Austrian pension projections for 2007-2060
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1. Executive Summary

According to recent population projections by EURO-STAT\(^1\) (EUROPOP2008), the size and age-profile of the Austrian and EU population will change substantially in the coming decades as emerging demographic trends show a clear picture in the future: the post-war baby-boom generation reaches retirement age, people live already considerably longer than previous generations and longevity will continue to improve, while fertility rates remain low, particularly, below reproduction rates. As a result, while the overall population number is still projected to grow by about 10% to more than 9m people in 2060, the number of elderly people will increase significantly relatively to the number of people in potential working age. This will cause a doubling of the share of 65+ year-olds in the working-age population from 25% now to over 50% in 2060. Austria is as faced with this fact as almost all industrialized countries are.

This change in the demographic pattern will also yield a shrinking labour force as of around the year 2020, which will constitute a severe drag on future potential economic growth. In consequence, according to the AWG/European Commission estimates, potential real GDP growth is projected to fall from rates lightly above 2% currently to 1.5% in 2060. Average potential real GDP growth over the projection period is expected to be around 1.7%, which is presumed to come from productivity growth only. Because of a rising overall population, real GDP growth per head will amount to 1.5% on average. Despite an expected increase in the employment rate to about 74.5%, in particular due to higher female and elderly employment also in light of the past ambitious pension reforms, the contribution to GDP from labour input will become negative in the longer term.

Based on the new population projection provided by EUROSTAT and a mandate by the ECOFIN\(^2\) Council the Working Group on Ageing and Sustainability (AWG) by the Economic Policy Committee (EPC) together with the European Commission (EC) carried out a third update of the long-run projections at EU level on the economic and budgetary impact of ageing populations. These new projections are set up on the basis of common and consistent demographic and macro economic assumptions and comprise five age-related public expenditure items: pensions, health- and long-term care spending, education expenditures and unemployment benefits.

This Working Paper is based on the country fiche provided for the EU peer reviews and focuses on the Austrian public pension projections only. The Austrian pension projections show the effects of population ageing for the period from 2007 up to 2060. Total public pension expenditures (covering both social security and civil service pensions as defined at EU level) are projected to rise from 12.8% of GDP in 2007 to a peak level of 14% of GDP in 2046, after which they will fall to 13.6% of GDP in the year 2060 again. Revenues from pension contributions are expected to remain rather constant at around 9% of GDP over the whole projection horizon. This increase is fairly moderate compared to many EU Member States, but more pronounced than shown in the second projection round in 2006. The pure dependency effect of ageing on public pension dynamics is estimated to be of about 10% of GDP in the long run.

To a very large extent, however, this will be compensated by stricter eligibility criteria, higher (female and elderly) employment/effective retirement ages and a declining benefit ratio resulting from lower replacement rates and the pension adjustment according to consumer price developments. A considerable damping effect on impending pension expenditures stems apparently from the parametric pension reforms implemented in recent years. For this reason, it is of great importance for Austria to continue to adhere to the past strategy to create adequate budgetary room for future manoeuvre, to pursue further reforms, in particular with a view to raise effective retirement ages, and to strengthen sustainable growth and employment. This is important in order to cope with the major challenges from ageing populations in future and to ensure fiscal and social sustainability in the long run.

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\(^1\) Statistical Office of the European Communities.

\(^2\) Economic and Financial Affairs Council.
2. The EPC/European Commission Ageing Report 2009

The ECOFIN Council mandated the Economic Policy Committee (EPC) already in the late 90ies to study the economic and budgetary implications of ageing populations in more depth. This should allow for profounder and much more comparable assessments of long run fiscal sustainability within the context of the Stability and Convergence Programmes (SCPs) and of multilateral surveillance of fiscal and economic policies.

As a consequence of the ECOFIN mandates, the EPC established a specific Working Group on Ageing and Sustainability (hereafter referred to as AWG) in 1999. This group is made up of representatives from national administrations and the European Commission (EC) and can also rely on regular technical advice from experts coming from the ECB, the IMF, the OECD as well as from academic institutions. The principal objective of the AWG is to examine the impact of ageing populations on economic growth and age-related public expenditures by preparing, notably every three years, long-term projections at EU level on the basis of commonly agreed demographic and macro economic assumptions. By definition, age-related public spending categories comprise pensions, health- and long-term care spending, education expenditures and unemployment benefits.

Since the late 90ies, these long term projections at EU level have turned out to become an international benchmark exercise for assessing fiscal sustainability and the impact of ageing societies on growth and the public sector in general, used extensively both in the institutional, financial and academic worlds. Comparable results and indicators have evidently supported Member States to pursue reform strategies to respect the inter-temporal budget constraint. The analysis and results on long-term sustainability of public finances, particularly, feed now usefully and more prominently into the various policy processes at EU level, such as the Stability and Growth Pact (SGP) and the Lisbon Strategy. As a result of the success of the previous projections rounds the next report is presumed to be published in late spring 2009. The new Ageing Report will bring together the extensive work undertaken by the group during the past two years to update and further deepen the common projection exercise of age-related expenditure projections on the basis of new population projections provided by EUROSTAT in 2008. The main goal of the current projection exercise has, thus, been in particular to improve further the quality and comparability of data and information.

This ageing projection exercise is again based on common agreements of the EC, the 27 Member States and Norway on the underlying exogenous assumptions and on the projection methodologies to be applied. On the basis of this set of assumptions and methodologies, separate budgetary projections are being run for the five age-related expenditure items. The projections for pensions are provided by the Member States using their own national model(s). The projections for health care, long-term care, education and unemployment are modelled by the EC, on the basis of a common projection model for each expenditure item. These long run projections will also be one strong pillar of the comprehensive sustainability analysis foreseen by the EC in autumn 2009.

Given the uncertainty surrounding the assumptions underpinning long-run macroeconomic and budgetary projections, a number of sensitivity tests are carried out in addition to the baseline scenarios. Thereby, the responsiveness of projection results to changes in key underlying assumptions is quantified so as to use these scenarios also as stress testing for risks.

This Working Paper only presents the demographic and macroeconomic projections for Austria, together with its implications on public pension expenditures in Austria for the period 2007-2060. While the demographic projections and macro economic assumptions were provided at EU level, the national pension models were used to provide the pension projections. The pension outcomes are consequently also a result of close cooperation between the Ministry of Finance, the Ministry of Labour, Social and Consumer Affairs and Statistics Austria. The results for Austria were peer-reviewed in the AWG at the end of November 2008, especially closely examined by the EC and Portugal. The projection results were found to be overall reasonable. This Working Paper rests on the Austrian country fiche provided for these AWG peer reviews.

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3 ECB = European Central Bank, IMF = International Monetary Fund, OECD = Organisation for Economic Cooperation and Development.
4 The sum of initial outstanding debt and the discounted future budget positions should sum up to zero over the infinite time-horizon (= sustainable public finances).
5 Mandate by the ECOFIN to the EPC in February 2006.
7 Ms. Caroline Haberfellner and Mr. Peter Part.
8 Mr. Johann Stefanits and Mr. Roman Freitag.
8 Mr. Werner Lenzelbauer.
3. Overview of the Austrian pension system

The public pension system in Austria is predominantly based on a pay-as-you-go (PAYG) scheme and consists of several sub-systems, above all for blue and white-collar workers, farmers, self-employed and civil servants. The coverage of the public pension system is overall very high. Public pension benefits are still by far the primary source of income for retirees (approximately 95%). In order to harmonise these different schemes, a standardised, more actuarially-oriented pension account system for all employed under 50 years (i.e. for people born on 1 January 1955 or later) was introduced in 2005, established in the Act on Harmonisation of Austrian Pension Systems. This new pension system will gradually replace those different pension schemes over the long run.

Currently, the statutory retirement age is 65 years for men and 60 years for women. But as a follow-up of a Constitutional Court ruling in the 90ies, the female retirement age of 60 years will be gradually raised to 65 years from 2024 (by ½ years steps) until 2033. Besides the regular old-age pensions, some possibilities are at disposal to receive early old-age pensions. Generally, when going on pension earlier (before reaching the statutory retirement age) a yearly deduction of 4.2% points is due (with a maximum ceiling of 15% points). The so called corridor pension ("Korridorpension") enables a person to go on early pension within an age-corridor from 62 to 65 years when having actively contributed payments of at least 450 months (37.5 years) to the public old-age insurance scheme. For women this gets relevant only by 2028 with the phasing in of the harmonisation of retirement age of men and women. In the case of the "Korridorpension", the yearly deduction for early retirement amounts to a reduced rate of 2.1% points per annum. Simultaneously, for working up to three years longer than demanded (i.e. until the age of 68) a bonus of annually 2.1% points is granted. A further possibility is the early old-age pension with a long period of insurance ("Vorzeitige Alterspension bei langer Versicherungsdauer"). People can claim a pension when having been insured for 450 months (37.5 years). Currently, they can leave the labour market with 57 (women) or 62 (men) years, respectively. This option is already expiring since 2004 by a stepwise increase of the entry age for early retirement and will be fully phased out by 2017. Furthermore, men can go on early pension with 60 years if their work has been in the area of "hard labour" ("Schwerarbeiterpension"). For women this settlement is only relevant from 2024 on (harmonisation of retirement age of men and women). The number of Schwerarbeiterpensionen, however, is fairly low (only about 1,200 pensions in 2008). The pension settlement for long-term insured ("Langzeitversichertenregelung" or "Hacklerregelung") makes a retirement with 55/60 years for women/men possible when having contributed 40 years (women)/45 years (men) to the pension system. No yearly deductions are applied when making use of this option until 2013. Currently, 64,000 retirees make use of this early pension option. These are almost 60% of total early pensioners.

The public pension system comprises also disability and survivors’ pensions. To be entitled to a disability pension, a medical certificate is required documenting the invalidity. The status of disability must prevail for a minimum period of at least 6 months. The entitlement condition for a survivor pension is the death of the husband/wife. The deceased must have contributed for a certain period to the public pensions system (this depends on the age at which the spouse died).

The new defined-benefit formula "45-65-80" is central in shaping the actual individual pension benefit. A person contributing 45 years to the public pension system and retiring at the statutory retirement age of 65 is entitled to receive a gross public pension amounting to 80% of his average life-time earnings. At present, the annual accrual rate corresponds to 1.8% in 2008 and will be further lowered to 1.78% in 2009 (from initially 2% before the reforms). The basis of average individual earnings will be extended gradually from the best 15 to the best 40 years of income until 2028. Entitlements for a regular old-age pension first arise with a minimum of 7 contribution years and when the statutory retirement age has been reached.

Due to the establishment of the Act on Harmonisation of Austrian Pension Systems a sort of parallel accounting is used until the new law will be implemented fully (transformation process from old to new law). For people who have contributed to the pension system only from 2005 on, just the new law (with the above mentioned benefit formula) is applied. For those who were 50 years or older by 1 January 2005 the regulations according to the old law are still carried on. For all the persons who were below 50 years in 2005 a parallel accounting has been introduced. For those people pension benefits are calculated corresponding to old and to new law. Then a weighting method is used according to the contributions paid before and after 2005. Imagine a person having contributed to the public pension system for 15 years before 2005 (old law) and for 30 years after 2005 (new law). For this person pension benefits result from 1/3 due to the regulations of the old law and from 2/3 due to the new law. Currently, there still exists an overall ceiling on pension deductions (when comparing individual pension benefits...
due to the old and new legislation) of 10%. This cap will ultimately fade out in 2033.

The purchasing power of pension benefits is secured by yearly adjustments according to consumer price inflation (CPI). Occasionally, annual pension adjustments deviated moderately from CPI developments in the past. On 24 September 2008, the Austrian Parliament decided on an exceptional slightly higher pension benefit adjustment, paid out already two months earlier in November 2008, together with a staged lump sum. This measure was taken in order to support the purchasing power of low income retirees in compensation for the high oil and food price hikes in 2008. Additionally, the waiting period for the first pension adjustment was repealed. Before, pension benefits of new pensioners were adjusted according to inflation only from the second year on after pensioning. As of 2009, pension benefits are adjusted from the first year on.

Average pension benefits in the private social insurance scheme amounted to approx. € 840 per benefit received in 2007. This amount is quite low as also very small pensions (ca. 250,000 in number) are included which are paid mainly to non-residents. Civil servants pension benefits are still much higher and made up for approx. € 2,320 per benefit received. In order to avoid elderly poverty, pensioners with pension claims below a certain minimum, have access to so-called “Ausgleichszulagen” which are financed solely by federal tax revenues. If the total income of a pensioner is below a statutory minimum (“Richtsatz”), the pensioners receive a state-financed “equalising allowance” in order to add on to reach at least this defined minimum threshold (indexed by price development). The monthly statutory minimum was € 772.40 for a single pensioner in 2008 and € 1,158.08 for a married couple. At present, “Ausgleichszulagen” are granted to around 240,000 recipients (approx. 10% of total pensioners). The total sum of equalising allowances amounts to approximately 0.3% of GDP (2007).

The public pension system is financed mainly through compulsory contributions, which are supplemented by other public transfers (as c.f. out of the unemployment insurance scheme, the family allowance equalisation fund or federal transfers for granting minimum income standards). Pension contributions are levied on gross salaries and deducted from these before personal income tax. The present contribution rates are uniformly set at 22.8% in the private social insurance sector, whereof the employer bears 12.55% and the employee 10.25%. There are no contributions of the employers in the civil service sector. There, the employee’s contribution ranges from 12.55% to 10.25%. For farmers and self employed in the private social insurance sector a contribution rate of 15% and 17.5% is effective, whereby the difference to the standard contribution rate is borne by federal government transfers. The federal budget also covers the deficits in most public pension schemes in the case of their actual emergence (“Bundesbeitrag”). These deficits are, thus, financed by general tax revenues. Contributions to public old-age provisions in Austria are exempt from taxation, but pension benefits are subject to income tax and health care contributions.

Generally, private pensions in Austria (both occupational and private) are still of much less quantitative importance than public pensions. Recent estimates show that private pension benefits paid in 2007 correspond to less than 5% of overall pension benefits. Nevertheless, the volumes of private pensions have increased rapidly in recent years. Total benefits resulting from private pension provisions accounted for approximately 0.5% of GDP and contributions for about 1% of GDP in 2007. It is projected that these benefits could augment to around 2% of GDP by 2070, thereby compensating for part of the expected declining replacement rate in the public pension scheme in future.

The Austrian Occupational Pension Act (“Betriebspensionsgesetz”) contains all regulations for occupational old age provisions (2nd pillar). This Act regulates primarily following firm-related retirement provisions: 1) pension provision funds (“Pensionskassen”), 2) occupational collective insurances, 3) direct provisions allowed by a company to an employer and 4) life insurances. The implementation of the new severance payment (“Abfertigung neu”) in 2002 increased the relevance of the second pension pillar, as it made occupational pensions mandatory. Since then employers are obliged to transfer 1.53% of the monthly salary of their employees to a staff provision fund (“Mitarbeitervorsorgekasse”), set up especially for this purpose. In view of old-age provision, retiring employees can choose to receive the payout in form of the total sum (taxed with 6%) or in form of a monthly paid additional pension (tax exempt) or in terms of a reinvestment in a pension investment fund (tax exempt). Since the introduction of the new severance payment the entitlements arising out of these schemes rose from € 146m in 2003 to € 1,622m (or 0.6% of GDP) in 2007. Likewise, the number of prospective beneficiaries grew from 800,000 in 2003 to 2.4m in 2007.

Private pension provisions made by individuals form the third pillar of the Austrian pension system. Like in the occupational sector, also in the private sector individuals can choose between a multiple range of investment products fulfilling directly or indirectly the purpose of old-age provision. Hence, in the private sector one can generally distinguish between concrete pen-

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10 By the „Austrian Institute for Advanced Studies“.
sion directed provisions and a general accumulation of savings over the life-cycle. Concrete pension directed provisions are aided by the state in order to boost the development of the third pension pillar. Traditionally, life insurances play a significant role in the private pension provision. Private life insurance contracts have continued to show a major upward trend over the past years. While a private life insurance, in general leads to a one-off payment, private pension insurance contracts are usually concluded for the purpose of obtaining a life-long pension. The most attractive private old-age provision represents the new premium-aided pension savings scheme (“Zukunftsvorsorge”). This product was introduced in 2003 and can be understood as a form of life insurance (incl. a capital guarantee) subsidised by the state with a tax premium. The annual state premium made up for 9.5% in 2008. After a minimum investment period of 10 years, the taxpayer may dispose of his entitlements. If the entitlements are, however, paid out, half of the allowed state bonuses must be paid back, a tax of 25% must be paid on the capital gains retroactively and the capital guarantee is lost. If the entitlements are transferred or used for pension payments, no tax will be due. This scheme has been recording strong growth since its launch in 2003. In 2003 already 281,000 contracts existed. This amount quadrupled in the following three years to 1,186,500 contracts in 2007 (volume of premiums of € 725m in 2007). By the end of 2007 the declared duration of every second contract was 30 years or longer.
4. Projection results

4.1. Demographic developments until 2060

The very starting point of the common exercise represents the EUROPOP2008 population projection, which was developed by EUROSTAT in close co-operation with the national statistical offices. The approach used by EUROSTAT was a so-called convergence scenario. The key demographic determinants – fertility rates, life expectancy and net migration – were assumed to converge across Member States over the very long run (by the year 2150). As far as fertility and mortality rates were concerned, it was assumed that they catch up to that of the ‘forerunners’ in the EU, whereby, net migration is assumed to approach to zero net migration in the convergence year 2150.

According to this EUROPOP2008 population projection (released by EUROSTAT in May 2008), the Austrian population is expected to increase from 8.3m persons today to a peak of 9.1m in 2046, before it starts to decline again to the level of 9m by 2060. The overall size of the Austrian population is projected to be larger by about 700,000 inhabitants in 50 years’ time, but also much older than it is now. According to the projections, the working-age population (aged 15-64) will continue to expand modestly from 5.6m to 5.8m people until 2020, before commencing to go down to a level of 5.2m by 2060 (despite continuous positive net immigration of 28,000 persons on average).

Over the whole projection period, the potential labour force will drop by 8%. Also the young population (aged 0-14 years) will decline by 4% over the projection horizon. Simultaneously, the elderly population (aged 65 years and above) will increase markedly throughout the projection period. The number of elderly (65+ years) will almost double, rising from 1.4m in 2008 to 2.6m in 2060, also mirroring the baby boom generation to reach the retirement age. The very old population (80+ years) is projected to rise even stronger, by 276% (nearly tripling from about 370,000 in 2007 to over 1 million by 2060).

The old-age dependency ratio (the ratio of persons 65+ years in relation to the age cohort 15-64 years), therefore, more than doubles from 25% at present to 51% in 2060 due to the babyboom generation reaching the retirement age and life expectancy increasing by more than 6.5 years. This entails that Austria would move from having 4 working-age people for every person aged over 65 years to a ratio of 2 to 1. The economic dependency ratio (i.e. the ratio of young (0-14) and old age (65+) cohorts together in relation to the working age population) will step up considerably from 102% to above 129%, as the fall in the young population will not compensate for the much stronger rise of older people.

The convergence scenario approach employed in the EUROPOP2008 projection will bring about for Austria, in consequence, the total fertility rate to rise from 1.41 in 2008 to 1.48 by 2030 and further to 1.57 by 2060. In turn, life expectancy at birth for males is projected to increase by 7.2 years over the projection period, from 77.2 in 2008 to 84.4 in 2060. For females, life expectancy at birth is expected to go up by 6.1 years, from 82.6 in 2008 to 88.7 in 2060. Further, annual net migration inflows are projected to fall from about 33,000 people in 2008 to 22,000 people by 2060. In an additionally calculated “zero migration scenario” the assumption of no migration would lead to a drop of the working-age population (15-64 years) of 5.6m today to 3.4m by 2060, which would amount to a decrease of 39%.
4.2. Labour force and employment developments until 2060

The labour force projections follow a cohort approach, a methodology basically developed by the OECD. Participation rates in the labour market have been calculated, by single age and sex, by using the entry/exit rate calculated on the basis of the average of the participation rates observed over the period 1998-2007 in each Member State. Whereby, the entry rates are generally assumed to be constant throughout the whole forecasting period, adjustments were made for exit rates of older workers (aged 55-71) to take into account recent and the lagged effects of enacted pension reforms. This base case projection reflects the working assumption of “no policy change” and, therefore, does not account for more or less likely future developments.

Since the common macroeconomic projections already account for the pension reforms of the last years, in particular the effects of raising and harmonising legal retirement ages and enhancing financial incentives to remain longer at work, their effects on employment are reflected by the Commission macro assumptions, accordingly. There has been no major change in incorporating these pension reforms into the labour force projections compared to the 2006 Austrian macro scenario. Additionally, the cohort-based projection contains an autonomous increase of female participation (“cohort effect”) as it is assumed that younger women have a much stronger attachment to the labour force than older women. The labour force over the next 50 years is projected by combining the projections of population and of rates of participation by gender/age group.

The calculation of the NAIRU\textsuperscript{11} was used as a proxy for a projection of the structural unemployment rate. As a general rule, the unemployment rates for each country converge to the estimated EU15 NAIRU in 2009\textsuperscript{12} being kept constant at that rate thereafter. To avoid extrapolating forward high levels of NAIRU for countries still above the estimated medium-term EU15 average of the NAIRU the EPC agreed that these countries should converge to this unemployment rate in the period up to 2020. The given participation rate and unemployment rate projections result ultimately in the projection of employment rates and employment in general.

The labour force over the next 50 years is projected by combining the projections of population and of rates of participation by gender/age group (based on the EU labour force concept). The overall participation rate (for the age group 15 to 64) in Austria is anticipated to increase by 2.8 percentage points over the period 2007-2060 (from 74.8% in 2007 to 77.6% in 2060). The projected upward shift in the overall participation rate is mainly due to the increase of participation rates for women and the elderly. While the participation rate for men within this age group increases only by 0.3 percentage points over the projection horizon (from 81.7% in 2007 to 82% in 2060), the participation rate for women will be boosted by 5.1 percentage points (from 68% in 2007 to 73.1% in 2060). For the total age-group 15-71, the current and projected total participation rates as well as the increase are smaller (from 68.6% in 2007 to 70.1% in 2060). Apparently, due to the enacted pension reforms, the biggest rise in participation rates is projected for older workers (55-64 years); around 21 percentage points for females and 9.2 percentage points for males within the projection horizon.

Compared to the participation rates projected in the previous projection round (2006), the recent outcomes result in lower levels. While the total participation rate for the age cohort 15-64 increased previously from 76.1% in 2010 to 79.1% by 2050, it will only start from the level of 75.3% in 2010 and rise to 77.5% in 2050 in the current projection exercise. This difference is mainly due to a statistical revision in the Austrian participation rate in 2004, which lowered this rate by more than 1 percentage point and to changes in the methodology used, as most recently a weighted average is used to calculate entry/exit rates on the basis of observed entry/exit rates from the labour market in 2006. Hence, the overall labour force (aged 15 to 71) in Austria is projected to drop by almost 3% from 2007 to 2060, whereby the female labour supply is increased by 2.3% and the male labour supply decreases by 4.5% within the projection horizon.

In addition, unemployment rates are expected to converge to the estimated NAIRU in 2009, based on the Spring 2008 economic forecasts by the European Commission (DG ECFIN\textsuperscript{13}), and afterwards they are kept constant at that rate. For Austria, these assumptions imply an initial unemployment rate of 4.5% in 2007, decreasing to 4.3% until 2010 and staying at this level thereafter. Given the population projection, the unemployment rate assumptions and the labour force projection, the overall employment rate (of people age 15 to 64) in Austria is projected to increase from 71.5% in 2007 to 72.7% in 2020, and to reach 74.3% in 2060.

\textsuperscript{11} NAIRU = Non-Accelerating Inflation Rate of Unemployment.

\textsuperscript{12} Based on the Spring 2008 economic forecasts by the European Commission.

\textsuperscript{13} DG ECFIN = Directorate General for Economic and Financial Affairs.
The elderly employment rate (55-64) is expected to rise strongly from the initially low level of around 39% at present to 54% in 2060. This relates to the effective increase of the retirement age by about 1.5 years over the projection horizon. Women’s employment (15-64) is expected to rise by 5 percentage points from 64.5% in 2007 to 69.6% in 2060. The expected boost in overall employment rates is assumed to result in a further slight employment growth in the period up to 2020. Then total employment will start to decline by around 0.2% per year on average until 2060, thereby steadily contributing negatively to potential real GDP growth.

4.3. Long run growth until 2060

As in previous projection rounds, a production function approach for projecting potential output growth has been applied. In order to project output growth, the same production function approach is used as of the Output Gap Working Group. By employing a standard specification of the Cobb-Douglas production function with constant returns to scale, potential GDP can be expressed formally as total output represented by a combination of the supply of labour and of the stock of capital multiplied with total factor productivity (TFP), which embeds the technological progress. Different (compared to the second projection round) is only the use of ‘total hours worked’ as labour input (as opposed to the ‘number of persons employed’ used in the 2006 Ageing Report).

Labour productivity growth, therefore, depends on the components TFP and the capital stock per worker. The key driving force for labour productivity and long run potential growth will be the former, as it is assumed exogenously that the TFP rate will converge to 1.1% in the long run. This resembles average historic trends both in the EU and USA, but evidently not latest actual productivity developments. This assumption does also not account for possible effects of ageing populations on TFP growth, for which no hard empirical evidence has been found in the AWG. Moreover, the speed of convergence was determined by the relative GDP position of Member States, allowing for a certain catching process of lower income countries (i.e. TFP growth of average 1.4% for the EU10). For Austria, as a country with a comparatively higher GDP/head level in the EU, this resulted in constant TFP growth of 1.1% over the projection horizon.

Furthermore, capital stocks are derived from the “investment rule”, which states, in principle, a constant investment to GDP ratio as of 2009 based on historical data. For countries with high investment ratios right now, some transition rules to steady state assumptions have been introduced. In the Austrian case, this rules led to an average potential GDP contribution of capital deepening by about 0.6 percentage points. As a result, overall labour productivity growth amounts to 1.7% on average during the period 2007-2060.

Finally, a constant real interest rate in the baseline scenario with a prudent value of 3% is assumed for all 27 Member States and Norway, reflecting more or less the assumed constant inflation rate of 2%.
As a result, the annual average potential GDP growth rate in Austria is projected to decline from 2.2% in 2007 to 1.5% in 2060 in real terms. Over the whole period 2007-2060, real GDP growth rates in Austria largely comply with those in the EU-27 area, with 1.7% on average. This is 0.2 percentage points higher compared to the 2006 exercise due to an overall higher (less negative) labour input. Driving factors of GDP growth are labour input and labour productivity, whereby, economic growth up to 2060 is strongly influenced by a shrinking labour supply due to the ageing population. Labour input in Austria is projected to increase up to the 2020s. Thereafter, the demographic changes, with a reduction in the working-age population, are projected to act as a drag on growth as displayed in graph 3. Henceforward, labour productivity will be the sole source of economic growth. As the Austrian population is projected to expand considerably, average GDP growth per head of 1.5% will be lower by 0.2 percentage points than average real GDP growth.

4.4. Baseline pension projections until 2060

Population ageing represents a major financial challenge for the Austrian public pension systems, which are predominantly PAYG based. The higher old-age dependency ratio will evidently be reflected in a marked increase in the overall number of pensions by 50%. Overall, gross public pension expenditures in Austria are, thus, projected to rise from 12.8% of GDP in the year 2007 to a high of 14% of GDP in 2046, then a decline to 13.6% of GDP in 2060 will follow.14

Table 1: Projected gross pension spending, tax on pension and contributions (% of GDP)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total gross pension expenditure</th>
<th>Old-age and early pensions</th>
<th>Other Pensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>13.0</td>
<td>9.5</td>
<td>3.2</td>
</tr>
<tr>
<td>2007</td>
<td>12.8</td>
<td>10.1</td>
<td>2.7</td>
</tr>
<tr>
<td>2020</td>
<td>13.0</td>
<td>10.9</td>
<td>2.8</td>
</tr>
<tr>
<td>2030</td>
<td>13.8</td>
<td>11.1</td>
<td>2.8</td>
</tr>
<tr>
<td>2040</td>
<td>13.9</td>
<td>11.1</td>
<td>2.9</td>
</tr>
<tr>
<td>2050</td>
<td>14.0</td>
<td></td>
<td>2.9</td>
</tr>
<tr>
<td>2060</td>
<td>13.6</td>
<td></td>
<td>2.7</td>
</tr>
</tbody>
</table>


This underlying dynamism is driven mainly by spending developments in the social insurance schemes by the private sector (ASVG16; e.g. employees, self-employed, farmers). Whereby, the increase is in general based on the rising number of pensions all together. This is mainly an impact of the population ageing. But expenditure dynamics are presumed to be curved considerably by a declining benefit ratio (average pension to economy-wide average wage). But also undertaken reform measures contribute to a lower increase in pension expenditures as they cause a higher effective retirement age (around +1.5 years over the projection horizon) through the rise of legal (female) retirement ages and through major disincentives for early retirement. Consequently, the Austrian projections – after the expected increase in pension expenditures until 2050 – manifest a small drop in public pension expenditures from 2050 to 2060.

Other pension expenditures (survivors' and disability pensions) amount to 3.2% of GDP in 2007 and decline to 2.7% of GDP by 2060. Whereby private other pensions contribute for 2/3 to this amount in the beginning of the period, they almost make up for the whole amount by the end of the projection horizon. Generally, 60% of other social insurance pensions in the private social insurance sector are due to survivors’ pensions and 40% due to disability pensions. These shares remain rather constant over the projection horizon.17

Table 2: Projected gross public pension spending: by scheme (as % of GDP)

<table>
<thead>
<tr>
<th>Year</th>
<th>Civil service sector employees</th>
<th>Private sector employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>13.0</td>
<td>3.6</td>
</tr>
<tr>
<td>2007</td>
<td>13.0</td>
<td>3.6</td>
</tr>
<tr>
<td>2020</td>
<td>13.0</td>
<td>3.1</td>
</tr>
<tr>
<td>2030</td>
<td>13.0</td>
<td>2.8</td>
</tr>
<tr>
<td>2040</td>
<td>13.0</td>
<td>1.9</td>
</tr>
<tr>
<td>2050</td>
<td>13.0</td>
<td>1.4</td>
</tr>
<tr>
<td>2060</td>
<td>13.0</td>
<td>1.3</td>
</tr>
</tbody>
</table>


The pension expenditures (old-age, early and other pensions) of the social insurance schemes by the private sector will rise by almost 40%, from 9.2% of GDP in 2007 to a peak of 12.6% in the year 2052, afterwards levelling off but still staying above 12% of GDP thereafter. The private social insurance sector covers all

---

14 Some pension expenditures not directly linked to pension benefits (as for rehabilitation, administrative costs, etc.) are not included in these projections. This is analogous to the 2006 projection round. These other pension expenditures make up for approximately 0.9% of GDP. "Ausgleichszulagen", amounting to around 0.3% of GDP, are also not contained in these projections.

15 This column represents a peak year, i.e. the year in which the particular variable reaches its maximum over the interval 2000 to 2060.

16 ASVG = „Allgemeines Sozialversicherungsge setz“.

17 As we are lacking complete information on real numbers, we assumed all pensions under the age of 60 being disability pensions.
relevant schemes, for blue and white collar employees (ASVG), self-employed (GSVG18 and FSVG19) and farmers (BSVG20), amongst others. The ASVG scheme makes up for more than 80% of the whole private social insurance scheme (both in terms of pensioners as well as in terms of contributors). The relevance of the farmers’ scheme is expected to decline within the next decades, which will be mostly absorbed by the ASVG scheme.

The pensions expenditures (old-age, early and other pensions) of the civil service pensions scheme (for federal, local governments and communities) will gradually decrease by almost 2/3 from 3.6% of GDP to 1.3% of GDP until 2060. Due to several past public sector reforms, a large number of public sector employees will be insured in the private social insurance system in future. Also the lower future replacement rates with newly and gradually harmonised civil servants’ pensions will contribute to this decline. As can be clearly taken from graph 4, a large proportion of civil service pensions will be replaced by the private social insurance in the medium and long run.21 As a result, the number of civil service beneficiaries will be halved in the long run. Overall public pension spending on civil servants goes down fairly rapidly, while the social insurance spending compensates this drop.

Graph 4: Social security pensions expenditures: private and civil service sector, gross, in % of GDP

![Graph showing social security pensions expenditures](image)


In 2007, as a total, 2.42m public pensions have been accounted for, 2.12m in social insurance pensions and 299,000 pensions for civil servants (12% of all pensions). Approximately 690,000 pensions were awarded to people aged below 65, partially reflecting the still low employment rate for people aged 55-64 of 38.8% in 2007 by international comparison. Due to the ageing population, the number of pensions will significantly rise by more than 50% from today’s 2.42m to 3.68m by 2060. The ageing effect is obvious as the rise in the number of pensions almost only takes place in the age cohort 65+. This increase in the total number of pensions will, nevertheless, be a markedly lower rise than the overall extension of the older population (65+ years) which will augment by 87% until 2060.

The evolution of the number of pensions is due to several factors: besides the dominant ageing impact, some effects also stem from a still rising number of pensioners receiving (small) double pensions. On the other hand, the increase of the employment rate of older workers (55-64) by more than 15 percentage points to 54% by 2060, the expected relative reduction in the number of survivors’ pensions due to assumptions on a contemporary change in family structures and converging life expectancies of women and men as well as a lower increase of double pensions due to the fading out of pensions for WW II victims or veterans have dampening impacts on the number of pensions.

Graph 5: Number of pensions, private and civil service sector, in 1,000

![Graph showing number of pensions](image)


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18 GSVG = „Gewerbliche Sozialversicherungsgesetz“.
19 FSVG = „Sozialversicherungsgesetz freiberuflich selbständig Erwerbstätiger“
20 BSVG = „Bauern Sozialversicherungsgesetz“
21 See also section 4 on the description of the models.
Whereas the increase of the number of pensions mainly accounts for the rise in pension expenditures this evolution is, to some degree, offset by a lowering benefit ratio. The benefit ratio will decline from today’s 47% to 33% by 2060. This reflects both the shift of employees from the civil service scheme to the private social insurance scheme and the strong decrease of the benefit ratio in the civil service sector. This development also tracks the fall in the overall replacement rate by 9 percentage points over the projection horizon. This mirrors apparently introduced deductions for early retirement and longer insurance times as precondition for the maximum replacement ratio (45 years, 80% of the best 40 income years). Also, the indexation of pensions due to consumer price developments, whereby average wage is adjusted according to labour productivity in the model, explains for the decline of average benefits in relation to average wages over time.

Table 3: Benefit ratio and gross replacement rate for social security pension sector (in %)

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Replacement Rate, Social security scheme</td>
<td>54</td>
<td>49</td>
<td>49</td>
<td>46</td>
<td>45</td>
<td>44</td>
</tr>
<tr>
<td>Benefit Ratio, Social security scheme</td>
<td>48</td>
<td>47</td>
<td>44</td>
<td>42</td>
<td>40</td>
<td>37</td>
</tr>
</tbody>
</table>


Table 4 decomposes the increase in the ratio of pension expenditures to GDP into the effects of changes in the dependency, coverage and benefit ratio and in the employment rate. While the dependency ratio measures the ageing effect, the coverage ratio reflects the take-up effect of pensions relative to the number of old people, the employment effect measures the share of the working age population to the number of the employed and the benefit effect captures changes in the average pension relative to the output per employed person.

Table 4: Factors driving public pension expenditures between 2007 and 2060 (in percentage points of GDP)

<table>
<thead>
<tr>
<th>Factor</th>
<th>2007-20</th>
<th>2020-30</th>
<th>2030-40</th>
<th>2040-50</th>
<th>2050-60</th>
<th>2070-60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public pensions to GDP in a starting year</td>
<td>0.3</td>
<td>0.8</td>
<td>0.2</td>
<td>0.0</td>
<td>-0.4</td>
<td>0.9</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>2.0</td>
<td>3.8</td>
<td>2.8</td>
<td>0.7</td>
<td>0.7</td>
<td>9.9</td>
</tr>
<tr>
<td>Coverage ratio</td>
<td>-0.5</td>
<td>-1.8</td>
<td>-1.2</td>
<td>0.4</td>
<td>0.5</td>
<td>-2.6</td>
</tr>
<tr>
<td>1/Employment rate</td>
<td>-0.2</td>
<td>-0.1</td>
<td>-0.3</td>
<td>0.1</td>
<td>0.0</td>
<td>-0.5</td>
</tr>
<tr>
<td>Benefit ratio</td>
<td>-0.9</td>
<td>-0.6</td>
<td>-0.9</td>
<td>-1.1</td>
<td>-1.4</td>
<td>-5.0</td>
</tr>
</tbody>
</table>


In Austria, the old-age dependency ratio, which will double from 25% in 2007 to 51% by 2060, weighs on public pension spending dynamics in 2007 to 2060 by far more than the actually projected total increase, while the other factors offset part of the burden stemming from the ageing population. The demographic change alone, as measured by the dependency ratio, would result in a significant expenditure boost by almost 10 percentage points of GDP in the period 2007 to 2060. The strongest offsetting effect of 5 percentage points of GDP (slightly more than half of it) comes from the benefit ratio as already discussed above. Then the coverage ratio follows curbing expenditure growth by about 2.5 percentage points of GDP. This decline in the coverage ratio (take-up effect of pensions) in Austria reflects the higher effective retirement age by approximately 1.5 years in the long run due to gradual increases in the statutory retirement age of women from 2024 on and due to reform measures to tighten up the access to early retirement schemes. Though employment rates are projected to be higher, the employment effect contributes only to a minor degree to reduce the increase in total public pension expenditures. Moreover, in the period from 2040 on, the coverage ratio and the employment effect start to put a slight additional burden on the increase in pension spending rather than offsetting this evolution. Thereby, the increase in the coverage ratio from 2040 on could be primarily explained by a higher take-up of pensions by women thanks to their increasing participation in the labour market.

22 Relation of average pension to economy-wide average wage.
23 First pension to economy-wide average wage.
24 In the Austrian case the number of pensions is used instead of the number of pensioners due to lacking precise information.
25 The starting year is 2007 for the column 2007-20 and 2020 for the column 2020-30, etc.
**Total revenues** (in particular from social security contributions from the social security and the civil service schemes) will remain roughly constant over the overall horizon at a level of 9% of GDP. This is due to the constant development of the number of contributors as well as of the wage share (gross wages being the contribution base for pension contributions).

**Graph 6: Total contributions and total number of contributors**

![Graph 6: Total contributions and total number of contributors](image)


The Austrian projections are based on the assumption that pensions for civil servants are being replaced by social security pensions. In particular, new entering public sector employees are insured predominantly in the social security scheme by the private sector. Lindek with a restrictive policy in new public hiring until 2015, the number of civil servants is expected to be reduced from approximately 290,000 today to 170,000 by 2060. This evolution is reflected in the rising contributions in the private social insurance scheme besides a decrease in contributions in the civil service sector.

Table 5 provides an even more in-depth insight into the impact of demographic factors on the Austrian public pension schemes.

**Table 5: Number of pensioners and contributors in the social security scheme (in 1,000), population over 65 and total employment (in 1,000) and related ratios (%)**

<table>
<thead>
<tr>
<th>Years</th>
<th>2001</th>
<th>2007</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of pensions (I)</td>
<td>2,240</td>
<td>2,423</td>
<td>2,799</td>
<td>3,071</td>
<td>3,273</td>
<td>3,494</td>
<td>3,808</td>
</tr>
<tr>
<td>Number of people aged 65+ (II)</td>
<td>1,234</td>
<td>1,401</td>
<td>1,688</td>
<td>2,129</td>
<td>2,494</td>
<td>2,711</td>
<td>2,839</td>
</tr>
<tr>
<td>Ratio of (I) and (II)</td>
<td>182</td>
<td>175</td>
<td>156</td>
<td>144</td>
<td>138</td>
<td>136</td>
<td>141</td>
</tr>
<tr>
<td>Number of contributors (III)</td>
<td>3,488</td>
<td>3,705</td>
<td>4,352</td>
<td>4,311</td>
<td>4,269</td>
<td>4,186</td>
<td>4,092</td>
</tr>
<tr>
<td>Employment (IV)</td>
<td>3,440</td>
<td>3,104</td>
<td>4,205</td>
<td>4,088</td>
<td>4,033</td>
<td>3,946</td>
<td>3,822</td>
</tr>
<tr>
<td>Ratio of (III) and (IV)</td>
<td>96</td>
<td>93</td>
<td>103</td>
<td>105</td>
<td>106</td>
<td>106</td>
<td>106</td>
</tr>
<tr>
<td>Ratio of (III) and (II) support ratio</td>
<td>155</td>
<td>151</td>
<td>155</td>
<td>140</td>
<td>138</td>
<td>130</td>
<td>111</td>
</tr>
</tbody>
</table>

The number of pensions (row 1) shows the developments in the number of pensions in the social security scheme (civil service and private social insurance scheme, both old-age and early pensions as well as other pensions). The number of pensions rises in the next decades mainly in line with the increasing number of over 65 year olds. Thus, more people accrue pension rights in the system and pensioners draw pensions for a longer period due to the upsurge in life expectancy and a higher coverage rate due to women and double pensions. Still, in conformity with reforms undertaken, in order to tighten the access to early retirement schemes, the ratio of pensioners to the number of people aged over 65 (row 3) declines from 182% in 2001 and 173% in 2007 to 141% in 2060.

The number of contributors to the social security scheme (row 4) consists of employees being insured in the social security scheme. The number of contributors is projected to stay almost stable, but slightly plunge from 2020 on. This evolution goes in line with the slight fall of the potential working age population (15-64) within the projection horizon. The ratio of the number of contributors to employment rises from 93% in 2007 to 106% in 2060, thus, the number of contributors starts to exceed the employed from 2020 on. This fact emerges because the number of contributors results from the number of labour force contracts and, currently, approximately 200,000 people have more than only one engagement.

The **support ratio** (last row), which is defined as the ratio of contributors to pensioners, declines from 153% in 2007 to 111% in 2060. This is mainly the result of the increasing population aged 65+ and of the decreasing working age population (15-64).

Net public pension expenditures are projected to rise slightly faster than their gross values, while accounting for the falling benefit ratio in particular in the
civil service schemes. The total deficit (total contributions minus total net expenditures) in terms of GDP will rise from 1.8% of GDP in 2007 to 3.2% of GDP in 2060.

Graph 7: Deficit, contributions minus expenditures, in % of GDP

Table 6: Total and public pension expenditures under different scenarios (deviation from baseline scenario)

<table>
<thead>
<tr>
<th>Year</th>
<th>Baseline</th>
<th>Higher life expectancy</th>
<th>Higher lab. productivity</th>
<th>Higher emp. rate</th>
<th>Higher emp. of older workers</th>
<th>Zero net migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2040</td>
<td>0.0</td>
<td>-0.2</td>
<td>-0.5</td>
<td>-0.4</td>
<td>-0.5</td>
<td>-0.5</td>
</tr>
<tr>
<td>2050</td>
<td>0.4</td>
<td>-0.5</td>
<td>-0.8</td>
<td>-0.8</td>
<td>-0.5</td>
<td>-0.5</td>
</tr>
<tr>
<td>2060</td>
<td>0.8</td>
<td>-1.0</td>
<td>-0.8</td>
<td>-1.0</td>
<td>-0.5</td>
<td>-0.5</td>
</tr>
</tbody>
</table>


4.5. Sensitivity tests

The baseline projections cannot capture all the direct and indirect channels through which ageing can influence economic growth, as the projection exercise is carried out on the basis of commonly agreed assumptions in order to ensure comparability and clarity. However, given the uncertainty surrounding the assumptions underpinning long-run projections, it is necessary to carry out a number of sensitivity tests so as to quantify the responsiveness of projection results to changes in key underlying assumptions. This is why it was agreed to run a series of sensitivity analysis. Pension expenditure dynamics could be dampened by higher labour productivity growth and higher total employment rates, especially, higher employment rates of older workers. On the other hand, additional pressures will be put on pension expenditures assuming a higher life expectancy and zero net migration.28

- **Higher labour productivity**: A scenario with labour productivity growth being assumed to converge to a productivity growth rate which is 0.25 percentage points higher than in the baseline scenario. The increase is introduced linearly during the period 2010-2020, and remains 0.25 p.p. above the baseline thereafter.
  - If the average productivity growth will be higher by 0.25 percentage points than in the baseline scenario, public pension expenditures will be reduced by 1.1 percentage points of GDP in 2060.

- **Higher employment rate older workers**: A scenario with the employment rate of older workers (55-64) being 5 p.p. higher compared with the baseline projection. The increase is introduced linearly over the period 2010-2020 and remains 5 p.p. higher thereafter. The higher employment rate of this group of workers is assumed to be achieved through a reduction of the inactive population.
  - This increase of the employment rate of the elderly (55-64 years), in relation to the baseline scenario, results in lower pension expenditures by 0.5 percentage points of GDP in 2060.

- **Higher employment rate**: A scenario with the employment rate being 1 p.p. higher compared with the baseline projection. The increase is introduced linearly over the period 2010-2020 and remains 1 p.p. higher thereafter. The higher employment rate is assumed to be achieved by lowering the rate of structural unemployment (the NAIRU).
  - A rise in the employment rate compared to the baseline scenario is projected to cause a reduction in pension expenditures by 0.3 percentage points of GDP at the end of the projection period.

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28 As interest rates do not influence the projections for the social security pension expenditures in Austria, the scenario of „higher interest rate“ is irrelevant for the Austrian pension models.
• **Higher life expectancy**: A scenario with an increase of life expectancy of one year by 2060 compared with the baseline projection.

  → The assumption of higher life expectancy brings about an expansion of pension expenditures by +0.4 percentage points in 2060 compared to the baseline scenario.

• **Zero net migration**: A scenario with zero net migration (no immigration nor emigration) compared with the baseline projection.

  → Following the quite strong assumption of an absence of both immigration and emigration shows that the pensions to GDP ratios in this scenario would be significantly higher than in the baseline scenario, concretely by 5.3 percentage points in 2060.

Graph 8: Total gross pension expenditures: sensitivity scenarios


4.6. Comparison with previous projections rounds

Compared to the outcomes in the Ageing report 2006, we can identify a change in the expenditure dynamics, especially, from around 2040 on. As graph 6 shows, expenditures in both outcomes experience a gradual increase in the first half of the projection horizon. Whereas the peak in the old projections was reached in 2032, total pension expenditures according to the new projections peak in 2046. The old expenditure projections followed a sharper decline to below the initial level of 2004, whereas the new expenditure projections foresee expenditures staying longer on the peak level, only slightly declining during the last few years of the projection horizon.

The major bulk of the deviation from the 2006 outcome refers apparently to the markedly higher expected number of pensions, in particular as of 2030, and lower employment rates. To some extent, the higher increase is also due to the latest reform measures, especially designed to strengthen social sustainability, decided in between these two last projection rounds. For instance – besides some other minor changes – the accrual rate was only gradually decreased from almost 2% to 1.8% today (1.78% in 2009). The most recent reform measures (September 2008) covered the extension of the long-insurance early retirement scheme (“Hacklerregelung”) from 2010 to 2013 and the repeal of the waiting period for the first pension adjustment. The estimated effect of these reform measures in the long run accounts for about 0.25% of GDP.

Graph 9: Comparison of old and new total pension expenditures, in % of GDP


Compared to the results of the first AWG projection round in 2001, the overall increase in public pension spending is still considerably lower by more than 1 percentage point of GDP despite more favourable macroeconomic assumptions in 2001 that future ove-
rall participation and employment rates will augment more strongly.\textsuperscript{29} Hence, the outcome in the current projection round, therefore, still reflects notably the positive consolidation effects stemming from ambitious pension reform measures since the beginning of 2000 (see the details of the various Austrian projection results in table 7).

### Table 7: Decomposition of the change (in %) in public pension expenditure to GDP between 2007 and 2050 under the 2001, 2006 and 2009 projection exercises

<table>
<thead>
<tr>
<th></th>
<th>% Change 2007-2050</th>
<th>Dependence ratio</th>
<th>Coverage ratio</th>
<th>Employment rate</th>
<th>Benefit ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension/GDP – 2005\textsuperscript{30}</td>
<td>2.4</td>
<td>10.5</td>
<td>-3.0</td>
<td>-2.2</td>
<td>-2.9</td>
</tr>
<tr>
<td>Pension/GDP – 2006\textsuperscript{31}</td>
<td>-1.0</td>
<td>11.3</td>
<td>-3.6</td>
<td>-1.3</td>
<td>-4.3</td>
</tr>
<tr>
<td>Pension/GDP – 2009\textsuperscript{32}</td>
<td>1.5</td>
<td>9.3</td>
<td>-3.1</td>
<td>-0.5</td>
<td>-3.8</td>
</tr>
</tbody>
</table>


### 4.7. Pension projection results of the EU Member States and Norway

The final results of the pension projection exercise in 2009 show in some countries a different picture compared to the 2006 exercise. The overall public pension expenditures (1st pillar) for the EU27 will increase by 2.3 percentage points of GDP from 2007 to 2060. For the Euro Area expenditure growth will be at 2.7 percentage points of GDP. Comparing this horizontal developments with the 2006 Ageing Report, the trends for the EU and the Euro Area are fairly similar. At the Member State level, results are mixed. There is a very large diversity as regards the projected change in public pension expenditure in percent of GDP, ranging from a decline of 3.8 percentage points of GDP in Poland to an increase of 15.2 percentage points of GDP in Luxembourg.

The driving factors of pension expenditures are diverse across Member States. For example, on the one hand, the pressure on the pension scheme in Luxembourg mainly comes from the rising number of pensioners in relation to the contributors. Additionally, the average pension level will go up due to the increasing completeness of careers, especially for women, migrants and cross-border commuters. On the other hand, the projected decline in Poland is due to the pension reform introduced in 1999 which redirected some major part of pension contributions to the mandatory private scheme. The reform also narrowed the access to early retirement schemes and lead to a change in the pension formula.

### Table 8: Change of public pension expenditures in % of GDP in the EU and Norway

<table>
<thead>
<tr>
<th>Change of public pension expenditures in % of GDP, 2007-2060</th>
<th>EU Member States and Norway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease</td>
<td></td>
</tr>
<tr>
<td>Increase by less than 2 p.p.</td>
<td>DK, AT, FI</td>
</tr>
<tr>
<td>Increase by 2 to 5 p.p.</td>
<td>PT, DE, HU, UK, IT, FI, CZ, SK, LT, NL, IE, NO, BE</td>
</tr>
<tr>
<td>Increase by 5 to 10 p.p.</td>
<td>MT, ES, RO, SI</td>
</tr>
<tr>
<td>Increase by more than 10 p.p.</td>
<td>CY, GR, LU</td>
</tr>
</tbody>
</table>

Source: EU Member States and Norway.

To sum up, compared with the 2006 projection round, public pension expenditures are now projected to increase more over the period 2007-2060 in 11 Member States (ES, IT, LU, AT, EE, LT, LV, MT, PL, SK and SI). By contrast, pension expenditures are now projected to increase less in 12 Member States (BE, DK, DE, FR, IE, NL, PT, SE, UK, CY, CZ and HU). As a result, Austria keeps on ranging among those countries where public pension expenditures are expected to go up relatively modestly (below EU27 and Euro area average).

\textsuperscript{30} Decomposition period 2001-2050.
\textsuperscript{31} Decomposition period 2004-2050.
\textsuperscript{32} Decomposition period 2007-2050.
5. Description of the pension projection model

5.1. Austrian Institutional Framework for Long-Term Pensions Projections

Traditionally, medium-term pension projections, covering at least five future years, are contained in the yearly opinion submitted by the Austrian Pension Advising Council (PAC) to the federal government in preparation of annual pension adjustments. This consultative body represents the main forum for periodic policy discussions. It is composed of experts, academics, government and social partner representatives.

Initially, these medium-term projections which are limited to the private social insurance schemes ("gesetzliche Sozialversicherung") have been the central policy instrument for assessing pension developments. However, the tendency towards a more frequent use of quantitative analyses and external advice was intensified during past reform efforts. As a result, long-term pension projections based on demographics by Statistics Austria were presented as a complementary tool to clarify the need for adjustment and to assess the impacts of the major past reform efforts initiated by the federal government. This has proven to be a very helpful and transparent instrument.

This is why, with the aim to have long-term pension projections constantly available and to safeguard long-term financial sustainability of the Austrian pension system, the federal government set up a permanent monitoring mechanism as of 2007. The PAC will then review financial developments in the pension system every three years and in particular with regard to the sustainability factor newly established in 2005. This sustainability factor does not operate automatically. The analysis of the financial sustainability of the Austrian pension system by the PAC is based on recent demographic projections of Statistics Austria, in particular projections of life expectancy at the age of 65. If life expectancy exceeds the reference value as defined in the law by more than 3% the committee is obliged to put forward respective proposals to offset potentially higher pension expenditures (e.g. through changes in the contribution rate, retirement age, benefit adjustment).

The last review was in September of 2007 (with a revised version in February 2008) which resulted in no proposals. In the government programme of the new Austrian government (being in place since 2 December 2008) some changes are foreseen in order to safeguard the sustainability of the pension system. A new and more effective monitoring mechanism as well as a reform of the PAC are foreseen.

5.2. Description of the Applied Projection Models within the EU Framework

The Austrian pension projections within the given EU framework are based on two autonomous models, covering the private social insurance sector and the civil service schemes, respectively. They include all benefits and contributions to old-age, early-retirement, disability and survivor schemes. The pension projections, therefore, include all public pension expenditure, amounting to 12.8% of GDP in total, but do not cover additional social assistance benefits. Total pension spending is defined as the outlays before taxation and before social contributions, health care contributions in particular. The pension projections contain the effects of all existing major pension reforms. This implies that the most recent 2008 minor reform steps have already been built completely into the pension projections. The cut-off date for measures included, therefore, is 1 October 2008.

Both models consist of partial equilibrium models and comprise deterministic elements only. In order to achieve consistency in the results, the two basic models for the private social insurance and the civil service sectors are consolidated, both as to macroeconomic developments and to expected shifts of contributors from one to the other category of schemes. For instance, the developments in civil service sector employment are captured by the private social insurance sector model; vice versa the macro scenario of the private social insurance sector schemes forms an important input into the civil service projections. Hence, though the two models are fully autonomous, they have been made fully consistent with regard to employment and wage developments.

The private social insurance sector model, accounting for nearly three quarters of total public pension expenditure is central to simulate the financial effects of population ageing. It covers all relevant social insurance schemes, for blue and white collar employees (ASVG), self-employed and farmers, among others. The model is composed of two major blocs that are intimately linked together. The macro part is made up of ten modules, reflecting economic, labour market, public
finance and pension insurance developments. In effect, most single parameters are endogenously determined with the exception of participation and inflation rates, which fit in as exogenous inputs. The pension-specific micro part relies on inputs from the macro side on employment and on the payroll, from demographics and from age-related time series describing past pension contributions and benefits. These micro modules are designed so as to incorporate already enacted reforms with their effects in the near and distant future and to simulate reform options. These pension modules permit to calculate the great bulk of already existing pensions, the number of new pensions and of exits, average pension benefits and replacement rates as well as aggregate figures in a given (future) year. In the opposite direction, pension contribution rates and the level of the social insurance pension deficit covered by the federal budget feed back into the macro modules.

Secondly, the civil service model takes into proper consideration the fact that these pension benefits are fully financed out of the federal, Länder and the various communal budgets. The federal sector clearly dominates by size. In this vein, the federal segment comprises all pension and survivors’ benefit payments to civil service retirees of the federal government, the postal, telecom and railway services and specific groups of regional governments, such as primary and secondary school teachers. However, the model also takes account of all vital developments at the other government levels. With respect to these numerous schemes and some differing features and evolutions in these schemes, a number of rough approximations had to be incorporated into the model, especially for pension payments of the Länder and municipalities.

This also applies to ongoing structural reforms in the civil service sector which aim at enhanced application of private-sector-based labour contracts to their employees. As a general trend, civil service developments are assumed to be much more exposed to the present age-structure in the civil service and the future internal reforms rather than to demographics and economic developments, which are nonetheless taken into adequate consideration. These reform measures will dwell upon the comprehensive efforts to harmonise private social insurance and civil service sector pension systems, raising effective retirement ages and contribution rates as well as pursuing restrictive recruitment in the civil service sector in general and into the civil service status in particular. In the long run, while gradually phasing in, it is presumed that around 120,000 employees (of about 286,000 civil servants in 2007) in the public sector will shift from civil service to private social insurance sector contracts. This goes together with the assumption of restrictive civil service sector recruitment until 2015, including in the postal, telecom and railway services. As a result, the number of civil service pensions will fall markedly in the long run.
6. References


7. Abbreviations

ASVG  Allgemeines Sozialversicherungsgesetz
AWG  Working Group on Ageing and Sustainability
BSVG  Bauern Sozialversicherungsgesetz
CPI  Consumer Price Inflation
DG ECFIN  Directorate General for Economic and Financial Affairs
EC  European Commission
ECB  European Central Bank
EU  European Union
EPC  Economic Policy Committee
ECOFIN  Economic and Financial Affairs Council
FSVG  Sozialversicherungsgesetz freiberuflich selbständig Erwerbstätiger
GDP  Gross Domestic Product
GSVG  Gewerbliches Sozialversicherungsgesetz
IMF  International Monetary Fund
NAIRU  Non-Accelerating Inflation Rate of Unemployment
OECD  Organisation for Economic Cooperation and Development
PAC  Austrian Pension Advising Council
PAYG  Pay-as-you-go
SCPs  Stability and Convergence Programmes
SGP  Stability and Growth Pact
TFP  Total Factor Productivity
USA  United States of America
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