DEMOGRAPHIC CHANGE: SUSTAINABLE RETIREMENT PROVISION

This is a translated version of the original German-language chapter "Demografischer Wandel: Nachhaltige Alterssicherung", which is the sole authoritative text. Please cite the original German-language chapter if any reference is made to this text.

KEY MESSAGES

- Population ageing is creating a considerable sustainability problem for the statutory pension scheme.
- In the long term, linking the retirement age to rising further life expectancy could ease the sustainability problem. In the short term, the reinstatement of the 'catch-up factor', which was suspended in 2018, would help.
- Mothers' Pension and Basic Pension reduce the risk of old-age poverty but are not well targeted. Better labour market integration and education are long-term options for preventing poverty.

SUMMARY

In the coming years, Germany will experience a significant **ageing of its population** due to increasing life expectancy coupled with relatively low fertility rates and moderate net migration levels. This is putting the social security systems under increasing pressure, especially the pay-as-you-go statutory pension scheme (GRV). As the baby-boomer cohorts reach retirement age, a decade of demographic hiatus comes to an end. The old-age dependency ratio – the ratio between the number of persons aged 65 and over and those aged between 20 and 64 years – is set to rise sharply. The statutory pension scheme is facing old, familiar challenges as well as new challenges that are making it increasingly difficult to ensure the **long-term sustainability of the pay-as-you-go model**. The coronavirus pandemic is unlikely to have any notable effect on the demographics. However, a high level of short-time working and rising unemployment could produce negative wage and income effects which, in combination with the 'double stop line' enshrined in law and the pension guarantee, could further weaken the funding of the statutory pension scheme. In order to align future pension payments with the lower earnings of contributors resulting from the pandemic, it is necessary to **reinstate the 'catch-up factor'**.

Various options for ensuring the sustainability of the pay-as-you-go system of funding the statutory pension scheme are currently under discussion. Linking pensions to inflation rather than earnings, better utilisation of labour force potential and the expansion of the pool of people paying into the scheme could help to fund it. However, **linking the statutory retirement age to rising further life expectancy** is a more appropriate way of solving the sustainability problem. One option would be to specify a fixed ratio between working years and retirement years. This would help to avoid future reductions in the net replacement rate. The employment phase would be extended if further life expectancy continues to rise. The actual retirement age will raise only if people are enabled to work longer. Incentives to encourage people to stay in employment for longer, and **better protection against incapacity** will play a key role here.

The challenges of demographic change also include the potential **risk of poverty in old age**. Old-age poverty in Germany has increased in the past two decades, but is currently not higher than the risk of poverty among the general population. Reforms such as the Mothers' Pension (Mütterrente), an additional pension entitlement accrued during child-rearing years, and the Basic Pension (Grundrente) have tended to exacerbate the sustainability problem. Although they reduce the risk of old-age poverty, they are not targeted where the need is greatest. Poverty in old age can be prevented through **better integration in the labour market** and **through provision of better training and development opportunities**.

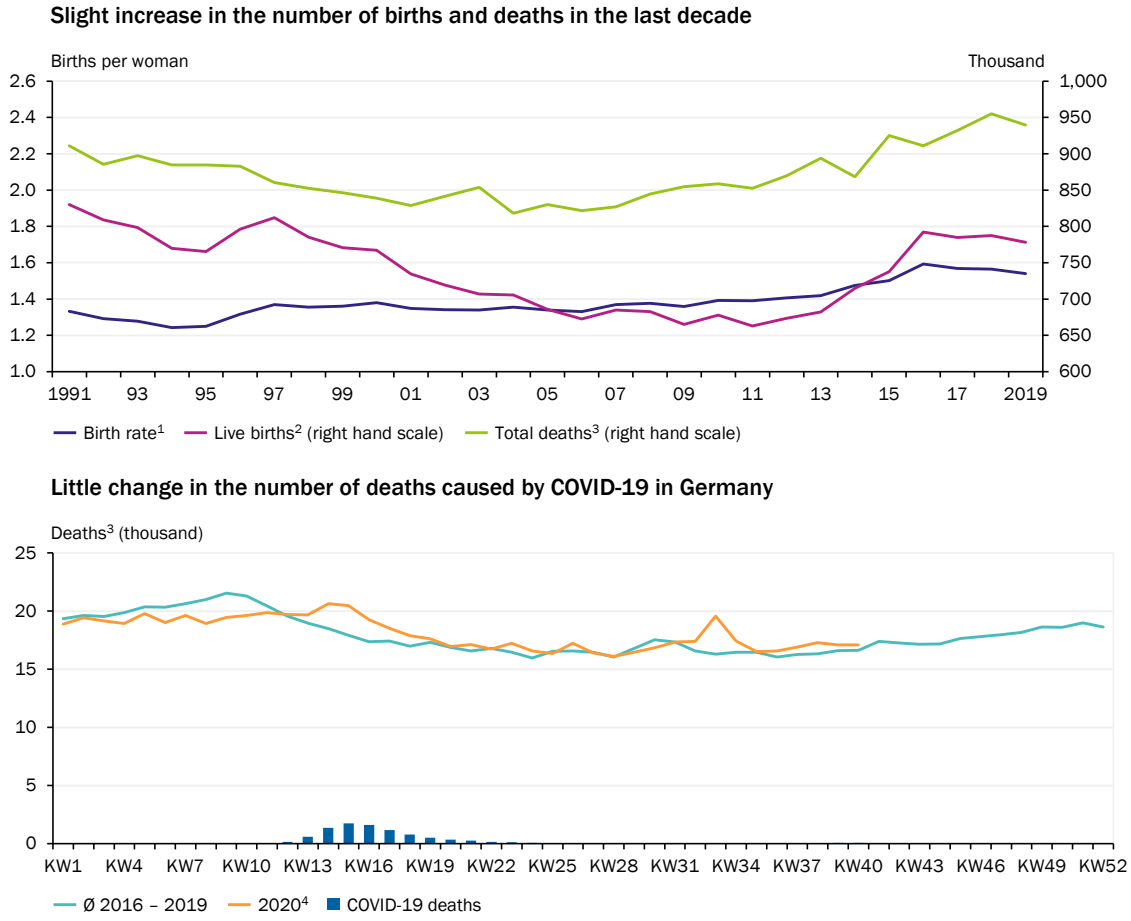
I. THE AGEING SOCIETY AND ITS ECONOMIC CONSEQUENCES

592. Like many other advanced economies, Germany is experiencing a significant **ageing of its population**, caused by rising life expectancy combined with comparatively low fertility and moderate net migration. Ageing has many economic consequences: adding to challenges for long-term economic growth and productivity, the **financial feasibility of the statutory pension scheme**, which operates as a pay-as-you-go system, is facing a test. In addition to the challenge of demographic change faced by the statutory pension scheme, there are problems affecting occupational and private pensions (GCEE Annual Report 2016 items 615 ff.). Still, the following analysis concentrates on the statutory pension scheme.

593. The gap between the number of live births and deaths that has been opening up since 1998 ↘ CHART 98 TOP is leading to a **slowdown in population growth**. The

↘ CHART 98

Fertility rate and deaths in Germany



1 – Based on the total fertility rate for women aged from 15 up to 50 years. 2 – Babies showing evidence of a heartbeat, pulsation of the umbilical cord or natural lung function after exiting the maternal body. 3 – Deaths reported to registry offices excluding still births, subsequently recorded war deaths and presumed deaths declared by courts. The data for 2019 and 2020 is provisional. An average for the period 2016 to 2019 thus contains both final and provisional data. 4 – In calendar week 33 there was a brief spike due to a heatwave.

Sources: Federal Statistical Office, RKI

trend of deaths is largely stable in Germany, where the coronavirus pandemic has so far had little effect. ↘ CHART 98 BOTTOM

1. Fertility

594. The **total fertility rate in Germany** has been rising slightly for a number of years, and in 2018 stood at **1.57 children per woman**. ↘ CHART 98 TOP It describes the average number of children that a woman will have during her fertile years. The fertility rate is well below the value of 2.1 that would be necessary to keep the population numbers stable (United Nations, 2020). The recent rise in the fertility rate alone is thus not sufficient to halt the fall in population growth (GCEE Annual Report 2018 items 86 ff.).

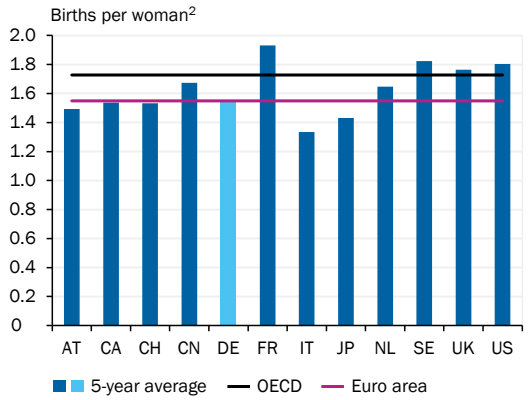
595. By international comparison, the five-year average for the total fertility rate in Germany is, at 1.54 births per woman, **on a par with the average in the euro area** (1.55 births per woman) and **below the OECD average** (1.73 births per woman). ↘ CHART 99 LEFT There are clear differences between countries. Italy, for example, has the lowest rate in the euro area, at 1.33 births per woman, while France has the highest fertility rate at 1.93. Within the German-speaking region, Austria and Switzerland are below Germany, with rates of 1.49 and 1.53 respectively. Japan has a particularly low fertility rate with an average of 1.43 births per woman, while China is a little higher with 1.67 births per woman.

596. There are **a number of reasons why fertility rates vary between countries**. Firstly, the differences can be attributed to a postponement of birth to a higher age, which tends to result in fewer children per woman (Beaujouan and Sobotka, 2019; OECD, 2019a). Secondly, there may be cultural reasons (Goldstein

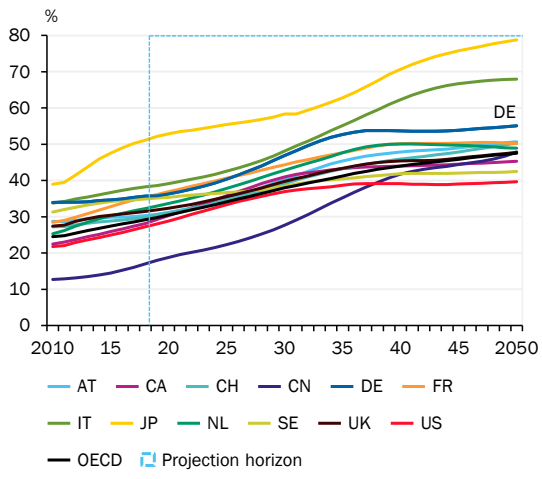
↘ CHART 99

Total fertility rates and old-age dependency ratios by international comparison[1]

Total fertility rate in Germany in line with euro area level, but below OECD level



Significant increase in the old-age dependency ratio in Germany from 2020



1 – AT-Austria, CA-Canada, CH-Switzerland, CN-China, DE-Germany, FR-France, IT-Italy, JP-Japan, NL-Netherlands, SE-Sweden, UK-United Kingdom, US-United States. 2 – Based on total fertility rates. 3 – 2014 to 2018. 4 – Ratio of those aged 65 and above to 20 to 64-year-olds. 5 – OECD population projections.

Sources: OECD, World Bank, own calculations

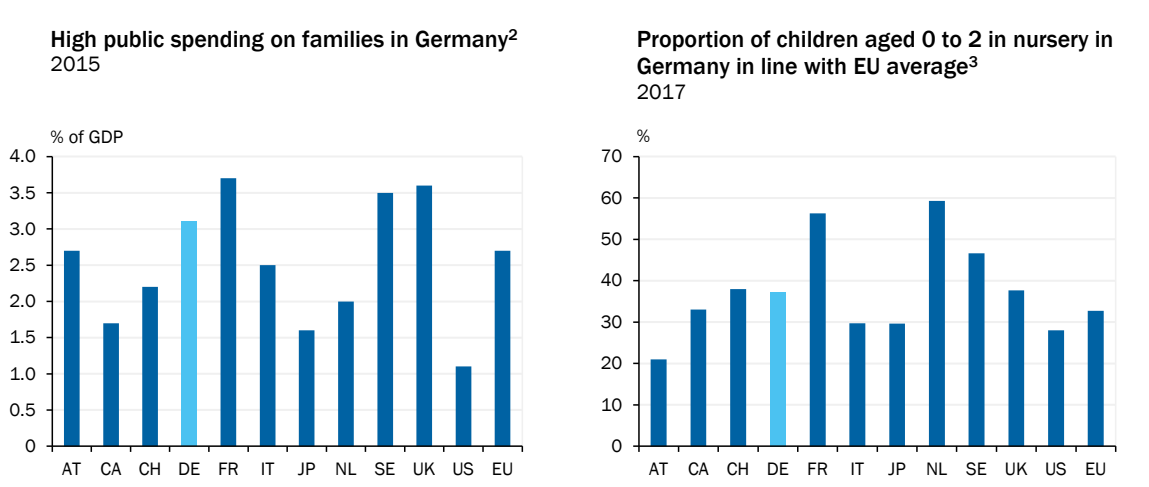
et al., 2003; Sobotka, 2009). A third reason is related to different family policies of the various countries, for example with regard to subsidised child care or tax benefits. While government expenditure for family policy in France is relatively high and the majority of 0 to 2 year olds attend nursery, spending on family policy in Italy is low by international comparison. ↘ CHART 100 LEFT There, the proportion of children in nursery is significantly lower. ↘ CHART 100 RIGHT In Germany, the increase in the total fertility rate could be rather due to immigration than to family-friendly policy measures (Bonin et al., 2013; Pötzsch, 2018). Fourthly, studies show that the loss of a husband's job and the associated fall in household income (Lindo, 2010; Del Bono et al., 2012, 2015) and high unemployment (Cazzola et al., 2016) can negatively influence fertility decisions. Fifthly, rising income at the national level can have a negative effect on total fertility rates (Becker, 1960; Becker et al., 1999). At an individual level, there is generally a positive correlation between income and fertility (Cohen et al., 2013; Laroque and Salanié, 2014).

597. The traditional difficulties faced by women in balancing work and family life are often cited as a possible reason for the low total fertility rate in **Japan** (Occasional Report 2011 Box 2). The proportion of women with children in the labour force in Japan was around 63 % in 2014, below that of Germany (69 % in 2013) (OECD, 2016). The high cost of living and of raising and educating children, coupled with the lower earnings of parents, could be additional barriers for fertility. Migration tends to play a lesser role in Japan. In the past decade, efforts have been made in Japan to reform child benefits and parental leave and to increase the availability of childcare slots (Nagase, 2018).

598. In **China**, the total fertility rate has been declining – a trend that in fact started shortly before the one child policy was introduced in the 1980s in response to a population explosion. Despite the abolition of the one child policy in 2016, there

↘ CHART 100

Public spending on family policy and proportion of children in childcare by international comparison



1 – AT-Austria, CA-Canada, CH-Switzerland, DE-Germany, FR-France, IT-Italy, JP-Japan, NL-Netherlands, SE-Sweden, UK-United Kingdom, US-United States, EU-European Union. 2 – Monetary benefits (child benefit, tax-free allowance for children, parental allowance and support for childcare etc.). NL: Data from 2011. EU: Excluding Lithuania and the Netherlands. 3 – US: Data from 2011. CH: Data from 2014. CA: Data from 2011 (Statistics Canada).

Sources: OECD, Statistics Canada, own calculations

has been no significant increase in the rate. The average total fertility rate in China has risen only fractionally from 1.66 children per woman in 2016 to 1.69 in 2018 (OECD, 2020). This may be due to social change resulting from the higher educational attainment of women and the propensity for better educated women to postpone having children until later in life (Black et al., 2008, for an overview of the literature on the effects of education on fertility). Other reasons may include higher costs of education, healthcare and living, the growing demand for childcare and the lack of employment protection for mothers.

2. Age structure of the population

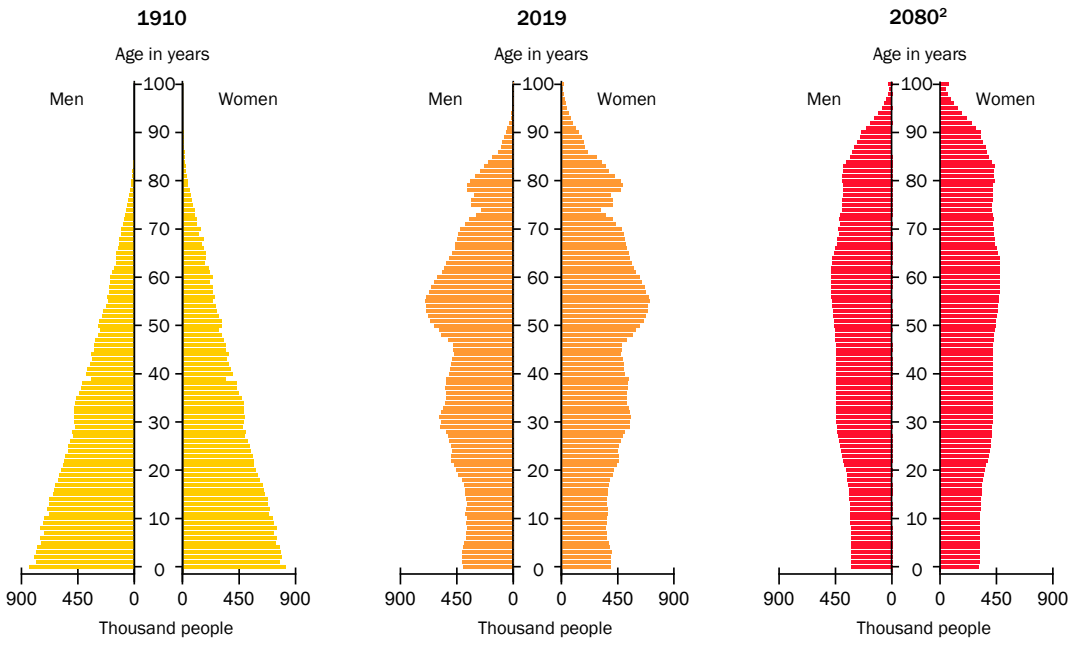
599. The combination of the total fertility rate being below the reproduction level and life expectancy rising is leading to a **shift in the age structure of the German population**, which is now looking less and less like the typical pyramid shape. ↘ CHART 101 According to the 14th coordinated population projection, the number of 65 to 69-year-olds will reach more than five million in the period 2025 to 2030 – the highest level since 1990 – while the working-age population (20 to 64-year-olds) is shrinking and the younger population (below 19 years of age) remains relatively constant. ↘ CHART 102 LEFT

600. The **baby-boomer cohorts** of the 1950s and 1960s are **on the brink of retirement**. According to the German Federal Statistical Office, the number of people aged between 55 and 65 rose from 9.6 million to 12.1 million in the period between 2008 and 2018. In contrast, the cohorts about to enter working life were

↘ CHART 101

Age distribution of the total population[1]

Population steadily ageing as the baby-boomers approach retirement



1 – Cut-off date 31.12. 2 – Simulation by Werding in accordance with the 14. coordinated population projection, Variant G1-L1-W1: Fertiliy 1.4 children per woman; life expectancy at birth 82.5 years for boys and 86.4 years for girls; decrease in net migration to 110,500 in 2030 and constant thereafter.

Sources: Federal Statistical Office, Werding (2020)

born in low birth rate years. ↘ CHART 101 The process of **demographic change** is thus about to reach the **end of a decade-long hiatus** (GCEE Annual Report 2018 items 86 ff.). The old-age dependency ratio in Germany, which is the ratio of the number of people of pension age (65 years and older) to the number of people of working age (15 to 64 years), will increase sharply from 2020 onwards. ↘ CHART 99 RIGHT The ageing society is likely to put social security systems under increasing pressure. Projections produced by the Organisation for Economic Co-operation and Development (OECD) put the **old-age dependency ratio** for Germany **in 2050 at 59 %** (OECD, 2017a). Italy will have the second oldest population after Japan, as measured by the old-age dependency ratio, closely followed by Germany. In the coming decades, the old-age dependency ratios in all OECD countries are set to increase substantially. ↘ CHART 99 RIGHT

601. **Migration** has the potential to mitigate demographic change. According to the Federal Statistical Office, net migration in Germany was around 327,000 in 2019. This figure shows how many more people settled in Germany than emigrated. In 2018, the net figure was around 400,000. Net migration has fallen for the fourth year in succession. Migration is having a significant effect in countering the shrinking population in Germany, but is not enough to halt the overall ageing. ↘ CHART 101

The number of live births in 2016 was around 792,000, which is the highest since the new millennium began. ↘ CHART 98 TOP This may be due in part to an increase in the number of births to mothers with a migrant background, as economic **migration** has increased since the mid-2000s and, since 2014, the number of refugees seeking asylum in Germany has also risen (Pötzsch, 2018; GCEE Annual Report 2018 items 96 ff.). But migration is **unlikely** to have a **long-term effect on the total fertility rate**: studies on the cultural influence of migrants on fertility show that the second generation of migrants tend to adjust to the fertility level of the host country as they integrate (Milewski, 2010; Stichnoth and Yeter, 2016).

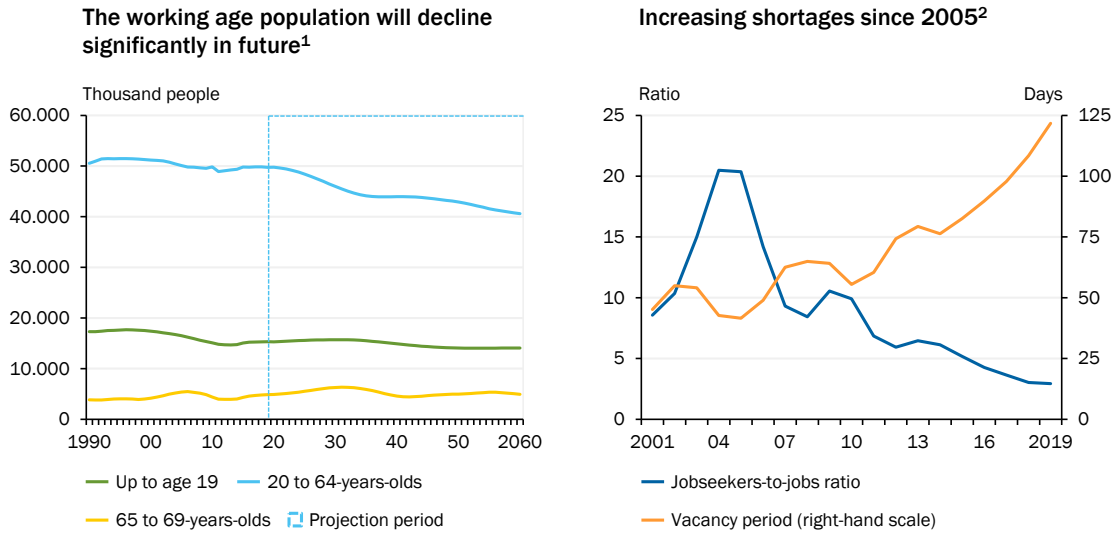
3. Challenges of an ageing population

602. Ageing societies present a challenge for long-term growth, productivity and macroeconomic stability (GCEE Annual Report 2019 items 141 ff.). The **shrinking of the labour force potential** is likely to **reduce the availability of skilled workers** – not least because of the age structure. During the period from 2005 to the end of 2019, the number of jobseekers per vacancy has fallen considerably, while the average vacancy period, which measures the time from the desired hire date to the time the position is filled, has risen. ↘ CHART 102 RIGHT This shows the increasing difficulty employers are having in filling their vacancies. Population ageing could therefore lower productivity and, with it, competitiveness and long-term growth potential. In addition, the ratio of available production factors changes in an ageing population as the labour supply shrinks while the supply of capital per capita increases.

603. Demographic change is more pronounced in some regions than in others. The arrival of younger migrants and the migration to urban centres from both within

↘ CHART 102

Age-specific population growth and indicators of labour demand in Germany



1 – In accordance to the 14. coordinated population projection of the Federal Statistiscal Office, Variant G2-L1-W2: Fertility 1.6 children per woman, life expectancy at birth 82.5 years for boys and 86.4 years for girls, decrease in net migration to 206,000 in 2026 and constant thereafter.
2 – Moving average from October of the previous year to September of the current year.

Sources: Federal Employment Agency, Federal Statistical Office

Germany and abroad means that **rural regions are more seriously affected by demographic change** than towns and cities (Swiaczny et al., 2008). The changing age structure and population trends are presenting rural and urban regions with major challenges, especially those that are experiencing steady population loss and ageing. ↘ CHART 103

604. In addition to the consequences for productivity and growth, the ageing society is putting **increasing pressure** on social security systems, especially the **pay-as-you-go statutory pension scheme**, as in future there will be fewer people paying in and a greater number of pensioners. The other social welfare systems face additional challenges in the form of changing healthcare needs, a future increase in the demand for care places, and housing and other infrastructure that meets the needs of older people and allows them to remain living and receiving care in their own homes for longer.

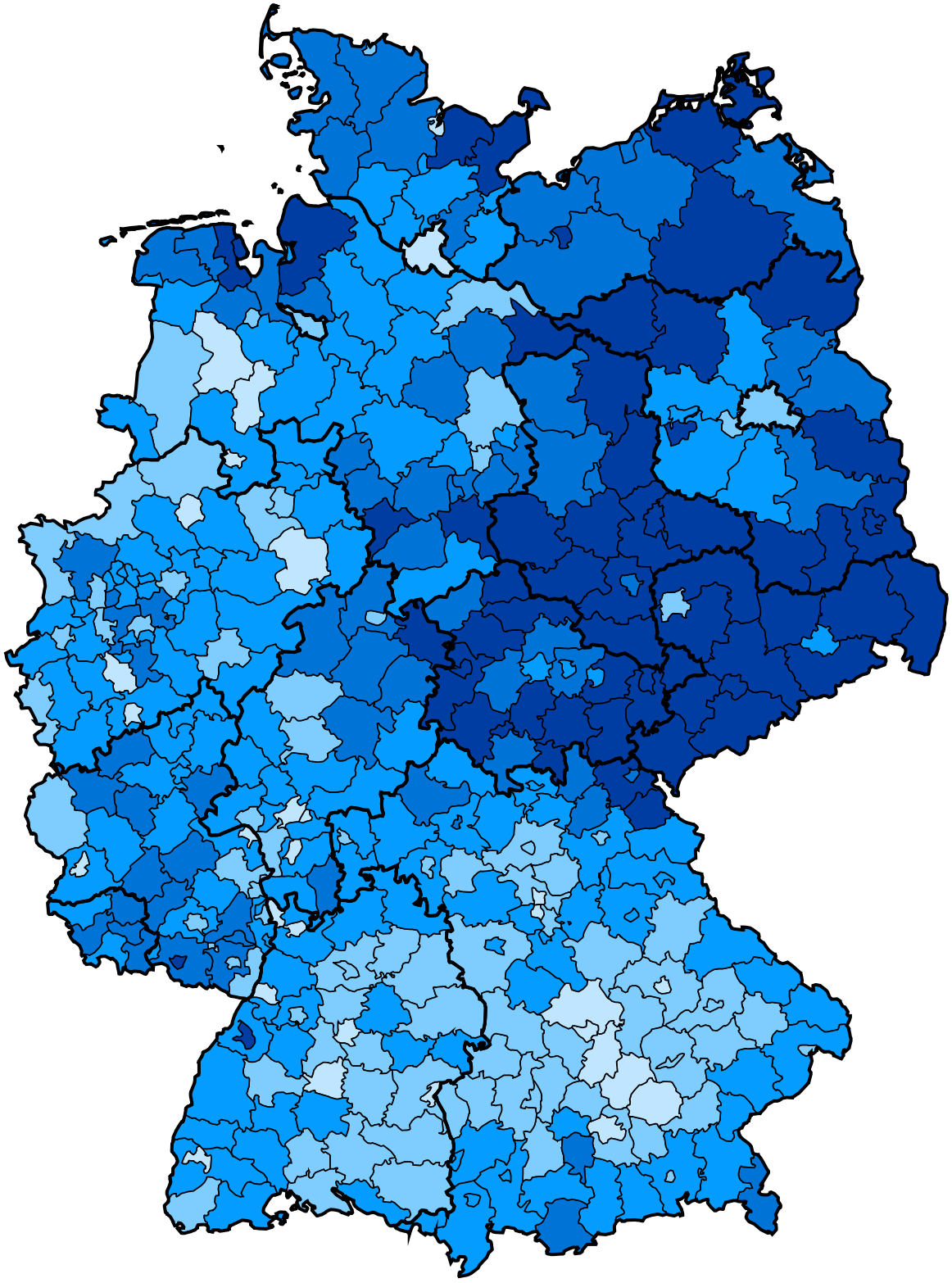
II. SUSTAINABLE DESIGN OF THE STATUTORY PENSION SCHEME

605. The statutory pension scheme is currently funded on a pay-as-you-go basis, which will lead to a **sustainability problem** as the old-age dependency ratio changes. In addition, the **coronavirus pandemic** will have an impact on the structure of the statutory pension scheme, just as the financial crisis did. The economic downturn will create additional burdens on those paying into the system and the stop

↘ CHART 103

Ageing in Germany by region

Proportion of those aged 65 and above particularly high in eastern Germany



1 – Ratio of those aged 65 and above to 20 to 64-year-olds.

Sources: Federal Agency for Cartography and Geodesy, Federal Statistical Office, own calculations

lines will put an additional strain on the government budget and thus on taxpayers (Pimpertz, 2020). The benefit level guarantee and the suspension of the catch-up factor ↘ BOX 15 mean that the net replacement rate will remain unchanged until 2025 (Börsch-Supan and Rausch, 2020).

606. The next section will examine the statutory pension scheme and its long-term sustainability. Possible solutions to the sustainability problem of the statutory pension scheme will then be discussed. One of the proposals involves **extending** the **working life phase**. The challenges presented by this approach and proposals that could potentially mitigate them will then be discussed.

1. Pension formula and catch-up factor

607. The **statutory pension scheme is a pay-as-you-go pension model** and forms the first pillar of the pension system in Germany (GCEE Annual Report 2016 items 569 ff.). It is supplemented by two further pillars, i.e., occupational pensions and private pensions (GCEE Annual Report 2016 items 580 ff.). Persons compulsorily insured by the statutory pension scheme include those subject to social security contributions and certain categories of the self-employed. Expenditures of the statutory pension scheme are largely covered by contributions and federal subsidies, whereby the federal subsidies are justified as the statutory pension scheme performs tasks for the benefit of society as a whole (non-insurance benefits; GCEE Annual Report 2005 table 38). In 2019, the government subsidies accounted for around 23.7 % of the annual income of the statutory pension scheme and around 21.7 % of total federal government spending. The net replacement rate before taxes is the ratio of the available standard pension of a benchmark pensioner with 45 years of contributions to the average disposable income (GCEE Annual Report 2016 items 560 ff.). In 2019 it was around 48 %.

608. The **pension formula** for the statutory pension scheme provides information on the **gross monthly pension** of a person at retirement age and has been adjusted several times since the year 2000 (GCEE Annual Report 2016 items 578 ff.). ↘ BOX 15 The calculation of the individual gross pension is adjusted with particular emphasis on rises in line with **gross earnings**. Rising levels of earnings therefore lead to an increase in the payments to pensioners.

↘ BOX 15

Using the pension formula to calculate the pension amount

The individual **gross monthly pension** R_t at time t is calculated by multiplying personal earnings points (*EP*) by the pension type factor (*RF*), the retirement age factor (*ZF*) and the current pension value at time t (AR_t):

$$R_t = EP \times RF \times ZF \times AR_t.$$

All earnings points accumulated are summed up to calculate the personal **earnings points**. The earnings points acquired each year are calculated by dividing the annual income earned by the individual scheme member by the average earnings of all scheme members in the relevant year.

If earned income is equivalent to the average earned income of all scheme members, one earnings point is acquired. Income earned in the former East German states is boosted using a conversion factor (Feld and Kohlmeier, 2016). Additional earning points can be acquired for example during periods spent raising children.

The **pension type factor** indicates whether the pension is an old-age, disability or survivors' pension. The **retirement age factor** indicates whether early or late retirement applies. It is 1.0 when retirement starts at the statutory pension age. It decreases by 0.003 for each month of early retirement and increases by 0.005 for each month that retirement is delayed. The **current pension value** AR_t is updated using the **pension adjustment formula**:

$$AR_t = AR_{t-1} \times \underbrace{\frac{BE_{t-1}}{BE_{t-2}} \times \left[\frac{VE_{t-2}}{VE_{t-3}} \times \left(\frac{BE_{t-2}}{BE_{t-3}}\right)^{-1}\right]}_{wage\ factor} \times \underbrace{\frac{1 - AVA_{2012} - RVB_{t-1}}{1 - AVA_{2012} - RVB_{t-2}}}_{contribution\ rate\ factor} \times \underbrace{\left[\left(1 - \frac{RQ_{t-1}}{RQ_{t-2}}\right)\alpha + 1\right]}_{sustainability\ factor}.$$

The **wage factor** is based on the change in gross wages and salaries (*BE*) and in insurable earnings (*VE*) and thus consists of the wage and salary growth rate pursuant to the national accounts (w) and the income subject to social security contributions (v), i.e., the national accounts (VGR) factor and the β factor (Gasche, 2010):

$$\underbrace{\frac{BE_{t-1}}{BE_{t-2}} \times \left[\frac{VE_{t-2}}{VE_{t-3}} \times \left(\frac{BE_{t-2}}{BE_{t-3}}\right)^{-1}\right]}_{wage\ factor} = \underbrace{(1 + w_{t-1})}_{VGR\ factor} \times \underbrace{\frac{(1 + v_{t-2})}{(1 + w_{t-2})}}_{\beta\ factor}.$$

The link with gross earnings was established in 2001. The β factor was introduced by the sustainability reform in 2004 as a means of linking pension increases more closely to the income of Deutsche Rentenversicherung (DRV) (Gasche, 2010).

The **contribution rate factor** has restricted the increase in the net replacement rate since 2002. In order to reflect the greater burden on contributors, the change in the contribution rate (*RVB*) is factored in, along with a notional private pension scheme contribution percentage (*AVA*). This 'Riester factor' was increased incrementally to 4 % between 2002 and 2012 to reflect the private contribution to the state-funded additional pension provision.

The **sustainability factor** was incorporated into the pension adjustment formula in 2005. If the pensioner quotient (*RQ*) increases, it has a dampening effect on the net replacement rate. The **pensioner quotient** expresses the ratio between the number of 'equivalence pensioners' and the number of 'equivalence contributors'. The number of equivalence pensioners represents the number of standard pensions (benchmark pensioners) to which the pension volume is equivalent. The number of equivalence contributors shows how many average earners would have to pay contributions to generate the contribution income of the statutory pension scheme. The effect of the sustainability factor is therefore to ensure that the burden of an ageing population is shared between those paying contributions on the one side and those drawing pensions on the other (GCEE Annual Report 2008 box 11). The α factor controls how strongly the sustainability factor influences the pension adjustment, i.e., how the burden is shared between the two groups. α has been set at 0.25 since it was introduced.

The **protection clause** of section 68a of the Social Code VI (SGB VI) was introduced in 2004 as a means of preventing the new current pension value calculated in accordance with the pension adjustment formula from being lower than the previous pension value. Consequently, the sustainability, wage and contribution rate factors were unable to exert their (full) dampening effect in 2005, 2006 and 2010. This meant that a balancing adjustment was needed, which was incorporated into the protection clause (modified protection clause) in the form of the **catch-up factor** that

was part of the 2007 pension age reform law (Rentenversicherungs-Altersgrenzenanpassungsgesetz). The required balancing adjustment represents the extent of the previously unimplemented dampening effects. Through the modified protection clause in 2011, the catch-up factor reduced the level of the balancing adjustment by only implementing half of the planned pension increases.

With the introduction of the Statutory Pension Insurance Benefit Improvement and Stabilisation Act (Leistungsverbesserungs- und Stabilisierungsgesetz) in 2018, the **double stop line** now ensures that the net replacement rate before taxes (section 154 (3a) SGB VI) will not fall below the 48 % floor before 2025 and the contribution rate will not exceed 20 %. At the same time, the sustainability factor was suspended and the balancing adjustment set at 1.

609. The introduction of the **benefit level guarantee** in 2005 ensured that the pension value would not be reduced if the earnings of the contributors fell. As a result, nominal pension reductions are excluded. The **catch-up factor** introduced into the pension calculation in 2007 would actually render it possible to offset any reductions in the net replacement rate – which are not currently possible because of the pension guarantee – against subsequent pension adjustments. In order to enable the scheme to meet the contribution rate target during the 2008 financial crisis, the catch-up factor had ensured that losses of earnings suffered by workers as a result of the crisis could be gradually deducted from pension increases in subsequent years by halving the rates of increase. ↘ BOX 15 However, the 2018 pension reform **suspended** the catch-up factor **until 2025**.

610. The increase in short-time work and unemployment ↘ ITEMS 129 FF. ↘ ITEM 77 and the loss of earnings resulting from job losses caused by the **coronavirus pandemic** could **increase the net replacement rate in 2021**, because the wage factor means pensions will be adjusted in line with the development of earnings over the previous two years. If pensions rise while earnings are stagnating or falling, the net replacement rate increases. The setting of the **double stop line until 2025 will prevent pensions from decreasing**, even if earnings fall in 2020 as a result of the crisis. It also prevents the contribution rate from increasing. The suspension of the catch-up factor means that this increase in the contribution rate will not be made up for in later years, so the slight increase in the net replacement rate will be permanent (Werding, 2020). The coronavirus pandemic will thus increase the strain on the statutory pension scheme. Ultimately, the only option remaining is to increase the federal subsidy (Börsch-Supan and Rausch, 2020).

611. **Reinstatement of the catch-up factor** could ensure that despite earnings falling during the crisis, the net replacement rate can, to some extent, be corrected in later years. In future years, when earnings are rising, pensions would increase at a slower rate than earnings, thereby avoiding **shifting the burden** of the pandemic **from one generation to another** (Pimpertz, 2020). The reinstatement of the catch-up factor could bring future pension increases back into line with the earnings of contributors and thus readjust the burden sharing (Rürup, 2020).

612. The **Reliable Intergenerational Contract Commission** set up by the federal government outlined its position on the problems of old age provision in its first report in March 2020. It believes it would be sensible to **keep** the legally binding

stop lines for the net replacement rate and the contribution rate in place **beyond 2025**. However, both stop lines should be based on a corridor – between 44 % and 49 % for the net replacement rate and between 20 % and 24 % for the contribution rate – and should apply for a period of seven years. After that, the benchmarks on which the stop lines are based should be replaced with **new welfare state benchmarks** based on total social insurance contributions, the additional legally mandated pension spending and the gap between the available standard pension and the average amount needed to live on in old age (KVG, 2020a, 2020b). After all, for pensioners it is probably the amount of the pension payment that ultimately matters.

2. Sustainability of the statutory pension scheme

613. **Demographic change** means that there will be fewer people funding current pension payments in future – especially as the baby-boomer cohorts of the 1950s and 1960s approach retirement age (GCEE Annual Report 2016 item 574). As the **double stop line** set by the federal government **in the statutory pension scheme** in 2018 has fixed the net replacement rate, as described above, at 48 % and the contribution rate at 20 % until 2025 (section 154 SGB VI), **more funding will be needed from the federal budget in future**. This can be met through more government debt, lower public spending in other areas, or tax rises, which would add to the burden of current and future generations.

614. A sustainability analysis can illustrate the **long-term influence of demographic change on public finances**. It simulates the long-term changes in government spending on pensions, which is highly sensitive to demographic change, in labour force participation and in healthcare. To calculate and evaluate the sustainability of the statutory pension scheme, the German Council of Economic Experts commissioned an **expert report** (Werding, 2020) from Professor Werding. A fundamental assumption in the calculation of the **sustainability gap** in the baseline scenario is that the general government revenue ratio remains constant over the simulation period, i.e., that revenues increase at the same rate as gross domestic product (GDP). The sustainability gap measures the extent of the consolidation required before any consideration is given to specific consolidation measures on the income or expenditure side. The following therefore does not consider the effects of reform scenarios on sustainability gaps, ↘ ITEMS 710 FF. but merely carries out simulations of reforms.

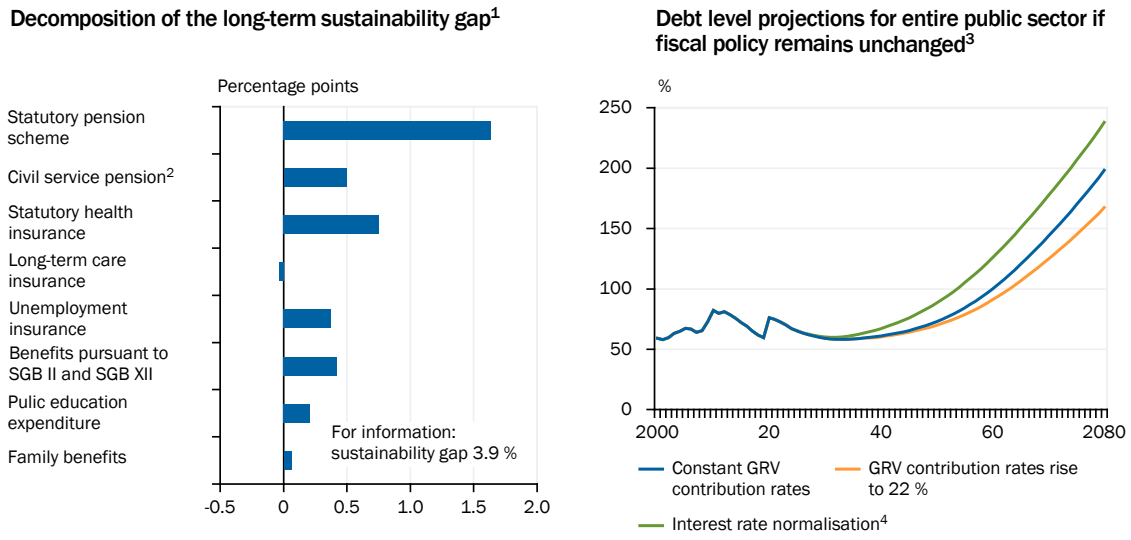
In the **simulation of additional scenarios**, ↘ ITEMS 621 FF different income and expenditure measures are applied. However, any negative feedback effects on economic growth through **disincentives** as a result of higher social security or tax rates (in connection with a higher federal subsidy) are excluded. The assumption of a constant revenue ratio in the initial calculation of the **sustainability gap** does not imply that in subsequent simulations of different scenarios, **revenue side measures** are not considered as **equivalent to expenditure side measures** in terms of consolidation. The effect of a stop line for contribution rates (reduction of income compared to the baseline scenario) is reflected in the

simulations to the same extent as a stop line for the net replacement rate (increase in expenditure compared to the baseline scenario).

615. Werding's (2020) simulations show how long-term **productivity and population trends** in Germany affect the sustainability of public finance (GCEE Annual Report 2016 items 591 ff.). Some items of expenditure in the government finances are likely to be particularly affected by demographic change. An ageing society tends to mean higher spending, for example in areas such as pension provision and basic income support, or in healthcare and long-term care. However, an older overall population is likely to lead to reduced spending in areas such as the labour market, education and family. Nevertheless, a smaller labour force relative to the population as a whole is likely to have an impact on revenues.

616. The statutory pension scheme plays a major role in terms of the long-term sustainability of the government budget (GCEE Annual Report 2016 items 592 ff.; GCEE Annual Report 2018 items 107 ff.). This is clearly illustrated by the breakdown of the **sustainability gap** (S2 indicator as defined by the EU). This shows the extent to which the simulated changes in the primary budget deficit or surplus would have to be permanently adjusted from 2021 onwards in order to comply with the intertemporal budget constraint on state spending and income over an infinite time horizon. The calculated sustainability gap of 3.9 % is the share of GDP that would have to be spent each year, starting immediately, in order to ensure that the national budget is sustainable without any adjustment of the revenue ratio. The analysis also shows the contribution of various social insurance components to the long-term sustainability of the national budget. ↘ CHART 104 LEFT With

↘ CHART 104
Sustainability and various debt level projections



1 – The sustainability gap indicates the sustained increase in the primary budget deficit relative to GDP that is necessary to maintain the intertemporal budget constraint. When calculating the sustainability gap, for the sake of simplicity and international comparability a constant revenue ratio relative to GDP is assumed, thus maintaining a constant fiscal policy in the modelling. In other words, it is implicitly assumed that when contributions to the statutory pension scheme (GRV) rise, taxes or spending are reduced elsewhere in order to keep the impact on the population fiscally neutral. 2 – Including allowance. 3 – Total government gross debt as defined in the Maastricht Treaty. 4 – The market interest rate for current issues of government bonds will rise to the long-term average of 2 % p.a. in real terms by 2040 and will then hold steady at this level.

Source: Werding (2020)

a contribution of 1.6 percentage points, the **immense significance of the statutory pension scheme** to ensuring long-term sustainable public finances is clear. In addition to rising pension expenditure, the demographic burden on the state budget is being felt, in particular through spending on the statutory health insurance system (GCEE Annual Report 2018 items 821 ff.), unemployment benefit and basic income support.

The sustainability gap thus refers only to the public finances and does not take account of any gaps in the provision for those covered by the scheme. When the second and third pillars of pension provision were being strengthened in earlier reforms, an indicator was created in the form of the **pensions gap** to assess the sustainability of old-age pension provision (GCEE Annual Report 2016 items 631 ff.). The pension gap arises when adjustments to the pension formula lower the future net replacement rate. The retirement age and increasing life expectancy will play an important role in determining the size of the future pension gap (Börsch-Supan et al., 2016; GCEE Annual Report 2016 item 632).

The **Sim.18 simulation model** (Werding, 2020) projects the trajectory of various budget items based on demographic extrapolations, assumptions concerning long-term changes to the labour market, and economic output, while giving detailed consideration to the institutional framework. Demographic extrapolations are based on assumptions regarding the birth rate, life expectancy and net migration (immigration and emigration) up to the year 2080. For the labour market, assumptions regarding qualifications as well as earnings and taxes at the macroeconomic level allow for conclusions to be drawn about the future number and qualifications of the employed and unemployed as well as their productivity and earnings (by age and gender). A neoclassical production function enables inferences to be drawn concerning future GDP, productivity and earnings growth, and the return on the economy's capital stock. The average return on (equity) capital also plays a role in determining how much of the total government budget is spent on interest.

617. A **debt projection** provides information on the hypothetical growth of government debt as a function of the assumed demographic growth trend. ↘ CHART 104 RIGHT Assuming the current pension formula is retained, statutory pension scheme contribution rates remain constant and there are no further reforms, the projection shows **debt at 200 %** of GDP by the year 2080. One fundamental assumption concerns future interest rates. The simulations are based on the current interest rate environment and the term structure and assume that average real interest rates will be negative until 2049 and below the real growth rate of GDP until 2059. Accordingly, the projected debt level is lower than in earlier projections (GCEE Annual Report 2016 item 593).

If **interest rates were to normalise more quickly**, the debt level would increase accordingly. When the baby-boomer cohorts all reach retirement age within the next ten years, it is likely that they will save less and may even start **spending their savings**. The decline in the (equilibrium) real interest rate, which has been amplified by the economically active generations' propensity to

save over the past two decades, could therefore be reversed (Goodhart and Pradhan, 2020). And a reversal of globalisation could create inflationary pressure. If that happened, the central banks would be forced to raise interest rates sooner.

618. Phases in which interest rates are below the GDP growth rate are not uncommon in history (GCEE Annual Report 2019 chart 76), although they often end abruptly. An analysis of historical data from the past 150 years shows that phases with a negative interest rate-growth differential have a substantial risk of being reversed within five to ten years (GCEE Annual Report 2019 box 13). Even if **sustainability** improves when there is a negative interest rate-growth differential, public finances are still subject to a substantial **interest rate risk**. For reasons of fiscal prudence we therefore have to expect a change in the ratio over a longer period, such as the next 60 years. In addition, an unfavourable assessment of the sustainability of public finance, which might result from a large increase in the debt ratio for example, would lead to higher risk premiums and thus higher funding costs.

Depending on the scenario under consideration, the long-term real yield on Bunds converges at around 2 % or close to the long-term real GDP growth rate of 1 %. This is consistent with findings of structural models, such as those for the USA (GCEE Annual Report 2017 chart 37). The average **long-term equilibrium real interest rate** for the years 1960 to 2017 was around 2 %. It is thus very similar to the average real GDP growth rate (Wieland and Wolters, 2017; GCEE Annual Report 2017 items 336 ff.).

619. The **statutory pension scheme** is primarily **funded** through the **insurance contributions** of employees and employers and is supplemented by additional **federal subsidies** from general taxation. There are two types of federal subsidy: the general federal subsidy and the additional federal subsidy. The latter includes an uplift amount to cover benefits not covered by contributions, i.e., non-insurance benefits. The federal subsidies also include contributions covered by government during periods spent raising children. In addition, a sustainability reserve is used to balance out mid-year liquidity fluctuations in the statutory pension scheme and to stabilise the contribution rate over the economic cycle (GCEE Annual Report 2005 item 496).

620. To finance the costs of demographic change in the statutory pension scheme while preserving the net replacement rate and capping any increase in contributions, the federal government could theoretically **increase the annual federal subsidies**. An argument in favour of greater taxation based funding of the statutory pension scheme through federal subsidies is the fact that it draws on a wider tax base, for example from income tax and value-added tax, compared with contribution based funding, as it is based on all earned income not just income from employment that is subject to social insurance contributions. Shifting the system towards a more tax-based model of financing would also place a heavier burden on contributors and at the same time lead to a decrease in net pension payments (Werding, 2016). Increasing the contribution rates, however, would create negative incentives to pursuing employment that is subject to mandatory social insurance contributions, as other forms of employment with lower duties would be

more attractive (Börsch-Supan and Schnabel, 1998). This would weaken the income side of the statutory pension scheme and could result in the need to increase contributions (GCEE Annual Report 2005 item 507).

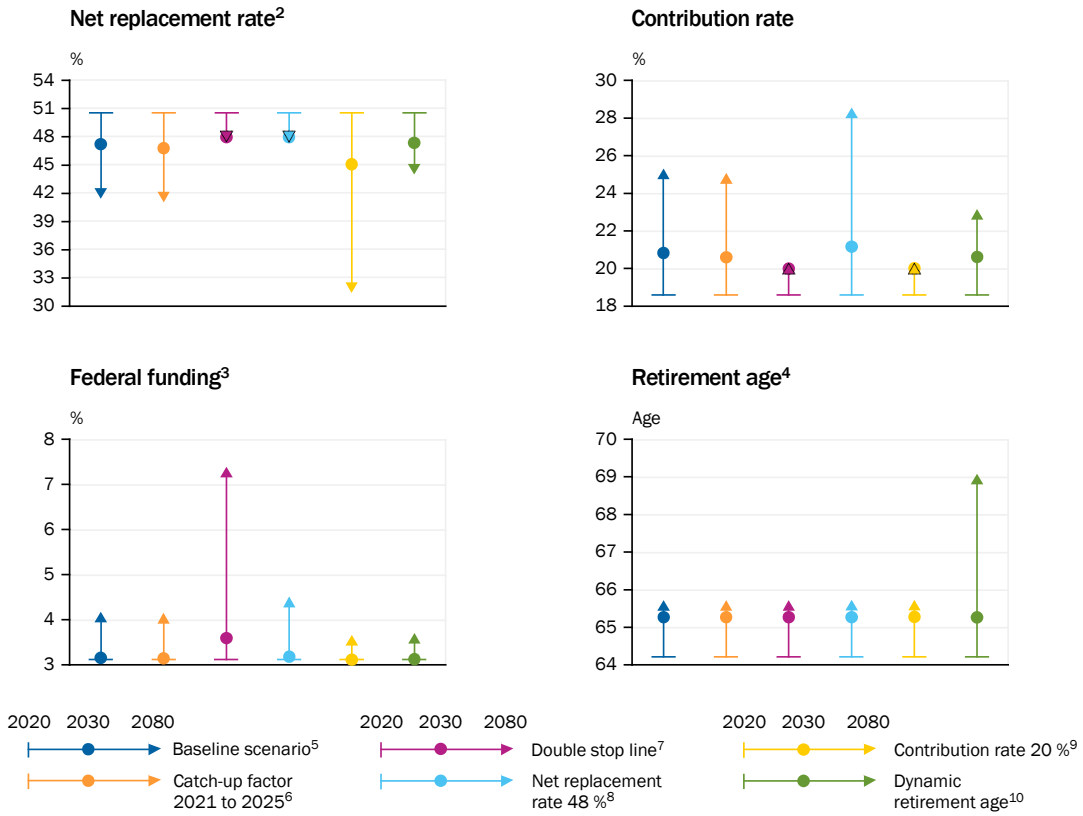
Effects of pension policy reform

621. The simulation study by Werding (2020) also examines the effects of various pension policy scenarios. The **baseline scenario** assumes that from 2026, the contribution rate and net replacement rate are adjusted in line with the most recently applicable provisions, i.e., the double stop line is discontinued. The catch-up factor would then be reinstated. The net replacement rate would fall from the current level of over 50 % to below 48 % in 2030 and to just 42 % by 2080. ↘ CHART 105 At the same time, the contribution rate would rise over the longer term to 25 %. In accordance with pension legislation, the federal subsidy would not be increased particularly strongly and would rise to 4 % of GDP in 2080.

622. If the **double stop line** is **continued in the long term**, the situation looks very different. The consequence of the politically mandated stability of the con-

↘ CHART 105

Simulations of the effects of stop lines in the statutory pension scheme (GRV)[1]



1 – Baseline year 2020: net replacement rate 50.5 %, contribution rate to the statutory pension scheme 18.6 %, federal funding 3.1 % of GDP, average retirement age 64.2 years. 2 – Net before taxes, ratio of standard pension (45 earnings points) to the average income of scheme members. 3 – Federal subsidies in relation to nominal GDP. 4 – Average age at which old-age pension is first claimed. 5 – Double stop line ends in 2026: Contribution rate and net replacement rate thereafter based on applicable law and average assumptions, catch-up factor is not reinstated. 6 – Catch-up factor is temporarily reinstated between 2021 and 2025. 7 – Double stop line is made permanent. 8 – Net replacement rate not permitted to fall below 48 %. 9 – Contribution rate not permitted to rise above 20 %. 10 – Retirement age is linked to further life expectancy from 2031.

Source: Werding (2020)

tribution rate and the net replacement rate in combination with a constant retirement age is that the sustainability of the statutory pension scheme can only be guaranteed by increasing the federal subsidy. ↘ CHART 105 The net replacement rate would be fixed at 48 % for the entire period, with the contribution rate fixed at 20 %. The full strain on the system of pension finance would be **shifted** from the pensions budget **to the federal budget** and the federal subsidy would increase to 7.3 % of GDP in 2080.

A **single stop line** placing a 48 % floor on the net replacement rate would see the contribution rate rise to 28 % and would also need additional funds from the federal budget. ↘ CHART 105 In contrast, a stop line that capped the contribution rate at 20 % would push the net replacement rate down towards 30 %, although under current pension legislation it would place less strain on federal resources.

623. In one scenario, Werding (2020, chart 9) assumes that for a limited period from 2021 to 2025, the **catch-up factor is reinstated** in order to mitigate the short-term effects of the coronavirus pandemic. In the long term, this is likely to lead to a slightly lower net replacement rate than in the benchmark scenario; the contribution rate would be lower. ↘ CHART 105 This long-term trend is largely due to the current recession caused by the coronavirus pandemic. If the catch-up factor were to take effect and the 2020 increase in pensions were to be offset against the lower wage increases in the following years, the net replacement rate could be 0.4 percentage points lower in the longer term. The reinstatement of the catch-up factor would be a relatively simple adjustment to pension legislation that would achieve a small but long-term effect on the net replacement rate without disproportionately burdening one population group.

624. Another simulated scenario involves linking **retirement age to further life expectancy** from 2030 onwards. It is assumed that the statutory retirement age increases by two years if life expectancy is extended by three years (2/3 ratio); however, the actual retirement age only increases by one and a half years. The net replacement rate is significantly higher than in the baseline scenario and the contribution rates are substantially lower. The call on the federal budget would be lower. ↘ CHART 105 Ultimately, the only adjustment mechanism lies outside the actual pension formula and merely varies the ratio of contributors to pensioners.

625. Viewed in the long term, the statutory pension scheme is unsustainable without any changes to the current legislation or the revenue ratio. The statutory pension scheme's **sustainability problem** is likely to **persist** beyond the coronavirus pandemic recession and the introduction of the Basic Pension. This situation is particularly unlikely to change if the stop lines are retained in the medium term. So the question, then, is what solutions are available to bridge the sustainability problem? There are a number of potential approaches.

3. Potential solutions for long-term sustainability

626. Without adjustments to the system, the net replacement rate would fall over the long term while the contribution rate and grants from the federal government

budget would increase sharply. **Various possible solutions are being discussed** to overcome this problem. The next section discusses the options for adjusting pensions to inflation, unlocking additional labour force potential, including additional groups in the statutory pension scheme and raising retirement age.

Inflation adjustment

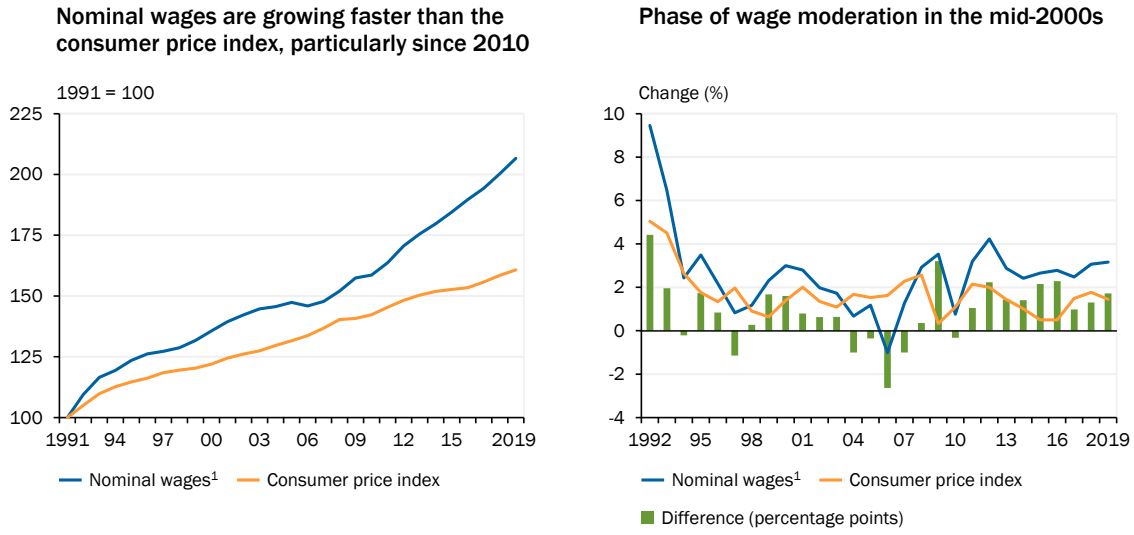
627. One possible solution for countering the statutory pension scheme's funding deficit could be to **link pensions to** the **consumer price index rather than earnings**, as is already the case in a number of OECD countries (OECD, 2007a). Some European countries, such as Italy and France (in the 1990s) and Austria (in 2004), have switched from adjusting pensions in line with earnings to adjusting them in line with price inflation (Hohnerlein, 2019).

628. When the German Budget Consolidation Act (Haushaltssanierungsgesetz) was introduced in 1999, the adjustment in line with earnings was suspended on a one-off basis in Germany, with pensions being **adjusted to inflation** from 1 July 2000 instead. As a consequence, the **pension adjustment in the year 2000 was around 0.6 %**, ↘ CHART 106 RIGHT while under the old formula it could have been around 1.4 % (Gasche and Kluth, 2011). In 2001, the net pension adjustment switched to a modified gross adjustment. Since the introduction of the sustainability factor in 2005, the current pension value now tracks average gross earnings, adjusted upwards or downwards by attenuation factors. ↘ BOX 15

629. The rise in **consumer prices** is typically below the rise in **nominal earnings**, as these generally benefit from an additional boost through productivity increases. The period from 2004 to 2007 is an exception to this rule. ↘ CHART 106 LEFT If pension payments were adjusted in line with inflation, they would therefore rise

↘ CHART 106

Wage and consumer price trends in Germany



1 – Nominal gross wages and salaries per hour worked.

Sources: Federal Statistical Office, own calculations

less sharply than if they were linked to earnings. Adjusted for inflation, the gap between pensions and earnings would increase over time, which means the net replacement rate would fall. A link between pensions and prices would maintain the purchasing power of pensions, but pensioners would not be benefiting from productivity increases. A link to price inflation would therefore most likely have a detrimental effect on poverty in old age.

Increase in employment

630. One scenario in which employment increases and contributions rise is when **people who are not currently economically active move into employment**. This is the extensive margin of labour adjustment and leads to correspondingly **higher statutory pension scheme income**. If the additional workers are part-time staff or workers on reduced hour contracts who earn a below average wage, **statutory pension scheme expenditure** would **be lower** in subsequent years because the pension adjustment depends on average earnings.

631. A second scenario that sees employment increase and contributions rise is when **workers increase their work intensity, i.e., their working hours**. This is the intensive margin of labour adjustment. However, this would have countervailing effects on the financial position of the statutory pension scheme. Income from contributions would rise at first, but the increase in the average wage would mean upward pension adjustments in the following years. In terms of sustainability, the statutory pension scheme is better able to bear an increase in the extensive margin than in the intensive margin of labour supply.

632. According to figures from the German Federal Statistical Office, in 2019 the employment rate for women aged 15-64 years was 72.8 %, while for men it was 80.5 %. Over the past ten years, this figure has risen by 7.7 percentage points for women and by 5.2 percentage points for men. There are **three strategies** for increasing the number of people in the labour force. Firstly, action could be taken to tackle **long-term unemployment** (GCEE Annual Report 2016 items 738 ff.) and adverse incentives in the tax and transfer system. This would be particularly effective in getting people in the bottom income bracket into (more intensive) employment (GCEE Annual Report 2019 items 648 ff.).

633. Secondly, there could be additional potential for increasing the employment rate, particularly among women. Here too, adverse incentives in the tax and transfer system could be overcome, especially in respect of encouraging second earners in the household to enter the labour force (Bonin et al., 2013; Böhmer et al., 2014; Bick and Fuchs-Schündeln, 2018; Bach et al., 2020b), or it could be made easier to **reconcile work and family life** (Bonin et al., 2013; Böhmer et al., 2014; Geyer et al., 2015; Müller and Wrohlich, 2020).

634. And thirdly, there is potential for increasing the number of **older people** in employment. Even without an increase in the statutory pension age, an increase in the age at which people actually retire would boost the total size of the labour force and thus help to close the funding gap. In terms of the statutory pension scheme's finances, an **increase in employment** in this group would have the advantage

of also reducing expenditure because the number of pensioners would decrease. In order to achieve this, workers subject to social insurance contributions could – for example in the years leading up to the statutory retirement age – reduce their working hours and draw a partial pension, instead of retiring early and leaving the workforce completely (GCEE Annual Report 2016 items 604 ff.). ↘ ITEM 665 Also, instead of moving from full-time work to not working at all upon reaching retirement age, people could move into part-time work when they reach retirement age while drawing a partial pension. ↘ ITEM 654

635. As the labour force potential is already largely unlocked at the extensive margin and any increase at the intensive margin has a lesser effect on sustainability, the measures discussed in this section could **only be a partial solution for the sustainability problem of the statutory pension scheme** and would have to be supplemented with other measures. And although an increase in the employment rate would mean more contributors to the statutory pension scheme, any short-term relief of the financial burden on the statutory pension scheme would be weakened in the long term as these contributors then acquire pension entitlements that have to be funded when they reach retirement.

Including the self-employed and civil servants

636. **Expanding the contributor base** to include civil servants and the self-employed would generate more contribution income, but would also create additional claims on the scheme (Gasche and Rausch, 2013; Buslei et al., 2016; Werding, 2016). The **inclusion of self-employed people** in the statutory pension scheme would lead to a redistribution of contributions from those previously without pension cover to those currently included in the scheme in the form of pension payments (GCEE Annual Report 2006 box 17; GCEE Annual Report 2016, item 603). Another argument for including the self-employed is that it would close the insurance gap that exists for mostly solo self-employed people. The argument against is that the contributions to the statutory pension scheme could be perceived by scheme members as a tax, especially by those who, because of a lack of retirement provision and a declining level of security in old age, would have to rely on social welfare. This could lead to **free-rider behaviour** by self-employed workers who are not required by law to contribute and have not made private provision for their old age, as this group will still be entitled to the Basic Pension (GCEE Annual Report 2016 item 602). Nevertheless, compulsory pension cover would make sense for the self-employed who do not have obligatory cover in order to avoid potential incentive problems (GCEE Annual Report 2016 item 603).

637. In addition to the high legal hurdles outlined above, the **inclusion of civil servants** could cause significant fiscal problems (GCEE Annual Report 2001 items 257 ff.). Firstly, it would require a complete reorganisation of the civil service system, which would be extremely costly. Secondly, although extending the contributor base would have positive implications for the public finances (Werding, 2016), it would cause problems in respect of the existing de facto pay-as-you-go system of civil service pensions because the hidden deductions from the salaries of active civil servants are not paid into any pension fund. This is why the salaries

of civil servants are lower than the gross salaries of employees in similar roles in the public or private sector (GCEE Annual Report 2001 item 257). In addition, the **pension system for civil servants** is also **unsustainable in the long term** because of the expected increase in pension costs **as a result of the ageing society** and is disproportionately responsible for the sustainability gap (Werding, 2016). ↘ CHART 104

638. The new members of the statutory pension scheme would not only pay contributions – they would also acquire entitlements that would mean higher pension expenditure in the future. Merging different insurance schemes will merely shift income and expenditure streams and will only have a marginal effect on the sustainability problem at the macroeconomic level. Expanding the contributor base **does not change the fact that, in future, fewer contributors will have to pay for more pensioners**. The inclusion of additional groups will therefore not help to solve the sustainability problem of the statutory pension scheme (GCEE Annual Report 2016 items 602 ff.).

Adjustment of the retirement age

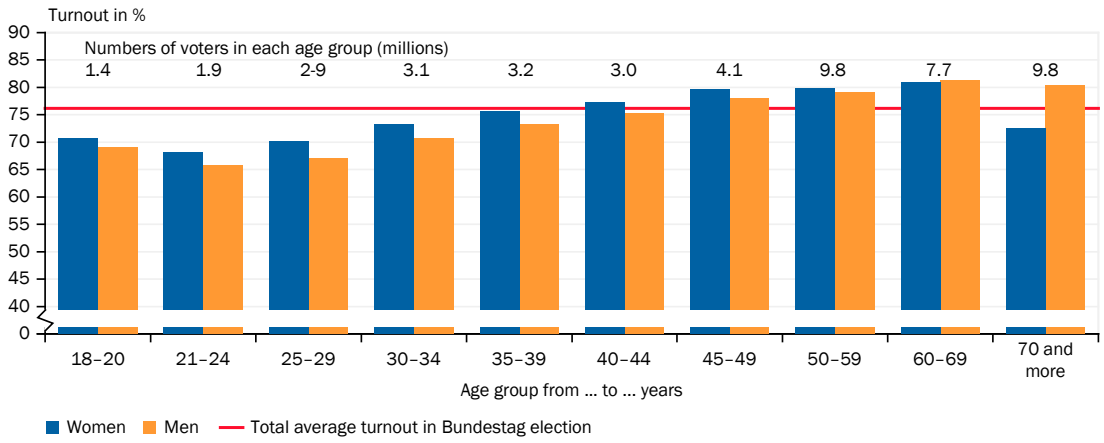
639. One option for securing the future financial viability of the statutory pension scheme in the face of **steadily increasing life expectancy** would be to split the additional years of life expectancy between the working phase and the retirement phase, instead of simply staying longer in retirement. The report of the Commission on a Fair Intergenerational Contract refers in this respect to the already implemented incremental increase in the standard retirement age to 67 years by 2031, but does not propose any further increase. Instead, the Commission proposes extending the remit of the Social Advisory Council to form an old-age provision advisory council that would look again at the need to further raise the retirement age and report back in 2026 (KVG, 2020a). However, it would be helpful if the problems were to be addressed sooner than that. The German Council of Economic Experts has called many times for a **link between retirement age and further life expectancy** in later life (Occasional Report 2011; GCEE Annual Report 2016 items 20 and 599 ff.). Every additional year of life expectancy would be split in a fixed proportion between the retirement phase and the working phase. One option for splitting the years would be one third to the retirement phase, and two thirds to the employment phase.

640. The question is then whether and how the actual retirement age can be increased (Buslei et al., 2019b). This may be problematic as health worsens in old age and it is harder for older unemployed people to find new jobs, so there is a risk of greater poverty in old age (Buslei et al., 2019a). In order to ensure that people can remain in employment until the statutory retirement age, the Commission recommends measures to support employees. For example, **preventive and rehabilitative measures** should enable older people to remain in employment by promoting the health of workers and facilitating a return to the labour market following illness. There are already examples of companies who have set up their own health centres as a pre-emptive step to help employees stay in their jobs for longer. In addition, **continuing training and development for older workers** is recommended to ensure that they have the skills needed in a changing job market up

↘ CHART 107

Participation in the 2017 Bundestag election by age group[1]

Higher turnout among over 44-year-olds



Source: Kobold and Schmiedel (2018)

to retirement age, and to equip older workers with updated skills. Ultimately, this may hinge on whether companies themselves invest in training and developing their older workers.

641. An increase in the statutory retirement age requires the reform to be supported by a majority of the population. A higher retirement age could be contrary to the interests of those who are currently very close to retirement. The greater the number of **people who are currently on the verge of retirement** as a proportion of the total population, the lower the probability that the median voter will be in favour of raising the statutory retirement age (Bütler, 2002; Lacomba and Lagos, 2007). The political power of people nearing pension age is further strengthened by the fact that this group is typically more likely to vote than other age groups, as was illustrated by turnout in the Bundestag elections in 2017, for example. ↘ CHART 107 This could explain why it has been so difficult in the past to gain political acceptance for an increase in the statutory retirement age. One possible means of garnering additional support for such an increase would be through **rules protecting legitimate expectations** (Vertrauensschutz-Regeln) that exclude people on the brink of retirement from being affected by any increase in the retirement age.

642. In addition, the **proportion of pensioners in the population** is set to **increase sharply** in the coming years. On the one hand, they may be more receptive to an increase in the retirement age (Bittschi and Wigger, 2019). On the other hand, they may **increase the pressure for large pensions** at the expense of contributors (Sinn and Uebelmesser, 2003). As the sustainability problem is getting worse with time, reforms to make the statutory pension system more sustainable need to be implemented soon, regardless of these political considerations, because otherwise even greater adjustments will have to be made at a later date. Previous calculations have shown that the sustainability gap will increase by 0.3 percentage points if the introduction of a higher statutory retirement age is delayed for five years. If the delay is even longer, the sustainability gap will widen further (GCEE Special Report 2011 items 314 ff.).

643. The **consequences** of raising the statutory retirement age **are very different for different groups of people**. Life expectancy and health are significantly better among high-earning, well-educated older people than among low earners and those with fewer qualifications (Lampert et al., 2019; Lampert and Hoebel, 2019; Börsch-Supan et al., 2020). According to calculations by Lampert et al. (2019), life expectancy at birth for women (men) earning less than 60 % of median income is 4.4 years (8.6 years) below the life expectancy of those earning at least 150 % of median income. This only represents evidence of a correlation and does not provide any information about the causal effect of an individual's income on their own life expectancy. The causal influence of social background on educational attainment and health, however, is well documented (Black and Devereux, 2010; Coneus and Spiess, 2012; Gould et al., 2019). The intergenerational dependency is due in particular to the fact that parental influence and the influence of environment in early childhood are especially important, and early disadvantages are relatively persistent in the development of human capital due to path dependence (Currie and Almond, 2011; Francesconi and Heckman, 2016; Almond et al., 2018; Conti et al., 2019).

644. The relationship between socio-economic status and life expectancy has become further entrenched over past decades as life expectancy has risen (Wenau et al., 2019). Further life expectancy at age 65 for women (men) earning less than 60 % of median income is currently 15.2 (9.8) years, while among those earning at least 150 % of median income it is 18.9 (16.4) years (Lampert et al., 2019). For women, the difference in further life expectancy between the income groups is thus 3.7 years, while for men it is as much as 6.6 years. Raising the retirement age would thus deprive low earners of relatively more pension income and retirement years than high earners. **Health conditions** and heavy manual labour may be among the reasons why low earners may be **less likely** to still be **in employment at the standard retirement age** when the statutory retirement age is raised and would thus have to suffer further deductions from their already low pension. ↘ ITEM 665

645. The **fairness of distribution** between socio-economic groups is particularly relevant to the raising of the standard retirement age. As a result of the equivalence principle (Teilhabeäquivalenzprinzip), the proportion of individual contributions to monthly outgoings is the same for all scheme members. The present value of wage replacement benefits over the entire pension period, however, is higher for people with high income than for low earners because of the longer period over which pensions are drawn (greater life expectancy). In terms of **life cycle pension** there is thus **no strict equivalence** with individual contributions.

646. Breyer and Hupfeld (2009) therefore favour a new pension calculation formula. According to this formula, the **monthly pension entitlement** would still be in proportion to the number of years insured, but would **rise at a decreasing rate relative to the average income earned over a person's working life**. In the view of Breyer and Hupfeld (2010), this would achieve distributive neutrality in addition to equivalence over the life cycle. In this way, pension payments in the

lower income segment would increase in comparison to the current legal situation, and pension payments in the higher income segment would decrease. Many OECD countries already have a pension system in which the earnings replacement rate progressively decreases as income rises (OECD, 2019b).

647. Feld et al. (2013) carried out a simulation of Breyer and Hupfeld's proposal (2009) and found that it has negative **incentive effects on total working hours**. This is because under this proposal, above-average earners would expect to receive lower pensions than under the current system. At the same time, although below-average earners could expect higher pensions, the pension income of some of these people would still be below the basic income support level and would have to be topped up. In the simulation, the positive effect on labour supply of below-average earners is thus lower than the negative effect on labour supply of above-average earners. Yet, the redistribution from high-income to low-income pensioners would lead to a decline in the need for basic income support which would reduce the burden on those currently in employment. This would also have a positive work incentive effect. Which of these countervailing incentive effects will predominate, i.e., what the overall effect on the labour volume will be, depends – among other things – to a great extent on how heavily future pension payments (in the individual calculation) are discounted before they are factored into the labour supply decision. How people actually discount future income into current decision-making is complex, heterogeneous and often at variance with the standard model (exponential discounting) (Chabris et al., 2010; Cremer and Pestieau, 2011; Ericson and Laibson, 2019). The overall effect of the proposed reform thus depends on some major assumptions.

4. Statutory and actual retirement age

648. One solution to the problem of demographic change in the statutory pension scheme would be to increase the statutory **retirement age** and link it to further life expectancy. However, it is unclear whether this will have the effect of raising the actual retirement age by the same amount. In order to ensure that this is the case, individual **incentives** should be created to extend employment in later life and make early retirement a less attractive alternative. An extension of working life brings with it the **individual risk** that not every worker is able to continue in their job until statutory retirement age. This risk can be mitigated with changes to reduced earning capacity and disability insurance schemes.

It is especially important to consider the effects an increase in the retirement age would have on **continued participation in the labour force** in later years and whether it would actually succeed in extending the working phase. A full pension for particularly long-term contributors (**Pension at Age 63**) is contrary to the purpose of the reform.

Incentives for longer employment

649. After decades when **early retirement** was encouraged by companies and legislators in Germany, there has been a **paradigm shift** towards extended employment that started with the pension reform of 1992 (Arnds and Bonin, 2003; Buchholz et al., 2013). In particular, early retirement is no longer supported by the government and the number of older people in the workforce is steadily rising as a result. In 2008, the '58 rule' that released jobseekers from the obligation to actively look for work after the age of 58 was scrapped. Such incentives are intended to keep the actual retirement age in line with the statutory retirement age. The **actual retirement age** for old-age pensions in 2018 averaged **64.0 years for men and 64.1 years for women** (IAQ, 2020) ↘ CHART 108

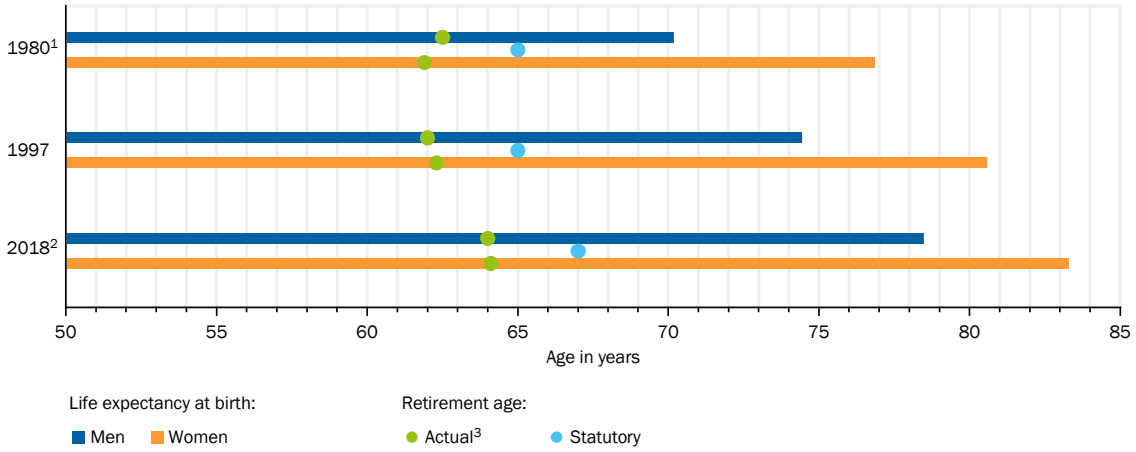
However, this new approach, reinforced by the gradual increase in the statutory retirement age to 67, has been **partly reversed**, in particular by the pension for long-term contributors in 2000 and the pension for particularly long-term contributors in 2014.

650. The gradual increase in the standard retirement age to 67 by 2031 is intended to encourage more older workers to continue in employment for longer. The **number of older people in the workforce has increased significantly** in recent years. In 2019, the employment rate among 55 to 64-year-olds was higher, at 73 %, than that of 20 to 24-year-olds (67 %). ↘ CHART 118 RIGHT In 2018, the number of people remaining in the labour market beyond the standard retirement age was around 246,000 – an increase of 77 % compared to 2012 (BA, 2019). Reasons for this change may include the rising shortage of skilled workers caused by demographic change, financial incentives, and better health in older age (Börsch-Supan et al., 2020).

↘ CHART 108

Life expectancy and retirement age in Germany

Statutory and actual retirement age have risen to a similar extent



1 – Former West Germany. 2 – Gradual increase in the statutory retirement age from 65 to 67 years since 2012. The standard retirement age for anyone born after 1963 is 67. 3 – Retirement due to old age.

Sources: Deutsche Rentenversicherung, Federal Statistical Office

651. Although the unemployment rate among 55 to 64-year-olds fell during the period between 2011 and 2018, employees who are close to retirement age are **at increasing risk of losing their jobs**. According to the Federal Statistical Office, the unemployment rate among older people (60 to 65-year-olds) in 2018 was around 6.1 %, which is well above the unemployment rate among those aged between 55 and under 60 (5.5 %). This shows that breaks in employment are increasing among the older age group and **support for workers approaching retirement age** may become more important in future.

652. As part of the **social protection package** introduced during the coronavirus crisis (Gesetz für den erleichterten Zugang zu sozialer Sicherung aufgrund des Corona-Virus SARS-CoV-2), the federal government has temporarily raised the supplementary income limit for early retirees for the 2020 calendar year from €6,300 to €44,590. The aim of this measure is to **make it easier** for people to continue or resume **work after retiring** because coronavirus-related illness and quarantine restrictions mean there is currently huge demand for staff, especially in the medical and care sectors. However, the new rule may incentivise some older employees, who would have retired soon anyway, to bring their retirement forward and then continue to work anyway.

653. Results of a study by Sackreuther et al. (2017) point to higher levels of employment in 2016 among retirees with higher educational qualifications who participate in **continuing training and development** in retirement. And in 2019, it was shown that employment opportunities for men remain higher than those for women in old age (Mergenthaler et al., 2020).

654. The 2016 **Flexible Pension Act** (Flexirenten-Gesetz) adjusted the supplementary income limits in order to provide incentives for flexible working up to the standard retirement age and also to make **working beyond the statutory retirement age more attractive**. It also releases employers from the obligation to pay the employer's contribution to unemployment insurance for such employees until the end of 2021. At the same time, workers accrue additional pension entitlements from the contributions to the statutory pension scheme (GCEE Annual Report 2016 item 605). By extending the Act beyond the end of 2021, employers could be offered additional incentives to continue employing workers beyond the statutory retirement age.

655. **Higher pension deductions and supplements** could also be used to **strengthen the incentives to continue working for longer**. If the employment phase is extended beyond the standard retirement age, scheme members can acquire greater pension entitlements that increase the value of their pension payments over the entire pension payment period (GCEE Annual Report 2006 item 325). This would increase the statutory pension scheme's income from contributions and also shorten the pension payment period. If, in contrast, the working phase was not extended and pensioners accepted deductions from their pensions in return for early retirement, there would be no additional contribution income, but the pension expenditure would be less than under the current system. From the perspective of the statutory pension scheme, actuarially fair deductions and supplements would have to achieve the same saving effect as an increase in

the standard retirement age, regardless of whether scheme members decide to extend their working phase or retire earlier (GCEE Annual Report 2006 item 325).

656. An adjustment of the pension formula in accordance with the proposal of Breyer and Hupfeld discussed above (2009) and the associated redistribution from high-income to low-income (soon-to-be) pensioners would result in low earners who are unable to continue working until the statutory retirement age because of their health or the very physical nature of their job being able to afford early retirement, with deductions, more easily than under the current system. Alternatively, in order to achieve this particular goal, **the level of deductions could be structured in a progressive manner**. That would mean lower deductions for people with small pension entitlements wishing to retire early, and higher deductions for those with large entitlements and would directly tackle the problem of low earners finding it increasingly difficult to continue working until the (raised) statutory retirement age. It would be particularly conducive to implementing a progressive system of deductions relative to income if there were to be a general switch to a system in which deductions are raised if early retirement is taken.

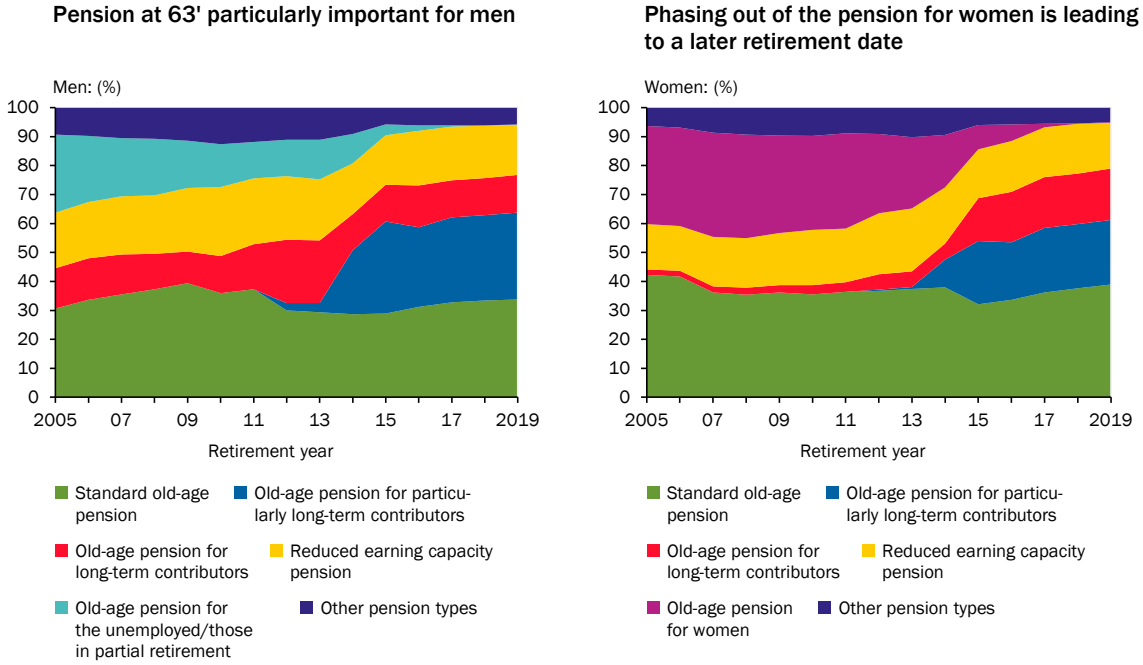
Full Pension at Age 63

657. However, the **pension for particularly long-term contributors (Pension at Age 63)** is slowing the growing trend towards older people remaining in employment and an increase in the length of the working life. Introduced in 2014, this option allows people with 45 years of contributions to take early retirement without deductions. Only scheme members born before 1953 were actually able to retire at the age of 63, though. For all others, the early retirement age is gradually being increased to 65 years as the statutory retirement age goes up. Following its introduction six years ago, the probability of this option being chosen is ten percentage points higher than the counterfactual situation where the worker retires at the same age and takes a pension with deductions (Dolls and Krolage, 2019). Since 2000, there has also been an option to retire at the age of 63 with 35 years of contributions, subject to deductions (**pension for long-term contributors**).

658. In 2016, 19.9 % of newly retired women and 27.5 % of men took the deduction-free pension at the age of 63 with 45 years of contributions. ↘ CHART 109 In total, the number of people taking the pension for particularly long-term contributors has risen since it was introduced in 2014. At the same time, the number of those retiring on a Reduced Earning Capacity Pension (Erwerbsminderungsrente) in 2015 fell by 4 percentage points for men and 5 percentage points for women. While the pension for long-term contributors with 35 years of contributions is becoming less important for men, the proportion of women making use of it rose to 17.5 % in 2017. One reason for this may be the **phasing out of the old-age pension for women** in 1999. The change affects women born after 1952 and raises the earliest possible deduction-free retirement age from 60 to 63 years (Geyer et al., 2019b).

↘ CHART 109

New pensioners by pension type[1]



1 – Share of the total number of new insured pensions each year (new insured pensions in 2019: 457,616 for men and 520,047 for women). Excluding old-age pension for people with disabilities. 2 – Excluding one-off effects arising from the introduction of the mothers' pension.

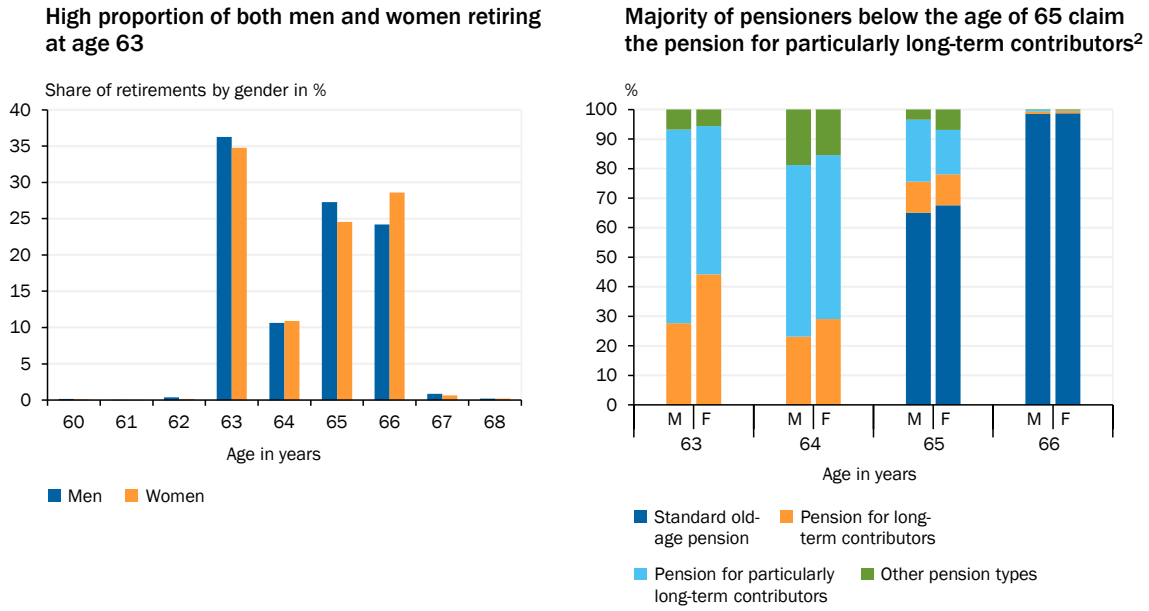
Source: DRV

659. The pension for particularly long-term contributors (those with 45 years of contributions) creates **incentives to leave working life prematurely**. This runs counter to the objective of extending the working life. Broken down according to pension type, the figures show an increase in the number of people retiring at the age of 63 in 2017. ↘ CHART 110 LEFT This may be due to the deduction-free pension at age 63 (45 contribution years), and to the fact that the majority of pensioners taking the pension for long-term contributors (35 contribution years) retire at the age of 63 and thus accept deductions of around 31 months. ↘ CHART 110 RIGHT

660. In comparison with long-term contributors who have 35 years of contributions, and especially in comparison with standard retirement age pensioners, particularly long-term contributors with 45 years of contributions tend on average to have acquired higher pension entitlements (Feld et al., 2014; Kallweit and Kohlmeier, 2014; Börsch-Supan et al., 2015; Keck and Krickl, 2018). ↘ CHART 111 TOP In addition to the differences in the **pension entitlements arising from employment**, there are gender-specific differences in pension type. Women born between 1949 and 1953 have, on average, acquired fewer earnings points than men of the same cohorts. This is clearly illustrated in the case of people taking their pension at the standard retirement age, when **labour market participation** for women from the age of around 30 years is 47 %, falling to 32 % at the age of 60. ↘ CHART 111 BOTTOM RIGHT The equivalent figures for men are 77 % at the age of 30 and 46 % at the age of 60. ↘ CHART 111 BOTTOM LEFT This trend could be due to more part-time work and lack of employment due to time spent raising children. Taken together, this points to an increasing additional burden on the statutory

↘ CHART 110

Retirement age in Germany by gender and pension type[1]



1 – Retirement year 2017 in the 10 % sample includes 95,744 new pensioners. 2 – M-Men, F-Female.

Sources: FDZ-RV (SUFRTZN17XVSBB), own calculations

pension scheme and, at the same time, to a worsening of the skilled labour shortage situation, as there are greater incentives to leave the labour market prematurely.

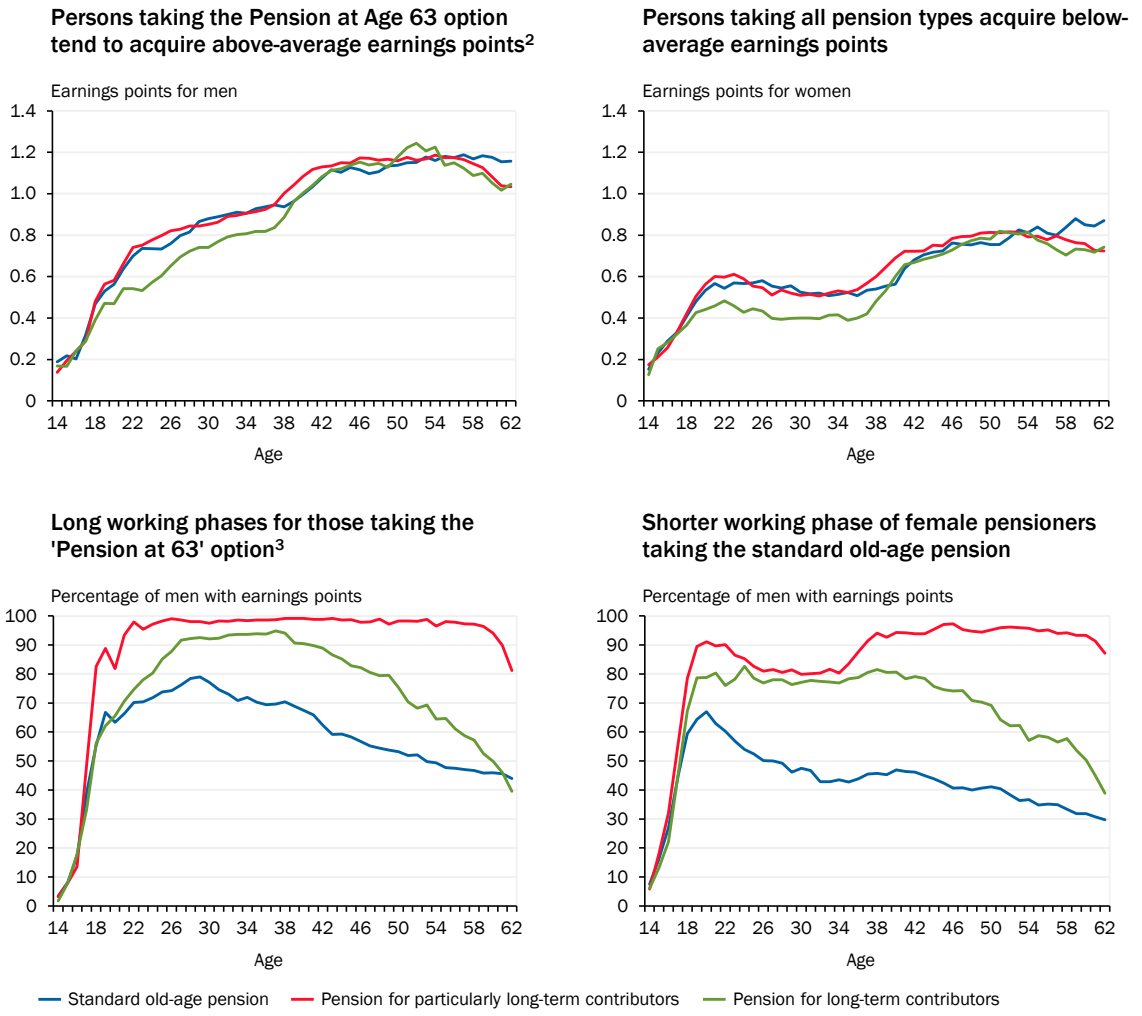
661. **Retirement on a pension without deductions at the age of 63** for particularly long-term contributors **requires** scheme members to have **at least 45 years of contributions** and to have been born between 1949 and 1964. The following count towards the qualifying period: calendar months with compulsory contribution periods, periods of military service, child-raising periods and periods when other benefits were drawn such as sickness benefits and unemployment benefits (section 55 (2) SGB VI). According to an analysis carried out by the German Council of Economic Experts in 2017, the net replacement rate of the pension for particularly long-term contributors, measured as the pension payment relative to the earnings of the previous year, is 49.0 %, which is significantly higher than pension types for standard pensioners (12.5 %) and the pension for long-term contributors with 35 contribution years (27.1 %).

662. Werding's simulation model (2020) permits an analysis of the **hypothetical situation** if **Pension at Age 63** were to be **scrapped** after 2021. ↘ CHART 112 This would have practically no effect on the net replacement rate. Particularly in the medium term, for example in 2030, however, the contribution rate would be lower and the federal subsidy would be somewhat lower. So if contributors and taxpayers bear the additional burden, the Pension at Age 63 does not affect the net replacement rate.

↘ CHART 111

Average earnings points from employment[1] and labour force participation by gender

Based on scientific use file of the pension systems administrative data (VSKT) in 2016 (1949 to 1953 cohorts)



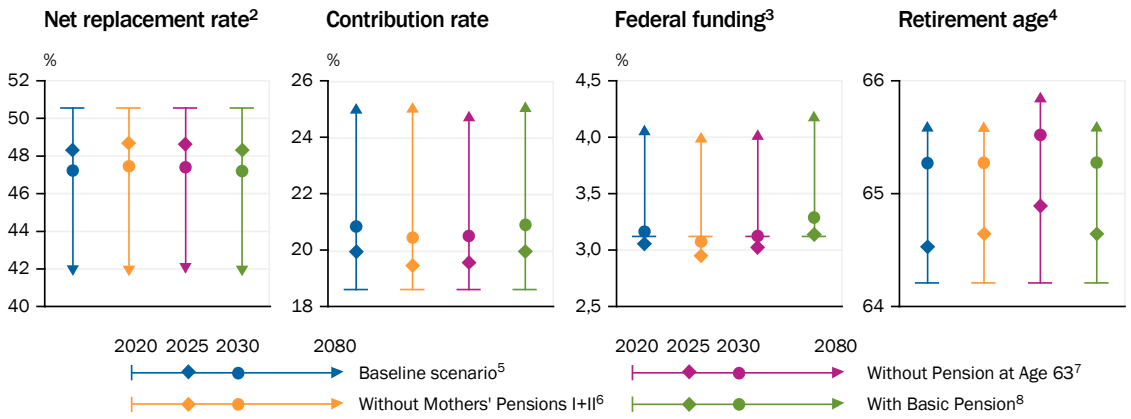
1 – One earnings point represents the so-called average earnings (average income of employees subject to compulsory social insurance contributions taking account of the income threshold). For example, if one year's earned income is equivalent to half the average earned income of all scheme members, 0.5 earnings points are acquired. 2 – Interpretation aid: A male pensioner born between 1949 and 1953 who later took the standard pension option had earned an average of one earnings point at the age of 40. 3 – Interpretation aid: Approx. 67 % of male pensioners born between 1949 and 1953 who later took the standard pension option received earnings points from gainful employment at the age of 40.

Sources: FDZ-RV (SUFVSKT2016), own calculations

663. The equivalence principle on which the statutory pension scheme is based is intended to ensure that contributions and pension entitlements are in proportion to one another, although there are different arguments as to how this principle should be implemented and interpreted (Breyer, 2013). The pension for particularly long-term contributors breaches the **equivalence principle**, as qualifying periods of different lengths mean that earnings points are valued differently (GCEE Annual Report 2014 items 565 ff.; GCEE Annual Report 2007 item 264). In addition, the required qualifying period of 45 years until pension age has been relaxed by counting child-raising periods and time spent providing long-term care as contribution years. The same number of earnings points can thus produce different pension entitlements, which results in some socio-demographic groups being granted special status (Börsch-Supan et al., 2015). In addition, the selective deduction-free early retirement option implies additional costs for the statutory

↘ CHART 112

Simulations of the effects of the most recent pension reforms on the statutory pension scheme (GRV)[1]



1 – Baseline year 2020: Net replacement rate 50.5 %, contribution to the statutory pension scheme 18.6 %, federal funding 3.1 % of GDP, average retirement age 64.2 years. 2 – Net before taxes, ratio of the standard pension (45 earnings points) to the average income of scheme members. 3 – Federal subsidies in relation to nominal GDP. 4 – Average age at which old-age pension is first claimed. 5 – Double stop line ends in 2026: Contribution rate and net replacement rate thereafter based on applicable law and average assumptions. 6 – Mothers' Pensions I+II are suspended at the end of 2021. 7 – Pension for particularly long-term contributors is suspended at the end of 2021. 8 – The Basic Pension is introduced from 2021 as agreed.

Quelle: Werding (2020)

pension scheme, which – in view of demographic change – will further exacerbate the scheme's funding problem.

Protection against incapacity

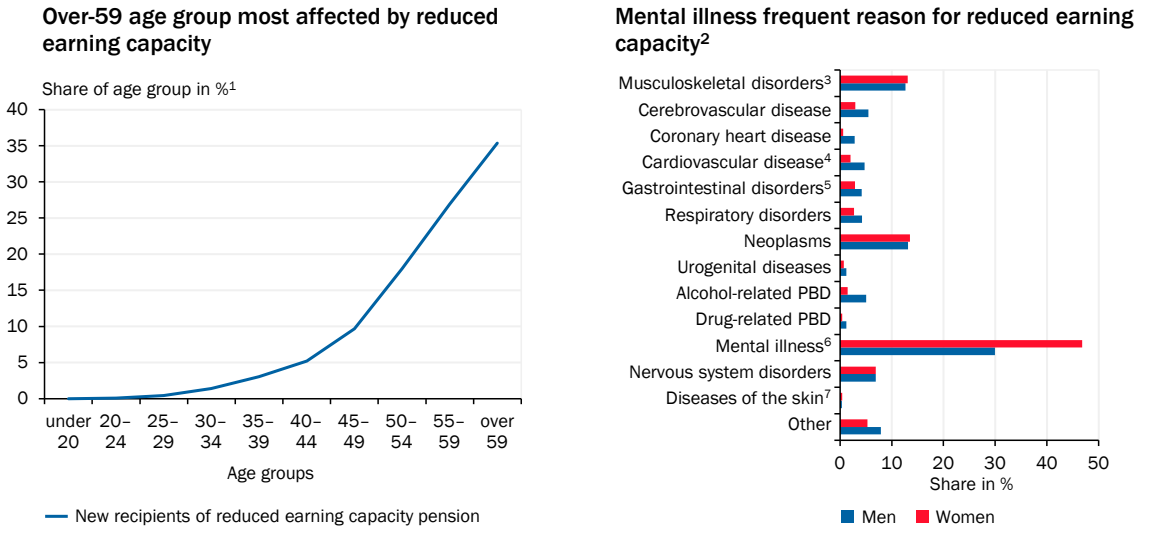
664. As workers grow older, the **probability of their being uncapable to work due to disability increases**. A general extension of the working phase must take account of the risk of increasing incapacity in older age. To protect against this risk, the statutory pension scheme provides the Reduced Earnings Capacity Pension (Erwerbsminderungsrente). There are also private income protection insurance schemes that cover occupation-specific risks.

665. The former statutory disability pension was abolished with the statutory reform of **pensions for reduced earning capacity** in 2001. Until then, anyone who was unable to continue working as a result of accident, musculoskeletal or cardiovascular diseases, or mental illness was classified as having an occupational disability. However, these specific conditions do not mean a person is unable to work at all. One consequence of the reform was to privatise occupational disability insurance.

Incapacity for work, in contrast, measures the degree of reduction in earning capacity. This may be total if the person is incapable of working for more than three hours a day, and partial if they can work for between three and six hours a day. The creation of the **Reduced Earning Capacity Pension** is an important element of the social safety net, enabling people to remain in work for longer. Increasing health risks in older age can lead to a reduced work volume for employees and jeopardise the ongoing payment of contributions into the statutory pension scheme. In this case, the reduced earning capacity pension covers the loss of earnings through pension payments on the basis of partial or full reduction in earning

↘ CHART 113

New recipients of reduced earning capacity pension in 2018, by age and diagnosis group



1 – New recipients of reduced earning capacity pension in the age group as a proportion of new recipients of reduced earning capacity pension in total (1,824,819 cases) in 2018. Average age 55.25 years. 2 – Distribution by reason for reduced earning capacity pension (diagnosis). PBD-Psychological and behavioural disorder. 3 – Plus connective tissue diseases. 4 – Excluding cerebrovascular and coronary (heart) diseases. 5 – Plus endocrinal, nutrition and metabolic disorders. 6 – Excluding addictions. 7 – And subcutaneous tissue.

Source: Deutsche Rentenversicherung

capacity. To enable people to stay in work for longer, the possibility of making this pension **easier to access at a later age** should be considered.

666. In 2018, there were 133,968 new recipients of the reduced earning capacity pension; this group accounted for 17.5 % of all new recipients of benefits under the statutory pension scheme (DRV, 2019). According to a study by Mika (2013), in 2010 the occupations with the **highest risk** of incapacity were **basic service jobs** and the second highest-risk group were basic clerical or administrative jobs. Among female employees, **basic clerical and administrative jobs** came top with basic services in second place. The risk of reduced earning capacity is around 16 % for male employees approaching the age of 60 and around 12 % for female employees (Mika, 2013). The risk of having to claim a pension due to reduced earning capacity increases with age. Among new recipients of the Reduced Earning Capacity Pension, the biggest age group is the over-59 year-olds, accounting for 35.4 % of new claimants in 2018. The second largest group (26.9 %) are those aged between 55 and 59 years. ↘ CHART 113 LEFT The probability of becoming unable to work at some point in life is higher for those with lower educational attainment and training qualifications (Lampert et al., 2017). The most frequent health reason for men and women by far is mental illness. ↘ CHART 113 RIGHT Occupation-specific accidents are rarely a cause of reduced earning capacity. In 2018, a total of 148,607 applications for pensions on the grounds of reduced earning capacity were turned down (Federal Government, 2019).

667. During working life, a **private occupational disability insurance** offers employees the option of insuring themselves against the financial consequences of being unable to work. Private occupational disability insurance covers accidents

and illnesses that prevent the scheme member from working in their chosen profession for at least three years. In the event of a claim, the payments serve as a replacement of earnings. Private occupational disability insurance usually includes a **reorganisation clause** that defines how an alternative role in the same company or in another profession can be created. Private occupational disability insurance thus has a **retraining function** to enable scheme members to work long term in paid employment.

A medical examination is required before joining an occupational disability insurance scheme and the cost of this is higher when carried out later in a person's career because it entails extensive documentation of their health and activity. **Joining an occupational disability insurance** scheme **early** can be advantageous in order to safeguard against the risk of a deterioration in one's health.

668. The problem of **occupation-specific risk** of being unable to work in later life is closely linked to the **activity involved** (Mika, 2013). It is much harder to carry out very heavy manual labour, such as in the construction industry, in later life than when young. But workers carry out a variety of activities over the course of their working life. People acquire professional experience as they grow older and progress along their career paths and, if they obtain qualifications and remain in the same profession, earn the possibility of promotion (McCue, 1996; Lluis, 2005). Promotion would lead to a change in the types of activity carried out, for example a move from manual labour to managerial duties. On a wider scale, however, promotions are not a solution for mitigating occupation-specific risk.

The structural change brought about by the digital transformation is leading to a change in the types of activity carried out and may enable the creation of age-appropriate jobs. Older workers will be able to perform less physically demanding duties, although the ongoing training of these workers is also an important element in enabling them to work with new technologies (Bellmann, 2017). ↘ ITEM 582 Retraining can also bring about a **change in job profile** if a certain activity can no longer be carried out. However, existential risks must be mitigated, especially in the case of workers who lack qualifications.

669. The Netherlands have linked their incapacity pension model to the rising retirement age. Stricter general rules for accessing this type of pension have been introduced while access for older people has been simplified in combination with the introduction of support and reintegration measures to help people return to and stay in work. The central plank of this model is the **involvement of companies in the further training and development** and reintegration of their employees during phases of reduced earning capacity. ↘ BOX 16

↘ BOX 16

The Reduced Earning Capacity Pension model in the Netherlands

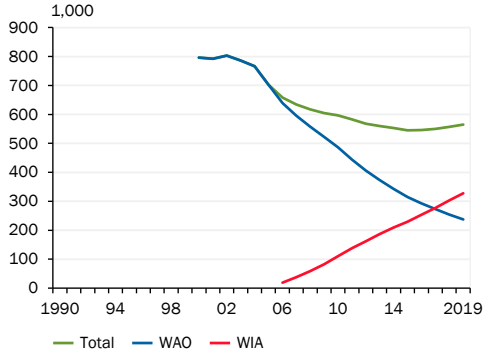
Until the early 2000s, the Reduced Earning Capacity Pension was an attractive option for employers in the Netherlands to avoid having to pay severance payments when terminating employment contracts. At the same time, it offered employees generous payments without requiring them to look for a new job (Koning and Lindeboom, 2015). **Numbers**

reached an all-time high in 2002 when just under 800,000 people were receiving a Reduced Earnings Capacity Pension. ↘ CHART 114 LEFT Radical reforms have since made it harder to claim these pensions, thereby reducing the cost to the state. New claims fell from 15.6 per 1,000 workers in 1998 to 5.1 per 1,000 workers in 2012 (Germany in 2012: 3.4). ↘ CHART 114 RIGHT

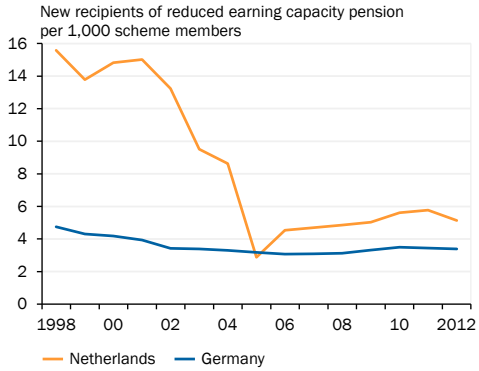
The Netherlands succeeded in reducing the duration of illness (OECD, 2007b) by introducing **incentives** for companies **to minimise the prevalence of illness in the workforce**. In 1994, the continued payment of wages by employers was introduced and was gradually extended to two years. A minimum payment of 70 % of gross wages is stipulated by law. In 2002, the 'Gatekeeper Protocol' placed a legal obligation on employers to set up rehabilitation and reintegration plans. Other measures introduced to control the number of claims for Reduced Earning Capacity Pensions include a detailed examination of the employee's medical condition in the event of illness as well as the early preparation and documentation of plans for their reintegration into work. The employer is accountable to the insurance provider for the measures implemented. The stricter criteria for obtaining reduced earning capacity status reduced the number of new claimants significantly.

↘ CHART 114
The reduced earning capacity pension system in the Netherlands

Slight decrease in total reduced earning capacity pension claims in the Netherlands[1]



Sharp decrease in new recipients of reduced earning capacity pensions through switch to WIA



1 – WIA: Reduced earning capacity system for new recipients from 2006. WAO: Reduced earning capacity system for new recipients before 2006.

Sources: Deutsche Rentenversicherung, UWV Netherlands

In 2006, a reduced earning capacity scheme was introduced that **tightened the eligibility criteria**. Unlike in Germany, a person's degree of earning capacity reduction is assessed on the basis of the loss of income resulting from the incapacity. The insurance provider determines an expected income, factoring possible alternative types of employment and the effect of the illness into the assessment. This is compared with the gross earnings prior to the incapacity. The minimum requirement for the degree of incapacity was increased from 15 % to 35 %, and the criteria for determining what constitutes reasonable alternative employment for the individual concerned were eased. The new reduced earning capacity model reduced the entitlement to benefits. Like the German reduced earning capacity system, the Dutch system now differentiates between full and partial reduced earning capacity. Benefits are now lower than before the reform, especially for a partial reduction in earning capacity.

Overall, reduced benefit entitlements and stricter criteria restricting access to the Reduced Earnings capacity Pension system will contribute to its long-term financial viability. In addition, regular medical checks for the beneficiaries (Einerhand and Swart, 2010) and

the **employer's obligation to reintegrate them into the workforce** should be viewed positively. For the period from 2010 to 2040, the number of people receiving this benefit is forecast to decrease again by up to a third. (European Commission, 2018).

It is striking that the importance of the reduced earning capacity system for employees aged over 55 years is increasing. In the Netherlands, a flat state pension is complemented by fully funded occupational and private pension provision (GCEE Annual Report 2016 box 19) and the retirement age has already been set at 67 until 2024, after which it will be linked to life expectancy (European Commission, 2020). At the same time, there **is no option for early retirement with deductions** as in Germany. Workers whose earning capacity is reduced are therefore reliant on an efficient system that is prepared for a growing number of people with reduced earning capacity due to the longer working life.

670. As the risk of occupational disability increases in later life, a mandatory occupational disability insurance in combination **with retraining measures** would be one possible way of avoiding permanent incapacity. A joint scheme operated by employers and employee representatives within state-imposed parameters could be one solution. Some such form of insurance could cover replacement earnings and pay for retraining for another, less physically demanding job. The benefits would only be claimed for a limited period, which would ensure the insurance was not being misused. Balancing the wishes of the individual and the needs of the labour market may however be a challenge when it comes to determining the career for which training is to be provided.

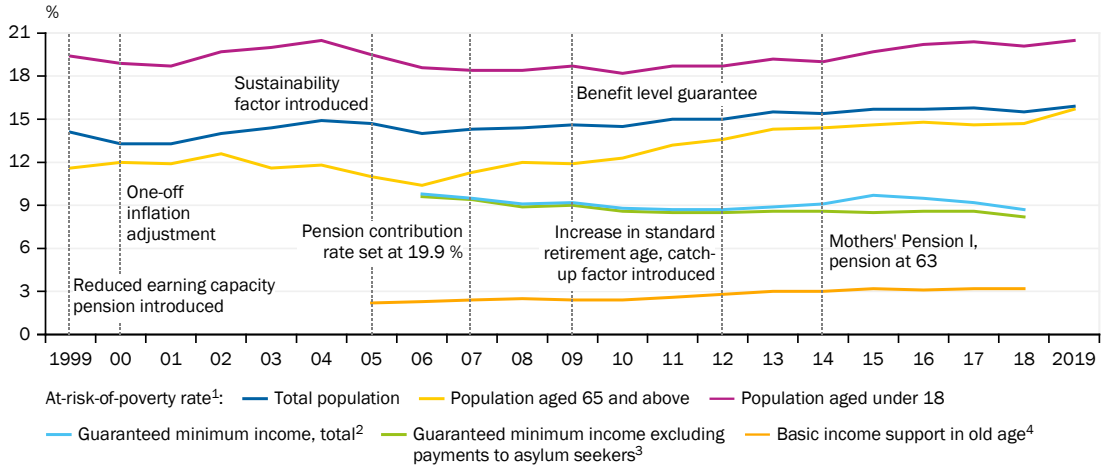
III. POVERTY IN OLD AGE

671. Demographic change is creating a fear of being at risk of poverty in old age (GCEE Annual Report 2016 Items 559 ff.). There are **two fundamental ways of measuring** poverty in old age. The first is as a percentage within the income distribution range, which is how the **at-risk-of-poverty rate for the over-65 year-olds** is measured. This shows the proportion of those aged over 65 whose equivalence income is less than 60 % of national equivalence-weighted median income. Alternatively, the **poverty rate** for over-65 year-olds can be used, which is based on 50 % of this median income. These indicators are a **measure of relative poverty,** which change as the national income distribution changes.

The second way of measuring poverty in old age is to use a defined level of need. In Germany, a minimum level of necessary income has been set by policymakers in the form of basic income support (Geyer, 2015; Buslei et al., 2019a). The **basic income support rate** among the older population, i.e., the proportion of those over the age of 65 who claim basic income support, can be used to measure poverty in old age. However, poverty in old age cannot be fully measured by this indicator alone, as around 60 % of those entitled to this benefit do not claim it (hidden old-age poverty). Non-take-up is particularly high among households only entitled to small sums, people aged over 77 and homeowners (Buslei et al., 2019c).

↘ CHART 115

At-risk-of-poverty rates and social welfare benefits over time



1 – People whose disposable income is less than 60 % of the average national income, reference value is the national median. 2 – Recipients of total standard benefits (unemployment benefit II/income support), basic income support in old age and when earning capacity is reduced, standard benefits under the German Asylum-Seekers Benefits Act (AsylbLG) and subsistence support for those living outside institutions, as a proportion of the population as a whole. 3 – Without standard benefits under the AsylbLG. 4 – Recipients of benefits upon reaching the age limit of 65 to 67 years (and older) in relation to the population at the same age.

Sources: Statistical Offices of the Federation and the Länder

1. Changes in poverty in old age

672. **The risk of poverty in old age has increased** over the past two decades and in 2019 stood at 15.7 % – similar to the risk of poverty among the general population. ↘ CHART 115 The figure for children at risk of poverty is significantly higher at over 20.5 %. Pension reforms such as the benefit level guarantee in 2009 and the introduction of the Mothers' pension' and a full pension at the age of 63 do not appear to have led directly to changes in the various measures of poverty in old age. ↘ CHART 115 The growth of the low-wage sector in recent years could be one reason for the increase in poverty in old age (GCEE Annual Report 2016 Items 752 ff.), at least for those who have seen their earnings fall and their pension entitlements shrink as a result of the expansion of the low-wage economy.

673. If the current pension rules are left unchanged, the **at-risk-of-poverty rate could rise in future** and, according to the simulations by Geyer et al. (2019a), reach 21.8 % in the first half of the 2040s before decreasing slightly in the following years. The potential reduction in the net replacement rate and the associated increase in poverty in old age in the coming years, as a result of demographic change, is provoking more public debate about poverty in old age even though the risk of poverty in the older population is currently no higher than in the population as a whole. The distribution of poverty in old age varies greatly from country to country. ↘ BOX 17

↘ BOX 17

Poverty and social security in later life: an international comparison

In most countries, **the income of older people** is below that of the general population. Across the OECD, the income of those aged over 65 is only 87 % of average income (OECD, 2019b). However, older people within OECD countries are not disproportionately at risk of poverty, which may be largely due to the progressive nature of state old-age pension provision. Progressive elements of the pension systems include basic income for people of pension age based on where they live (e.g., New Zealand and Canada) or basic pensions (United Kingdom) or minimum pensions (Switzerland) based on contribution years. In addition, in most countries there is a cap on entitlements which prevents greater perpetuation of inequality (OECD, 2017b).

The poverty level among over-65 year-olds is particularly high in the United States (23 %). The Netherlands, France and Denmark in contrast, are among the countries with the lowest rates of poverty in old age (3 %). ↘ CHART 116 TOP LEFT In almost all OECD and G20 countries, poverty in old age affects women more than men. The average poverty level among over-65 year-olds in the OECD countries is 10 % among men and 16 % among women. The **gender-specific difference** in old-age poverty is particularly high in the Baltic States and South Korea. The gender difference is 3 percentage points in Germany, which is below average (OECD, 2019b). The differences between countries can only be partly explained by differences in the national pension systems. Gender-specific differences in labour force participation and income from employment are particularly relevant (Zaidi, 2010; Haitz, 2015).

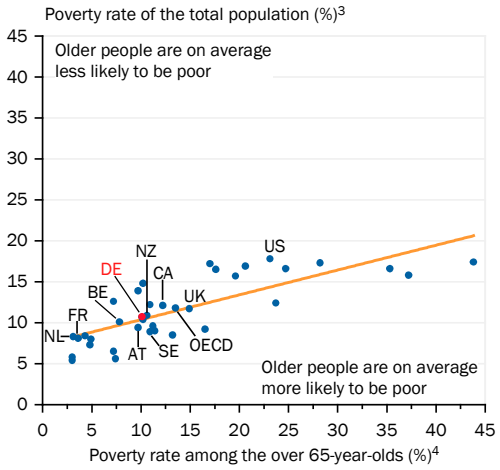
Poverty in old age was declining across the OECD in the period from the mid-1990s to 2016, while poverty in the general population rose slightly over the same period and child poverty rose sharply. ↘ CHART 116 TOP RIGHT But the change in poverty rates varies across the OECD countries for which data for that period is available (OECD, 2019b). In future, the further rise in life expectancy could be coupled with a decreasing net replacement rate and thus increasing poverty in old age in many OECD countries (OECD, 2014).

There are essentially two approaches to guaranteeing **a basic standard of living in old age**. The more common approach is needs-based basic income support for older people and those who are unable to work (for example in Germany, France, the United States and Italy). Less common is a non-contributory basic income in old age. In New Zealand and the Netherlands, statutory pension payments are limited to this basic income. Mixed forms exist in Canada and Greece, where the basic income is topped up with an earnings-related pension to protect the standard of living. The amount of the basic income is very low, however, at 17 % of average income in Greece and 13 % in Canada (OECD, 2019b). Systems with a universal basic income for older people can provide effective protection against poverty in old age because there is no tapering of other benefits, but they put a lot of strain on the public finances (Goedemé, 2013). Basic income support in Germany is slightly below the OECD average ↘ CHART 116 BOTTOM LEFT, and state spending on ensuring a basic standard of living is relatively low.↘ CHART 116 BOTTOM RIGHT In addition, Germany currently has no minimum or basic pension linked to contribution criteria, enabling low earners to top up entitlements as part of an earnings-based system, as exists for example in Belgium and the United Kingdom (OECD, 2019b). However, this will change from 1 January 2021 with the introduction of the **Basic Pension** (**Grundrente**) which is best classified as a minimum pension for low earners.

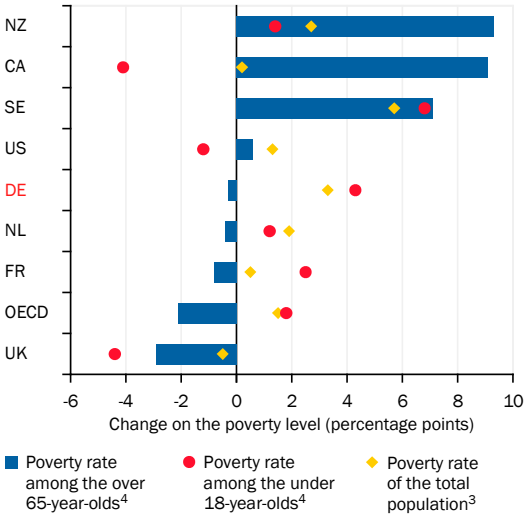
↘ CHART 116

International comparison: poverty and social security in old age in selected OECD member states[1]

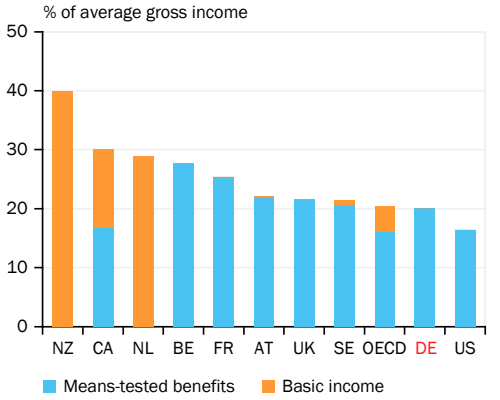
Poverty among older people in 2018 on average across the OECD more widespread than poverty among the total population[2]



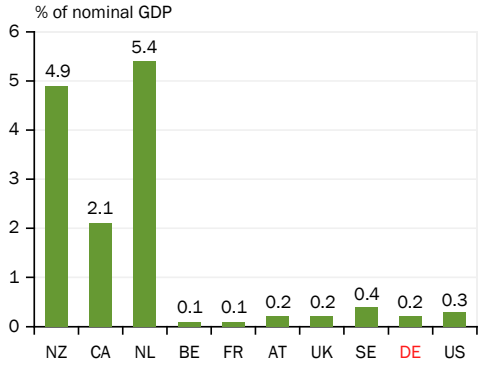
On average across the OECD since 1995, poverty has fallen among older people and increased in the total population[5]



Livelihood security level in Germany slightly below the OECD average



High public expenditure for livelihood security in countries without means testing



1 – NZ-New Zealand, CA-Canda, NL-Netherlands, BE-Belgium, FR-France, AT-Austria, UK-United Kingdeom, SE-Sweden, DE-Germany, US-USA. 2 – Or last available year 3 – Percentage of people that have less than 50 % of the median household equivalence income, relative to the total population. 4 – Percentage of people in this age group that have less than 50 % of the median household equivalence income, relative to the same age group in the population. 5 – The more recent poverty rates for Canada, Sweden, United Kingdom and USA are for 2017, those for New Zealand are for 2014, for all other countries, 2016. The older poverty rates related to 1996 for France, 1994 for United Kingdom, 1995 for all other countries.

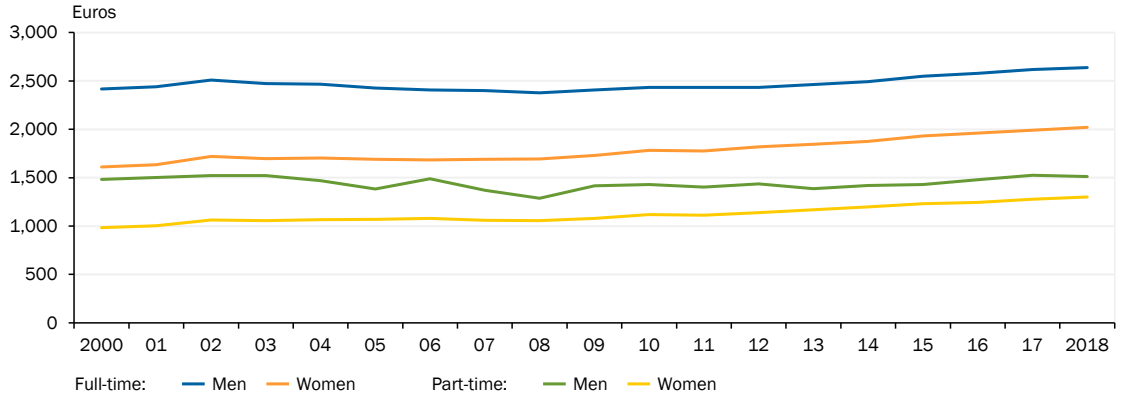
Sources: OECD, national institutions, own calculations

674. According to the Federal Statistical Office, the **at-risk-of-poverty rate for over-65 year-olds** stood at 15.7 % in 2019. **Women** (17.4 %) are **more commonly** affected **than men** (13.5 %). ↘ CHART 119 The gender-specific differences are due in part to the fact that women over the age of 30 are less likely to be in full-time employment and tend to earn lower salaries on average (Keller and Kahle, 2018). Although the proportion of women in the labour force has increased

↘ CHART 117

Income trends by gender[1]

Individual income rising for men and women



1 – Monthly real net individual income (CPI 2015 = 100) for employees aged 15–64, excl. workers on reduced hour contracts, trainees, armed forces. Weighted with extrapolation factor. Change to the extrapolation basis in 2011/2012, figures from 2011 comparable with the following years.

Sources: RDC of the Federal Statistical Office and Statistical Offices of the Länder, Mikrozensus 2000-2018, own calculations

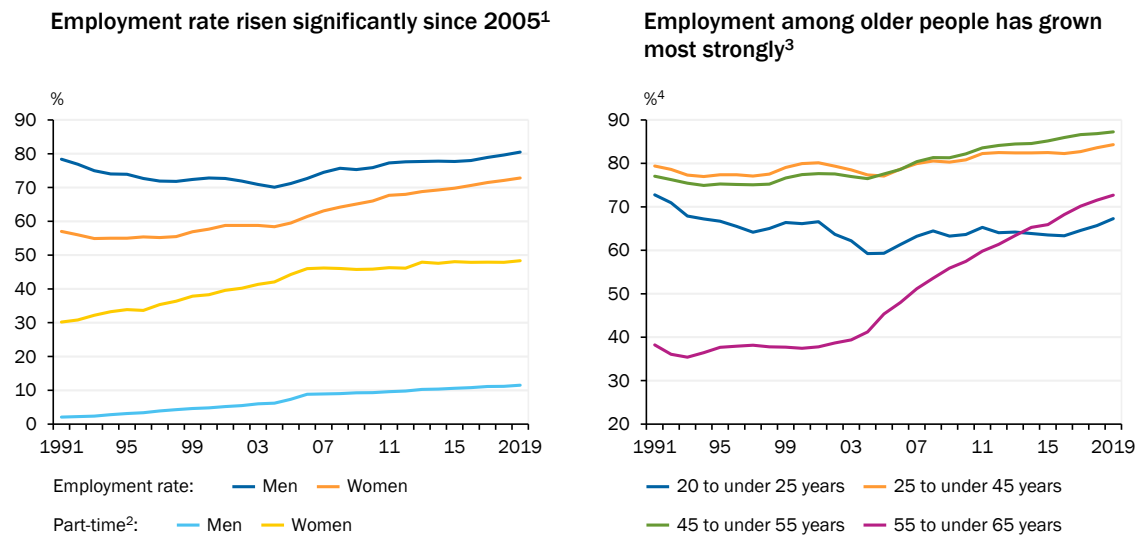
over the past decade, there are still **income differences between men and women**. ↘ CHART 117 LEFT This may be due in part to the fact that more women work part-time, but is also the result of an asymmetric distribution across professions, hierarchical positions and sectors of industry. ↘ CHART 118 LEFT Consequently, **women** tend to **acquire smaller pension entitlements**. According to pension statistics (BMAS, 2019), insured men in western Germany had an average retirement pension of €1,152.52 in 2019, while insured women received just €692.92. In eastern Germany, the figures are €1,250.68 for men and €1,024.45 for women. Looking at household income instead of individual pension payments, only single-person households contribute to the gender differences.

675. **Increasing the number of women in the labour force** is a key political goal, not least against the background of an ageing society, relatively low pension entitlements for women and potentially rising poverty in old age. Between 2005 and 2019, female employment rose from 60 % to 73 %. ↘ CHART 118 LEFT This increase is due in particular to the sectoral structural shift towards more jobs in the service sector and in healthcare, social care and education, where women make up a greater proportion of the workforce.

676. The risk of poverty in old age varies not only by gender but also on the basis of other characteristics. The at-risk-of-poverty rate among those without a **school-leaving qualification** is 41 5%, more than five times as high as for those with a university entrance qualification (7.5 %). At 33.4 %, the proportion of people with a **migration background** who suffer poverty in old age is well over twice as high as for those without a migration background (13.2 %). The figure for **people living alone** is, at 24 %, more than twice as high as for those living in larger households. ↘ CHART 119 The distribution of the risk of poverty in old age is thus very heterogeneous within the population.

↘ CHART 118

Employment in Germany



1 – In the 15 to under 65 age group. 2 – Part-time employees. 3 – Up to 2010, data from the microcensus. From 2011, the figures are extrapolated using the population update based on the 2011 census. The results are therefore not directly comparable with previous years. 4 – Relative to the population in each age group.

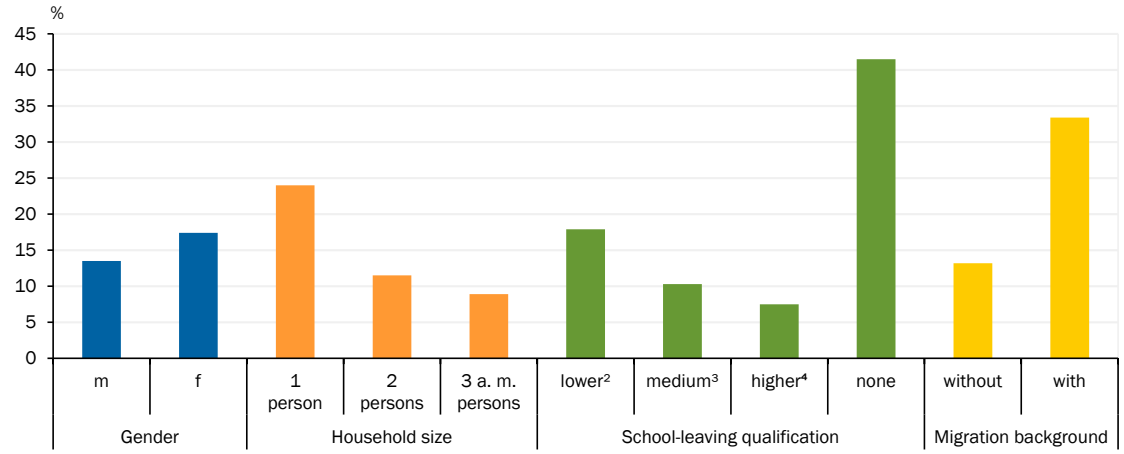
Sources: Federal Statistical Office, own calculations

677. The most important instrument in ensuring that low earners can secure a basic livelihood in later life is **basic income support in old age and when earning capacity is reduced**. This is a social welfare benefit under SGB XII. Anyone who has reached the relevant age and who cannot adequately support themselves from their own means can apply for basic income support. Basic income support follows the principle of subsidiarity whereby available income and assets should be

↘ CHART 119

At-risk-of-poverty rates for people aged 65 and above in 2019[1]

Poverty in old age are higher for people without school-leaving qualification and with a migration background



1 – People aged 65 and above whose disposable income is less than 60 % of the average national income; reference value is the national median. 2 – Hauptschule. 3 – Mittlere Reife. 4 – Abitur and Fachhochschulreife.

Source: Statistisches Bundesamt

used first before social welfare benefits are paid (Report of the German Social Advisory Council on the Federal Government's Pension Insurance Report, 2015). The benefits are therefore means tested.

2. Mothers' Pension

678. Parents who interrupt their working lives to raise children can still acquire one earnings point a year towards their pension. For a long time, it was only possible to acquire earnings points for a maximum of one year for raising children born before 1992, while a maximum of three years could be credited for raising children born after 1992. This was gradually changed with the pension reforms in 2014 (RV-Leistungsverbesserungsgesetz 2014) and 2018 (RV-Leistungsverbesserungs- und Stabilisierungsgesetz 2018) (**Mothers' Pension I and II**), raising the maximum allowance for children born before 1992 to two and a half years.

679. Generally, crediting child-rearing years to the statutory pension scheme breaches the **principle of equivalence** as the number of earnings points acquired is not matched by contributions. This applies both for children born after 1992 and those born before 1992, for whom additional credit was granted through the new Mothers' Pension. The crediting of time spent raising children to the statutory pension scheme does however comply with the solidarity principle of social insurance. In the public debate, the crediting of child-rearing periods is sometimes justified with the argument that the pay-as-you-go system depends on future generations and therefore cannot function without child rearing. On this basis, credits could be granted solely on the basis of the child's existence, without parents having to meet the condition of economic inactivity.

680. In an expert report prepared by the German Institute for Economic Research (DIW) for the German Council of Economic Experts (Geyer et al., 2020), the dynamic simulation model DYSIMO is used to analyse the **effects of Mothers' Pension I+II** on monthly pension payments and household income. The expert report concludes that well over eight million women benefit from the Mothers' Pension. Men benefit indirectly where they are part of the household. The reforms to the Mothers' Pension **increase** the average **pension payment per woman by €77 per month (10.5 %)**.

The dynamic simulation model DYSIMO is a **microsimulation model**, based on the SOEP dataset, which includes data on socio-economic characteristics as well as the income and assets of individuals and households. It replicates the current tax and transfer system, so that different reforms to the pension system can be modelled. This enables the impact of changes to pension rules on pension payments, income, at-risk-of-poverty rates and basic income support claims to be simulated (Geyer et al., 2020).

681. The effects of the reforms on pension payments are not distributed equally; they vary according to income group. The absolute increase in pension payments for women is similar in the bottom four quintiles of weighted disposable household income, at €79 to 81, and is only lower in the top quintile (€61); however, **the**

relative increase in pension payments declines sharply with income. While the increase in pension payments in the bottom two quintiles is 16.6 % and 13.0 %, in the top two quintiles it is only 8.9 % and 6.4 %. ↘ CHART 120 LEFT

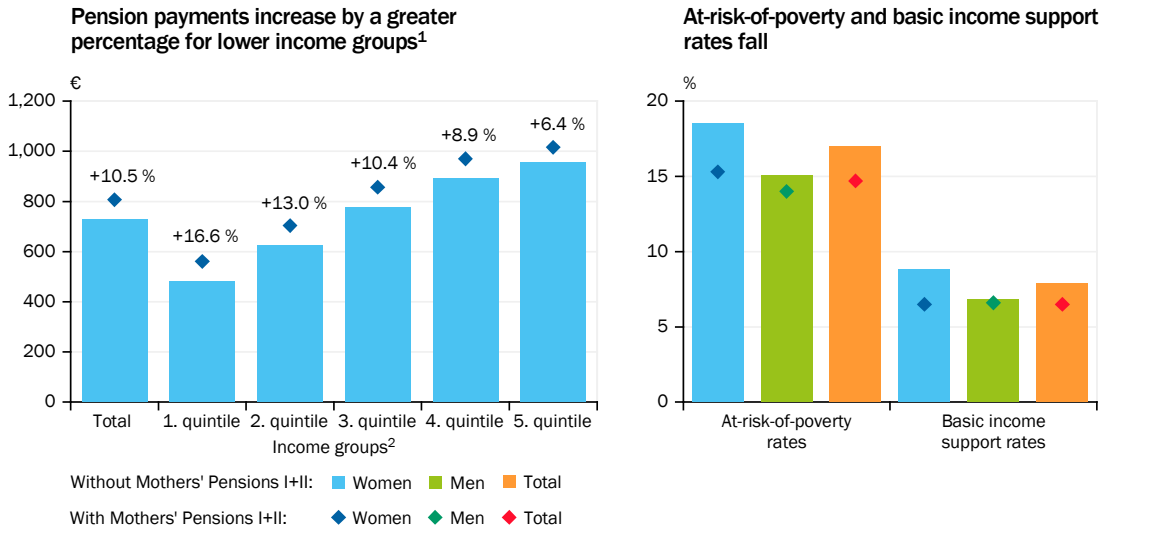
The **at-risk-of-poverty rate** of the population above the age threshold **falls** with the introduction of Mothers' Pension I+II **by 2.3 percentage points**, whereby the decrease is greater for women (3.2 percentage points) than for men (1.1 percentage points). As the risk of poverty is measured at household level, gender-specific differences are attributable solely to single-person households. Accordingly, Mothers' Pension I+II reduces the at-risk-of-poverty rate for women living alone by a larger amount: 4.5 percentage points. The reforms reduce the number of those entitled to claim **basic income support by 17.7 %**. This decrease is also far greater for women (26.1 %) than for men (2.9 %) (Geyer et al., 2020). ↘ CHART 120 RIGHT

682. Overall, the extension of child-raising periods thus has the **effect of reducing poverty** as it disproportionately benefits women with lower pension entitlements. Because the Mothers' Pension is not means tested, however, it also benefits women who have large pensions. Conversely, it does not benefit pensioners who – even in the presence of the Mothers' Pension – have to claim basic income support. However, the Mothers' Pension was not introduced in order to tackle poverty in old age. Its aim was to financially recognise the contribution of parents in raising the next generation and to solve the problem of the January 1992 cut-off date.

683. Overall, the reforms to Mothers' Pensions cost employees and employers more through **higher pension contribution rates**, but also cost taxpayers more because of the **increasing federal subsidy**. This is illustrated by Werding's simulation scenario (Werding, 2020) in which the package of Mothers' Pension I and

↘ CHART 120

Simulated effects of Mothers' Pensions I+II on monthly pension payments, at-risk-of-poverty and basic income support claim rates



1 – The percentages above the bars refer to the increase in pension payments resulting from Mothers' Pensions I+II relative to the pension payments without the Mothers' Pensions I+II. 2 – Income quintiles of weighted disposable income.

Source: Geyer et al. (2020) based on SOEP data

II is hypothetically scrapped after 2021. ↘ CHART 112 Under the pension adjustment formula, the increasing contribution rates lead to **pensions being adjusted downwards** in the coming years. The reforms will thus also negatively affect childless pensioners, particularly those in the lower income bracket (Bach et al., 2018).

3. Basic Pension

684. The **Basic Pension** will be introduced in Germany on 1 January 2021. It consists of a pension top-up for those who can show **at least 33 qualifying years**, which are years in which they have paid compulsory contributions to the statutory pension scheme, raised children or provided long-term care for a relative. Another requirement is that the average earnings points for the qualifying calendar months are below a certain ceiling. Qualifying calendar months are those in which the individual has been credited with a minimum of 0.025 earnings points (0.3 earnings points for the year) and the other qualifying criteria apply. The ceiling is 0.4008 earnings points for the year if the individual has 33 qualifying years. The ceiling is increased on a straight-line basis up to 0.8008 earnings points for those with at least 35 qualifying years.

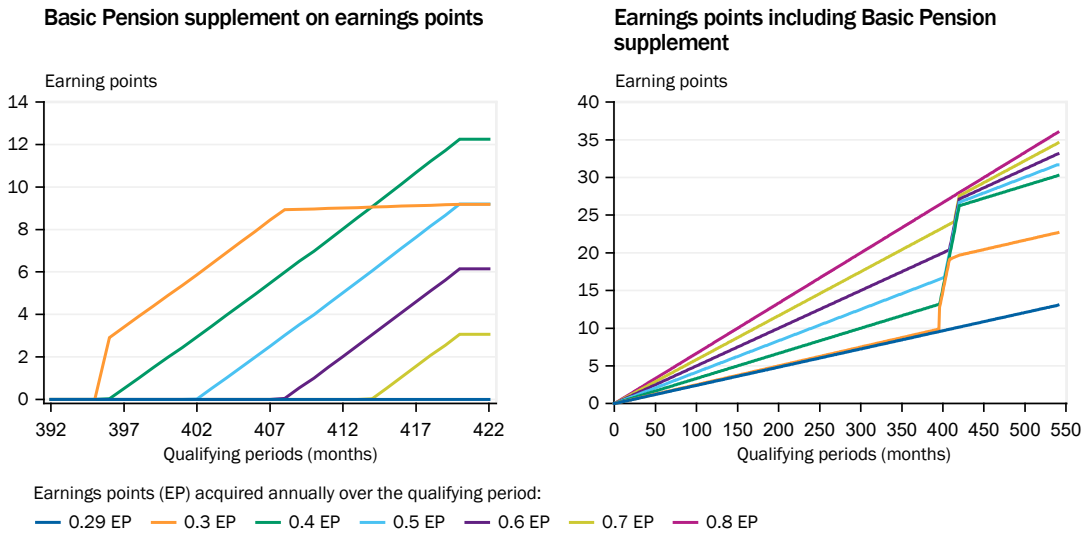
685. The **amount of the supplement** is calculated by firstly looking at the average of the earnings points from the qualifying years if this average is less than 0.4 earnings points. If the average is between 0.4 and the maximum, then the calculation uses instead the difference between average and maximum. The supplement is finally calculated as 87.5 % of the figure thus determined. A maximum of 35 qualifying years are topped up in this way.

686. The application of these rules means that provided they have enough qualifying years, individuals with a lower number of earnings points may in some cases receive a higher Basic Pension top-up than people with a higher number of earnings points. In specific cases involving certain **combinations of earnings points and qualifying years**, people with a higher number of earnings points will receive a higher supplement. For example, the Basic Pension supplement for a person who has been credited with 0.3 earnings points a year for 408 months (34 years) is higher than the supplement for a person who has been credited with 0.4 earnings points a year over the same period. However, if the earnings points are credited over a period of 420 months (35 years), the supplement for the person with 0.4 earnings points a year is higher than for the person with 0.3 earnings points a year. A person with fewer than 0.3 earnings points a year never benefits from the Basic Pension, regardless of their qualifying years. ↘ CHART 121 LEFT

It is **hard to understand** why the **supplement is structured** in this way. The Basic Pension also changes the relative income position between scheme members. For example, without Basic Pension, the pension of a person with an average of 0.7 acquired earnings points a year over a period of 30 insurance years is higher than the pension of a person with an average of 0.4 acquired earnings points a year over a period of 40 insurance years. When the Basic Pension is awarded, the order is reversed. ↘ CHART 121 RIGHT

↘ CHART 121

Effect of the Basic Pension on earnings points, based on earnings points acquired each year[1]



1 – For hypothetical persons whose average annually acquired earnings points remain constant over the entire qualifying period.
Interpretation aid: The Basic Pension supplement for a person who has been credited 0.3 earnings points per year over a period of 408 months, is 8.9 (chart, left). The total number of earnings points including the supplement for this person is 19.1 (chart, right).

Source: Geyer et al. (2020)

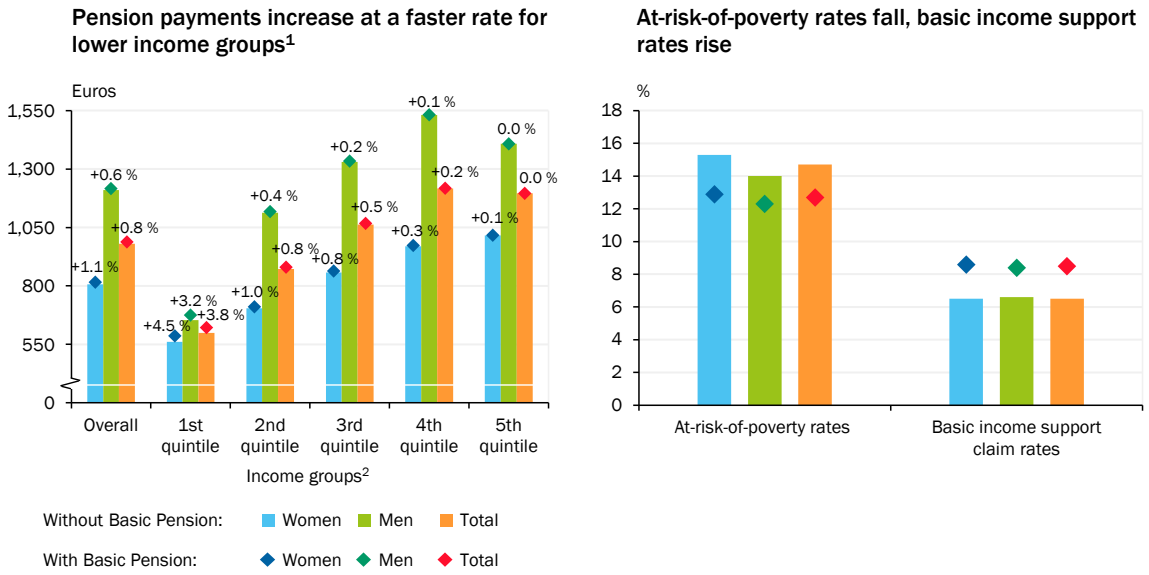
687. The Basic Pension is subject to a **means test** that looks at **income** but not assets, and is automatically granted without having to be claimed. Income above a threshold of €1,250 for single persons and €1,950 for couples is offset against the Basic Pension at a rate of 60 %. Income above €1,600 Euro for single persons and €2,300 for couples is fully offset against the Basic Pension. Income is defined as taxable income under income tax legislation.

688. In the DIW expert report (Geyer et al., 2020), the dynamic simulation model DYSIMO was used to analyse the effects of the Basic Pension on income. The expert report concludes that 1.2 million people will benefit from the Basic Pension, which is around 6 % of people above the standard retirement age. The Basic Pension increases the average pension payment for women by €9 (1.1 %) and for men by €7 (0.6 %). The **income-boosting effect of the Basic Pension is felt almost exclusively by people in the bottom income bracket**: the average pension payment of people in the bottom quintile of weighted disposable household income is increased by €23 (3.8 %), that of people in the second quintile by €7 (0.8 %) and that of people in the 3rd to 5th quintiles by €5, €2 and €0 respectively, i.e., less than 0.6 %. ↘ CHART 122 LEFT

689. The introduction of the Basic Pension **reduces** the **at-risk-of-poverty rate by 2 percentage points**. The effect is stronger for women than for men because women often earn less than men. ↘ CHART 122 RIGHT As the risk of poverty is measured at household level, gender-specific differences are attributable solely to single-person households. Accordingly, the Basic Pension reduces the at-risk-of-poverty rate for women living alone more than it does for men living alone (3.3 percentage points and 1.6 percentage points respectively). In addition, the effect of the Basic Pension in western Germany, where the at-risk-of-poverty rate of 15.7 %

↘ CHART 122

Simulated effects of the Basic Pension on monthly pension payments, at-risk-of-poverty rates and basic income support rates



1 – The percentages above the bars refer to the increase in pension payments resulting from the Basic Pension relative to the pension payments without the Basic Pension. 2 – Income quintiles of weighted disposable household income.

Source: Geyer et al. (2020) based on data from the SOEP

falls to 13.5 %, is greater than in eastern Germany where it falls from 10 % to 8.8 % (Geyer et al., 2020).

690. The introduction of the Basic Pension increases the number of those entitled to claim **basic income support** from 6.5 % to 8,5 %, i.e., by 30.8 %, even though the pension payments in the lower income bracket increase. ↘ CHART 122 RIGHT This is due to the introduction of an allowance for income from pension insurance in the calculation of eligibility for basic income support. The first €100 of the pension is disregarded for the purposes of the eligibility calculation. If the pension is more than €100, 30 % of the additional amount is disregarded. The allowance must not be more than 50 % of the standard amount (€432 a month since 1 January 2020) (Geyer et al., 2020). It should be noted that the simulations of Geyer et al. refer to the number of persons eligible for basic income support, not the number of actual claims. It is unclear whether the take-up rate will change when more people become eligible – this depends on the extent to which those who are newly entitled to the basic income support will actually claim it.

691. Overall, the Basic Pension **reduces poverty slightly**. Households in the bottom income quintile in particular will benefit from an increase in pension payments as a result of the reform. Geyer et al. (2020) have calculated that around 41 % of beneficiaries are among those at risk of poverty. However, some people in the lower income bracket do not benefit. This refers to the group who do not satisfy the requirements under pension insurance law, i.e., the qualifying period criterion or the lower limit for annual earnings points acquired.

692. Overall, the Basic Pension is a **blunt tool for addressing poverty in old age**, firstly because it benefits people who would not be at risk of poverty without the

Basic Pension and secondly because it does not benefit people who are at risk of poverty. The latter group includes people with reduced earning capacity, the long-term unemployed and self-employed people with low earnings. The positive correlation between income and asset poverty means that dispensing with the asset-based means test should not significantly affect the targeting of poorer households (Geyer et al., 2020).

693. The stated aim of the Basic Pension was not to tackle poverty in old age, but rather that: "People who have paid compulsory contributions to the statutory pension insurance scheme for decades should be entitled to expect a retirement pension that recognises their lifetime achievement." (Deutscher Bundestag, 2020, own translation). However, it is unclear as to why the contributions of a person with a short contribution history and higher individual payments should be valued as less of a lifetime achievement than contributions of the same total amount paid over a longer period of time in smaller sums. The Basic Pension **breaches the equivalence principle** as it breaks the fixed ratio between the amount of contributions paid and the amount of pension benefit received, and instead values contributions differently depending on the particular combination of qualifying periods and annual contributions.

694. The implementation of the Basic Pension will create a **considerable administrative burden** for Deutsche Rentenversicherung (DRV) as well as increased costs for the **additional personnel requirement** – especially since DRV does not have the income information required for the means testing and because in some cases time spent abroad will also have to be factored in (DRV, 2020). DRV calculates it will need an additional 1,300 staff for 2021 plus an additional 700 in subsequent years (as at June 2020; Fasshauer, 2020). It is estimated that the implementation of the Basic Pension Act (Grundrentengesetz) will cost around €155 million (Fasshauer, 2020). Due to the additional administration involved, DRV does not anticipate that the first Basic Pension payments will be made until the middle of 2021 (DRV Nord, 2020).

695. The Basic Pension is to be **funded** by increasing the federal subsidy. The additional federal subsidy for the Basic Pension will be **€1.3 billion** in the first year, around **€1.4 billion** in 2022 and in 2023, and €1.5 billion in 2024. In 2025 it will rise to €1.6 billion (Deutscher Bundestag, 2020). This does not include the additional administrative spending. The effects on the federal subsidy are illustrated in Werding's simulation (Werding, 2020). ↘ CHART 112 However, it remains unclear how the additional spending will be funded. At the beginning of the year, the Federal Ministry of Finance proposed a European financial transaction tax to cover the cost. This would require the backing of nine EU member states and an agreement for which there is currently no consensus (BMF, 2020).

4. Effective measures to tackle poverty in old age

696. The measures to stabilise the sustainability of the statutory pension scheme outlined above will help to counter any further increase in poverty in old age by **preventing the net replacement rate from declining** too sharply. The increase

in the statutory retirement age in particular will reduce the proportion of pensioners and thereby increase pension payments. ↘ BOX 15

697. The reforms and proposals discussed so far are, however, curative rather than preventative when it comes to poverty in old age (GCEE Annual Report 2013 Items 700 ff.; GCEE Annual Report 2016, Item 566). A targeted **curative measure** for tackling poverty in old age could be a **change to the way in which tapering is applied**. The means by which this works is through the decision to participate in the labour market: the lower the rate of tapering of benefits, the greater the marginal incentive to take up work and the larger the reduction in the at-risk-of-poverty rate (GCEE Annual Report 2019 Item 692). However, a lowering of the rate of tapering brings with it an expansion of the group of basic income support recipients and would therefore have to be carefully balanced. A standard percentage-based allowance on the basic income support in old age would nevertheless ensure that acquired pension entitlements would not be offset completely against other benefits as is currently the case (Ragnitz, 2020).

698. Poverty in old age is due in no small part to interrupted career histories. Improving opportunities to participate in the labour market should be the focus of measures aimed at **preventing old-age poverty**. One means of doing this would be family policy measures such as the quantitative and qualitative expansion of the childcare infrastructure that would help to make work more compatible with family life and thus increase the proportion of women in the labour force (Schober and Spieß, 2014; Geyer et al., 2015; Bach et al., 2020a; Müller and Wrohlich, 2020). If mothers are able to increase their earning capacity, they will acquire bigger pension entitlements and thus be less at risk of poverty in old age.

699. The provision of **education and training opportunities** could be another effective means of preventing poverty in old age (GCEE Annual Report 2016 Item 567). Educational attainment begins with early years' provision and includes school education and vocational training as well as continuing professional development. Early years' support for children from households of low educational attainment is a particularly effective and efficient means of improving labour market opportunities (Heckman, 2000, 2006; Currie and Almond, 2011; Almond et al., 2018). A higher level of education is associated with a lower risk of unemployment, a greater propensity to work and higher income and thereby improves individual provision in later life across all three pillars of the pension system. Lifelong learning, for example through continuing professional development, also opens up opportunities to obtain further skills and qualifications and to avoid unemployment (GCEE Annual Report 2012 Item 577). Education also has a positive effect on health and health-related behaviour (Lance, 2011; Heckman et al., 2018a, 2018b). A higher level of education could thus lessen the risk of reduced earnings and poverty in future generations.

IV. CONCLUSION

700. The long-term ageing of the population is a problem that cannot easily be tackled through policy measures. It is possible, however, to limit the negative **impact of demographic change** on the statutory pension scheme, provided that economic policies are implemented to address the challenge. Early action is critical, as the longer the necessary measures are delayed, the more disruptive and serious the subsequent adjustment measures will need to be (Occasional Report 2011 Item 10).

701. The economic framework within which the pay-as-you-go funded statutory pension scheme operates has been changed by the **coronavirus pandemic**. The impact of workers' loss of income due to job cuts and short-time working will be reflected in pension adjustments with a delay in the years to come. The suspension of the catch-up factor together with the introduction of a benefit level guarantee and binding double stop line are likely to increase pensions relative to earnings, even in the longer term. **Reinstating the catch-up factor sooner rather than later** would help to rectify the imbalance caused by the economic shock.

702. An ageing society is likely to mean increased contributions, a reduced net replacement rate and a higher federal subsidy in future. There are a number of options for reform in order to address this problem. Linking pension adjustments to inflation instead of wage development would, in the event of high productivity growth, lead to a sharp fall in the net replacement rate. Expanding the contributor base of the statutory pension scheme tends only to offer a temporary solution to the sustainability problem. Encouraging **greater labour force participation**, particularly among women and older people, could alleviate the funding problem. However, this measure would not on its own be enough to solve the problem fully and in a lasting way. A key plank of any reform would be to **split the additional years gained from rising life expectancy between the work phase and the retirement phase** and increase the retirement age above 67 years from 2031. This could be achieved by establishing a fixed link between the statutory retirement age and further life expectancy.

703. In order to enable economically active people to remain in work for longer and thus enter retirement later, the **incapacity and disability insurance schemes** should be structured in such a way that older people are better protected if their earning capacity is jeopardised. If people are unable to continue working due to the nature of their job, they should have sufficient cover so that they are able to bridge the longer period until the standard retirement age. This kind of reform could be combined with **further training and development measures** in order to help workers transition to other professions or roles.

704. Historical **pension reforms** such as the Mothers' Pension, the full pension at the age of 63 for particularly long-term contributors and the Basic Pension have tended to exacerbate the funding problem caused by demographic change. The cost of these measures should at the very least be met from the federal budget

rather than shouldered by contributors. These pension reforms can help to alleviate potential **poverty in old age**. Targeted and more sustainable measures to tackle poverty in old age include a lowering of the rate at which benefits are tapered for recipients of basic income support, better integration into the labour market, support to ensure unbroken career histories, and improved early-years provision, school education and professional training and development.

A differing opinion

705. One member of the Council, Achim Truger, does not agree with the majority position of the GCEE on some aspects of Chapter 6, 'Demographic change: sustainable retirement provision'. The differing opinion relates **firstly** to the option preferred by the Council majority of the rapid implementation of an **automatic link between the statutory retirement age** and **further life expectancy** from 2031; **secondly** to the **treatment of different options for reform** such as increasing labour force participation (of women) and expanding the contributor base; and **thirdly** to the way the growing problem of **poverty in old age was addressed**.

706. The option preferred by the majority of the Council to implement an **automatic link between the statutory retirement age and further life expectancy** from 2031 would lead – as mentioned by the Council majority – to **serious disadvantages** and problems for several affected people. Firstly, life expectancy is clearly correlated with income and other socio-economic factors (Brussig and Schulz, 2019). Thereby, an increase of the standard retirement age would especially disadvantage people with lower income, since their pension period would be limited in a relatively more substantial way due to their lower further life expectancy. Secondly, people employed in physically and mentally exhausting occupations with, in addition, frequently lower income, who already retire earlier from working life, could barely reach the higher retirement age and would therefore have to accept large reductions of their pensions.

707. Although these problems are identified by the Council majority, **no compelling solutions** are provided, which is not surprising given the complexity of the matter and the many as yet unanswered questions (Bäcker, 2018). The proposal of Breyer and Hupfeld (2009) of a pension entitlement that increases at a declining rate relative to income is discussed, but is criticised for its potentially negative work incentive effects. A more generous reduced earning capacity pension for older workers is also proposed. However, the example given – that of **reduced earning capacity pension reform in the Netherlands** – is **not very useful** because it shows how a reduced earning capacity pension that was considerably more generous in previous years can be drastically reduced, but not how it can be adapted to meet greater need and higher take-up in later life. Moreover, the Dutch public pension system cannot be directly compared to the German system because of its fundamentally different design as a form of basic income support (Pimpertz, 2019).

708. An increase in the statutory or de facto retirement age is an option worth considering in order to stabilise the statutory pension insurance. For the reasons mentioned, however, an **automatic increase in the retirement age** should **not be forced through** until such time as there are specific and credible solutions to the disadvantages and problems touched upon. Automatic adjustment in accordance with a predetermined formula would also be problematic because it would restrict future possible courses of action and pension policy responses. There is no need for this. Instead, the current pension-policy rules (double stop lines) mean that policymakers, researchers and civil society still have **at least until 2026 to come up with convincing solutions**; the gradual increase in the statutory retirement age up to 67 years that is already being implemented will not be completed until 2031.

709. There is no evidence of any particularly urgent need for early reforms, for example because of an ever-increasing sustainability gap. Figures from a calculation carried out in 2011 are hardly likely to still apply today, given that interest rates have fallen significantly since then. Quite apart from that, the proposal of the Council majority itself does not envisage the retirement age being adjusted until 2031, so a faster decision would not result in any de facto changes for the GRV. Otherwise the Council majority would have to advocate a more rapid raising of the statutory retirement age before 2031. Nor are **economic policy arguments** suggesting an immediate solution was necessary because the prospects for reform were dwindling as the electorate ages **convincingly supported** by the literature on this topic. There are both optimistic and pessimistic views on this, as shown by Bittschi and Wigger (2019) and Sinn and Uebelmesser (2003).

710. A key element of the argument in this chapter is the **fiscal sustainability gap** (Werding, 2016, 2020). The way it is calculated, however, can lead to **problematic interpretations**. Firstly, it only takes account of future costs on the public finances and secondly – because of the computational convention that always assumes a constant revenue ratio – it only considers the impact of measures on the expenditure ratio of the public finances (Werding, 2020, S. 25ff.; Werding et al., 2020, S. 63ff.). This leads to **a systematic preference for pension reforms** that **reduce the pension level** or lead to **privatisation of the statutory pension**. Taken to the extreme, a complete abolition of the statutory pension and civil servants' pension would minimise the sustainability gap that has been calculated in the area of old age provision. But this completely ignores the massive strain this would place on private households, who would have to make private pension arrangements. The same applies to partial privatisation measures such as the Riester pension, which reduce the burden on companies by lowering the employer contributions at the expense of individual contributors. A more comprehensive analysis would clearly be required here (Geyer, 2020).

711. **Different reform options cannot be meaningfully compared with one another** using the sustainability gap when some of them lead to higher revenue ratios, for example because of higher contribution rates, a higher federal subsidy or the inclusion of additional contributors and their income in the statutory pension scheme. The higher revenue ratios are by definition not factored into the sustainability gap because of the assumed constancy of the revenue ratio, although

the very aim of the reforms is to reduce the sustainability gap. This applies not only in the baseline scenario, but in all Werding's (2020, p. 52) very well documented reform scenarios or sensitivity analyses. In the simulations, if the pension level is fixed at 48 % until the year 2080, for example, the sustainability gap increases compared to the baseline scenario from 3.92 % of GDP to 4.91 % of GDP, even though the measure is funded entirely on the income side, either through a higher federal subsidy or a higher pension contribution rate (Werding, 2020, p. 52).

The Council majority correctly does not use sustainability gaps to compare reform options. ↘ ITEM 614 However, the question then is on what basis does it judge sustainability?

712. In addition to the adjustment of the statutory retirement age, the Council majority identifies three main options for reforming the statutory pension scheme. These are: firstly, the transition from gross earnings to inflation as the basis for pension adjustment; secondly, expanding the labour force; and thirdly, widening the contributor base. All three options are, however, judged to be less effective than adjusting the retirement age. In the case of **inflation adjustment,** which is not worked up as a scenario, this appears to be justified as that is likely to lead to a significant decrease in the pension level, which would cast further **doubt** on the **function of statutory pension insurance to ensure a decent standard of living** as a supporting pillar of old-age provision.

713. According to Werding's sustainability analysis, a substantial **increase in (female) employment** (2020) could however noticeably reduce the sustainability gap, although, as explained, the potentially revenue ratio-increasing elements of the reform are not even considered in the gap identified there. Because of the high proportion of women working part-time, there is a lot of potential for increasing the work volume of women (Türk et al., 2018). This would enable the pension level to be substantially increased over almost the entire period up to 2080 while at the same time noticeably reducing the contribution rate (Werding, 2016). For many decades, this last point also applies to the **inclusion of additional groups of contributors such as civil servants and the self-employed** (Werding, 2016). As the Council majority states, this could be rapidly implemented without major transition problems for the self-employed people currently not subject to compulsory insurance.

714. The inclusion of civil servants in the statutory pension scheme could only be achieved gradually, and under a grandfathering regime. In addition, the stabilisation of pension insurance during the transition would lead to more spending and thus require more funding for public authorities. **But that is also true for** the subsidising of private pension insurance through **Riester pensions** or deferred compensation **in company pension schemes** (2nd and 3rd pillars).

715. Increasing (female) employment and including additional groups of contributors could be **combined** as a package **with other measures**. An **immigration policy** focused on the needs of the labour market, systematic funding of **non-insurance benefits** in pension insurance (Meinhardt, 2018) and a moderate increase in pension insurance contributions in small increments to above 20 %

could, over a number of years, significantly help to stabilise the statutory pension scheme as a fundamental pillar of old age provision. Until that point, a convincing explanation needs to be provided of the need for and the feasibility of an increase in the statutory or de facto retirement age.

716. The **reinstatement of the catch-up factor in 2021** that is favoured by the Council majority as a means of preventing a small long-term increase in the pension level as a result of the coronavirus crisis does **not** appear to be **urgently necessary**. It is true that the sudden pension adjustments required by the crisis are extremely complex and difficult to understand (Viebrok, 2020); however, the decision concerning the medium-term pension level which does not in any event have to be taken until 2026 should be taken at an explicitly political level and not be prejudiced by the reintroduction of the catch-up factor.

717. The GCEE has also examined the **problem of poverty in old age**. In contrast to Feld and Nientiedt, (2020) it does not base its conclusions solely on the relatively low level of basic income support take-up among older people, but also relies on another commonly used indicator in the form of the at-risk-of-poverty rate. While the basic income support take-up rate among older people rose between 2005 and 2018 from 2.2 % to 3.2 %, the figures for the at-risk-of-poverty rate are significantly higher and rose in the same period from 11.0 % to 14.7 %. Nevertheless, **this huge increase in the risk of poverty** among older people over the past 20 years has been downplayed by the Council majority which states that the risk in 2018 is the same as the risk in the general population and considerably lower than that among children.

718. The **comparison with** the **risk of child poverty** is particularly **inappropriate**. As children generally do not earn income and, in addition, inadequate childcare provision makes it harder for the adults living in the household to earn income, the presence of children in households tends to have an adverse effect on the household income level; statistically speaking, children increase the risk of poverty (Grabka and Goebel, 2017, p. 81). In households of pensioners, however, there are usually no children. **Child poverty** and the options for tackling it are definitely a topic that would **merit more detailed discussion by the GCEE in future**. However, this subject deserves far more than a brief passing observation made with the intention of downplaying poverty in old age.

719. Moreover, it can indeed be a cause for concern that pensioners, who in Germany have historically fared very well compared to other age groups over extended periods of time, have lost this position within the course of just a few years and appear to be at risk of falling further behind in future. The **problem of poverty in old age** could become significantly **worse** in the coming years. The at-risk-of-poverty rate is likely to rise above 20 % in the period from 2025 to 2029 (Geyer et al., 2019a). In the context of the pensions debate this is particularly relevant because in addition to disrupted career histories, the **reduction of the pension level** as a result of **past pension reforms** is likely to contribute to an increase in poverty in old age in the future (Buslei et al., 2019a).

REFERENCES

Almond, D., J. Currie and V. Duque (2018), Childhood circumstances and adult outcomes: Act II, Journal of Economic Literature 56 (4), 1360–1446.

Arnds, P. and H. Bonin (2003), Frühverrentung in Deutschland: Ökonomische Anreize und institutionelle Strukturen, IZA Discussion Paper 666, Institute of Labor Economics, Bonn.

BA (2019), Situation von Älteren, Berichte: Blickpunkt Arbeitsmarkt September 2019, Federeral Employment Agency, Nuremberg.

Bach, S. et al. (2020a), Fiskalische Wirkungen eines weiteren Ausbaus ganztägiger Betreuungsangebote für Kinder im Grundschulalter – Gutachten für das Bundesministerium für Familie, Senioren, Frauen und Jugend, DIW Berlin: Politikberatung kompakt 146, German Institute for Economic Research, Berlin.

Bach, S., H. Buslei and and M. Harnisch (2018), Die Mütterrente II kommt vor allem Rentnerinnen mit geringen und mittleren Einkommen zugute, DIW Wochenbericht 85 (28), German Institute for Economic Research, Berlin, 613–622.

Bach, S., B. Fischer, P. Haan and K. Wrohlich (2020b), Reform des Ehegattensplittings: Realsplitting mit niedrigem Übertragungsbetrag ist ein guter Kompromiss, DIW Wochenbericht 87 (41), German Institute for Economic Research, Berlin, 785–794.

Bäcker, G. (2018), Wann und Wie in den Ruhestand? Altersübergänge im Umbruch, Altersübergänge im Umbruch. Sozialer Fortschr 67 (11/12), 997–1015.

Beaujouan, É. and T. Sobotka (2019), Late childbearing continues to increase in developed countries, Population Societies 562 (1), 1–4.

Becker, G.S. (1960), An economic analysis of fertility, in: National Bureau Commitee for Economic Research (Eds.), Demographic and Economic Change in Developed Countries, Columbia University Press, New York, 209–240.

Becker, G.S., E.L. Glaeser and K.M. Murphy (1999), Population and economic growth, American Economic Review 89 (2), 145–149.

Bellmann, L. (2017), Chancen und Risiken der Digitalisierung für ältere Produktionsarbeiter, IAB Forschungsbericht 15/2017, Institute for Employment Research of the Federal Employment Agency, Nuremberg.

Bick, A. and N. Fuchs-Schündeln (2018), Taxation and labour supply of married couples across countries: A macroeconomic analysis, Review of Economic Studies 85 (3), 1543–1576.

Bittschi, B. and B.U. Wigger (2019), On the political feasibility of increasing the legal retirement age, CESifo Working Paper 7492, CESifo Network, Munich.

Black, S.E. and P.J. Devereux (2010), Recent developments in intergenerational mobility, NBER Working Paper 15889, National Bureau of Economic Research, Cambridge, MA.

Black, S.E., P.J. Devereux and K.G. Salvanes (2008), Staying in the classroom and out of the maternity ward? The effect of compulsory schooling laws on teenage births, Economic Journal 118 (530), 1025–1054.

BMAS (2019), Die Rentenbestände in der gesetzlichen Rentenversicherung in der Bundesrepublik Deutschland, Rentenbestandsstatistik 2019, Federal Ministry for Labour and Social Affairs, Bonn.

BMF (2020), Olaf Scholz zur Besteuerung von Finanztransaktionen, Federal Ministry of Finance, Berlin, https://www.bundesfinanzministerium.de/Content/DE/Video/2020/2020-02-19-scholz-finanztransaktionsteuer/2020-02-19-scholz-finanztransaktionsteuer.html, retrieved 19 February 2020.

Böhmer, M. et al. (2014), Gesamtevaluation der ehe- und familienbezogenen Maßnahmen und Leistungen in Deutschland, Endbericht, Gesamtevaluation im Auftrag des Bundesministeriums der Finanzen und Bundesministeriums für Familie, Senioren, Frauen und Jugend, Prognos AG, Berlin.

Bonin, H., A. Fichtl, H. Rainer, C.K. Spieß, H. Stichnoth and K. Wrohlich (2013), Lehren für die Familienpolitik – Zentrale Resultate der Gesamtevaluation familienbezogener Leistungen, ifo Schnelldienst 66 (18), 22–30.

Börsch-Supan, A., M. Coppola and J. Rausch (2015), Die „Rente mit 63“: Wer sind die Begünstigten?: Was sind die Auswirkungen auf die Gesetzliche Rentenversicherung?, Perspektiven der Wirtschaftspolitik 16 (3), 264–288.

Börsch-Supan, A., I. Ferrari and L. Salerno (2020), Verteilung und Entwicklung von Gesundheit im Alter, MEA Discussion Paper 06–2020, Max-Planck-Instituts für Sozialrecht und Sozialpolitik, Munich Center for the Economics of Aging, Munich.

Börsch-Supan, A. and J. Rausch (2020), Corona-Pandemie: Auswirkungen auf die gesetzliche Rentenversicherung, ifo Schnelldienst 73 (4), 36–43.

Börsch-Supan, A. and R. Schnabel (1998), Social security and declining labor-force participation in Germany, American Economic Review 88 (2), 173–178.

Breyer, F. (2013), Gesetzliche Rente: Bedeutet Teilhabeäquivalenz Verteilungsneutralität? – Ein weiterer Irrtum, Wirtschaftsdienst 2013 (2), 117–119.

Breyer, F. and S. Hupfeld (2010), On the fairness of early retirement provisions, German Economic Review 11 (1), 60–77.

Breyer, F. and S. Hupfeld (2009), Fairness of public pensions and old-age poverty, FinanzArchiv / Public Finance Analysis 65 (3), 358–380.

Brussig, M. and S.E. Schulz (2019), Soziale Unterschiede im Mortalitätsrisiko: Das frühere Arbeitsleben beeinflusst die fernere Lebenserwartung, IAQ-Report 6/2019, University of Duisburg-Essen, Faculty of Social Sciences, Institute for Work, Skills and Training, Duisburg.

Buchholz, S., A. Rinklake and H.-P. Blossfeld (2013), Umkehr von Frühverrentung in Deutschland, Comparative Population Studies – Zeitschrift für Bevölkerungswissenschaft 38 (4), 907–936.

Buslei, H., B. Fischer, J. Geyer and A. Hammerschmid (2019a), Das Rentenniveau spielt eine wesentliche Rolle für das Armutsrisiko im Alter, DIW Wochenbericht 86 (21/22), German Institute for Economic Research, Berlin, 375–383.

Buslei, H., P. Gallego-Granados, J. Geyer and P. Haan (2019b), Rente mit 67: Der Arbeitsmarkt für Ältere wird entscheidend sein, DIW Wochenbericht 86 (16/17), German Institute for Economic Research, Berlin, 275–283.

Buslei, H., J. Geyer, P. Haan and M. Harnisch (2019c), Starke Nichtinanspruchnahme von Grundsicherung deutet auf hohe verdeckte Altersarmut, DIW Wochenbericht 86 (49), German Institute for Economic Research, Berlin, 909–917.

Buslei, V.H., J. Geyer, P. Haan and M. Peters (2016), Ausweitung der gesetzlichen Rentenversicherung auf Selbständige: merkliche Effekte auch in der mittleren Frist, DIW Wochenbericht 83 (30), German Institute for Economic Research, Berlin, 659–668.

Bütler, M. (2002), The political feasibility of increasing the retirement age: Lessons from a ballot on the female retirement age, International Tax and Public Finance 9 (4), 349–365.

Cazzola, A., L. Pasquini and A. Angeli (2016), The relationship between unemployment and fertility in Italy: A time-series analysis, Demographic Research 34, 1–38.

Chabris, C.F., D.I. Laibson and J.P. Schuldt (2010), intertemporal choice, in: Durlauf, S. N. and L. E. Blume (Eds.), Behavioural and Experimental Economics, The New Palgrave Economics Collection, Palgrave Macmillan UK, London, 168–177.

Cohen, A., R. Dehejia and D. Romanov (2013), Financial incentives and fertility, Review of Economics and Statistics 95 (1), 1–20.

Coneus, K. and C.K. Spiess (2012), The intergenerational transmission of health in early childhood – Evidence from the German Socio-Economic Panel Study, Economics & Human Biology 10 (1), 89–97.

Conti, G., G. Mason and S. Poupakis (2019), Developmental origins of health inequality, IFS Working Paper W19/17, Institute for Fiscal Studies, London.

Cremer, H. and P. Pestieau (2011), Myopia, redistribution and pensions, European Economic Review 55 (2), 165–175.

Currie, J. and D. Almond (2011), Chapter 15 – Human capital development before age five, in: Card, D. and O. Ashenfelter (Eds.), Handbook of Labor Economics, Vol. 4, Elsevier, Amsterdam, 1315–1486.

Del Bono, E., A. Weber and R. Winter-Ebmer (2015), Fertility and economic instability: The role of unemployment and job displacement, Journal of Population Economics 28 (2), 463–478.

Del Bono, E., A. Weber and R. Winter-Ebmer (2012), Clash of career and family: Fertility decisions after job displacement, Journal of the European Economic Association 10 (4), 659–683.

Deutscher Bundestag (2020), Entwurf eines Gesetzes zur Einführung der Grundrente für langjährige Versicherung in der gesetzlichen Rentenversicherung mit unterdurchschnittlichem Einkommen und für

weitere Maßnahmen zur Erhöhung der Alterseinkommen (Grundrentengesetz), Drucksache 19/18473, Berlin, 8 April.

Dolls, M. and C. Krolage (2019), The effects of early retirement incentives on retirement decisions, ifo Working Paper 291, ifo Institut, Munich.

DRV (2020), Stephan Fasshauer zur Umsetzung des Grundrentengesetzes, Press release, Deutsche Rentenversicherung Bund, Berlin, 24 June.

DRV (2019), Rentenversicherung in Zeitreihen, DRV-Schriften Band 22, Deutsche Rentenversicherung Bund, Berlin.

DRV Nord (2020), Deutsche Rentenversicherung Nord sucht zusätzliches Personal für Grundrente, Press release, Deutsche Rentenversicherung Nord, Lübeck, 8 September.

Einerhand, M. and E. Swart (2010), Reform of the dutch sickness and disability arrangements, Conference paper, Modernising and activating measures relating to work incapacity, Spain, Madrid, 4.–5 February.

Ericson, K.M. and D. Laibson (2019), Intertemporal choice, in: Bernheim, B. D., S. DellaVigna and D. Laibson ((Eds.), Handbook of Behavioral Economics: Applications and Foundations, Vol. 2, North-Holland, Amsterdam, 1–67.

European Commission (2020), Niederlande – Beschäftigung, Soziales und Integration, https://ec.europa.eu/social/main.jsp?catId=1122&langId=de&intPageId=4993, retrieved 29 September 2020.

European Commission (2018), Country fiche on pensions for the Netherlands – The 2017 round of projections for the ageing working group, Brussels.

Fasshauer, S. (2020), Die verwaltungstechnische Umsetzung des Grundrentengesetzes durch die Deutsche Rentenversicherung Bund, Speech, Virtuelle Vertreterversammlung der Deutschen Rentenversicherung Bund, Berlin, 24 June.

Federal Government (2019), Details zur Erwerbsminderungsrente, Antwort der Bundesregierung auf die kleine Anfrage der Abgeordneten Ulrike Schielke-Ziesing, Uwe Witt, Sebastian Münzenmaier, weiterer Abgeordneter und der Fraktion der AfD, Drucksache 19/9329, Deutscher Bundestag, Berlin, 11 April.

Feld, L.P. and D. Nientiedt (2020), Reformbedarf im System der Alterssicherung, Gutachten im Auftrag der Initiative Neue Soziale Marktwirtschaft, Walter Eucken Institut, Freiburg.

Feld, L.P., M. Kallweit and A. Kohlmeier (2013), Maßnahmen zur Vermeidung von Altersarmut: Makroökonomische Folgen und Verteilungseffekte, Perspektiven der Wirtschaftspolitik 14 (3–4), 279–304.

Feld, L.P. and A. Kohlmeier (2016), Zur Vereinheitlichung des Rentenrechts, Wirtschaftsdienst 96 (11), 811–817.

Feld, L.P., A. Kohlmeier and C.M. Schmidt (2014), Das Rentenpaket: Die Bundesregierung auf Irrwegen, Wirtschaftsdienst 94 (8), 553–559.

Francesconi, M. and J.J. Heckman (2016), Child development and parental investment: Introduction, Economic Journal 126 (596), F1–F27.

Gasche, M. (2010), Rentenanpassung 2010 – Wem nützt die Rentengarantie?, MEA Discussion Paper 199–2010, Mannheim Research Institute for the Economics of Aging.

Gasche, M. and S. Kluth (2011), Auf der Suche nach der besten Rentenanpassungsformel, MEA Discussion Paper 241–2011, Mannheim Research Institute for the Economics of Aging.

Gasche, M. and J. Rausch (2013), Auswirkungen einer Einbeziehung der Selbständigen in die Gesetzliche Rentenversicherung, Perspektiven der Wirtschaftspolitik 14 (3–4), 305–345.

Geyer, J. (2020), In die Zukunft ohne Gesamtkonzept: Vorausberechnungen und ihre Probleme, in: Blank, F., M. A., M. Hofmann and A. Buntenbach (Eds.), Neustart in der Rentenpolitik: Analysen und Perspektiven, Nomos Verlagsgesellschaft, Baden-Baden, 191–206.

Geyer, J. (2015), Grundsicherungsbezug und Armutsrisikoquote als Indikatoren von Altersarmut, DIW Roundup: Politik im Fokus 62, German Institute for Economic Research, Berlin.

Geyer, J., H. Buslei, P. Gallego-Granados and P. Haan (2019a), Anstieg der Altersarmut in Deutschland: Wie wirken verschiedene Rentenreformen?, Deutsches Institut für Wirtschaftsforschung im Auftrag der Bertelsmann Stiftung, Gütersloh.

Geyer, J., P. Haan, A. Hammerschmid and C. Welteke (2019b), Erhöhung des Renteneintrittsalters für Frauen: Mehr Beschäftigung, aber höheres sozialpolitisches Risiko, DIW Wochenbericht 86 (14), German Institute for Economic Research, Berlin, 239–247.

Geyer, J., P. Haan and M. Harnisch (2020), Zur Wirkung der Grundrente und der Mütterrente auf die Altersarmut, German Council of Economic Experts, Working paper 07/2020, Wiesbaden.

Geyer, J., P. Haan and K. Wrohlich (2015), The effects of family policy on maternal labor supply: Combining evidence from a structural model and a quasi-experimental approach, Labour Economics 36, 84–98.

Goedemé, T. (2013), Minimum income protection for Europe's elderly. What and how much has been guaranteed during the 2000s?, in: Marx, I. and K. Nelson ((Eds.), Minimum income protection in flux, Reconciling work and welfare in Europe, Palgrave Macmillan, London, 108–136.

Goldstein, J., W. Lutz and M.R. Testa (2003), The emergence of sub-replacement family size ideals in Europe, Population Research and Policy Review 22 (5), 479–496.

Goodhart, Charles and Manoj Pradhan (Eds.) (2020), The great demographic reversal, Palgrave Macmillan, Cham.

Gould, E.D., A. Simhon and B.A. Weinberg (2019), Does parental quality matter? Evidence on the transmission of human capital using variation in parental influence from death, divorce, and family size, Journal of Labor Economics 38 (2), 569–610.

Grabka, M.M. and J. Goebel (2017), Realeinkommen sind von 1991 bis 2014 im Durchschnitt gestiegen – erste Anzeichen für wieder zunehmende Einkommensungleichheit, DIW Wochenbericht 84 (4), German Institute for Economic Research, Berlin, 71–82.

Haitz, N. (2015), Old-age poverty in OECD countries and the issue of gender pension gaps, CESifo DICE Report 13 (2), 73–75.

Heckman, J.J. (2006), Skill formation and the economics of investing in disadvantaged children, Science 312 (5782), 1900–1902.

Heckman, J.J. (2000), Policies to foster human capital, Research in Economics 54 (1), 3–56.

Heckman, J.J., J.E. Humphries and G. Veramendi (2018a), The nonmarket benefits of education and ability, Journal of Human Capital 12 (2), 282–304.

Heckman, J.J., J.E. Humphries and G. Veramendi (2018b), Returns to education: The causal effects of education on earnings, health, and smoking, Journal of Political Economy 126 (S1), S197–S246.

Hohnerlein, E.M. (2019), Pension indexation for retirees revisited – Normative patterns and legal standards, Global Social Policy 19 (3), 246–265.

IAQ (2020), Durchschnittliches Zugangsalter in Altersrenten 1993-2019, Institute for Work, Skills and Training, Duisburg und Essen.

Kallweit, M. and A. Kohlmeier (2014), Das Rentenpaket der Bundesregierung. Politökonomisch geschickt – ökonomisch falsch, Working Paper 02/2014 , German Council of Economic Experts, Wiesbaden.

Keck, W. and T. Krickl (2018), „Rente mit 63" – Wer profitiert?, RVaktuell 4/2018, 76–86.

Keller, M. and D.I. Kahle (2018), Realisierte Erwerbstätigkeit von Müttern und Vätern zur Vereinbarkeit von Familie und Beruf, WISTA – Wirtschaft und Statistik 3/2018, 54–72.

Kobold, K. and S. Schmiedel (2018), Wahlverhalten bei der Bundestagswahl 2017 nach Geschlecht und Alter, WISTA – Wirtschaft und Statistik 3/2018, 142–156.

Koning, P. and M. Lindeboom (2015), The rise and fall of disability insurance enrollment in the Netherlands, Journal of Economic Perspectives 29 (2), 151–172.

KVG (2020a), Bericht der Kommission Verlässlicher Generationenvertrag, Band I - Empfehlungen, Kommission Verlässlicher Generationenvertrag – Bundesministerium für Arbeit und Soziales, Berlin.

KVG (2020b), Bericht der Kommission Verlässlicher Generationenvertrag, Band II - Materialien, Kommission Verlässlicher Generationenvertrag – Bundesministerium für Arbeit und Soziales, Berlin.

Lacomba, J.A. and F.M. Lagos (2007), Political election on legal retirement age, Social Choice and Welfare 29 (1), 1–17.

Lampert, T. and J. Hoebel (2019), Sozioökonomische Unterschiede in der Gesundheit und Pflegebedürftigkeit älterer Menschen, Bundesgesundheitsblatt – Gesundheitsforschung – Gesundheitsschutz 62 (3), 238–246.

Lampert, T., J. Hoebel and L.E. Kroll (2019), Social differences in mortality and life expectancy in Germany. Current situation and trends, Journal of Health Monitoring 4 (1), 3–13.

Lampert, T., J. Hoebel, B. Kuntz, S. Müters and L.E. Kroll (2017), Gesundheitliche Ungleichheit in verschiedenen Lebensphasen, Gesundheitsberichterstattung des Bundes, Robert Koch-Institute, Berlin.

Lance, L. (2011), Chapter 2 – Nonproduction benefits of education: Crime, health, and good citizenship, in: Hanushek, E. A., S. Machin and L. Woessmann ((Eds.), Handbook of The Economics of Education, Vol. 4, North-Holland, Amsterdam, 183–282.

Laroque, G. and B. Salanié (2014), Identifying the response of fertility to financial incentives, Journal of Applied Econometrics 29 (2), 314–332.

Lindo, J.M. (2010), Are children really inferior goods? Evidence from displacement-driven income shocks, Journal of Human Resources 45 (2), 301–327.

Lluis, S. (2005), The role of comparative advantage and learning in wage dynamics and intrafirm mobility: Evidence from Germany, Journal of Labor Economics 23 (4), 725–767.

McCue, K. (1996), Promotions and wage growth, Journal of Labor Economics 14 (2), 175–209.

Meinhardt, V. (2018), Versicherungsfremde Leistungen der Sozialversicherung: Expertise für das IMK, IMK Study 60, Institut für Makroökonomie und Konjunkturforschung in der Hans-Böckler-Stiftung, Düsseldorf.

Mergenthaler, A., L. Konzelmann, V. Cihlar, F. Micheel and N.F. Schneider (2020), Vom Ruhestand zu (Un-)Ruheständen, Bundesinstitut für Bevölkerungsforschung, Wiesbaden.

Mika, T. (2013), Risiken für eine Erwerbsminderung bei unterschiedlichen Berufsgruppen, Bundesgesundheitsblatt – Gesundheitsforschung – Gesundheitsschutz 56 (3), 391–398.

Milewski, N. (2010), Immigrant fertility in West Germany: Is there a socialization effect in transitions to second and third births?, European Journal of Population 26 (3), 297–323.

Müller, K.-U. and K. Wrohlich (2020), Does subsidized care for toddlers increase maternal labor supply? Evidence from a large-scale expansion of early childcare, Labour Economics 62, 101776.

Nagase, N. (2018), Has Abe's womanomics worked?, Asian Economic Policy Review 13 (1), 68–101.

OECD (2020), SF2.1: Fertility rates, OECD Family Database, Organisation for Economic Co-operation and Development, Paris.

OECD (2019a), SF2.3: Age of mothers at childbirth and age-specific fertility, OECD Family Database, Organisation for Economic Co-operation and Development, Paris.

OECD (2019b), Pensions at a glance 2019: OECD and G20 indicators, OECD Publishing, Organisation for Economic Co-operation and Development, Paris.

OECD (2017a), Pensions at a glance 2017: OECD and G20 indicators, OECD Publishing, Organisation for Economic Co-operation and Development, Paris.

OECD (2017b), Preventing ageing unequally, OECD Publishing, Organisation for Economic Co-operation and Development, Paris.

OECD (2016), LMF 1.2: Maternal employment rates, OECD Family Database, Organisation for Economic Co-operation and Development, Paris, 26 September.

OECD (2014), OECD Pensions outlook 2014, OECD Publishing, Organisation for Economic Co-operation and Development, Paris.

OECD (2007a), Comparing pension policies of OECD countries, in: OECD ((Eds.), Pensions at a Glance 2007: Public Policies across OECD Countries, OECD Pensions at a Glance, OECD Publishing, Organisation for Economic Co-operation and Development, Paris, 21–52.

OECD (2007b), Sickness and disability schemes in the Netherlands, Country memo as a background paper for the OECD Disability Review, Organisation for Economic Co-operation and Development, Paris.

Pimpertz, J. (2020), Haltelinien überdenken, Nachholfaktor reaktivieren, Rentenanpassung glätten, IW-Kurzbericht 48/2020, German Economic Institute, Cologne.

Pimpertz, J. (2019), Ein Vergleich ausgewählter Grundrentensysteme in der EU – Was können wir für Deutschland lernen?, IW-Gutachten im Auftrag der Initiative Neue Soziale Marktwirtschaft, German Economic Institute, Cologne.

Pötzsch, O. (2018), Aktueller Geburtenanstieg und seine Potenziale, WISTA - Wirtschaft und Statistik 3/2018, 72–89.

Ragnitz, J. (2020), Der Koalitionskompromiss zur Grundrente: Gut gemeint, schlecht gemacht, ifo Schnelldienst 73 (3), 48–52.

Rürup, B. (2020), Corona: Rentner müssen an den Kosten der Krise beteiligt werden, https://www.handelsblatt.com/meinung/gastbeitraege/kommentar-rentner-muessen-an-den-wirtschaftlichen-kosten-der-coronakrise-beteiligt-werden/25787868.html, retrieved 31 August 2020.

Sackreuther, I. et al. (2017), (Un-)Ruheständе in Deutschland – Übergänge, Potenziale und Lebenspläne älterer Menschen im Wandel, Bundesinstitut für Bevölkerungsforschung, Wiesbaden.

Schober, P.S. and C.K. Spieß (2014), Die Kita-Qualität ist für das Erwerbsverhalten von Müttern mit Kleinkindern relevant: Zusammenhang eindeutiger in Ostdeutschland, DIW Wochenbericht 81 (21), German Institute for Economic Research, Berlin, 463–471.

Sinn, H.-W. and S. Uebelmesser (2003), Pensions and the path to gerontocracy in Germany, European Journal of Political Economy 19 (1), 153–158.

Sobotka, T. (2009), Sub-replacement fertility intentions in Austria, European Journal of Population 25 (4), 387–412.

Sozialbeirat (2015), Gutachten des Sozialbeirats zum Rentenversicherungsbericht 2015, Berlin.

Stichnoth, H. and M. Yeter (2016), Cultural influences on the fertility behavior of first- and second-generation immigrants, Journal of Demographic Economics 82 (3), 281–314.

Swiaczny, F., P. Graze and C. Schlömer (2008), Spatial impacts of demographic change in Germany, Zeitschrift für Bevölkerungswissenschaft 33 (2), 181–205.

Türk, E., F. Blank, C. Logeay, J. Wöss and R. Zwiener (2018), Den demografischen Wandel bewältigen: Die Schlüsselrolle des Arbeitsmarktes, IMK Report 137, Institut für Makroökonomie und Konjunkturforschung in der Hans-Böckler-Stiftung, Düsseldorf.

United Nations (2020), World fertility and family planning 2020: Highlights, ST/ESA/SER.A/440, New York.

Viebrok, H. (2020), Herausforderungen für die Finanzen der gesetzlichen Rentenversicherung durch die COVID-19-Pandemie, RVaktuell 5/2020, 113–125.

Wenau, G., P. Grigoriev and V. Shkolnikov (2019), Socioeconomic disparities in life expectancy gains among retired German men, 1997–2016, Journal of Epidemiology and Community Health 73 (7), 605–611.

Werding, M. (2020), Rentenfinanzen und fiskalische Tragfähigkeit: Aktueller Rechtsstand und Effekte verschiedener Reformen, Working Paper 06/2020, German Council of Economic Experts, Wiesbaden.

Werding, M. (2016), Rentenfinanzierung im demographischen Wandel: Tragfähigkeitsprobleme und Handlungsoptionen, Working Paper 05/2016, German Council of Economic Experts, Wiesbaden.

Werding, M., K. Gründler, B. Läpple, R. Lehmann, M. Mosler and N. Potrafke (2020), Modellrechnungen für den fünften Tragfähigkeitsbericht des BMF, ifo Forschungsberichte 111, Endbericht, ifo Institute, Munich.

Wieland, V. and M.H. Wolters (2017), Little decline in model-based estimates of long-run equilibrium interest rate, IMFS Working Paper, Institute for Monetary and Financial Stability, Frankfurt am Main.

Zaidi, A. (2010), Poverty risks for older people in EU countries – An update, Policy Brief 1/2010, European Centre for Social Welfare Policy and Research, Wien.