
Participation rate (15-64) - MALES	2,5	75,1	75,5	76,3	77,0	77,5	77,5	77,6
young (15-24)	1,7	40,6	41,7	42,8	42,3	41,9	42,3	42,2
prime-age (25-54)	-1,0	92,4	92,2	91,5	91,5	91,4	91,4	91,4
older (55-64)	14,9	56,0	60,5	66,8	69,1	71,1	71,3	70,9
Average effective exit age (TOTAL) (1)	2,6	61,9	62,6	63,5	64,3	64,5	64,5	64,5
Men	2,8	61,9	62,8	63,6	64,5	64,7	64,7	64,7
Women	2,5	61,8	62,5	63,3	64,1	64,3	64,3	64,3
Employment rate (15-64)	4,6	63,9	65,1	66,7	67,8	68,4	68,4	68,5
Employment rate (20-74)	4,5	60,2	60,2	61,7	63,1	65,1	65,5	64,7
Employment rate (15-74)	4,3	55,9	56,0	57,5	58,7	60,4	60,8	60,2
Unemployment rate (15-64)	-2,4	10,2	9,3	8,5	8,2	7,9	7,9	7,9
Unemployment rate (20-74)	-2,4	9,7	8,8	8,0	7,7	7,4	7,4	7,4
Unemployment rate (15-74)	-2,5	10,2	9,2	8,4	8,0	7,7	7,7	7,7
Employment (20-74) (in millions)	4,3	26,6	27,1	28,0	28,6	29,6	30,5	30,9
Employment (15-64) (in millions)	3,5	26,7	27,2	27,7	28,1	29,0	29,9	30,2
share of young (15-24)	0,9	8%	9%	10%	10%	10%	10%	9%
share of prime-age (25-54)	-3,5	76%	74%	72%	73%	74%	72%	73%
share of older (55-64)	2,6	15%	17%	19%	17%	17%	18%	18%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-0,7	19,9	20,3	20,6	18,8	17,8	19,2	19,2
Old-age dependency ratio 15-64 (3)	14,4	30,4	33,2	40,0	45,1	45,0	43,3	44,8
Old-age dependency ratio 20-64 (3)	16,0	33,7	36,9	44,4	50,2	50,2	48,2	49,7
Total dependency ratio (4)	14,8	59,8	62,7	69,9	76,1	75,7	73,0	74,6
Total economic dependency ratio (5)	-1,7	147,1	146,5	148,4	151,4	147,8	144,3	145,4
Economic old-age dependency ratio (15-64) (6)	15,1	46,3	49,6	57,4	63,1	62,1	59,8	61,4
Economic old-age dependency ratio (15-74) (7)	13,4	45,7	48,9	56,0	61,1	60,0	57,8	59,1

France		**EC (DG ECFIN) - EPC (AWG) 2018 projections**						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-3,3	15,0	15,0	15,4	15,1	13,8	12,5	11,8
Of which : Old-age and early pensions	-2,2	12,3	12,3	13,0	12,8	11,7	10,7	10,1
Disability pensions	-0,3	1,1	1,1	1,0	0,9	0,9	0,9	0,8
Survivors pensions	-0,8	1,6	1,6	1,5	1,4	1,1	1,0	0,8
Other	0,0	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	12,1	12,2	12,7	12,5	11,5	10,5	9,9
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,0	0,3	0,3	0,4	0,4	0,4	0,4	0,4
Public pensions, net	-2,9	13,4	13,4	13,8	13,4	12,3	11,2	10,5
Public pensions, contributions	-0,1	11,9	11,8	11,7	11,8	11,7	11,7	11,9
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	89,1%	89,1%	89,1%	89,1%	89,1%	89,1%	89,1%
Pensioners (Public, in 1000 persons)	5.378	19.403	20.203	22.519	23.790	24.145	24.124	24.781
Public pensioners aged 65+ (1000 persons)	6.933	13.261	14.435	17.241	19.247	19.616	19.490	20.195
Share of pensioners below age 65 as % of all pensioners (Public)	-13,1	32%	29%	23%	19%	19%	19%	19%
Benefit ratio % (Public pensions)	-14,5	50,5	49,6	47,1	44,4	41,3	38,8	35,9
Gross replacement rate at retirement % (Old-age earnings-related)	-9,9	45,4	52,8	48,5	47,9	40,1	37,6	35,6
Average accrual rates % (new pensions, earnings related)	0,0	1,5	1,5	1,7	1,7	1,7	1,6	1,5
Average contributory period, years (new pensions, earnings-related)	-0,9	34,5	36,1	31,8	32,6	32,2	33,5	33,6
Contributors (Public pensions, in 1000 persons)	4.261	26.604	26.895	27.662	28.360	29.122	30.002	30.865
Support ratio (contributors/100 pensioners, Public pensions)	-13	137	133	123	119	121	124	125
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,5	0,0	0,1	0,1	0,2	0,3	0,4	0,5
Lower fertility (-20%)	1,9	0,0	0,0	0,0	0,4	0,9	1,3	1,9
Higher TFP growth (+0.4 p.p.)	-1,5	0,0	0,1	0,1	-0,4	-1,0	-1,4	-1,5
Lower TFP growth (-0.4 p.p.)	1,9	0,0	0,0	0,1	0,5	1,1	1,5	1,9
Higher employment rate (+2 p.p.)	-0,3	0,0	-0,1	-0,5	-0,5	-0,5	-0,4	-0,3
Lower employment rate (+2 p.p.)	0,2	0,0	0,1	0,4	0,4	0,3	0,2	0,2
Higher employment rate of older workers (+10 p.p.)	-0,4	0,0	-0,1	-0,6	-0,6	-0,6	-0,5	-0,4
Higher migration (+33%)	-0,4	0,0	0,0	0,0	-0,2	-0,2	-0,4	-0,4
Lower migration (-33%)	0,5	0,0	0,0	0,1	0,2	0,3	0,4	0,5
TFP risk scenario (-0.2 p.p.)	0,9	0,0	0,0	0,1	0,4	0,6	0,7	0,9
Policy scenario linking retirement age to life expectancy	-1,6	0,0	0,0	-0,2	-0,5	-0,7	-0,9	-1,6
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-3,3	15,0	15,0	15,4	15,1	13,8	12,5	11,8
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-3,3		-0,1	0,4	0,0	-1,3	-2,5	-3,3
Dependency ratio	6,2		1,5	4,4	6,3	6,3	5,8	6,2
Coverage ratio	-2,9		-0,7	-1,8	-2,7	-2,8	-2,7	-2,9
Of which : Old-age	-0,3		-0,1	-0,1	-0,2	-0,2	-0,2	-0,3
Early-age	-4,2		-1,0	-1,9	-3,1	-3,2	-4,0	-4,2
Cohort effect	-6,4		-1,2	-4,2	-7,0	-7,2	-6,0	-6,4
Benefit ratio	-4,8		-0,4	-1,1	-2,0	-3,0	-3,9	-4,8
Labour market ratio	-1,4		-0,3	-0,8	-1,2	-1,4	-1,4	-1,4
Of which : Employment rate	-1,0		-0,3	-0,6	-0,9	-1,1	-1,0	-1,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,4		0,0	-0,2	-0,3	-0,4	-0,3	-0,4
Interaction effect (residual)	-0,3		-0,1	-0,3	-0,3	-0,3	-0,3	-0,3
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-3,3		-0,1	0,5	-0,4	-1,3	-1,2	-0,8
Dependency ratio	6,2		1,5	2,9	1,9	0,0	-0,5	0,4
Coverage ratio	-2,9		-0,7	-1,1	-0,9	-0,1	0,1	-0,2
Of which : Old-age	-0,3		-0,1	-0,1	-0,1	0,0	0,0	-0,1
Early-age	-4,2		-1,0	-0,9	-1,1	-0,1	-0,8	-0,2
Cohort effect	-6,4		-1,2	-3,0	-2,8	-0,2	1,2	-0,5
Benefit ratio	-4,8		-0,4	-0,7	-0,9	-1,1	-0,8	-0,9
Labour market ratio	-1,4		-0,3	-0,5	-0,4	-0,2	0,0	-0,1
Of which : Employment rate	-1,0		-0,3	-0,3	-0,3	-0,2	0,0	0,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,4		0,0	-0,2	-0,1	0,0	0,0	0,0
Interaction effect (residual)	-0,3		-0,1	-0,2	-0,1	0,0	0,0	0,0

France				EC (DG ECFIN) - EPC (AWG) 2018 projections				

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.5	7.9	8.0	8.2	8.4	8.4	8.4	8.3
AWG risk scenario	1.2	7.9	8.1	8.5	8.8	9.0	9.1	9.1
TFP risk scenario	0.4	7.9	8.0	8.2	8.3	8.3	8.3	8.3
Demographic scenario	0.7	7.9	8.0	8.3	8.4	8.5	8.5	8.6
High Life expectancy scenario (variation of Demographic sc.)	0.8	7.9	8.0	8.3	8.5	8.6	8.6	8.7
Healthy ageing scenario	-0.2	7.9	7.9	8.0	8.0	7.9	7.8	7.6
Death-related cost scenario	0.5	7.9	8.0	8.2	8.3	8.3	8.3	8.3
Income elasticity scenario	1.0	7.9	8.0	8.3	8.6	8.7	8.8	8.8
EU28 cost convergence scenario	0.8	7.9	8.0	8.3	8.5	8.5	8.6	8.6
Labour intensity scenario	0.8	7.9	8.0	8.4	8.7	8.6	8.6	8.6
Sector-specific composite indexation scenario	2.2	7.9	8.1	8.7	9.2	9.7	10.0	10.0
Non-demographic determinants scenario	2.5	7.9	8.1	8.6	9.2	9.7	10.1	10.3

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.6	1.7	1.8	1.9	2.3	2.4	2.4	2.4
AWG risk scenario	2.8	1.7	1.9	2.2	3.0	3.5	4.0	4.5
TFP risk scenario	0.7	1.7	1.8	1.9	2.3	2.4	2.5	2.4
Demographic scenario	0.8	1.7	1.8	1.9	2.3	2.5	2.6	2.5
Base case scenario	0.8	1.7	1.8	2.0	2.4	2.5	2.6	2.6
High Life expectancy scenario (variation of Base case sc.)	1.1	1.7	1.8	2.0	2.4	2.7	2.8	2.8
Healthy ageing scenario	0.6	1.7	1.8	1.9	2.2	2.4	2.4	2.3
Shift to formal care scenario	1.3	1.7	2.0	2.4	2.9	3.0	3.1	3.1
Coverage convergence scenario	2.3	1.7	1.8	2.2	2.8	3.3	3.7	4.0
Cost convergence scenario	1.3	1.7	1.8	2.1	2.5	2.8	2.9	3.0
Cost and coverage convergence scenario	3.0	1.7	1.9	2.3	3.0	3.6	4.2	4.7

Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	46%	3,018	3,117	3,433	3,966	4,248	4,386	4,400
of which: receiving institutional care	61%	1,100	1,148	1,266	1,541	1,690	1,764	1,767
receiving home care	58%	1,207	1,262	1,447	1,713	1,847	1,903	1,910
receiving cash benefits	2%	711	707	720	711	712	718	723

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.4	4.8	4.7	4.6	4.6	4.6	4.5	4.4
Number of students (in thousands)								
Total (students/staff in 2016 = 15,7)	6.3%	12,751	12,784	12,794	13,099	13,475	13,483	13,560
as % of population 5-24	-1.2	78.3	77.2	76.6	77.0	77.2	76.8	77.1

Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	1.3	0.0	0.2	0.6	1.1	1.3	1.3	1.3

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.4	1.6	1.4	1.3	1.2	1.2	1.2	1.2

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-3.0	31.0	30.9	31.5	31.5	30.3	29.0	28.0

Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.9	0.0	0.2	0.6	1.1	1.7	2.3	2.9
TFP risk scenario (-0.2 p.p.)	0.9	0.0	0.0	0.1	0.4	0.6	0.7	0.9
High life expectancy (+2 years) (8)	0.7	0.0	0.0	0.1	0.3	0.4	0.6	0.7
Lower fertility (-20%)	2.2	0.0	0.1	-0.2	0.0	0.8	1.4	2.2
Higher TFP growth (+0.4 p.p.)	-1.3	0.0	0.1	0.1	-0.3	-0.9	-1.2	-1.3
Lower TFP growth (-0.4 p.p.)	1.9	0.0	0.0	0.1	0.5	1.1	1.5	1.9
Higher employment rate (+2 p.p)	-0.8	0.0	-0.2	-1.0	-1.0	-1.0	-0.9	-0.8
Lower employment rate (+2 p.p)	0.8	0.0	0.2	1.0	1.0	0.9	0.8	0.8
Higher employment rate of older workers (+10 p.p.)	-0.7	0.0	-0.2	-1.0	-1.0	-0.9	-0.8	-0.7
Higher migration (+33%)	-0.4	0.0	0.0	0.0	-0.2	-0.3	-0.4	-0.4
Lower migration (-33%)	0.6	0.0	0.0	0.1	0.2	0.4	0.5	0.6
Policy scenario linking retirement age to life expectancy	-1.7	0.0	0.0	-0.2	-0.5	-0.7	-0.9	-1.7

LEGENDA:
* The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations
The average accrual rates (new pensions, earnings related) and the average contributory period (new pensions, earnings-related) correspond to the overall public pension system, which consists of the defined-benefit schemes and point systems.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

11. CROATIA

Croatia				EC (DG ECFIN) - EPC (AWG) 2018 projections			
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,41	1,47	1,51	1,54	1,58	1,61	1,65
Life expectancy at birth								
males	9,4	75,0	75,8	77,8	79,6	81,3	82,9	84,4
females	7,8	81,1	81,8	83,4	84,9	86,3	87,6	88,9
Life expectancy at 65								
males	6,4	15,6	16,1	17,4	18,6	19,8	21,0	22,0
females	6,2	19,1	19,6	20,8	22,0	23,2	24,3	25,3
Net migration (thousand)	26,1	-21,5	-1,7	4,2	5,0	6,0	5,2	4,6
Net migration as % of population	0,6	-0,5	0,0	0,1	0,1	0,2	0,1	0,1
Population (million)	-0,8	4,2	4,1	3,9	3,8	3,7	3,5	3,4
Children population (0-14) as % of total population	-1,4	14,6	14,5	13,6	13,2	13,2	13,1	13,2
Prime age population (25-54) as % of total population	-6,8	40,3	39,4	38,1	36,3	35,3	34,5	33,5
Working age population (15-64) as % of total population	-10,5	66,0	64,4	61,6	59,9	57,7	56,5	55,6
Elderly population (65 and over) as % of total population	11,9	19,4	21,1	24,8	26,9	29,1	30,3	31,2
Very elderly population (80 and over) as % of total population	8,0	4,9	5,5	6,4	9,0	10,3	11,5	13,0
Very elderly population (80 and over) as % of elderly population	16,1	25,4	26,2	26,0	33,4	35,4	37,9	41,5
Very elderly population (80 and over) as % of working age population	15,9	7,5	8,6	10,5	15,0	17,8	20,3	23,3
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,2	1,1	1,0	1,0	1,6	1,6	1,2	1,0
Employment 15-74 (growth rate)	-0,4	0,4	-0,3	-0,1	-0,2	-0,4	-0,6	-0,5
Labour input : hours worked (growth rate)	-0,4	0,2	-0,5	-0,1	-0,2	-0,4	-0,6	-0,5
Labour productivity per hour (growth rate)	1,7	0,9	1,5	1,1	1,8	2,1	1,8	1,5
TFP (growth rate)	1,0	0,3	0,5	0,7	1,2	1,3	1,2	1,0
Capital deepening (contribution to labour productivity growth)	0,7	0,6	1,0	0,4	0,6	0,7	0,6	0,5
Potential GDP per capita (growth rate)	1,3	1,9	1,5	0,6	0,9	1,7	1,6	1,5
Potential GDP per worker (growth rate)	1,3	0,7	1,3	0,4	0,7	1,7	1,8	1,7
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-869	2.755	2.628	2.432	2.282	2.118	1.993	1.887
Population growth (working age:15-64)	0,8	-1,3	-1,1	-0,7	-0,6	-0,8	-0,6	-0,5
Population (20-74) (in thousands)	-803	2.953	2.906	2.746	2.571	2.435	2.274	2.150
Population growth (20-74)	0,2	-0,8	-0,2	-0,6	-0,6	-0,5	-0,7	-0,6
Labour force 15-64 (thousands)	-478	1.809	1.767	1.672	1.602	1.497	1.407	1.331
Labour force 20-74 (thousands)	-425	1.794	1.766	1.682	1.630	1.542	1.448	1.368
Participation rate (20-74)	2,9	60,7	60,7	61,2	63,4	63,3	63,7	63,6
Participation rate (15-64)	4,9	65,7	67,2	68,8	70,2	70,7	70,6	70,6
young (15-24)	2,6	37,3	41,3	40,0	39,9	40,0	39,7	39,9
prime-age (25-54)	3,1	82,0	82,9	84,0	84,8	85,1	85,1	85,2
older (55-64)	12,5	42,3	43,5	47,3	53,3	54,0	54,2	54,7
Participation rate (20-74) - FEMALES	5,5	55,4	55,9	57,1	60,1	60,3	60,8	60,9
Participation rate (15-64) - FEMALES	6,8	61,1	63,0	65,6	67,4	67,9	67,9	67,8
young (15-24)	2,8	33,0	37,1	35,9	35,8	35,9	35,6	35,7
prime-age (25-54)	3,8	78,7	80,0	81,2	82,2	82,5	82,5	82,6
older (55-64)	18,3	34,4	36,3	44,5	50,8	52,0	52,2	52,7
Participation rate (20-74) - MALES	0,0	66,3	65,8	65,4	66,8	66,3	66,5	66,3
Participation rate (15-64) - MALES	2,9	70,3	71,5	71,8	73,0	73,4	73,2	73,2
young (15-24)	2,4	41,4	45,2	43,9	43,8	43,9	43,6	43,8
prime-age (25-54)	2,4	85,3	85,7	86,7	87,2	87,6	87,6	87,6
older (55-64)	6,1	50,7	51,3	50,3	55,8	56,1	56,3	56,8
Average effective exit age (TOTAL) (1)	2,4	61,5	61,8	62,7	63,9	63,9	63,9	63,9
Men	1,6	62,4	62,5	62,9	64,0	64,0	64,0	64,0
Women	3,0	60,7	61,1	62,5	63,7	63,7	63,7	63,7
Employment rate (15-64)	8,0	57,0	59,4	60,7	63,3	65,1	65,0	65,0
Employment rate (20-74)	5,8	53,3	54,2	54,6	57,7	58,8	59,1	59,1
Employment rate (15-74)	5,8	50,0	51,2	51,5	54,5	55,6	55,8	55,8
Unemployment rate (15-64)	-5,3	13,2	11,6	11,7	9,8	7,9	7,9	7,9
Unemployment rate (20-74)	-5,1	12,2	10,8	10,8	9,0	7,1	7,1	7,1
Unemployment rate (15-74)	-5,5	13,0	11,4	11,5	9,5	7,5	7,5	7,5
Employment (20-74) (in millions)	-0,3	1,6	1,6	1,5	1,5	1,4	1,3	1,3
Employment (15-64) (in millions)	-0,3	1,6	1,6	1,5	1,4	1,4	1,3	1,2
share of young (15-24)	0,8	8%	9%	8%	8%	8%	8%	9%
share of prime-age (25-54)	-4,2	78%	77%	77%	74%	74%	74%	73%
share of older (55-64)	3,4	15%	15%	15%	18%	18%	18%	18%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0,9	21,8	22,1	21,2	23,0	22,4	22,2	22,6
Old-age dependency ratio 15-64 (3)	26,9	29,3	32,8	40,3	45,0	50,4	53,7	56,2
Old-age dependency ratio 20-64 (3)	29,3	32,0	35,5	43,9	48,8	54,8	58,5	61,3
Total dependency ratio (4)	28,5	51,5	55,4	62,4	67,0	73,2	77,0	80,0
Total economic dependency ratio (5)	1,7	162,2	156,8	160,5	154,2	153,1	159,1	163,9
Economic old-age dependency ratio (15-64) (6)	31,4	50,1	53,3	63,7	67,2	72,3	77,5	81,5
Economic old-age dependency ratio (15-74) (7)	28,2	49,5	52,4	62,0	64,8	68,8	73,8	77,7

Croatia	EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-3,8	10,6	10,4	10,0	8,3	7,4	7,0	6,8
Of which : Old-age and early pensions	-2,1	6,9	6,9	6,9	5,6	5,1	4,9	4,8
Disability pensions	-1,0	1,8	1,8	1,5	1,3	1,0	0,9	0,9
Survivors pensions	-0,7	1,8	1,7	1,6	1,5	1,3	1,2	1,2
Other	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Earnings-related pensions (old age and early pensions), gross	-2,1	6,9	6,9	6,9	5,6	5,1	4,9	4,8
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	1,6	0,0	0,0	0,3	0,8	1,2	1,4	1,6
New pensions, gross (Old-age and early pensions)	-0,1	0,2	0,2	0,1	0,1	0,1	0,1	0,1
Public pensions, net	-3,7	10,5	10,3	9,9	8,2	7,4	7,0	6,7
Public pensions, contributions	-0,1	5,8	5,8	5,6	5,6	5,6	5,6	5,6
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	98,9%	98,9%	98,9%	98,9%	98,9%	98,9%	98,9%
Pensioners (Public, in 1000 persons)	-90	1.233	1.238	1.244	1.172	1.165	1.154	1.143
Public pensioners aged 65+ (1000 persons)	155	846	919	1.019	1.003	1.006	1.002	1.001
Share of pensioners below age 65 as % of all pensioners (Public)	-19,0	31%	26%	18%	14%	14%	13%	12%
Benefit ratio % (Public pensions)	-13,9	31,6	31,2	28,1	24,7	21,4	19,3	17,8
Gross replacement rate at retirement % (Old-age earnings-related)	-13,8	30,8	30,5	21,0	20,0	18,9	17,8	17,0
Average accrual rates % (new pensions, earnings related)	-0,5	1,0	1,0	0,6	0,6	0,5	0,5	0,5
Average contributory period, years (new pensions, earnings-related)	3,4	31,1	31,5	32,6	34,4	34,5	34,4	34,4
Contributors (Public pensions, in 1000 persons)	-264	1.453	1.468	1.400	1.386	1.339	1.258	1.189
Support ratio (contributors/100 pensioners, Public pensions)	-14	118	119	113	118	115	109	104
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,5	0,0	0,0	0,1	0,3	0,4	0,4	0,5
Lower fertility (-20%)	1,2	0,0	0,0	0,0	0,1	0,5	0,8	1,2
Higher TFP growth (+0.4 p.p.)	-0,4	0,0	0,0	0,0	-0,1	-0,2	-0,3	-0,4
Lower TFP growth (-0.4 p.p.)	0,5	0,0	0,0	0,0	0,1	0,3	0,4	0,5
Higher employment rate (+2 p.p.)	-0,2	0,0	-0,1	-0,3	-0,3	-0,3	-0,2	-0,2
Lower employment rate (+2 p.p.)	0,2	0,0	0,1	0,4	0,3	0,2	0,2	0,2
Higher employment rate of older workers (+10 p.p.)	-0,6	0,0	-0,2	-0,8	-0,7	-0,6	-0,6	-0,6
Higher migration (+33%)	-0,2	0,0	0,0	0,0	-0,1	-0,2	-0,2	-0,2
Lower migration (-33%)	0,2	0,0	0,0	0,0	0,1	0,2	0,2	0,2
TFP risk scenario (-0.2 p.p.)	0,2	0,0	0,0	0,0	0,0	0,1	0,2	0,2
Policy scenario linking retirement age to life expectancy	-0,9	0,0	0,0	-0,1	-0,2	-0,4	-0,7	-0,9
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-3,8	10,6	10,4	10,0	8,3	7,4	7,0	6,8
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-3,8		-0,2	-0,6	-2,2	-3,1	-3,5	-3,8
Dependency ratio	6,3		1,1	3,5	4,5	5,5	6,0	6,3
Coverage ratio	-3,3		-0,6	-1,9	-2,9	-3,2	-3,3	-3,3
Of which : Old-age	-0,9		0,2	-0,1	-0,6	-0,9	-1,0	-0,9
Early-age	-6,1		-1,5	-4,1	-6,5	-6,3	-6,0	-6,1
Cohort effect	-5,6		-1,1	-3,2	-3,8	-4,7	-5,3	-5,6
Benefit ratio	-4,9		-0,2	-1,2	-2,4	-3,5	-4,3	-4,9
Labour market ratio	-1,5		-0,4	-0,8	-1,2	-1,5	-1,5	-1,5
Of which : Employment rate	-1,2		-0,4	-0,6	-1,0	-1,2	-1,2	-1,2
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,3		-0,1	-0,1	-0,2	-0,3	-0,3	-0,3
Interaction effect (residual)	-0,4		-0,1	-0,3	-0,3	-0,3	-0,4	-0,4
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	-3,8		-0,2	-0,4	-1,6	-0,9	-0,4	-0,2
Dependency ratio	6,3		1,1	2,3	1,1	1,0	0,5	0,3
Coverage ratio	-3,3		-0,6	-1,2	-1,0	-0,4	-0,1	0,0
Of which : Old-age	-0,9		0,2	-0,3	-0,6	-0,3	-0,1	0,1
Early-age	-6,1		-1,5	-2,6	-2,4	0,2	0,2	-0,1
Cohort effect	-5,6		-1,1	-2,1	-0,6	-0,9	-0,6	-0,3
Benefit ratio	-4,9		-0,2	-1,0	-1,2	-1,1	-0,8	-0,6
Labour market ratio	-1,5		-0,4	-0,4	-0,5	-0,3	0,0	0,0
Of which : Employment rate	-1,2		-0,4	-0,3	-0,4	-0,2	0,0	0,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,3		-0,1	-0,1	-0,1	-0,1	0,0	0,0
Interaction effect (residual)	-0,4		-0,1	-0,2	0,0	0,0	0,0	0,0

Croatia	EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care							
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.7	5.2	5.4	5.5	5.7	5.8	5.9	5.9
AWG risk scenario	1.5	5.2	5.5	5.8	6.2	6.5	6.7	6.7
TFP risk scenario	0.7	5.2	5.4	5.5	5.7	5.8	5.9	5.9
Demographic scenario	1.0	5.2	5.4	5.6	5.9	6.0	6.1	6.2
High Life expectancy scenario (variation of Demographic sc.)	1.1	5.2	5.4	5.6	5.9	6.1	6.2	6.3
Healthy ageing scenario	0.1	5.2	5.3	5.3	5.4	5.3	5.3	5.3
Death-related cost scenario	:	5.2	:	:	:	:	:	:
Income elasticity scenario	1.2	5.2	5.4	5.7	6.0	6.2	6.4	6.5
EU28 cost convergence scenario	1.9	5.2	5.4	5.8	6.2	6.5	6.8	7.1
Labour intensity scenario	1.2	5.2	5.3	5.7	5.8	5.9	6.2	6.4
Sector-specific composite indexation scenario	1.7	5.2	5.5	5.9	6.3	6.6	6.8	6.9
Non-demographic determinants scenario	2.7	5.2	5.5	6.0	6.7	7.3	7.7	8.0
Long-term care							
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.3	0.9	0.9	1.0	1.1	1.1	1.2	1.2
AWG risk scenario	1.1	0.9	0.9	1.0	1.2	1.4	1.6	2.0
TFP risk scenario	0.3	0.9	0.9	1.0	1.1	1.1	1.2	1.2
Demographic scenario	0.4	0.9	0.9	1.0	1.1	1.2	1.2	1.3
Base case scenario	0.4	0.9	0.9	1.0	1.1	1.2	1.2	1.3
High Life expectancy scenario (variation of Base case sc.)	0.5	0.9	0.9	1.0	1.2	1.2	1.3	1.4
Healthy ageing scenario	0.2	0.9	0.9	1.0	1.0	1.0	1.0	1.0
Shift to formal care scenario	0.9	0.9	1.1	1.4	1.5	1.6	1.7	1.8
Coverage convergence scenario	0.8	0.9	0.9	1.1	1.2	1.3	1.4	1.6
Cost convergence scenario	0.8	0.9	0.9	1.0	1.2	1.3	1.4	1.7
Cost and coverage convergence scenario	1.3	0.9	0.9	1.1	1.3	1.5	1.7	2.2
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	10%	156	159	165	177	176	171	171
of which: receiving institutional care	30%	21	22	23	26	27	26	27
receiving home care	27%	22	23	24	28	28	27	28
receiving cash benefits	3%	112	114	118	123	121	117	115
Education							
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.5	3.7	3.5	3.3	3.1	3.0	3.1	3.2
Number of students (in thousands)							
Total (students/staff in 2016 = 9,6)	-30.7%	656	617	562	519	491	473	454
as % of population 5-24	-1.1	74.0	72.7	72.3	72.9	72.7	73.0	72.9
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.4	0.7	0.8	0.8	0.8
Unemployment benefit							
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.1
Total cost of ageing							
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-3.4	20.7	20.4	20.1	18.4	17.6	17.4	17.2
Alternative scenarios (diff. from reference scenario)							
AWG risk scenario (affect HC & LTC)	1.6	0.0	0.1	0.3	0.6	0.9	1.2	1.6
TFP risk scenario (-0.2 p.p.)	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.2
High life expectancy (+2 years) (8)	0.5	0.0	0.0	0.1	0.3	0.4	0.5	0.5
Lower fertility (-20%)	1.2	0.0	0.0	-0.2	-0.2	0.3	0.7	1.2
Higher TFP growth (+0.4 p.p.)	-0.4	0.0	0.0	0.0	-0.1	-0.2	-0.3	-0.4
Lower TFP growth (-0.4 p.p.)	0.5	0.0	0.0	0.0	0.1	0.2	0.4	0.5
Higher employment rate (+2 p.p)	-0.4	0.0	-0.1	-0.5	-0.4	-0.4	-0.4	-0.4
Lower employment rate (+2 p.p)	0.4	0.0	0.1	0.5	0.4	0.4	0.4	0.4
Higher employment rate of older workers (+10 p.p.)	-0.8	0.0	-0.2	-1.0	-0.9	-0.8	-0.8	-0.8
Higher migration (+33%)	-0.3	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.3
Lower migration (-33%)	0.3	0.0	0.0	0.0	0.1	0.2	0.3	0.3
Policy scenario linking retirement age to life expectancy	-1.1	0.0	0.0	-0.2	-0.2	-0.5	-0.9	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

12. ITALY

Italy					EC (DG ECFIN) - EPC (AWG) 2018 projections			
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,3	1,33	1,36	1,42	1,48	1,54	1,60	1,66
Life expectancy at birth								
males	6,2	80,7	81,2	82,5	83,7	84,8	85,9	86,9
females	5,6	85,3	85,8	86,9	88,0	89,0	90,0	90,9
Life expectancy at 65								
males	4,6	19,1	19,5	20,4	21,3	22,1	23,0	23,7
females	4,5	22,5	22,9	23,8	24,7	25,5	26,3	27,0
Net migration (thousand)	29,3	134,5	161,2	209,7	217,7	197,4	176,7	163,8
Net migration as % of population	0,1	0,2	0,3	0,3	0,4	0,3	0,3	0,3
Population (million)	-5,9	60,8	60,7	60,3	60,0	58,9	56,8	54,9
Children population (0-14) as % of total population	-1,0	13,6	13,0	11,6	11,8	12,1	12,1	12,6
Prime age population (25-54) as % of total population	-9,0	41,6	39,9	35,5	34,3	33,5	33,1	32,7
Working age population (15-64) as % of total population	-9,8	64,3	63,8	61,0	55,9	54,1	54,6	54,5
Elderly population (65 and over) as % of total population	10,7	22,1	23,2	27,4	32,3	33,8	33,3	32,9
Very elderly population (80 and over) as % of total population	7,9	6,7	7,5	8,9	10,6	14,0	15,5	14,6
Very elderly population (80 and over) as % of elderly population	14,0	30,5	32,3	32,6	32,9	41,3	46,5	44,5
Very elderly population (80 and over) as % of working age population	16,3	10,5	11,6	14,6	19,0	25,8	28,4	26,8
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	0,8	-0,3	0,5	0,3	0,5	1,3	1,2	1,1
Employment 15-74 (growth rate)	-0,2	-0,1	0,6	-0,3	-0,7	-0,3	-0,3	-0,4
Labour input : hours worked (growth rate)	-0,2	0,0	0,6	-0,3	-0,8	-0,3	-0,3	-0,4
Labour productivity per hour (growth rate)	1,0	-0,3	-0,1	0,6	1,2	1,6	1,6	1,5
TFP (growth rate)	0,7	-0,2	0,0	0,3	0,8	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,4	-0,1	0,0	0,2	0,4	0,6	0,5	0,5
Potential GDP per capita (growth rate)	1,0	-0,3	0,6	0,3	0,6	1,5	1,6	1,4
Potential GDP per worker (growth rate)	1,1	-0,3	-0,1	0,6	1,2	1,6	1,6	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-9.145	39.049	38.719	36.796	33.493	31.842	31.008	29.904
Population growth (working age:15-64)	-0,2	-0,2	-0,3	-0,9	-0,9	-0,3	-0,2	-0,5
Population (20-74) (in thousands)	-8.393	42.735	42.734	42.163	40.150	36.903	35.312	34.342
Population growth (20-74)	-0,1	-0,2	0,1	-0,1	-0,8	-0,8	-0,3	-0,3
Labour force 15-64 (thousands)	-5.160	25.374	25.604	24.784	22.726	21.565	20.920	20.214
Labour force 20-74 (thousands)	-3.446	25.629	26.112	26.138	24.552	23.185	22.704	22.183
Participation rate (20-74)	4,6	60,0	61,1	62,0	61,2	62,8	64,3	64,6
Participation rate (15-64)	2,6	65,0	66,1	67,4	67,9	67,7	67,5	67,6
young (15-24)	0,3	26,8	26,5	27,6	27,2	26,7	26,8	27,1
prime-age (25-54)	-0,9	77,5	77,8	76,9	76,6	76,7	76,7	76,6
older (55-64)	19,7	53,4	60,5	70,2	71,1	71,8	72,6	73,1
Participation rate (20-74) - FEMALES	7,5	50,1	51,9	54,3	54,3	55,7	57,1	57,7
Participation rate (15-64) - FEMALES	4,9	55,2	57,0	59,6	60,4	60,1	59,9	60,1
young (15-24)	0,2	22,8	22,5	23,4	23,1	22,7	22,8	23,0
prime-age (25-54)	0,6	66,8	67,7	67,7	67,4	67,5	67,4	67,4
older (55-64)	25,7	41,7	49,8	62,9	65,5	65,9	66,7	67,5
Participation rate (20-74) - MALES	1,1	70,1	70,6	69,8	68,0	69,8	71,2	71,2
Participation rate (15-64) - MALES	-0,1	74,8	75,3	75,0	75,1	75,0	74,6	74,7
young (15-24)	0,4	30,5	30,2	31,4	31,0	30,4	30,6	30,9
prime-age (25-54)	-3,0	88,2	87,7	85,9	85,4	85,4	85,3	85,3
older (55-64)	12,7	65,9	71,9	77,8	77,0	77,7	78,4	78,6
Average effective exit age (TOTAL) (1)	4,6	63,8	66,2	66,5	67,0	67,6	68,1	68,4
Men	3,9	63,9	65,9	66,1	66,3	66,9	67,6	67,8
Women	5,4	63,7	66,6	66,8	67,7	68,2	68,6	69,1
Employment rate (15-64)	5,0	57,3	59,0	61,4	62,2	62,4	62,1	62,3
Employment rate (20-74)	6,9	53,2	54,8	56,9	56,5	58,3	59,7	60,0
Employment rate (15-74)	6,4	50,0	51,5	53,7	53,5	54,9	56,0	56,4
Unemployment rate (15-64)	-4,0	11,9	10,8	8,9	8,4	7,9	7,9	7,9
Unemployment rate (20-74)	-4,3	11,4	10,3	8,2	7,6	7,2	7,1	7,0
Unemployment rate (15-74)	-4,4	11,7	10,6	8,5	7,8	7,4	7,3	7,3
Employment (20-74) (in millions)	-2,1	22,7	23,4	24,0	22,7	21,5	21,1	20,6
Employment (15-64) (in millions)	-3,7	22,4	22,8	22,6	20,8	19,9	19,3	18,6
share of young (15-24)	1,0	4%	4%	5%	5%	5%	5%	5%
share of prime-age (25-54)	-9,9	78%	74%	66%	69%	70%	69%	68%
share of older (55-64)	9,0	18%	22%	29%	26%	25%	26%	27%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3,4	20,1	22,3	26,1	23,5	22,2	22,7	23,5
Old-age dependency ratio 15-64 (3)	25,8	34,5	36,4	45,0	57,9	62,5	61,0	60,3
Old-age dependency ratio 20-64 (3)	28,3	37,2	39,4	48,6	62,4	67,7	66,4	65,5
Total dependency ratio (4)	27,8	55,6	56,8	64,0	79,0	84,9	83,3	83,5
Total economic dependency ratio (5)	-1,7	166,5	158,0	150,3	163,2	172,3	168,1	164,7
Economic old-age dependency ratio (15-64) (6)	27,3	58,1	58,7	66,4	83,5	91,2	88,1	85,4
Economic old-age dependency ratio (15-74) (7)	19,7	57,0	56,9	62,2	76,4	83,7	80,1	76,7

Italy				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-1,7	15,6	15,6	17,2	18,7	17,3	15,1	13,9
Of which : Old-age and early pensions	-0,9	12,7	12,7	14,2	15,6	14,4	12,6	11,8
Disability pensions	-0,1	0,4	0,4	0,4	0,4	0,3	0,3	0,3
Survivors pensions	-0,8	2,5	2,5	2,6	2,8	2,6	2,2	1,8
Other	0,0	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	12,4	12,4	13,9	15,2	14,0	12,2	11,4
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,2	0,4	0,5	0,8	0,7	0,6	0,7	0,6
Public pensions, net	-1,4	12,7	12,7	14,0	15,2	14,1	12,3	11,3
Public pensions, contributions	0,2	10,7	10,9	10,9	11,0	11,0	11,0	10,9
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	81,3%	81,3%	81,3%	81,3%	81,3%	81,3%	81,3%
Pensioners (Public, in 1000 persons)	143	15.088	14.918	15.790	17.460	17.824	16.668	15.231
Public pensioners aged 65+ (1000 persons)	1.933	12.607	12.849	14.206	16.356	16.961	15.902	14.541
Share of pensioners below age 65 as % of all pensioners (Public)	-11,9	16%	14%	10%	6%	5%	5%	5%
Benefit ratio % (Public pensions)	-12,6	58,9	60,7	64,4	59,7	51,4	47,0	46,3
Gross replacement rate at retirement % (Old-age earnings-related)	-14,6	64,4	65,5	57,8	49,5	45,2	48,6	49,8
Average accrual rates % (new pensions, earnings related)	-0,3	1,9	1,9	1,7	1,7	1,7	1,7	1,6
Average contributory period, years (new pensions, earnings-related)	3,7	34,7	35,6	35,2	35,0	35,4	37,6	38,4
Contributors (Public pensions, in 1000 persons)	-2.205	23.397	24.141	24.633	23.430	22.311	21.802	21.192
Support ratio (contributors/100 pensioners, Public pensions)	-16	155	162	156	134	125	131	139
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,1	0,0	0,0	-0,1	-0,3	0,0	0,1	0,1
Lower fertility (-20%)	1,2	0,0	0,0	0,0	0,2	0,6	0,9	1,2
Higher TFP growth (+0.4 p.p.)	-1,1	0,0	0,0	0,0	-0,5	-1,1	-1,2	-1,1
Lower TFP growth (-0.4 p.p.)	1,3	0,0	0,0	0,0	0,5	1,2	1,4	1,3
Higher employment rate (+2 p.p.)	0,0	0,0	-0,1	-0,4	-0,3	-0,3	-0,1	0,0
Lower employment rate (+2 p.p.)	0,0	0,0	0,1	0,4	0,3	0,3	0,1	0,0
Higher employment rate of older workers (+10 p.p.)	0,3	0,0	-0,5	-1,9	-0,9	-0,1	0,1	0,3
Higher migration (+33%)	-0,4	0,0	-0,1	-0,3	-0,5	-0,7	-0,6	-0,4
Lower migration (-33%)	0,5	0,0	0,1	0,3	0,6	0,8	0,7	0,5
TFP risk scenario (-0.2 p.p.)	0,6	0,0	0,0	0,1	0,3	0,6	0,7	0,6
Policy scenario linking retirement age to life expectancy	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1,7	15,6	15,6	17,2	18,7	17,3	15,1	13,9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-1,7		0,0	1,6	3,1	1,7	-0,5	-1,7
Dependency ratio	10,3		0,9	4,5	9,2	10,8	10,5	10,3
Coverage ratio	-4,5		-0,9	-2,5	-3,5	-3,6	-3,9	-4,5
Of which : Old-age	-2,3		-0,4	-1,4	-1,7	-1,5	-1,7	-2,3
Early-age	-16,5		-3,5	-7,6	-10,6	-13,6	-15,7	-16,5
Cohort effect	-8,3		0,4	-1,8	-7,4	-9,3	-8,4	-8,3
Benefit ratio	-4,0		0,7	1,7	0,4	-2,3	-3,8	-4,0
Labour market ratio	-2,8		-0,6	-1,8	-2,4	-2,5	-2,6	-2,8
Of which : Employment rate	-1,4		-0,5	-1,1	-1,3	-1,4	-1,4	-1,4
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-1,4		-0,2	-0,7	-1,2	-1,1	-1,3	-1,4
Interaction effect (residual)	-0,7		-0,1	-0,3	-0,6	-0,7	-0,7	-0,7
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-1,7		0,0	1,6	1,4	-1,4	-2,2	-1,2
Dependency ratio	10,3		0,9	3,6	4,7	1,6	-0,3	-0,2
Coverage ratio	-4,5		-0,9	-1,6	-1,0	-0,1	-0,3	-0,6
Of which : Old-age	-2,3		-0,4	-0,9	-0,3	0,2	-0,2	-0,6
Early-age	-16,5		-3,5	-4,2	-3,0	-3,0	-2,1	-0,8
Cohort effect	-8,3		0,4	-2,2	-5,6	-1,9	1,0	0,1
Benefit ratio	-4,0		0,7	1,0	-1,4	-2,7	-1,5	-0,2
Labour market ratio	-2,8		-0,6	-1,2	-0,6	-0,1	-0,2	-0,2
Of which : Employment rate	-1,4		-0,5	-0,6	-0,2	-0,2	0,0	0,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-1,4		-0,2	-0,6	-0,4	0,1	-0,2	-0,2
Interaction effect (residual)	-0,7		-0,1	-0,2	-0,3	-0,1	0,0	0,0

Italy				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.7	6.3	6.2	6.5	6.9	7.2	7.1	7.0
AWG risk scenario	1.1	6.3	6.2	6.7	7.1	7.5	7.5	7.5
TFP risk scenario	0.7	6.3	6.2	6.5	6.9	7.1	7.1	7.0
Demographic scenario	0.9	6.3	6.2	6.6	7.0	7.3	7.3	7.2
High Life expectancy scenario (variation of Demographic sc.)	1.1	6.3	6.2	6.6	7.1	7.4	7.4	7.4
Healthy ageing scenario	0.2	6.3	6.1	6.4	6.7	6.8	6.7	6.5
Death-related cost scenario	0.8	6.3	6.1	6.6	7.0	7.2	7.2	7.1
Income elasticity scenario	1.0	6.3	6.2	6.7	7.1	7.4	7.4	7.4
EU28 cost convergence scenario	1.0	6.3	6.2	6.6	7.1	7.4	7.4	7.3
Labour intensity scenario	1.0	6.3	6.0	6.3	7.1	7.6	7.4	7.3
Sector-specific composite indexation scenario	1.5	6.3	6.2	6.8	7.3	7.7	7.8	7.8
Non-demographic determinants scenario	2.0	6.3	6.2	6.8	7.4	7.9	8.2	8.3
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.2	1.7	1.8	2.0	2.3	2.8	3.1	3.0
AWG risk scenario	2.2	1.7	1.8	2.1	2.6	3.3	3.8	3.9
TFP risk scenario	1.2	1.7	1.8	2.0	2.3	2.8	3.0	2.9
Demographic scenario	1.3	1.7	1.8	2.1	2.4	2.8	3.1	3.0
Base case scenario	1.3	1.7	1.8	2.0	2.4	2.8	3.1	3.0
High Life expectancy scenario (variation of Base case sc.)	1.6	1.7	1.8	2.1	2.5	3.0	3.4	3.4
Healthy ageing scenario	1.0	1.7	1.8	2.0	2.2	2.6	2.9	2.7
Shift to formal care scenario	1.8	1.7	2.0	2.4	2.8	3.3	3.6	3.5
Coverage convergence scenario	1.5	1.7	1.8	2.1	2.5	2.9	3.3	3.2
Cost convergence scenario	2.1	1.7	1.8	2.1	2.6	3.3	3.8	3.9
Cost and coverage convergence scenario	2.4	1.7	1.8	2.2	2.7	3.4	4.0	4.1
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	48%	3,245	3,422	3,805	4,319	4,981	5,207	4,806
of which: receiving institutional care	33%	685	710	762	841	947	984	911
receiving home care	65%	674	722	830	969	1,144	1,209	1,114
receiving cash benefits	47%	1,887	1,991	2,212	2,510	2,890	3,015	2,782
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.3	3.5	3.4	3.1	3.1	3.3	3.3	3.3
Number of students (in thousands)								
Total (students/staff in 2016 = 12,4)	-18.1%	9,102	8,968	8,091	7,655	7,770	7,653	7,459
as % of population 5-24	-0.4	78.3	78.5	76.7	78.3	78.6	77.9	77.9
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.4	0.6	0.7	0.8	0.8
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.3	0.9	0.8	0.6	0.6	0.5	0.5	0.5
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-0.4	28.0	27.8	29.5	31.6	31.0	29.1	27.6
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	1.4	0.0	0.1	0.3	0.5	0.8	1.2	1.4
TFP risk scenario (-0.2 p.p.)	0.6	0.0	0.0	0.1	0.3	0.6	0.6	0.6
High life expectancy (+2 years) (8)	0.4	0.0	0.0	-0.1	-0.3	0.0	0.2	0.4
Lower fertility (-20%)	1.4	0.0	0.0	-0.2	-0.1	0.5	0.9	1.4
Higher TFP growth (+0.4 p.p.)	-1.4	-0.1	-0.1	-0.2	-0.7	-1.3	-1.6	-1.5
Lower TFP growth (-0.4 p.p.)	1.2	0.0	0.0	0.0	0.5	1.2	1.3	1.2
Higher employment rate (+2 p.p)	-0.3	0.0	-0.1	-0.7	-0.6	-0.5	-0.4	-0.3
Lower employment rate (+2 p.p)	0.3	0.0	0.1	0.7	0.6	0.6	0.5	0.3
Higher employment rate of older workers (+10 p.p.)	0.0	0.0	-0.5	-2.1	-1.2	-0.4	-0.2	0.0
Higher migration (+33%)	-0.7	0.0	-0.1	-0.3	-0.7	-0.9	-0.9	-0.7
Lower migration (-33%)	0.8	0.0	0.1	0.3	0.7	1.0	1.0	0.8
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

13. CYPRUS

Cyprus			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,3	1,31	1,35	1,40	1,45	1,51	1,56	1,62
Life expectancy at birth								
males	6,4	80,6	81,4	82,7	83,8	84,9	86,0	87,0
females	5,9	84,3	85,0	86,2	87,2	88,3	89,3	90,2
Life expectancy at 65								
males	4,8	19,0	19,6	20,5	21,4	22,2	23,0	23,8
females	5,0	21,3	21,9	22,8	23,7	24,6	25,4	26,3
Net migration (thousand)	2,7	1,0	1,7	2,9	3,9	4,9	4,4	3,7
Net migration as % of population	0,3	0,1	0,2	0,3	0,4	0,5	0,4	0,4
Population (million)	0,2	0,9	0,9	0,9	1,0	1,0	1,0	1,0
Children population (0-14) as % of total population	-4,7	16,1	15,4	13,8	11,9	11,2	11,5	11,4
Prime age population (25-54) as % of total population	-9,5	43,9	44,8	44,6	42,2	38,0	36,1	34,4
Working age population (15-64) as % of total population	-13,6	68,7	67,9	65,9	65,3	62,2	56,9	55,1
Elderly population (65 and over) as % of total population	18,3	15,3	16,7	20,3	22,8	26,6	31,7	33,6
Very elderly population (80 and over) as % of total population	10,6	3,4	3,9	5,7	7,5	8,8	10,3	14,0
Very elderly population (80 and over) as % of elderly population	19,7	22,0	23,5	28,1	32,7	33,2	32,6	41,7
Very elderly population (80 and over) as % of working age population	20,5	4,9	5,8	8,7	11,4	14,2	18,2	25,4
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,4	0,3	1,1	1,1	1,6	1,7	1,3	1,4
Employment 15-74 (growth rate)	0,3	0,4	0,7	0,5	0,3	0,0	-0,4	-0,1
Labour input : hours worked (growth rate)	0,2	0,1	0,6	0,5	0,3	0,0	-0,4	-0,1
Labour productivity per hour (growth rate)	1,2	0,2	0,5	0,6	1,3	1,7	1,6	1,5
TFP (growth rate)	0,7	-0,2	0,0	0,3	0,9	1,1	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,4	0,5	0,3	0,5	0,6	0,6	0,5
Potential GDP per capita (growth rate)	1,1	-0,1	0,5	0,7	1,3	1,3	1,1	1,5
Potential GDP per worker (growth rate)	1,2	-0,1	0,4	0,6	1,3	1,7	1,6	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-23	584	592	607	624	614	576	561
Population growth (working age:15-64)	-0,3	0,1	0,4	0,2	0,3	-0,5	-0,5	-0,2
Population (20-74) (in thousands)	39	611	632	662	683	705	692	650
Population growth (20-74)	-1,3	0,8	0,7	0,6	0,3	0,3	-0,5	-0,5
Labour force 15-64 (thousands)	15	426	445	467	481	478	453	440
Labour force 20-74 (thousands)	44	429	450	476	492	498	484	472
Participation rate (20-74)	2,4	70,2	71,2	71,8	72,0	70,6	69,9	72,7
Participation rate (15-64)	5,6	72,9	75,2	77,0	77,1	77,9	78,6	78,5
young (15-24)	-0,8	38,7	40,2	38,2	37,7	39,8	38,3	37,9
prime-age (25-54)	1,7	86,8	87,5	87,9	88,0	88,4	88,5	88,5
older (55-64)	17,8	59,0	61,7	66,9	69,8	72,5	74,6	76,8
Participation rate (20-74) - FEMALES	3,8	65,1	66,7	67,9	67,8	66,1	66,0	68,9
Participation rate (15-64) - FEMALES	7,7	68,4	71,3	74,0	74,4	75,4	76,3	76,1
young (15-24)	-1,4	39,7	41,1	39,0	38,1	40,5	38,8	38,3
prime-age (25-54)	4,2	81,8	83,5	85,0	85,5	86,0	86,2	86,1
older (55-64)	24,3	47,3	50,6	57,6	63,0	66,8	69,6	71,6
Participation rate (20-74) - MALES	0,7	75,7	76,1	76,1	76,5	75,4	73,9	76,4
Participation rate (15-64) - MALES	3,2	77,6	79,4	80,2	80,0	80,5	80,9	80,7
young (15-24)	-0,1	37,6	39,3	37,6	37,4	39,2	37,9	37,5
prime-age (25-54)	-1,5	92,3	92,0	91,1	90,6	90,7	90,8	90,7
older (55-64)	11,2	70,9	73,1	77,9	78,5	78,9	80,2	82,1
Average effective exit age (TOTAL) (1)	3,5	64,3	64,1	64,6	65,2	65,9	66,9	67,7
Men	3,9	64,5	64,9	65,7	66,1	66,6	67,5	68,4
Women	3,1	64,0	63,3	63,7	64,4	65,2	66,2	67,1
Employment rate (15-64)	10,7	63,0	66,7	72,2	72,5	73,2	73,9	73,7
Employment rate (20-74)	7,5	61,1	63,5	67,6	67,8	66,6	66,0	68,6
Employment rate (15-74)	8,2	57,0	59,8	64,0	64,4	63,8	63,1	65,2
Unemployment rate (15-64)	-7,4	13,5	11,3	6,2	6,1	6,1	6,1	6,1
Unemployment rate (20-74)	-7,4	12,9	10,9	5,9	5,8	5,7	5,6	5,5
Unemployment rate (15-74)	-7,6	13,2	11,1	6,1	5,9	5,8	5,7	5,6
Employment (20-74) (in millions)	0,1	0,4	0,4	0,4	0,5	0,5	0,5	0,4
Employment (15-64) (in millions)	0,0	0,4	0,4	0,4	0,5	0,4	0,4	0,4
share of young (15-24)	-2,0	8%	7%	7%	6%	6%	6%	6%
share of prime-age (25-54)	-6,9	78%	78%	78%	74%	70%	72%	71%
share of older (55-64)	8,9	14%	15%	16%	20%	24%	22%	23%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	6,3	16,8	17,6	17,7	21,5	26,0	23,2	23,1
Old-age dependency ratio 15-64 (3)	38,7	22,2	24,6	30,8	34,9	42,7	55,7	61,0
Old-age dependency ratio 20-64 (3)	41,3	24,3	26,6	33,1	37,4	45,4	59,5	65,5
Total dependency ratio (4)	36,1	45,6	47,3	51,8	53,1	60,7	75,9	81,7
Total economic dependency ratio (5)	0,9	125,9	115,8	104,4	104,7	108,6	120,2	126,8
Economic old-age dependency ratio (15-64) (6)	41,2	32,8	34,5	39,8	44,9	53,1	67,3	74,0
Economic old-age dependency ratio (15-74) (7)	36,0	32,1	33,8	38,7	43,5	50,4	62,2	68,1

Cyprus		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	2,3	10,2	10,2	10,9	11,5	11,3	12,0	12,4
Of which : Old-age and early pensions	2,0	8,5	8,4	8,8	9,4	9,3	10,0	10,4
Disability pensions	0,1	0,2	0,3	0,3	0,3	0,3	0,3	0,3
Survivors pensions	0,2	1,5	1,6	1,8	1,8	1,7	1,6	1,7
Other	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Earnings-related pensions (old age and early pensions), gross	2,1	8,1	8,0	8,5	9,1	9,0	9,6	10,2
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,3	0,3	0,4	0,4	0,4	0,5	0,3	0,6
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	2,5	7,8	8,3	9,4	10,4	10,4	10,5	10,3
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	172	152	169	206	239	284	324	324
Public pensioners aged 65+ (1000 persons)	177	132	153	192	224	269	309	310
Share of pensioners below age 65 as % of all pensioners (Public)	-8,6	13%	10%	7%	6%	5%	5%	4%
Benefit ratio % (Public pensions)	-22,1	62,9	58,2	56,4	53,0	44,3	40,2	40,8
Gross replacement rate at retirement % (Old-age earnings-related)	10,0	40,6	46,0	48,4	43,1	41,3	43,4	50,6
Average accrual rates % (new pensions, earnings related)	-0,1	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:	:
Contributors (Public pensions, in 1000 persons)	92	441	468	530	556	564	550	532
Support ratio (contributors/100 pensioners, Public pensions)	-125	290	277	258	233	199	170	164
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	-0,2	0,0	0,0	0,2	0,0	0,0	-0,1	-0,2
Lower fertility (-20%)	1,5	0,0	0,0	0,0	0,2	0,5	0,9	1,5
Higher TFP growth (+0.4 p.p.)	-0,5	0,0	0,0	0,0	-0,2	-0,4	-0,5	-0,5
Lower TFP growth (-0.4 p.p.)	0,6	0,0	0,0	0,0	0,2	0,4	0,6	0,6
Higher employment rate (+2 p.p.)	-0,1	0,0	-0,1	-0,3	-0,3	-0,3	-0,3	-0,1
Lower employment rate (+2 p.p.)	0,1	0,0	0,1	0,3	0,3	0,3	0,3	0,1
Higher employment rate of older workers (+10 p.p.)	-0,3	0,0	-0,1	-0,5	-0,6	-0,7	-0,8	-0,3
Higher migration (+33%)	-0,9	0,0	-0,1	-0,3	-0,6	-0,8	-1,1	-0,9
Lower migration (-33%)	1,3	0,0	0,1	0,4	0,6	0,9	1,3	1,3
TFP risk scenario (-0.2 p.p.)	0,3	0,0	0,0	0,0	0,1	0,2	0,3	0,3
Policy scenario linking retirement age to life expectancy	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2,3	10,2	10,2	10,9	11,5	11,3	12,0	12,4
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	2,3		0,0	0,7	1,3	1,1	1,8	2,3
Dependency ratio	11,6		1,0	3,4	4,8	7,1	10,5	11,6
Coverage ratio	-2,4		-0,1	-0,7	-0,7	-0,8	-1,6	-2,4
Of which : Old-age	-1,4		0,3	0,0	0,1	0,1	-0,7	-1,4
Early-age	-5,4		-2,1	-4,4	-6,3	-6,5	-5,1	-5,4
Cohort effect	-7,6		-0,8	-2,6	-1,6	-2,9	-6,6	-7,6
Benefit ratio	-4,1		-0,3	-0,5	-1,2	-3,2	-4,2	-4,1
Labour market ratio	-2,1		-0,5	-1,3	-1,3	-1,6	-2,0	-2,1
Of which : Employment rate	-1,4		-0,5	-1,2	-1,2	-1,2	-1,4	-1,4
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,7		0,0	-0,1	-0,1	-0,3	-0,6	-0,7
Interaction effect (residual)	-0,8		-0,1	-0,2	-0,2	-0,5	-0,7	-0,8
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	2,3		0,0	0,7	0,6	-0,2	0,7	0,5
Dependency ratio	11,6		1,0	2,4	1,4	2,3	3,4	1,2
Coverage ratio	-2,4		-0,1	-0,6	0,0	-0,1	-0,8	-0,7
Of which : Old-age	-1,4		0,3	-0,2	0,1	0,0	-0,7	-0,7
Early-age	-5,4		-2,1	-2,3	-1,9	-0,2	1,4	-0,3
Cohort effect	-7,6		-0,8	-1,8	0,9	-1,3	-3,7	-1,0
Benefit ratio	-4,1		-0,3	-0,2	-0,7	-2,0	-1,1	0,2
Labour market ratio	-2,1		-0,5	-0,8	-0,1	-0,2	-0,5	-0,1
Of which : Employment rate	-1,4		-0,5	-0,7	0,0	0,0	-0,2	0,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,7		0,0	-0,1	0,0	-0,2	-0,3	-0,1
Interaction effect (residual)	-0,8		-0,1	-0,1	0,0	-0,2	-0,3	0,0

Cyprus				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.4	2.8	2.9	2.9	3.0	3.1	3.1	3.2
AWG risk scenario	0.6	2.8	2.9	3.0	3.2	3.3	3.4	3.4
TFP risk scenario	0.4	2.8	2.9	2.9	3.0	3.1	3.1	3.2
Demographic scenario	0.4	2.8	2.8	2.9	3.0	3.1	3.1	3.2
High Life expectancy scenario (variation of Demographic sc.)	0.4	2.8	2.8	2.9	3.0	3.1	3.1	3.2
Healthy ageing scenario	0.2	2.8	2.8	2.9	2.9	3.0	3.0	3.0
Death-related cost scenario	:	2.8	:	:	:	:	:	:
Income elasticity scenario	0.4	2.8	2.9	3.0	3.1	3.1	3.2	3.2
EU28 cost convergence scenario	4.4	2.8	3.0	3.4	4.1	4.9	5.9	7.2
Labour intensity scenario	0.5	2.8	2.8	2.8	2.9	3.0	3.2	3.3
Sector-specific composite indexation scenario	1.0	2.8	2.9	3.2	3.4	3.6	3.8	3.8
Non-demographic determinants scenario	0.9	2.8	2.9	3.1	3.2	3.5	3.6	3.7
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6
AWG risk scenario	2.9	0.3	0.3	0.5	0.7	1.1	1.8	3.2
TFP risk scenario	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6
Demographic scenario	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6
Base case scenario	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6
High Life expectancy scenario (variation of Base case sc.)	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6
Healthy ageing scenario	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5
Shift to formal care scenario	0.4	0.3	0.3	0.4	0.5	0.5	0.6	0.7
Coverage convergence scenario	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6
Cost convergence scenario	2.9	0.3	0.3	0.5	0.7	1.1	1.8	3.2
Cost and coverage convergence scenario	3.1	0.3	0.3	0.5	0.7	1.1	1.9	3.4
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	135%	39	42	52	62	71	80	92
of which: receiving institutional care	157%	8	9	12	14	16	19	22
receiving home care	164%	8	9	11	13	15	17	21
receiving cash benefits	117%	23	25	30	35	39	44	50
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-1.6	5.8	5.3	4.5	4.1	3.7	4.0	4.2
Number of students (in thousands)								
Total (students/staff in 2016 = 11,4)	-18.0%	149	140	131	124	115	119	122
as % of population 5-24	3.8	73.5	75.6	75.9	76.0	76.1	77.8	77.4
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	1.2	0.0	0.2	0.7	1.1	1.2	1.2	1.2
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.3	0.5	0.4	0.2	0.2	0.2	0.2	0.2
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.0	19.5	19.0	18.9	19.2	18.7	19.7	20.5
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.9	0.0	0.1	0.2	0.5	0.9	1.5	2.9
TFP risk scenario (-0.2 p.p.)	0.3	0.0	0.0	0.0	0.1	0.2	0.2	0.3
High life expectancy (+2 years) (8)	-0.2	0.0	0.0	0.1	0.0	-0.1	-0.2	-0.2
Lower fertility (-20%)	0.7	0.0	0.0	-0.6	-0.6	-0.1	0.2	0.7
Higher TFP growth (+0.4 p.p.)	-0.5	0.0	0.0	0.0	-0.2	-0.4	-0.5	-0.5
Lower TFP growth (-0.4 p.p.)	0.6	0.0	0.0	0.0	0.2	0.4	0.5	0.6
Higher employment rate (+2 p.p)	-0.3	0.0	-0.1	-0.5	-0.5	-0.5	-0.5	-0.3
Lower employment rate (+2 p.p)	0.3	0.0	0.1	0.5	0.5	0.5	0.5	0.3
Higher employment rate of older workers (+10 p.p.)	-0.6	0.0	-0.1	-0.7	-0.8	-0.9	-1.0	-0.6
Higher migration (+33%)	-1.0	0.0	-0.2	-0.6	-0.7	-1.0	-1.3	-1.0
Lower migration (-33%)	1.4	0.0	0.2	0.6	0.8	1.1	1.5	1.4
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

14. LATVIA

Latvia				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,1	1,74	1,83	1,85	1,85	1,85	1,86	1,87
Life expectancy at birth								
males	13,3	69,4	70,7	73,5	76,1	78,5	80,7	82,7
females	9,1	79,5	80,4	82,3	84,1	85,7	87,2	88,6
Life expectancy at 65								
males	7,6	14,0	14,7	16,2	17,7	19,0	20,4	21,6
females	6,4	19,0	19,6	20,9	22,1	23,3	24,4	25,4
Net migration (thousand)	9,5	-9,4	-8,0	-6,1	-1,5	1,2	0,0	0,1
Net migration as % of population	0,5	-0,5	-0,4	-0,4	-0,1	0,1	0,0	0,0
Population (million)	-0,6	2,0	1,9	1,7	1,6	1,5	1,4	1,3
Children population (0-14) as % of total population	0,1	15,4	16,3	16,1	14,0	15,5	16,2	15,4
Prime age population (25-54) as % of total population	-9,3	41,3	39,7	34,0	30,9	29,7	31,8	32,0
Working age population (15-64) as % of total population	-9,9	64,9	62,8	58,5	56,8	52,9	50,7	55,0
Elderly population (65 and over) as % of total population	9,8	19,8	20,8	25,4	29,2	31,6	33,1	29,6
Very elderly population (80 and over) as % of total population	9,9	5,1	6,0	7,1	9,5	11,5	12,7	15,0
Very elderly population (80 and over) as % of elderly population	25,0	25,8	28,8	27,8	32,6	36,4	38,4	50,8
Very elderly population (80 and over) as % of working age population	19,5	7,9	9,4	12,1	16,8	21,8	25,0	27,3
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,9	1,4	4,2	2,7	1,7	0,9	1,2	1,5
Employment 15-74 (growth rate)	-0,8	0,1	-0,5	-1,2	-0,7	-1,1	-0,5	0,0
Labour input : hours worked (growth rate)	-0,8	-0,2	-0,6	-1,2	-0,7	-1,1	-0,5	0,0
Labour productivity per hour (growth rate)	2,7	1,6	4,8	3,9	2,4	2,0	1,8	1,5
TFP (growth rate)	1,8	3,3	3,2	2,5	1,6	1,3	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,9	-1,7	1,5	1,4	0,9	0,7	0,6	0,5
Potential GDP per capita (growth rate)	2,6	2,2	5,0	3,7	2,5	1,4	1,9	2,1
Potential GDP per worker (growth rate)	2,7	1,3	4,7	3,9	2,5	2,0	1,8	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-535	1.272	1.197	1.015	905	794	721	736
Population growth (working age:15-64)	1,6	-1,6	-1,6	-1,3	-1,2	-1,4	0,0	0,0
Population (20-74) (in thousands)	-606	1.384	1.312	1.156	1.033	934	840	779
Population growth (20-74)	1,6	-1,6	-1,1	-1,4	-0,8	-1,1	-1,2	0,0
Labour force 15-64 (thousands)	-408	970	905	766	682	610	558	562
Labour force 20-74 (thousands)	-414	995	931	802	717	647	589	581
Participation rate (20-74)	2,7	71,9	70,9	69,3	69,4	69,3	70,1	74,6
Participation rate (15-64)	0,1	76,3	75,6	75,5	75,4	76,8	77,3	76,4
young (15-24)	-2,6	39,6	35,0	36,0	38,3	37,3	35,1	37,0
prime-age (25-54)	4,0	87,9	88,7	91,0	91,4	92,3	92,2	91,9
older (55-64)	4,9	67,5	64,5	67,5	70,9	70,0	72,7	72,4
Participation rate (20-74) - FEMALES	5,9	67,9	67,7	66,9	67,2	67,7	68,9	73,8
Participation rate (15-64) - FEMALES	1,4	74,0	74,1	74,5	74,1	75,7	76,3	75,4
young (15-24)	-3,3	36,1	30,9	31,9	34,0	33,2	31,2	32,8
prime-age (25-54)	5,7	85,6	87,3	90,2	90,9	91,5	91,7	91,3
older (55-64)	7,1	66,0	64,1	68,6	70,6	70,7	73,4	73,1
Participation rate (20-74) - MALES	-1,0	76,3	74,6	72,0	71,7	70,9	71,4	75,3
Participation rate (15-64) - MALES	-1,4	78,7	77,2	76,4	76,6	77,9	78,3	77,3
young (15-24)	-1,9	42,9	38,9	39,9	42,5	41,4	39,0	41,0
prime-age (25-54)	2,2	90,2	90,0	91,7	92,0	93,1	92,7	92,4
older (55-64)	2,2	69,4	64,9	66,2	71,3	69,4	72,0	71,7
Average effective exit age (TOTAL) (1)	2,6	62,7	63,6	65,2	65,2	65,2	65,2	65,2
Men	3,4	61,7	62,9	65,2	65,2	65,2	65,2	65,2
Women	1,8	63,5	64,2	65,3	65,3	65,3	65,3	65,3
Employment rate (15-64)	1,6	68,8	68,8	68,1	68,7	70,7	71,2	70,3
Employment rate (20-74)	3,9	65,0	64,8	63,0	63,7	64,2	65,0	69,0
Employment rate (15-74)	1,9	61,7	61,1	58,8	59,3	60,3	60,2	63,5
Unemployment rate (15-64)	-1,9	9,8	9,1	9,7	8,8	7,9	7,9	7,9
Unemployment rate (20-74)	-2,0	9,5	8,7	9,1	8,2	7,3	7,4	7,5
Unemployment rate (15-74)	-2,0	9,5	8,7	9,2	8,3	7,4	7,4	7,6
Employment (20-74) (in millions)	-0,4	0,9	0,8	0,7	0,7	0,6	0,5	0,5
Employment (15-64) (in millions)	-0,4	0,9	0,8	0,7	0,6	0,6	0,5	0,5
share of young (15-24)	2,2	7%	6%	8%	10%	8%	9%	10%
share of prime-age (25-54)	-3,4	74%	74%	70%	66%	68%	75%	70%
share of older (55-64)	1,2	19%	20%	22%	24%	24%	16%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-0,2	21,1	22,8	23,9	25,1	26,2	17,1	20,9
Old-age dependency ratio 15-64 (3)	23,3	30,5	33,1	43,5	51,4	59,8	65,2	53,8
Old-age dependency ratio 20-64 (3)	27,3	32,7	35,8	47,9	57,0	65,5	72,9	59,9
Total dependency ratio (4)	27,7	54,2	59,1	70,9	76,1	89,2	97,1	81,8
Total economic dependency ratio (5)	30,4	116,4	122,4	136,2	139,7	148,5	157,9	146,8
Economic old-age dependency ratio (15-64) (6)	31,0	40,7	44,1	57,6	68,0	76,9	84,2	71,7
Economic old-age dependency ratio (15-74) (7)	29,1	39,3	42,4	54,2	63,6	71,5	78,5	68,4

Latvia			**EC (DG ECFIN) - EPC (AWG) 2018 projections**					
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-2,6	7,4	6,8	6,2	6,3	6,1	5,6	4,7
Of which : Old-age and early pensions	-2,4	6,6	6,1	5,6	5,8	5,6	5,2	4,2
Disability pensions	-0,3	0,7	0,6	0,5	0,4	0,4	0,3	0,4
Survivors pensions	0,0	0,1	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	0,0
Earnings-related pensions (old age and early pensions), gross	-2,4	6,6	6,1	5,6	5,8	5,6	5,2	4,2
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	0,0	0,3	0,7	1,5	2,3	2,6
New pensions, gross (Old-age and early pensions)	-0,1	0,1	0,2	0,1	0,1	0,1	0,1	0,1
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	-0,2	6,8	7,5	6,7	6,6	6,5	6,5	6,5
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	-98	569	545	552	562	558	544	472
Public pensioners aged 65+ (1000 persons)	-18	404	397	436	461	468	467	386
Share of pensioners below age 65 as % of all pensioners (Public)	-10,8	29%	27%	21%	18%	16%	14%	18%
Benefit ratio % (Public pensions)	-11,9	24,0	22,8	18,1	16,4	14,6	12,7	12,1
Gross replacement rate at retirement % (Old-age earnings-related)	-30,0	51,7	46,0	34,9	26,7	22,5	20,4	21,7
Average accrual rates % (new pensions, earnings related)	-0,4	1,0	1,0	1,0	0,8	0,7	0,6	0,6
Average contributory period, years (new pensions, earnings-related)	1,3	36,5	37,1	37,8	37,8	37,8	37,8	37,8
Contributors (Public pensions, in 1000 persons)	-377	960	927	781	705	649	588	583
Support ratio (contributors/100 pensioners, Public pensions)	-45	169	170	141	125	116	108	124
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,1	0,0	0,0	0,0	0,0	0,1	0,1	0,1
Lower fertility (-20%)	0,4	0,0	0,0	0,0	0,0	0,1	0,3	0,4
Higher TFP growth (+0.4 p.p.)	-0,2	0,0	0,0	0,0	-0,2	-0,3	-0,2	-0,2
Lower TFP growth (-0.4 p.p.)	0,2	0,0	0,0	0,0	0,0	0,1	0,2	0,2
Higher employment rate (+2 p.p.)	0,0	0,0	0,0	-0,1	-0,1	0,0	0,0	0,0
Lower employment rate (+2 p.p.)	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0
Higher employment rate of older workers (+10 p.p.)	0,1	0,0	0,0	-0,1	0,0	0,1	0,1	0,1
Higher migration (+33%)	0,0	0,0	0,0	0,1	0,1	0,1	0,1	0,0
Lower migration (-33%)	0,0	0,0	0,0	-0,1	-0,1	-0,1	-0,1	0,0
TFP risk scenario (-0.2 p.p.)	0,2	0,0	0,0	0,2	0,3	0,2	0,2	0,2
Policy scenario linking retirement age to life expectancy	-0,2	0,0	0,0	0,0	-0,3	-0,5	-0,3	-0,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-2,6	7,4	6,8	6,2	6,3	6,1	5,6	4,7
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-2,6		-0,6	-1,2	-1,1	-1,3	-1,7	-2,6
Dependency ratio	4,4		0,7	2,7	3,9	4,8	5,5	4,4
Coverage ratio	-1,4		-0,5	-1,1	-1,3	-1,5	-1,6	-1,4
Of which : Old-age	-0,4		-0,3	-0,4	-0,4	-0,4	-0,3	-0,4
Early-age	-0,8		-0,6	-1,5	-2,1	-1,2	-0,3	-0,8
Cohort effect	-3,1		-0,3	-1,6	-2,1	-3,8	-5,3	-3,1
Benefit ratio	-4,7		-0,7	-2,3	-2,9	-3,6	-4,4	-4,7
Labour market ratio	-0,5		-0,1	-0,3	-0,4	-0,5	-0,7	-0,5
Of which : Employment rate	-0,4		0,0	-0,1	-0,2	-0,3	-0,5	-0,4
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,1		0,0	-0,2	-0,2	-0,2	-0,2	-0,1
Interaction effect (residual)	-0,5		-0,1	-0,3	-0,4	-0,4	-0,5	-0,5
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-2,6		-0,6	-0,6	0,1	-0,2	-0,4	-0,9
Dependency ratio	4,4		0,7	2,0	1,1	0,9	0,7	-1,0
Coverage ratio	-1,4		-0,5	-0,6	-0,2	-0,2	-0,1	0,2
Of which : Old-age	-0,4		-0,3	-0,1	0,0	0,0	0,0	-0,1
Early-age	-0,8		-0,6	-0,8	-0,6	0,9	0,8	-0,4
Cohort effect	-3,1		-0,3	-1,4	-0,5	-1,6	-1,5	2,2
Benefit ratio	-4,7		-0,7	-1,6	-0,6	-0,7	-0,8	-0,3
Labour market ratio	-0,5		-0,1	-0,2	-0,1	-0,2	-0,1	0,2
Of which : Employment rate	-0,4		0,0	-0,1	-0,1	-0,1	-0,2	0,1
Labour intensity	0,0		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	0,1
Interaction effect (residual)	-0,5		-0,1	-0,3	-0,1	-0,1	0,0	0,0

Latvia		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.6	3.7	3.9	4.2	4.4	4.5	4.4	4.3
AWG risk scenario	1.8	3.7	4.1	4.8	5.3	5.6	5.6	5.5
TFP risk scenario	0.5	3.7	3.9	4.2	4.3	4.4	4.4	4.3
Demographic scenario	0.5	3.7	3.9	4.1	4.2	4.3	4.3	4.3
High Life expectancy scenario (variation of Demographic sc.)	0.6	3.7	3.9	4.1	4.3	4.4	4.4	4.3
Healthy ageing scenario	0.0	3.7	3.9	3.9	4.0	4.0	3.9	3.8
Death-related cost scenario	:	3.7	:	:	:	:	:	:
Income elasticity scenario	0.9	3.7	4.0	4.3	4.5	4.7	4.7	4.6
EU28 cost convergence scenario	3.3	3.7	4.0	4.5	5.2	5.8	6.4	7.0
Labour intensity scenario	0.8	3.7	3.8	4.1	4.4	4.6	4.8	4.5
Sector-specific composite indexation scenario	0.6	3.7	3.9	4.1	4.3	4.4	4.4	4.4
Non-demographic determinants scenario	2.8	3.7	4.1	5.1	5.8	6.2	6.4	6.5
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.1	0.4	0.4	0.5	0.5	0.6	0.6	0.6
AWG risk scenario	2.6	0.4	0.5	0.6	0.9	1.4	2.1	3.0
TFP risk scenario	0.1	0.4	0.4	0.5	0.5	0.6	0.6	0.6
Demographic scenario	0.1	0.4	0.4	0.5	0.5	0.5	0.6	0.6
Base case scenario	0.2	0.4	0.4	0.5	0.5	0.6	0.6	0.6
High Life expectancy scenario (variation of Base case sc.)	0.2	0.4	0.4	0.5	0.5	0.6	0.6	0.6
Healthy ageing scenario	0.0	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Shift to formal care scenario	0.5	0.4	0.5	0.7	0.8	0.9	0.9	0.9
Coverage convergence scenario	0.9	0.4	0.5	0.6	0.7	0.9	1.1	1.3
Cost convergence scenario	0.9	0.4	0.5	0.6	0.7	0.9	1.1	1.4
Cost and coverage convergence scenario	2.8	0.4	0.5	0.7	1.0	1.5	2.2	3.3
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-2%	44	44	44	45	45	44	42
of which: receiving institutional care	-10%	13	13	13	13	13	12	12
receiving home care	-5%	15	15	15	15	15	14	14
receiving cash benefits	6%	16	16	17	17	18	17	17
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.5	4.5	4.2	4.8	4.6	4.5	5.2	5.0
Number of students (in thousands)								
Total (students/staff in 2016 = 10,1)	-27.6%	323	301	306	263	234	245	234
as % of population 5-24	-3.3	82.9	81.8	80.0	78.7	80.0	80.5	79.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.7	0.0	0.1	0.3	0.5	0.7	0.7	0.7
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.1	0.4	0.3	0.4	0.3	0.3	0.3	0.3
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-1.4	16.4	15.7	16.1	16.2	15.9	16.2	15.0
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	3.6	0.0	0.2	0.8	1.3	1.9	2.6	3.6
TFP risk scenario (-0.2 p.p.)	0.1	0.0	0.0	0.2	0.2	0.2	0.1	0.1
High life expectancy (+2 years) (8)	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Lower fertility (-20%)	-0.1	0.0	0.0	-0.5	-0.7	-0.3	-0.3	-0.1
Higher TFP growth (+0.4 p.p.)	-0.2	0.0	0.0	0.0	-0.2	-0.2	-0.2	-0.2
Lower TFP growth (-0.4 p.p.)	0.2	0.0	0.0	0.0	0.0	0.1	0.2	0.2
Higher employment rate (+2 p.p)	-0.3	0.0	-0.1	-0.3	-0.3	-0.2	-0.2	-0.3
Lower employment rate (+2 p.p)	0.3	0.0	0.0	0.3	0.3	0.3	0.3	0.3
Higher employment rate of older workers (+10 p.p.)	-0.2	0.0	-0.1	-0.5	-0.3	-0.2	-0.2	-0.2
Higher migration (+33%)	0.2	0.0	0.0	0.2	0.2	0.3	0.4	0.2
Lower migration (-33%)	-0.2	0.0	0.0	-0.2	-0.2	-0.3	-0.3	-0.2
Policy scenario linking retirement age to life expectancy	-0.7	0.0	0.0	0.0	-0.5	-0.9	-0.7	-0.7

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

15. LITHUANIA

Lithuania		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,66	1,71	1,76	1,79	1,81	1,82	1,84
Life expectancy at birth								
males	13,5	69,3	70,8	73,6	76,2	78,6	80,8	82,8
females	8,9	79,9	81,0	82,8	84,5	86,0	87,4	88,8
Life expectancy at 65								
males	7,5	14,3	15,1	16,6	18,0	19,3	20,6	21,8
females	6,3	19,3	20,0	21,2	22,4	23,5	24,6	25,6
Net migration (thousand)	28,2	-28,2	-23,8	-17,0	-6,3	1,3	0,2	0,0
Net migration as % of population	1,0	-1,0	-0,9	-0,7	-0,3	0,1	0,0	0,0
Population (million)	-1,1	2,9	2,7	2,4	2,1	2,0	1,8	1,7
Children population (0-14) as % of total population	-0,1	14,7	15,4	15,2	12,6	14,2	15,7	14,7
Prime age population (25-54) as % of total population	-6,8	40,4	39,2	33,7	32,0	31,1	33,3	33,6
Working age population (15-64) as % of total population	-10,4	66,1	64,1	57,9	55,6	53,6	51,4	55,8
Elderly population (65 and over) as % of total population	10,4	19,2	20,5	26,9	31,8	32,3	32,9	29,6
Very elderly population (80 and over) as % of total population	8,5	5,4	6,1	7,3	10,5	13,3	13,2	13,9
Very elderly population (80 and over) as % of elderly population	18,9	28,0	29,7	27,1	33,1	41,4	40,1	46,9
Very elderly population (80 and over) as % of working age population	16,8	8,1	9,5	12,6	18,9	24,9	25,7	24,9
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,1	2,1	1,7	0,5	1,0	0,9	1,0	1,7
Employment 15-74 (growth rate)	-1,0	0,8	-0,6	-2,0	-1,1	-0,9	-0,7	0,2
Labour input : hours worked (growth rate)	-0,9	1,2	-0,6	-2,1	-1,1	-0,9	-0,7	0,1
Labour productivity per hour (growth rate)	2,0	0,8	2,3	2,5	2,1	1,9	1,7	1,5
TFP (growth rate)	1,2	0,2	1,1	1,5	1,3	1,2	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,8	0,6	1,2	1,0	0,7	0,7	0,6	0,5
Potential GDP per capita (growth rate)	2,0	3,3	2,9	1,9	2,1	1,6	1,7	2,2
Potential GDP per worker (growth rate)	2,1	1,2	2,3	2,5	2,1	1,9	1,7	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-938	1.897	1.752	1.387	1.177	1.046	942	959
Population growth (working age:15-64)	2,1	-1,8	-2,1	-2,0	-1,3	-1,2	-0,4	0,3
Population (20-74) (in thousands)	-994	2.016	1.909	1.608	1.366	1.212	1.108	1.023
Population growth (20-74)	1,1	-1,3	-1,3	-1,6	-1,3	-1,0	-0,9	-0,2
Labour force 15-64 (thousands)	-693	1.434	1.325	1.052	895	819	736	741
Labour force 20-74 (thousands)	-710	1.461	1.349	1.075	918	840	757	751
Participation rate (20-74)	1,0	72,4	70,7	66,8	67,2	69,3	68,3	73,4
Participation rate (15-64)	1,7	75,6	75,6	75,9	76,1	78,4	78,2	77,3
young (15-24)	-2,3	36,2	36,4	30,9	34,6	36,1	31,3	33,9
prime-age (25-54)	3,2	89,3	90,2	91,9	92,3	92,6	92,8	92,5
older (55-64)	3,8	69,9	63,4	68,8	70,6	71,7	70,7	73,7
Participation rate (20-74) - FEMALES	3,7	68,8	66,6	63,8	64,4	67,1	66,7	72,5
Participation rate (15-64) - FEMALES	2,7	74,0	73,5	75,3	75,4	77,4	77,4	76,7
young (15-24)	-2,0	32,3	32,4	27,3	30,8	32,3	28,0	30,3
prime-age (25-54)	3,7	88,4	89,6	91,8	92,0	91,8	92,3	92,1
older (55-64)	7,6	66,9	58,9	69,0	71,4	72,3	71,2	74,5
Participation rate (20-74) - MALES	-2,3	76,6	75,3	70,2	70,2	71,6	70,0	74,3
Participation rate (15-64) - MALES	0,6	77,3	77,9	76,5	76,8	79,3	78,9	77,9
young (15-24)	-2,5	39,8	40,1	34,3	38,2	39,9	34,5	37,4
prime-age (25-54)	2,7	90,2	90,9	92,0	92,7	93,4	93,2	92,9
older (55-64)	-0,8	73,7	69,0	68,5	69,6	71,1	70,2	72,9
Average effective exit age (TOTAL) (1)	1,0	63,0	62,5	64,0	64,0	64,0	64,0	64,0
Men	-0,1	64,3	63,2	64,3	64,3	64,3	64,3	64,3
Women	2,0	61,8	61,8	63,8	63,8	63,8	63,8	63,8
Employment rate (15-64)	1,7	69,5	70,3	69,7	70,0	72,2	72,0	71,2
Employment rate (20-74)	1,0	66,8	65,8	61,6	62,0	64,0	63,2	67,8
Employment rate (15-74)	0,2	62,4	62,1	57,5	57,7	60,5	58,9	62,6
Unemployment rate (15-64)	-0,1	8,0	7,1	8,1	8,0	7,9	7,9	7,9
Unemployment rate (20-74)	-0,1	7,8	6,9	7,8	7,7	7,6	7,6	7,7
Unemployment rate (15-74)	-0,1	7,9	7,0	7,9	7,8	7,7	7,7	7,8
Employment (20-74) (in millions)	-0,7	1,3	1,3	1,0	0,8	0,8	0,7	0,7
Employment (15-64) (in millions)	-0,6	1,3	1,2	1,0	0,8	0,8	0,7	0,7
share of young (15-24)	-0,2	8%	7%	6%	8%	7%	6%	8%
share of prime-age (25-54)	0,0	73%	73%	71%	70%	69%	77%	73%
share of older (55-64)	0,2	19%	20%	23%	22%	24%	16%	19%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-0,4	20,7	23,5	24,9	23,0	26,5	18,1	20,3
Old-age dependency ratio 15-64 (3)	24,1	29,0	31,9	46,4	57,2	60,2	63,9	53,1
Old-age dependency ratio 20-64 (3)	27,2	31,6	34,4	51,1	63,3	65,0	70,6	58,8
Total dependency ratio (4)	28,1	51,2	56,0	72,7	79,9	86,6	94,4	79,3
Total economic dependency ratio (5)	34,6	111,5	116,3	140,0	148,1	150,2	160,0	146,2
Economic old-age dependency ratio (15-64) (6)	33,5	38,7	42,8	63,3	78,1	80,0	84,9	72,2
Economic old-age dependency ratio (15-74) (7)	32,9	37,6	41,7	61,4	75,3	77,4	81,7	70,5

Lithuania		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-1,7	6,9	7,0	7,1	7,0	6,5	6,0	5,2
Of which : Old-age and early pensions	-1,4	4,9	4,9	4,9	5,0	4,6	4,3	3,5
Disability pensions	0,1	1,4	1,5	1,7	1,6	1,6	1,4	1,4
Survivors pensions	-0,2	0,3	0,3	0,3	0,3	0,2	0,2	0,1
Other	-0,2	0,3	0,3	0,2	0,1	0,1	0,1	0,1
Earnings-related pensions (old age and early pensions), gross	-0,7	1,9	1,9	1,9	1,9	1,7	1,6	1,2
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	1,9	0,0	0,0	0,2	0,6	1,0	1,8	1,9
New pensions, gross (Old-age and early pensions)	-0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	-0,7	7,2	6,9	6,5	6,5	6,5	6,5	6,5
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	-265	908	876	889	875	804	746	643
Public pensioners aged 65+ (1000 persons)	:	:	582	670	700	653	625	526
Share of pensioners below age 65 as % of all pensioners (Public)	:	:	34%	25%	20%	19%	16%	18%
Benefit ratio % (Public pensions)	-12,1	31,4	33,1	27,1	23,4	21,5	19,4	19,3
Gross replacement rate at retirement % (Old-age earnings-related)	:	:	35,2	27,5	22,5	20,0	18,1	17,5
Average accrual rates % (new pensions, earnings related)	-0,1	0,5	0,5	0,4	0,4	0,4	0,4	0,3
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:	:
Contributors (Public pensions, in 1000 persons)	:	:	1.191	941	805	735	664	659
Support ratio (contributors/100 pensioners, Public pensions)	:	:	136	106	92	92	89	102
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,3	0,0	0,0	0,0	0,1	0,2	0,3	0,3
Lower fertility (-20%)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Higher TFP growth (+0.4 p.p.)	-0,1	0,0	0,0	0,0	0,0	-0,1	-0,1	-0,1
Lower TFP growth (-0.4 p.p.)	0,1	0,0	0,0	0,0	0,0	0,1	0,1	0,1
Higher employment rate (+2 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Lower employment rate (+2 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Higher employment rate of older workers (+10 p.p.)	0,0	0,0	0,0	-0,1	0,0	0,0	0,0	0,0
Higher migration (+33%)	-0,6	0,0	0,1	-0,1	-0,2	-0,3	-0,5	-0,6
Lower migration (-33%)	0,6	0,0	-0,1	-0,1	0,1	0,2	0,4	0,6
TFP risk scenario (-0.2 p.p.)	0,0	0,0	0,0	0,1	0,1	0,0	0,0	0,0
Policy scenario linking retirement age to life expectancy	-0,1	0,0	0,1	0,0	-0,2	-0,3	-0,2	-0,1
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1,7	6,9	7,0	7,1	7,0	6,5	6,0	5,2
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-1,7		0,1	0,2	0,2	-0,4	-0,8	-1,7
Dependency ratio	5,0		0,6	3,7	5,3	5,5	6,0	5,0
Coverage ratio	-1,8		-0,4	-1,2	-1,6	-1,8	-2,0	-1,8
Of which : Old-age	0,0		:	0,0	0,0	0,0	0,0	0,0
Early-age	-1,4		:	-0,5	-1,0	-1,3	-0,3	-1,4
Cohort effect	-3,7		-0,1	-2,4	-3,8	-4,0	-5,9	-3,7
Benefit ratio	-4,0		-0,1	-1,7	-2,7	-3,2	-3,9	-4,0
Labour market ratio	-0,3		0,0	-0,1	-0,2	-0,2	-0,4	-0,3
Of which : Employment rate	-0,3		0,0	-0,1	-0,1	-0,2	-0,3	-0,3
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	0,0		0,0	0,0	-0,1	0,0	-0,1	0,0
Interaction effect (residual)	-0,6		0,0	-0,4	-0,6	-0,6	-0,6	-0,6
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-1,7		0,1	0,1	-0,1	-0,5	-0,5	-0,8
Dependency ratio	5,0		0,6	3,0	1,6	0,2	0,5	-1,0
Coverage ratio	-1,8		-0,4	-0,8	-0,4	-0,1	-0,2	0,1
Of which : Old-age	0,0		:	0,0	0,0	0,0	0,0	0,0
Early-age	-1,4		:	-0,5	-0,4	-0,3	0,9	-1,1
Cohort effect	-3,7		-0,1	-2,2	-1,4	-0,3	-1,9	2,2
Benefit ratio	-4,0		-0,1	-1,6	-1,0	-0,6	-0,6	-0,1
Labour market ratio	-0,3		0,0	-0,1	-0,1	0,0	-0,2	0,1
Of which : Employment rate	-0,3		0,0	-0,1	-0,1	-0,1	-0,1	0,0
Labour intensity	0,0		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	0,1
Interaction effect (residual)	-0,6		0,0	-0,4	-0,1	0,0	0,0	0,0

Lithuania				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.4	4.1	4.2	4.4	4.6	4.7	4.6	4.5
AWG risk scenario	1.2	4.1	4.4	4.8	5.3	5.5	5.4	5.3
TFP risk scenario	0.3	4.1	4.2	4.4	4.6	4.7	4.5	4.4
Demographic scenario	0.5	4.1	4.2	4.4	4.6	4.7	4.6	4.6
High Life expectancy scenario (variation of Demographic sc.)	0.6	4.1	4.2	4.4	4.7	4.8	4.7	4.7
Healthy ageing scenario	-0.1	4.1	4.1	4.2	4.3	4.3	4.2	4.0
Death-related cost scenario	:	4.1	:	:	:	:	:	:
Income elasticity scenario	0.8	4.1	4.2	4.5	4.8	5.0	4.9	4.9
EU28 cost convergence scenario	2.8	4.1	4.3	4.8	5.5	6.1	6.4	6.9
Labour intensity scenario	0.6	4.1	3.9	4.4	4.8	5.0	5.0	4.7
Sector-specific composite indexation scenario	0.7	4.1	4.2	4.5	4.8	4.9	4.8	4.8
Non-demographic determinants scenario	2.2	4.1	4.4	5.0	5.6	6.1	6.2	6.3
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.0	1.0	1.0	1.3	1.7	2.0	2.2	2.0
AWG risk scenario	3.6	1.0	1.1	1.6	2.3	3.3	4.1	4.6
TFP risk scenario	1.0	1.0	1.0	1.3	1.7	2.0	2.1	2.0
Demographic scenario	1.0	1.0	1.1	1.3	1.6	2.0	2.0	2.0
Base case scenario	1.0	1.0	1.0	1.3	1.7	2.0	2.2	2.0
High Life expectancy scenario (variation of Base case sc.)	1.3	1.0	1.0	1.4	1.8	2.2	2.4	2.3
Healthy ageing scenario	0.8	1.0	1.0	1.3	1.6	1.8	1.9	1.8
Shift to formal care scenario	1.3	1.0	1.1	1.5	1.9	2.3	2.4	2.3
Coverage convergence scenario	1.0	1.0	1.0	1.3	1.7	2.0	2.2	2.0
Cost convergence scenario	4.1	1.0	1.1	1.7	2.4	3.4	4.4	5.1
Cost and coverage convergence scenario	4.1	1.0	1.1	1.7	2.4	3.4	4.4	5.1
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-2%	203	206	213	220	231	219	199
of which: receiving institutional care	-21%	89	89	89	87	85	78	70
receiving home care	25%	59	62	67	73	83	81	74
receiving cash benefits	0%	55	56	57	60	63	60	55
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.1	3.9	3.3	3.6	3.6	3.2	3.8	3.8
Number of students (in thousands)								
Total (students/staff in 2016 = 9,4)	-42.2%	505	444	408	333	275	298	291
as % of population 5-24	-0.1	81.7	81.6	83.0	81.5	81.6	83.2	81.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.3	0.6	0.7	0.7	0.8
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	0.2	0.1	0.2	0.2	0.2	0.2	0.2
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	-0.4	16.0	15.7	16.7	17.1	16.6	16.7	15.6
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	3.4	0.0	0.2	0.7	1.2	2.0	2.7	3.4
TFP risk scenario (-0.2 p.p.)	-0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1
High life expectancy (+2 years) (8)	0.6	0.0	0.0	0.1	0.2	0.3	0.5	0.6
Lower fertility (-20%)	0.1	0.0	0.0	-0.3	-0.5	-0.1	-0.1	0.1
Higher TFP growth (+0.4 p.p.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lower TFP growth (-0.4 p.p.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate (+2 p.p)	-0.2	0.0	0.0	-0.2	-0.2	-0.2	-0.2	-0.2
Lower employment rate (+2 p.p)	0.2	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Higher employment rate of older workers (+10 p.p.)	-0.3	0.0	-0.1	-0.4	-0.3	-0.3	-0.3	-0.3
Higher migration (+33%)	-0.4	0.0	0.1	0.1	0.0	0.0	-0.1	-0.4
Lower migration (-33%)	0.5	0.0	-0.1	-0.2	-0.1	0.0	0.2	0.5
Policy scenario linking retirement age to life expectancy	-0.6	0.0	0.0	-0.1	-0.5	-0.7	-0.8	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

16. LUXEMBOURG

Luxembourg				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,3	1,40	1,54	1,57	1,60	1,63	1,66	1,69
Life expectancy at birth								
males	7,2	79,2	80,0	81,5	82,8	84,1	85,3	86,4
females	6,3	84,6	85,3	86,6	87,8	88,9	89,9	90,9
Life expectancy at 65								
males	5,0	18,5	19,0	20,0	20,9	21,8	22,7	23,5
females	4,7	22,4	22,9	23,8	24,7	25,6	26,4	27,1
Net migration (thousand)	-6,8	10,8	10,2	8,7	7,0	5,0	4,5	4,0
Net migration as % of population	-1,5	1,9	1,6	1,1	0,8	0,5	0,4	0,4
Population (million)	0,5	0,6	0,6	0,8	0,9	0,9	1,0	1,0
Children population (0-14) as % of total population	-1,5	16,4	16,2	16,4	15,8	15,0	14,9	14,9
Prime age population (25-54) as % of total population	-10,2	45,7	45,0	42,9	40,2	37,7	36,2	35,5
Working age population (15-64) as % of total population	-12,1	69,3	68,9	65,9	63,3	61,4	58,8	57,2
Elderly population (65 and over) as % of total population	13,6	14,3	14,9	17,7	20,9	23,6	26,3	27,9
Very elderly population (80 and over) as % of total population	7,1	4,0	4,1	4,6	6,1	8,2	9,5	11,1
Very elderly population (80 and over) as % of elderly population	11,9	28,0	27,8	26,0	29,0	34,7	36,3	39,9
Very elderly population (80 and over) as % of working age population	13,7	5,8	5,8	7,0	9,6	13,4	16,2	19,5
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	2,3	3,0	3,8	2,5	2,1	1,8	1,7	1,7
Employment 15-74 (growth rate)	0,8	2,2	2,9	1,0	0,6	0,2	0,1	0,2
Labour input : hours worked (growth rate)	0,8	2,5	2,9	1,0	0,6	0,2	0,1	0,2
Labour productivity per hour (growth rate)	1,4	0,5	0,8	1,5	1,5	1,5	1,5	1,5
TFP (growth rate)	0,9	0,4	0,7	0,9	1,0	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,1	0,1	0,6	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,1	0,7	1,6	0,9	1,0	1,1	1,2	1,4
Potential GDP per worker (growth rate)	1,4	0,8	0,9	1,5	1,5	1,5	1,5	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	189	404	438	501	548	578	586	593
Population growth (working age:15-64)	-2,2	2,4	1,9	1,0	0,8	0,3	0,1	0,2
Population (20-74) (in thousands)	245	415	456	538	594	632	653	660
Population growth (20-74)	-2,6	2,6	2,3	1,3	0,8	0,5	0,2	0,1
Labour force 15-64 (thousands)	128	283	310	354	384	399	404	411
Labour force 20-74 (thousands)	129	279	307	352	381	397	402	409
Participation rate (20-74)	-5,4	67,4	67,4	65,5	64,2	62,8	61,6	61,9
Participation rate (15-64)	-0,8	70,1	70,9	70,7	70,0	69,1	69,1	69,3
young (15-24)	0,4	32,0	33,6	32,6	32,0	32,6	32,6	32,3
prime-age (25-54)	1,5	87,1	87,6	88,3	88,5	88,5	88,6	88,6
older (55-64)	0,1	42,4	44,2	42,4	42,9	43,0	42,1	42,5
Participation rate (20-74) - FEMALES	-2,9	61,9	62,7	62,4	61,5	60,2	58,9	59,0
Participation rate (15-64) - FEMALES	1,8	64,8	66,3	67,6	67,3	66,6	66,4	66,5
young (15-24)	-0,2	32,0	33,3	32,3	31,6	32,1	32,1	31,8
prime-age (25-54)	4,1	81,0	82,7	84,5	84,9	85,0	85,1	85,1
older (55-64)	5,3	34,7	36,8	38,5	40,0	40,6	39,5	39,9
Participation rate (20-74) - MALES	-7,8	72,7	71,9	68,6	66,8	65,4	64,4	64,9
Participation rate (15-64) - MALES	-3,2	75,2	75,3	73,8	72,7	71,7	71,8	72,1
young (15-24)	0,9	31,9	33,9	33,0	32,4	33,0	33,0	32,8
prime-age (25-54)	-0,8	93,0	92,5	92,0	92,1	92,1	92,2	92,2
older (55-64)	-4,7	49,8	51,2	46,1	45,7	45,4	44,7	45,2
Average effective exit age (TOTAL) (1)	0,1	60,2	60,3	60,3	60,3	60,3	60,3	60,3
Men	0,1	60,4	60,4	60,4	60,4	60,4	60,4	60,4
Women	0,1	60,0	60,1	60,1	60,1	60,1	60,1	60,1
Employment rate (15-64)	0,1	65,7	66,8	67,2	66,5	65,7	65,6	65,9
Employment rate (20-74)	-4,4	63,5	63,8	62,5	61,2	59,9	58,8	59,1
Employment rate (15-74)	-3,9	59,5	60,1	59,0	57,6	56,4	55,4	55,5
Unemployment rate (15-64)	-1,2	6,2	5,7	5,0	5,0	5,0	5,0	5,0
Unemployment rate (20-74)	-1,2	5,8	5,3	4,6	4,6	4,6	4,6	4,6
Unemployment rate (15-74)	-1,3	6,2	5,7	4,9	4,9	4,9	4,9	4,9
Employment (20-74) (in millions)	0,1	0,3	0,3	0,3	0,4	0,4	0,4	0,4
Employment (15-64) (in millions)	0,1	0,3	0,3	0,3	0,4	0,4	0,4	0,4
share of young (15-24)	0,7	7%	7%	6%	7%	7%	7%	7%
share of prime-age (25-54)	-2,8	83%	82%	82%	81%	79%	79%	80%
share of older (55-64)	2,2	10%	12%	12%	12%	14%	13%	13%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3,2	16,9	18,2	19,3	19,8	21,2	21,1	20,1
Old-age dependency ratio 15-64 (3)	28,2	20,6	21,7	26,9	32,9	38,5	44,6	48,9
Old-age dependency ratio 20-64 (3)	31,0	22,5	23,4	29,1	35,9	42,0	48,7	53,5
Total dependency ratio (4)	30,6	44,3	45,2	51,8	57,9	63,0	69,9	74,9
Total economic dependency ratio (5)	43,7	118,7	116,1	123,8	135,0	145,3	155,8	162,4
Economic old-age dependency ratio (15-64) (6)	42,0	31,0	31,9	39,1	48,5	57,5	66,8	73,0
Economic old-age dependency ratio (15-74) (7)	41,2	30,9	31,7	38,7	48,0	56,8	66,0	72,1

Luxembourg		**EC (DG ECFIN) - EPC (AWG) 2018 projections**						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	8,9	9,0	9,0	10,2	11,5	13,0	16,0	17,9
Of which : Old-age and early pensions	8,3	6,7	6,7	7,7	8,9	10,1	12,9	14,9
Disability pensions	0,3	0,7	0,8	0,9	0,9	1,1	1,2	1,1
Survivors pensions	0,3	1,6	1,6	1,6	1,7	1,8	1,9	1,9
Other	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Earnings-related pensions (old age and early pensions), gross	8,3	6,7	6,7	7,7	8,9	10,1	12,9	14,9
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,1	0,5	0,3	0,4	0,4	0,5	0,6	0,5
Public pensions, net	7,6	7,7	7,6	8,6	9,8	11,0	13,6	15,2
Public pensions, contributions	-0,3	9,5	9,2	9,2	9,3	9,4	9,3	9,3
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	84,9%	84,9%	84,9%	84,9%	84,9%	84,9%	84,9%
Pensioners (Public, in 1000 persons)	401	191	214	288	356	419	518	593
Public pensioners aged 65+ (1000 persons)	345	134	152	207	272	318	384	478
Share of pensioners below age 65 as % of all pensioners (Public)	-10,7	30%	29%	28%	23%	24%	26%	19%
Benefit ratio % (Public pensions)	0,6	51,8	53,8	53,1	52,0	51,5	52,7	52,4
Gross replacement rate at retirement % (Old-age earnings-related)	-9,9	72,9	66,2	61,3	64,3	61,8	63,6	63,0
Average accrual rates % (new pensions, earnings related)	-0,2	1,8	1,8	1,7	1,7	1,6	1,6	1,6
Average contributory period, years (new pensions, earnings-related)	6,0	31,2	30,5	31,9	34,9	36,4	37,3	37,1
Contributors (Public pensions, in 1000 persons)	234	436	488	576	624	650	659	669
Support ratio (contributors/100 pensioners, Public pensions)	-115	228	229	200	175	155	127	113
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,5	0,0	0,0	0,1	0,1	0,2	0,3	0,5
Lower fertility (-20%)	2,4	0,0	0,0	0,0	0,1	0,6	1,4	2,4
Higher TFP growth (+0.4 p.p.)	-1,2	0,0	0,0	0,0	-0,2	-0,6	-0,9	-1,2
Lower TFP growth (-0.4 p.p.)	1,3	0,0	0,0	0,0	0,2	0,6	1,0	1,3
Higher employment rate (+2 p.p.)	-0,1	0,0	0,0	-0,2	-0,3	-0,3	-0,2	-0,1
Lower employment rate (+2 p.p.)	0,1	0,0	0,0	0,3	0,4	0,4	0,3	0,1
Higher employment rate of older workers (+10 p.p.)	-0,2	0,0	-0,1	-0,5	-0,6	-0,7	-0,6	-0,2
Higher migration (+33%)	-1,4	0,0	-0,3	-0,8	-1,3	-1,7	-1,6	-1,4
Lower migration (-33%)	2,0	0,0	0,3	1,0	1,8	2,4	2,4	2,0
TFP risk scenario (-0.2 p.p.)	0,6	0,0	0,0	0,2	0,4	0,5	0,6	0,6
Policy scenario linking retirement age to life expectancy	-1,8	0,0	-0,2	-0,4	-0,8	-1,2	-2,0	-1,8
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	8,9	9,0	9,0	10,2	11,5	13,0	16,0	17,9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	8,9		-0,1	1,1	2,5	3,9	6,9	8,9
Dependency ratio	10,4		0,4	2,5	4,8	6,8	8,8	10,4
Coverage ratio	-0,8		-0,2	-0,6	-1,5	-2,0	-1,3	-0,8
Of which : Old-age	1,2		0,0	-0,4	-0,6	-1,2	-0,8	1,2
Early-age	2,9		-0,5	0,7	-0,3	0,8	5,2	2,9
Cohort effect	-8,9		-0,1	-1,8	-3,4	-4,7	-7,0	-8,9
Benefit ratio	-0,6		-0,2	-0,5	-0,6	-0,6	-0,5	-0,6
Labour market ratio	-0,1		-0,1	-0,2	-0,1	0,0	0,0	-0,1
Of which : Employment rate	-0,1		-0,1	-0,1	-0,1	0,0	0,0	-0,1
Labour intensity	0,1		0,0	0,0	0,1	0,1	0,1	0,1
Career shift	-0,1		0,0	-0,1	-0,1	-0,1	-0,1	-0,1
Interaction effect (residual)	-0,2		0,0	-0,1	-0,2	-0,2	-0,2	-0,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	8,9		-0,1	1,2	1,4	1,4	3,0	2,0
Dependency ratio	10,4		0,4	2,1	2,3	1,9	2,1	1,6
Coverage ratio	-0,8		-0,2	-0,5	-0,8	-0,5	0,7	0,5
Of which : Old-age	1,2		0,0	-0,4	-0,2	-0,6	0,4	2,0
Early-age	2,9		-0,5	1,2	-1,1	1,2	4,4	-2,3
Cohort effect	-8,9		-0,1	-1,7	-1,6	-1,3	-2,3	-1,9
Benefit ratio	-0,6		-0,2	-0,3	-0,1	-0,1	0,1	0,0
Labour market ratio	-0,1		-0,1	-0,1	0,1	0,1	0,0	-0,1
Of which : Employment rate	-0,1		-0,1	0,0	0,0	0,1	0,0	-0,1
Labour intensity	0,1		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	0,0
Interaction effect (residual)	-0,2		0,0	-0,1	-0,1	0,0	0,1	0,0

Luxembourg				EC (DG ECFIN) - EPC (AWG) 2018 projections				

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.2	3.9	4.0	4.2	4.4	4.7	4.9	5.1
AWG risk scenario	1.7	3.9	4.1	4.4	4.7	5.1	5.4	5.6
TFP risk scenario	1.1	3.9	4.0	4.1	4.4	4.7	4.9	5.0
Demographic scenario	1.4	3.9	4.0	4.2	4.5	4.8	5.0	5.2
High Life expectancy scenario (variation of Demographic sc.)	1.5	3.9	4.0	4.2	4.5	4.9	5.1	5.4
Healthy ageing scenario	0.7	3.9	4.0	4.0	4.2	4.4	4.5	4.6
Death-related cost scenario	:	3.9	:	:	:	:	:	:
Income elasticity scenario	1.5	3.9	4.0	4.2	4.6	4.9	5.2	5.4
EU28 cost convergence scenario	2.8	3.9	4.1	4.5	5.0	5.6	6.2	6.7
Labour intensity scenario	2.1	3.9	3.9	4.1	4.6	5.2	5.6	6.0
Sector-specific composite indexation scenario	2.1	3.9	4.1	4.5	4.9	5.4	5.7	6.0
Non-demographic determinants scenario	2.4	3.9	4.1	4.5	5.0	5.5	5.9	6.2

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.8	1.3	1.4	1.6	2.0	2.8	3.5	4.1
AWG risk scenario	5.2	1.3	1.4	1.8	2.5	3.7	5.0	6.5
TFP risk scenario	2.8	1.3	1.4	1.6	2.0	2.8	3.5	4.0
Demographic scenario	2.3	1.3	1.4	1.6	2.0	2.6	3.1	3.6
Base case scenario	2.9	1.3	1.4	1.6	2.0	2.8	3.5	4.1
High Life expectancy scenario (variation of Base case sc.)	3.5	1.3	1.4	1.6	2.1	3.0	3.9	4.8
Healthy ageing scenario	2.5	1.3	1.4	1.5	1.9	2.6	3.2	3.7
Shift to formal care scenario	3.5	1.3	1.5	1.9	2.4	3.2	4.0	4.7
Coverage convergence scenario	4.6	1.3	1.4	1.7	2.4	3.5	4.7	5.9
Cost convergence scenario	3.4	1.3	1.4	1.6	2.2	3.0	3.9	4.6
Cost and coverage convergence scenario	5.6	1.3	1.4	1.8	2.6	3.9	5.3	6.9
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	272%	15	17	23	31	41	49	57
of which: receiving institutional care	388%	5	5	7	10	15	19	23
receiving home care	228%	9	10	13	17	22	26	29
receiving cash benefits	187%	2	2	3	3	4	5	5

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.1	3.3	3.1	3.1	3.2	3.3	3.3	3.4
Number of students (in thousands)								
Total (students/staff in 2016 = 9)	58.6%	93	97	114	131	137	142	148
as % of population 5-24	0.3	70.5	69.8	71.2	71.2	70.3	70.6	70.8
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	1.5	0.0	0.2	0.7	1.2	1.5	1.5	1.5

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.1	0.5	0.5	0.4	0.4	0.4	0.4	0.4

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	12.9	18.1	18.0	19.4	21.7	24.1	28.1	30.9
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.9	0.0	0.1	0.4	0.8	1.3	2.0	2.9
TFP risk scenario (-0.2 p.p.)	0.6	0.0	0.0	0.2	0.4	0.4	0.5	0.6
High life expectancy (+2 years) (8)	0.9	0.0	0.0	0.1	0.2	0.4	0.7	0.9
Lower fertility (-20%)	3.1	0.0	0.1	-0.1	-0.1	0.7	1.7	3.1
Higher TFP growth (+0.4 p.p.)	-0.9	0.0	0.1	0.1	-0.1	-0.4	-0.7	-0.9
Lower TFP growth (-0.4 p.p.)	1.4	0.0	0.1	0.1	0.4	0.7	1.1	1.4
Higher employment rate (+2 p.p)	-0.2	0.0	0.0	-0.4	-0.5	-0.5	-0.4	-0.2
Lower employment rate (+2 p.p)	0.8	0.0	0.2	0.8	0.9	1.0	0.9	0.8
Higher employment rate of older workers (+10 p.p.)	-0.4	0.0	0.0	-0.6	-0.8	-0.9	-0.8	-0.4
Higher migration (+33%)	-1.5	0.0	-0.3	-0.9	-1.5	-1.9	-1.9	-1.5
Lower migration (-33%)	2.8	0.0	0.5	1.4	2.3	3.1	3.2	2.8
Policy scenario linking retirement age to life expectancy	-2.3	0.0	-0.1	-0.4	-0.9	-1.4	-2.4	-2.3

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 (new pensions, earnings-related) and the average contributory period (new pensions, earnings-related) are for 2017.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

17. HUNGARY

Hungary				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,3	1,48	1,61	1,68	1,72	1,75	1,77	1,80
Life expectancy at birth								
males	11,1	72,8	73,7	76,0	78,2	80,3	82,1	83,9
females	9,0	79,6	80,4	82,3	84,0	85,7	87,2	88,6
Life expectancy at 65								
males	7,1	14,9	15,4	16,8	18,2	19,5	20,8	22,0
females	6,7	18,7	19,2	20,6	21,9	23,1	24,3	25,4
Net migration (thousand)	-7,0	18,2	19,9	16,2	20,8	15,3	13,8	11,2
Net migration as % of population	-0,1	0,2	0,2	0,2	0,2	0,2	0,2	0,1
Population (million)	-1,0	9,8	9,8	9,7	9,5	9,3	9,1	8,9
Children population (0-14) as % of total population	0,4	14,5	14,6	14,8	14,4	14,4	14,8	14,9
Prime age population (25-54) as % of total population	-7,9	41,9	42,3	38,8	35,4	34,1	34,0	34,0
Working age population (15-64) as % of total population	-11,1	67,1	65,0	63,0	60,4	57,4	55,6	56,0
Elderly population (65 and over) as % of total population	10,7	18,5	20,3	22,2	25,2	28,2	29,6	29,1
Very elderly population (80 and over) as % of total population	8,0	4,3	4,6	6,2	8,2	8,9	12,0	12,3
Very elderly population (80 and over) as % of elderly population	18,9	23,4	22,8	27,9	32,7	31,7	40,5	42,2
Very elderly population (80 and over) as % of working age population	15,5	6,4	6,4	9,8	13,7	15,6	21,6	22,0
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,6	1,9	1,9	2,1	1,2	1,5	1,3	1,3
Employment 15-74 (growth rate)	-0,3	1,7	0,1	-0,2	-0,9	-0,5	-0,5	-0,2
Labour input : hours worked (growth rate)	-0,3	1,6	0,1	-0,2	-0,9	-0,5	-0,5	-0,2
Labour productivity per hour (growth rate)	1,9	0,2	1,8	2,4	2,1	1,9	1,7	1,5
TFP (growth rate)	1,3	0,7	1,1	1,5	1,4	1,3	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,7	-0,5	0,7	0,8	0,8	0,7	0,6	0,5
Potential GDP per capita (growth rate)	1,8	2,1	1,9	2,3	1,4	1,7	1,5	1,6
Potential GDP per worker (growth rate)	1,9	0,1	1,8	2,3	2,2	1,9	1,7	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-1.620	6.588	6.364	6.081	5.711	5.325	5.065	4.968
Population growth (working age:15-64)	0,6	-0,7	-1,0	-0,3	-1,1	-0,4	-0,5	-0,2
Population (20-74) (in thousands)	-1.651	7.134	7.033	6.650	6.417	6.093	5.722	5.483
Population growth (20-74)	-0,2	-0,2	-0,4	-0,8	-0,2	-1,0	-0,3	-0,4
Labour force 15-64 (thousands)	-831	4.623	4.616	4.710	4.367	4.086	3.879	3.793
Labour force 20-74 (thousands)	-761	4.630	4.620	4.776	4.480	4.177	3.975	3.869
Participation rate (20-74)	5,7	64,9	65,7	71,8	69,8	68,6	69,5	70,6
Participation rate (15-64)	6,2	70,2	72,5	77,5	76,5	76,7	76,6	76,3
young (15-24)	-2,1	33,2	32,3	32,1	31,2	31,8	31,2	31,1
prime-age (25-54)	2,6	86,1	87,4	88,4	88,7	88,6	88,6	88,7
older (55-64)	29,1	52,2	55,6	80,2	79,8	81,5	81,2	81,3
Participation rate (20-74) - FEMALES	8,7	57,3	59,0	66,3	64,7	63,6	64,8	66,0
Participation rate (15-64) - FEMALES	8,4	63,5	66,9	73,0	71,9	72,2	72,0	71,8
young (15-24)	-1,9	29,0	28,3	28,1	27,2	27,8	27,2	27,1
prime-age (25-54)	3,5	79,8	81,6	82,9	83,4	83,1	83,1	83,3
older (55-64)	35,2	43,5	50,1	77,7	76,4	78,8	78,6	78,7
Participation rate (20-74) - MALES	2,0	73,1	72,8	77,5	75,0	73,5	74,1	75,0
Participation rate (15-64) - MALES	3,7	77,0	78,2	81,9	80,9	81,1	81,0	80,7
young (15-24)	-2,2	37,1	36,1	36,0	35,0	35,7	35,0	34,9
prime-age (25-54)	1,5	92,3	93,1	93,8	93,8	93,8	93,9	93,8
older (55-64)	21,4	62,5	61,8	82,8	83,3	84,2	83,9	83,9
Average effective exit age (TOTAL) (1)	3,3	61,7	62,8	65,1	65,1	65,1	65,1	65,1
Men	2,8	62,5	63,2	65,3	65,3	65,3	65,3	65,3
Women	3,8	61,0	62,4	64,8	64,8	64,8	64,8	64,8
Employment rate (15-64)	6,0	66,6	69,6	73,6	72,7	72,9	72,8	72,5
Employment rate (20-74)	5,6	61,7	63,2	68,4	66,5	65,3	66,2	67,2
Employment rate (15-74)	4,4	58,0	59,4	64,2	62,2	61,1	61,7	62,4
Unemployment rate (15-64)	-0,2	5,2	4,0	5,0	5,0	5,0	5,0	5,0
Unemployment rate (20-74)	-0,3	5,0	3,8	4,8	4,7	4,7	4,7	4,7
Unemployment rate (15-74)	-0,2	5,1	4,0	4,9	4,9	4,9	4,9	4,9
Employment (20-74) (in millions)	-0,7	4,4	4,4	4,5	4,3	4,0	3,8	3,7
Employment (15-64) (in millions)	-0,8	4,4	4,4	4,5	4,1	3,9	3,7	3,6
share of young (15-24)	-0,3	7%	7%	6%	7%	7%	7%	7%
share of prime-age (25-54)	-6,2	77%	79%	71%	68%	69%	71%	71%
share of older (55-64)	6,4	16%	15%	23%	25%	24%	22%	22%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-0,3	20,7	18,9	22,2	23,7	22,5	20,5	20,5
Old-age dependency ratio 15-64 (3)	24,5	27,5	31,3	35,2	41,8	49,1	53,2	52,0
Old-age dependency ratio 20-64 (3)	27,6	29,8	33,9	38,2	45,8	53,7	58,5	57,3
Total dependency ratio (4)	29,5	49,1	53,8	58,8	65,7	74,3	79,8	78,6
Total economic dependency ratio (5)	17,2	121,9	118,9	111,2	120,3	131,7	139,0	139,1
Economic old-age dependency ratio (15-64) (6)	28,3	40,4	44,0	45,7	54,0	64,1	69,7	68,7
Economic old-age dependency ratio (15-74) (7)	26,7	40,0	43,6	44,7	52,1	62,1	67,3	66,7

Hungary			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	1,5	9,7	9,0	8,4	9,4	10,6	11,1	11,2
Of which : Old-age and early pensions	2,2	8,0	7,4	7,0	8,2	9,5	10,1	10,2
Disability pensions	-0,2	0,7	0,7	0,7	0,7	0,6	0,5	0,6
Survivors pensions	-0,5	0,9	0,8	0,6	0,5	0,4	0,4	0,4
Other	0,0	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Earnings-related pensions (old age and early pensions), gross	2,2	7,9	7,4	7,0	8,2	9,5	10,1	10,2
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,0	0,2	0,1	0,2	0,3	0,2	0,3	0,2
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	-1,0	9,4	8,3	8,5	8,5	8,4	8,4	8,5
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	432	2.542	2.572	2.720	2.928	3.057	3.087	2.974
Public pensioners aged 65+ (1000 persons)	776	1.725	1.892	2.052	2.285	2.523	2.601	2.501
Share of pensioners below age 65 as % of all pensioners (Public)	-16,3	32%	26%	25%	22%	17%	16%	16%
Benefit ratio % (Public pensions)	-7,7	40,4	37,1	32,8	32,0	32,3	32,0	32,7
Gross replacement rate at retirement % (Old-age earnings-related)	3,7	45,5	46,1	47,6	49,3	48,9	48,6	49,2
Average accrual rates % (new pensions, earnings related)	-0,3	2,4	2,3	2,2	2,1	2,1	2,1	2,1
Average contributory period, years (new pensions, earnings-related)	4,7	32,8	34,5	37,2	37,8	37,4	37,6	37,5
Contributors (Public pensions, in 1000 persons)	-638	4.349	4.471	4.572	4.296	4.005	3.812	3.711
Support ratio (contributors/100 pensioners, Public pensions)	-46	171	174	168	147	131	124	125
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,6	0,0	0,0	0,1	0,2	0,3	0,5	0,6
Lower fertility (-20%)	1,8	0,0	0,0	0,0	0,1	0,6	1,1	1,8
Higher TFP growth (+0.4 p.p.)	-0,9	0,0	0,0	0,0	-0,2	-0,6	-0,8	-0,9
Lower TFP growth (-0.4 p.p.)	1,1	0,0	0,0	0,0	0,3	0,7	1,0	1,1
Higher employment rate (+2 p.p.)	-0,2	0,0	0,0	-0,2	-0,2	-0,3	-0,3	-0,2
Lower employment rate (+2 p.p.)	0,3	0,0	0,1	0,2	0,3	0,4	0,4	0,3
Higher employment rate of older workers (+10 p.p.)	-0,6	0,0	-0,1	-0,4	-0,5	-0,6	-0,6	-0,6
Higher migration (+33%)	-0,2	0,0	0,0	0,0	-0,1	-0,2	-0,3	-0,2
Lower migration (-33%)	0,3	0,0	0,0	0,0	0,1	0,2	0,3	0,3
TFP risk scenario (-0.2 p.p.)	0,6	0,0	0,1	0,5	0,8	0,7	0,6	0,6
Policy scenario linking retirement age to life expectancy	-1,6	0,0	0,0	-0,2	-0,7	-0,8	-1,4	-1,6
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	1,5	9,7	9,0	8,4	9,4	10,6	11,1	11,2
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	1,5		-0,7	-1,3	-0,3	0,9	1,4	1,5
Dependency ratio	6,4		1,3	2,4	4,1	5,7	6,6	6,4
Coverage ratio	-1,8		-0,8	-0,9	-1,2	-1,6	-1,9	-1,8
Of which : Old-age	0,2		0,0	0,1	0,1	0,1	0,1	0,2
Early-age	-2,8		-1,3	-2,6	-2,2	-2,8	-2,7	-2,8
Cohort effect	-5,3		-1,2	-0,7	-2,2	-4,1	-5,5	-5,3
Benefit ratio	-1,6		-0,7	-1,6	-1,8	-1,7	-1,8	-1,6
Labour market ratio	-1,1		-0,4	-1,0	-1,1	-1,1	-1,1	-1,1
Of which : Employment rate	-0,9		-0,4	-0,9	-0,9	-0,9	-1,0	-0,9
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,2		0,0	-0,1	-0,2	-0,2	-0,2	-0,2
Interaction effect (residual)	-0,3		-0,1	-0,2	-0,2	-0,3	-0,3	-0,3
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	1,5		-0,7	-0,6	1,0	1,2	0,5	0,1
Dependency ratio	6,4		1,3	1,1	1,6	1,6	0,9	-0,2
Coverage ratio	-1,8		-0,8	-0,2	-0,3	-0,4	-0,2	0,1
Of which : Old-age	0,2		0,0	0,1	0,0	0,1	0,0	0,0
Early-age	-2,8		-1,3	-1,3	0,4	-0,6	0,1	-0,1
Cohort effect	-5,3		-1,2	0,5	-1,6	-1,9	-1,4	0,3
Benefit ratio	-1,6		-0,7	-0,9	-0,2	0,1	-0,1	0,2
Labour market ratio	-1,1		-0,4	-0,6	-0,1	0,0	0,0	0,1
Of which : Employment rate	-0,9		-0,4	-0,5	0,0	0,0	0,0	0,0
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,2		0,0	-0,1	-0,1	0,0	0,0	0,0
Interaction effect (residual)	-0,3		-0,1	-0,1	0,0	0,0	0,0	0,0

Hungary				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.8	4.9	5.1	5.4	5.6	5.8	5.8	5.7
AWG risk scenario	1.8	4.9	5.2	5.8	6.3	6.6	6.8	6.7
TFP risk scenario	0.8	4.9	5.1	5.3	5.5	5.7	5.8	5.7
Demographic scenario	1.1	4.9	5.0	5.4	5.7	5.9	6.0	6.0
High Life expectancy scenario (variation of Demographic sc.)	1.2	4.9	5.1	5.4	5.7	6.0	6.1	6.1
Healthy ageing scenario	0.1	4.9	5.0	5.1	5.1	5.2	5.2	5.0
Death-related cost scenario	0.8	4.9	5.0	5.3	5.6	5.8	5.8	5.7
Income elasticity scenario	1.4	4.9	5.1	5.5	5.9	6.2	6.3	6.3
EU28 cost convergence scenario	2.1	4.9	5.1	5.6	6.0	6.4	6.8	7.0
Labour intensity scenario	1.5	4.9	4.9	5.1	5.6	6.1	6.4	6.4
Sector-specific composite indexation scenario	1.3	4.9	5.1	5.5	5.8	6.1	6.3	6.2
Non-demographic determinants scenario	3.0	4.9	5.2	6.1	6.8	7.4	7.8	7.9
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.4	0.7	0.7	0.8	0.9	1.0	1.1	1.1
AWG risk scenario	4.1	0.7	0.8	1.1	1.6	2.3	3.4	4.8
TFP risk scenario	0.4	0.7	0.7	0.8	0.9	1.0	1.1	1.1
Demographic scenario	0.4	0.7	0.7	0.8	0.9	1.0	1.1	1.1
Base case scenario	0.5	0.7	0.7	0.8	0.9	1.0	1.2	1.2
High Life expectancy scenario (variation of Base case sc.)	0.6	0.7	0.7	0.8	0.9	1.1	1.2	1.3
Healthy ageing scenario	0.3	0.7	0.7	0.7	0.8	0.9	1.0	1.0
Shift to formal care scenario	0.8	0.7	0.8	1.0	1.2	1.3	1.5	1.5
Coverage convergence scenario	1.6	0.7	0.7	0.9	1.1	1.4	1.9	2.3
Cost convergence scenario	2.2	0.7	0.8	1.0	1.4	1.8	2.4	2.9
Cost and coverage convergence scenario	4.5	0.7	0.8	1.1	1.7	2.5	3.7	5.2
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	22%	315	325	352	372	383	393	385
of which: receiving institutional care	18%	255	262	282	296	303	308	301
receiving home care	41%	60	62	70	76	80	85	85
receiving cash benefits	:	0	0	0	0	0	0	0
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.2	3.6	3.4	3.3	3.5	3.6	3.7	3.8
Number of students (in thousands)								
Total (students/staff in 2016 = 11,2)	-11.6%	1,573	1,505	1,477	1,465	1,406	1,399	1,390
as % of population 5-24	0.3	75.8	76.2	75.5	75.9	75.7	76.2	76.1
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.3	0.6	0.7	0.8	0.8
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	3.0	19.0	18.2	17.8	19.4	21.0	21.9	22.0
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	4.6	0.0	0.2	0.7	1.4	2.1	3.3	4.6
TFP risk scenario (-0.2 p.p.)	0.5	0.0	0.1	0.5	0.7	0.6	0.5	0.5
High life expectancy (+2 years) (8)	0.7	0.0	0.0	0.1	0.2	0.4	0.5	0.7
Lower fertility (-20%)	1.9	0.0	0.0	-0.2	-0.3	0.4	1.1	1.9
Higher TFP growth (+0.4 p.p.)	-0.8	0.0	0.0	0.0	-0.2	-0.6	-0.8	-0.8
Lower TFP growth (-0.4 p.p.)	1.0	0.0	0.0	0.0	0.3	0.7	1.0	1.0
Higher employment rate (+2 p.p)	-0.4	0.0	-0.1	-0.3	-0.4	-0.4	-0.4	-0.4
Lower employment rate (+2 p.p)	0.5	0.0	0.1	0.4	0.4	0.5	0.5	0.5
Higher employment rate of older workers (+10 p.p.)	-0.8	0.0	-0.1	-0.6	-0.8	-0.8	-0.8	-0.8
Higher migration (+33%)	-0.3	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.3
Lower migration (-33%)	0.3	0.0	0.0	0.1	0.1	0.3	0.4	0.3
Policy scenario linking retirement age to life expectancy	-2.0	0.0	0.0	-0.2	-0.7	-0.9	-1.7	-2.0

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

18. MALTA

Malta				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,3	1,41	1,54	1,62	1,67	1,70	1,72	1,75
Life expectancy at birth								
males	6,8	80,0	80,5	82,0	83,4	84,7	85,8	86,8
females	6,3	84,3	84,8	86,1	87,4	88,5	89,6	90,6
Life expectancy at 65								
males	4,6	19,3	19,6	20,6	21,5	22,3	23,1	23,9
females	4,7	22,2	22,5	23,5	24,4	25,3	26,1	26,9
Net migration (thousand)	-2,5	3,5	3,2	2,6	2,0	1,4	1,3	1,0
Net migration as % of population	-0,6	0,8	0,7	0,5	0,4	0,3	0,2	0,2
Population (million)	0,1	0,4	0,5	0,5	0,5	0,5	0,5	0,5
Children population (0-14) as % of total population	0,3	14,3	14,6	15,2	14,3	14,2	14,7	14,5
Prime age population (25-54) as % of total population	-7,1	40,7	40,7	39,7	37,1	34,8	33,9	33,7
Working age population (15-64) as % of total population	-11,5	66,4	64,2	60,4	60,6	58,7	55,4	54,9
Elderly population (65 and over) as % of total population	11,2	19,3	21,2	24,4	25,1	27,0	29,9	30,6
Very elderly population (80 and over) as % of total population	9,1	4,2	4,9	7,9	9,9	10,0	11,1	13,3
Very elderly population (80 and over) as % of elderly population	21,6	22,0	23,3	32,2	39,4	36,8	37,2	43,6
Very elderly population (80 and over) as % of working age population	17,9	6,4	7,7	13,0	16,3	16,9	20,1	24,3
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	2,3	6,1	4,2	3,2	2,0	1,2	1,2	1,6
Employment 15-74 (growth rate)	0,4	3,8	1,8	0,8	0,2	-0,4	-0,4	0,1
Labour input : hours worked (growth rate)	0,4	3,5	1,6	0,7	0,2	-0,4	-0,3	0,0
Labour productivity per hour (growth rate)	1,9	2,5	2,6	2,4	1,8	1,6	1,6	1,5
TFP (growth rate)	1,2	1,7	1,6	1,5	1,2	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,7	0,7	0,9	0,9	0,6	0,6	0,5	0,5
Potential GDP per capita (growth rate)	2,0	4,9	3,2	2,6	1,8	1,1	1,1	1,6
Potential GDP per worker (growth rate)	1,9	2,1	2,3	2,3	1,8	1,6	1,6	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-4	290	292	296	307	302	288	286
Population growth (working age:15-64)	-0,2	0,3	0,1	0,4	0,1	-0,4	-0,4	0,1
Population (20-74) (in thousands)	-1	318	328	329	333	339	330	317
Population growth (20-74)	-1,6	1,3	0,2	0,1	0,3	-0,1	-0,3	-0,3
Labour force 15-64 (thousands)	27	201	211	232	243	240	229	227
Labour force 20-74 (thousands)	26	197	208	228	239	237	226	223
Participation rate (20-74)	8,4	62,0	63,5	69,4	71,9	69,8	68,4	70,4
Participation rate (15-64)	10,3	69,2	72,2	78,5	79,2	79,5	79,4	79,5
young (15-24)	-1,5	52,3	54,1	50,8	50,8	52,0	50,9	50,8
prime-age (25-54)	9,3	82,0	85,7	90,0	91,3	91,4	91,4	91,4
older (55-64)	24,5	45,6	44,4	61,7	67,7	69,8	68,6	70,1
Participation rate (20-74) - FEMALES	17,4	48,6	52,6	62,0	66,4	65,1	63,8	66,0
Participation rate (15-64) - FEMALES	19,4	55,6	61,0	71,2	74,0	74,8	74,7	75,0
young (15-24)	-1,2	49,7	51,3	48,1	48,4	49,6	48,5	48,5
prime-age (25-54)	19,0	67,3	74,6	83,3	86,2	86,3	86,2	86,3
older (55-64)	38,1	26,9	27,6	48,4	60,3	64,6	63,4	65,0
Participation rate (20-74) - MALES	-0,3	75,0	74,0	76,5	77,1	74,3	72,7	74,7
Participation rate (15-64) - MALES	1,8	82,1	82,7	85,4	84,1	84,0	83,9	83,8
young (15-24)	-1,7	54,8	56,8	53,2	53,1	54,3	53,2	53,1
prime-age (25-54)	0,3	96,0	96,2	96,2	96,1	96,3	96,4	96,3
older (55-64)	10,6	64,3	61,1	74,6	74,9	74,8	73,5	74,9
Average effective exit age (TOTAL) (1)	1,4	62,0	61,8	63,3	63,3	63,3	63,3	63,3
Men	1,5	62,5	62,1	64,0	64,0	64,0	64,0	64,0
Women	1,2	61,5	61,5	62,6	62,6	62,6	62,6	62,6
Employment rate (15-64)	8,8	66,2	68,8	74,1	74,7	75,0	75,0	75,1
Employment rate (20-74)	7,3	59,6	60,9	65,9	68,3	66,3	65,0	66,9
Employment rate (15-74)	6,2	57,1	58,5	62,8	64,7	63,1	61,7	63,3
Unemployment rate (15-64)	1,4	4,2	4,6	5,6	5,6	5,6	5,6	5,6
Unemployment rate (20-74)	1,2	3,8	4,1	5,1	5,0	5,0	5,0	5,0
Unemployment rate (15-74)	1,3	4,2	4,5	5,5	5,5	5,5	5,5	5,5
Employment (20-74) (in millions)	0,0	0,2	0,2	0,2	0,2	0,2	0,2	0,2
Employment (15-64) (in millions)	0,0	0,2	0,2	0,2	0,2	0,2	0,2	0,2
share of young (15-24)	-1,9	13%	11%	10%	10%	10%	10%	11%
share of prime-age (25-54)	-2,2	73%	76%	76%	71%	69%	71%	71%
share of older (55-64)	4,1	14%	13%	15%	19%	21%	19%	18%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-0,9	20,5	20,3	18,3	21,2	23,3	20,9	19,7
Old-age dependency ratio 15-64 (3)	26,6	29,1	33,0	40,4	41,4	46,0	53,9	55,8
Old-age dependency ratio 20-64 (3)	29,8	31,7	35,5	43,9	45,3	50,2	59,1	61,5
Total dependency ratio (4)	31,7	50,6	55,7	65,6	65,0	70,2	80,5	82,3
Total economic dependency ratio (5)	15,4	124,1	123,1	121,2	118,1	123,4	136,7	139,5
Economic old-age dependency ratio (15-64) (6)	30,4	42,5	46,5	53,6	54,2	59,8	70,2	72,9
Economic old-age dependency ratio (15-74) (7)	30,0	41,9	45,9	53,1	53,5	58,9	69,0	71,9

Malta	EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	2,9	8,0	7,8	7,1	7,3	8,7	10,5	10,9
Of which : Old-age and early pensions	4,3	5,0	5,1	5,0	5,6	7,0	8,8	9,3
Disability pensions	0,0	0,2	0,2	0,2	0,2	0,2	0,2	0,2
Survivors pensions	-0,4	1,4	1,3	1,1	1,1	1,1	1,0	0,9
Other	-1,0	1,5	1,3	0,7	0,5	0,4	0,4	0,4
Earnings-related pensions (old age and early pensions), gross	4,5	4,5	4,6	4,6	5,2	6,6	8,4	8,9
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	0,4	0,3
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	-1,8	8,1	7,0	6,9	6,7	6,6	6,5	6,3
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	89	86	96	115	131	148	167	175
Public pensioners aged 65+ (1000 persons)	91	66	76	100	112	128	148	157
Share of pensioners below age 65 as % of all pensioners (Public)	-13,3	23%	20%	13%	14%	14%	11%	10%
Benefit ratio % (Public pensions)	-9,9	49,2	47,6	39,5	37,7	39,0	40,0	39,3
Gross replacement rate at retirement % (Old-age earnings-related)	-2,7	50,0	51,1	50,4	49,3	48,2	47,8	47,3
Average accrual rates % (new pensions, earnings related)	:	:	2,0	1,7	1,7	1,7	1,7	1,7
Average contributory period, years (new pensions, earnings-related)	3,3	35,2	35,5	36,5	36,9	37,3	37,9	38,6
Contributors (Public pensions, in 1000 persons)	27	195	205	224	236	234	224	221
Support ratio (contributors/100 pensioners, Public pensions)	-100	227	214	196	180	158	135	127
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,5	0,0	-0,1	0,0	0,0	0,1	0,3	0,5
Lower fertility (-20%)	1,8	0,0	0,0	0,0	0,2	0,5	1,1	1,8
Higher TFP growth (+0.4 p.p.)	-0,7	0,0	0,0	0,1	-0,1	-0,3	-0,6	-0,7
Lower TFP growth (-0.4 p.p.)	0,9	0,0	0,0	0,0	0,1	0,4	0,7	0,9
Higher employment rate (+2 p.p.)	-0,3	0,0	-0,1	-0,2	-0,2	-0,3	-0,3	-0,3
Lower employment rate (+2 p.p.)	0,0	0,0	0,0	0,1	0,0	0,0	-0,1	0,0
Higher employment rate of older workers (+10 p.p.)	-0,6	0,0	-0,1	-0,4	-0,5	-0,6	-0,7	-0,6
Higher migration (+33%)	-0,8	0,0	-0,2	-0,3	-0,5	-0,8	-0,9	-0,8
Lower migration (-33%)	0,7	0,0	0,1	0,2	0,3	0,5	0,7	0,7
TFP risk scenario (-0.2 p.p.)	0,5	0,0	0,0	0,1	0,2	0,3	0,4	0,5
Policy scenario linking retirement age to life expectancy	-1,2	0,0	-0,1	-0,1	-0,4	-0,8	-1,2	-1,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2,9	8,0	7,8	7,1	7,3	8,7	10,5	10,9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	2,9		-0,2	-1,0	-0,7	0,7	2,4	2,9
Dependency ratio	5,7		1,0	2,7	2,9	3,7	5,3	5,7
Coverage ratio	0,6		-0,2	-0,4	0,1	0,3	0,4	0,6
Of which : Old-age	2,0		0,1	0,5	1,0	1,3	1,6	2,0
Early-age	-0,8		0,1	-2,0	-1,4	-1,0	-0,2	-0,8
Cohort effect	-5,2		-1,2	-2,6	-2,0	-2,5	-4,7	-5,2
Benefit ratio	-2,3		-0,7	-2,2	-2,5	-2,3	-2,1	-2,3
Labour market ratio	-1,0		-0,2	-0,8	-0,9	-0,9	-0,9	-1,0
Of which : Employment rate	-1,1		-0,3	-0,9	-1,0	-1,0	-1,0	-1,1
Labour intensity	0,1		0,0	0,1	0,1	0,1	0,1	0,1
Career shift	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Interaction effect (residual)	-0,2		-0,1	-0,3	-0,3	-0,2	-0,2	-0,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	2,9		-0,2	-0,8	0,3	1,3	1,8	0,4
Dependency ratio	5,7		1,0	1,7	0,2	0,8	1,6	0,4
Coverage ratio	0,6		-0,2	-0,3	0,5	0,3	0,0	0,2
Of which : Old-age	2,0		0,1	0,4	0,4	0,3	0,3	0,4
Early-age	-0,8		0,1	-2,0	0,5	0,4	0,8	-0,6
Cohort effect	-5,2		-1,2	-1,5	0,7	-0,5	-2,3	-0,5
Benefit ratio	-2,3		-0,7	-1,5	-0,4	0,3	0,2	-0,2
Labour market ratio	-1,0		-0,2	-0,6	-0,1	0,0	-0,1	0,0
Of which : Employment rate	-1,1		-0,3	-0,6	-0,1	0,0	0,0	-0,1
Labour intensity	0,1		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	0,0
Interaction effect (residual)	-0,2		-0,1	-0,2	0,0	0,0	0,0	0,0

Malta			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.7	5.6	6.0	6.8	7.3	7.5	7.8	8.3
AWG risk scenario	4.3	5.6	6.2	7.5	8.5	8.9	9.3	9.9
TFP risk scenario	2.6	5.6	6.0	6.8	7.3	7.5	7.8	8.2
Demographic scenario	2.8	5.6	5.9	6.7	7.2	7.5	7.9	8.4
High Life expectancy scenario (variation of Demographic sc.)	3.2	5.6	5.9	6.7	7.4	7.7	8.2	8.8
Healthy ageing scenario	1.7	5.6	5.9	6.4	6.7	6.8	6.9	7.3
Death-related cost scenario	:	5.6	:	:	:	:	:	:
Income elasticity scenario	3.3	5.6	6.0	6.9	7.6	7.9	8.4	8.9
EU28 cost convergence scenario	3.5	5.6	6.0	6.9	7.5	8.0	8.5	9.1
Labour intensity scenario	3.0	5.6	5.6	6.3	6.7	7.1	8.0	8.6
Sector-specific composite indexation scenario	4.3	5.6	6.1	7.3	8.2	8.7	9.3	9.9
Non-demographic determinants scenario	5.9	5.6	6.2	7.8	9.1	9.8	10.6	11.4
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.4	0.9	1.0	1.3	1.6	1.8	2.0	2.3
AWG risk scenario	3.3	0.9	1.0	1.4	1.9	2.4	3.0	4.2
TFP risk scenario	1.4	0.9	1.0	1.3	1.6	1.7	1.9	2.3
Demographic scenario	1.4	0.9	1.0	1.4	1.7	1.8	1.9	2.3
Base case scenario	1.4	0.9	1.0	1.3	1.6	1.7	2.0	2.3
High Life expectancy scenario (variation of Base case sc.)	1.7	0.9	1.0	1.3	1.7	1.9	2.2	2.6
Healthy ageing scenario	1.1	0.9	1.0	1.3	1.5	1.6	1.8	2.0
Shift to formal care scenario	1.6	0.9	1.0	1.4	1.8	1.9	2.1	2.5
Coverage convergence scenario	1.9	0.9	1.0	1.4	1.7	2.0	2.3	2.8
Cost convergence scenario	2.8	0.9	1.0	1.4	1.9	2.2	2.8	3.7
Cost and coverage convergence scenario	3.6	0.9	1.0	1.5	2.0	2.5	3.2	4.5
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	123%	17	19	26	31	32	34	37
of which: receiving institutional care	215%	4	5	7	9	10	11	13
receiving home care	142%	8	9	13	16	16	18	20
receiving cash benefits	12%	5	5	6	6	5	5	5
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.2	5.4	4.8	4.8	4.8	4.7	5.1	5.2
Number of students (in thousands)								
Total (students/staff in 2016 = 9,4)	16.7%	69	68	76	79	77	80	81
as % of population 5-24	2.3	74.4	75.0	78.3	76.2	75.8	77.5	76.7
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	1.5	0.0	0.2	0.7	1.2	1.5	1.5	1.5
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	6.8	20.2	19.8	20.3	21.4	23.0	25.6	27.0
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	3.5	0.0	0.2	0.9	1.5	1.9	2.5	3.5
TFP risk scenario (-0.2 p.p.)	0.5	0.0	0.0	0.1	0.2	0.3	0.4	0.5
High life expectancy (+2 years) (8)	0.8	0.0	-0.1	0.0	0.1	0.3	0.5	0.8
Lower fertility (-20%)	2.1	0.0	0.0	-0.4	-0.3	0.3	1.0	2.1
Higher TFP growth (+0.4 p.p.)	-0.7	0.0	0.0	0.1	-0.1	-0.3	-0.5	-0.7
Lower TFP growth (-0.4 p.p.)	0.8	0.0	0.0	0.0	0.1	0.3	0.6	0.8
Higher employment rate (+2 p.p)	-0.5	0.0	-0.1	-0.4	-0.4	-0.5	-0.5	-0.5
Lower employment rate (+2 p.p)	0.3	0.0	0.0	0.4	0.3	0.2	0.2	0.3
Higher employment rate of older workers (+10 p.p.)	-0.9	0.0	-0.2	-0.7	-0.7	-0.9	-1.1	-0.9
Higher migration (+33%)	-1.1	0.0	-0.2	-0.4	-0.7	-1.0	-1.2	-1.1
Lower migration (-33%)	1.1	0.0	0.1	0.3	0.5	0.8	1.1	1.1
Policy scenario linking retirement age to life expectancy	-1.7	0.0	-0.1	-0.1	-0.5	-1.0	-1.6	-1.7

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 (new pensions, earnings-related) and the average contributory period (new pensions, earnings-related) are for 2017.
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

The Netherlands		EC (DG ECFIN) - EPC (AWG) 2018 projections

Main demographic and macroeconomic assumptions

Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,66	1,73	1,74	1,76	1,77	1,79	1,81
Life expectancy at birth								
males	6,7	79,8	80,7	82,0	83,2	84,4	85,5	86,5
females	6,8	83,3	84,1	85,5	86,7	87,9	89,0	90,1
Life expectancy at 65								
males	5,0	18,4	19,0	20,0	20,9	21,8	22,6	23,4
females	5,2	21,2	21,8	22,8	23,8	24,7	25,6	26,4
Net migration (thousand)	-61,0	85,5	66,9	59,5	43,7	29,6	28,6	24,5
Net migration as % of population	-0,4	0,5	0,4	0,3	0,2	0,2	0,1	0,1
Population (million)	2,5	17,0	17,5	18,4	19,1	19,2	19,3	19,6
Children population (0-14) as % of total population	-0,7	16,4	15,8	16,1	16,2	15,5	15,4	15,7
Prime age population (25-54) as % of total population	-4,8	39,8	38,6	36,8	36,8	36,0	35,4	35,0
Working age population (15-64) as % of total population	-8,5	65,3	64,4	60,4	58,2	59,3	58,6	56,8
Elderly population (65 and over) as % of total population	9,2	18,3	19,8	23,5	25,5	25,2	26,0	27,5
Very elderly population (80 and over) as % of total population	6,1	4,5	4,9	7,0	8,7	10,5	10,3	10,6
Very elderly population (80 and over) as % of elderly population	14,3	24,3	24,6	29,7	34,1	41,8	39,5	38,5
Very elderly population (80 and over) as % of working age population	11,8	6,8	7,5	11,5	15,0	17,8	17,5	18,7
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,5	1,3	1,4	1,1	1,5	1,8	1,6	1,5
Employment 15-74 (growth rate)	0,2	0,6	0,6	0,0	0,2	0,3	0,0	-0,1
Labour input : hours worked (growth rate)	0,2	0,9	0,7	0,0	0,2	0,3	0,0	-0,1
Labour productivity per hour (growth rate)	1,3	0,4	0,7	1,0	1,4	1,5	1,5	1,5
TFP (growth rate)	0,8	0,2	0,4	0,6	0,9	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,1	0,3	0,4	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,2	0,7	0,8	0,6	1,3	1,8	1,5	1,3
Potential GDP per worker (growth rate)	1,3	0,7	0,8	1,0	1,3	1,5	1,6	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-20	11.122	11.247	11.141	11.091	11.407	11.324	11.102
Population growth (working age:15-64)	-0,5	0,4	0,2	-0,3	0,3	0,2	-0,2	-0,1
Population (20-74) (in thousands)	450	11.899	12.180	12.392	12.241	12.218	12.466	12.349
Population growth (20-74)	-0,8	0,6	0,5	0,1	-0,2	0,2	0,1	-0,2
Labour force 15-64 (thousands)	292	8.863	8.982	9.022	9.040	9.325	9.309	9.156
Labour force 20-74 (thousands)	833	8.429	8.634	8.904	8.908	9.160	9.332	9.262
Participation rate (20-74)	4,2	70,8	70,9	71,9	72,8	75,0	74,9	75,0
Participation rate (15-64)	2,8	79,7	79,9	81,0	81,5	81,7	82,2	82,5
young (15-24)	2,2	68,2	70,3	70,8	70,2	70,5	70,6	70,4
prime-age (25-54)	0,3	87,0	87,1	87,1	87,2	87,2	87,3	87,3
older (55-64)	10,4	68,4	68,0	72,0	73,3	76,1	77,9	78,8
Participation rate (20-74) - FEMALES	6,2	65,3	65,8	67,4	68,8	71,4	71,3	71,5
Participation rate (15-64) - FEMALES	5,2	75,0	75,7	77,6	78,8	79,4	79,8	80,1
young (15-24)	2,3	69,2	71,5	71,9	71,4	71,6	71,7	71,5
prime-age (25-54)	2,4	82,2	82,8	83,8	84,4	84,5	84,5	84,5
older (55-64)	16,1	58,6	59,4	64,8	67,0	71,4	73,6	74,7
Participation rate (20-74) - MALES	2,0	76,4	76,0	76,3	76,7	78,5	78,3	78,3
Participation rate (15-64) - MALES	0,3	84,4	84,0	84,3	84,1	84,0	84,5	84,7
young (15-24)	2,1	67,3	69,2	69,7	69,2	69,4	69,6	69,3
prime-age (25-54)	-1,8	91,7	91,3	90,3	89,9	89,8	89,9	89,9
older (55-64)	4,6	78,3	76,7	79,4	79,7	80,7	82,1	82,8
Average effective exit age (TOTAL) (1)	3,7	64,6	65,2	66,2	66,7	67,3	68,0	68,3
Men	3,6	65,4	66,1	67,1	67,6	68,2	68,8	69,0
Women	3,8	63,7	64,3	65,3	65,8	66,5	67,1	67,5
Employment rate (15-64)	3,9	74,9	75,8	77,3	77,8	78,0	78,5	78,7
Employment rate (20-74)	5,0	67,0	67,7	68,9	69,9	72,0	71,9	72,0
Employment rate (15-74)	5,0	65,8	66,8	68,1	68,8	70,7	70,7	70,8
Unemployment rate (15-64)	-1,5	6,1	5,0	4,5	4,5	4,5	4,5	4,5
Unemployment rate (20-74)	-1,5	5,4	4,5	4,0	4,0	4,0	4,0	4,0
Unemployment rate (15-74)	-1,6	6,0	5,0	4,4	4,4	4,4	4,4	4,4
Employment (20-74) (in millions)	0,9	8,0	8,2	8,5	8,6	8,8	9,0	8,9
Employment (15-64) (in millions)	0,4	8,3	8,5	8,6	8,6	8,9	8,9	8,7
share of young (15-24)	0,1	15%	16%	15%	16%	16%	15%	15%
share of prime-age (25-54)	-1,5	68%	66%	66%	68%	66%	65%	66%
share of older (55-64)	1,5	17%	18%	19%	16%	18%	20%	19%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	-0,5	20,2	21,2	21,1	18,1	20,0	21,0	19,6
Old-age dependency ratio 15-64 (3)	20,3	28,1	30,7	38,9	43,9	42,5	44,3	48,4
Old-age dependency ratio 20-64 (3)	22,4	31,0	33,8	42,5	48,4	46,9	48,7	53,3
Total dependency ratio (4)	22,9	53,2	55,3	65,5	71,8	68,7	70,7	76,1
Total economic dependency ratio (5)	6,3	100,2	98,0	103,2	108,6	104,7	102,9	106,5
Economic old-age dependency ratio (15-64) (6)	17,8	35,2	37,0	44,8	50,4	48,8	49,1	53,0
Economic old-age dependency ratio (15-74) (7)	14,5	34,4	35,8	42,5	47,6	46,2	45,8	48,9

The Netherlands		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	0,6	7,3	7,0	7,5	8,5	8,2	7,9	7,9
Of which : Old-age and early pensions	0,4	5,3	5,0	5,7	6,6	6,1	5,7	5,6
Disability pensions	0,2	1,9	1,9	1,7	1,9	2,0	2,1	2,1
Survivors pensions	0,0	0,1	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	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	0,0
Private occupational pensions, gross	0,1	5,8	5,7	7,7	8,2	7,0	6,2	6,0
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,1	0,2	0,2	0,3	0,3	0,3	0,3	0,3
Public pensions, net	0,5	6,2	5,9	6,4	7,3	7,0	6,7	6,7
Public pensions, contributions	0,5	7,0	7,0	7,6	8,5	8,0	7,6	7,5
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	-0,2	84,9%	84,7%	85,6%	85,7%	85,2%	84,8%	84,6%
Pensioners (Public, in 1000 persons)	826	4.040	4.189	4.779	5.183	4.985	4.872	4.867
Public pensioners aged 65+ (1000 persons)	838	3.229	3.382	3.969	4.377	4.182	4.072	4.067
Share of pensioners below age 65 as % of all pensioners (Public)	-3,7	20%	19%	17%	16%	16%	16%	16%
Benefit ratio % (Public pensions)	-1,7	35,7	32,9	31,8	33,4	34,2	34,3	34,0
Gross replacement rate at retirement % (Old-age earnings-related)	:	:	:	:	:	:	:	:
Average accrual rates % (new pensions, earnings related)	:	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:	:
Contributors (Public pensions, in 1000 persons)	948	8.892	9.325	9.636	9.619	9.877	10.014	9.840
Support ratio (contributors/100 pensioners, Public pensions)	-18	220	223	202	186	198	206	202
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,0	0,0	0,0	-0,1	0,0	0,1	0,1	0,0
Lower fertility (-20%)	1,1	0,0	0,0	0,0	0,2	0,5	0,8	1,1
Higher TFP growth (+0.4 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Lower TFP growth (-0.4 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Higher employment rate (+2 p.p.)	-0,2	0,0	0,0	-0,2	-0,2	-0,2	-0,2	-0,2
Lower employment rate (+2 p.p.)	0,2	0,0	0,0	0,2	0,2	0,2	0,2	0,2
Higher employment rate of older workers (+10 p.p.)	-0,2	0,0	-0,1	-0,4	-0,4	-0,2	-0,2	-0,2
Higher migration (+33%)	-0,4	0,0	0,0	-0,2	-0,3	-0,4	-0,4	-0,4
Lower migration (-33%)	0,4	0,0	0,0	0,2	0,3	0,4	0,4	0,4
TFP risk scenario (-0.2 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	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	0,0
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	0,6	7,3	7,0	7,5	8,5	8,2	7,9	7,9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	0,6		-0,3	0,2	1,2	0,9	0,6	0,6
Dependency ratio	4,2		0,7	2,4	3,4	3,2	3,5	4,2
Coverage ratio	-2,7		-0,4	-1,1	-1,4	-1,7	-2,1	-2,7
Of which : Old-age	-2,4		-0,4	-0,8	-1,0	-1,3	-1,8	-2,4
Early-age	0,4		-0,3	0,3	0,9	-0,1	-0,1	0,4
Cohort effect	-4,1		-0,4	-2,5	-3,8	-2,8	-3,1	-4,1
Benefit ratio	0,0		-0,3	-0,5	-0,2	0,0	0,1	0,0
Labour market ratio	-0,8		-0,1	-0,4	-0,5	-0,5	-0,7	-0,8
Of which : Employment rate	-0,4		-0,1	-0,2	-0,3	-0,3	-0,3	-0,4
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,5		-0,1	-0,2	-0,3	-0,2	-0,4	-0,5
Interaction effect (residual)	-0,2		0,0	-0,1	-0,2	-0,2	-0,2	-0,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	0,6		-0,3	0,5	1,0	-0,4	-0,3	0,0
Dependency ratio	4,2		0,7	1,7	1,1	-0,3	0,3	0,7
Coverage ratio	-2,7		-0,4	-0,6	-0,3	-0,3	-0,5	-0,5
Of which : Old-age	-2,4		-0,4	-0,5	-0,1	-0,3	-0,5	-0,5
Early-age	0,4		-0,3	0,6	0,5	-0,9	-0,1	0,6
Cohort effect	-4,1		-0,4	-2,0	-1,4	1,0	-0,2	-1,0
Benefit ratio	0,0		-0,3	-0,2	0,3	0,2	0,1	-0,1
Labour market ratio	-0,8		-0,1	-0,2	-0,1	0,0	-0,2	-0,1
Of which : Employment rate	-0,4		-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	0,0
Career shift	-0,5		-0,1	-0,1	0,0	0,0	-0,1	-0,1
Interaction effect (residual)	-0,2		0,0	-0,1	0,0	0,0	0,0	0,0

The Netherlands			EC (DG ECFIN) - EPC (AWG) 2018 projections					

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.8	6.2	6.4	6.7	6.9	7.0	7.0	7.0
AWG risk scenario	1.4	6.2	6.5	6.9	7.2	7.4	7.6	7.6
TFP risk scenario	0.8	6.2	6.4	6.7	6.9	7.0	7.0	7.0
Demographic scenario	1.0	6.2	6.4	6.7	7.0	7.1	7.1	7.2
High Life expectancy scenario (variation of Demographic sc.)	1.2	6.2	6.4	6.8	7.0	7.2	7.3	7.4
Healthy ageing scenario	0.3	6.2	6.3	6.5	6.6	6.6	6.5	6.5
Death-related cost scenario	0.7	6.2	6.4	6.7	6.8	6.9	6.9	7.0
Income elasticity scenario	1.2	6.2	6.4	6.8	7.1	7.2	7.3	7.4
EU28 cost convergence scenario	1.1	6.2	6.4	6.8	7.0	7.1	7.2	7.3
Labour intensity scenario	1.3	6.2	6.4	6.9	7.3	7.3	7.3	7.6
Sector-specific composite indexation scenario	2.8	6.2	6.6	7.2	7.8	8.4	8.8	9.0
Non-demographic determinants scenario	2.4	6.2	6.5	7.0	7.5	8.0	8.4	8.6

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.5	3.5	3.7	4.4	5.3	5.8	6.0	6.0
AWG risk scenario	4.7	3.5	3.7	4.7	5.9	6.8	7.5	8.3
TFP risk scenario	2.5	3.5	3.7	4.4	5.3	5.8	6.0	6.0
Demographic scenario	2.7	3.5	3.7	4.5	5.3	6.0	6.3	6.3
Base case scenario	3.0	3.5	3.7	4.6	5.6	6.2	6.4	6.5
High Life expectancy scenario (variation of Base case sc.)	3.7	3.5	3.7	4.7	5.8	6.6	7.0	7.2
Healthy ageing scenario	2.1	3.5	3.6	4.3	5.1	5.5	5.6	5.6
Shift to formal care scenario	3.7	3.5	3.9	5.2	6.2	6.9	7.1	7.2
Coverage convergence scenario	3.3	3.5	3.7	4.7	5.7	6.4	6.7	6.9
Cost convergence scenario	5.0	3.5	3.7	4.8	6.0	7.0	7.7	8.5
Cost and coverage convergence scenario	5.5	3.5	3.8	4.8	6.2	7.2	8.0	9.0
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	82%	823	883	1,115	1,318	1,455	1,482	1,498
of which: receiving institutional care	92%	303	323	405	493	559	584	582
receiving home care	76%	521	560	710	825	897	899	916
receiving cash benefits	:	0	0	0	0	0	0	0

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.5	5.2	4.9	4.7	5.0	4.9	4.7	4.7
Number of students (in thousands)								
Total (students/staff in 2016 = 13)	1.0%	3,637	3,513	3,498	3,705	3,721	3,622	3,673
as % of population 5-24	-1.8	90.8	88.4	88.7	88.9	88.3	88.5	88.9
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.5	0.0	0.1	0.3	0.5	0.6	0.6	0.5

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.3	1.3	1.1	0.9	0.9	0.9	0.9	0.9

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	3.0	23.6	23.0	24.3	26.6	26.8	26.5	26.6
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.9	0.0	0.1	0.4	0.9	1.4	2.1	2.9
TFP risk scenario (-0.2 p.p.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High life expectancy (+2 years) (8)	0.3	0.0	0.0	-0.1	0.1	0.3	0.5	0.3
Lower fertility (-20%)	1.7	0.0	0.0	-0.3	-0.2	0.4	1.0	1.7
Higher TFP growth (+0.4 p.p.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lower TFP growth (-0.4 p.p.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate (+2 p.p)	-0.9	0.0	-0.2	-0.9	-0.9	-0.9	-0.9	-0.9
Lower employment rate (+2 p.p)	0.9	0.0	0.2	0.9	0.9	0.9	0.9	0.9
Higher employment rate of older workers (+10 p.p.)	-0.7	0.0	-0.1	-0.9	-0.8	-0.7	-0.7	-0.7
Higher migration (+33%)	-0.7	0.0	-0.1	-0.3	-0.5	-0.7	-0.8	-0.7
Lower migration (-33%)	0.8	0.0	0.1	0.3	0.6	0.8	0.9	0.8
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

20. AUSTRIA

Austria				EC (DG ECFIN) - EPC (AWG) 2018 projections			
Main demographic and macroeconomic assumptions							

Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0.2	1.47	1.49	1.53	1.56	1.59	1.62	1.66
Life expectancy at birth								
males	7.3	79.0	79.8	81.3	82.7	84.0	85.2	86.3
females	6.4	83.8	84.5	85.8	87.0	88.2	89.2	90.2
Life expectancy at 65								
males	5.2	18.3	18.9	19.9	20.8	21.7	22.6	23.5
females	4.9	21.6	22.1	23.1	24.0	24.9	25.7	26.5
Net migration (thousand)	-53.2	73.8	67.8	55.4	40.3	26.3	24.8	20.6
Net migration as % of population	-0.6	0.8	0.7	0.6	0.4	0.3	0.2	0.2
Population (million)	1.4	8.7	9.0	9.7	10.1	10.2	10.2	10.2
Children population (0-14) as % of total population	-0.5	14.3	14.3	14.7	14.1	13.6	13.8	13.8
Prime age population (25-54) as % of total population	-8.6	43.0	42.0	39.4	37.9	35.8	34.9	34.4
Working age population (15-64) as % of total population	-11.4	67.2	66.6	62.6	60.4	59.4	57.0	55.8
Elderly population (65 and over) as % of total population	11.9	18.5	19.0	22.6	25.5	27.0	29.2	30.4
Very elderly population (80 and over) as % of total population	7.5	5.0	5.5	6.6	8.1	10.8	11.0	12.4
Very elderly population (80 and over) as % of elderly population	14.2	26.7	28.8	29.2	31.6	40.0	37.7	40.9
Very elderly population (80 and over) as % of working age population	14.9	7.4	8.2	10.5	13.3	18.2	19.3	22.3

Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1.5	1.4	1.7	1.5	1.7	1.3	1.2	1.3
Employment 15-74 (growth rate)	0.1	1.3	1.2	0.2	0.2	-0.2	-0.3	-0.2
Labour input : hours worked (growth rate)	0.1	0.7	0.7	0.2	0.2	-0.2	-0.3	-0.2
Labour productivity per hour (growth rate)	1.4	0.7	1.0	1.4	1.5	1.5	1.5	1.5
TFP (growth rate)	0.9	0.5	0.7	0.9	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.2	0.3	0.5	0.5	0.5	0.5	0.5
Potential GDP per capita (growth rate)	1.2	0.3	0.9	1.0	1.4	1.3	1.3	1.4
Potential GDP per worker (growth rate)	1.3	0.1	0.5	1.4	1.4	1.5	1.5	1.5

Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-191	5,866	6,024	6,077	6,101	6,084	5,826	5,675
Population growth (working age:15-64)	-1.2	1.0	0.6	-0.1	0.2	-0.3	-0.5	-0.2
Population (20-74) (in thousands)	140	6,247	6,449	6,783	6,794	6,738	6,650	6,387
Population growth (20-74)	-1.3	0.9	0.8	0.3	-0.2	0.0	-0.3	-0.4
Labour force 15-64 (thousands)	-16	4,475	4,638	4,684	4,811	4,768	4,568	4,458
Labour force 20-74 (thousands)	121	4,362	4,550	4,674	4,802	4,787	4,623	4,483
Participation rate (20-74)	0.4	69.8	70.6	68.9	70.7	71.0	69.5	70.2
Participation rate (15-64)	2.3	76.3	77.0	77.1	78.9	78.4	78.4	78.6
young (15-24)	-1.3	58.1	58.3	57.1	56.9	57.4	57.1	56.9
prime-age (25-54)	2.2	88.4	89.0	90.0	90.6	90.5	90.6	90.6
older (55-64)	9.5	51.8	55.1	53.6	61.0	61.7	60.8	61.3
Participation rate (20-74) - FEMALES	3.3	65.1	65.9	64.5	68.3	69.2	67.7	68.4
Participation rate (15-64) - FEMALES	5.2	71.7	72.5	73.7	77.2	76.8	76.8	76.9
young (15-24)	-0.9	55.0	55.8	54.5	54.2	54.8	54.4	54.1
prime-age (25-54)	4.6	84.9	86.3	88.5	89.5	89.4	89.5	89.5
older (55-64)	16.4	42.7	44.5	44.8	58.2	59.6	58.6	59.1
Participation rate (20-74) - MALES	-2.7	74.6	75.2	73.4	73.1	72.9	71.3	72.0
Participation rate (15-64) - MALES	-0.7	80.8	81.4	80.4	80.5	79.9	80.0	80.1
young (15-24)	-1.6	61.1	60.7	59.6	59.5	60.0	59.7	59.5
prime-age (25-54)	-0.1	91.8	91.7	91.6	91.6	91.6	91.7	91.6
older (55-64)	2.3	61.2	66.0	62.6	63.8	63.8	62.9	63.5
Average effective exit age (TOTAL) (1)	0.7	63.0	62.6	62.8	63.7	63.7	63.7	63.7
Men	0.2	64.0	64.0	64.2	64.2	64.2	64.2	64.2
Women	1.2	62.0	61.2	61.4	63.2	63.2	63.2	63.2
Employment rate (15-64)	3.1	71.6	72.7	73.3	75.0	74.6	74.6	74.7
Employment rate (20-74)	1.3	65.8	66.9	65.9	67.6	67.9	66.5	67.1
Employment rate (15-74)	1.1	63.7	64.7	63.8	65.2	65.6	64.3	64.8
Unemployment rate (15-64)	-1.3	6.1	5.6	4.9	4.9	4.9	4.9	4.9
Unemployment rate (20-74)	-1.4	5.7	5.2	4.4	4.4	4.4	4.3	4.4
Unemployment rate (15-74)	-1.4	6.0	5.5	4.7	4.7	4.7	4.6	4.6
Employment (20-74) (in millions)	0.2	4.1	4.3	4.5	4.6	4.6	4.4	4.3
Employment (15-64) (in millions)	0.0	4.2	4.4	4.5	4.6	4.5	4.3	4.2
share of young (15-24)	-0.1	12%	11%	11%	12%	12%	12%	12%
share of prime-age (25-54)	-3.3	75%	73%	74%	72%	70%	71%	71%
share of older (55-64)	3.5	13%	15%	15%	16%	18%	17%	16%

Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	1.9	18.9	21.1	21.4	20.1	22.7	21.7	20.8
Old-age dependency ratio 15-64 (3)	26.9	27.6	28.6	36.1	42.3	45.5	51.3	54.4
Old-age dependency ratio 20-64 (3)	29.7	29.9	30.8	39.1	46.1	49.5	55.9	59.6
Total dependency ratio (4)	30.4	48.8	50.1	59.7	65.6	68.4	75.6	79.2
Total economic dependency ratio (5)	23.5	104.8	102.8	109.9	112.1	116.0	123.1	128.3
Economic old-age dependency ratio (15-64) (6)	30.9	36.9	37.5	45.5	52.3	56.5	63.3	67.8
Economic old-age dependency ratio (15-74) (7)	28.2	36.4	36.8	43.9	50.3	54.0	60.0	64.6

Austria	EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	0.5	13.8	13.9	14.4	14.9	14.6	14.7	14.3
Of which : Old-age and early pensions	1.9	10.5	10.9	11.8	12.4	12.4	12.6	12.4
Disability pensions	-0.3	1.1	0.8	0.7	0.7	0.6	0.7	0.7
Survivors pensions	-1.0	1.9	1.8	1.6	1.4	1.2	1.0	0.8
Other	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Earnings-related pensions (old age and early pensions), gross	1.9	10.5	10.9	11.8	12.4	12.4	12.6	12.4
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0.0	0.4	0.4	0.5	0.4	0.5	0.4	0.4
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	0.2	9.4	9.7	9.8	9.7	9.6	9.6	9.6
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	1,188	2,373	2,507	2,884	3,270	3,434	3,530	3,561
Public pensioners aged 65+ (1000 persons)	:	:	:	:	:	:	:	:
Share of pensioners below age 65 as % of all pensioners (Public)	:	:	:	:	:	:	:	:
Benefit ratio % (Public pensions)	-11.6	50.5	50.5	48.5	45.8	42.8	41.0	38.9
Gross replacement rate at retirement % (Old-age earnings-related)	-1.9	44.4	42.7	52.2	48.5	45.7	44.0	42.5
Average accrual rates % (new pensions, earnings related)	-0.1	1.3	1.2	1.5	1.3	1.3	1.2	1.2
Average contributory period, years (new pensions, earnings-related)	0.9	35.3	35.6	35.8	36.1	36.2	36.3	36.2
Contributors (Public pensions, in 1000 persons)	195	3,945	4,119	4,290	4,422	4,430	4,275	4,140
Support ratio (contributors/100 pensioners, Public pensions)	-50	166	164	149	135	129	121	116
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.7	0.0	0.0	0.1	0.2	0.4	0.6	0.7
Lower fertility (-20%)	1.3	0.0	0.0	0.0	0.3	0.8	1.2	1.3
Higher TFP growth (+0.4 p.p.)	-0.3	0.0	0.0	0.0	-0.1	-0.5	-0.5	-0.3
Lower TFP growth (-0.4 p.p.)	0.4	0.0	0.0	0.0	0.2	0.5	0.6	0.4
Higher employment rate (+2 p.p.)	-0.4	0.0	-0.1	-0.6	-0.9	-1.0	-0.8	-0.4
Lower employment rate (+2 p.p.)	0.3	0.0	0.1	0.6	1.0	1.0	0.8	0.3
Higher employment rate of older workers (+10 p.p.)	-0.7	0.0	-0.1	-1.1	-1.7	-1.8	-1.5	-0.7
Higher migration (+33%)	-1.3	0.0	-0.2	-0.6	-1.0	-1.2	-1.2	-1.3
Lower migration (-33%)	1.1	0.0	0.2	0.7	1.1	1.2	1.2	1.1
TFP risk scenario (-0.2 p.p.)	0.3	0.0	0.1	0.4	0.8	0.9	0.7	0.3
Policy scenario linking retirement age to life expectancy	-2.4	0.0	0.0	-0.4	-0.5	-1.0	-1.8	-2.4
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	0.5	13.8	13.9	14.4	14.9	14.6	14.7	14.3
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	0.5		0.1	0.6	1.1	0.7	0.9	0.5
Dependency ratio	10.1		0.4	3.9	6.3	7.4	9.2	10.1
Coverage ratio	-3.3		-0.1	-1.5	-2.0	-2.3	-3.0	-3.3
Of which : Old-age	:		:	:	:	:	:	:
Early-age	:		:	:	:	:	:	:
Cohort effect	-8.7		0.3	-3.3	-5.3	-5.3	-7.7	-8.7
Benefit ratio	-4.6		0.0	-0.9	-1.9	-3.0	-3.7	-4.6
Labour market ratio	-1.1		-0.2	-0.6	-1.0	-1.0	-1.1	-1.1
Of which : Employment rate	-0.7		-0.2	-0.3	-0.7	-0.6	-0.6	-0.7
Labour intensity	0.1		0.0	0.0	0.1	0.1	0.1	0.1
Career shift	-0.5		0.0	-0.3	-0.4	-0.4	-0.5	-0.5
Interaction effect (residual)	-0.5		0.0	-0.3	-0.4	-0.4	-0.5	-0.5
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	0.5		0.1	0.5	0.5	-0.3	0.2	-0.4
Dependency ratio	10.1		0.4	3.4	2.5	1.0	1.8	0.9
Coverage ratio	-3.3		-0.1	-1.4	-0.5	-0.3	-0.7	-0.4
Of which : Old-age	0.0		:	:	:	:	:	:
Early-age	0.0		:	:	:	:	:	:
Cohort effect	-8.7		0.3	-3.6	-2.0	0.0	-2.3	-1.1
Benefit ratio	-4.6		0.0	-0.9	-1.0	-1.1	-0.7	-0.9
Labour market ratio	-1.1		-0.2	-0.4	-0.4	0.1	-0.2	0.0
Of which : Employment rate	-0.7		-0.2	-0.1	-0.4	0.1	0.0	-0.1
Labour intensity	0.1		0.0	0.0	0.0	0.0	0.0	0.0
Career shift	-0.5		0.0	-0.3	0.0	-0.1	-0.1	0.1
Interaction effect (residual)	-0.5		0.0	-0.3	-0.1	0.0	-0.1	0.0

Austria				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.3	7.0	7.0	7.3	7.7	8.0	8.2	8.3
AWG risk scenario	2.1	7.0	7.1	7.6	8.2	8.6	8.9	9.1
TFP risk scenario	1.3	7.0	7.0	7.3	7.7	8.0	8.1	8.2
Demographic scenario	1.6	7.0	7.0	7.4	7.8	8.1	8.3	8.6
High Life expectancy scenario (variation of Demographic sc.)	1.8	7.0	7.0	7.4	7.9	8.3	8.5	8.8
Healthy ageing scenario	0.6	7.0	6.9	7.1	7.3	7.5	7.5	7.6
Death-related cost scenario	1.4	7.0	7.0	7.3	7.7	8.0	8.2	8.4
Income elasticity scenario	1.8	7.0	7.0	7.5	7.9	8.4	8.6	8.8
EU28 cost convergence scenario	1.6	7.0	7.0	7.4	7.8	8.2	8.4	8.6
Labour intensity scenario	2.8	7.0	7.1	7.7	8.3	8.8	9.3	9.7
Sector-specific composite indexation scenario	2.7	7.0	7.1	7.7	8.4	9.0	9.4	9.6
Non-demographic determinants scenario	3.3	7.0	7.1	7.8	8.6	9.3	9.8	10.2
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.9	1.9	2.0	2.3	2.6	3.2	3.6	3.8
AWG risk scenario	3.4	1.9	2.0	2.5	3.0	3.9	4.6	5.3
TFP risk scenario	1.9	1.9	2.0	2.3	2.6	3.2	3.6	3.8
Demographic scenario	1.7	1.9	2.0	2.2	2.6	3.1	3.4	3.6
Base case scenario	2.2	1.9	2.0	2.3	2.7	3.3	3.8	4.1
High Life expectancy scenario (variation of Base case sc.)	2.7	1.9	2.0	2.4	2.8	3.6	4.1	4.6
Healthy ageing scenario	1.7	1.9	1.9	2.2	2.5	3.1	3.4	3.6
Shift to formal care scenario	3.0	1.9	2.2	2.9	3.3	4.1	4.5	4.9
Coverage convergence scenario	2.2	1.9	2.0	2.3	2.7	3.3	3.8	4.1
Cost convergence scenario	3.7	1.9	2.0	2.5	3.1	4.0	4.8	5.6
Cost and coverage convergence scenario	3.7	1.9	2.0	2.5	3.1	4.0	4.8	5.6
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	106%	731	780	945	1,118	1,347	1,438	1,504
of which: receiving institutional care	114%	91	96	117	138	172	187	195
receiving home care	95%	175	186	222	260	309	326	341
receiving cash benefits	108%	465	498	606	719	867	925	969
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.0	4.9	4.6	4.7	4.7	4.6	4.8	4.9
Number of students (in thousands)								
Total (students/staff in 2016 = 8.9)	7.4%	1,458	1,443	1,541	1,607	1,569	1,561	1,566
as % of population 5-24	0.7	79.6	79.8	80.5	79.8	79.7	80.3	80.2
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.7	0.0	0.1	0.3	0.5	0.7	0.7	0.7
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.2	0.9	0.8	0.7	0.7	0.7	0.7	0.7
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	3.6	28.5	28.3	29.4	30.6	31.1	31.9	32.1
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.2	0.0	0.1	0.4	0.8	1.3	1.7	2.2
TFP risk scenario (-0.2 p.p.)	0.2	0.0	0.1	0.4	0.8	0.8	0.6	0.2
High life expectancy (+2 years) (8)	1.1	0.0	0.0	0.1	0.3	0.6	0.9	1.1
Lower fertility (-20%)	1.7	0.0	0.0	-0.3	0.0	0.7	1.4	1.7
Higher TFP growth (+0.4 p.p.)	-0.3	0.1	0.1	0.1	-0.1	-0.4	-0.5	-0.2
Lower TFP growth (-0.4 p.p.)	0.4	0.0	0.0	0.0	0.1	0.5	0.6	0.4
Higher employment rate (+2 p.p)	-1.0	0.0	-0.2	-1.1	-1.4	-1.5	-1.3	-0.9
Lower employment rate (+2 p.p)	0.8	0.0	0.2	1.2	1.5	1.5	1.3	0.9
Higher employment rate of older workers (+10 p.p.)	-1.2	0.0	-0.2	-1.4	-2.0	-2.2	-1.9	-1.2
Higher migration (+33%)	-1.7	0.0	-0.3	-0.8	-1.2	-1.5	-1.7	-1.7
Lower migration (-33%)	1.5	0.0	0.3	0.9	1.4	1.7	1.7	1.5
Policy scenario linking retirement age to life expectancy	-2.8	0.0	0.0	-0.5	-0.6	-1.1	-2.1	-2.8

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

21. POLAND

Poland		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,3	1,37	1,45	1,56	1,61	1,65	1,68	1,71
Life expectancy at birth								
males	10,5	73,9	74,9	77,1	79,2	81,1	82,8	84,4
females	7,9	81,6	82,4	84,0	85,6	87,0	88,3	89,5
Life expectancy at 65								
males	6,6	16,0	16,6	17,9	19,1	20,3	21,5	22,6
females	5,9	20,2	20,7	21,9	23,0	24,1	25,1	26,1
Net migration (thousand)	2,4	4,9	0,0	-2,4	16,2	29,7	11,6	7,3
Net migration as % of population	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
Population (million)	-7,1	38,0	37,9	37,2	35,8	34,3	32,8	30,9
Children population (0-14) as % of total population	-1,9	15,0	15,3	14,0	12,8	13,3	13,4	13,1
Prime age population (25-54) as % of total population	-11,1	43,0	42,8	40,1	35,4	32,7	32,6	31,9
Working age population (15-64) as % of total population	-15,1	68,7	66,0	62,6	61,1	55,9	52,5	53,6
Elderly population (65 and over) as % of total population	17,1	16,3	18,7	23,3	26,1	30,9	34,1	33,3
Very elderly population (80 and over) as % of total population	12,0	4,2	4,5	6,0	9,7	10,1	12,8	16,2
Very elderly population (80 and over) as % of elderly population	23,0	25,7	24,1	25,9	37,3	32,8	37,6	48,7
Very elderly population (80 and over) as % of working age population	24,2	6,1	6,8	9,6	15,9	18,1	24,4	30,3
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,4	2,7	2,6	1,9	1,2	0,7	1,0	1,0
Employment 15-74 (growth rate)	-0,8	0,4	-0,3	-0,7	-1,0	-1,2	-0,8	-0,6
Labour input : hours worked (growth rate)	-0,8	0,5	-0,3	-0,7	-1,0	-1,2	-0,8	-0,6
Labour productivity per hour (growth rate)	2,2	2,1	2,9	2,7	2,2	1,9	1,7	1,5
TFP (growth rate)	1,3	1,1	1,5	1,7	1,4	1,2	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,8	1,1	1,4	1,0	0,8	0,7	0,6	0,5
Potential GDP per capita (growth rate)	1,8	2,7	2,7	2,3	1,6	1,2	1,5	1,6
Potential GDP per worker (growth rate)	2,2	2,2	2,9	2,7	2,2	1,9	1,7	1,6
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-9.543	26.075	25.017	23.271	21.868	19.160	17.214	16.533
Population growth (working age:15-64)	0,5	-0,9	-1,1	-0,5	-1,0	-1,5	-0,7	-0,4
Population (20-74) (in thousands)	-9.227	27.612	27.606	25.829	24.237	22.847	20.250	18.385
Population growth (20-74)	-0,7	0,1	-0,1	-0,7	-0,4	-0,9	-1,3	-0,7
Labour force 15-64 (thousands)	-6.637	18.019	17.693	16.377	14.974	13.191	11.972	11.382
Labour force 20-74 (thousands)	-6.444	18.168	17.991	16.813	15.437	13.799	12.470	11.724
Participation rate (20-74)	-2,0	65,8	65,2	65,1	63,7	60,4	61,6	63,8
Participation rate (15-64)	-0,3	69,1	70,7	70,4	68,5	68,8	69,5	68,8
young (15-24)	-2,1	34,9	34,1	32,8	33,2	33,2	32,0	32,9
prime-age (25-54)	0,8	85,0	85,4	85,2	85,5	86,0	85,9	85,8
older (55-64)	4,4	48,5	50,6	53,6	52,5	52,0	52,4	53,0
Participation rate (20-74) - FEMALES	-1,6	58,0	57,3	57,4	55,7	52,6	54,4	56,4
Participation rate (15-64) - FEMALES	-0,8	62,2	63,7	63,3	60,8	61,0	62,3	61,4
young (15-24)	-2,0	29,4	28,4	27,2	27,7	27,7	26,7	27,4
prime-age (25-54)	1,0	78,9	79,5	79,6	79,8	80,1	80,1	80,0
older (55-64)	1,1	39,2	40,4	41,8	40,4	39,2	39,6	40,3
Participation rate (20-74) - MALES	-2,9	73,9	73,4	72,9	71,7	68,2	68,7	71,0
Participation rate (15-64) - MALES	0,0	76,0	77,7	77,3	76,0	76,4	76,6	76,0
young (15-24)	-2,0	40,2	39,5	38,2	38,5	38,6	37,2	38,2
prime-age (25-54)	0,4	90,8	91,2	90,7	91,0	91,6	91,4	91,3
older (55-64)	6,6	58,9	61,8	66,1	65,1	64,7	64,9	65,5
Average effective exit age (TOTAL) (1)	0,3	62,6	62,9	62,9	62,9	62,9	62,9	62,9
Men	0,5	64,0	64,5	64,5	64,5	64,5	64,5	64,5
Women	0,0	61,3	61,3	61,3	61,3	61,3	61,3	61,3
Employment rate (15-64)	0,1	64,8	67,3	66,3	64,5	64,8	65,5	64,8
Employment rate (20-74)	-1,6	61,9	62,2	61,5	60,2	57,1	58,3	60,3
Employment rate (15-74)	-1,9	58,1	58,7	57,7	56,5	53,9	54,5	56,2
Unemployment rate (15-64)	-0,4	6,3	4,8	5,8	5,8	5,8	5,8	5,8
Unemployment rate (20-74)	-0,6	6,0	4,6	5,5	5,5	5,4	5,4	5,4
Unemployment rate (15-74)	-0,5	6,2	4,7	5,7	5,6	5,6	5,6	5,6
Employment (20-74) (in millions)	-6,0	17,1	17,2	15,9	14,6	13,1	11,8	11,1
Employment (15-64) (in millions)	-6,2	16,9	16,8	15,4	14,1	12,4	11,3	10,7
share of young (15-24)	0,3	7%	6%	7%	7%	7%	7%	8%
share of prime-age (25-54)	-2,8	78%	79%	78%	73%	74%	77%	75%
share of older (55-64)	2,5	15%	15%	15%	20%	20%	16%	18%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	1,4	21,0	20,2	19,5	25,7	25,5	20,4	22,4
Old-age dependency ratio 15-64 (3)	38,5	23,7	28,4	37,3	42,6	55,3	64,9	62,2
Old-age dependency ratio 20-64 (3)	42,7	25,6	30,6	40,5	46,3	59,9	71,2	68,3
Total dependency ratio (4)	41,1	45,6	51,6	59,7	63,6	79,0	90,3	86,7
Total economic dependency ratio (5)	55,6	121,2	119,8	132,5	143,8	161,4	176,1	176,8
Economic old-age dependency ratio (15-64) (6)	57,0	34,9	39,8	52,6	62,0	79,6	93,8	91,9
Economic old-age dependency ratio (15-74) (7)	54,0	34,3	38,8	50,8	59,6	75,4	89,1	88,3

Poland		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-1,0	11,2	11,1	11,0	10,8	11,2	11,1	10,2
Of which : Old-age and early pensions	-0,4	9,9	10,1	10,2	10,0	10,4	10,4	9,5
Disability pensions	-0,3	0,8	0,6	0,5	0,6	0,6	0,5	0,5
Survivors pensions	-0,3	0,5	0,3	0,3	0,2	0,2	0,2	0,2
Other	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Earnings-related pensions (old age and early pensions), gross	-0,1	8,5	9,0	9,2	8,9	9,1	9,1	8,4
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	0,1	0,1
Public pensions, net	-0,5	7,9	8,1	8,2	8,0	8,1	8,1	7,5
Public pensions, contributions	0,3	7,9	8,1	8,3	8,4	8,3	8,3	8,3
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	2,4	70,9%	73,1%	74,7%	73,9%	72,8%	73,1%	73,3%
Pensioners (Public, in 1000 persons)	2.455	9.233	9.949	10.799	11.705	12.650	12.609	11.688
Public pensioners aged 65+ (1000 persons)	4.163	6.135	7.222	8.763	9.489	10.784	11.260	10.298
Share of pensioners below age 65 as % of all pensioners (Public)	-21,7	34%	27%	19%	19%	15%	11%	12%
Benefit ratio % (Public pensions)	-25,6	48,5	44,8	38,1	31,9	27,3	24,6	22,9
Gross replacement rate at retirement % (Old-age earnings-related)	-38,4	61,4	57,8	41,4	27,6	24,0	23,5	23,0
Average accrual rates % (new pensions, earnings related)	-0,2	1,0	0,9	0,9	0,8	0,8	0,8	0,7
Average contributory period, years (new pensions, earnings-related)	0,8	34,8	34,8	35,4	35,6	35,3	35,9	35,6
Contributors (Public pensions, in 1000 persons)	-5.879	16.525	16.608	15.488	14.249	12.691	11.426	10.645
Support ratio (contributors/100 pensioners, Public pensions)	-88	179	167	143	122	100	91	91
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,3	0,0	0,0	0,0	0,1	0,2	0,2	0,3
Lower fertility (-20%)	1,6	0,0	0,0	0,0	0,2	0,6	1,1	1,6
Higher TFP growth (+0.4 p.p.)	-0,7	0,0	0,0	0,0	-0,2	-0,5	-0,7	-0,7
Lower TFP growth (-0.4 p.p.)	0,9	0,0	0,0	0,0	0,3	0,7	0,9	0,9
Higher employment rate (+2 p.p.)	0,1	0,0	0,0	0,0	0,0	0,1	0,1	0,1
Lower employment rate (+2 p.p.)	-0,1	0,0	0,0	0,0	0,0	-0,1	-0,1	-0,1
Higher employment rate of older workers (+10 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Higher migration (+33%)	-0,1	0,0	0,0	0,0	0,0	0,0	-0,1	-0,1
Lower migration (-33%)	0,1	0,0	0,0	0,0	0,0	0,0	0,1	0,1
TFP risk scenario (-0.2 p.p.)	0,5	0,0	0,1	0,6	0,8	0,7	0,6	0,5
Policy scenario linking retirement age to life expectancy	-0,4	0,0	-0,7	-0,6	-0,8	-0,7	-0,3	-0,4
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1,0	11,2	11,1	11,0	10,8	11,2	11,1	10,2
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-1,0		-0,1	-0,2	-0,3	0,0	-0,1	-1,0
Dependency ratio	11,7		2,2	5,6	7,1	10,1	12,1	11,7
Coverage ratio	-3,0		-0,7	-2,0	-1,9	-2,4	-3,0	-3,0
Of which : Old-age	0,1		0,3	0,2	0,3	0,3	0,2	0,1
Early-age	-4,8		-0,6	-3,8	-4,1	-3,8	-4,9	-4,8
Cohort effect	-8,5		-2,1	-4,0	-3,5	-6,8	-9,6	-8,5
Benefit ratio	-8,1		-0,9	-2,6	-4,5	-6,2	-7,3	-8,1
Labour market ratio	-0,4		-0,5	-0,5	-0,3	-0,5	-0,7	-0,4
Of which : Employment rate	-0,2		-0,4	-0,3	0,0	0,0	-0,3	-0,2
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,3		-0,1	-0,2	-0,3	-0,4	-0,4	-0,3
Interaction effect (residual)	-1,2		-0,3	-0,6	-0,8	-1,1	-1,2	-1,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-1,0		-0,1	-0,1	-0,1	0,3	-0,1	-0,9
Dependency ratio	11,7		2,2	3,4	1,5	3,0	2,0	-0,4
Coverage ratio	-3,0		-0,7	-1,2	0,1	-0,5	-0,6	0,1
Of which : Old-age	0,1		0,3	-0,1	0,1	0,0	-0,1	-0,1
Early-age	-4,8		-0,6	-3,2	-0,3	0,3	-1,1	0,1
Cohort effect	-8,5		-2,1	-1,8	0,5	-3,3	-2,8	1,1
Benefit ratio	-8,1		-0,9	-1,8	-1,9	-1,7	-1,1	-0,8
Labour market ratio	-0,4		-0,5	-0,1	0,3	-0,2	-0,2	0,2
Of which : Employment rate	-0,2		-0,4	0,1	0,3	0,0	-0,2	0,1
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,3		-0,1	-0,1	0,0	-0,2	0,0	0,1
Interaction effect (residual)	-1,2		-0,3	-0,4	-0,1	-0,3	-0,1	0,0

Poland								EC (DG ECFIN) - EPC (AWG) 2018 projections

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.8	4.3	4.3	4.5	4.8	5.0	5.2	5.2
AWG risk scenario	1.7	4.3	4.5	4.9	5.4	5.8	6.0	6.0
TFP risk scenario	0.8	4.3	4.3	4.5	4.7	5.0	5.1	5.1
Demographic scenario	1.0	4.3	4.3	4.5	4.8	5.1	5.3	5.3
High Life expectancy scenario (variation of Demographic sc.)	1.1	4.3	4.3	4.5	4.9	5.2	5.4	5.4
Healthy ageing scenario	0.3	4.3	4.2	4.3	4.4	4.5	4.6	4.6
Death-related cost scenario	0.7	4.3	4.3	4.4	4.7	4.9	5.1	5.1
Income elasticity scenario	1.3	4.3	4.4	4.7	5.0	5.4	5.6	5.6
EU28 cost convergence scenario	2.5	4.3	4.4	4.8	5.4	5.9	6.4	6.9
Labour intensity scenario	2.3	4.3	4.3	4.7	5.3	6.0	6.6	6.6
Sector-specific composite indexation scenario	1.4	4.3	4.4	4.7	5.1	5.5	5.7	5.7
Non-demographic determinants scenario	2.7	4.3	4.5	5.2	5.9	6.5	6.9	7.1

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.8	0.5	0.5	0.7	0.9	1.0	1.2	1.3
AWG risk scenario	1.6	0.5	0.5	0.7	1.0	1.3	1.6	2.1
TFP risk scenario	0.8	0.5	0.5	0.7	0.9	1.0	1.1	1.3
Demographic scenario	0.6	0.5	0.5	0.7	0.8	0.9	1.0	1.1
Base case scenario	0.8	0.5	0.5	0.7	0.9	1.0	1.2	1.3
High Life expectancy scenario (variation of Base case sc.)	1.0	0.5	0.5	0.7	0.9	1.1	1.2	1.5
Healthy ageing scenario	0.7	0.5	0.5	0.6	0.8	0.9	1.0	1.2
Shift to formal care scenario	1.6	0.5	0.7	1.1	1.4	1.6	1.9	2.1
Coverage convergence scenario	0.8	0.5	0.5	0.7	0.9	1.0	1.2	1.3
Cost convergence scenario	1.8	0.5	0.5	0.8	1.1	1.4	1.7	2.2
Cost and coverage convergence scenario	1.8	0.5	0.5	0.8	1.1	1.4	1.8	2.3
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	72%	1,873	1,986	2,287	2,680	2,868	2,993	3,217
of which: receiving institutional care	100%	86	94	113	139	150	159	172
receiving home care	101%	122	132	159	195	212	226	245
receiving cash benefits	68%	1,665	1,760	2,015	2,346	2,505	2,608	2,800

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.4	4.3	4.1	4.2	4.1	4.2	4.6	4.7
Number of students (in thousands)								
Total (students/staff in 2016 = 11)	-28.4%	6,627	6,351	6,130	5,483	5,069	5,022	4,742
as % of population 5-24	1.1	81.8	83.0	82.1	82.3	83.0	83.3	82.9
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.6	0.0	0.1	0.3	0.5	0.6	0.6	0.6

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.0	20.4	20.1	20.5	20.7	21.5	22.2	21.4
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	1.7	0.0	0.2	0.5	0.8	1.1	1.4	1.7
TFP risk scenario (-0.2 p.p.)	0.4	0.0	0.1	0.5	0.8	0.7	0.5	0.4
High life expectancy (+2 years) (8)	0.5	0.0	0.0	0.0	0.1	0.2	0.3	0.5
Lower fertility (-20%)	1.5	0.0	0.0	-0.4	-0.4	0.2	0.8	1.5
Higher TFP growth (+0.4 p.p.)	-1.1	0.0	-0.1	-0.2	-0.4	-0.8	-1.0	-1.1
Lower TFP growth (-0.4 p.p.)	0.8	0.0	0.0	0.0	0.3	0.6	0.8	0.8
Higher employment rate (+2 p.p)	-0.1	0.0	0.0	-0.2	-0.1	-0.1	-0.1	-0.1
Lower employment rate (+2 p.p)	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.1
Higher employment rate of older workers (+10 p.p.)	-0.3	0.0	0.0	-0.2	-0.3	-0.4	-0.3	-0.3
Higher migration (+33%)	-0.2	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2
Lower migration (-33%)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Policy scenario linking retirement age to life expectancy	-1.0	0.0	-0.7	-0.7	-1.0	-1.1	-0.8	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

22. PORTUGAL

Portugal				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,34	1,28	1,34	1,40	1,47	1,53	1,59
Life expectancy at birth								
males	7,7	78,2	78,9	80,5	82,0	83,4	84,7	85,9
females	6,1	84,3	84,9	86,1	87,3	88,4	89,4	90,4
Life expectancy at 65								
males	5,2	18,1	18,6	19,6	20,6	21,5	22,4	23,3
females	4,9	21,8	22,2	23,2	24,1	25,0	25,9	26,7
Net migration (thousand)	24,6	-10,5	2,4	12,8	18,2	15,8	14,6	14,2
Net migration as % of population	0,3	-0,1	0,0	0,1	0,2	0,2	0,2	0,2
Population (million)	-2,3	10,3	10,2	9,9	9,5	9,1	8,5	8,0
Children population (0-14) as % of total population	-2,1	14,0	13,0	11,3	11,5	11,5	11,3	11,9
Prime age population (25-54) as % of total population	-9,7	41,2	39,8	36,8	34,0	33,2	31,8	31,5
Working age population (15-64) as % of total population	-12,4	65,1	64,5	61,5	56,6	53,5	53,8	52,7
Elderly population (65 and over) as % of total population	14,5	20,9	22,5	27,2	31,9	35,0	34,9	35,4
Very elderly population (80 and over) as % of total population	9,7	6,0	6,7	8,3	10,7	13,4	16,2	15,7
Very elderly population (80 and over) as % of elderly population	15,4	28,9	29,7	30,7	33,6	38,4	46,5	44,4
Very elderly population (80 and over) as % of working age population	20,5	9,3	10,4	13,6	19,0	25,1	30,2	29,8
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	0,9	0,4	0,8	1,0	0,8	0,9	1,0	0,8
Employment 15-74 (growth rate)	-0,6	0,3	-0,3	-0,4	-0,9	-0,9	-0,7	-0,8
Labour input : hours worked (growth rate)	-0,6	0,1	-0,2	-0,4	-0,9	-0,9	-0,7	-0,8
Labour productivity per hour (growth rate)	1,5	0,3	1,0	1,4	1,7	1,8	1,7	1,5
TFP (growth rate)	1,0	0,5	0,7	0,9	1,1	1,2	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,5	-0,3	0,2	0,5	0,6	0,6	0,6	0,5
Potential GDP per capita (growth rate)	1,4	0,7	1,1	1,3	1,2	1,5	1,7	1,4
Potential GDP per worker (growth rate)	1,5	0,1	1,0	1,4	1,8	1,9	1,7	1,6
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-2.515	6.724	6.572	6.065	5.395	4.862	4.587	4.208
Population growth (working age:15-64)	-0,3	-0,6	-0,6	-1,0	-1,4	-0,7	-0,6	-0,9
Population (20-74) (in thousands)	-2.300	7.267	7.211	6.946	6.426	5.781	5.264	4.966
Population growth (20-74)	-0,4	-0,3	-0,2	-0,5	-1,0	-1,2	-0,6	-0,6
Labour force 15-64 (thousands)	-1.740	4.962	4.933	4.644	4.164	3.748	3.506	3.221
Labour force 20-74 (thousands)	-1.542	5.082	5.065	4.946	4.556	4.105	3.803	3.541
Participation rate (20-74)	1,4	69,9	70,2	71,2	70,9	71,0	72,2	71,3
Participation rate (15-64)	2,8	73,8	75,1	76,6	77,2	77,1	76,4	76,6
young (15-24)	2,1	33,6	34,9	36,6	36,1	34,8	35,6	35,7
prime-age (25-54)	1,4	89,2	89,9	90,4	90,5	90,6	90,5	90,6
older (55-64)	11,0	58,4	63,8	68,5	69,1	69,5	69,8	69,4
Participation rate (20-74) - FEMALES	5,2	65,4	66,7	68,9	69,1	69,6	71,4	70,6
Participation rate (15-64) - FEMALES	5,8	70,5	72,6	75,4	76,6	76,9	76,2	76,3
young (15-24)	2,4	31,8	33,3	35,1	34,6	33,3	34,1	34,2
prime-age (25-54)	4,3	86,6	88,2	90,1	90,8	90,9	90,8	90,9
older (55-64)	17,7	50,8	57,4	65,0	67,2	68,4	68,9	68,5
Participation rate (20-74) - MALES	-3,0	74,9	74,1	73,7	72,8	72,5	73,1	71,9
Participation rate (15-64) - MALES	-0,5	77,2	77,6	77,8	77,7	77,3	76,6	76,8
young (15-24)	1,8	35,3	36,3	38,1	37,5	36,2	37,0	37,2
prime-age (25-54)	-1,7	91,9	91,6	90,7	90,3	90,3	90,2	90,3
older (55-64)	3,3	67,0	71,0	72,3	71,2	70,7	70,7	70,3
Average effective exit age (TOTAL) (1)	2,0	64,4	65,4	66,1	66,3	66,4	66,4	66,4
Men	1,8	64,8	65,3	66,3	66,5	66,6	66,6	66,6
Women	2,2	64,1	65,4	65,9	66,1	66,2	66,2	66,3
Employment rate (15-64)	5,2	65,3	67,6	69,7	70,7	71,0	70,4	70,5
Employment rate (20-74)	3,9	62,3	63,6	65,3	65,5	66,0	67,1	66,3
Employment rate (15-74)	4,3	58,3	59,7	61,9	62,3	62,4	63,3	62,6
Unemployment rate (15-64)	-3,6	11,5	9,9	8,9	8,4	7,9	7,9	7,9
Unemployment rate (20-74)	-3,8	10,9	9,4	8,2	7,6	7,1	7,1	7,1
Unemployment rate (15-74)	-4,0	11,2	9,6	8,4	7,8	7,3	7,3	7,2
Employment (20-74) (in millions)	-1,2	4,5	4,6	4,5	4,2	3,8	3,5	3,3
Employment (15-64) (in millions)	-1,4	4,4	4,4	4,2	3,8	3,5	3,2	3,0
share of young (15-24)	0,6	6%	7%	7%	6%	6%	7%	7%
share of prime-age (25-54)	-6,4	78%	75%	71%	71%	74%	71%	71%
share of older (55-64)	5,8	16%	18%	22%	23%	20%	22%	22%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	3,8	20,2	21,6	24,5	25,2	22,2	24,4	24,0
Old-age dependency ratio 15-64 (3)	35,1	32,1	34,9	44,2	56,4	65,4	64,9	67,2
Old-age dependency ratio 20-64 (3)	37,8	35,0	38,1	47,7	60,6	70,9	70,4	72,8
Total dependency ratio (4)	36,2	53,6	55,1	62,6	76,7	87,0	85,8	89,7
Total economic dependency ratio (5)	14,5	126,3	120,3	115,7	125,0	136,5	139,5	140,8
Economic old-age dependency ratio (15-64) (6)	38,4	44,9	47,5	55,1	68,5	80,6	81,8	83,4
Economic old-age dependency ratio (15-74) (7)	31,4	43,2	45,6	50,9	61,6	72,4	74,2	74,6

Portugal		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-2,2	13,5	13,6	14,3	14,7	13,7	12,0	11,4
Of which : Old-age and early pensions	-1,5	11,2	11,3	12,1	12,5	11,6	10,1	9,7
Disability pensions	-0,2	0,7	0,6	0,6	0,5	0,4	0,5	0,5
Survivors pensions	-0,5	1,7	1,7	1,7	1,7	1,6	1,4	1,2
Other	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Earnings-related pensions (old age and early pensions), gross	-1,4	10,7	10,9	11,7	12,1	11,1	9,6	9,2
Private occupational pensions, gross	0,0	0,3	0,3	0,2	0,2	0,2	0,2	0,3
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,0	0,3	0,3	0,4	0,4	0,3	0,3	0,3
Public pensions, net	-1,9	12,0	12,1	12,7	13,1	12,2	10,6	10,1
Public pensions, contributions	-0,8	13,1	12,8	11,9	11,1	11,0	11,8	12,3
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	88,7%	88,7%	88,7%	88,7%	88,7%	88,7%	88,7%
Pensioners (Public, in 1000 persons)	69	2.718	2.747	2.918	3.153	3.226	2.993	2.788
Public pensioners aged 65+ (1000 persons)	402	2.126	2.231	2.492	2.777	2.927	2.704	2.528
Share of pensioners below age 65 as % of all pensioners (Public)	-12,5	22%	19%	15%	12%	9%	10%	9%
Benefit ratio % (Public pensions)	-23,5	57,5	57,9	56,2	49,7	41,0	35,8	34,0
Gross replacement rate at retirement % (Old-age earnings-related)	-12,4	68,3	69,3	76,0	66,0	58,6	55,7	55,9
Average accrual rates % (new pensions, earnings related)	0,1	2,1	2,2	2,2	2,2	2,3	2,2	2,2
Average contributory period, years (new pensions, earnings-related)	4,7	33,2	35,1	37,3	37,7	37,5	37,7	37,8
Contributors (Public pensions, in 1000 persons)	-1.149	4.009	4.013	3.944	3.654	3.315	3.069	2.859
Support ratio (contributors/100 pensioners, Public pensions)	-45	147	146	135	116	103	103	103
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,4	0,0	0,1	0,8	1,4	1,2	0,6	0,4
Lower fertility (-20%)	1,7	0,0	0,0	0,0	0,2	0,6	1,1	1,7
Higher TFP growth (+0.4 p.p.)	-1,7	0,0	0,0	0,0	-0,5	-1,1	-1,5	-1,7
Lower TFP growth (-0.4 p.p.)	2,2	0,0	0,0	0,0	0,5	1,4	1,9	2,2
Higher employment rate (+2 p.p.)	-0,2	0,0	-0,1	-0,3	-0,3	-0,3	-0,3	-0,2
Lower employment rate (+2 p.p.)	0,3	0,0	0,1	0,3	0,3	0,3	0,3	0,3
Higher employment rate of older workers (+10 p.p.)	-0,6	0,0	-0,1	-0,7	-0,8	-0,7	-0,6	-0,6
Higher migration (+33%)	-0,4	0,0	0,0	0,0	-0,1	-0,3	-0,4	-0,4
Lower migration (-33%)	0,4	0,0	0,0	0,0	0,1	0,3	0,4	0,4
TFP risk scenario (-0.2 p.p.)	1,0	0,0	0,0	0,2	0,5	0,8	0,9	1,0
Policy scenario linking retirement age to life expectancy	-0,4	0,0	0,0	0,0	0,0	-0,1	-0,3	-0,4
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-2,2	13,5	13,6	14,3	14,7	13,7	12,0	11,4
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-2,2		0,1	0,8	1,2	0,1	-1,6	-2,2
Dependency ratio	10,9		1,2	4,5	8,2	10,6	10,5	10,9
Coverage ratio	-3,3		-0,7	-1,9	-2,7	-3,0	-3,1	-3,3
Of which : Old-age	-1,3		-0,2	-0,8	-1,1	-0,9	-1,1	-1,3
Early-age	-5,8		-2,0	-4,9	-4,4	-5,6	-6,1	-5,8
Cohort effect	-8,6		-0,5	-2,1	-6,0	-8,6	-7,7	-8,6
Benefit ratio	-7,1		0,1	-0,3	-2,0	-4,7	-6,5	-7,1
Labour market ratio	-1,9		-0,4	-1,2	-1,7	-2,0	-1,7	-1,9
Of which : Employment rate	-1,0		-0,4	-0,7	-0,9	-1,1	-1,0	-1,0
Labour intensity	0,1		0,0	0,1	0,1	0,0	0,1	0,1
Career shift	-1,0		0,0	-0,5	-0,9	-0,9	-0,8	-1,0
Interaction effect (residual)	-0,8		-0,1	-0,3	-0,6	-0,8	-0,8	-0,8
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-2,2		0,1	0,7	0,4	-1,1	-1,7	-0,6
Dependency ratio	10,9		1,2	3,3	3,7	2,4	-0,1	0,4
Coverage ratio	-3,3		-0,7	-1,3	-0,7	-0,3	-0,1	-0,2
Of which : Old-age	-1,3		-0,2	-0,6	-0,3	0,1	-0,2	-0,2
Early-age	-5,8		-2,0	-2,9	0,5	-1,2	-0,5	0,2
Cohort effect	-8,6		-0,5	-1,6	-3,9	-2,6	1,0	-0,9
Benefit ratio	-7,1		0,1	-0,3	-1,7	-2,7	-1,8	-0,6
Labour market ratio	-1,9		-0,4	-0,8	-0,5	-0,2	0,3	-0,2
Of which : Employment rate	-1,0		-0,4	-0,3	-0,2	-0,2	0,1	0,0
Labour intensity	0,1		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-1,0		0,0	-0,5	-0,4	0,0	0,1	-0,2
Interaction effect (residual)	-0,8		-0,1	-0,2	-0,3	-0,2	0,0	0,0

Portugal				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.4	5.9	6.2	6.9	7.5	8.0	8.3	8.3
AWG risk scenario	3.3	5.9	6.3	7.2	8.1	8.8	9.2	9.2
TFP risk scenario	2.3	5.9	6.2	6.9	7.5	8.0	8.3	8.2
Demographic scenario	2.7	5.9	6.2	6.9	7.7	8.2	8.6	8.6
High Life expectancy scenario (variation of Demographic sc.)	3.1	5.9	6.2	7.0	7.8	8.4	8.9	9.0
Healthy ageing scenario	1.5	5.9	6.1	6.6	7.1	7.4	7.6	7.4
Death-related cost scenario	:	5.9	:	:	:	:	:	:
Income elasticity scenario	3.0	5.9	6.2	7.1	7.9	8.5	8.9	8.9
EU28 cost convergence scenario	3.4	5.9	6.2	7.1	8.0	8.6	9.1	9.3
Labour intensity scenario	3.4	5.9	6.0	6.7	7.7	8.7	9.2	9.3
Sector-specific composite indexation scenario	4.7	5.9	6.4	7.6	8.8	9.8	10.5	10.6
Non-demographic determinants scenario	4.8	5.9	6.3	7.5	8.6	9.6	10.4	10.7
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.9	0.5	0.6	0.7	0.9	1.2	1.4	1.4
AWG risk scenario	2.6	0.5	0.6	0.9	1.2	1.8	2.4	3.2
TFP risk scenario	0.9	0.5	0.6	0.7	0.9	1.2	1.3	1.4
Demographic scenario	0.8	0.5	0.6	0.8	0.9	1.1	1.3	1.3
Base case scenario	0.9	0.5	0.6	0.7	0.9	1.2	1.4	1.4
High Life expectancy scenario (variation of Base case sc.)	1.1	0.5	0.6	0.7	1.0	1.3	1.5	1.6
Healthy ageing scenario	0.8	0.5	0.6	0.7	0.9	1.1	1.3	1.3
Shift to formal care scenario	2.5	0.5	1.0	1.9	2.3	2.7	3.0	3.0
Coverage convergence scenario	1.8	0.5	0.6	0.8	1.2	1.6	2.0	2.3
Cost convergence scenario	1.7	0.5	0.6	0.8	1.0	1.4	1.8	2.3
Cost and coverage convergence scenario	2.8	0.5	0.6	0.9	1.3	1.8	2.5	3.3
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	49%	333	351	394	447	495	520	498
of which: receiving institutional care	58%	33	36	41	48	53	55	52
receiving home care	75%	16	17	20	24	27	29	28
receiving cash benefits	47%	284	298	333	376	415	436	417
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.6	4.5	4.2	3.6	3.5	3.8	3.8	3.9
Number of students (in thousands)								
Total (students/staff in 2016 = 11,1)	-38.0%	1,769	1,667	1,393	1,270	1,247	1,163	1,096
as % of population 5-24	-0.1	83.4	82.3	81.6	83.4	83.9	83.0	83.3
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.7	0.0	0.1	0.4	0.6	0.7	0.7	0.7
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.3	0.9	0.7	0.6	0.6	0.6	0.6	0.6
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.1	25.4	25.3	26.2	27.3	27.3	26.1	25.5
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.7	0.0	0.1	0.5	0.9	1.4	2.0	2.7
TFP risk scenario (-0.2 p.p.)	1.0	0.0	0.0	0.2	0.5	0.8	0.9	1.0
High life expectancy (+2 years) (8)	0.8	0.0	0.1	0.8	1.5	1.4	0.9	0.8
Lower fertility (-20%)	2.1	0.0	0.0	-0.2	-0.1	0.5	1.2	2.1
Higher TFP growth (+0.4 p.p.)	-1.6	0.0	0.0	-0.1	-0.5	-1.1	-1.4	-1.6
Lower TFP growth (-0.4 p.p.)	2.1	0.0	0.0	0.0	0.5	1.3	1.8	2.1
Higher employment rate (+2 p.p)	-0.5	0.0	-0.1	-0.6	-0.6	-0.6	-0.6	-0.5
Lower employment rate (+2 p.p)	0.6	0.0	0.1	0.6	0.6	0.6	0.6	0.6
Higher employment rate of older workers (+10 p.p.)	-0.9	0.0	-0.2	-1.0	-1.1	-1.0	-0.9	-0.9
Higher migration (+33%)	-0.6	0.0	0.0	-0.1	-0.2	-0.4	-0.5	-0.6
Lower migration (-33%)	0.6	0.0	0.0	0.1	0.2	0.4	0.5	0.6
Policy scenario linking retirement age to life expectancy	-0.6	0.0	0.0	0.0	0.0	-0.2	-0.4	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

23. ROMANIA

Romania			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,4	1,54	1,72	1,81	1,85	1,87	1,88	1,89
Life expectancy at birth								
males	11,8	71,8	72,9	75,4	77,8	79,9	81,8	83,6
females	9,4	78,9	79,9	81,8	83,6	85,3	86,9	88,3
Life expectancy at 65								
males	7,2	14,8	15,4	16,8	18,2	19,5	20,8	22,0
females	6,9	18,2	18,8	20,2	21,5	22,8	24,0	25,1
Net migration (thousand)	66,4	-63,8	-65,1	-51,1	-8,9	7,7	1,6	2,6
Net migration as % of population	0,3	-0,3	-0,3	-0,3	-0,1	0,0	0,0	0,0
Population (million)	-4,7	19,7	19,2	18,0	17,0	16,3	15,7	15,0
Children population (0-14) as % of total population	0,1	15,3	15,2	14,9	14,6	14,8	15,2	15,5
Prime age population (25-54) as % of total population	-9,4	42,7	42,7	37,6	33,8	32,5	32,9	33,3
Working age population (15-64) as % of total population	-11,8	67,1	65,4	63,2	58,6	55,2	54,1	55,3
Elderly population (65 and over) as % of total population	11,6	17,6	19,4	21,9	26,8	29,9	30,7	29,2
Very elderly population (80 and over) as % of total population	9,2	4,3	4,8	5,9	8,4	9,9	12,6	13,5
Very elderly population (80 and over) as % of elderly population	21,8	24,4	24,9	26,8	31,2	33,2	41,2	46,2
Very elderly population (80 and over) as % of working age population	18,0	6,4	7,4	9,3	14,3	18,0	23,3	24,4
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,8	3,5	3,4	2,1	1,3	1,3	1,3	1,3
Employment 15-74 (growth rate)	-0,8	0,1	-0,2	-1,4	-1,1	-0,8	-0,4	-0,3
Labour input : hours worked (growth rate)	-0,8	-0,1	-0,4	-1,4	-1,1	-0,8	-0,4	-0,3
Labour productivity per hour (growth rate)	2,6	3,6	3,8	3,5	2,4	2,1	1,8	1,5
TFP (growth rate)	1,7	2,8	2,6	2,2	1,6	1,3	1,2	1,0
Capital deepening (contribution to labour productivity growth)	0,9	0,8	1,1	1,3	0,9	0,7	0,6	0,5
Potential GDP per capita (growth rate)	2,3	4,2	4,1	2,8	1,8	1,7	1,8	1,7
Potential GDP per worker (growth rate)	2,6	3,4	3,7	3,5	2,5	2,1	1,8	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-4.906	13.193	12.563	11.356	9.983	9.003	8.480	8.287
Population growth (working age:15-64)	0,8	-1,1	-1,3	-0,8	-1,3	-0,8	-0,3	-0,3
Population (20-74) (in thousands)	-4.902	14.006	13.694	12.435	11.536	10.431	9.593	9.104
Population growth (20-74)	0,5	-0,7	-0,5	-1,1	-0,4	-1,0	-0,7	-0,2
Labour force 15-64 (thousands)	-3.262	8.650	8.377	7.439	6.412	5.824	5.547	5.387
Labour force 20-74 (thousands)	-3.255	8.808	8.531	7.623	6.705	6.074	5.746	5.552
Participation rate (20-74)	-1,9	62,9	62,3	61,3	58,1	58,2	59,9	61,0
Participation rate (15-64)	-0,6	65,6	66,7	65,5	64,2	64,7	65,4	65,0
young (15-24)	0,9	28,2	29,1	30,0	29,0	29,2	29,1	29,1
prime-age (25-54)	-0,6	81,9	81,5	81,0	81,1	81,5	81,4	81,3
older (55-64)	6,7	44,0	47,5	51,5	49,9	49,7	51,4	50,7
Participation rate (20-74) - FEMALES	-2,5	53,2	52,0	50,6	47,6	48,0	49,8	50,7
Participation rate (15-64) - FEMALES	-1,8	56,1	56,6	54,9	53,2	53,9	54,7	54,4
young (15-24)	1,1	21,9	22,9	23,6	23,0	23,1	23,0	23,1
prime-age (25-54)	-2,5	72,3	71,3	69,5	69,2	69,9	69,8	69,8
older (55-64)	3,9	34,2	36,0	40,8	37,9	36,9	38,6	38,1
Participation rate (20-74) - MALES	-1,5	72,8	72,8	72,1	68,6	68,4	70,0	71,3
Participation rate (15-64) - MALES	0,8	74,8	76,5	75,8	75,0	75,3	76,0	75,6
young (15-24)	1,1	34,1	35,1	36,2	35,1	35,3	35,1	35,2
prime-age (25-54)	1,9	91,0	91,2	91,9	92,5	92,9	92,9	92,9
older (55-64)	8,2	54,9	59,9	62,2	61,8	61,9	63,8	63,1
Average effective exit age (TOTAL) (1)	0,1	63,2	63,2	63,3	63,3	63,3	63,3	63,3
Men	0,0	64,0	64,0	64,0	64,0	64,0	64,0	64,0
Women	0,2	62,4	62,4	62,6	62,6	62,6	62,6	62,6
Employment rate (15-64)	-0,6	61,6	63,3	61,5	60,3	60,7	61,4	61,0
Employment rate (20-74)	-1,8	59,4	59,4	57,9	55,0	55,1	56,6	57,6
Employment rate (15-74)	-2,0	55,7	55,9	54,6	51,7	51,7	52,9	53,7
Unemployment rate (15-64)	0,1	6,1	5,1	6,2	6,2	6,2	6,2	6,2
Unemployment rate (20-74)	-0,1	5,5	4,6	5,6	5,4	5,4	5,5	5,5
Unemployment rate (15-74)	0,0	5,9	4,9	5,9	5,8	5,8	5,9	5,9
Employment (20-74) (in millions)	-3,1	8,3	8,1	7,2	6,3	5,7	5,4	5,2
Employment (15-64) (in millions)	-3,1	8,1	7,9	7,0	6,0	5,5	5,2	5,1
share of young (15-24)	1,4	6%	6%	6%	7%	7%	7%	7%
share of prime-age (25-54)	-4,2	80%	80%	74%	73%	75%	76%	76%
share of older (55-64)	2,8	14%	13%	20%	20%	18%	16%	17%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0,6	20,0	18,4	24,2	24,8	23,1	20,3	20,6
Old-age dependency ratio 15-64 (3)	26,6	26,3	29,6	34,7	45,7	54,2	56,7	52,8
Old-age dependency ratio 20-64 (3)	29,8	28,6	32,2	37,6	50,1	59,6	62,6	58,4
Total dependency ratio (4)	31,7	49,1	52,8	58,2	70,6	81,1	84,7	80,8
Total economic dependency ratio (5)	48,0	134,0	133,4	147,2	165,6	180,6	184,9	182,0
Economic old-age dependency ratio (15-64) (6)	42,4	39,1	43,3	52,3	69,3	83,0	86,7	81,5
Economic old-age dependency ratio (15-74) (7)	39,8	37,8	41,8	50,3	65,0	78,0	82,1	77,6

Romania		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	0,7	8,0	7,3	6,6	7,7	8,7	8,9	8,7
Of which : Old-age and early pensions	0,7	5,9	5,4	4,9	5,9	6,7	6,9	6,7
Disability pensions	0,0	0,6	0,6	0,7	0,7	0,7	0,6	0,6
Survivors pensions	0,2	0,4	0,4	0,4	0,5	0,6	0,6	0,6
Other	-0,2	1,0	0,8	0,6	0,7	0,7	0,8	0,8
Earnings-related pensions (old age and early pensions), gross	0,7	5,9	5,4	4,9	5,8	6,7	6,9	6,6
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	1,1	0,0	0,0	0,2	0,5	0,8	1,0	1,1
New pensions, gross (Old-age and early pensions)	0,0	0,2	0,1	0,1	0,2	0,2	0,1	0,1
Public pensions, net	0,9	7,7	7,2	6,6	7,6	8,6	8,8	8,6
Public pensions, contributions	0,3	5,6	5,8	5,4	5,2	5,3	5,5	5,9
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	2,6	96,3%	98,9%	98,9%	98,9%	98,9%	98,9%	98,9%
Pensioners (Public, in 1000 persons)	-48	5.152	5.186	5.131	5.527	5.627	5.467	5.104
Public pensioners aged 65+ (1000 persons)	424	3.537	3.640	3.593	4.007	4.307	4.315	3.961
Share of pensioners below age 65 as % of all pensioners (Public)	-8,9	31%	30%	30%	28%	23%	21%	22%
Benefit ratio % (Public pensions)	-9,5	35,5	31,9	26,6	25,8	25,8	25,9	26,0
Gross replacement rate at retirement % (Old-age earnings-related)	-0,7	30,2	31,6	31,5	29,9	30,4	30,2	29,5
Average accrual rates % (new pensions, earnings related)	:	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	1,5	31,0	31,2	32,1	31,5	32,3	32,8	32,5
Contributors (Public pensions, in 1000 persons)	-1.086	5.591	6.249	5.429	4.728	4.364	4.295	4.506
Support ratio (contributors/100 pensioners, Public pensions)	-20	109	121	106	86	78	79	88
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,4	0,0	0,0	0,1	0,1	0,2	0,3	0,4
Lower fertility (-20%)	1,9	0,0	0,0	0,0	0,1	0,6	1,2	1,9
Higher TFP growth (+0.4 p.p.)	-0,9	0,0	0,0	-0,1	-0,5	-0,7	-0,8	-0,9
Lower TFP growth (-0.4 p.p.)	0,9	0,0	0,0	0,0	0,0	0,5	0,8	0,9
Higher employment rate (+2 p.p.)	-0,1	0,0	0,0	-0,2	-0,2	-0,2	-0,2	-0,1
Lower employment rate (+2 p.p.)	0,1	0,0	0,0	0,2	0,2	0,2	0,2	0,1
Higher employment rate of older workers (+10 p.p.)	-0,5	0,0	-0,1	-0,4	-0,6	-0,6	-0,6	-0,5
Higher migration (+33%)	0,1	0,0	0,1	0,2	0,3	0,3	0,2	0,1
Lower migration (-33%)	-0,1	0,0	-0,1	-0,2	-0,2	-0,3	-0,2	-0,1
TFP risk scenario (-0.2 p.p.)	0,5	0,0	0,0	0,2	0,4	0,4	0,5	0,5
Policy scenario linking retirement age to life expectancy	-1,3	0,0	0,0	-0,1	-0,6	-0,8	-1,0	-1,3
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	0,7	8,0	7,3	6,6	7,7	8,7	8,9	8,7
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	0,7		-0,7	-1,3	-0,3	0,7	0,9	0,7
Dependency ratio	5,6		1,0	2,2	4,3	5,8	6,2	5,6
Coverage ratio	-1,7		-0,5	-1,0	-1,5	-1,8	-2,0	-1,7
Of which : Old-age	-0,8		-0,3	-0,8	-1,1	-1,0	-0,9	-0,8
Early-age	0,1		-0,6	-1,2	-0,5	0,2	0,0	0,1
Cohort effect	-4,0		-0,3	-0,1	-1,7	-3,9	-4,6	-4,0
Benefit ratio	-2,6		-0,9	-2,3	-2,6	-2,6	-2,6	-2,6
Labour market ratio	-0,1		-0,2	0,0	-0,1	-0,2	-0,2	-0,1
Of which : Employment rate	-0,1		-0,2	0,0	0,1	0,0	-0,1	-0,1
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,1		0,0	0,0	-0,2	-0,2	-0,1	-0,1
Interaction effect (residual)	-0,5		-0,1	-0,2	-0,4	-0,4	-0,4	-0,5
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	0,7	-0,7	-0,6	1,1	1,0	0,3	-0,2	
Dependency ratio	5,6	1,0	1,2	2,1	1,4	0,4	-0,6	
Coverage ratio	-1,7	-0,5	-0,5	-0,5	-0,4	-0,1	0,2	
Of which : Old-age	-0,8	-0,3	-0,5	-0,3	0,0	0,2	0,1	
Early-age	0,1	-0,6	-0,6	0,7	0,7	-0,2	0,1	
Cohort effect	-4,0	-0,3	0,2	-1,7	-2,1	-0,8	0,6	
Benefit ratio	-2,6	-0,9	-1,4	-0,3	0,0	0,0	0,1	
Labour market ratio	-0,1	-0,2	0,2	-0,1	-0,1	-0,1	0,1	
Of which : Employment rate	-0,1	-0,2	0,2	0,1	-0,1	-0,1	0,0	
Labour intensity	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Career shift	-0,1	0,0	0,0	-0,2	0,0	0,1	0,0	
Interaction effect (residual)	-0,5	-0,1	-0,1	-0,1	0,0	0,0	0,0	

Romania		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.9	4.3	4.4	4.8	5.1	5.3	5.3	5.2
AWG risk scenario	2.1	4.3	4.6	5.4	6.0	6.4	6.5	6.4
TFP risk scenario	0.9	4.3	4.4	4.8	5.0	5.2	5.3	5.1
Demographic scenario	0.9	4.3	4.4	4.7	5.0	5.2	5.3	5.2
High Life expectancy scenario (variation of Demographic sc.)	1.1	4.3	4.4	4.7	5.1	5.3	5.4	5.3
Healthy ageing scenario	0.3	4.3	4.3	4.5	4.6	4.7	4.7	4.5
Death-related cost scenario	:	4.3	:	:	:	:	:	:
Income elasticity scenario	1.3	4.3	4.4	4.9	5.3	5.6	5.6	5.6
EU28 cost convergence scenario	2.6	4.3	4.5	5.0	5.6	6.1	6.6	6.8
Labour intensity scenario	1.8	4.3	4.3	4.8	5.5	6.1	6.2	6.1
Sector-specific composite indexation scenario	1.6	4.3	4.5	5.1	5.5	5.8	5.9	5.8
Non-demographic determinants scenario	3.3	4.3	4.7	5.7	6.5	7.1	7.5	7.5
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.3	0.3	0.3	0.4	0.5	0.5	0.6	0.6
AWG risk scenario	4.3	0.3	0.3	0.5	0.8	1.4	2.5	4.6
TFP risk scenario	0.3	0.3	0.3	0.4	0.5	0.5	0.6	0.6
Demographic scenario	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5
Base case scenario	0.3	0.3	0.3	0.4	0.5	0.5	0.6	0.6
High Life expectancy scenario (variation of Base case sc.)	0.4	0.3	0.3	0.4	0.5	0.6	0.6	0.7
Healthy ageing scenario	0.2	0.3	0.3	0.3	0.4	0.5	0.5	0.5
Shift to formal care scenario	0.5	0.3	0.4	0.5	0.6	0.7	0.8	0.8
Coverage convergence scenario	1.0	0.3	0.3	0.5	0.6	0.9	1.1	1.3
Cost convergence scenario	2.0	0.3	0.3	0.4	0.6	0.9	1.5	2.3
Cost and coverage convergence scenario	4.7	0.3	0.3	0.5	0.9	1.5	2.7	5.0
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	34%	429	440	470	519	544	586	575
of which: receiving institutional care	31%	223	228	244	269	280	299	291
receiving home care	38%	206	211	226	250	264	287	284
receiving cash benefits	:	0	0	0	0	0	0	0
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.3	2.5	2.3	2.3	2.5	2.6	2.7	2.8
Number of students (in thousands)								
Total (students/staff in 2016 = 15,2)	-26.8%	3,203	3,008	2,715	2,532	2,427	2,389	2,343
as % of population 5-24	-1.1	75.6	74.8	74.0	74.2	74.7	74.7	74.5
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.3	0.6	0.7	0.7	0.8
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.2	15.1	14.4	14.2	15.8	17.2	17.6	17.3
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	5.2	0.0	0.2	0.8	1.3	2.0	3.1	5.2
TFP risk scenario (-0.2 p.p.)	0.4	0.0	0.0	0.2	0.3	0.4	0.4	0.4
High life expectancy (+2 years) (8)	0.5	0.0	0.0	0.0	0.1	0.2	0.4	0.5
Lower fertility (-20%)	2.0	0.0	0.0	-0.2	-0.2	0.5	1.2	2.0
Higher TFP growth (+0.4 p.p.)	-0.8	0.0	0.0	-0.1	-0.4	-0.6	-0.7	-0.8
Lower TFP growth (-0.4 p.p.)	0.9	0.0	0.0	0.0	0.0	0.4	0.8	0.9
Higher employment rate (+2 p.p)	-0.2	0.0	-0.1	-0.3	-0.3	-0.3	-0.3	-0.2
Lower employment rate (+2 p.p)	0.3	0.0	0.1	0.3	0.3	0.3	0.3	0.3
Higher employment rate of older workers (+10 p.p.)	-0.7	0.0	-0.1	-0.6	-0.8	-0.8	-0.7	-0.7
Higher migration (+33%)	0.1	0.0	0.1	0.2	0.3	0.3	0.2	0.1
Lower migration (-33%)	-0.1	0.0	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1
Policy scenario linking retirement age to life expectancy	-1.6	0.0	0.0	-0.2	-0.8	-1.0	-1.2	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

24. SLOVENIA

Slovenia				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,58	1,62	1,66	1,70	1,74	1,78	1,81
Life expectancy at birth								
males	7,6	78,2	78,9	80,4	81,9	83,3	84,6	85,8
females	6,3	83,8	84,4	85,7	86,9	88,0	89,1	90,1
Life expectancy at 65								
males	5,4	17,7	18,1	19,2	20,3	21,3	22,2	23,1
females	5,0	21,4	21,8	22,8	23,8	24,7	25,6	26,4
Net migration (thousand)	2,4	0,2	4,2	4,1	4,3	3,8	2,8	2,5
Net migration as % of population	0,1	0,0	0,2	0,2	0,2	0,2	0,1	0,1
Population (million)	-0,1	2,1	2,1	2,1	2,1	2,0	2,0	2,0
Children population (0-14) as % of total population	0,0	14,9	15,3	13,9	13,6	14,8	14,8	14,9
Prime age population (25-54) as % of total population	-8,9	42,6	40,6	36,4	33,8	33,4	34,0	33,7
Working age population (15-64) as % of total population	-9,8	66,4	64,0	61,0	58,2	54,6	54,9	56,7
Elderly population (65 and over) as % of total population	9,8	18,7	20,7	25,2	28,3	30,6	30,2	28,5
Very elderly population (80 and over) as % of total population	8,5	5,0	5,6	6,9	9,8	11,4	12,9	13,5
Very elderly population (80 and over) as % of elderly population	20,5	27,0	26,9	27,6	34,6	37,3	42,6	47,5
Very elderly population (80 and over) as % of working age population	16,3	7,6	8,7	11,4	16,8	20,9	23,4	23,8
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,5	1,0	2,1	1,6	1,3	1,2	1,6	1,4
Employment 15-74 (growth rate)	-0,2	0,5	0,5	-0,5	-0,7	-0,5	0,0	-0,1
Labour input : hours worked (growth rate)	-0,2	0,7	0,5	-0,6	-0,6	-0,5	0,0	-0,1
Labour productivity per hour (growth rate)	1,8	0,3	1,6	2,1	1,9	1,8	1,7	1,5
TFP (growth rate)	1,2	0,9	1,3	1,4	1,2	1,1	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,6	-0,6	0,3	0,8	0,7	0,6	0,6	0,5
Potential GDP per capita (growth rate)	1,6	1,0	2,0	1,6	1,3	1,4	1,9	1,6
Potential GDP per worker (growth rate)	1,8	0,6	1,6	2,1	1,9	1,8	1,6	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-264	1.372	1.330	1.268	1.201	1.116	1.098	1.108
Population growth (working age:15-64)	0,8	-0,8	-0,7	-0,5	-0,7	-0,5	0,1	0,0
Population (20-74) (in thousands)	-280	1.483	1.474	1.421	1.366	1.294	1.217	1.202
Population growth (20-74)	0,3	-0,3	0,0	-0,3	-0,5	-0,6	-0,4	0,0
Labour force 15-64 (thousands)	-175	985	980	930	877	822	806	810
Labour force 20-74 (thousands)	-171	985	981	936	887	833	812	814
Participation rate (20-74)	1,3	66,4	66,5	65,8	64,9	64,4	66,7	67,7
Participation rate (15-64)	1,3	71,8	73,7	73,3	73,0	73,6	73,5	73,1
young (15-24)	0,3	34,1	34,2	33,2	34,9	33,8	33,3	34,3
prime-age (25-54)	-0,6	90,5	90,7	90,0	89,8	90,2	90,0	89,9
older (55-64)	19,7	41,1	50,7	60,8	60,1	58,8	60,1	60,9
Participation rate (20-74) - FEMALES	3,0	62,8	63,2	63,4	62,9	62,7	64,9	65,8
Participation rate (15-64) - FEMALES	2,5	68,8	70,9	71,4	71,2	71,8	71,6	71,2
young (15-24)	0,3	30,3	30,4	29,5	31,1	30,1	29,6	30,6
prime-age (25-54)	-0,9	89,0	89,1	88,4	88,0	88,4	88,2	88,1
older (55-64)	24,7	35,5	46,1	60,2	59,4	58,3	59,5	60,2
Participation rate (20-74) - MALES	-0,4	70,0	69,8	68,2	66,9	66,0	68,5	69,6
Participation rate (15-64) - MALES	0,3	74,7	76,4	75,1	74,8	75,4	75,3	74,9
young (15-24)	0,3	37,7	37,8	36,7	38,6	37,3	36,8	38,0
prime-age (25-54)	-0,3	91,9	92,2	91,6	91,6	92,0	91,7	91,7
older (55-64)	14,8	46,7	55,3	61,4	60,7	59,3	60,7	61,5
Average effective exit age (TOTAL) (1)	2,1	60,5	62,6	62,6	62,6	62,6	62,6	62,6
Men	1,8	60,9	62,7	62,7	62,7	62,7	62,7	62,7
Women	2,3	60,2	62,5	62,5	62,5	62,5	62,5	62,5
Employment rate (15-64)	2,8	66,0	68,7	69,0	68,7	69,3	69,1	68,8
Employment rate (20-74)	2,7	61,1	62,1	62,1	61,2	60,7	62,9	63,8
Employment rate (15-74)	1,6	58,0	59,0	58,2	57,8	57,2	58,6	59,6
Unemployment rate (15-64)	-2,2	8,1	6,8	5,9	5,9	5,9	5,9	5,9
Unemployment rate (20-74)	-2,2	8,0	6,7	5,7	5,7	5,7	5,7	5,7
Unemployment rate (15-74)	-2,2	8,0	6,7	5,8	5,8	5,7	5,8	5,8
Employment (20-74) (in millions)	-0,1	0,9	0,9	0,9	0,8	0,8	0,8	0,8
Employment (15-64) (in millions)	-0,1	0,9	0,9	0,9	0,8	0,8	0,8	0,8
share of young (15-24)	2,1	6%	6%	8%	8%	8%	8%	8%
share of prime-age (25-54)	-7,9	81%	78%	73%	72%	75%	76%	73%
share of older (55-64)	5,8	13%	15%	19%	20%	17%	16%	18%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0,2	21,4	22,1	22,6	24,5	21,5	18,9	21,6
Old-age dependency ratio 15-64 (3)	22,1	28,1	32,3	41,3	48,6	55,9	55,0	50,2
Old-age dependency ratio 20-64 (3)	25,1	30,1	34,8	45,3	52,9	61,2	60,9	55,3
Total dependency ratio (4)	26,0	50,5	56,2	64,0	71,9	83,0	82,0	76,5
Total economic dependency ratio (5)	26,0	125,6	124,8	132,9	144,2	157,2	157,7	151,6
Economic old-age dependency ratio (15-64) (6)	29,6	41,4	46,0	57,8	68,2	78,0	77,4	71,0
Economic old-age dependency ratio (15-74) (7)	28,7	41,0	45,5	56,6	66,6	76,0	75,8	69,7

Slovenia	EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections							
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	3,9	10,9	11,0	12,0	14,2	15,6	15,2	14,9
Of which : Old-age and early pensions	3,5	8,3	8,5	9,4	11,1	12,3	12,0	11,9
Disability pensions	0,2	1,3	1,2	1,3	1,5	1,7	1,6	1,5
Survivors pensions	0,3	1,3	1,2	1,3	1,5	1,6	1,6	1,5
Other	-0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0
Earnings-related pensions (old age and early pensions), gross	3,5	8,3	8,5	9,4	11,1	12,3	12,0	11,9
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	0,3
Public pensions, net	3,9	10,9	10,9	12,0	14,1	15,5	15,1	14,8
Public pensions, contributions	-0,5	9,1	8,9	8,8	8,7	8,6	8,7	8,7
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	99,3%	99,3%	99,3%	99,3%	99,3%	99,3%	99,3%
Pensioners (Public, in 1000 persons)	120	616	658	721	790	812	775	736
Public pensioners aged 65+ (1000 persons)	187	436	484	583	653	695	673	623
Share of pensioners below age 65 as % of all pensioners (Public)	-13,9	29%	26%	19%	17%	14%	13%	15%
Benefit ratio % (Public pensions)	-0,8	31,8	30,1	29,3	29,9	30,0	30,0	31,0
Gross replacement rate at retirement % (Old-age earnings-related)	1,0	34,7	36,3	36,4	36,2	36,0	35,9	35,7
Average accrual rates % (new pensions, earnings related)	0,0	1,5	1,5	1,5	1,5	1,5	1,5	1,5
Average contributory period, years (new pensions, earnings-related)	0,8	37,9	39,0	38,9	38,9	38,6	38,7	38,7
Contributors (Public pensions, in 1000 persons)	-142	891	900	860	810	763	748	749
Support ratio (contributors/100 pensioners, Public pensions)	-43	145	137	119	103	94	96	102
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,9	0,0	0,0	0,1	0,2	0,3	0,5	0,9
Lower fertility (-20%)	2,5	0,0	0,0	0,0	0,2	0,9	1,6	2,5
Higher TFP growth (+0.4 p.p.)	-0,6	0,0	0,0	0,0	-0,2	-0,4	-0,5	-0,6
Lower TFP growth (-0.4 p.p.)	0,6	0,0	0,0	0,0	0,2	0,5	0,6	0,6
Higher employment rate (+2 p.p.)	-0,3	0,0	-0,1	-0,3	-0,3	-0,4	-0,3	-0,3
Lower employment rate (+2 p.p.)	0,4	0,0	0,1	0,3	0,4	0,4	0,4	0,4
Higher employment rate of older workers (+10 p.p.)	-0,6	0,0	-0,1	-1,0	-1,0	-0,8	-0,5	-0,6
Higher migration (+33%)	-0,6	0,0	0,0	-0,2	-0,4	-0,6	-0,7	-0,6
Lower migration (-33%)	0,7	0,0	0,0	0,2	0,4	0,7	0,8	0,7
TFP risk scenario (-0.2 p.p.)	0,3	0,0	0,1	0,2	0,4	0,4	0,3	0,3
Policy scenario linking retirement age to life expectancy	-1,3	0,0	0,0	0,0	-0,2	-0,5	-0,8	-1,3
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	3,9	10,9	11,0	12,0	14,2	15,6	15,2	14,9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	3,9		0,0	1,1	3,2	4,6	4,3	3,9
Dependency ratio	7,5		1,7	4,8	6,8	9,0	9,0	7,5
Coverage ratio	-2,1		-0,5	-1,6	-1,8	-2,4	-2,6	-2,1
Of which : Old-age	-0,1		-0,1	-0,2	-0,1	-0,2	-0,2	-0,1
Early-age	-2,4		-0,3	-2,6	-2,1	-1,5	-2,7	-2,4
Cohort effect	-6,5		-1,2	-3,3	-5,1	-8,8	-9,2	-6,5
Benefit ratio	-0,3		-0,6	-1,0	-0,8	-0,7	-0,7	-0,3
Labour market ratio	-0,7		-0,4	-0,7	-0,6	-0,9	-0,9	-0,7
Of which : Employment rate	-0,7		-0,5	-0,7	-0,5	-0,7	-0,9	-0,7
Labour intensity	0,1		0,0	0,0	0,1	0,0	0,1	0,1
Career shift	-0,1		0,0	-0,1	-0,2	-0,2	-0,1	-0,1
Interaction effect (residual)	-0,5		-0,2	-0,4	-0,4	-0,4	-0,4	-0,5
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070
Public pensions, gross as % of GDP	3,9		0,0	1,1	2,1	1,4	-0,4	-0,3
Dependency ratio	7,5		1,7	3,1	2,0	2,2	-0,1	-1,4
Coverage ratio	-2,1		-0,5	-1,1	-0,2	-0,6	-0,2	0,5
Of which : Old-age	-0,1		-0,1	-0,1	0,0	-0,1	0,0	0,1
Early-age	-2,4		-0,3	-2,4	0,5	0,7	-1,2	0,3
Cohort effect	-6,5		-1,2	-2,1	-1,8	-3,8	-0,3	2,6
Benefit ratio	-0,3		-0,6	-0,4	0,2	0,1	0,0	0,5
Labour market ratio	-0,7		-0,4	-0,3	0,1	-0,2	0,0	0,2
Of which : Employment rate	-0,7		-0,5	-0,2	0,1	-0,2	-0,1	0,1
Labour intensity	0,1		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,1		0,0	-0,1	-0,1	0,0	0,1	0,0
Interaction effect (residual)	-0,5		-0,2	-0,2	0,0	-0,1	0,0	0,0

Slovenia				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.0	5.6	5.8	6.3	6.7	6.8	6.8	6.7
AWG risk scenario	2.0	5.6	6.0	6.7	7.3	7.6	7.7	7.6
TFP risk scenario	1.0	5.6	5.8	6.3	6.6	6.7	6.7	6.6
Demographic scenario	1.1	5.6	5.8	6.3	6.7	6.8	6.9	6.8
High Life expectancy scenario (variation of Demographic sc.)	1.3	5.6	5.8	6.3	6.7	6.9	7.0	7.0
Healthy ageing scenario	0.4	5.6	5.8	6.0	6.3	6.3	6.2	6.1
Death-related cost scenario	1.0	5.6	5.8	6.2	6.6	6.7	6.7	6.6
Income elasticity scenario	1.4	5.6	5.9	6.4	6.9	7.1	7.1	7.1
EU28 cost convergence scenario	1.4	5.6	5.8	6.3	6.8	7.0	7.1	7.0
Labour intensity scenario	1.7	5.6	5.7	6.3	7.0	7.6	7.6	7.4
Sector-specific composite indexation scenario	2.1	5.6	5.9	6.7	7.3	7.7	7.8	7.8
Non-demographic determinants scenario	3.1	5.6	6.0	6.9	7.7	8.2	8.6	8.7
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.9	0.9	1.0	1.1	1.4	1.7	1.8	1.8
AWG risk scenario	3.5	0.9	1.0	1.4	2.1	2.9	3.7	4.4
TFP risk scenario	0.9	0.9	1.0	1.2	1.5	1.7	1.9	1.9
Demographic scenario	0.8	0.9	1.0	1.2	1.4	1.6	1.7	1.8
Base case scenario	1.0	0.9	1.0	1.2	1.5	1.7	1.9	1.9
High Life expectancy scenario (variation of Base case sc.)	1.2	0.9	1.0	1.2	1.5	1.9	2.0	2.1
Healthy ageing scenario	0.8	0.9	1.0	1.1	1.4	1.6	1.7	1.7
Shift to formal care scenario	1.3	0.9	1.1	1.5	1.8	2.1	2.2	2.2
Coverage convergence scenario	1.1	0.9	1.0	1.2	1.6	1.8	2.0	2.1
Cost convergence scenario	3.3	0.9	1.0	1.4	2.1	2.8	3.6	4.3
Cost and coverage convergence scenario	3.7	0.9	1.1	1.5	2.2	3.0	3.8	4.7
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	81%	111	120	141	170	190	199	202
of which: receiving institutional care	84%	35	38	45	55	61	64	65
receiving home care	89%	34	37	44	54	61	64	65
receiving cash benefits	73%	42	45	52	61	68	72	73
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.6	4.0	4.0	4.2	4.1	4.5	4.7	4.6
Number of students (in thousands)								
Total (students/staff in 2016 = 12,4)	0.3%	345	353	366	337	343	356	346
as % of population 5-24	-0.8	86.6	86.6	86.2	85.9	86.6	86.4	85.9
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.6	0.0	0.1	0.2	0.5	0.6	0.6	0.6
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.1	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	6.3	21.9	22.1	23.9	26.6	28.8	28.8	28.2
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	3.5	0.0	0.2	0.7	1.3	2.0	2.8	3.5
TFP risk scenario (-0.2 p.p.)	0.3	0.0	0.1	0.3	0.4	0.3	0.3	0.3
High life expectancy (+2 years) (8)	1.3	0.0	0.0	0.1	0.3	0.5	0.8	1.3
Lower fertility (-20%)	2.6	0.0	0.0	-0.3	-0.2	0.7	1.5	2.6
Higher TFP growth (+0.4 p.p.)	-0.5	0.0	0.0	0.1	-0.1	-0.3	-0.4	-0.5
Lower TFP growth (-0.4 p.p.)	1.2	0.0	0.5	0.6	0.8	1.1	1.2	1.2
Higher employment rate (+2 p.p)	-0.5	0.0	-0.1	-0.4	-0.5	-0.5	-0.5	-0.5
Lower employment rate (+2 p.p)	0.7	0.0	0.1	0.6	0.7	0.7	0.7	0.7
Higher employment rate of older workers (+10 p.p.)	-0.2	0.0	0.3	-0.7	-0.6	-0.4	-0.1	-0.2
Higher migration (+33%)	-0.7	0.0	0.0	-0.2	-0.4	-0.7	-0.8	-0.7
Lower migration (-33%)	1.0	0.0	0.1	0.3	0.5	0.9	1.0	1.0
Policy scenario linking retirement age to life expectancy	-1.5	0.0	0.0	0.1	-0.1	-0.5	-0.9	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

25. SLOVAKIA

Slovakia				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,4	1,40	1,47	1,60	1,68	1,74	1,79	1,82
Life expectancy at birth								
males	10,5	73,7	74,6	76,8	78,9	80,8	82,6	84,2
females	8,4	80,7	81,4	83,2	84,8	86,3	87,8	89,1
Life expectancy at 65								
males	6,8	15,3	15,8	17,2	18,5	19,8	21,0	22,1
females	6,5	19,1	19,7	21,0	22,2	23,4	24,6	25,6
Net migration (thousand)	-2,7	6,0	5,9	5,0	6,8	6,5	3,8	3,2
Net migration as % of population	0,0	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Population (million)	-0,5	5,4	5,5	5,5	5,4	5,3	5,1	4,9
Children population (0-14) as % of total population	-1,2	15,3	15,4	14,3	13,5	14,0	14,1	14,2
Prime age population (25-54) as % of total population	-12,3	44,9	44,4	40,8	36,2	33,3	33,1	32,7
Working age population (15-64) as % of total population	-15,2	70,0	67,7	64,5	61,9	56,8	53,9	54,7
Elderly population (65 and over) as % of total population	16,4	14,7	16,9	21,2	24,6	29,3	32,0	31,1
Very elderly population (80 and over) as % of total population	11,2	3,2	3,4	5,0	7,8	9,0	12,0	14,3
Very elderly population (80 and over) as % of elderly population	24,5	21,5	20,2	23,7	31,7	30,6	37,5	46,1
Very elderly population (80 and over) as % of working age population	21,7	4,5	5,0	7,8	12,6	15,8	22,3	26,2
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,9	2,4	2,8	2,8	1,8	1,2	1,2	1,5
Employment 15-74 (growth rate)	-0,3	1,0	-0,1	-0,3	-0,5	-0,6	-0,4	0,0
Labour input : hours worked (growth rate)	-0,4	0,6	-0,3	-0,3	-0,6	-0,6	-0,4	0,0
Labour productivity per hour (growth rate)	2,2	1,7	3,0	3,1	2,3	1,8	1,7	1,5
TFP (growth rate)	1,5	2,0	2,3	2,1	1,5	1,1	1,1	1,0
Capital deepening (contribution to labour productivity growth)	0,7	-0,3	0,8	1,1	0,8	0,6	0,6	0,5
Potential GDP per capita (growth rate)	2,1	2,2	2,6	2,9	2,0	1,4	1,6	1,9
Potential GDP per worker (growth rate)	2,2	1,4	2,9	3,1	2,3	1,8	1,7	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-1.118	3.799	3.696	3.521	3.325	2.983	2.750	2.681
Population growth (working age:15-64)	0,4	-0,6	-0,7	-0,5	-1,0	-1,1	-0,4	-0,3
Population (20-74) (in thousands)	-1.036	4.000	4.006	3.855	3.700	3.506	3.183	2.963
Population growth (20-74)	-0,5	0,1	0,0	-0,4	-0,4	-0,9	-0,9	-0,4
Labour force 15-64 (thousands)	-726	2.739	2.708	2.586	2.437	2.222	2.062	2.014
Labour force 20-74 (thousands)	-589	2.740	2.717	2.599	2.479	2.317	2.191	2.150
Participation rate (20-74)	4,1	68,5	67,8	67,4	67,0	66,1	68,8	72,6
Participation rate (15-64)	3,0	72,1	73,3	73,5	73,3	74,5	75,0	75,1
young (15-24)	-1,1	32,4	32,3	30,8	31,7	31,6	30,8	31,3
prime-age (25-54)	0,6	87,6	87,9	87,8	88,0	88,1	88,2	88,2
older (55-64)	21,9	54,4	55,7	63,3	66,5	71,1	74,5	76,3
Participation rate (20-74) - FEMALES	6,7	61,2	61,2	62,0	62,0	61,4	64,2	67,9
Participation rate (15-64) - FEMALES	4,8	65,6	67,5	68,6	68,5	69,7	70,3	70,4
young (15-24)	-1,3	24,8	24,2	23,1	23,9	23,7	23,1	23,6
prime-age (25-54)	1,4	81,5	82,1	82,8	82,9	82,7	83,0	82,9
older (55-64)	27,0	48,5	52,2	61,2	64,2	69,9	73,7	75,5
Participation rate (20-74) - MALES	1,2	76,0	74,6	72,9	72,1	70,8	73,4	77,2
Participation rate (15-64) - MALES	1,1	78,5	79,0	78,2	78,0	79,1	79,5	79,7
young (15-24)	-0,9	39,7	39,9	38,2	39,3	39,1	38,1	38,8
prime-age (25-54)	-0,2	93,5	93,4	92,6	92,9	93,3	93,2	93,3
older (55-64)	16,2	60,9	59,6	65,4	68,8	72,4	75,3	77,1
Average effective exit age (TOTAL) (1)	5,8	61,4	61,8	62,5	63,7	64,9	66,1	67,2
Men	5,4	61,9	62,0	62,7	63,9	65,0	66,2	67,3
Women	6,1	61,0	61,5	62,4	63,6	64,9	66,1	67,1
Employment rate (15-64)	4,0	65,1	67,1	66,7	67,1	68,6	69,1	69,2
Employment rate (20-74)	5,3	62,1	62,3	61,5	61,6	61,2	63,9	67,4
Employment rate (15-74)	4,3	58,3	58,7	57,5	57,7	57,6	59,5	62,6
Unemployment rate (15-64)	-1,8	9,7	8,4	9,1	8,5	7,9	7,9	7,9
Unemployment rate (20-74)	-2,2	9,3	8,1	8,8	8,1	7,4	7,2	7,2
Unemployment rate (15-74)	-2,2	9,6	8,3	9,0	8,3	7,6	7,4	7,4
Employment (20-74) (in millions)	-0,5	2,5	2,5	2,4	2,3	2,1	2,0	2,0
Employment (15-64) (in millions)	-0,6	2,5	2,5	2,3	2,2	2,0	1,9	1,9
share of young (15-24)	0,4	6%	6%	6%	6%	6%	7%	7%
share of prime-age (25-54)	-8,2	79%	79%	76%	71%	70%	73%	71%
share of older (55-64)	7,8	15%	15%	18%	23%	24%	20%	22%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2,5	19,3	19,3	20,3	25,1	24,6	20,3	21,8
Old-age dependency ratio 15-64 (3)	35,8	21,0	24,9	32,9	39,7	51,5	59,4	56,8
Old-age dependency ratio 20-64 (3)	39,8	22,7	26,9	35,9	43,1	56,1	65,3	62,5
Total dependency ratio (4)	39,7	42,9	47,8	55,1	61,5	76,2	85,6	82,7
Total economic dependency ratio (5)	26,4	117,7	117,8	129,2	134,5	143,6	149,8	144,1
Economic old-age dependency ratio (15-64) (6)	42,5	31,4	36,1	47,9	56,4	69,6	78,3	73,9
Economic old-age dependency ratio (15-74) (7)	37,1	31,2	35,7	47,2	55,0	66,1	72,7	68,3

Slovakia		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	1,2	8,6	8,3	7,6	7,8	8,8	9,9	9,8
Of which : Old-age and early pensions	0,7	6,7	6,5	5,9	5,9	6,7	7,6	7,4
Disability pensions	0,1	0,9	0,9	0,9	1,0	1,0	1,0	1,1
Survivors pensions	0,3	0,8	0,8	0,7	0,8	0,9	1,1	1,2
Other	0,1	0,1	0,1	0,1	0,2	0,2	0,2	0,2
Earnings-related pensions (old age and early pensions), gross	0,7	6,7	6,5	5,9	5,9	6,7	7,6	7,4
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	-0,1	0,3	0,2	0,3	0,3	0,3	0,4	0,3
Public pensions, net	1,2	8,6	8,3	7,6	7,8	8,8	9,9	9,8
Public pensions, contributions	-0,1	6,9	6,8	6,6	6,7	6,8	6,8	6,8
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Pensioners (Public, in 1000 persons)	181	1.364	1.401	1.480	1.558	1.653	1.673	1.546
Public pensioners aged 65+ (1000 persons)	569	794	913	1.151	1.277	1.430	1.490	1.363
Share of pensioners below age 65 as % of all pensioners (Public)	-30,0	42%	35%	22%	18%	14%	11%	12%
Benefit ratio % (Public pensions)	-8,2	46,6	44,4	37,5	35,0	34,7	36,5	38,4
Gross replacement rate at retirement % (Old-age earnings-related)	1,3	49,0	51,0	47,3	43,4	43,5	51,9	50,2
Average accrual rates % (new pensions, earnings related)	-0,1	1,2	1,2	1,1	1,0	1,0	1,1	1,1
Average contributory period, years (new pensions, earnings-related)	5,2	41,5	41,6	42,2	43,4	44,7	45,9	46,7
Contributors (Public pensions, in 1000 persons)	-409	2.176	2.201	2.122	2.036	1.902	1.800	1.767
Support ratio (contributors/100 pensioners, Public pensions)	-45	159	157	143	131	115	108	114
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,2	0,0	0,0	0,0	0,0	-0,1	-0,1	0,2
Lower fertility (-20%)	1,6	0,0	0,0	0,0	0,1	0,5	1,0	1,6
Higher TFP growth (+0.4 p.p.)	-0,8	0,0	0,0	0,0	-0,2	-0,5	-0,7	-0,8
Lower TFP growth (-0.4 p.p.)	0,9	0,0	0,0	0,0	0,1	0,5	0,7	0,9
Higher employment rate (+2 p.p.)	-0,1	0,0	0,0	-0,1	-0,1	-0,1	-0,1	-0,1
Lower employment rate (+2 p.p.)	0,0	0,0	0,0	0,1	0,1	0,1	0,1	0,0
Higher employment rate of older workers (+10 p.p.)	-0,6	0,0	-0,1	-0,4	-0,5	-0,6	-0,6	-0,6
Higher migration (+33%)	-0,2	0,0	0,0	0,0	-0,1	-0,2	-0,2	-0,2
Lower migration (-33%)	0,2	0,0	0,0	0,0	0,1	0,2	0,2	0,2
TFP risk scenario (-0.2 p.p.)	0,5	0,0	0,1	0,4	0,6	0,5	0,6	0,5
Policy scenario linking retirement age to life expectancy	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	1,2	8,6	8,3	7,6	7,8	8,8	9,9	9,8
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	1,2		-0,3	-0,9	-0,8	0,2	1,3	1,2
Dependency ratio	8,8		1,6	4,1	5,6	7,8	9,3	8,8
Coverage ratio	-4,1		-0,9	-2,3	-2,9	-3,6	-4,0	-4,1
Of which : Old-age	-0,9		0,0	0,0	-0,2	-0,5	-0,7	-0,9
Early-age	-6,8		-1,0	-4,4	-6,0	-6,4	-6,5	-6,8
Cohort effect	-6,6		-1,4	-2,5	-3,0	-5,5	-7,6	-6,6
Benefit ratio	-1,5		-0,5	-1,9	-2,4	-2,5	-2,0	-1,5
Labour market ratio	-1,2		-0,3	-0,3	-0,4	-0,8	-1,2	-1,2
Of which : Employment rate	-0,6		-0,2	-0,3	-0,3	-0,5	-0,6	-0,6
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,6		0,0	0,0	-0,1	-0,4	-0,5	-0,6
Interaction effect (residual)	-0,8		-0,2	-0,5	-0,6	-0,7	-0,8	-0,8
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	1,2	-0,3	-0,6	0,2	1,0	1,1	-0,1	
Dependency ratio	8,8	1,6	2,5	1,5	2,3	1,4	-0,4	
Coverage ratio	-4,1	-0,9	-1,3	-0,6	-0,7	-0,4	-0,1	
Of which : Old-age	-0,9	0,0	0,0	-0,2	-0,3	-0,2	-0,2	
Early-age	-6,8	-1,0	-3,4	-1,6	-0,4	-0,1	-0,3	
Cohort effect	-6,6	-1,4	-1,1	-0,5	-2,5	-2,1	1,0	
Benefit ratio	-1,5	-0,5	-1,4	-0,5	0,0	0,5	0,5	
Labour market ratio	-1,2	-0,3	-0,1	-0,1	-0,4	-0,3	-0,1	
Of which : Employment rate	-0,6	-0,2	0,0	0,0	-0,2	-0,2	0,0	
Labour intensity	0,0	0,0	0,0	0,0	0,0	0,0	0,0	
Career shift	-0,6	0,0	0,0	-0,1	-0,2	-0,2	-0,1	
Interaction effect (residual)	-0,8	-0,2	-0,3	-0,1	-0,1	0,0	0,0	

Slovakia		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.2	5.6	5.8	6.2	6.6	6.9	7.0	6.8
AWG risk scenario	2.6	5.6	5.9	6.9	7.6	8.1	8.3	8.1
TFP risk scenario	1.1	5.6	5.8	6.2	6.5	6.8	6.9	6.7
Demographic scenario	1.5	5.6	5.8	6.3	6.7	7.0	7.2	7.1
High Life expectancy scenario (variation of Demographic sc.)	1.7	5.6	5.8	6.3	6.7	7.1	7.3	7.2
Healthy ageing scenario	0.0	5.6	5.6	5.8	5.9	6.0	5.9	5.6
Death-related cost scenario	1.3	5.6	5.7	6.2	6.6	6.9	7.0	6.9
Income elasticity scenario	2.0	5.6	5.8	6.5	7.0	7.4	7.6	7.5
EU28 cost convergence scenario	2.0	5.6	5.8	6.3	6.8	7.2	7.4	7.6
Labour intensity scenario	2.4	5.6	5.7	6.5	7.2	7.8	8.2	7.9
Sector-specific composite indexation scenario	2.5	5.6	5.9	6.7	7.4	7.9	8.2	8.1
Non-demographic determinants scenario	4.3	5.6	6.0	7.2	8.4	9.2	9.8	9.9
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.6	0.9	0.9	1.1	1.2	1.4	1.5	1.5
AWG risk scenario	2.0	0.9	1.0	1.2	1.5	1.9	2.4	2.9
TFP risk scenario	0.6	0.9	0.9	1.1	1.2	1.3	1.4	1.5
Demographic scenario	0.5	0.9	0.9	1.1	1.2	1.3	1.3	1.4
Base case scenario	0.7	0.9	0.9	1.1	1.3	1.4	1.5	1.6
High Life expectancy scenario (variation of Base case sc.)	0.7	0.9	0.9	1.1	1.3	1.4	1.5	1.6
Healthy ageing scenario	0.3	0.9	0.9	1.0	1.1	1.2	1.2	1.2
Shift to formal care scenario	1.3	0.9	1.1	1.6	1.8	2.0	2.2	2.2
Coverage convergence scenario	0.9	0.9	0.9	1.1	1.3	1.5	1.7	1.8
Cost convergence scenario	1.8	0.9	1.0	1.3	1.6	1.9	2.4	2.7
Cost and coverage convergence scenario	2.3	0.9	1.0	1.3	1.6	2.1	2.6	3.2
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	39%	285	298	338	371	387	400	397
of which: receiving institutional care	107%	50	53	65	78	86	96	103
receiving home care	-23%	68	69	70	69	65	58	52
receiving cash benefits	45%	167	177	203	224	237	246	242
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.0	3.7	3.5	3.6	3.5	3.6	3.8	3.7
Number of students (in thousands)								
Total (students/staff in 2016 = 12,7)	-17.0%	857	842	829	761	735	739	712
as % of population 5-24	1.2	72.9	74.5	74.2	73.7	74.4	74.7	74.1
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.9	0.0	0.1	0.4	0.7	0.9	0.9	0.9
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	3.0	18.9	18.6	18.8	19.3	20.7	22.2	21.9
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.8	0.0	0.2	0.8	1.3	1.8	2.3	2.8
TFP risk scenario (-0.2 p.p.)	0.4	0.0	0.1	0.4	0.5	0.4	0.4	0.4
High life expectancy (+2 years) (8)	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.3	0.0
Lower fertility (-20%)	1.7	0.0	0.0	-0.2	-0.3	0.3	1.0	1.7
Higher TFP growth (+0.4 p.p.)	-0.8	0.0	0.0	0.0	-0.2	-0.5	-0.7	-0.8
Lower TFP growth (-0.4 p.p.)	0.8	0.0	0.0	0.0	0.1	0.4	0.7	0.8
Higher employment rate (+2 p.p)	-0.2	0.0	-0.1	-0.3	-0.2	-0.2	-0.2	-0.2
Lower employment rate (+2 p.p)	0.2	0.0	0.1	0.3	0.3	0.2	0.2	0.2
Higher employment rate of older workers (+10 p.p.)	-0.8	0.0	-0.1	-0.6	-0.8	-0.9	-0.9	-0.8
Higher migration (+33%)	-0.3	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.3
Lower migration (-33%)	0.3	0.0	0.0	0.1	0.1	0.2	0.3	0.3
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

26. FINLAND

Finland		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,60	1,71	1,72	1,74	1,76	1,78	1,80
Life expectancy at birth								
males	7,4	78,5	79,1	80,6	82,1	83,4	84,7	85,9
females	6,1	84,1	84,6	85,8	87,0	88,1	89,2	90,2
Life expectancy at 65								
males	5,1	18,2	18,6	19,6	20,6	21,5	22,4	23,3
females	4,8	21,7	22,0	23,0	23,9	24,8	25,7	26,5
Net migration (thousand)	-9,1	15,9	15,8	13,7	10,7	8,5	7,8	6,8
Net migration as % of population	-0,2	0,3	0,3	0,2	0,2	0,1	0,1	0,1
Population (million)	0,1	5,5	5,6	5,7	5,7	5,7	5,7	5,6
Children population (0-14) as % of total population	-1,5	16,3	16,2	15,5	15,2	15,1	14,9	14,7
Prime age population (25-54) as % of total population	-4,2	38,0	37,5	36,8	36,2	35,1	34,7	33,8
Working age population (15-64) as % of total population	-6,9	63,0	61,5	59,3	59,1	58,3	56,8	56,1
Elderly population (65 and over) as % of total population	8,5	20,7	22,3	25,2	25,7	26,6	28,2	29,2
Very elderly population (80 and over) as % of total population	7,0	5,2	5,6	8,2	9,9	10,5	10,7	12,2
Very elderly population (80 and over) as % of elderly population	16,7	25,2	25,2	32,4	38,4	39,3	37,9	41,8
Very elderly population (80 and over) as % of working age population	13,5	8,3	9,1	13,7	16,7	17,9	18,8	21,7
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,3	0,4	0,7	1,1	1,5	1,5	1,5	1,5
Employment 15-74 (growth rate)	0,0	0,1	-0,2	0,0	0,1	0,0	0,0	-0,1
Labour input : hours worked (growth rate)	0,0	0,4	-0,1	0,0	0,1	0,0	0,0	-0,1
Labour productivity per hour (growth rate)	1,3	0,1	0,8	1,0	1,4	1,5	1,5	1,5
TFP (growth rate)	0,8	-0,1	0,3	0,7	0,9	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,2	0,6	0,3	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,2	0,2	0,4	0,9	1,5	1,6	1,5	1,6
Potential GDP per worker (growth rate)	1,3	0,4	0,9	1,0	1,4	1,5	1,5	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-307	3.463	3.425	3.382	3.383	3.314	3.213	3.155
Population growth (working age:15-64)	0,2	-0,4	-0,2	-0,2	0,0	-0,3	-0,3	-0,2
Population (20-74) (in thousands)	-311	3.810	3.837	3.740	3.683	3.676	3.601	3.499
Population growth (20-74)	-0,5	0,2	0,0	-0,1	-0,2	-0,1	-0,3	-0,3
Labour force 15-64 (thousands)	-153	2.628	2.606	2.575	2.592	2.561	2.504	2.474
Labour force 20-74 (thousands)	-41	2.595	2.577	2.545	2.575	2.585	2.570	2.555
Participation rate (20-74)	4,9	68,1	67,2	68,1	69,9	70,3	71,4	73,0
Participation rate (15-64)	2,5	75,9	76,1	76,1	76,6	77,3	77,9	78,4
young (15-24)	-0,2	52,9	52,8	52,9	52,5	52,8	52,6	52,7
prime-age (25-54)	-0,5	86,3	85,9	85,6	85,7	85,8	85,9	85,8
older (55-64)	13,4	66,2	67,3	68,3	71,0	74,0	77,1	79,6
Participation rate (20-74) - FEMALES	5,8	65,2	64,1	65,3	67,7	68,3	69,4	71,0
Participation rate (15-64) - FEMALES	3,0	74,1	74,2	74,6	75,4	76,1	76,7	77,1
young (15-24)	0,0	54,2	54,3	54,4	54,0	54,3	54,2	54,2
prime-age (25-54)	0,3	82,7	82,5	82,7	83,0	83,0	83,1	83,1
older (55-64)	12,7	67,2	67,4	68,3	71,9	74,9	77,7	79,9
Participation rate (20-74) - MALES	3,9	71,1	70,2	70,8	72,1	72,3	73,2	75,0
Participation rate (15-64) - MALES	2,1	77,6	77,9	77,6	77,8	78,4	79,1	79,7
young (15-24)	-0,4	51,7	51,4	51,4	51,0	51,4	51,2	51,3
prime-age (25-54)	-1,3	89,7	89,2	88,4	88,3	88,4	88,5	88,5
older (55-64)	14,2	65,2	67,2	68,3	70,2	73,1	76,4	79,4
Average effective exit age (TOTAL) (1)	4,2	63,6	63,6	64,3	65,1	66,0	67,1	67,8
Men	4,0	63,9	63,9	64,4	65,2	66,1	67,2	67,9
Women	4,4	63,2	63,4	64,1	65,0	65,9	67,1	67,6
Employment rate (15-64)	3,5	69,0	70,5	70,4	70,8	71,4	72,0	72,5
Employment rate (20-74)	5,7	62,6	62,8	63,5	65,3	65,7	66,7	68,3
Employment rate (15-74)	5,2	59,8	60,1	60,6	62,2	62,7	63,6	65,1
Unemployment rate (15-64)	-1,5	9,1	7,4	7,6	7,6	7,6	7,6	7,6
Unemployment rate (20-74)	-1,6	8,0	6,5	6,6	6,6	6,6	6,5	6,4
Unemployment rate (15-74)	-1,8	8,9	7,2	7,4	7,4	7,3	7,2	7,1
Employment (20-74) (in millions)	0,0	2,4	2,4	2,4	2,4	2,4	2,4	2,4
Employment (15-64) (in millions)	-0,1	2,4	2,4	2,4	2,4	2,4	2,3	2,3
share of young (15-24)	-0,2	11%	11%	11%	12%	11%	11%	11%
share of prime-age (25-54)	-2,9	70%	70%	71%	70%	68%	68%	67%
share of older (55-64)	3,0	19%	19%	18%	19%	21%	21%	22%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0,0	21,3	21,3	19,3	20,6	21,6	20,5	21,3
Old-age dependency ratio 15-64 (3)	19,1	32,8	36,3	42,4	43,5	45,7	49,7	52,0
Old-age dependency ratio 20-64 (3)	21,2	35,9	39,8	46,7	47,8	50,1	54,7	57,2
Total dependency ratio (4)	19,5	58,7	62,6	68,6	69,1	71,6	75,9	78,3
Total economic dependency ratio (5)	4,8	123,6	124,2	132,1	130,6	128,4	128,2	128,4
Economic old-age dependency ratio (15-64) (6)	19,2	44,7	48,6	57,1	57,8	58,7	61,8	63,9
Economic old-age dependency ratio (15-74) (7)	15,9	43,4	47,2	55,3	55,8	55,8	57,8	59,4

Finland				**EC (DG ECFIN) - EPC (AWG) 2018 projections**				
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	0,6	13,4	13,8	14,8	13,9	13,2	13,5	13,9
Of which : Old-age and early pensions	0,7	11,2	11,8	12,7	11,8	11,2	11,5	11,9
Disability pensions	0,1	1,4	1,2	1,3	1,3	1,4	1,4	1,5
Survivors pensions	-0,2	0,8	0,8	0,8	0,7	0,7	0,6	0,6
Other	0,0	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	10,5	11,1	12,1	11,2	10,5	10,8	11,2
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	0,3
Public pensions, net	0,4	10,5	10,8	11,6	10,9	10,4	10,6	10,9
Public pensions, contributions	1,9	17,6	16,8	18,1	17,8	17,7	18,3	19,4
Additional indicators	Ch 16-70		2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	0,0	78,5%	78,5%	78,5%	78,5%	78,5%	78,5%	78,5%
Pensioners (Public, in 1000 persons)	295	1.449	1.544	1.656	1.660	1.662	1.708	1.744
Public pensioners aged 65+ (1000 persons)	440	1.142	1.259	1.447	1.470	1.485	1.545	1.583
Share of pensioners below age 65 as % of all pensioners (Public)	-11,9	21%	18%	13%	11%	11%	10%	9%
Benefit ratio % (Public pensions)	-7,4	53,5	53,1	52,4	49,7	47,1	46,1	46,1
Gross replacement rate at retirement % (Old-age earnings-related)	0,7	41,3	40,5	39,2	38,4	41,7	41,9	42,0
Average accrual rates % (new pensions, earnings related)	-0,1	1,6	1,6	1,5	1,4	1,5	1,6	1,6
Average contributory period, years (new pensions, earnings-related)	2,2	33,9	34,3	35,3	35,3	36,2	36,2	36,1
Contributors (Public pensions, in 1000 persons)	-5	2.273	2.301	2.288	2.320	2.319	2.289	2.268
Support ratio (contributors/100 pensioners, Public pensions)	-27	157	149	138	140	139	134	130
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,2	0,0	0,0	0,1	0,1	0,0	0,1	0,2
Lower fertility (-20%)	1,9	0,0	0,0	0,0	0,3	0,7	1,2	1,9
Higher TFP growth (+0.4 p.p.)	-1,0	0,0	0,0	0,0	-0,3	-0,6	-0,9	-1,0
Lower TFP growth (-0.4 p.p.)	1,1	0,0	0,0	0,0	0,3	0,7	0,9	1,1
Higher employment rate (+2 p.p.)	-0,2	0,0	-0,1	-0,4	-0,3	-0,3	-0,2	-0,2
Lower employment rate (+2 p.p.)	0,2	0,0	0,1	0,4	0,4	0,3	0,2	0,2
Higher employment rate of older workers (+10 p.p.)	-1,1	0,0	-0,3	-2,1	-1,5	-1,3	-1,2	-1,1
Higher migration (+33%)	-0,4	0,0	-0,1	-0,3	-0,4	-0,4	-0,4	-0,4
Lower migration (-33%)	0,5	0,0	0,1	0,3	0,4	0,5	0,5	0,5
TFP risk scenario (-0.2 p.p.)	0,6	0,0	0,1	0,5	0,7	0,6	0,6	0,6
Policy scenario linking retirement age to life expectancy	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	0,6	13,4	13,8	14,8	13,9	13,2	13,5	13,9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	0,6		0,4	1,4	0,5	-0,2	0,1	0,6
Dependency ratio	6,6		1,4	3,8	4,1	4,8	6,0	6,6
Coverage ratio	-2,5		-0,3	-1,4	-1,7	-2,0	-2,4	-2,5
Of which : Old-age	-0,5		0,1	0,0	-0,1	-0,3	-0,5	-0,5
Early-age	-7,2		-0,6	-3,7	-5,8	-6,7	-7,1	-7,2
Cohort effect	-6,1		-1,5	-4,4	-3,9	-4,3	-5,7	-6,1
Benefit ratio	-2,0		-0,3	-0,5	-1,3	-1,9	-2,1	-2,0
Labour market ratio	-1,3		-0,3	-0,3	-0,5	-0,8	-1,2	-1,3
Of which : Employment rate	-0,7		-0,3	-0,3	-0,4	-0,5	-0,6	-0,7
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,6		0,0	0,0	-0,1	-0,3	-0,5	-0,6
Interaction effect (residual)	-0,2		-0,1	-0,2	-0,2	-0,2	-0,2	-0,2
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	0,6		0,4	1,0	-0,9	-0,7	0,3	0,4
Dependency ratio	6,6		1,4	2,4	0,3	0,6	1,2	0,6
Coverage ratio	-2,5		-0,3	-1,0	-0,3	-0,4	-0,4	-0,1
Of which : Old-age	-0,5		0,1	-0,1	-0,1	-0,2	-0,2	0,0
Early-age	-7,2		-0,6	-3,1	-2,1	-0,9	-0,5	-0,1
Cohort effect	-6,1		-1,5	-2,9	0,5	-0,4	-1,4	-0,4
Benefit ratio	-2,0		-0,3	-0,2	-0,8	-0,7	-0,1	0,1
Labour market ratio	-1,3		-0,3	-0,1	-0,1	-0,3	-0,4	-0,2
Of which : Employment rate	-0,7		-0,3	0,0	-0,1	-0,1	-0,1	-0,1
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,6		0,0	0,0	-0,1	-0,2	-0,2	-0,1
Interaction effect (residual)	-0,2		-0,1	-0,1	0,0	0,0	0,0	0,0

Finland				**EC (DG ECFIN) - EPC (AWG) 2018 projections**				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.8	6.1	6.2	6.5	6.6	6.7	6.7	6.9
AWG risk scenario	1.4	6.1	6.3	6.6	7.0	7.2	7.3	7.5
TFP risk scenario	0.7	6.1	6.2	6.5	6.6	6.6	6.7	6.8
Demographic scenario	1.1	6.1	6.3	6.6	6.8	6.9	7.0	7.2
High Life expectancy scenario (variation of Demographic sc.)	1.3	6.1	6.3	6.6	6.9	7.0	7.1	7.4
Healthy ageing scenario	0.2	6.1	6.2	6.3	6.3	6.2	6.2	6.3
Death-related cost scenario	0.9	6.1	6.2	6.5	6.7	6.7	6.8	7.0
Income elasticity scenario	1.3	6.1	6.3	6.6	6.9	7.0	7.2	7.4
EU28 cost convergence scenario	1.3	6.1	6.3	6.6	6.9	7.0	7.2	7.4
Labour intensity scenario	1.3	6.1	6.2	6.9	7.1	7.1	7.2	7.4
Sector-specific composite indexation scenario	2.6	6.1	6.4	7.0	7.6	8.1	8.4	8.7
Non-demographic determinants scenario	2.5	6.1	6.3	6.8	7.4	7.8	8.2	8.6
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.1	2.2	2.3	3.0	3.6	3.8	3.9	4.2
AWG risk scenario	2.9	2.2	2.4	3.2	3.9	4.2	4.5	5.1
TFP risk scenario	2.1	2.2	2.3	3.0	3.6	3.8	3.9	4.2
Demographic scenario	2.2	2.2	2.4	3.0	3.6	3.8	3.9	4.4
Base case scenario	2.3	2.2	2.4	3.1	3.7	3.9	4.1	4.5
High Life expectancy scenario (variation of Base case sc.)	2.8	2.2	2.4	3.1	3.9	4.2	4.4	5.0
Healthy ageing scenario	1.8	2.2	2.3	3.0	3.5	3.6	3.7	4.0
Shift to formal care scenario	2.7	2.2	2.5	3.4	4.1	4.3	4.5	4.9
Coverage convergence scenario	2.3	2.2	2.4	3.1	3.7	3.9	4.1	4.5
Cost convergence scenario	3.2	2.2	2.4	3.2	4.0	4.3	4.7	5.4
Cost and coverage convergence scenario	3.2	2.2	2.4	3.2	4.0	4.3	4.7	5.4
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	66%	549	583	698	811	834	849	910
of which: receiving institutional care	105%	42	45	58	72	76	78	86
receiving home care	89%	183	197	246	298	310	317	345
receiving cash benefits	48%	324	341	394	441	449	454	479
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.4	5.9	5.8	5.9	5.8	5.7	5.6	5.5
Number of students (in thousands)								
Total (students/staff in 2016 = 14,5)	-7.6%	1,231	1,228	1,217	1,197	1,174	1,157	1,137
as % of population 5-24	0.6	99.3	100.5	99.0	100.0	99.7	99.8	99.9
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.2	0.0	0.0	0.1	0.2	0.3	0.3	0.2
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.4	2.2	1.8	1.8	1.8	1.8	1.8	1.8
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	2.6	29.8	30.0	32.0	31.8	31.1	31.5	32.4
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	1.4	0.0	0.1	0.3	0.6	0.9	1.2	1.4
TFP risk scenario (-0.2 p.p.)	0.5	0.0	0.1	0.4	0.7	0.6	0.5	0.5
High life expectancy (+2 years) (8)	0.4	0.0	0.0	0.1	0.1	0.0	0.2	0.4
Lower fertility (-20%)	2.3	0.0	0.0	-0.3	-0.1	0.6	1.3	2.3
Higher TFP growth (+0.4 p.p.)	-1.0	0.0	0.0	0.0	-0.3	-0.6	-0.8	-1.0
Lower TFP growth (-0.4 p.p.)	1.1	0.0	0.0	0.0	0.3	0.7	0.9	1.1
Higher employment rate (+2 p.p)	-1.0	0.0	-0.2	-1.2	-1.1	-1.1	-1.0	-1.0
Lower employment rate (+2 p.p)	1.0	0.0	0.2	1.2	1.2	1.1	1.1	1.0
Higher employment rate of older workers (+10 p.p.)	-1.6	0.0	-0.4	-2.6	-2.0	-1.8	-1.7	-1.6
Higher migration (+33%)	-0.6	0.0	-0.1	-0.3	-0.5	-0.6	-0.6	-0.6
Lower migration (-33%)	0.7	0.0	0.1	0.3	0.5	0.7	0.7	0.7
Policy scenario linking retirement age to life expectancy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

27. SWEDEN

Sweden					EC (DG ECFIN) - EPC (AWG) 2018 projections			
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,2	1,86	1,87	1,91	1,95	1,98	2,01	2,03
Life expectancy at birth								
males	6,1	80,6	81,1	82,3	83,5	84,6	85,7	86,7
females	6,0	84,3	84,8	86,1	87,2	88,3	89,4	90,3
Life expectancy at 65								
males	4,6	19,0	19,4	20,3	21,2	22,0	22,8	23,6
females	4,9	21,7	22,1	23,1	24,0	24,9	25,8	26,6
Net migration (thousand)	-79,1	103,5	67,9	57,2	44,7	30,5	27,4	24,4
Net migration as % of population	-0,9	1,0	0,7	0,5	0,4	0,2	0,2	0,2
Population (million)	4,0	9,9	10,3	11,3	12,0	12,7	13,3	13,9
Children population (0-14) as % of total population	-0,3	17,5	17,9	17,8	17,3	17,6	17,5	17,2
Prime age population (25-54) as % of total population	-4,5	39,4	39,3	37,2	37,3	35,9	35,6	34,9
Working age population (15-64) as % of total population	-4,9	62,7	61,9	61,0	60,4	59,7	57,8	57,8
Elderly population (65 and over) as % of total population	5,1	19,8	20,2	21,3	22,3	22,7	24,7	25,0
Very elderly population (80 and over) as % of total population	5,0	5,1	5,3	7,2	7,6	8,5	9,1	10,1
Very elderly population (80 and over) as % of elderly population	14,8	25,7	26,1	33,9	34,1	37,5	36,8	40,5
Very elderly population (80 and over) as % of working age population	9,4	8,1	8,5	11,8	12,6	14,3	15,7	17,5
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,9	2,7	1,9	1,9	2,0	1,8	1,8	1,9
Employment 15-74 (growth rate)	0,5	1,4	0,5	0,6	0,6	0,3	0,3	0,3
Labour input : hours worked (growth rate)	0,5	1,5	0,5	0,6	0,5	0,3	0,2	0,3
Labour productivity per hour (growth rate)	1,5	1,1	1,4	1,4	1,5	1,5	1,5	1,5
TFP (growth rate)	1,0	0,9	0,9	0,9	1,0	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,3	0,5	0,5	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,3	1,5	0,9	1,2	1,4	1,3	1,4	1,5
Potential GDP per worker (growth rate)	1,4	1,2	1,4	1,3	1,5	1,5	1,5	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	1.802	6.218	6.405	6.875	7.261	7.589	7.694	8.019
Population growth (working age:15-64)	-0,4	0,8	0,7	0,5	0,5	0,3	0,3	0,3
Population (20-74) (in thousands)	1.753	6.802	6.930	7.320	7.777	8.100	8.403	8.555
Population growth (20-74)	-0,7	1,0	0,3	0,7	0,4	0,3	0,3	0,3
Labour force 15-64 (thousands)	1.400	5.113	5.257	5.595	5.918	6.183	6.264	6.513
Labour force 20-74 (thousands)	1.353	5.110	5.240	5.557	5.875	6.145	6.249	6.463
Participation rate (20-74)	0,4	75,1	75,6	75,9	75,5	75,9	74,4	75,5
Participation rate (15-64)	-1,0	82,2	82,1	81,4	81,5	81,5	81,4	81,2
young (15-24)	-1,4	55,5	53,6	54,0	54,1	54,1	53,8	54,0
prime-age (25-54)	0,6	90,9	91,1	91,6	91,5	91,5	91,5	91,5
older (55-64)	-2,2	79,9	78,5	77,2	77,8	78,0	77,7	77,7
Participation rate (20-74) - FEMALES	1,1	72,2	72,7	73,3	73,2	73,5	72,0	73,2
Participation rate (15-64) - FEMALES	-0,4	80,4	80,2	79,9	80,2	80,2	80,2	80,0
young (15-24)	-0,8	56,3	55,1	55,5	55,5	55,6	55,2	55,5
prime-age (25-54)	1,5	88,4	89,0	89,8	90,0	89,9	90,0	89,9
older (55-64)	-2,6	77,1	75,9	73,4	74,2	74,9	74,5	74,6
Participation rate (20-74) - MALES	-0,3	78,0	78,4	78,5	77,9	78,1	76,7	77,8
Participation rate (15-64) - MALES	-1,6	84,0	83,9	82,8	82,7	82,7	82,6	82,4
young (15-24)	-2,0	54,7	52,3	52,7	52,7	52,8	52,4	52,7
prime-age (25-54)	-0,3	93,3	93,2	93,2	93,0	93,0	93,0	93,0
older (55-64)	-1,8	82,7	83,0	80,9	81,3	81,1	80,8	80,9
Average effective exit age (TOTAL) (1)	-0,3	65,3	65,0	65,0	65,0	65,0	65,0	65,0
Men	-0,3	65,9	65,6	65,6	65,6	65,6	65,6	65,6
Women	-0,3	64,7	64,4	64,4	64,4	64,4	64,4	64,4
Employment rate (15-64)	0,2	76,4	77,2	76,7	76,8	76,8	76,7	76,6
Employment rate (20-74)	1,4	70,5	71,8	72,3	71,9	72,2	70,8	71,9
Employment rate (15-74)	0,8	67,2	68,2	68,3	68,0	68,4	67,0	67,9
Unemployment rate (15-64)	-1,4	7,1	5,9	5,8	5,7	5,7	5,7	5,7
Unemployment rate (20-74)	-1,3	6,1	5,0	4,8	4,8	4,8	4,8	4,8
Unemployment rate (15-74)	-1,4	7,0	5,8	5,6	5,6	5,6	5,6	5,6
Employment (20-74) (in millions)	1,4	4,8	5,0	5,3	5,6	5,8	6,0	6,2
Employment (15-64) (in millions)	1,4	4,7	4,9	5,3	5,6	5,8	5,9	6,1
share of young (15-24)	1,1	11%	10%	12%	12%	12%	12%	12%
share of prime-age (25-54)	-1,6	71%	71%	70%	71%	68%	70%	69%
share of older (55-64)	0,6	18%	18%	19%	17%	20%	18%	19%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0,9	18,4	18,7	19,2	18,0	20,5	18,2	19,3
Old-age dependency ratio 15-64 (3)	11,6	31,6	32,6	34,9	37,0	38,1	42,7	43,2
Old-age dependency ratio 20-64 (3)	13,5	34,5	35,8	38,7	41,1	42,1	47,5	48,0
Total dependency ratio (4)	13,5	59,5	61,5	64,0	65,7	67,5	73,0	73,0
Total economic dependency ratio (5)	16,5	101,5	102,1	106,4	108,1	110,6	116,4	118,0
Economic old-age dependency ratio (15-64) (6)	15,0	37,6	38,7	41,8	44,4	46,0	51,3	52,7
Economic old-age dependency ratio (15-74) (7)	14,5	36,3	37,3	40,3	42,9	44,4	49,3	50,8

Sweden		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-1,2	8,2	7,6	7,2	6,8	6,6	7,0	7,0
Of which : Old-age and early pensions	-0,6	6,9	6,7	6,3	6,0	5,8	6,3	6,3
Disability pensions	-0,3	1,0	0,8	0,8	0,8	0,7	0,7	0,7
Survivors pensions	-0,3	0,3	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	0,0
Earnings-related pensions (old age and early pensions), gross	-1,5	6,4	6,2	5,7	5,2	4,8	5,0	4,9
Private occupational pensions, gross	0,2	1,9	2,1	2,6	2,7	2,4	2,3	2,1
Private individual pensions, gross	0,6	0,6	0,7	0,9	1,1	1,2	1,3	1,2
New pensions, gross (Old-age and early pensions)	-0,1	0,3	0,3	0,3	0,3	0,3	0,3	0,3
Public pensions, net	-0,8	6,3	5,8	5,5	5,2	5,1	5,5	5,5
Public pensions, contributions	-0,2	5,9	5,8	5,7	5,7	5,7	5,7	5,7
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	2,4	77,0%	76,3%	76,3%	77,1%	78,1%	79,0%	79,4%
Pensioners (Public, in 1000 persons)	2.348	2.501	2.634	3.049	3.405	3.796	4.421	4.849
Public pensioners aged 65+ (1000 persons)	2.326	2.107	2.273	2.675	3.035	3.396	4.037	4.433
Share of pensioners below age 65 as % of all pensioners (Public)	-7,2	16%	14%	12%	11%	11%	9%	9%
Benefit ratio % (Public pensions)	-16,5	38,6	36,2	31,2	28,0	25,4	23,5	22,1
Gross replacement rate at retirement % (Old-age earnings-related)	-10,3	32,6	32,6	29,2	24,8	23,8	22,3	22,3
Average accrual rates % (new pensions, earnings related)	-0,1	0,9	0,9	0,9	0,9	0,8	0,8	0,8
Average contributory period, years (new pensions, earnings-related)	0,8	39,9	40,5	39,9	37,1	39,6	39,2	40,7
Contributors (Public pensions, in 1000 persons)	1.589	5.762	5.876	6.247	6.635	6.929	7.044	7.351
Support ratio (contributors/100 pensioners, Public pensions)	-79	230	223	205	195	183	159	152
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,3	0,0	0,0	0,0	0,1	0,2	0,2	0,3
Lower fertility (-20%)	1,1	0,0	0,0	0,0	0,1	0,4	0,7	1,1
Higher TFP growth (+0.4 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Lower TFP growth (-0.4 p.p.)	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,0
Higher employment rate (+2 p.p.)	-0,2	0,0	0,0	-0,2	-0,2	-0,1	-0,2	-0,2
Lower employment rate (+2 p.p.)	0,2	0,0	0,0	0,2	0,2	0,2	0,2	0,2
Higher employment rate of older workers (+10 p.p.)	-0,3	0,0	-0,1	-0,4	-0,3	-0,3	-0,3	-0,3
Higher migration (+33%)	-0,3	0,0	-0,1	-0,3	-0,3	-0,3	-0,3	-0,3
Lower migration (-33%)	0,3	0,0	0,1	0,3	0,4	0,4	0,4	0,3
TFP risk scenario (-0.2 p.p.)	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
Policy scenario linking retirement age to life expectancy	-0,7	0,0	-0,1	-0,4	-0,4	-0,5	-0,8	-0,7
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-1,2	8,2	7,6	7,2	6,8	6,6	7,0	7,0
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-1,2		-0,5	-1,0	-1,3	-1,6	-1,2	-1,2
Dependency ratio	2,4		0,3	0,9	1,3	1,5	2,3	2,4
Coverage ratio	0,6		-0,1	0,0	0,0	0,2	0,4	0,6
Of which : Old-age	1,3		0,1	0,3	0,4	0,7	1,0	1,3
Early-age	-1,6		-1,0	-1,1	-1,5	-1,5	-1,6	-1,6
Cohort effect	-2,0		-0,2	-0,8	-1,2	-1,1	-2,2	-2,0
Benefit ratio	-4,0		-0,6	-1,7	-2,4	-3,1	-3,6	-4,0
Labour market ratio	-0,1		-0,1	-0,1	-0,1	-0,1	-0,2	-0,1
Of which : Employment rate	-0,1		-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	0,0
Career shift	0,0		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	-0,1
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-1,2		-0,5	-0,5	-0,4	-0,2	0,4	0,0
Dependency ratio	2,4		0,3	0,6	0,4	0,2	0,8	0,1
Coverage ratio	0,6		-0,1	0,1	0,0	0,2	0,2	0,3
Of which : Old-age	1,3		0,1	0,2	0,1	0,3	0,3	0,3
Early-age	-1,6		-1,0	-0,1	-0,5	0,0	0,0	0,0
Cohort effect	-2,0		-0,2	-0,7	-0,4	0,1	-1,0	0,2
Benefit ratio	-4,0		-0,6	-1,1	-0,7	-0,6	-0,5	-0,4
Labour market ratio	-0,1		-0,1	0,0	0,0	0,0	-0,1	0,1
Of which : Employment rate	-0,1		-0,1	0,0	0,0	0,0	0,0	0,0
Labour intensity	0,0		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	0,0
Interaction effect (residual)	-0,1		0,0	0,0	0,0	0,0	0,0	0,0

Sweden				EC (DG ECFIN) - EPC (AWG) 2018 projections				

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.7	6.9	7.0	7.2	7.4	7.5	7.6	7.7
AWG risk scenario	1.5	6.9	7.1	7.5	7.8	8.1	8.3	8.5
TFP risk scenario	0.7	6.9	7.0	7.2	7.3	7.4	7.5	7.6
Demographic scenario	0.9	6.9	7.0	7.2	7.4	7.5	7.7	7.8
High Life expectancy scenario (variation of Demographic sc.)	1.1	6.9	7.0	7.3	7.4	7.6	7.8	8.0
Healthy ageing scenario	0.2	6.9	7.0	7.0	7.0	7.0	7.1	7.1
Death-related cost scenario	0.6	6.9	7.0	7.2	7.3	7.3	7.5	7.6
Income elasticity scenario	1.2	6.9	7.0	7.3	7.5	7.7	7.9	8.1
EU28 cost convergence scenario	1.0	6.9	7.0	7.3	7.4	7.6	7.7	7.9
Labour intensity scenario	1.6	6.9	7.0	7.5	7.7	7.9	8.3	8.5
Sector-specific composite indexation scenario	1.9	6.9	7.1	7.6	8.0	8.3	8.6	8.8
Non-demographic determinants scenario	2.6	6.9	7.1	7.7	8.2	8.7	9.2	9.5

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.7	3.2	3.3	3.8	4.1	4.3	4.7	4.9
AWG risk scenario	2.5	3.2	3.3	3.9	4.3	4.6	5.2	5.7
TFP risk scenario	1.7	3.2	3.3	3.8	4.1	4.3	4.7	4.9
Demographic scenario	1.6	3.2	3.3	3.8	4.1	4.3	4.6	4.9
Base case scenario	2.1	3.2	3.3	3.9	4.3	4.5	5.0	5.3
High Life expectancy scenario (variation of Base case sc.)	2.7	3.2	3.3	3.9	4.4	4.8	5.4	5.9
Healthy ageing scenario	1.4	3.2	3.3	3.7	4.0	4.1	4.5	4.6
Shift to formal care scenario	2.9	3.2	3.5	4.6	5.0	5.3	5.8	6.1
Coverage convergence scenario	2.5	3.2	3.3	4.0	4.4	4.8	5.3	5.7
Cost convergence scenario	2.5	3.2	3.3	3.9	4.3	4.6	5.2	5.7
Cost and coverage convergence scenario	2.9	3.2	3.3	4.0	4.5	4.8	5.5	6.1
Number of recipients (in thousands)	**Ch 16-70**	**2016**	**2020**	**2030**	**2040**	**2050**	**2060**	**2070**
AWG reference scenario	102%	539	571	714	819	901	1,002	1,090
of which: receiving institutional care	115%	103	109	138	162	180	203	222
receiving home care	99%	198	210	263	299	329	363	395
receiving cash benefits	99%	237	251	313	358	392	436	473

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.4	5.8	5.8	6.0	6.0	6.0	6.2	6.2
Number of students (in thousands)								
Total (students/staff in 2016 = 12,6)	39.3%	2,121	2,230	2,466	2,604	2,713	2,857	2,956
as % of population 5-24	0.1	91.6	94.1	91.0	91.4	91.9	91.8	91.7
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.7	0.0	0.1	0.3	0.6	0.7	0.7	0.7

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.1	0.3	0.3	0.3	0.2	0.2	0.2	0.2

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.6	24.4	24.0	24.4	24.5	24.6	25.7	26.0
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	1.5	0.0	0.1	0.4	0.7	0.9	1.2	1.5
TFP risk scenario (-0.2 p.p.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
High life expectancy (+2 years) (8)	0.7	0.0	0.0	0.1	0.2	0.4	0.5	0.7
Lower fertility (-20%)	1.5	0.0	0.0	-0.3	-0.3	0.2	0.8	1.5
Higher TFP growth (+0.4 p.p.)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Lower TFP growth (-0.4 p.p.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Higher employment rate (+2 p.p)	-0.5	0.0	-0.1	-0.5	-0.5	-0.5	-0.5	-0.5
Lower employment rate (+2 p.p)	0.5	0.0	0.1	0.5	0.5	0.5	0.5	0.5
Higher employment rate of older workers (+10 p.p.)	-0.8	0.0	-0.1	-0.8	-0.7	-0.8	-0.8	-0.8
Higher migration (+33%)	-0.6	0.0	-0.1	-0.4	-0.6	-0.7	-0.7	-0.6
Lower migration (-33%)	0.7	0.0	0.1	0.4	0.7	0.8	0.8	0.7
Policy scenario linking retirement age to life expectancy	-1.6	0.0	-0.1	-0.7	-0.8	-1.1	-1.6	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

28. UNITED KINGDOM

United Kingdom			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,1	1,80	1,80	1,81	1,83	1,84	1,86	1,87
Life expectancy at birth								
males	6,9	79,6	80,2	81,6	83,0	84,2	85,4	86,5
females	6,8	83,3	83,9	85,3	86,7	87,9	89,0	90,1
Life expectancy at 65								
males	4,8	18,8	19,2	20,1	21,1	22,0	22,8	23,6
females	5,2	21,3	21,7	22,8	23,8	24,8	25,7	26,5
Net migration (thousand)	-136,7	244,0	251,5	220,1	181,0	134,2	121,1	107,3
Net migration as % of population	-0,2	0,4	0,4	0,3	0,2	0,2	0,2	0,1
Population (million)	15,4	65,6	67,5	71,8	75,2	77,7	79,4	81,0
Children population (0-14) as % of total population	-1,7	17,7	17,7	17,0	16,7	16,4	16,2	15,9
Prime age population (25-54) as % of total population	-5,5	40,4	39,6	37,8	37,7	36,4	35,8	34,9
Working age population (15-64) as % of total population	-6,8	64,4	63,7	61,8	60,2	59,6	58,4	57,6
Elderly population (65 and over) as % of total population	8,5	18,0	18,6	21,3	23,2	23,9	25,4	26,5
Very elderly population (80 and over) as % of total population	5,8	4,8	5,1	6,6	7,7	9,4	9,6	10,7
Very elderly population (80 and over) as % of elderly population	13,4	26,9	27,4	31,1	33,1	39,2	37,9	40,3
Very elderly population (80 and over) as % of working age population	11,0	7,5	8,0	10,7	12,7	15,8	16,5	18,5
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,7	1,5	1,6	1,8	1,8	1,8	1,6	1,6
Employment 15-74 (growth rate)	0,3	0,9	0,5	0,4	0,3	0,3	0,0	0,0
Labour input : hours worked (growth rate)	0,3	1,1	0,6	0,4	0,3	0,3	0,0	0,0
Labour productivity per hour (growth rate)	1,4	0,5	1,0	1,4	1,5	1,5	1,5	1,5
TFP (growth rate)	0,9	0,3	0,6	0,9	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	0,5
Potential GDP per capita (growth rate)	1,3	0,8	0,9	1,2	1,4	1,5	1,4	1,4
Potential GDP per worker (growth rate)	1,4	0,6	1,0	1,3	1,5	1,5	1,5	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	4.440	42.225	42.959	44.314	45.214	46.314	46.390	46.665
Population growth (working age:15-64)	-0,4	0,5	0,5	0,1	0,4	0,1	0,0	0,1
Population (20-74) (in thousands)	6.032	44.918	46.033	47.874	49.051	49.868	50.831	50.950
Population growth (20-74)	-0,9	0,9	0,5	0,5	0,1	0,3	0,1	0,0
Labour force 15-64 (thousands)	4.774	32.599	33.389	34.828	36.026	37.092	37.161	37.373
Labour force 20-74 (thousands)	5.387	32.248	33.032	34.518	35.808	37.146	37.506	37.635
Participation rate (20-74)	2,1	71,8	71,8	72,1	73,0	74,5	73,8	73,9
Participation rate (15-64)	2,9	77,2	77,7	78,6	79,7	80,1	80,1	80,1
young (15-24)	-1,2	58,6	58,5	57,8	57,4	57,5	57,3	57,4
prime-age (25-54)	3,1	86,1	86,9	88,2	88,9	89,2	89,2	89,2
older (55-64)	8,3	66,0	66,7	68,9	71,1	73,7	73,9	74,2
Participation rate (20-74) - FEMALES	4,7	66,1	66,6	68,0	69,4	71,3	70,8	70,8
Participation rate (15-64) - FEMALES	5,1	72,1	73,0	74,9	76,6	77,2	77,3	77,2
young (15-24)	-1,1	57,6	57,5	57,1	56,6	56,6	56,4	56,5
prime-age (25-54)	5,3	80,1	81,3	83,6	85,0	85,4	85,5	85,5
older (55-64)	12,7	59,4	61,2	65,4	68,3	71,4	71,8	72,1
Participation rate (20-74) - MALES	-0,8	77,6	77,0	76,3	76,6	77,6	76,7	76,8
Participation rate (15-64) - MALES	0,6	82,3	82,4	82,2	82,7	82,9	82,9	82,9
young (15-24)	-1,3	59,5	59,4	58,6	58,2	58,3	58,1	58,2
prime-age (25-54)	0,7	92,2	92,5	92,8	92,8	92,9	92,8	92,8
older (55-64)	3,6	72,8	72,4	72,6	74,0	76,1	76,0	76,4
Average effective exit age (TOTAL) (1)	1,4	64,4	64,7	65,1	65,1	65,8	65,8	65,8
Men	0,8	65,0	64,8	65,1	65,1	65,8	65,8	65,8
Women	2,0	63,8	64,5	65,1	65,1	65,8	65,8	65,8
Employment rate (15-64)	1,8	73,3	73,3	73,7	74,7	75,1	75,1	75,1
Employment rate (20-74)	1,3	68,8	68,3	68,3	69,2	70,6	70,0	70,0
Employment rate (15-74)	0,9	65,8	65,4	65,2	65,9	67,2	66,6	66,7
Unemployment rate (15-64)	1,2	5,0	5,6	6,2	6,2	6,2	6,2	6,2
Unemployment rate (20-74)	1,0	4,2	4,8	5,2	5,2	5,2	5,2	5,2
Unemployment rate (15-74)	1,1	4,9	5,5	6,1	6,1	6,1	6,0	6,0
Employment (20-74) (in millions)	4,8	30,9	31,4	32,7	33,9	35,2	35,6	35,7
Employment (15-64) (in millions)	4,1	31,0	31,5	32,7	33,8	34,8	34,8	35,0
share of young (15-24)	-1,1	13%	13%	13%	12%	12%	12%	12%
share of prime-age (25-54)	-2,3	71%	71%	70%	71%	69%	70%	69%
share of older (55-64)	3,5	16%	17%	17%	17%	19%	18%	19%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2,2	18,0	19,4	19,4	18,3	20,0	19,4	20,2
Old-age dependency ratio 15-64 (3)	18,0	27,9	29,3	34,4	38,5	40,2	43,5	46,0
Old-age dependency ratio 20-64 (3)	20,0	30,7	32,0	38,0	42,5	44,2	48,0	50,7
Total dependency ratio (4)	18,3	55,4	57,0	61,9	66,2	67,7	71,2	73,7
Total economic dependency ratio (5)	14,9	104,8	107,7	111,8	114,2	113,5	116,0	119,7
Economic old-age dependency ratio (15-64) (6)	21,3	34,5	36,8	42,9	47,6	48,8	52,3	55,8
Economic old-age dependency ratio (15-74) (7)	19,7	33,4	35,7	41,3	45,8	46,6	49,6	53,0

United Kingdom			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	1,7	7,7	7,7	8,0	8,6	8,3	8,9	9,5
Of which : Old-age and early pensions	2,1	4,9	5,0	5,4	6,1	6,0	6,5	7,0
Disability pensions	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Survivors pensions	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Other	-0,4	2,8	2,7	2,6	2,5	2,4	2,4	2,5
Earnings-related pensions (old age and early pensions), gross	-1,1	1,1	1,0	0,5	0,2	0,0	0,0	0,0
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	:	:	:	:	:	:	:	:
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	6.403	13.165	12.846	14.186	16.210	16.296	17.608	19.569
Public pensioners aged 65+ (1000 persons)	:	:	:	:	:	:	:	:
Share of pensioners below age 65 as % of all pensioners (Public)	:	:	:	:	:	:	:	:
Benefit ratio % (Public pensions)	0,8	27,8	28,4	28,5	28,9	29,1	29,5	28,5
Gross replacement rate at retirement % (Old-age earnings-related)	:	:	:	:	:	:	:	:
Average accrual rates % (new pensions, earnings related)	:	:	:	:	:	:	:	:
Average contributory period, years (new pensions, earnings-related)	:	:	:	:	:	:	:	:
Contributors (Public pensions, in 1000 persons)	:	:	:	:	:	:	:	:
Support ratio (contributors/100 pensioners, Public pensions)	:	:	:	:	:	:	:	:
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,5	0,0	0,0	0,1	0,2	0,3	0,4	0,5
Lower fertility (-20%)	1,6	0,0	0,0	0,0	0,2	0,5	1,0	1,6
Higher TFP growth (+0.4 p.p.)	-0,4	0,0	0,0	0,0	-0,1	-0,2	-0,3	-0,4
Lower TFP growth (-0.4 p.p.)	0,5	0,0	0,0	0,0	0,1	0,2	0,4	0,5
Higher employment rate (+2 p.p.)	-0,3	0,0	0,0	-0,2	-0,2	-0,2	-0,2	-0,3
Lower employment rate (+2 p.p.)	0,3	0,0	0,0	0,2	0,2	0,2	0,2	0,3
Higher employment rate of older workers (+10 p.p.)	-0,5	0,0	-0,1	-0,4	-0,4	-0,4	-0,5	-0,5
Higher migration (+33%)	-0,5	0,0	-0,1	-0,2	-0,4	-0,5	-0,5	-0,5
Lower migration (-33%)	0,5	0,0	0,1	0,2	0,4	0,5	0,6	0,5
TFP risk scenario (-0.2 p.p.)	0,4	0,0	0,0	0,2	0,2	0,3	0,4	0,4
Policy scenario linking retirement age to life expectancy	-0,6	0,0	0,0	-0,1	-0,2	-0,3	-0,4	-0,6
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	1,7	7,7	7,7	8,0	8,6	8,3	8,9	9,5
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	1,7		-0,1	0,3	0,9	0,6	1,2	1,7
Dependency ratio	3,1		0,2	1,2	1,9	2,2	2,8	3,1
Coverage ratio	-1,1		-0,5	-1,0	-1,0	-1,4	-1,4	-1,1
Of which : Old-age	:		:	:	:	:	:	:
Early-age	:		:	:	:	:	:	:
Cohort effect	-2,6		0,0	-1,2	-1,8	-1,7	-2,3	-2,6
Benefit ratio	0,0		0,0	0,1	0,2	0,2	0,3	0,0
Labour market ratio	-0,3		0,0	-0,1	-0,2	-0,2	-0,3	-0,3
Of which : Employment rate	-0,2		0,0	-0,1	-0,1	-0,2	-0,2	-0,2
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,1		0,0	0,0	0,0	-0,1	-0,1	-0,1
Interaction effect (residual)	-0,1		0,1	0,0	-0,1	-0,2	-0,2	-0,1
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	1,7		-0,1	0,3	0,6	-0,3	0,6	0,5
Dependency ratio	3,1		0,2	1,0	0,7	0,3	0,5	0,4
Coverage ratio	-1,1		-0,5	-0,5	0,0	-0,4	0,0	0,3
Of which : Old-age	0,0		:	:	:	:	:	:
Early-age	0,0		:	:	:	:	:	:
Cohort effect	-2,6		0,0	-1,1	-0,6	0,1	-0,6	-0,3
Benefit ratio	0,0		0,0	0,0	0,1	0,0	0,1	-0,2
Labour market ratio	-0,3		0,0	-0,1	-0,1	-0,1	-0,1	0,0
Of which : Employment rate	-0,2		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	0,0
Career shift	-0,1		0,0	0,0	0,0	0,0	-0,1	0,0
Interaction effect (residual)	-0,1		0,1	-0,1	-0,1	-0,1	0,1	0,0

United Kingdom		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.4	7.9	8.1	8.4	8.8	9.1	9.2	9.4
AWG risk scenario	2.4	7.9	8.1	8.7	9.3	9.8	10.1	10.3
TFP risk scenario	1.4	7.9	8.1	8.4	8.7	9.0	9.1	9.3
Demographic scenario	1.7	7.9	8.1	8.4	8.9	9.2	9.4	9.6
High Life expectancy scenario (variation of Demographic sc.)	2.0	7.9	8.1	8.5	9.0	9.3	9.7	10.0
Healthy ageing scenario	0.7	7.9	8.0	8.2	8.4	8.5	8.5	8.6
Death-related cost scenario	1.4	7.9	8.1	8.4	8.7	9.0	9.2	9.3
Income elasticity scenario	2.0	7.9	8.1	8.5	9.0	9.4	9.7	10.0
EU28 cost convergence scenario	1.7	7.9	8.1	8.4	8.9	9.2	9.4	9.7
Labour intensity scenario	2.3	7.9	8.1	8.6	9.1	9.4	9.8	10.2
Sector-specific composite indexation scenario	4.2	7.9	8.2	9.1	10.2	11.1	11.7	12.2
Non-demographic determinants scenario	3.8	7.9	8.2	8.9	9.7	10.6	11.2	11.7
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.3	1.5	1.6	1.8	2.1	2.4	2.6	2.8
AWG risk scenario	1.8	1.5	1.6	1.9	2.2	2.6	3.0	3.3
TFP risk scenario	1.2	1.5	1.6	1.8	2.1	2.4	2.6	2.7
Demographic scenario	1.1	1.5	1.6	1.8	2.1	2.3	2.5	2.7
Base case scenario	1.3	1.5	1.6	1.8	2.1	2.4	2.6	2.8
High Life expectancy scenario (variation of Base case sc.)	1.6	1.5	1.6	1.9	2.2	2.6	2.9	3.1
Healthy ageing scenario	1.0	1.5	1.5	1.8	2.0	2.2	2.4	2.5
Shift to formal care scenario	2.0	1.5	1.8	2.4	2.7	3.0	3.3	3.5
Coverage convergence scenario	1.3	1.5	1.6	1.8	2.1	2.4	2.6	2.8
Cost convergence scenario	1.9	1.5	1.6	1.9	2.3	2.7	3.0	3.4
Cost and coverage convergence scenario	2.0	1.5	1.6	1.9	2.3	2.7	3.1	3.5
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	97%	3,492	3,707	4,431	5,217	5,969	6,457	6,877
of which: receiving institutional care	116%	644	685	832	1,008	1,183	1,303	1,390
receiving home care	96%	1,243	1,322	1,584	1,860	2,122	2,284	2,438
receiving cash benefits	90%	1,605	1,700	2,015	2,349	2,664	2,870	3,049
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.2	5.2	5.1	5.1	5.1	5.0	5.0	5.0
Number of students (in thousands)								
Total (students/staff in 2016 = 15)	13.1%	13,432	13,666	14,215	14,588	14,881	15,083	15,190
as % of population 5-24	1.0	85.5	85.8	85.3	86.2	86.1	86.3	86.5
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	1.0	0.0	0.1	0.5	0.8	1.0	1.0	1.0
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	4.3	22.5	22.6	23.5	24.8	24.9	25.9	26.8
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	1.5	0.0	0.1	0.4	0.7	1.0	1.2	1.5
TFP risk scenario (-0.2 p.p.)	0.3	0.0	0.0	0.1	0.2	0.2	0.3	0.3
High life expectancy (+2 years) (8)	0.9	0.0	0.0	0.1	0.2	0.4	0.7	0.9
Lower fertility (-20%)	2.0	0.0	0.0	-0.5	-0.3	0.3	1.0	2.0
Higher TFP growth (+0.4 p.p.)	-0.3	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.3
Lower TFP growth (-0.4 p.p.)	0.4	0.0	0.0	0.0	0.1	0.2	0.3	0.4
Higher employment rate (+2 p.p)	-0.5	0.0	-0.1	-0.4	-0.4	-0.4	-0.5	-0.5
Lower employment rate (+2 p.p)	0.5	0.0	0.1	0.4	0.5	0.5	0.5	0.5
Higher employment rate of older workers (+10 p.p.)	-0.9	0.0	-0.1	-0.7	-0.8	-0.8	-0.8	-0.9
Higher migration (+33%)	-0.7	0.0	-0.1	-0.3	-0.5	-0.7	-0.8	-0.7
Lower migration (-33%)	0.8	0.0	0.1	0.4	0.5	0.8	0.9	0.8
Policy scenario linking retirement age to life expectancy	-1.0	0.0	0.0	-0.2	-0.4	-0.5	-0.8	-1.0

LEGENDA:
* The potential GDP and its components are used to estimate the rate of potential output growth, net of normal cyclical variations
The projections for total public pension expenditure include spending on the Public Service Pension schemes (PSPs).
(1) Based on the calculation of the average probability of labour force entry and exit observed. The table reports the value for 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

Norway					EC (DG ECFIN) - EPC (AWG) 2018 projections			
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0,1	1,70	1,74	1,76	1,77	1,79	1,81	1,83
Life expectancy at birth								
males	6,4	80,2	80,8	82,1	83,3	84,4	85,5	86,6
females	6,1	84,3	84,8	86,1	87,2	88,3	89,4	90,4
Life expectancy at 65								
males	4,7	18,8	19,2	20,1	21,0	21,9	22,7	23,5
females	4,9	21,7	22,1	23,1	24,1	25,0	25,8	26,6
Net migration (thousand)	-11,3	27,4	27,3	26,0	23,7	20,2	18,1	16,1
Net migration as % of population	-0,3	0,5	0,5	0,4	0,4	0,3	0,3	0,2
Population (million)	1,8	5,2	5,4	5,9	6,3	6,6	6,8	7,0
Children population (0-14) as % of total population	-2,1	17,8	17,5	16,9	16,5	16,0	15,8	15,7
Prime age population (25-54) as % of total population	-6,2	41,2	41,0	39,1	38,4	36,7	35,8	35,1
Working age population (15-64) as % of total population	-8,4	65,7	64,9	62,9	60,9	60,2	58,4	57,3
Elderly population (65 and over) as % of total population	10,5	16,5	17,5	20,2	22,7	23,8	25,8	27,0
Very elderly population (80 and over) as % of total population	6,5	4,2	4,3	6,1	7,4	8,8	9,7	10,7
Very elderly population (80 and over) as % of elderly population	14,2	25,5	24,5	30,0	32,6	37,0	37,4	39,7
Very elderly population (80 and over) as % of working age population	12,3	6,4	6,6	9,6	12,2	14,7	16,5	18,7
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1,8	2,1	2,0	1,7	1,8	1,8	1,6	1,6
Employment 15-74 (growth rate)	0,3	0,2	1,2	0,4	0,4	0,2	0,0	0,1
Labour input : hours worked (growth rate)	0,3	0,5	2,0	0,4	0,3	0,2	0,0	0,1
Labour productivity per hour (growth rate)	1,5	0,5	0,6	1,3	1,4	1,5	1,5	1,5
TFP (growth rate)	0,9	-0,2	0,4	0,8	0,9	1,0	1,0	1,0
Capital deepening (contribution to labour productivity growth)	0,5	0,6	0,3	0,5	0,5	0,5	0,5	0,5
Potential GDP per capita (growth rate)	1,2	1,2	1,1	1,0	1,2	1,4	1,3	1,3
Potential GDP per worker (growth rate)	1,4	1,4	0,8	1,3	1,4	1,5	1,5	1,5
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	579	3.439	3.524	3.712	3.826	3.962	3.985	4.018
Population growth (working age:15-64)	-0,6	0,7	0,6	0,3	0,4	0,2	0,0	0,1
Population (20-74) (in thousands)	809	3.612	3.746	3.980	4.159	4.280	4.401	4.422
Population growth (20-74)	-1,2	1,2	0,7	0,6	0,3	0,3	0,2	0,0
Labour force 15-64 (thousands)	480	2.683	2.763	2.917	3.014	3.122	3.138	3.163
Labour force 20-74 (thousands)	516	2.650	2.747	2.906	3.009	3.113	3.148	3.166
Participation rate (20-74)	-1,8	73,3	73,3	73,0	72,3	72,7	71,5	71,6
Participation rate (15-64)	0,7	78,0	78,4	78,6	78,8	78,8	78,8	78,7
young (15-24)	0,0	54,9	55,4	55,3	54,6	55,0	54,9	54,8
prime-age (25-54)	1,6	86,4	86,9	87,5	87,9	87,9	87,9	88,0
older (55-64)	-1,1	73,9	72,5	72,1	71,7	73,1	72,6	72,8
Participation rate (20-74) - FEMALES	-0,5	70,0	70,2	70,4	70,1	70,7	69,4	69,5
Participation rate (15-64) - FEMALES	1,7	75,8	76,2	76,8	77,4	77,5	77,5	77,4
young (15-24)	-0,3	55,1	55,3	55,2	54,6	55,0	54,9	54,8
prime-age (25-54)	2,6	83,8	84,4	85,6	86,3	86,3	86,3	86,4
older (55-64)	1,1	70,1	69,1	69,3	69,4	71,4	71,0	71,1
Participation rate (20-74) - MALES	-2,9	76,6	76,4	75,5	74,5	74,7	73,6	73,7
Participation rate (15-64) - MALES	-0,2	80,2	80,5	80,3	80,2	80,1	80,0	80,0
young (15-24)	0,2	54,6	55,5	55,3	54,5	55,0	54,9	54,8
prime-age (25-54)	0,7	88,8	89,2	89,3	89,5	89,4	89,5	89,5
older (55-64)	-3,2	77,7	75,8	74,8	73,9	74,7	74,2	74,4
Average effective exit age (TOTAL) (1)	0,0	65,5	65,5	65,5	65,5	65,5	65,5	65,5
Men	0,0	65,9	65,9	65,9	65,9	65,9	65,9	65,9
Women	0,0	65,1	65,1	65,1	65,1	65,1	65,1	65,1
Employment rate (15-64)	1,8	74,3	75,8	76,0	76,2	76,2	76,1	76,1
Employment rate (20-74)	-0,8	70,3	71,2	70,9	70,3	70,7	69,5	69,6
Employment rate (15-74)	-0,4	67,3	68,4	68,2	67,5	67,9	66,9	66,9
Unemployment rate (15-64)	-1,5	4,8	3,3	3,3	3,3	3,3	3,3	3,3
Unemployment rate (20-74)	-1,3	4,1	2,9	2,9	2,8	2,8	2,8	2,8
Unemployment rate (15-74)	-1,5	4,7	3,2	3,2	3,2	3,2	3,2	3,2
Employment (20-74) (in millions)	0,5	2,5	2,7	2,8	2,9	3,0	3,1	3,1
Employment (15-64) (in millions)	0,5	2,6	2,7	2,8	2,9	3,0	3,0	3,1
share of young (15-24)	-0,4	13%	13%	12%	12%	12%	12%	12%
share of prime-age (25-54)	-1,3	70%	70%	69%	71%	68%	69%	69%
share of older (55-64)	1,7	17%	17%	18%	17%	19%	19%	19%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	2,4	17,8	18,3	19,7	18,7	20,6	20,2	20,2
Old-age dependency ratio 15-64 (3)	22,1	25,2	27,0	32,1	37,3	39,6	44,1	47,2
Old-age dependency ratio 20-64 (3)	24,2	27,8	29,7	35,2	41,0	43,5	48,5	52,0
Total dependency ratio (4)	22,3	52,3	54,0	59,0	64,3	66,1	71,1	74,6
Total economic dependency ratio (5)	21,1	97,8	95,4	100,9	106,5	109,0	114,1	118,9
Economic old-age dependency ratio (15-64) (6)	27,0	30,2	31,7	38,0	44,4	47,7	53,0	57,2
Economic old-age dependency ratio (15-74) (7)	25,5	29,1	30,5	36,5	42,6	45,7	50,5	54,6

Norway		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	2,1	10,7	11,0	11,7	11,9	12,0	12,5	12,8
Of which : Old-age and early pensions	2,7	7,4	7,7	8,6	9,2	9,3	9,8	10,2
Disability pensions	-0,6	3,2	3,2	3,0	2,6	2,7	2,6	2,6
Survivors pensions	0,0	0,1	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	0,0
Earnings-related pensions (old age and early pensions), gross	4,5	4,8	5,1	6,6	8,0	8,4	9,0	9,3
Private occupational pensions, gross	:	:	:	:	:	:	:	:
Private individual pensions, gross	:	:	:	:	:	:	:	:
New pensions, gross (Old-age and early pensions)	0,0	0,4	0,5	0,5	0,4	0,4	0,5	0,4
Public pensions, net	:	:	:	:	:	:	:	:
Public pensions, contributions	2,1	10,7	11,0	11,7	11,9	12,0	12,5	12,8
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	:	:	:	:	:	:	:	:
Pensioners (Public, in 1000 persons)	1.237	1.215	1.314	1.578	1.812	2.033	2.283	2.452
Public pensioners aged 65+ (1000 persons)	1.255	872	967	1.244	1.510	1.712	1.961	2.127
Share of pensioners below age 65 as % of all pensioners (Public)	-15,0	28%	26%	21%	17%	16%	14%	13%
Benefit ratio % (Public pensions)	-14,9	50,6	50,0	46,7	42,7	39,6	37,2	35,8
Gross replacement rate at retirement % (Old-age earnings-related)	:	:	:	:	:	:	:	:
Average accrual rates % (new pensions, earnings related)	0,0	0,9	0,9	1,0	1,0	0,9	0,9	0,9
Average contributory period, years (new pensions, earnings-related)	-2,2	35,9	37,5	36,3	34,8	32,6	33,5	33,8
Contributors (Public pensions, in 1000 persons)	:	:	:	:	:	:	:	:
Support ratio (contributors/100 pensioners, Public pensions)	:	:	:	:	:	:	:	:
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0,2	0,0	0,0	0,1	0,2	0,2	0,2	0,2
Lower fertility (-20%)	1,8	0,0	0,0	0,0	0,3	0,7	1,2	1,8
Higher TFP growth (+0.4 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Lower TFP growth (-0.4 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Higher employment rate (+2 p.p.)	-0,3	0,0	-0,1	-0,3	-0,3	-0,3	-0,3	-0,3
Lower employment rate (+2 p.p.)	0,4	0,0	0,1	0,3	0,4	0,4	0,4	0,4
Higher employment rate of older workers (+10 p.p.)	-0,7	0,0	-0,1	-0,6	-0,6	-0,7	-0,7	-0,7
Higher migration (+33%)	-0,6	0,0	-0,1	-0,4	-0,6	-0,7	-0,6	-0,6
Lower migration (-33%)	0,7	0,0	0,1	0,5	0,7	0,8	0,8	0,7
TFP risk scenario (-0.2 p.p.)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Policy scenario linking retirement age to life expectancy	-1,1	0,0	0,0	-0,3	-0,5	-0,6	-0,9	-1,1
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	2,1	10,7	11,0	11,7	11,9	12,0	12,5	12,8
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	2,1		0,3	1,0	1,2	1,3	1,8	2,1
Dependency ratio	7,6		0,7	2,7	4,6	5,3	6,7	7,6
Coverage ratio	-0,9		-0,2	-0,6	-1,1	-0,9	-0,9	-0,9
Of which : Old-age	1,2		0,1	0,4	0,6	0,9	1,2	1,2
Early-age	-3,2		-0,5	-1,6	-3,2	-3,5	-3,3	-3,2
Cohort effect	-6,2		-0,4	-2,1	-3,8	-3,8	-5,2	-6,2
Benefit ratio	-3,9		0,0	-0,7	-1,7	-2,6	-3,4	-3,9
Labour market ratio	-0,3		-0,2	-0,2	-0,3	-0,3	-0,4	-0,3
Of which : Employment rate	-0,2		-0,2	-0,2	-0,2	-0,2	-0,2	-0,2
Labour intensity	0,0		0,0	0,0	0,0	0,0	0,0	0,0
Career shift	-0,1		0,0	-0,1	-0,1	-0,1	-0,2	-0,1
Interaction effect (residual)	-0,3		0,0	-0,1	-0,2	-0,2	-0,3	-0,3
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	2,1		0,3	0,7	0,2	0,1	0,5	0,3
Dependency ratio	7,6		0,7	2,0	1,9	0,7	1,3	0,9
Coverage ratio	-0,9		-0,2	-0,4	-0,5	0,2	0,0	-0,1
Of which : Old-age	1,2		0,1	0,3	0,2	0,3	0,3	0,1
Early-age	-3,2		-0,5	-1,1	-1,6	-0,3	0,1	0,1
Cohort effect	-6,2		-0,4	-1,7	-1,7	0,0	-1,4	-1,0
Benefit ratio	-3,9		0,0	-0,7	-1,0	-0,9	-0,8	-0,5
Labour market ratio	-0,3		-0,2	0,0	-0,1	0,0	-0,1	0,0
Of which : Employment rate	-0,2		-0,2	0,0	-0,1	0,0	0,0	0,0
Labour intensity	0,0		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	0,0
Interaction effect (residual)	-0,3		0,0	-0,1	-0,1	0,0	0,0	0,0

Norway				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.2	7.7	7.9	8.2	8.4	8.6	8.8	8.9
AWG risk scenario	2.1	7.7	8.0	8.5	9.0	9.4	9.6	9.8
TFP risk scenario	1.2	7.7	7.9	8.2	8.4	8.6	8.7	8.8
Demographic scenario	1.5	7.7	7.9	8.2	8.6	8.8	9.0	9.2
High Life expectancy scenario (variation of Demographic sc.)	1.7	7.7	7.9	8.3	8.6	8.9	9.2	9.4
Healthy ageing scenario	0.5	7.7	7.8	7.9	8.0	8.1	8.1	8.2
Death-related cost scenario	:	7.7	:	:	:	:	:	:
Income elasticity scenario	1.8	7.7	7.9	8.4	8.7	9.1	9.3	9.5
EU28 cost convergence scenario	1.6	7.7	7.9	8.3	8.6	8.8	9.1	9.3
Labour intensity scenario	2.7	7.7	7.8	8.5	9.0	9.4	9.9	10.3
Sector-specific composite indexation scenario	4.1	7.7	8.2	9.2	10.0	10.8	11.4	11.7
Non-demographic determinants scenario	3.5	7.7	8.0	8.8	9.5	10.1	10.7	11.1
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	3.4	3.7	3.8	4.4	5.3	5.9	6.6	7.1
AWG risk scenario	5.2	3.7	3.8	4.6	5.7	6.6	7.8	8.9
TFP risk scenario	3.4	3.7	3.8	4.4	5.3	5.9	6.6	7.1
Demographic scenario	3.1	3.7	3.8	4.4	5.2	5.8	6.4	6.8
Base case scenario	3.9	3.7	3.8	4.5	5.5	6.2	7.0	7.6
High Life expectancy scenario (variation of Base case sc.)	4.8	3.7	3.8	4.6	5.7	6.6	7.7	8.6
Healthy ageing scenario	3.0	3.7	3.7	4.3	5.1	5.7	6.3	6.8
Shift to formal care scenario	4.6	3.7	4.0	5.1	6.1	6.8	7.7	8.3
Coverage convergence scenario	3.9	3.7	3.8	4.5	5.5	6.2	7.0	7.6
Cost convergence scenario	5.8	3.7	3.8	4.7	5.9	6.9	8.2	9.5
Cost and coverage convergence scenario	5.8	3.7	3.8	4.7	5.9	6.9	8.2	9.5
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	122%	367	387	485	588	673	751	815
of which: receiving institutional care	191%	45	48	62	84	101	118	131
receiving home care	110%	200	212	263	312	353	389	420
receiving cash benefits	118%	121	128	159	192	219	244	264
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	-0.3	7.6	7.2	7.0	7.1	7.1	7.1	7.3
Number of students (in thousands)								
Total (students/staff in 2016 = 9)	15.9%	1,165	1,162	1,201	1,260	1,292	1,318	1,351
as % of population 5-24	1.2	89.9	89.7	89.6	90.5	90.3	90.8	91.1
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.4	0.7	0.8	0.8	0.8
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.2	0.6	0.4	0.4	0.4	0.4	0.4	0.4
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	6.3	30.2	30.2	31.8	33.1	34.0	35.4	36.5
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.7	0.0	0.2	0.5	0.9	1.5	2.0	2.7
TFP risk scenario (-0.2 p.p.)	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
High life expectancy (+2 years) (8)	0.9	0.0	0.0	0.1	0.3	0.5	0.7	0.9
Lower fertility (-20%)	2.4	0.0	0.0	-0.4	-0.3	0.4	1.3	2.4
Higher TFP growth (+0.4 p.p.)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Lower TFP growth (-0.4 p.p.)	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
Higher employment rate (+2 p.p)	-0.8	0.0	-0.2	-0.7	-0.7	-0.7	-0.8	-0.8
Lower employment rate (+2 p.p)	1.0	0.0	0.2	0.9	0.9	0.9	1.0	1.0
Higher employment rate of older workers (+10 p.p.)	-1.4	0.0	-0.2	-1.1	-1.2	-1.3	-1.4	-1.4
Higher migration (+33%)	-1.0	0.0	-0.2	-0.6	-0.9	-1.1	-1.2	-1.0
Lower migration (-33%)	1.2	0.0	0.2	0.6	1.0	1.3	1.4	1.2
Policy scenario linking retirement age to life expectancy	-2.3	0.0	-0.1	-0.5	-0.9	-1.3	-1.9	-2.3

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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

30. EURO AREA

Euro-area		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0.2	1.56	1.61	1.67	1.71	1.74	1.76	1.79
Life expectancy at birth								
males	7.1	79.3	80.0	81.4	82.8	84.1	85.3	86.4
females	6.1	84.6	85.1	86.3	87.5	88.6	89.6	90.6
Life expectancy at 65								
males	4.9	18.7	19.1	20.1	21.1	21.9	22.8	23.6
females	4.7	22.2	22.6	23.5	24.4	25.3	26.1	26.9
Net migration (thousand)	-520.3	1148.6	811.8	877.8	855.6	801.2	712.9	628.2
Net migration as % of population	-0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2
Population (million)	5.2	340.3	343.8	349.0	352.2	351.8	348.3	345.6
Children population (0-14) as % of total population	-0.2	15.2	15.0	14.5	14.4	14.6	14.7	14.9
Prime age population (25-54) as % of total population	-7.1	41.1	39.4	36.1	34.6	34.2	34.2	34.0
Working age population (15-64) as % of total population	-8.8	64.8	63.8	60.4	57.2	55.9	56.0	56.0
Elderly population (65 and over) as % of total population	9.0	20.0	21.2	25.1	28.4	29.5	29.3	29.0
Very elderly population (80 and over) as % of total population	6.8	5.9	6.5	7.7	9.6	12.0	12.7	12.7
Very elderly population (80 and over) as % of elderly population	14.4	29.3	30.5	30.7	34.0	40.8	43.4	43.7
Very elderly population (80 and over) as % of working age population	13.6	9.1	10.1	12.7	16.9	21.5	22.7	22.6
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1.3	1.0	1.2	1.0	1.2	1.5	1.5	1.5
Employment 15-74 (growth rate)	0.0	0.7	0.4	-0.1	-0.2	-0.1	-0.1	-0.1
Labour input : hours worked (growth rate)	-0.1	0.5	0.2	-0.1	-0.2	-0.1	-0.1	-0.1
Labour productivity per hour (growth rate)	1.4	0.5	0.9	1.2	1.5	1.6	1.6	1.5
TFP (growth rate)	0.9	0.4	0.6	0.7	0.9	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.1	0.3	0.4	0.5	0.6	0.6	0.5
Potential GDP per capita (growth rate)	1.3	0.7	1.0	0.9	1.2	1.5	1.6	1.5
Potential GDP per worker (growth rate)	1.4	0.4	0.8	1.2	1.5	1.6	1.6	1.6
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-26,869	220,550	219,529	210,879	201,394	196,763	195,087	193,682
Population growth (working age:15-64)	-0.2	0.1	-0.2	-0.6	-0.3	-0.1	0.0	-0.1
Population (20-74) (in thousands)	-22,385	236,866	238,713	237,177	229,276	220,487	216,351	214,481
Population growth (20-74)	-0.3	0.2	0.2	-0.1	-0.5	-0.3	-0.1	0.0
Labour force 15-64 (thousands)	-15,236	160,553	161,256	156,829	150,909	147,567	146,179	145,316
Labour force 20-74 (thousands)	-9,502	159,870	161,548	160,368	155,632	152,159	150,884	150,367
Participation rate (20-74)	2.6	67.5	67.7	67.6	67.9	69.0	69.7	70.1
Participation rate (15-64)	2.2	72.8	73.5	74.4	74.9	75.0	74.9	75.0
young (15-24)	0.6	39.9	40.4	40.5	41.0	40.8	40.4	40.6
prime-age (25-54)	0.8	85.5	85.8	86.0	86.0	86.1	86.2	86.3
older (55-64)	13.2	59.8	63.5	69.8	71.8	72.2	72.7	73.0
Participation rate (20-74) - FEMALES	5.2	61.5	62.1	62.5	63.7	65.2	66.3	66.7
Participation rate (15-64) - FEMALES	4.6	67.3	68.6	70.6	71.7	71.9	71.8	71.9
young (15-24)	0.6	37.5	38.1	38.1	38.6	38.4	38.0	38.2
prime-age (25-54)	2.9	79.6	80.7	81.8	82.2	82.3	82.4	82.5
older (55-64)	17.9	53.0	57.3	65.6	69.2	70.1	70.6	71.0
Participation rate (20-74) - MALES	-0.3	73.5	73.1	71.9	71.5	72.4	73.0	73.2
Participation rate (15-64) - MALES	-0.3	78.3	78.3	78.1	78.1	78.0	77.9	78.0
young (15-24)	0.6	42.2	42.7	42.8	43.3	43.0	42.7	42.9
prime-age (25-54)	-1.5	91.4	91.0	90.0	89.7	89.8	89.8	89.8
older (55-64)	8.0	66.9	70.0	74.1	74.5	74.3	74.8	75.0
Average effective exit age (TOTAL) (1)	2.6	63.4	64.4	65.2	65.5	65.8	65.9	66.0
Men	2.5	63.6	64.4	65.2	65.6	65.8	66.0	66.1
Women	2.8	63.3	64.3	65.1	65.5	65.7	65.9	66.0
Employment rate (15-64)	4.5	65.4	67.0	68.3	69.4	69.9	69.9	69.9
Employment rate (20-74)	4.8	60.9	62.0	62.5	63.2	64.7	65.4	65.7
Employment rate (15-74)	4.3	57.7	58.7	59.2	59.9	61.1	61.6	61.9
Unemployment rate (15-64)	-3.4	10.2	8.8	8.1	7.4	6.7	6.8	6.8
Unemployment rate (20-74)	-3.5	9.8	8.4	7.6	6.9	6.3	6.3	6.3
Unemployment rate (15-74)	-3.5	10.0	8.6	7.8	7.1	6.5	6.5	6.5
Employment (20-74) (in millions)	-3.3	144.3	148.0	148.2	144.9	142.6	141.4	140.9
Employment (15-64) (in millions)	-8.8	144.2	147.1	144.1	139.7	137.6	136.3	135.4
share of young (15-24)	1.2	8%	8%	8%	9%	9%	9%	9%
share of prime-age (25-54)	-4.8	75%	73%	70%	70%	71%	71%	70%
share of older (55-64)	3.6	17%	19%	22%	21%	20%	20%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.7	20.0	21.6	23.0	21.6	20.8	20.5	20.7
Old-age dependency ratio 15-64 (3)	20.9	30.9	33.1	41.5	49.7	52.7	52.3	51.8
Old-age dependency ratio 20-64 (3)	23.3	33.6	36.1	45.3	54.4	57.9	57.5	56.9
Total dependency ratio (4)	24.1	54.3	56.6	65.5	74.9	78.8	78.5	78.4
Total economic dependency ratio (5)	8.7	131.7	128.2	131.4	138.4	141.8	141.5	140.4
Economic old-age dependency ratio (15-64) (6)	22.5	45.3	47.0	56.0	65.7	69.6	68.9	67.8
Economic old-age dependency ratio (15-74) (7)	19.4	44.5	45.9	53.5	62.2	65.8	65.1	63.9

Euro-area			**EC (DG ECFIN) - EPC (AWG) 2018 projections**					
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-0.4	12.3	12.3	13.0	13.5	13.1	12.4	11.9
Of which : Old-age and early pensions	0.3	9.6	9.7	10.5	11.1	10.8	10.3	9.9
Disability pensions	-0.1	0.9	0.9	0.9	0.8	0.8	0.8	0.8
Survivors pensions	-0.6	1.7	1.6	1.5	1.5	1.3	1.2	1.1
Other	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Earnings-related pensions (old age and early pensions), gross	0.3	9.1	9.1	9.9	10.5	10.2	9.7	9.3
Private occupational pensions, gross	0.0	0.4	0.4	0.6	0.6	0.6	0.5	0.5
Private individual pensions, gross	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
New pensions, gross (Old-age and early pensions)	0.0	0.3	0.3	0.4	0.4	0.3	0.3	0.3
Public pensions, net	-0.5	9.7	9.7	10.3	10.6	10.2	9.6	9.3
Public pensions, contributions	0.6	10.3	10.3	10.7	10.9	10.9	10.9	10.9
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	-1.2	79.2%	79.3%	79.1%	78.5%	78.1%	77.9%	78.0%
Pensioners (Public, in 1000 persons)	20,668	87,790	90,722	101,083	110,600	113,689	111,562	108,457
Public pensioners aged 65+ (1000 persons)	26,268	64,126	68,630	80,489	91,332	94,904	93,148	90,394
Share of pensioners below age 65 as % of all pensioners (Public)	-10.3	27%	24%	20%	17%	17%	17%	17%
Benefit ratio % (Public pensions)	-10.6	44.1	43.0	40.4	38.1	35.4	33.9	33.5
Gross replacement rate at retirement % (Old-age earnings-related)	-6.5	45.6	47.2	44.7	41.7	39.3	39.1	39.0
Average accrual rates % (new pensions, earnings related)	-0.1	1.3	1.4	1.3	1.3	1.3	1.2	1.2
Average contributory period, years (new pensions, earnings-related)	2.9	32.7	33.3	33.8	34.3	34.8	35.3	35.6
Contributors (Public pensions, in 1000 persons)	-1,521	140,579	145,568	145,613	142,747	140,351	139,222	139,058
Support ratio (contributors/100 pensioners, Public pensions)	-32	160	160	144	129	123	125	128
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.3	0.0	0.0	0.1	0.1	0.2	0.3	0.3
Lower fertility (-20%)	1.3	0.0	0.0	0.0	0.2	0.7	1.0	1.3
Higher TFP growth (+0.4 p.p.)	-0.7	0.0	0.0	0.0	-0.2	-0.6	-0.7	-0.7
Lower TFP growth (-0.4 p.p.)	0.9	0.0	0.0	0.0	0.3	0.6	0.8	0.9
Higher employment rate (+2 p.p.)	-0.2	0.0	-0.1	-0.3	-0.3	-0.3	-0.3	-0.2
Lower employment rate (+2 p.p.)	0.2	0.0	0.1	0.3	0.3	0.3	0.2	0.2
Higher employment rate of older workers (+10 p.p.)	-0.4	0.0	-0.2	-0.9	-0.8	-0.6	-0.5	-0.4
Higher migration (+33%)	-0.4	0.0	-0.1	-0.2	-0.3	-0.5	-0.5	-0.4
Lower migration (-33%)	0.4	0.0	0.1	0.2	0.4	0.5	0.5	0.4
TFP risk scenario (-0.2 p.p.)	0.4	0.0	0.0	0.1	0.2	0.4	0.4	0.4
Policy scenario linking retirement age to life expectancy	-0.8	0.0	0.0	-0.1	-0.2	-0.4	-0.5	-0.8
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-0.4	12.3	12.3	13.0	13.5	13.1	12.4	11.9
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-0.4		0.0	0.7	1.3	0.8	0.1	-0.4
Dependency ratio	7.1		0.9	3.9	6.4	7.3	7.2	7.1
Coverage ratio	-2.2		-0.4	-1.3	-1.9	-2.0	-2.0	-2.2
Of which : Old-age	-0.5		0.0	-0.3	-0.4	-0.4	-0.4	-0.5
Early-age	-3.0		-1.1	-2.1	-2.7	-2.7	-2.9	-3.0
Cohort effect	-6.7		-0.3	-2.8	-5.6	-6.8	-6.7	-6.7
Benefit ratio	-3.5		-0.1	-0.7	-1.7	-2.7	-3.3	-3.5
Labour market ratio	-1.4		-0.4	-0.9	-1.2	-1.3	-1.4	-1.4
Of which : Employment rate	-0.9		-0.3	-0.6	-0.8	-0.9	-0.9	-0.9
Labour intensity	0.1		0.0	0.0	0.0	0.1	0.1	0.1
Career shift	-0.5		-0.1	-0.3	-0.5	-0.5	-0.5	-0.5
Interaction effect (residual)	-0.4		0.0	-0.2	-0.4	-0.4	-0.4	-0.4
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-0.4	0.0	0.8	0.5	-0.4	-0.7	-0.5	
Dependency ratio	7.1	0.9	3.0	2.5	0.9	-0.1	-0.1	
Coverage ratio	-2.2	-0.4	-0.9	-0.6	-0.1	0.0	-0.1	
Of which : Old-age	-0.5	0.0	-0.3	-0.1	0.0	0.0	-0.2	
Early-age	-3.0	-1.1	-1.1	-0.6	0.0	-0.2	0.0	
Cohort effect	-6.7	-0.3	-2.5	-2.8	-1.2	0.1	0.1	
Benefit ratio	-3.5	-0.1	-0.6	-1.0	-1.0	-0.6	-0.2	
Labour market ratio	-1.4	-0.4	-0.5	-0.3	-0.1	0.0	-0.1	
Of which : Employment rate	-0.9	-0.3	-0.3	-0.2	-0.1	0.0	0.0	
Labour intensity	0.1	0.0	0.0	0.0	0.0	0.0	0.0	
Career shift	-0.5	-0.1	-0.3	-0.1	0.0	0.0	0.0	
Interaction effect (residual)	-0.4	0.0	-0.2	-0.1	0.0	0.0	0.0	

Euro-area		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.7	6.8	6.8	7.1	7.4	7.5	7.5	7.4
AWG risk scenario	1.4	6.8	6.9	7.4	7.8	8.1	8.2	8.1
TFP risk scenario	0.6	6.8	6.8	7.1	7.4	7.5	7.5	7.4
Demographic scenario	0.9	6.8	6.8	7.2	7.5	7.6	7.7	7.7
High Life expectancy scenario (variation of Demographic sc.)	1.1	6.8	6.8	7.2	7.5	7.7	7.8	7.8
Healthy ageing scenario	0.1	6.8	6.8	6.9	7.0	7.1	7.0	6.9
Death-related cost scenario	:	6.8	:	:	:	:	:	:
Income elasticity scenario	1.1	6.8	6.9	7.2	7.6	7.8	7.9	7.9
EU28 cost convergence scenario	1.1	6.8	6.9	7.2	7.5	7.8	7.8	7.9
Labour intensity scenario	1.3	6.8	6.8	7.3	7.8	8.1	8.1	8.1
Sector-specific composite indexation scenario	2.1	6.8	7.0	7.5	8.1	8.6	8.8	8.8
Non-demographic determinants scenario	2.5	6.8	7.0	7.5	8.1	8.7	9.1	9.2
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.1	1.6	1.7	1.9	2.2	2.6	2.7	2.7
AWG risk scenario	2.9	1.6	1.8	2.2	2.7	3.4	4.0	4.5
TFP risk scenario	1.3	1.6	1.7	2.0	2.3	2.7	2.9	2.9
Demographic scenario	1.3	1.6	1.7	2.0	2.3	2.7	2.9	2.9
Base case scenario	1.4	1.6	1.7	2.0	2.4	2.8	3.0	3.0
High Life expectancy scenario (variation of Base case sc.)	1.8	1.6	1.7	2.0	2.5	3.0	3.2	3.4
Healthy ageing scenario	1.1	1.6	1.7	1.9	2.2	2.6	2.7	2.7
Shift to formal care scenario	2.0	1.6	1.9	2.5	2.9	3.4	3.6	3.6
Coverage convergence scenario	2.2	1.6	1.7	2.1	2.6	3.2	3.5	3.8
Cost convergence scenario	2.3	1.6	1.7	2.1	2.6	3.1	3.5	3.9
Cost and coverage convergence scenario	3.2	1.6	1.8	2.2	2.8	3.6	4.2	4.8
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	66%	15,352	16,266	18,497	21,288	24,242	25,549	25,498
of which: receiving institutional care	70%	3,876	4,100	4,656	5,424	6,230	6,605	6,599
receiving home care	78%	4,989	5,323	6,190	7,289	8,308	8,845	8,886
receiving cash benefits	54%	6,487	6,842	7,651	8,575	9,703	10,099	10,013
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.0	4.3	4.2	4.1	4.2	4.2	4.3	4.3
Number of students (in thousands)								
Total (students/staff in 2016 = 232.2)	-2.4%	60,198	59,536	58,441	58,126	58,625	58,766	58,727
as % of population 5-24	-0.8	84.1	83.4	82.8	83.3	83.5	83.3	83.3
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.4	0.7	0.8	0.8	0.8
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.2	1.1	0.9	0.9	0.9	0.8	0.8	0.8
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.1	26.0	25.9	27.0	28.2	28.2	27.6	27.1
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.5	0.0	0.1	0.5	0.9	1.4	1.9	2.5
TFP risk scenario (-0.2 p.p.)	0.6	0.0	0.0	0.1	0.3	0.5	0.5	0.6
High life expectancy (+2 years) (8)	0.8	0.0	0.0	0.1	0.2	0.5	0.7	0.8
Lower fertility (-20%)	1.8	0.0	0.1	-0.2	0.0	0.7	1.2	1.8
Higher TFP growth (+0.4 p.p.)	-0.4	0.0	0.1	0.1	-0.1	-0.3	-0.4	-0.4
Lower TFP growth (-0.4 p.p.)	1.0	0.0	0.0	0.1	0.4	0.8	1.0	1.0
Higher employment rate (+2 p.p)	-0.4	0.0	-0.1	-0.7	-0.7	-0.6	-0.6	-0.4
Lower employment rate (+2 p.p)	0.9	0.0	0.2	0.9	0.9	0.9	0.9	0.9
Higher employment rate of older workers (+10 p.p.)	-0.5	0.0	-0.2	-1.2	-1.0	-0.8	-0.6	-0.5
Higher migration (+33%)	-0.4	0.0	-0.1	-0.2	-0.4	-0.5	-0.5	-0.4
Lower migration (-33%)	0.9	0.0	0.1	0.3	0.6	0.9	0.9	0.9
Policy scenario linking retirement age to life expectancy	-0.8	0.0	0.0	-0.1	-0.2	-0.3	-0.5	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

31. EUROPEAN UNION 27

EU27				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0.3	1.55	1.61	1.67	1.71	1.74	1.77	1.80
Life expectancy at birth								
males	7.9	78.2	78.9	80.6	82.1	83.5	84.8	86.1
females	6.6	83.7	84.3	85.7	87.0	88.2	89.3	90.3
Life expectancy at 65								
males	5.3	18.0	18.5	19.6	20.6	21.6	22.5	23.4
females	5.1	21.6	22.0	23.0	24.0	25.0	25.8	26.7
Net migration (thousand)	-543.4	1240.8	875.6	937.2	973.4	919.1	793.4	697.4
Net migration as % of population	-0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Population (million)	-6.1	445.3	448.7	452.4	453.3	450.8	445.0	439.2
Children population (0-14) as % of total population	-0.3	15.2	15.1	14.6	14.4	14.6	14.7	14.9
Prime age population (25-54) as % of total population	-7.5	41.3	40.0	36.6	34.8	34.0	34.0	33.9
Working age population (15-64) as % of total population	-9.4	65.3	64.1	60.9	57.9	56.1	55.7	55.9
Elderly population (65 and over) as % of total population	9.7	19.5	20.8	24.6	27.8	29.3	29.6	29.2
Very elderly population (80 and over) as % of total population	7.4	5.5	6.1	7.4	9.4	11.5	12.5	12.9
Very elderly population (80 and over) as % of elderly population	15.8	28.3	29.1	30.1	34.0	39.2	42.4	44.1
Very elderly population (80 and over) as % of working age population	14.6	8.4	9.4	12.1	16.3	20.5	22.5	23.0
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1.3	1.3	1.4	1.2	1.2	1.4	1.5	1.4
Employment 15-74 (growth rate)	-0.1	0.7	0.3	-0.2	-0.3	-0.2	-0.1	-0.1
Labour input : hours worked (growth rate)	-0.2	0.5	0.1	-0.2	-0.4	-0.3	-0.1	-0.1
Labour productivity per hour (growth rate)	1.5	0.7	1.1	1.4	1.6	1.7	1.6	1.6
TFP (growth rate)	0.9	0.5	0.7	0.9	1.0	1.1	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.2	0.4	0.5	0.6	0.6	0.6	0.6
Potential GDP per capita (growth rate)	1.4	1.0	1.3	1.2	1.3	1.5	1.6	1.6
Potential GDP per worker (growth rate)	1.5	0.6	1.1	1.4	1.6	1.7	1.6	1.6
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-45,127	290,697	287,478	275,374	262,255	252,854	247,841	245,570
Population growth (working age:15-64)	0.0	-0.1	-0.3	-0.6	-0.4	-0.3	-0.1	-0.1
Population (20-74) (in thousands)	-40,782	312,277	313,537	308,043	297,259	285,102	276,485	271,494
Population growth (20-74)	-0.2	0.1	0.1	-0.2	-0.4	-0.4	-0.2	-0.1
Labour force 15-64 (thousands)	-27,399	210,159	210,177	203,364	194,287	187,918	184,421	182,760
Labour force 20-74 (thousands)	-21,201	209,786	210,964	207,665	200,053	193,655	190,196	188,586
Participation rate (20-74)	2.3	67.2	67.3	67.4	67.3	67.9	68.8	69.5
Participation rate (15-64)	2.1	72.3	73.1	73.9	74.1	74.3	74.4	74.4
young (15-24)	0.8	39.2	39.5	39.6	40.1	40.1	39.7	40.0
prime-age (25-54)	0.9	85.4	85.8	85.9	86.0	86.2	86.2	86.3
older (55-64)	12.5	58.2	61.8	67.9	68.9	69.5	70.6	70.8
Participation rate (20-74) - FEMALES	4.9	60.6	61.0	61.8	62.3	63.2	64.6	65.5
Participation rate (15-64) - FEMALES	4.1	66.6	67.8	69.5	70.1	70.5	70.7	70.7
young (15-24)	0.9	36.3	36.7	36.7	37.3	37.4	37.0	37.2
prime-age (25-54)	2.6	79.5	80.4	81.4	81.7	81.9	82.0	82.1
older (55-64)	16.4	51.0	55.0	62.9	64.8	65.9	67.2	67.4
Participation rate (20-74) - MALES	-0.4	73.6	73.2	72.3	71.6	72.0	72.7	73.2
Participation rate (15-64) - MALES	0.0	78.0	78.3	78.1	77.9	78.0	78.0	78.0
young (15-24)	0.6	41.9	42.2	42.3	42.7	42.7	42.2	42.5
prime-age (25-54)	-1.0	91.3	91.1	90.4	90.2	90.3	90.3	90.3
older (55-64)	8.2	65.9	68.9	73.1	73.1	73.2	73.9	74.0
Average effective exit age (TOTAL) (1)	2.3	63.3	64.1	64.8	65.2	65.4	65.5	65.6
Men	2.1	63.7	64.4	65.1	65.4	65.6	65.7	65.8
Women	2.5	63.0	63.8	64.6	65.0	65.2	65.3	65.4
Employment rate (15-64)	3.9	65.6	67.3	68.3	68.9	69.5	69.5	69.5
Employment rate (20-74)	4.0	61.2	62.2	62.6	62.9	63.8	64.7	65.3
Employment rate (15-74)	3.5	57.9	58.9	59.3	59.5	60.3	60.9	61.5
Unemployment rate (15-64)	-2.7	9.3	7.9	7.6	7.0	6.5	6.5	6.6
Unemployment rate (20-74)	-2.8	8.8	7.5	7.1	6.5	6.0	6.0	6.0
Unemployment rate (15-74)	-2.8	9.1	7.8	7.3	6.8	6.2	6.3	6.3
Employment (20-74) (in millions)	-14.0	191.2	195.1	192.9	187.0	182.0	178.7	177.2
Employment (15-64) (in millions)	-19.9	190.7	193.5	187.9	180.6	175.7	172.4	170.8
share of young (15-24)	1.2	8%	8%	8%	9%	9%	9%	9%
share of prime-age (25-54)	-4.7	75%	74%	71%	70%	71%	71%	71%
share of older (55-64)	3.5	17%	18%	21%	21%	20%	20%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.7	20.1	21.1	22.5	22.1	21.4	20.4	20.8
Old-age dependency ratio 15-64 (3)	22.4	29.9	32.5	40.3	48.0	52.3	53.1	52.2
Old-age dependency ratio 20-64 (3)	25.0	32.5	35.3	44.0	52.6	57.3	58.4	57.5
Total dependency ratio (4)	25.7	53.2	56.1	64.3	72.9	78.3	79.5	78.9
Total economic dependency ratio (5)	14.1	129.1	126.2	130.6	138.0	143.1	144.3	143.2
Economic old-age dependency ratio (15-64) (6)	25.8	43.5	45.7	54.6	64.2	69.6	70.6	69.3
Economic old-age dependency ratio (15-74) (7)	22.8	42.7	44.6	52.3	60.9	65.9	66.8	65.5

EU27		EC (DG ECFIN) - EPC (AWG) 2018 projections						
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-0.5	11.9	11.8	12.3	12.7	12.4	11.8	11.4
Of which : Old-age and early pensions	0.2	9.3	9.3	10.0	10.5	10.3	9.9	9.5
Disability pensions	-0.1	0.9	0.9	0.9	0.9	0.8	0.8	0.8
Survivors pensions	-0.6	1.5	1.4	1.3	1.3	1.2	1.1	0.9
Other	-0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Earnings-related pensions (old age and early pensions), gross	0.1	8.6	8.7	9.3	9.7	9.5	9.1	8.8
Private occupational pensions, gross	0.1	0.5	0.6	0.7	0.8	0.8	0.7	0.7
Private individual pensions, gross	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
New pensions, gross (Old-age and early pensions)	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Public pensions, net	-0.5	9.3	9.3	9.7	10.0	9.7	9.2	8.8
Public pensions, contributions	0.4	9.7	9.7	9.9	10.1	10.0	10.0	10.1
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	-1.0	78.6%	78.8%	78.7%	78.1%	77.8%	77.6%	77.7%
Pensioners (Public, in 1000 persons)	25,751	114,880	118,765	130,506	141,963	146,813	145,031	140,631
Public pensioners aged 65+ (1000 persons)	34,987	82,997	89,363	103,654	116,421	122,582	122,121	117,984
Share of pensioners below age 65 as % of all pensioners (Public)	-11.6	28%	25%	21%	18%	17%	16%	16%
Benefit ratio % (Public pensions)	-11.0	44.1	42.5	39.5	37.2	34.9	33.5	33.1
Gross replacement rate at retirement % (Old-age earnings-related)	-7.0	45.1	46.3	43.5	40.5	38.6	38.3	38.1
Average accrual rates % (new pensions, earnings related)	-0.1	1.4	1.4	1.4	1.3	1.3	1.3	1.3
Average contributory period, years (new pensions, earnings-related)	2.7	35.4	35.9	36.7	37.0	37.5	37.9	38.1
Contributors (Public pensions, in 1000 persons)	-10,217	182,617	188,398	186,297	181,034	176,069	173,098	172,400
Support ratio (contributors/100 pensioners, Public pensions)	-36	159	159	143	128	120	119	123
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.3	0.0	0.0	0.1	0.1	0.2	0.3	0.3
Lower fertility (-20%)	1.3	0.0	0.0	0.0	0.2	0.6	1.0	1.3
Higher TFP growth (+0.4 p.p.)	-0.7	0.0	0.0	0.0	-0.2	-0.5	-0.6	-0.7
Lower TFP growth (-0.4 p.p.)	0.8	0.0	0.0	0.0	0.3	0.6	0.8	0.8
Higher employment rate (+2 p.p.)	-0.2	0.0	-0.1	-0.3	-0.3	-0.3	-0.2	-0.2
Lower employment rate (+2 p.p.)	0.2	0.0	0.1	0.3	0.3	0.3	0.2	0.2
Higher employment rate of older workers (+10 p.p.)	-0.4	0.0	-0.2	-0.8	-0.7	-0.6	-0.4	-0.4
Higher migration (+33%)	-0.4	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4
Lower migration (-33%)	0.4	0.0	0.1	0.2	0.4	0.5	0.5	0.4
TFP risk scenario (-0.2 p.p.)	0.4	0.0	0.0	0.1	0.3	0.4	0.4	0.4
Policy scenario linking retirement age to life expectancy	-0.8	0.0	0.0	-0.2	-0.3	-0.4	-0.6	-0.8
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-0.5	11.9	11.8	12.3	12.7	12.4	11.8	11.4
Public pensions, gross as % of GDP - p.p. ch. from 2016 due to :	-0.5		-0.1	0.4	0.9	0.5	-0.1	-0.5
Dependency ratio	6.7		1.0	3.5	5.6	6.6	6.9	6.7
Coverage ratio	-2.1		-0.4	-1.3	-1.7	-1.9	-2.0	-2.1
Of which : Old-age	-0.4		0.0	-0.3	-0.4	-0.3	-0.3	-0.4
Early-age	-3.0		-1.0	-2.2	-2.6	-2.6	-3.0	-3.0
Cohort effect	-6.1		-0.5	-2.4	-4.5	-5.9	-6.3	-6.1
Benefit ratio	-3.7		-0.2	-0.9	-1.9	-2.9	-3.5	-3.7
Labour market ratio	-1.1		-0.3	-0.7	-0.9	-1.0	-1.0	-1.1
Of which : Employment rate	-0.7		-0.3	-0.5	-0.6	-0.7	-0.7	-0.7
Labour intensity	0.1		0.0	0.0	0.1	0.1	0.1	0.1
Career shift	-0.4		-0.1	-0.3	-0.4	-0.4	-0.4	-0.4
Interaction effect (residual)	-0.4		-0.1	-0.2	-0.3	-0.3	-0.4	-0.4
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-0.5		-0.1	0.5	0.4	-0.3	-0.6	-0.4
Dependency ratio	6.7		1.0	2.5	2.1	1.0	0.2	-0.2
Coverage ratio	-2.1		-0.4	-0.8	-0.5	-0.2	-0.1	-0.1
Of which : Old-age	-0.4		0.0	-0.3	-0.1	0.0	0.0	-0.1
Early-age	-3.0		-1.0	-1.2	-0.3	-0.1	-0.4	0.0
Cohort effect	-6.1		-0.5	-1.9	-2.1	-1.4	-0.4	0.2
Benefit ratio	-3.7		-0.2	-0.7	-0.9	-1.0	-0.6	-0.2
Labour market ratio	-1.1		-0.3	-0.4	-0.2	-0.1	0.0	0.0
Of which : Employment rate	-0.7		-0.3	-0.2	-0.1	-0.1	0.0	0.0
Labour intensity	0.1		0.0	0.0	0.0	0.0	0.0	0.0
Career shift	-0.4		-0.1	-0.2	-0.1	0.0	0.0	0.0
Interaction effect (residual)	-0.4		-0.1	-0.1	-0.1	-0.1	-0.1	0.0

EU27				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Health care								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.7	6.6	6.7	6.9	7.2	7.3	7.3	7.3
AWG risk scenario	1.4	6.6	6.8	7.2	7.6	7.9	8.0	8.0
TFP risk scenario	0.7	6.6	6.7	6.9	7.2	7.3	7.3	7.3
Demographic scenario	0.9	6.6	6.7	7.0	7.3	7.4	7.5	7.5
High Life expectancy scenario (variation of Demographic sc.)	1.1	6.6	6.7	7.0	7.3	7.5	7.6	7.7
Healthy ageing scenario	0.1	6.6	6.6	6.7	6.8	6.9	6.8	6.7
Death-related cost scenario	:	6.6	:	:	:	:	:	:
Income elasticity scenario	1.1	6.6	6.7	7.1	7.4	7.6	7.7	7.8
EU28 cost convergence scenario	1.2	6.6	6.7	7.0	7.4	7.6	7.7	7.8
Labour intensity scenario	1.4	6.6	6.6	7.1	7.6	7.9	8.0	8.0
Sector-specific composite indexation scenario	2.1	6.6	6.8	7.3	7.9	8.4	8.6	8.7
Non-demographic determinants scenario	2.5	6.6	6.8	7.4	8.0	8.6	8.9	9.1
Long-term care								
Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.1	1.6	1.7	1.9	2.3	2.5	2.7	2.7
AWG risk scenario	2.9	1.6	1.7	2.2	2.7	3.4	3.9	4.5
TFP risk scenario	1.3	1.6	1.7	2.0	2.3	2.7	2.9	2.9
Demographic scenario	1.3	1.6	1.7	2.0	2.3	2.6	2.8	2.9
Base case scenario	1.5	1.6	1.7	2.0	2.4	2.7	3.0	3.1
High Life expectancy scenario (variation of Base case sc.)	1.8	1.6	1.7	2.0	2.5	2.9	3.2	3.4
Healthy ageing scenario	1.1	1.6	1.7	1.9	2.2	2.5	2.7	2.7
Shift to formal care scenario	2.1	1.6	1.9	2.5	2.9	3.3	3.6	3.7
Coverage convergence scenario	2.2	1.6	1.7	2.1	2.6	3.1	3.5	3.8
Cost convergence scenario	2.3	1.6	1.7	2.1	2.6	3.1	3.5	3.9
Cost and coverage convergence scenario	3.2	1.6	1.8	2.2	2.8	3.5	4.1	4.8
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	67%	19,531	20,670	23,617	27,150	30,491	32,236	32,546
of which: receiving institutional care	68%	4,757	5,021	5,710	6,613	7,489	7,956	7,987
receiving home care	78%	5,825	6,209	7,245	8,497	9,613	10,271	10,379
receiving cash benefits	58%	8,949	9,440	10,662	12,040	13,390	14,009	14,180
Education								
Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.0	4.4	4.2	4.2	4.3	4.3	4.4	4.4
Number of students (in thousands)								
Total (students/staff in 2016 = 329.1)	-5.2%	78,422	77,279	75,880	74,634	74,560	74,754	74,343
as % of population 5-24	-0.3	83.4	83.1	82.4	82.9	83.2	83.1	83.1
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.4	0.6	0.8	0.8	0.8
Unemployment benefit								
Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.2	0.9	0.8	0.8	0.7	0.7	0.7	0.7
Total cost of ageing								
As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.1	25.4	25.2	26.1	27.2	27.3	27.0	26.6
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.5	0.0	0.1	0.5	0.9	1.4	1.9	2.5
TFP risk scenario (-0.2 p.p.)	0.5	0.0	0.0	0.2	0.3	0.5	0.5	0.5
High life expectancy (+2 years) (8)	0.8	0.0	0.0	0.1	0.2	0.4	0.6	0.8
Lower fertility (-20%)	1.8	0.0	0.0	-0.2	-0.1	0.6	1.2	1.8
Higher TFP growth (+0.4 p.p.)	-0.4	0.0	0.1	0.1	-0.1	-0.3	-0.4	-0.4
Lower TFP growth (-0.4 p.p.)	0.9	0.0	0.0	0.1	0.3	0.7	0.9	0.9
Higher employment rate (+2 p.p)	-0.4	0.0	-0.1	-0.7	-0.6	-0.6	-0.5	-0.4
Lower employment rate (+2 p.p)	0.8	0.0	0.1	0.8	0.8	0.9	0.8	0.8
Higher employment rate of older workers (+10 p.p.)	-0.5	0.0	-0.2	-1.1	-1.0	-0.8	-0.6	-0.5
Higher migration (+33%)	-0.3	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.3
Lower migration (-33%)	0.7	0.0	0.1	0.3	0.5	0.7	0.8	0.7
Policy scenario linking retirement age to life expectancy	-0.9	0.0	0.0	-0.1	-0.3	-0.5	-0.6	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

32. EUROPEAN UNION*

EU28			EC (DG ECFIN) - EPC (AWG) 2018 projections					
Main demographic and macroeconomic assumptions								
Demographic projections (EUROSTAT)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Fertility rate	0.2	1.58	1.63	1.69	1.73	1.76	1.78	1.81
Life expectancy at birth								
males	7.8	78.3	79.1	80.7	82.2	83.6	84.9	86.1
females	6.6	83.7	84.3	85.6	86.9	88.1	89.2	90.3
Life expectancy at 65								
males	5.3	18.1	18.6	19.7	20.7	21.6	22.6	23.4
females	5.1	21.5	22.0	23.0	24.0	24.9	25.8	26.6
Net migration (thousand)	-680.1	1484.8	1127.1	1157.2	1154.3	1053.3	914.6	804.7
Net migration as % of population	-0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Population (million)	9.3	510.9	516.1	524.1	528.5	528.4	524.4	520.3
Children population (0-14) as % of total population	-0.5	15.5	15.4	14.9	14.7	14.9	14.9	15.0
Prime age population (25-54) as % of total population	-7.2	41.2	39.9	36.8	35.2	34.4	34.3	34.0
Working age population (15-64) as % of total population	-9.0	65.2	64.0	61.0	58.2	56.6	56.1	56.2
Elderly population (65 and over) as % of total population	9.5	19.3	20.5	24.1	27.1	28.5	29.0	28.8
Very elderly population (80 and over) as % of total population	7.1	5.4	5.9	7.3	9.2	11.2	12.1	12.5
Very elderly population (80 and over) as % of elderly population	15.5	28.1	28.9	30.2	33.9	39.2	41.8	43.6
Very elderly population (80 and over) as % of working age population	14.0	8.3	9.3	11.9	15.8	19.8	21.6	22.3
Macroeconomic assumptions*	AVG 16-70	2016	2020	2030	2040	2050	2060	2070
Potential Real GDP (growth rate)	1.4	1.3	1.4	1.3	1.3	1.5	1.5	1.5
Employment 15-74 (growth rate)	-0.1	0.7	0.3	-0.1	-0.2	-0.1	-0.1	-0.1
Labour input : hours worked (growth rate)	-0.1	0.6	0.2	-0.1	-0.3	-0.2	-0.1	-0.1
Labour productivity per hour (growth rate)	1.5	0.6	1.1	1.4	1.6	1.6	1.6	1.6
TFP (growth rate)	0.9	0.5	0.7	0.9	1.0	1.0	1.0	1.0
Capital deepening (contribution to labour productivity growth)	0.5	0.1	0.4	0.5	0.6	0.6	0.6	0.6
Potential GDP per capita (growth rate)	1.4	1.0	1.2	1.2	1.3	1.5	1.6	1.5
Potential GDP per worker (growth rate)	1.5	0.6	1.1	1.4	1.6	1.6	1.6	1.6
Labour force assumptions	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Population (15-64) (in thousands)	-40,687	332,922	330,438	319,688	307,470	299,168	294,231	292,235
Population growth (working age:15-64)	0.0	0.0	-0.2	-0.5	-0.3	-0.2	-0.1	-0.1
Population (20-74) (in thousands)	-34,751	357,195	359,570	355,917	346,309	334,970	327,316	322,444
Population growth (20-74)	-0.3	0.2	0.1	-0.1	-0.4	-0.3	-0.2	-0.1
Labour force 15-64 (thousands)	-22,626	242,758	243,566	238,193	230,313	225,010	221,582	220,133
Labour force 20-74 (thousands)	-15,814	242,034	243,995	242,182	235,861	230,801	227,703	226,220
Participation rate (20-74)	2.4	67.8	67.9	68.0	68.1	68.9	69.6	70.2
Participation rate (15-64)	2.4	72.9	73.7	74.5	74.9	75.2	75.3	75.3
young (15-24)	0.8	42.0	42.3	42.4	42.8	42.9	42.5	42.8
prime-age (25-54)	1.2	85.5	85.9	86.2	86.5	86.6	86.7	86.7
older (55-64)	12.2	59.1	62.4	68.0	69.2	70.1	71.1	71.3
Participation rate (20-74) - FEMALES	4.9	61.4	61.8	62.6	63.3	64.4	65.5	66.3
Participation rate (15-64) - FEMALES	4.5	67.3	68.5	70.3	71.1	71.5	71.7	71.8
young (15-24)	1.0	39.4	39.8	39.9	40.3	40.5	40.1	40.4
prime-age (25-54)	3.1	79.6	80.5	81.7	82.2	82.4	82.6	82.6
older (55-64)	16.2	52.0	55.7	63.2	65.2	66.7	67.9	68.2
Participation rate (20-74) - MALES	-0.3	74.1	73.7	72.8	72.3	72.9	73.3	73.8
Participation rate (15-64) - MALES	0.2	78.5	78.9	78.7	78.6	78.8	78.8	78.8
young (15-24)	0.6	44.5	44.6	44.7	45.1	45.2	44.8	45.1
prime-age (25-54)	-0.7	91.4	91.3	90.7	90.6	90.7	90.7	90.7
older (55-64)	7.7	66.7	69.3	73.0	73.2	73.6	74.2	74.4
Average effective exit age (TOTAL) (1)	2.2	63.5	64.2	64.9	65.1	65.4	65.6	65.6
Men	2.0	63.9	64.4	65.1	65.3	65.6	65.7	65.8
Women	2.4	63.1	63.9	64.6	65.0	65.2	65.4	65.5
Employment rate (15-64)	3.9	66.6	68.1	69.0	69.7	70.4	70.4	70.4
Employment rate (20-74)	3.8	62.2	63.0	63.4	63.8	64.9	65.5	66.0
Employment rate (15-74)	3.4	58.9	59.8	60.1	60.5	61.4	61.8	62.3
Unemployment rate (15-64)	-2.2	8.7	7.6	7.4	6.9	6.5	6.5	6.5
Unemployment rate (20-74)	-2.3	8.2	7.2	6.8	6.3	5.9	5.9	5.9
Unemployment rate (15-74)	-2.3	8.5	7.5	7.2	6.6	6.2	6.2	6.2
Employment (20-74) (in millions)	-9.2	222.1	226.5	225.7	221.0	217.2	214.3	212.9
Employment (15-64) (in millions)	-15.8	221.7	225.0	220.6	214.4	210.5	207.2	205.8
share of young (15-24)	1.0	9%	9%	9%	9%	9%	10%	10%
share of prime-age (25-54)	-4.5	75%	73%	70%	70%	71%	71%	70%
share of older (55-64)	3.5	16%	18%	21%	20%	20%	19%	20%
Dependency ratios	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Share of older population (55-64) (2)	0.9	19.8	20.9	22.1	21.6	21.1	20.2	20.7
Old-age dependency ratio 15-64 (3)	21.6	29.6	32.1	39.5	46.6	50.4	51.6	51.2
Old-age dependency ratio 20-64 (3)	24.2	32.2	34.9	43.2	51.1	55.3	56.8	56.4
Total dependency ratio (4)	24.6	53.5	56.2	64.0	71.9	76.6	78.2	78.0
Total economic dependency ratio (5)	13.5	125.6	123.6	127.8	134.3	138.2	139.5	139.2
Economic old-age dependency ratio (15-64) (6)	24.7	42.2	44.5	52.9	61.6	66.2	67.5	67.0
Economic old-age dependency ratio (15-74) (7)	22.0	41.4	43.4	50.7	58.5	62.8	63.9	63.4

EU28				EC (DG ECFIN) - EPC (AWG) 2018 projections				
Pension expenditure projections								
Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross	-0.2	11.2	11.1	11.6	12.0	11.7	11.3	11.0
Of which : Old-age and early pensions	0.4	8.6	8.7	9.3	9.8	9.5	9.3	9.1
Disability pensions	-0.1	0.8	0.8	0.7	0.7	0.7	0.7	0.7
Survivors pensions	-0.5	1.2	1.2	1.1	1.0	1.0	0.9	0.8
Other	-0.1	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Earnings-related pensions (old age and early pensions), gross	-0.3	7.4	7.5	7.9	8.1	7.8	7.5	7.2
Private occupational pensions, gross	0.1	0.5	0.5	0.6	0.7	0.6	0.6	0.6
Private individual pensions, gross	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
New pensions, gross (Old-age and early pensions)	0.0	0.2	0.2	0.3	0.3	0.3	0.3	0.2
Public pensions, net	-0.6	7.9	7.8	8.1	8.3	8.0	7.5	7.2
Public pensions, contributions	0.1	8.1	8.1	8.3	8.3	8.3	8.2	8.2
Additional indicators	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, net/Public pensions, gross, %	-4.3	70.0%	70.3%	69.9%	68.6%	68.0%	66.7%	65.7%
Pensioners (Public, in 1000 persons)	32,154	128,045	131,611	144,692	158,173	163,109	162,639	160,199
Public pensioners aged 65+ (1000 persons)	34,987	82,997	89,363	103,654	116,421	122,582	122,121	117,984
Share of pensioners below age 65 as % of all pensioners (Public)	-8.8	35%	32%	28%	26%	25%	25%	26%
Benefit ratio % (Public pensions)	-10.6	43.5	42.0	39.1	36.9	34.7	33.4	32.9
Gross replacement rate at retirement % (Old-age earnings-related)	-7.0	45.1	46.3	43.5	40.5	38.6	38.3	38.1
Average accrual rates % (new pensions, earnings related)	-0.1	1.4	1.4	1.4	1.3	1.3	1.3	1.3
Average contributory period, years (new pensions, earnings-related)	2.7	35.4	35.9	36.7	37.0	37.5	37.9	38.1
Contributors (Public pensions, in 1000 persons)	-10,217	182,617	188,398	186,297	181,034	176,069	173,098	172,400
Support ratio (contributors/100 pensioners, Public pensions)	-35	143	143	129	114	108	106	108
Public pensions, gross as % of GDP (difference from Baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
High life expectancy (+2 years)	0.4	0.0	0.0	0.1	0.1	0.2	0.3	0.4
Lower fertility (-20%)	1.4	0.0	0.0	0.0	0.2	0.6	1.0	1.4
Higher TFP growth (+0.4 p.p.)	-0.6	0.0	0.0	0.0	-0.2	-0.5	-0.6	-0.6
Lower TFP growth (-0.4 p.p.)	0.7	0.0	0.0	0.0	0.2	0.5	0.7	0.7
Higher employment rate (+2 p.p.)	-0.2	0.0	-0.1	-0.3	-0.3	-0.3	-0.2	-0.2
Lower employment rate (+2 p.p.)	0.2	0.0	0.1	0.3	0.3	0.3	0.2	0.2
Higher employment rate of older workers (+10 p.p.)	-0.4	0.0	-0.1	-0.7	-0.7	-0.5	-0.4	-0.4
Higher migration (+33%)	-0.4	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4
Lower migration (-33%)	0.4	0.0	0.1	0.2	0.4	0.5	0.5	0.4
TFP risk scenario (-0.2 p.p.)	0.4	0.0	0.0	0.1	0.3	0.4	0.4	0.4
Policy scenario linking retirement age to life expectancy	-0.8	0.0	0.0	-0.1	-0.3	-0.4	-0.5	-0.8
Decomposition of the increase (in p.p.) in pension expenditure (public) - cumulated change from 2016	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Public pensions, gross as % of GDP	-0.2	11.2	11.1	11.6	12.0	11.7	11.3	11.0
Public pensions as % of GDP - p.p. ch. from 2016 due to :	-0.2		-0.1	0.4	0.8	0.5	0.1	-0.2
Dependency ratio	6.5		0.9	3.3	5.3	6.3	6.6	6.5
Coverage ratio	-2.1		-0.5	-1.3	-1.8	-2.0	-2.1	-2.1
Of which : Old-age	-0.7		0.0	-0.3	-0.4	-0.4	-0.5	-0.7
Early-age	-3.5		-1.0	-2.3	-2.7	-3.0	-3.4	-3.5
Cohort effect	-5.9		-0.4	-2.4	-4.4	-5.6	-6.1	-5.9
Benefit ratio	-3.3		-0.2	-0.8	-1.7	-2.6	-3.1	-3.3
Labour market ratio	-1.0		-0.3	-0.6	-0.8	-0.9	-1.0	-1.0
Of which : Employment rate	-0.7		-0.2	-0.4	-0.6	-0.7	-0.7	-0.7
Labour intensity	0.1		0.0	0.0	0.1	0.1	0.1	0.1
Career shift	-0.4		0.0	-0.2	-0.3	-0.4	-0.4	-0.4
Interaction effect (residual)	-0.3		0.0	-0.2	-0.3	-0.3	-0.3	-0.3
Decomposition of the increase (in p.p.) in pension expenditure (public) - change over selected time periods	Ch 16-70	2016-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	
Public pensions, gross as % of GDP	-0.2	-0.1	0.5	0.4	-0.4	-0.4	-0.3	
Dependency ratio	6.5	0.9	2.5	2.0	0.9	0.3	-0.1	
Coverage ratio	-2.1	-0.5	-0.9	-0.4	-0.2	-0.1	0.0	
Of which : Old-age	-0.7	0.0	-0.3	-0.1	0.0	-0.1	-0.2	
Early-age	-3.5	-1.0	-1.2	-0.4	-0.3	-0.4	0.0	
Cohort effect	-5.9	-0.4	-1.9	-2.0	-1.2	-0.5	0.1	
Benefit ratio	-3.3	-0.2	-0.6	-0.9	-0.9	-0.5	-0.2	
Labour market ratio	-1.0	-0.3	-0.3	-0.2	-0.1	-0.1	0.0	
Of which : Employment rate	-0.7	-0.2	-0.2	-0.1	-0.1	0.0	0.0	
Labour intensity	0.1	0.0	0.0	0.0	0.0	0.0	0.0	
Career shift	-0.4	0.0	-0.2	-0.1	0.0	0.0	0.0	
Interaction effect (residual)	-0.3	0.0	-0.1	-0.1	0.0	0.0	0.0	

EU28				EC (DG ECFIN) - EPC (AWG) 2018 projections				

Health care

Baseline scenario as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	0.9	6.8	6.9	7.2	7.4	7.6	7.7	7.7
AWG risk scenario	1.6	6.8	7.0	7.4	7.9	8.3	8.4	8.4
TFP risk scenario	0.8	6.8	6.9	7.1	7.4	7.6	7.6	7.6
Demographic scenario	1.1	6.8	6.9	7.2	7.5	7.8	7.8	7.9
High Life expectancy scenario (variation of Demographic sc.)	1.3	6.8	6.9	7.2	7.6	7.9	8.0	8.1
Healthy ageing scenario	0.2	6.8	6.8	6.9	7.1	7.2	7.1	7.0
Death-related cost scenario	:	6.8	:	:	:	:	:	:
Income elasticity scenario	1.3	6.8	6.9	7.3	7.7	8.0	8.1	8.1
EU28 cost convergence scenario	1.3	6.8	6.9	7.3	7.6	7.9	8.0	8.1
Labour intensity scenario	1.6	6.8	6.9	7.3	7.9	8.2	8.3	8.4
Sector-specific composite indexation scenario	2.5	6.8	7.0	7.6	8.3	8.8	9.1	9.3
Non-demographic determinants scenario	2.8	6.8	7.0	7.6	8.3	8.9	9.3	9.6

Long-term care

Long-term care spending as % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.2	1.6	1.7	1.9	2.2	2.5	2.7	2.7
AWG risk scenario	2.7	1.6	1.7	2.1	2.6	3.2	3.8	4.3
TFP risk scenario	1.3	1.6	1.7	1.9	2.3	2.6	2.8	2.9
Demographic scenario	1.3	1.6	1.7	1.9	2.3	2.6	2.8	2.9
Base case scenario	1.4	1.6	1.7	2.0	2.3	2.7	2.9	3.0
High Life expectancy scenario (variation of Base case sc.)	1.8	1.6	1.7	2.0	2.4	2.9	3.2	3.4
Healthy ageing scenario	1.1	1.6	1.7	1.9	2.2	2.5	2.6	2.7
Shift to formal care scenario	2.0	1.6	1.9	2.5	2.9	3.3	3.5	3.6
Coverage convergence scenario	2.0	1.6	1.7	2.1	2.5	3.0	3.4	3.6
Cost convergence scenario	2.2	1.6	1.7	2.1	2.5	3.0	3.4	3.8
Cost and coverage convergence scenario	3.0	1.6	1.7	2.2	2.7	3.4	4.0	4.6
Number of recipients (in thousands)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	71%	23,023	24,376	28,048	32,367	36,461	38,693	39,423
of which: receiving institutional care	74%	5,402	5,706	6,542	7,621	8,672	9,258	9,377
receiving home care	81%	7,068	7,531	8,829	10,357	11,735	12,555	12,817
receiving cash benefits	63%	10,554	11,140	12,677	14,389	16,054	16,879	17,229

Education

Education spending as % of GDP - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.0	4.5	4.4	4.3	4.4	4.4	4.5	4.5
Number of students (in thousands)								
Total (students/staff in 2016 = 351)	-2.5%	91,854	90,945	90,095	89,222	89,441	89,837	89,533
as % of population 5-24	0.0	83.7	83.5	82.8	83.4	83.7	83.6	83.6
Education spending as % of GDP - High enrolment rate scenario (diff. from baseline)	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Total	0.8	0.0	0.1	0.4	0.7	0.8	0.8	0.8

Unemployment benefit

Unemployment benefit - Baseline	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
Unemployment benefit spending as % of GDP	-0.2	0.8	0.7	0.7	0.7	0.6	0.6	0.6

Total cost of ageing

As % of GDP	Ch 16-70	2016	2020	2030	2040	2050	2060	2070
AWG reference scenario	1.7	25.0	24.8	25.7	26.8	26.9	26.8	26.6
Alternative scenarios (diff. from reference scenario)								
AWG risk scenario (affect HC & LTC)	2.3	0.0	0.1	0.5	0.9	1.3	1.8	2.3
TFP risk scenario (-0.2 p.p.)	0.5	0.0	0.0	0.2	0.3	0.5	0.5	0.5
High life expectancy (+2 years) (8)	0.8	0.0	0.0	0.1	0.2	0.4	0.6	0.8
Lower fertility (-20%)	1.8	0.0	0.0	-0.2	-0.1	0.6	1.1	1.8
Higher TFP growth (+0.4 p.p.)	-0.4	0.0	0.0	0.1	-0.1	-0.3	-0.4	-0.4
Lower TFP growth (-0.4 p.p.)	0.8	0.0	0.0	0.1	0.3	0.6	0.8	0.8
Higher employment rate (+2 p.p)	-0.4	0.0	-0.1	-0.6	-0.6	-0.6	-0.5	-0.4
Lower employment rate (+2 p.p)	0.7	0.0	0.1	0.7	0.8	0.8	0.8	0.7
Higher employment rate of older workers (+10 p.p.)	-0.6	0.0	-0.2	-1.0	-0.9	-0.8	-0.7	-0.6
Higher migration (+33%)	-0.4	0.0	-0.1	-0.2	-0.4	-0.5	-0.5	-0.4
Lower migration (-33%)	0.8	0.0	0.1	0.3	0.5	0.8	0.8	0.8
Policy scenario linking retirement age to life expectancy	-0.9	0.0	0.0	-0.2	-0.3	-0.5	-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 2017 instead of 2016.
(2) Share of older population = Population aged 55 to 64 as a % of the population aged 15-64
(3) Old-age dependency ratio = Population aged 65 and over as a % of the population aged 15-64 or 20-64
(4) Total dependency ratio = Population under 15 and over 64 as a % of the population aged 15-64
(5) Total economic dependency ratio = Total population less employed as a % of the employed population 15-74
(6) Economic old-age dependency ratio (15-64) = Inactive population aged 65+ as a % of the employed population 15-64
(7) Economic old-age dependency ratio (15-74) = Inactive population aged 65+ as a % of the employed population 15-74
(8) For HC & LTC: High life expectancy scenario (variation of reference scenario)
Source : Commission Services (DG ECFIN), Eurostat (EUROPOP2015), EPC (AWG).

Part V

Resources

1. ABBREVIATIONS AND SYMBOLS USED

Member States, other countries and country aggregates

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
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	Slovak Republic

FI	Finland
SE	Sweden
UK	United Kingdom
NO	Norway
EA	Euro area
EU27	European Union, All EU Member States except the UK
EU*	European Union, 28 Member States
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
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
ESSPROS	European System of Integrated Social Protection Statistics
EU KLEMS	European database on capital, labour, energy, material and services
EUR	Euro
EUROPOP2008	Eurostat demographic projections 2007-2060
EUROPOP2010	Eurostat demographic projections 2010-2060
EUROPOP2013	Eurostat demographic projections 2013-2060
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

2. REFERENCES

Acemoglu D., A. Finkelstein and M. Notowidigdo (2013), *"Income and Health Spending: Evidence from Oil Price Shocks"*, Review of Economics and Statistics,Vol. 95(4), pp.1079-1095.

Aprile R. (2013), *"Death-related costs in projecting acute health care expenditure – A new methodological approach"*, mimeo, presented at the 28th May 2013 meeting of the AWG.

D'Auria F., Denis C., Havik K., Mc Morrow K., Planas C., Raciborski R., Röger W., Rossi A. (2010), *"The production function methodology for calculating potential growth rates and output gaps"*, European Economy, Economic Papers No 420.

Azizi K. and C. Pereira (2005), *"Comparaison internationale des dépenses de santé : une analyse des évolutions dans sept pays, 1970-2002"*, DREES, Dossier Solidarité et Santé, Vol. 1.

Bac C. and D. Balsan (2001), *"Modélisation des dépenses d'assurance maladie",* Document de travail, No. 19, Direction de la recherche, des études, de l'évaluation et des statistiques DREES.

Bac C. and G. Cornilleau (2002), "*Comparaison internationale des dépenses de santé : une analyse des évolutions dans sept pays depuis 1970"*, DREES, Études et Résultats, Vol. 175.

Breyer F., Costa-Font, F. and S. Felder (2010), *"Ageing, health, and health care"*, Oxford Review of Economic Policy, Vol. 26(4), pp. 674-690.

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, 121(6), pp.613-622.

Burniaux J., Duval R., and Jaumotte F. (2003), "*Coping with ageing: a dynamic approach to quantify the impact of alternative policy options on future labour supply in OECD countries"*, OECD Economic Department Working Papers, No 371.

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, pp. 16-133.

Carone G. (2005), *"Long-term labour force projections for the EU25 Member States: a set of data for assessing the impact of ageing"*, DG ECFIN, European Economy, Economic Papers No 235.

Carone, G., Eckefeldt, P., Giamboni, L., Laine, V. and Pamies-Sumner, S. (2016), *"Pension Reforms in the EU since the Early 2000's: Achievements and Challenges Ahead"* European Economy, Discussion paper No 42.

Chatterji S., Byles J., Cutler D., Seeman T., Verdes E. (2015), *"Health, functioning, and disability in older adults - present status and future implications"*, Lancet 385, pp. 563-575.

Clements B., Coady D., and Gupta S. (2012), *"The Economics of Public Health Care Reform in Advanced and Emerging Economies"*, IMF.

Colombo, F., Llena-Nozal, A., Mercier, J., Tjadens, F. (2011), *"Help Wanted? Providing and Paying for Long – Term Care"*, OECD Health Policy Studies, OECD Publishing.

Comas-Herrera A., Wittenberg R. and Pickard, Linda (2005), *"Making projections of public long-term care expenditure for European countries: a proposed methodology and data requirements"*: in "Understanding trends in disability among elderly populations and the implications of demographic and non- demographic factors for future health and long-term care costs" 21-22 Feb 2005, Brussels, Belgium, unpublished.

Cremer H. and Pestieau P. (2009), *"Long-term Care Insurance Policy in the EU: A Survey of the Issues"*, unpublished.

Cutler, D. (1995), "*Technology, Health Costs and the NIH"*, Cambridge MA: Harvard University and NBER.

Cutler D., K. Ghosh, and M. Landrum (2013) *"Evidence for Significant Compression of Morbidity In the Elderly U.S. Population"*, NBER Working Paper No 19268.

Duval R. (2003), *"The retirement effects of old-age pension and early retirement schemes in OECD*

countries", OECD Economic Department Working Papers, No 370.

Dybczak K. and Przywara B. (2010), *"The role of technology in health care expenditure in the EU"*, European Economy, Economic Papers No 400.

Eurostat (2004), *"Classification of funded pension schemes and impact on government finance"*, Economy and finance Collection: Methodologies and working papers, Luxemburg, No 30/2004.

Eurostat (2011a), *"EUROPOP2010: European Population projections 2010-based"*, News release 80/2011, 8 June 2011.

Eurostat (2011b), *"Manual on sources and methods for the compilation of COFOG Statistics – Classification of the Functions of the Government"*, http://ec.europa.eu/eurostat/docume nts/3859598/7766647/KS-GQ-16-010-EN-N.pdf/3fe2216e-13b0-4ba1-b84f-a7d5b091235f.

Eurostat (2014a), *"Comparison between Eurostat population projections 2010-based (EUROPOP2010) and 2013-based (EUROPOP2013)"*, Eurostat Technical Note, ESTAT/F2/GL, 18 April 2014.

Eurostat (2014b), *"EUROPOP2013: European Population projections 2013-based'*, http://epp.eurostat.ec.europa.eu/portal/page /portal/statistics/search_database.

Eurostat (2016), *"European system of integrated social protection statistics - ESSPROS manual and user guidelines"*, http://ec.europa.eu/eurostat/documents /3859598/7766647/KS-GQ-16-010-EN-N.pdf/3fe2216e-13b0-4ba1-b84f-a7d5b091235f

Eurostat (2017a), *"Summary methodology of the 2015-based population projections"*, Eurostat Technical Note, ESTAT/F-2/GL, 3 March 2017.

Eurostat (2017b), *"Methodology for the migration assumptions in the 2015-based population projections"*, Eurostat Technical Note, ESTAT/F-2/GL, 5 July 2017.

European Commission (2005), *"Key data on education in Europe 2005"*, Eurydice, Eurostat, 2005.

European Commission (2014), *"The production function methodology for calculating potential growth rates and output gaps"*, European Economy, Economic Papers, No 535, http://ec.europa.eu/economy_finance/publicat ions/economic_paper/2014/pdf/ecp535_en.pdf.

European Commission (2015), "*Commission Regulation (EU) 2015/359 of 4 March 2015 implementing Regulation (EC) No 1338/2008 of the European Parliament and of the Council as regards statistics on healthcare expenditure and financing"*, http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32015R0359.

European Commission DG ECFIN (2017), *"Health and long-term care expenditure projections: availability/collection of data"*, ECFIN/C2(2017)1190126.

European Commission (DG ECFIN) and Economic Policy Committee (AWG) (2009), *"The 2009 Ageing Report: economic and budgetary projections for the EU-27 Member States (2008-2060)"*, European Economy, No 2/2009, http://ec.europa.eu/economy_finance/publi cations/publication14992_en.pdf.

European Commission (DG ECFIN) and Economic Policy Committee (AWG) (2012), *"The 2012 Ageing Report Economic and budgetary projections for the 27 EU Member States (2010-2060)"*, European Economy, No 2/2012, http://ec.europa.eu/economy_finance/publi cations/european_economy/2012/2012-ageing-report_en.htm.

European Commission (DG ECFIN) and Economic Policy Committee (Ageing Working Group) (2015), *"The 2015 Ageing Report: economic and budgetary projections for the 28 EU Member States (2013-2060)"* including Country Fiches, European Economy, No 3/2015, http://ec.europa.eu/economy_finance/publi cations/european_economy/2015/ee3_en.htm.

European Commission (DG ECFIN) and the Economic Policy Committee (Ageing Working Group) (2016), *"Joint Report on Health Systems and Long-Term Care systems"*, Institutional paper 037, https://ec.europa.eu/info/publications/econom y-finance/joint-report-health-care-and-long-term-care-systems-fiscal-sustainability-0_en.

European Commission (DG ECFIN) and Economic Policy Committee (Ageing Working Group) (2017), "*The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies*", European Economy, Institutional papers, No 065.

European Commission (DG ECFIN) and Economic Policy Committee (Ageing Working Group), PENSREF database, https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/pensref-pension-reform-database_en.

European Commission, (DG Employment, Social Affairs and Inclusion), European Social Policy Network (ESPN) (2016), "Retirement regimes for workers in arduous or hazardous jobs in Europe. A study of national policies"

http://www.google.be/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjDhYjEo57QAhXpLcAKHfdOAxAQFgggMAA&url=http%3A%2F%2Fec.europa.eu%2Fsocial%2FBlobServlet%3FdocId%3D16232%26langId%3Den&usg=AFQjCNE6gEMuxX4Hm5aAeKKC96vrUqfxjA

European Commission (DG Employment, Social Affairs and Inclusion), Social Protection Committee (2015), "The 2015 Pension Adequacy Report: current and future income adequacy in old age in the EU: Country Profiles – Volume II, Joint Report prepared by the European Commission (DG EMPL) and the Social Protection Committee (SPC)", European Union, 2015 http://www.google.be/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwjMwOnn_pPOAhUlK8AKHWS7Bm8QFggjMAE&url=http%3A%2F%2Fec.europa.eu%2Fsocial%2FBlobServlet%3FdocId%3D14545%26langId%3Den&usg=AFQjCNHvhWhucU_a-9MpYBObbfj2t6p_NA

EU-SILC (2013), "*The European Statistics on Income and Living Conditions*", http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/eu_silc.

FELICIE team (2006), "*Future Elderly Living Conditions in Europe*", FP5-LIFE QUALITY project, https://cordis.europa.eu/project/rcn/67442_en.html.

Fries J.F. (1980), "*Ageing, natural death, and the compression of morbidity*", The New England Journal of Medicine, Vol. 303(3), pp. 130-135.

Fries J.F. (1989), "*The compression of morbidity: near or far?*", Milbank Memorial Fund Quarterly, Vol. 67(2), pp. 208-232.

Gabriele S., Cislaghi C., Costantini F., Innocenti F., Lepore V., Tediosi F., Valerio M., Zocchetti C. (2005), "*Demographic factors and health expenditure profiles by age: the case of Italy*", A deliverable for ENEPRI AHEAD (Ageing, Health Status and Determinants of Health Expenditure) project.

Gerdtham U.G. and B. Jönsson (1991), "*Price and Quantity in International Comparisons of Health Care Expenditure*", Applied Economics', Vol. 23, pp. 1519-1528.

Gerdtham U.G. (1995), "*Factors affecting Health spending: a cross-country econometric analysis*", in New Direction in Health Care Policies: Improving Cost Control and Effectiveness, OECD.

Getzen, T.E. (2000), "*Health care is an individual necessity and a national luxury: Applying multilevel decision models to the analysis of health care expenditure*", Journal of Health Economics, Vol. 19(2), pp. 259-270.

Gruber J. and Wise D.A. (2002), "*Social Security Programs and Retirement Around the World: Micro Estimation*", NBER Working Paper No 9407.

Gruber J. and Wise D.A. (2005a), "*Social security programs and retirement around the world: fiscal implications-Introduction and summary*", NBER Working Paper No 11290.

Gruber J and Wise D.A. (editors) (2005b), "*Social Security Programs and Retirement around the World: Fiscal Implications*", NBER Website. 26 July 2005. http://www.nber.com/books/intlSS-p3/index.html.

Gruenberg E.M. (1977), "*The failure of success*", Millbank Memorial Fund Quarterly, Vol. 55(1), pp. 3-24.

Hagist C. and L. Kotlikoff (2009), *"Who's going broke? Comparing growth in Public Healthcare Expenditure in ten OECD countries"*, Revista de Economia Pública, Vol. 188(1), pp. 55-72.

Havik K., Mc Morrow K., Orlandi F., Planas C., Raciborski R., Röger W., Rossi A., Thum-Thysen A., Vandermeulen V. (2014), *"The Production Function Methodology for Calculating Potential Growth Rates & Output Gaps"*, European Economy, Economic Papers No 535.

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

Jenkner E., Karpowicz I., Kashiwase K., Shang B., Soto M., Tyson J. (2010), "*Macro-Fiscal Implications of Health Care Reform in Advanced and Emerging Economies"*, prepared by the IMF Fiscal Affairs Department.

Katz, S., Ford, A. B., Moskowitz, R. W., Jackson, B. A., & Jaffe, M. W. (1963), *"Studies of illness in the aged. The index of ADL: A standardized measure of biological and psychosocial function."* Journal of the American Medical Association, 185, 914–919.

International Labour Organization (ILO) (2014), "Social protection for older persons: Key policy trends and statistics", *Social Protection Policy Papers*, Social Protection Department International Labour Office http://www.ilo.org/wcmsp5/groups/public/--dgreports/---dcomm/documents/publication/wcms_310211.pdf

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

Lubitz J.D. and Riley G.F. (1993), *"Trends in Medicare payment in the last year of life"*, New England Journal of Medicine, 328, 15, pp. 1092-1096.

Madsen M. (2004), "*Methodologies to incorporate 'death-related' costs in projections of health and long-term care based on Danish data"*, Ministry of Finance, Denmark.

Mahieu R. (2000), *"Les déterminants des dépenses de santé : une approche macroéconomique"*, Série des documents de travail de la Direction des études et synthèses économiques, G2000/01, INSEE.

Maisonneuve C. and Martins J.O. (2013), *"A projection method of public health and long-term care expenditures"*, OECD Economic Department WP No 1048.

Manton K.G. (1982), *"Changing concepts of morbidity and mortality in the elderly population"*, Milbank Memorial Fund Quarterly, Vol. 60(2), pp. 183-244.

Medeiros J. and C. Schwierz (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.

Newhouse J.P. (1977), *"Medical Care Expenditure: a cross national survey"*, Journal of Human Resources, Vol. 12, No 1, pp. 115-125.

Newhouse J.P. (1992), *"Medical Care Costs: How Much Welfare Loss?"*, Journal of Economic Perspectives, Summer, Vol. 6(3), pp. 3-21.

OECD (2006), *"Projecting OECD Health and Long-Term Care Expenditures: What are the Main Drivers?"*, Economic Department Working Paper No 477.

OECD (2011) *"Health-reform: meeting the challenge of ageing and multiple morbidities"*, OECD Publishing.

OECD (2015) *"Addressing Dementia: The OECD Response"*, http://www.oecd.org/sti/addressing-dementia-the-oecd-response.pdf.

OECD (2015), *Pensions at a Glance 2015: OECD and G20 indicators*, OECD Publishing, Paris. http://dx.doi.org/10.1787/pension_glance-2015-en

OECD, Eurostat, WHO (2011), "*A System of Health Accounts"*, SHA Manual 2011 edition, http://who.int/nha/sha_revision/sha_2011_final1.pdf.

Okunade A.A and V.N.R. Murthy (2002), *"Technology as a 'major driver' of health care costs: a cointegration analysis of the Newhouse conjecture"*, Journal of Health Economics, Vol. 21(1), pp.147-159.

Oliveira Martins J. and C. de la Maisonneuve (2006), *"The Drivers of Public Expenditure on Health and Long-Term Care: An Integrated Approach",* OECD Economic Studies No 43, 2006/2.

Olshansky S.J., M.A. Rudberg, B.A. Carnes, C.K. Cassel, J.A. Brody (1991), *"Trading off longer life for worsening health"*, Journal of Aging and health, Vol. 3(2), pp. 194-216.

Palangkaraya A. and J. Yong (2009), "*Population ageing and its implications on aggregate health care demand: empirical evidence from 22 OECD countries"*, International Journal of Health Care Finance and Economics, Vol. 9(4), pp. 391-402.

Raitano M. (2006), "*The Impact of Death-Related Costs on Health-Care Expenditure: A Survey"*, ENEPRI Research Report No 17.

Rechel B., Doyle Y. and E. Grundy (2009), *"How can health systems respond to population ageing?"*, Health Systems and Policy Analysis, WHO Regional Office for Europe and European Observatory on Health Systems and Policies, Policy Brief 10.

Salomon J.A. et al. (2012), *"Healthy life expectancy for 187 countries, 1990-2010: a systematic analysis for the Global Burden Disease Study 2010"*, Lancet 380, pp. 2144-2162.

Social Security Administration (SSA) (2014), *"*Social Security Programs Throughout the World: Europe, 2014", US SSA Publication No. 13-11801. https://www.ssa.gov/policy/docs/progdesc/ssptw/2014-2015/europe/index.html

Smith S., J. Newhouse, and M. Freeland (2009), *"Income, Insurance, and Technology: Why Does Health Spending Outpace Economic Growth?"* Health Affairs, Vol. 28(5), pp. 1276-84.

UNESCO-UIS/OECD/EUROSTAT (UOE) data collection on education statistics, http://www.oecd.org/dataoecd/32/53/33712760.pdf

UNESCO (2011), *"International Standard Classification of Education (ISCED)",* http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf.

United Nations Statistics Division (1999), "*COFOG - Classification of the Functions of Government",* http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4.

United Nations, Department of Economic and Social Affairs, Population Division (2014), *"World Population Prospects: The 2012 Revision, Methodology of the United Nations Population Estimates and Projections"*, ESA/P/WP.235.

Van Vliet R.C. and L.M. Lamers (1998), *"The high costs of death: should health plans get higher payments when members die?",* Medical Care, 36, pp. 1451-1460.

Vargas Bustamante A. and S.V. Shimoga (2017), *"Comparing the income elasticity of health spending in middle-income and high-income countries: the role of financial protection"*, International Journal of Health Policy Management 7(3), pp. 255-263, http://ijhpm.com/article_3392_121dfa7400f55ef26488d875f37f925a.pdf.

Verbrugge L.M. (1984), *"Longer life but worsening health? Trends in health and mortality of middle-aged and older persons"*, Milbank Memorial Fund Quarterly, Vol. 62(3), pp. 475-519.

Wiley Publishing (2008), *Webster's New World Medical Dictionary.*

Willemé P. and M. Dumont (2014), *"Machines that go 'ping': medical technology and health expenditures in the OECD countries",* Health Economics, http://onlinelibrary.wiley.com/doi/10.1002/hec.3089/abstract;jsessionid=0B9D9E2FBE53FBECBF09FA79D3B5F4B3.f02t02.

Whitehouse E. R. (2010), *"Decomposing National Defined-Contribution Pensions: Experience of OECD Countries' Reforms",* OECD Social, Employment and Migration Working Paper, No 109, OECD.

World Health Organization (2000), *"Health Systems: Improving Performance",* The World Health Report 2000, http://www.who.int/whr/2000/en/.

Xu K., Saksen, P., and A. Holly (2011), *"The determinants of health expenditure: a country-level panel data analysis"*, WHO Working Paper R4D, http://www.who.int/health_financing/documents/report_en_11_deter-he.pdf.

Zweifel P. et al. (2005), *"The Sisyphus syndrome in health revisited"*, International Journal of Health Care Finance and Economics, 5(2), pp. 127-145.

EUROPEAN ECONOMY INSTITUTIONAL SERIES

European Economy Institutional series can be accessed and downloaded free of charge from the following address:
https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en?field_eurovoc_taxonomy_target_id_selective=All&field_core_nal_countries_tid_selective=All&field_core_date_published_value[value][year]=All&field_core_tags_tid_i18n=22621.

Titles published before July 2015 can be accessed and downloaded free of charge from:
- http://ec.europa.eu/economy_finance/publications/european_economy/index_en.htm
  (the main reports, e.g. Economic Forecasts)
- http://ec.europa.eu/economy_finance/publications/occasional_paper/index_en.htm
  (the Occasional Papers)
- http://ec.europa.eu/economy_finance/publications/qr_euro_area/index_en.htm
  (the Quarterly Reports on the Euro Area)

GETTING IN TOUCH WITH THE EU

In person
All over the European Union there are hundreds of Europe Direct Information Centres. You can find the address of the centre nearest you at: http://europa.eu/contact.

On the phone or by e-mail
Europe Direct is a service that answers your questions about the European Union. You can contact this service:
- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696 or
- by electronic mail via: http://europa.eu/contact.

FINDING INFORMATION ABOUT THE EU

Online
Information about the European Union in all the official languages of the EU is available on the Europa website at: http://europa.eu.

EU Publications
You can download or order free and priced EU publications from EU Bookshop at: http://publications.europa.eu/bookshop. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see http://europa.eu/contact).

EU law and related documents
For access to legal information from the EU, including all EU law since 1951 in all the official language versions, go to EUR-Lex at: http://eur-lex.europa.eu.

Open data from the EU
The EU Open Data Portal (http://data.europa.eu/euodp/en/data) provides access to datasets from the EU. Data can be downloaded and reused for free, both for commercial and non-commercial purposes.