Demographic change and the long-term sustainability of public finances in Germany

Germany is facing major fiscal challenges owing to demographic change. Without further reforms or changes in behaviour, it is foreseeable that the fiscal financing base will grow significantly more slowly than age-related spending. According to recent calculations for the EU member states, the ratio of such expenditure to GDP could increase by around 5 percentage points by 2060 in Germany. This would require *inter alia* a rise in social contribution rates from just under 40% at present to almost 50% overall.

In future, public finances will be placed under strain both by the effects of the current dramatic increase in debt and by demographic change. There is therefore an ongoing need for adjustment; any backtracking on reforms already adopted in this area would exacerbate these problems. Increasing and lengthening labour market participation among older persons is a key need in this respect. Furthermore, the danger of sharply increasing burdens on future generations can be mitigated by initiating adjustments in the near future. These relate notably to the need to swiftly consolidate public finances as soon as the macroeconomic situation has stabilised.

Demographics and public finances

Demographic developments make financing government budgets more difficult

If the retirement age remains unchanged, the economically active population and its relative size vis-à-vis those no longer working will shrink significantly as a result of foreseeable demographic shifts. *Per capita* value added will consequently grow far more slowly than value added per employed person, and growth in wealth as measured by *per capita* gross domestic product (GDP) will be dampened perceptibly. As persons of working age bear the brunt of the government's financing burden through taxes and social contributions and those of retirement age tend to be net recipients of government benefit payments, public finances will come under increasing strain and, in the absence of adjustments, are not sustainable.

Need for fiscal policy adjustment to ensure sustainability

Public finances are considered sustainable if future expenditure (including interest payments) is covered by revenue. This does not preclude the incurrence of government debt as long as the associated debt servicing is assured in the long term. However, financing future expenditure through current revenue or debt incurrence – without any compensation in the private sphere – particularly affects the intergenerational redistribution of burdens. Sustainability gaps serve as useful gauges of sustainability, showing the number of percentage points by which the tax and social contributions ratio would need to be directly and permanently increased or by which the expenditure ratio would need to be permanently reduced in relation to the baseline in order to offset expected rising future burdens. However, these computations generally disregard the macroeconomic repercussions. Such projections spanning long periods of time are therefore always particularly conditioned by the assumptions upon which they are based, which impairs their information value.[1] Although in addition to the option of reducing expenditure the government can, in principle, close funding gaps by increasing taxes and social contributions, the economic repercussions of doing so, not least, must be borne in mind. A growing burden of tax and social contributions would have an increasingly detrimental effect on economic activity and, given rising international mobility, there is a danger that both capital and workers might migrate.

Development of age-related public spending in the Ageing Working Group's projections

New report published on the development of age-related spending

In 2001, the European Council (Stockholm) emphasised the need to regularly examine the long-term outlook for public finances, focusing in particular on the strains caused by demographic developments. The Ageing Working Group (AWG), which comprises staff from international institutions and representatives of the national ministries of finance and social affairs, among others, was set up to perform this function. In April 2009, the AWG published new projections on age-related government expenditure growth in

1 See European Commission, The long-term sustainability of public finances in the European Union, European Economy 4/2006 and Deutsche Bundesbank, The long-term sustainability of public finance – an analysis based on generational accounting, Monthly Report, December 2001, pp 29-43.
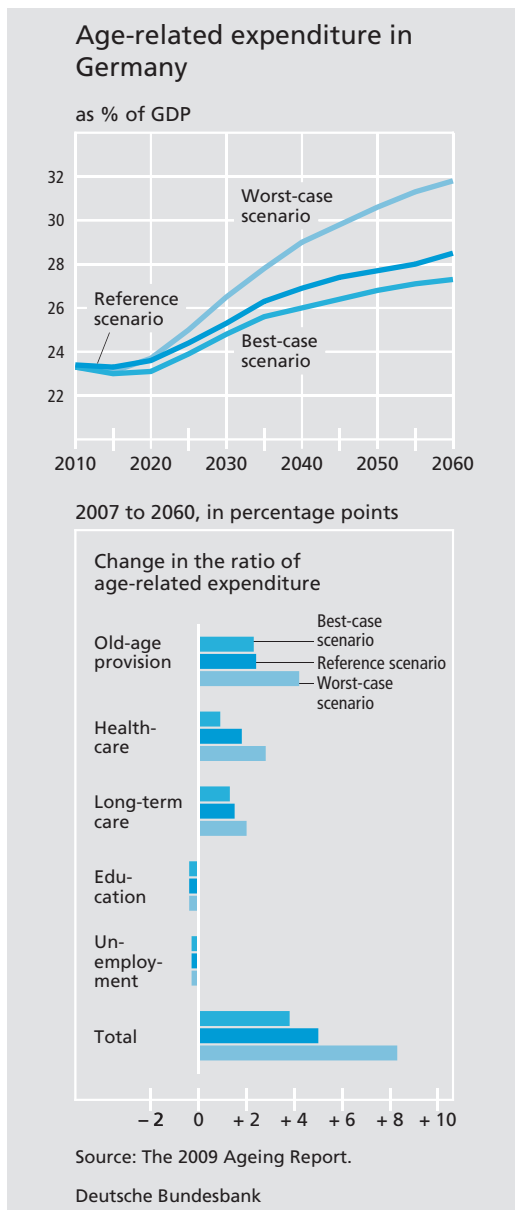
Age-related government expenditure 2007 to 2060

(Reference scenarios)

Country	Old-age provision 2007 as % of GDP	Old-age provision 2007 to 2060 Change in percentage points	Healthcare 2007 as % of GDP	Healthcare 2007 to 2060 Change in percentage points	Long-term care 2007 as % of GDP	Long-term care 2007 to 2060 Change in percentage points	Unemployment 2007 as % of GDP	Unemployment 2007 to 2060 Change in percentage points	Education 2007 as % of GDP	Education 2007 to 2060 Change in percentage points	Total 2007 as % of GDP	Total 2007 to 2060 Change in percentage points
BE	10.0	4.8	7.6	1.2	1.5	1.4	1.9	– 0.4	5.5	0.0	26.5	6.9
BG	8.3	3.0	4.7	0.7	0.2	0.2	0.1	0.0	3.3	– 0.2	16.6	3.7
CZ	7.8	3.3	6.2	2.2	0.2	0.4	0.1	0.0	3.5	– 0.3	17.9	5.5
DK	9.1	0.1	5.9	1.0	1.7	1.5	1.0	– 0.2	7.1	0.2	24.8	2.6
DE	10.4	2.3	7.4	1.8	0.9	1.4	0.9	– 0.3	3.9	– 0.4	23.6	4.8
EE	5.6	– 0.7	4.9	1.2	0.1	0.1	0.1	0.0	3.7	– 0.2	14.3	0.4
IE	5.2	6.1	5.8	1.8	0.8	1.3	0.8	0.1	4.5	– 0.3	17.2	8.9
EL	11.7	12.4	5.0	1.4	1.4	2.2	0.3	– 0.1	3.7	0.0	22.1	15.9
ES	8.4	6.7	5.5	1.6	0.5	0.9	1.3	– 0.4	3.5	0.1	19.3	9.0
FR	13.0	1.0	8.1	1.2	1.4	0.8	1.2	– 0.3	4.7	0.0	28.4	2.7
IT	14.0	– 0.4	5.9	1.1	1.7	1.3	0.4	0.0	4.1	– 0.3	26.0	1.6
CY	6.3	11.4	2.7	0.6	0.0	0.0	0.3	– 0.1	6.1	– 1.2	15.4	10.8
LV	5.4	– 0.4	3.5	0.6	0.4	0.5	0.2	0.0	3.7	– 0.3	13.2	0.4
LT	6.8	4.6	4.5	1.1	0.5	0.6	0.1	0.0	4.0	– 0.9	15.8	5.4
LU	8.7	15.2	5.8	1.2	1.4	2.0	0.4	0.0	3.8	– 0.5	20.0	18.0
HU	10.9	3.0	5.8	1.3	0.3	0.4	0.3	– 0.1	4.4	– 0.4	21.6	4.1
MT	7.2	6.2	4.7	3.3	1.0	1.6	0.4	0.0	5.0	– 1.0	18.2	10.2
NL	6.6	4.0	4.8	1.0	3.4	4.7	1.1	– 0.1	4.6	– 0.2	20.5	9.4
AT	12.8	0.9	6.5	1.5	1.3	1.2	0.7	0.0	4.8	– 0.5	26.0	3.1
PL	11.6	– 2.8	4.0	1.0	0.4	0.7	0.1	– 0.1	4.4	– 1.2	20.5	– 2.4
PT	11.4	2.1	7.2	1.9	0.1	0.1	1.2	– 0.4	4.6	– 0.3	24.5	3.4
RO	6.6	9.2	3.5	1.4	0.0	0.0	0.2	0.0	2.8	– 0.5	13.1	10.1
SI	9.9	8.8	6.6	1.9	1.1	1.8	0.2	0.0	5.1	0.4	22.9	12.8
SK	6.8	3.4	5.0	2.3	0.2	0.4	0.1	– 0.1	3.1	– 0.8	15.2	5.2
FI	10.0	3.3	5.5	1.0	1.8	2.6	1.2	– 0.2	5.7	– 0.3	24.2	6.3
SE	9.5	– 0.1	7.2	0.8	3.5	2.3	0.9	– 0.1	6.0	– 0.3	27.2	2.6
UK	6.6	2.7	7.5	1.9	0.8	0.5	0.2	0.0	3.8	– 0.1	18.9	5.1
EU 27	10.2	2.4	6.7	1.5	1.2	1.1	0.8	– 0.2	4.3	– 0.2	23.1	4.7
EA 16	11.1	2.8	6.7	1.4	1.3	1.4	1.0	– 0.2	4.2	– 0.2	24.3	5.2

Source: European Commission (DG ECFIN) and the Economic Policy Committee (AWG), The 2009 Ageing Report: Economic and budgetary projections for the EU-27 Member States (2008-2060), European Economy 2/2009.

Deutsche Bundesbank

Age-related expenditure in Germany

as % of GDP

2007 to 2060, in percentage points

Change in the ratio of age-related expenditure

Source: The 2009 Ageing Report.

Deutsche Bundesbank

the EU member states up until 2060; these will be discussed in the following sections (see also table on page 31).[2] Of the five expenditure areas examined, a disproportionately large expansion in spending on old-age provision, healthcare and long-term care insurance in relation to GDP growth was predicted. This is expected to be offset to some degree by reduced expenditure on education and the labour market.

Revenue development not explicitly taken into account

The effects of an ageing population on government revenue are not explicitly taken into account in the AWG's projections. Consequently, if the revenue ratio is assumed to remain constant, the long-term funding problem appears to reside entirely in the rising expenditure ratio. For example, no account was taken of additional government revenue in the form of taxes and social contributions payable on government transfer payments or of revenue shortfalls owing to the recent significant raising of income tax allowances for insurance contributions in Germany.

Clear decline in German labour force

The AWG's projections assume that, in Germany, the elderly dependency ratio (here, the ratio of persons above 64 years of age to those considered to be of working age (15 to 64)) will double to just under 60% by 2060[3]. Rising labour market participation, particularly among women and older persons, and falling unemployment are anticipated during the observation period. It is thus assumed that the number of persons of working age will decrease by 28½% (-15½ million) by 2060, while the decline in the labour force and the number of employed persons, at just under 25½% (-10½ million) and

2 See European Commission (DG ECFIN) and Economic Policy Committee (AWG), The 2009 Ageing Report: Economic and budgetary projections for the EU-27 Member States (2008-2060), European Economy 2/2009.
3 The Eurostat projection of April 2008 (EUROPOP2008) was used as the basis for population development. For Germany, it envisages an increase in the further life expectancy of 65-year-old women from 20.2 years today to 25.1 years in 2060. For men, it posits a rise from 16.9 years to 22.0 years. On average, this further life expectancy is predicted to increase by just over one month per year – with a slightly weakening tendency. The results tally to a large extent with the medium scenario (1-W2) in the eleventh coordinated population forecast for Germany published by the Federal Statistical Office in 2006.

23½% (-9 million) respectively, is not expected to be as sharp.

Sharp rise in age-related expenditure predicted

Age-related expenditure in Germany – as on an EU average – is forecast to grow by almost 5 percentage points to 28½% of GDP by 2060. In the absence of political countermeasures, the overall contribution rate to the statutory social security schemes would gradually increase from just under 40% at present to nearly 50% by 2060 – over and above tax hikes to finance the various Federal grants. In order to prevent this additional age-related burden – assuming that the expenditure ratio will remain stable after reaching its 2060 level – an immediate and permanent reduction of just over 3 percentage points in the primary deficit ratio would be required.[4]

Wide dispersion of results

As forecasts spanning such an extended period of time are subject to great uncertainty, various scenarios for expenditure development were simulated. However, growth in the expenditure ratio was only slightly weaker (+4½ percentage points) in the best-case scenario than in the reference scenario, whereas in the worst-case scenario, in which there was no net immigration,[5] it was significantly stronger (+8½ percentage points).

Old-age provision

Clear rise in spending on old-age provision

Government old-age provision in Germany includes the general statutory pension insurance scheme and the civil servants' pension scheme. In the starting year (2007), 10½% of GDP was spent on these two pension schemes, and a rise of 2½ percentage points by 2060 was forecast in the AWG's reference scenario.[6] Under the legislative *status quo*, this would require an increase in the contribution rate to the statutory pension insurance scheme from 19.9% at present to around 24% in 2060. Expenditure on civil servant pensions will also rise, but the projections are based on the legislative *status quo* and consequently do not take account of plans for the sustainability factor in the statutory pension insurance scheme to be adopted with the same effect into civil servant pension provisions. This has yet to be incorporated into civil servants' pension legislation.

Demographics key to expenditure growth

The driving force behind the growth in the expenditure ratio throughout the entire observation period is the increase in the ratio of persons aged over 65 to the working-age population. The rising retirement age, the fall in the average pension relative to the average salary and growing labour market participation, by contrast, are predicted to have a dampening effect. The gradual increase in the statutory retirement age from 65 to 67 and the pension adjustment rules, which aim

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4 An immediate reduction of 3 percentage points in the primary deficit ratio would initially lead to savings, which, taking account of the compound interest effect, would be sufficient to permanently offset the rise of eventually 5 percentage points in the expenditure ratio.
5 On an average of the years from 1998 to 2007, net immigration to Germany came to 128,000 persons per year. For the projection, average net immigration of around 160,000 persons per year was generally assumed. In the German Federal Government's most recent Sustainability Report (2008), two scenarios with annual net immigration of 100,000 and 200,000 persons, respectively, were simulated. In the Federal Government's most recent report on the statutory pension insurance scheme (2008), annual immigration of 200,000 was assumed until the final year of the projection (2022).
6 However, the calculations imply a temporary slight decline in the expenditure ratio in the next few years due to a temporary comparatively favourable demographic development and the assumption that the moderating factors within the pension adjustment formula will take full effect.

Projections of age-related expenditure in the euro area

The medium-scenario projections of the Ageing Working Group (AWG) show an increase in age-related government expenditure as a percentage of GDP of just over 4½ percentage points (pp) for the EU up to 2060. A rise of just over 5 pp is forecast for the euro area. However, at just over 8 pp, the unweighted average of the euro-area countries is considerably larger because high growth is predicted, particularly for many smaller member states. With an increase of just under 5 pp, Germany occupies a lower-order position.

Age-related expenditure

as a percentage of GDP in 2060
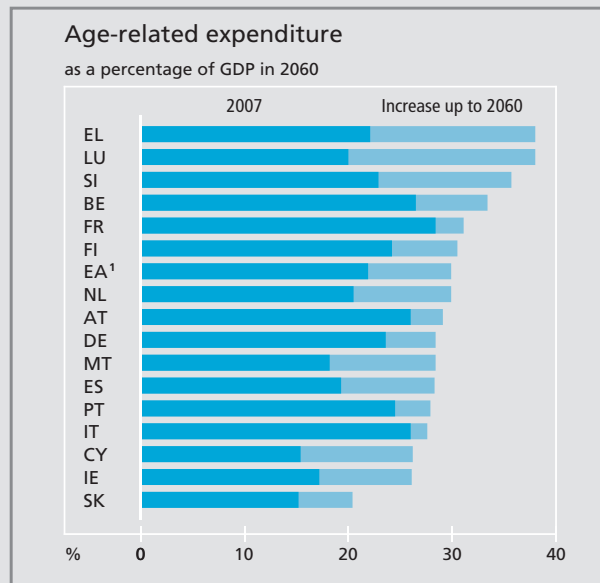
Demographics

Demographic changes are a crucial factor in the increasing burden on public finances. It is assumed that the ratio of persons aged 64 and over to those aged 15 to 64 will double by 2060 in both Germany and on a euro-area average. There would then only be 17 persons of working age (as opposed to currently 33) to 10 persons of retirement age. The most drastic changes are likely to occur in Slovakia, where the elderly dependency ratio is expected to quadruple. France is expected to fare better, particularly owing to its higher birth rate of just under 2 children per woman. Germany's birth rate is just under 1.4 and is expected to rise to just over 1.5 by 2060. The average euro-area birth rate is forecast to increase from just over 1.5 at present to just over 1.6 by 2060. A continuous, almost linear increase in life expectancy is assumed, along with the expectation that countries with lower initial values will gradually draw level with the other countries. With a further life expectancy for 65 year-olds of 22 years (men) or 25.1 years (women), the assumed values for Germany for 2060 are only slightly above the euro-area average. With regard to euro-area migration, annual net immigration of 0.25% of the population on average (Germany 0.2%) is assumed.

Source: European Commission (DG ECFIN) and the Economic Policy Committee (AWG); The 2009 Ageing Report: Economic and budgetary projections for the EU-27 Member States (2008 - 2060), European

Deutsche Bundesbank

Elderly dependency ratio

Ratio of persons aged 64 and over to those aged 15 to 64
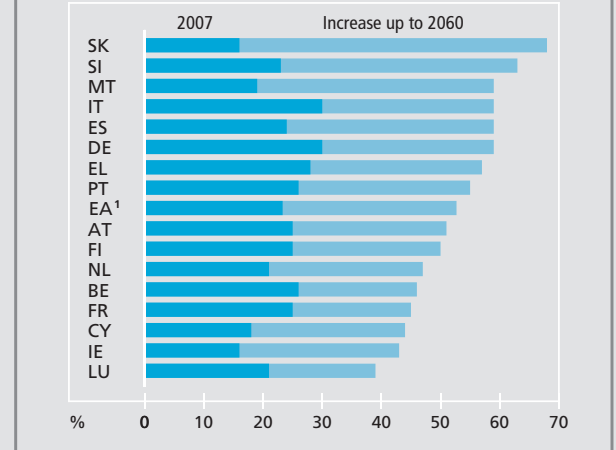
Labour market participation rate

Economic and fiscal policy developments do not depend on the numerical ratio of one age group to another but, rather, ultimately on the ratio of the economically active population to the share of those no longer economically active. This may differ from the development of the elderly dependency ratio if the labour market participation rate changes. It is assumed that the euro-area labour market participation rate will rise from 71% to 74½%.

Labour market participation rate among persons aged between 55 and 64
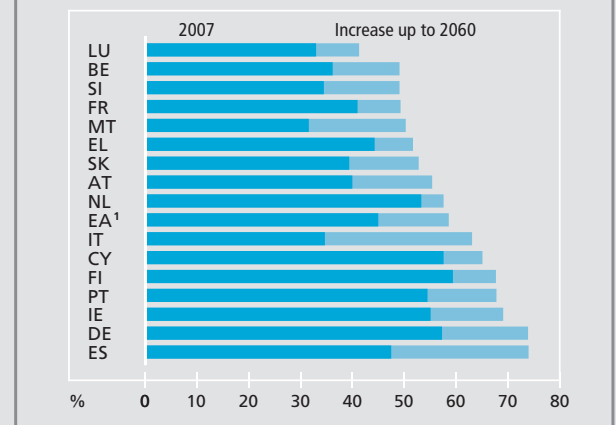
Economy 2/2009. — **1** Unweighted average of euro area. — **2** GDP-weighted average of euro area.

The increase will be particularly sharp in the case of women (from 63% to 69½%) and for those aged 55 to 64 years (from 45½% to 63%). Overall, at +3½ pp, it is expected that there will only be average growth in Germany's labour market participation rate. However, this has to be seen against the backdrop of the high starting level of 76%. If these increases do not materialise, GDP would be lower and the expenditure ratio – only slightly dampened by less strongly increasing pension claims – would be higher. Unemployment rates are expected to fall to low structural levels by 2020 and are assumed to be constant for the following years. The value for Germany is slightly above the euro-area average. Overall, the ratio of persons aged over 64 who are actually inactive to those aged 15 to 64 years who are actually active is expected to rise at a slower pace than the elderly dependency ratio. This ratio is expected to go up by 34 pp to 73% in the euro area. In Germany the increase is somewhat smaller (by 32 pp to 73%).

Labour productivity

With regard to labour productivity, it is assumed that labour productivity growth both in the euro area and in the EU as a whole will converge to a uniform 1.7% by 2060. Germany is expected to see a slight rise from its starting value of 1.5% by 2020. Particularly the new member states are expected to engage in an economic catching-up process and to post significantly higher growth rates in the next two decades.
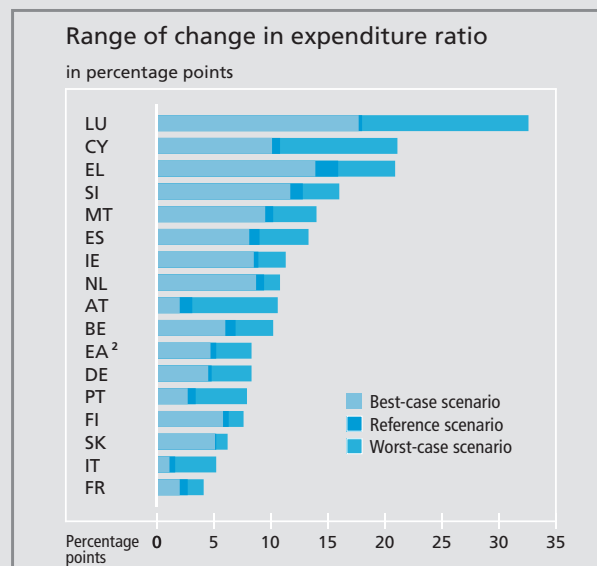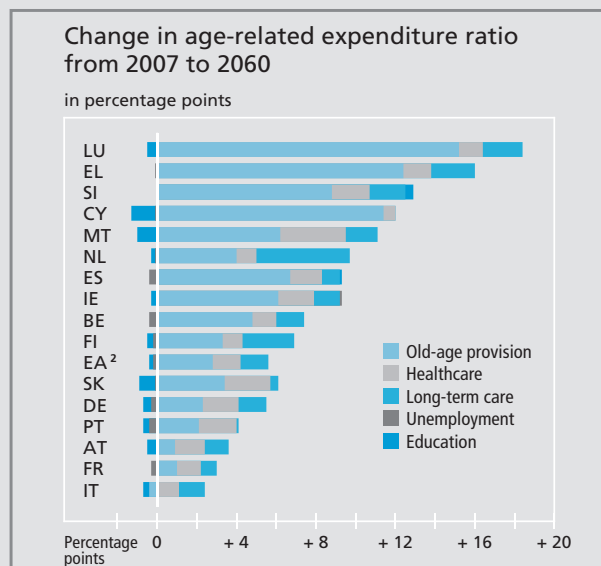
Projected figures in detail

Spending on old-age provision will exert the strongest fiscal pressure on euro-area expenditure. Pension expenditure accounts for an increase in the ratio of just under 3 pp and, on balance, it is responsible for more than half of future additional fiscal burdens. Expenditure ratios for spending on healthcare and long-term care will both increase by just under 1½ pp by 2060. Savings in the education sector and unemployment insurance payments are expected to remain very limited.

The results vary widely across countries. While Greece's expenditure ratio is forecast to rise to 16 pp and Luxembourg's to as much as 18 pp, the AWG envisages that Italy's expenditure ratio will remain below 2 pp and France's below 3 pp. Whereas France will be able to keep the financial base of its social security systems comparatively stable due to its high birth rate, the strain on Italy's ratio will be eased by the expected sharp rise in its labour market participation rate and the fact that its statutory pension insurance scheme is to change over to one in which benefits are based on the previous contributions paid, taking life expectancy into account. In Germany, too, the implementation of the pension reforms adopted in recent years will curb the increase in expenditure.

When comparing various scenarios, the lowest rise in the expenditure ratio is achieved either where productivity records stronger growth or where employment is at a more elevated level. The least favourable scenarios are those with no net immigration. In these scenarios, severe additional strains are recorded which are lowest in those countries that expect a comparatively low level of net immigration from the outset (such as the Netherlands, Slovakia and France).

Overall, the AWG's projections provide important guidance for a long-term reform policy that can also influence the behaviour of the parties involved.

Change in age-related expenditure ratio from 2007 to 2060

in percentage points

Range of change in expenditure ratio

in percentage points

to ensure that pensions rise more slowly than salaries through the "Riester reform steps" and the sustainability factor, play a role in this respect. The narrow dispersion of the results for alternative scenarios indicates that the calculations are very robust. However, without net immigration, for example, the expenditure ratio would increase by just over 4 percentage points instead of by 2½ percentage points.

Healthcare provision

Multiple determinants complicate estimation of healthcare spending

Projections for government healthcare provision (and also for long-term care costs) depend on many more determinants than old-age provision. In addition to age structure and labour market participation, other factors include health developments, the scope of the healthcare services to be financed (taking account of any patient co-payments), actual recourse to these services and price developments in this sector. The range of conceivable scenarios is therefore correspondingly broader.

Actual rise in expenditure ratio depends on countervailing factors ...

The age structure and state of health of the potential recipients of government healthcare are among the key determinants. The likely impact of each of these different and sometimes countervailing factors is still largely unknown. The fact that there will be an (at least relative) continuous decrease in the number of younger people and a steady increase in the number of older people and that the latter incur greater costs to the healthcare system will, in itself, drive up expenditure. However, this will be countered by the fact that the age profile for healthcare expenditure is unlikely to remain constant. For example, the average 65-year-old is likely to have fewer health problems today than the average 65-year-old fifty years ago.[7] On the other hand, rising incomes tend to push up demand for healthcare services, thus increasing expenditure. What implications this will have for government healthcare spending is ultimately a political decision. Government healthcare spending likewise depends both on the adoption of innovations in medical technology into the range of benefits and on possible measures to regulate the healthcare market – and thus also largely on future political decisions.[8]

... making simulating different scenarios particularly relevant

In order to take due account of this great uncertainty, the AWG simulated a number of scenarios. In the reference scenario, government healthcare expenditure in Germany increases from 7½% of GDP today to just over 9% by 2060. This would correspond to a rise in the contribution rate to the statutory health insurance scheme from around 15% at present to around 18%. This scenario assumes, first, that average healthcare expenditure will initially rise faster than incomes[9] and, second, that half of the years gained as a result of longer life expectancy will be spent

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7 See paper of the Advisory Council on the Assessment of Developments in the Health Care System (Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen), Koordination und Integration – Gesundheitsversorgung in einer Gesellschaft des längeren Lebens, 2009, pp 108 ff (in German only), and C Safiliou-Rothschild, Are Older People Responsible for High Healthcare Costs? CESifo Forum 1/2009, pp 57-64.
8 See also Deutsche Bundesbank, Financial development and outlook of the statutory health insurance scheme, Monthly Report, July 2004, pp 15-31.
9 The initial income elasticity is 1.1. It then falls to 1.0 by 2050, ie expenditure growth is then merely proportional to income.

in good health. A steeper expenditure rise to just over 10% of GDP would be expected if spending increased not in relation to *per capita* GDP but to the significantly faster growing measure GDP per employed person. This scenario might be realistic in the sense that the healthcare sector is comparatively labour-intensive and cost-saving efficiency gains will not be easy to achieve. Even less favourable scenarios would arise if, additionally, cost-driving advances in medical technology were to be assumed.[10] In the best-case scenario, all years gained as a result of longer life expectancy would be spent in good health. However, even then the expenditure ratio would still rise to nearly 8½%.

Long-term care services

Concentration of long-term care spending on the elderly

Spending on long-term care services is concentrated even more on higher age groups than healthcare expenditure. The age-specific demand for long-term nursing care is of key importance in this respect. If it were to remain constant, long-term care expenditure would feel the full impact of the demographic shift; however, if the need for long-term care were to arise only at an increasingly advanced age, growth in spending would be significantly slower. Further key factors are the extent to which long-term care will be provided in future by family members or in nursing homes – which incur higher costs to the statutory social security scheme. The expected change in family structures and the assumed higher labour market participation rate could push down the proportion of long-term care provided by family members. The reference scenario for Germany[11] foresees a

rise in government long-term care spending from an initial figure of just under 1% of GDP to 2½%. This equates to an increase in the contribution rate from just under 2% at present to around 4½% (excluding the special contribution to be paid by the childless).

The calculations for long-term care expenditure react particularly sensitively to variations in the adjustment of long-term care benefit rates. If these are not adjusted in line with *per capita* GDP or GDP per employed person but – in accordance with current legislation in Germany – generally at most in line with inflation, there would be a near constant expenditure ratio in the AWG's calculations. However, this would mean that real wage increases in this particularly labour-intensive sector could only be financed if considerable rationalisation were to occur. Otherwise, a less sharp increase in the expenditure ratio would mean that long-term care benefit rates would grow more slowly than wages, thus losing value in real terms. An increasing proportion of the long-term care costs would therefore need to be covered privately or through the means-tested basic allowance, which is not taken into account here.

Automatic adjustment of long-term care benefits key to expenditure rise

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10 See J Oliveira Martins, C de la Maisonneuve, The Drivers of Public Expenditures on Health and Long-Term Care: An Integrated Approach, in: OECD Economic Studies, No 43, 2006/2, pp 121 ff.

11 In the reference scenario, it is assumed that around half of the years gained through longer life expectancy will be spent in good health, ie without the need for long-term care. For the financial benefits, a rise in line with per capita GDP is applied; for non-financial benefits, by contrast, a steeper rise in line with GDP per employed person is assumed.

Education

Education expenditure likely to fall in relation to GDP

In the reference scenario for Germany, the AWG predicts a decline in public education expenditure by 2060 of just under ½ percentage point to 3½% of GDP. In an alternative scenario, the effects of an increase of 20% in the teacher-pupil ratio by 2020 were calculated. This is relevant in the sense that falling pupil numbers do not automatically lead to a corresponding reduction in education expenditure, especially as improved supervision may be politically desirable. This scenario illustrates, however, that a rising teacher-pupil ratio causes a rather sharp increase of ½ percentage point in spending on education.

Unemployment

Easing due to assumed fall in unemployment

Based on the assumptions regarding labour market developments, which also form the basis for calculations in the other areas, the AWG also provides projections for labour market-related expenditure relating to the statutory unemployment insurance scheme ("unemployment benefit I"). It is assumed that the quotient of benefits per recipient to GDP per employed person will remain constant and that the ratio of other labour market expenditure to GDP will fall in parallel with the presumed decline in the unemployment rate (from around 9% to just over 6%). On balance, a reduction of around one-third (from just under 1% to just over ½%) in the ratio of labour market-related expenditure to GDP is projected. The lower unemployment rate and the corresponding easing in expenditure burdens should come into play by as early as 2020. Should the assumptions regarding the development of the structural unemployment rate prove too optimistic, expenditure would be correspondingly higher in the absence of further labour market reforms.

Demographic developments and the long-term sustainability of government budgets

Sharp demographically determined deterioration in public finances

The long-term sustainability of public finances hinges on whether future government revenue – without further policy changes – is sufficient to cover expected expenditure (including interest). If it is assumed that government revenue and non-age-related spending will develop proportionately to GDP, the government deficit ratio will be driven solely by the expenditure increase predicted by the AWG and by interest payments. The entire additional fiscal burden would thus be credit-financed. Based on a straightforward extrapolation, this would result in a government deficit ratio of almost 6% and a debt ratio of just under 85% in Germany in 2040.[12] However, the starting point for these calculations is the comparatively favourable public finance situation in 2008, with a structural deficit ratio of 1.2% and a debt ratio of 65.9%.[13] By contrast, if today's much less favourable budgetary outlook were taken as the starting point, thus taking account of the expected

12 As in the AWG's report, a decline in real GDP growth from 1.9% to 1.0% and a nominal interest rate of 5% were applied. It is assumed that the development of the nominal debt level is influenced solely by the deficits to be financed. Under the partial analysis approach used here, the macroeconomic repercussions are generally disregarded.
13 See European Commission's spring 2009 economic forecast.

dramatic deterioration in the structural budgetary position, the projected future deficit and debt ratios would be substantially higher.

Scenarios in view of the financial and economic crisis

To take account of the slowdown in growth caused by the financial and economic crisis, the AWG carried out further model calculations (see the box opposite). Owing to the relatively strict wage indexation of statutory pensions and the great importance of wage costs for services in the healthcare, long-term care and education sectors, the ratio of age-related expenditure is projected to be only marginally higher in Germany as a result of the crisis. A greater effect would only arise if weaker growth were to be accompanied by a permanently lower employment level.

Considerable consolidation requirement ...

Despite the uncertainty associated with such long-term and schematic calculations, they do illustrate the need for substantial consolidation measures in order to sustainably stabilise public finances. The required scale of these measures can be estimated using sustainability indicators. The "S2 indicator" is both theoretically substantiated and commonly used in a European context.[14] It states how many percentage points higher the primary balance must be in relation to GDP in each future year to ensure fiscal sustainability. Even if the comparatively favourable starting

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14 This indicator is calculated on a regular basis by the European Commission (see European Commission, Public finances in EMU – 2008, European Economy (and earlier years) as well as European Commission, The long-term sustainability of public finances in the European Union, European Economy 4/2006). The results outlined below already take account of the AWG's most recent results, although the calculations differ slightly in terms of methodology from those of the Commission.

The impact of the financial and economic crisis on long-term fiscal sustainability

The macroeconomic downturn, which has been accelerated by the current financial and economic crisis, has significantly worsened the base for projections. The AWG's detailed projections regarding age-related expenditure could not take account of this factor. To assess these effects, three scenarios were additionally considered. In the best-case scenario, the current economic contraction is fully offset extremely rapidly by temporary economic expansion which exceeds the potential to a matching degree, so that GDP rebounds to the level of the reference scenario where no crisis has taken place as early as the start of the 2020s (rebound scenario). In a medium scenario, the GDP growth originally assumed is reached again some time after 2022 but the growth losses sustained in the meantime are not made good (lost-decade scenario). The level of GDP would, therefore, be permanently lower. In the worst-case scenario, potential growth is permanently lower and the deviation from the reference path widens continuously (permanent-shock scenario).

For the euro area under the worst-case scenario of a permanent slowdown in growth, the AWG has calculated that the expenditure ratio will increase by almost 2 percentage points. In the EU as a whole, the ratio would be over 1½ percentage points higher by 2060. However, the expenditure ratio for Germany would rise by barely ½ percentage point. This reflects, in particular, the comparatively tight pegging of German retirement pensions and other transfers to the development of wages and salaries as well as – given a virtually constant wage ratio – of GDP. Therefore, in Germany, recipients of government transfers feel the effects of a slower increase in income – and, conversely, of a more favourable development – more directly than in many other EU states. Furthermore, people employed in the fields of healthcare, long-term care and education will likewise be affected by lower incomes. The overall impact of a slowdown in growth on the expenditure ratio will be limited by these factors, unless a lower growth path also leads to permanently lower employment levels.

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... amplified by expected dramatic rise in structural deficits

values from 2008 are applied, the S2 indicator still shows a fiscal consolidation requirement of around 3% of GDP for Germany. Although the structural budgetary position in 2008 would be sufficient to reduce the debt ratio without the age-related rise in spending, it is not sufficient to cover the demographically induced burdens. If, instead of the 2008 values, the structural deficit and debt ratios forecast for 2010 by the European Commission are taken as the starting point, the consolidation requirement would be around twice as large.

Possible courses of action

Approaches to confronting demographic challenges

Among other things, the publication of medium and long-term projections over the past two decades has drawn greater public attention to the fact that foreseeable demographic changes require a fiscal policy response, and a number of reforms have already been adopted. In order to confront these ongoing challenges, there are three potential approaches: directly restricting age-related expenditure, improving growth and employment prospects, and undertaking a forward-looking and prompt consolidation of public finances.

Restricting the increase in age-related expenditure

Measures cutting benefits and raising retirement age adopted

The burden on future tax and contribution payers can be reduced directly if the increase in age-related spending is successfully slowed. This was the aim, in particular, of the most recent reforms to government old-age

provision. The modifications to the pension adjustment formula are intended to ensure that pensions grow more slowly than earnings subject to contributions, thus reducing the relative pension level. Furthermore, the statutory retirement age is being raised in stages. Both measures are also intended to restrict growth in expenditure on civil servants' pensions.

Despite the continuing financial pressure resulting from demographic developments, attempts are currently being made to reverse the benefit cuts that have been adopted. Thus the dampening effect of the "Riester reform steps" has been postponed for two years and, most recently, the extension of the safeguard clause has ruled out pension cuts even if contribution payers' average salaries fall. If this deferral of the dampening measures is not made good – as stipulated by law – this will lead to ongoing additional expenditure which is not taken into account in the AWG's projections.

Adopted reforms should not be reversed

Given the increase in life expectancy, raising the statutory retirement age is a suitable measure to prevent the retirement phase from being steadily prolonged in relation to the working phase. Otherwise, this alone would automatically lead to a continuous expansion in expenditure and contribution rates – even before taking low birth rates into account. An increase in the statutory retirement age to 67 by 2029 has been stipulated.[15] Although the current population

Increase in the statutory retirement age

[15] Beginning in 2012, the statutory retirement age will be raised by one month each year and from 2024 by two months each year. Hence those born after 1963 will only be allowed to draw a full pension upon reaching 67 years of age.

forecasts predict a near constant annual rise of just over one month in life expectancy also after 2029, there are no plans as yet to increase the retirement age further. If the relative length of the retirement phase to the working phase is to be kept approximately constant, the AWG's demographic assumptions imply the need for a further rise in the statutory retirement age to 69 by 2060.[16] Indexing the retirement age to life expectancy (as in Denmark, for example) could be an appropriate way of dealing with this expected development and of providing a more reliable longer-term outlook for all concerned.

Exploiting rationalisation reserves in healthcare sector

A key need in the field of healthcare provision is to exploit efficiency reserves. This relates both to the number of health service providers and to the level of recourse to healthcare services.[17] For the public long-term care insurance scheme, indexation to inflation means that the foundations for a subdued rise in long-term care benefit rates have already been laid. As in the past, a key issue is to identify the benefits that can and should be funded by insurees (and possibly additionally by taxpayers).

Supplementary private provision

In principle, private provision can compensate for the benefit cuts which may arise as a result of spending curbs imposed in the social security systems. This encompasses both private and company pension schemes and an expansion of patient co-payments, either directly or via supplementary insurance policies, in the healthcare and long-term care sectors. However, lower public spending would then be accompanied by higher expenditure on means-tested benefits. Although weaker

overall growth in age-related expenditure would then be mirrored in a lower burden in terms of taxes and social contributions, this might be partly counteracted by higher spending at an individual level. Nevertheless, this would provide an opportunity to identify and eliminate misdirected provision of benefits.

Raising the growth and employment potential

A lower ratio of employed persons to the total population means, in itself, that the burden of financing existing transfer payments will be spread among fewer people, thus increasing the individual level of taxes and social contributions. For Germany, a significantly sharper drop in the share of persons of working age by 2060 is expected (around -30%) than on average in the euro area (approximately -15%). Different demographic developments can be explained, among other things, by varying birth rates and migration levels. The institutional framework in this respect, which is partly shaped by policy decisions (eg regarding the structure of the tax

Need for adjustment depends on population developments

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16 See Deutsche Bundesbank, Outlook for Germany's statutory pension insurance scheme, Monthly Report, April 2008, p 54 ff.
17 Although international comparisons should be interpreted with caution, various measures point to a relatively high level of provision in Germany. In 2004, for example, the number of hospital beds per 100,000 inhabitants in Germany stood at 858. The corresponding average of the 25 EU member states (as of 1 May 2004) was only 590. In Germany, the number of visits per inhabitant to general practitioners and specialist doctors stood at 4.3 and 4.8, respectively, in 2004. The average figures of the 15 pre-enlargement EU member states were 3.8 and 2.6, respectively. See M Schneider et al, Indikatoren der OMK im Gesundheitswesen und der Langzeitpflege, Gutachten für das Bundesministerium für Gesundheit, Kempten 2007 (paper written for the Gertman health ministry, in German only).

and transfer system or conditions for immigration), therefore also has a bearing on the future course of population developments.

Longer working phase

For a given demographic change there are a number of approaches to cushioning a fall in the potential labour force. One option is to extend the phase of employment. In addition to raising the retirement age as discussed above, shortening the duration of education and training could also play a role in this respect. However, it should be borne in mind that shortening the period of education and training could have unwelcome repercussions for productivity. Moreover, the burden on the statutory pension insurance scheme would not be eased in the long term owing to the resulting increase in benefit claims.

Higher labour market participation rate

Another way to expand the labour force would be to increase the labour market participation rate, which currently stands at 76% in Germany.[18] In particular, a higher labour market participation rate among persons aged between 55 and 64 could cushion the fall in the potential labour force. However, the AWG's report already assumes an increase in Germany for this age group of 16 percentage points to 74% by 2060. Germany would thus be among the EU countries with the highest labour market participation rate among older persons (after Sweden and on a par with Spain). Another crucial requirement is to effectively curb long-term unemployment and generally increase employment incentives in the tax, social security and transfer systems. Early retirement schemes pose a clear obstacle to efforts to bolster potential output.

Higher labour productivity

Higher labour productivity can likewise help to ease demographically induced burdens. In the AWG's report, average annual growth of 1.7% in labour productivity until 2060 was assumed for Germany (as for the euro area as a whole), two-thirds of which is attributed to improved increased total factor productivity and one-third to capital deepening. Recent history suggests that this is rather optimistic, and economic and fiscal policy reforms would probably be required in order to achieve such a clear increase. Above all, appropriate underlying conditions – including effective competition legislation and a less distorting tax, social security and transfer system – may contribute to growth in physical and human capital. An efficient education system is likewise of key importance, which should also embrace persons with immigrant backgrounds. Overall, however, the broad wage indexation of statutory pensions limits the alleviating effects of higher labour productivity on the expenditure ratio.

Prompt consolidation of public finances

Demographically induced burdens and the Stability and Growth Pact

Relatively rapid and comprehensive budgetary consolidation could reduce the debt ratio, and interest payments relative to GDP would then tend to fall. The budgetary leeway gained as a result could then offset part of the demographically induced expenditure growth. In principle, this aspect is also taken into consideration in the European Stability and Growth Pact. Thus, the medium-term budgetary objectives are intended, among other things, to ensure long-term sustainabil-

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18 The labour market participation rate among men is 82%, while among women it is around 70%.

ity of public finances. As part of the update of the stability and convergence programmes, the member states are to take explicit account of the costs of an ageing population for the first time when setting their medium-term budgetary objectives at the end of 2009. How exactly this will be implemented is still subject to debate, however. It is important that the member states do not merely factor in a small part of the demographically induced expenditure growth, as the new medium-term objectives would then be hardly more ambitious than the present ones and the ensuing changes in the targets would lead to little progress.

Prompt consolidation advantageous

On a national level, new debt rules were recently included in the German constitution which, following a transitional period, will not permit any structural deficits for the federal states and only allow a very restricted structural deficit for central government. If, as these rules stipulate, Germany were to achieve a balanced budget by the middle of the next decade, the debt ratio would fall steadily in the following years. Assuming the revenue ratio and the other expenditure ratios remain constant, the resulting interest savings would suffice until around 2025 to compensate for the expected increase in age-related expenditure by 1 percentage point vis-à-vis 2016.[19] However, even then there would be no funding concept for the much larger rise in age-related expenditure after 2025. If no reforms are adopted to further re-

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[19] These calculations are based on the assumptions outlined on page 38. The values forecast for 2010 by the European Commission in its 2009 spring projection were taken as the starting point.

Reports on the long-term development of public finances

In addition to the AWG's reports, the European Commission's Sustainability Reports and occasional analyses based on generational accounting, the Federal Ministry of Finance, for example, also publishes its own report on the sustainability of public finances once every legislative period. The timeframe for these calculations currently extends until 2050. Furthermore, the Federal Government compiles a Civil Servant Pension Report once every four years based on projections regarding the burden placed on public budgets by the pensions payable to public-sector employees for the period up to 2050. However, the Fourth Civil Servant Pension Report, which was issued in April 2009, considers only civil servants employed by central government. The particularly pressing future budgetary problems facing the federal states are consequently disregarded.

The Federal Government also publishes an Old-age Provision Report once every legislative period outlining the current and future income situation in retirement and the importance of the various old-age provision schemes. The projections, which cover existing and new retirees up to and including 2030, include both benefits under the statutory pension insurance scheme as well as government-assisted supplementary private pension schemes.

The Federal Government's Old-age Provision Report is updated once a year. This report contains detailed projections for the statutory pension insurance scheme, though for a period of only 15 years. The 2008 Old-age Provision Report covers the period up until 2022 and thus notably includes the year 2020, before which the contribution rate is not supposed to exceed 20% and the relative pension level before tax but after deducting social contributions is not supposed to fall below 46%. As taking timely countermeasures can make an important contribution to overcoming long-term financing problems, it would make sense to extend the projection horizon – with due regard to the associated greater uncertainty – beyond the 2030 milestone used in the draft legislation for the latest pension reforms.

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strict the increase in expenditure and the extra strains are not eased by stronger growth and rising employment, significant structural surpluses in the German general government budget would be needed to avoid further adjustments in future. This applies at least to those years in which the demographically induced burdens will still be relatively small. The earlier the consolidation process starts, the lower the surpluses will need to be, as interest savings will then be made over a longer time frame. In addition, prompt fiscal consolidation would also tend to lead to a more equal intergenerational burden-sharing.[20]

Concluding remarks

Sound public finances and ongoing social reforms

Public finances are currently under considerable strain owing to the exceptional financial and economic crisis. The severity of the recession will lead – to some extent automatically – to considerably higher government deficits. The deterioration – also in structural terms – in the budgetary position, which is reflected, not least, in a sharp rise in debt, will restrict future budgetary leeway. Moreover, it is fore-

seeable that demographic developments will place additional strains on public finances. Current calculations predict a substantial increase in age-related government spending even if the reforms already adopted are implemented. Against this backdrop, the current deterioration in the structural position of public finances considerably hampers the task of achieving a sound initial fiscal position before the demographically induced burdens start to have an increasing impact on the general government budget. A key need for lessening the burden on future generations is to achieve significant and lasting consolidation progress as soon as the economy stabilises. The coming years, which will still see a relatively favourable demographic trend, offer the chance to implement and, looking further ahead, extend the reforms initiated in the system of old-age provision. Particular attention will also need to be paid to the healthcare sector.

20 See F Balassone, J Cunha, G Langenus, B Manzke, J Pavot, D Prammer, P Tommasino, Fiscal sustainability and policy implications for the euro area, ECB Working Paper No 994, January 2009.