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The long-term sustainability of public finances in the European Union

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Abbreviations and symbols used

Member States

BE	Belgium
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom

EUR-12	European Union Member States having adopted the single currency (BE, DE, IE, EL, ES, FR, IT, LU, NL, AT, PT, FI), i.e. countries participating in the economic and monetary union without a derogation
EU-25	European Union, the 25 Member States
EU-15	European Union, the 15 Member States before 1 May 2004 (EUR-12 plus DK, SE and UK)
NMS10	European Union, the 10 Member States that joined the EU on 1 May 2004 (CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK)

Other abbreviations

AR	Ageing Report
CAB	cyclically adjusted balance
CBO	Congress Budget Office
GRD	debt requirement in 2050
EDP	excessive deficit procedure
EMU	economic and monetary union
EPC	Economic Policy Committee
ERM II	European exchange rate mechanism, which replaced the original ERM in 1999
ESA 95	European system of national accounts 1995
GDP	gross domestic product
IBP	initial budgetary position
IMF	International Monetary Fund
LTC	long-term change in the budgetary position
MTO	medium-term objective
NAIRU	non-accelerating inflation rate of unemployment
PAYG	pay-as-you-go
PEP	pre-accession economic programme
RPB	required primary balance
SCP	stability and convergence programme
SFA	stock-flow adjustment
SGP	Stability and Growth Pact
SNA	United Nations system of national accounts
VAT	value added tax

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Chapter I

Long-term sustainability of public finances

Summary

Population ageing in the European Union will have a significant impact on economic growth and lead to significant pressures to increase public spending. In order to gauge the scale of this challenge, the assessment of long-term sustainability of public finances is part of the regular EU budgetary surveillance, based on the long-term age-related government expenditure projections and on the budgetary strategies presented in the stability and convergence programmes. In this context, consistency between short to medium-term budgetary targets and long-term sustainability is at the core of the analysis.

The issue of long-term sustainability is multifaceted. It involves avoiding imposing an excessive burden on future generations and ensuring the country's capacity to appropriately adjust budgetary policy in the medium and long run. For this purpose, the results of the common long-term age-related expenditure projections under current policies, provided in spring 2006 by the EPC/Commission, and the current budgetary position are the key inputs to the analysis of the sustainability of public finances.

The new projections provide a comparable, transparent and robust basis for assessing the budgetary implications of demographic change and the sustainability of public finances across Member States. Based on the projected expenditure trends, deficit and debt levels are projected over the long-term. Debt sustainability is derived from the intertemporal budget constraint. It imposes that current total liabilities of the government, i.e. the current public debt and the discounted value of future expenditure including the budgetary impact of ageing populations, should be covered by the discounted value of future government revenue. If current policies ensure that the intertemporal budget constraint is respected, current policies are sustainable.

The assessment of long-term sustainability of public finances goes beyond answering the question whether current policies are sustainable or not. An estimation of the size of the budgetary imbalances is also needed to understand the challenge that policymakers face. This is provided by sustainability gap indicators that measure the size of a required permanent budgetary adjustment (e.g. a constant reduction of non-age-related public expenditure as a share of GDP or a constant increase in public revenue as a share of GDP) that enables one of the following conditions to be met : (i) reaching a target of 60 % of GDP for the Maastricht debt in 2050 (the S1 indicator); and (ii) fulfilling the intertemporal budget constraint over an infinite horizon (the S2 indicator).

The sustainability indicators provide a firm basis to identify the size and the main source of risks to public finance sustainability in the EU Member States. They provide information on and a measure of the size of the required adjustment and of the cost that would result from a delay in addressing long-term sustainability. In addition, they provide a measure of implicit liabilities — government commitments — related to ageing populations. However, the indicators do not have normative content nor do they assess intergenerational equity. To reach an overall assessment of the sustainability of public finances, other factors are taken into account, which allow a better qualification of the assessment with regard to where the main risks are likely to stem from.

1. Sustainability of public finances in view of ageing populations

In the coming decades, Europe's population will undergo dramatic demographic changes due to low fertility rates, continuous increases in life expectancy and the retirement of the baby-boom generation. Ageing populations will pose major economic, budgetary and social challenges. This is expected to have a significant impact on growth and lead to significant pressures to increase public spending ([1]). This will make it difficult for Member States to maintain sound and sustainable public finances in the long term. This is of particular importance in economic and monetary union, as high deficits and rising debt in some countries, leading to unsustainable public finances, might have an adverse impact on macroeconomic conditions for other EMU countries. Therefore, ensuring fiscal sustainability requires time-consistent policies, which involves addressing budgetary imbalances before the budgetary impact of ageing sets in.

1.1. Concept of sustainability of public finances

The issue of debt or fiscal sustainability is a multifaceted one and there is no agreed definition on what a sustainable debt position is. Blanchard et al. (1990) consider that 'it is essentially about whether, based on the policy currently on the books, a government is headed towards excessive debt accumulation'.

The time horizon over which one analyses debt sustainability depends on its purpose. In some cases, it might be relatively short and the purpose is to evaluate short- to medium-term dynamics of debt (e.g. in the Commission's assessments of the updates of the stability and convergence programmes for the purpose of the budgetary surveillance) or to analyse the dynamics of debt servicing, including in many cases external debt service (e.g. IMF assessment of default risks) ([2]). In the short- to medium-term context, the assessment of the sustainability is conditional upon factors such as the structure of debt according to maturity, currency of denomination and average terms of new commitments. If the sustainability of external debt is considered, additional factors such as exchange rate dynamics, exports and imports of goods and services in foreign currency and net foreign direct investment are taken into account. Such type of sustainability analysis is mostly used for emerging markets or low-income countries ([3]).

In the case of the assessment of the long-term sustainability of public finances, the time horizon needs to be considerably longer to assess the budgetary impact of government commitments, notably regarding pensions. Against such a significant budgetary challenge posed by ageing populations, the latter has been the preoccupation of the EU in recent years and is the prime focus of this report.

Many EU Member States conduct long-term projections and analyse long-term budgetary trends, in particular in view of assessing the budgetary impact of the projected demographic changes. Moreover, other international

([1]) See Economic Policy Committee and European Commission (Economic and Financial Affairs DG) (2006a), 'The impact of ageing on public expenditure: projections for the EU-25 Member States on pensions, healthcare, long-term care, education and unemployment transfers (2004–50)', *European Economy*, Special Report No 1/2006, henceforth called the Ageing Report.

([2]) Commission's assessments of the updates of stability and convergence programmes can be found at the following address: http://ec.europa.eu/economy_finance/about/activities/sgp/year/year20052006_en.htm

([3]) Medium-term debt sustainability assessment underpins the IMF's decisions in the context of Fund-supported programmes, in particular by helping to determine when financing is appropriate, what might be a sensible level of access, and whether a debt restructuring may be needed (see IMF, 2002, 2003a and 2003b).

organisations like the IMF assess long-term sustainability (mainly for industrialised countries) ([1]).

For the purposes of assessing sustainability of public finances over the long term in view of the budgetary challenge posed by ageing populations, debt sustainability may be defined in two alternative ways.

- A first definition of sustainability is derived from the government's intertemporal budget constraint. It imposes that current total liabilities of the government, i.e. the current public debt and the discounted value of all future expenditure, should be covered by the discounted value of all future government revenue over an infinite horizon. In other words, the government must run sufficiently large primary surpluses in the future to cover the increasing cost of ageing and to pay off interest on outstanding debt. If current policies ensure that the government's intertemporal budget constraint is fulfilled, current policies are financially sustainable. However, since the government's intertemporal budget constraint is defined over an infinite horizon, it does not specify when the adjustment of revenues or expenditures, if any, has to be made: the required adjustment may be made today or at any point in the future. Furthermore, this condition does not imply that debt should reach a specific level (whether it is zero or not) ([2]).

- The abovementioned condition over an infinite horizon can be approximated by looking over a finite period and assessing if current policies ensure a specific debt target to be reached at a given date. While this finite condition does not ensure the sustainability of public finances after the target year, it gives a clearer policy objective than the intertemporal budget constraint. Given that there are as many possible conditions as there are debt concepts, debt targets and target years, the EU adopted an approach of this second definition, which draws on the compliance with the EMU debt requirement in 2050 ([3]).

([1]) See e.g. Donders (2006), HM Treasury (2005), Velfærds Kommissionen Denmark (2005), SOU Sweden (2004), Bundesministerum der Finanzen (2005); Comité d'étude sur le vieillissement en Belgique (2006); IMF Article IV reviews.

([2]) In fact, the intertemporal budget constraint only requires that the debt does not increase too fast; more precisely, that nominal debt does not increase faster than the nominal interest rate.

([3]) Blanchard et al. (1990) uses as a target the initial level of debt as a share of GDP over a 40 year period. A former target of the EU was the initial nominal debt level (the T1 indicator, see for example European Commission (2005), page 121). The UK uses a net debt target of 40 % in 2100. This small sample shows the diversity of targets that can be envisaged.

1.2. The sustainability indicators

The assessment of long-term sustainability of public finances goes beyond answering the question whether current policies are sustainable or not. An estimation of the size of the budgetary imbalances is also needed. This is provided by sustainability gap indicators that measure the size of a permanent budgetary adjustment (e.g. a constant reduction of non-age-related public expenditure as a share of GDP or a constant increase in public revenue as a share of GDP) that enables one of the following conditions to be met:

- reaching a target of 60 % of GDP for the Maastricht debt in 2050 (the S1 indicator);

- fulfilling the intertemporal budget constraint over an infinite horizon (the S2 indicator).

It should be clear that translating the two sustainability conditions into a permanent adjustment of public expenditure or public revenue has no normative content in the sense that it would favour one policy option over another. It mainly aims at giving a measure of the sustainability risk that is intuitive and 'easily' understandable. Alternative presentations of these conditions are also possible. They can be translated into a required primary balance over the medium term, i.e. expressed as a target rather than as a deviation from this target. They can also be translated into a 'stock' measure, often called implicit liabilities or implicit debt, instead of a 'flow' measure as given by the sustainability indicators. The two latter measures should therefore be considered as alternative presentations of the sustainability indicators rather than as new or different indicators (see Section 3.2 below for a more detailed presentation).

1.3. Deriving the sustainability indicators

The two sustainability indicators translate current and future budgetary imbalances into synthetic measures that can be simply expressed as a sum of three different components.

- The first component relates to the relative position of the current primary balance compared to the primary balance that stabilises the level of debt as a share of GDP over the long term, further recalled as the debt-stabilising primary balance. If the initial primary balance is not large enough, the government

debt will be on an explosive path even before considering the impact of ageing ([1]).

- The second component is specific to the S1 indicator and relates to the initial level of debt. If a country has an initial level of debt larger than 60 % of GDP, reaching the debt-stabilising primary balance will not be sufficient to ensure that the debt reference value is achieved in 2050 and an additional adjustment is therefore necessary.

- The third component relates to the increase in age-related expenditure in the future due to ageing populations. Fulfilling the first two conditions will not be enough to avoid excessive debt accumulation if expenditure is expected to increase (or equivalently if the primary balance is expected to deteriorate) as a share of GDP in the future. An additional adjustment is therefore necessary to cover the increase in expenditure up to 2050 (in the case of S1) or over an infinite horizon (in the case of S2).

This decomposition of the indicators (see Table I.1) gives additional insight in understanding the numerical results of the indicators. It also enables determining, for each country, whether the risks to the sustainability of public finances stem from the initial budgetary position and/or a large increase in age-related expenditure over the long term.

A high positive contribution of the current budgetary position (first column) signals that the current level of the primary balance, if maintained, will lead to an explosive debt without considering the effect of ageing. A high positive contribution of the long-term changes in the primary balance (last column) signals that the impact of ageing on public expenditure is expected to be large. In this context, a low sustainability gap may cover quite different situations. In some cases, it stems from a debt-stabilising budget balance and a small ageing impact on public finances. In other cases, it stems from a very strong budgetary position today with large primary surpluses that compensate for a significant projected rise in age-related expenditure.

([1]) The notion of long-term debt-stabilising primary balance refers to the primary balance that, if reached, would stabilise the debt in the long-run at its current level. It therefore depends on the long-term prospects of GDP growth and interest rates. It can differ from the short-term debt-stabilising primary balance that can be calculated with current nominal GDP growth and nominal interest rates.

Table I.1

Summarising the indicators

	Impact of				
	Initial budgetary position		**Debt requirement in 2050**		**Long-term changes in the primary balance**
S1 =	Gap to the debt-stabilising primary balance	+	Additional adjustment required to reach a debt target of 60 % of GDP in 2050	+	Additional adjustment required to finance the increase in public expenditure up to 2050
S2 =	Gap to the debt-stabilising primary balance	+	0	+	Additional adjustment required to finance the increase in public expenditure over an infinite horizon

Source: Commission services (see Table A.1.1 in Annex 1 for a mathematical derivation).

2. Projecting budgetary developments

2.1. Projections of government age-related expenditure

Budgetary projections over the long term are based on a set of assumptions which can potentially have a very large impact on the results. In a multilateral context, having a common setting for the projections for the purposes of analysing and assessing the long-term sustainability of public finances is essential to ensure comparability of results and equal treatment. This was the main motivation behind the 2006 common budgetary projections exercise, carried out by the European Commission together with national authorities working through the Economic Policy Committee ([1]).

The long-term projections on how ageing will affect the labour market, economic growth and age-related public expenditure items have been published ([2]) in a repeat of an exercise carried out in 2001. The projections were made on the basis of 'no policy change', only reflecting currently enacted legislation, although account is taken of provisions in enacted legislation that enter into force over time. Equally, they reflect the current behaviour of economic agents, without assuming any future changes in behaviour. Projections for public spending on pensions were made using the models of the Member States' authorities. Projections for healthcare, long-term care, education and unemployment transfers were made using common models developed by the European Commission. The Ecofin Council of February 2006 agreed that the projections provided a comparable and comprehensive picture of the economic and budgetary impact of ageing populations and that they would provide the basis for assessing the sustainability of public finances at EU level.

The projections used in the baseline scenario for analysing public finance sustainability include the following five age-related expenditure items.

- **Gross public pension expenditure:** This consists of pensions for old age, early retirement, disability, survivors (widows and orphans) and for other specific purposes which should be considered as equivalents or substitutes for these types of pensions, including pensions for reduced capacity to work or for labour-market reasons. Pension expenditures are, in nearly all countries, the most important age-related government expenditure item, both in terms of size at present and in the future and in terms of differences across the EU Member States. The substantial increase in the old-age dependency ratio over the coming decades in the EU leads to increasing pension expenditure in almost all EU countries. However, there is a large diversity with regard to the size of the increase, reflecting mainly differences in the pension arrangements that prevail in the different Member States. Such diversity gives rise to different degrees of risk in terms of public finance sustainability.

- **Healthcare expenditure:** Several scenarios for future trends with regard to expenditure on healthcare are available in the Ageing Report. For the purposes of analysing and assessing public finance sustainability, a 'reference' scenario from the Ageing Report is used. This scenario takes account of the combined effects of ageing, the healthcare status of elderly citizens and the income elasticity of demand for healthcare goods and services. It is notably assumed that the health status of the populations will improve by half as much as in the constant health scenario ([3]).

- **Long-term care expenditure:** Several scenarios for future trends with regard to expenditure on long-term

([1]) The final projections are published in Economic Policy Committee and European Commission (Economic and Financial Affairs DG) (2006a, b) and the underlying assumptions in Economic Policy Committee and European Commission Commission (Economic and Financial Affairs DG) (2005a, b).

([2]) For the results of the 2001 exercise see Economic Policy Committee (2001).

([3]) This assumption was complemented by adding the effect of income elasticity equal to 1.1 in the base year converging to unity in 2050.

care are available in the Ageing Report. As in the case for healthcare, a 'reference' scenario from the Ageing Report has been used. This scenario assumes that age-specific disability rates decline at half the pace of age-specific mortality rates. In particular, it is assumed that age-specific disability rates decrease by half of the decrease in the age-specific mortality rates. In this scenario about half of the projected gains in life expectancy up to 2050 would be spent in good health and free of disability. Long-term care projections show quite different patterns across countries, mainly due to large differences in initial coverage. Finally, the Ageing Report did not include projections for long-term care for Estonia, Greece, France, Cyprus, Hungary and Portugal. Since the completion of the Ageing Report, Estonia, France, Hungary and Portugal have provided the required data so that the Commission could run the projections for these countries. However, for Greece and Cyprus, the lack of long-term care projections implies that the total increase in age-related expenditures, and therefore the risks to the long-term sustainability of public finances, will be underestimated.

- **Education expenditure and unemployment benefits:** This consists of direct education expenditure and transfers to households and institutions; and expenditure on unemployment benefits that follow from the assumptions made on the working-age population, labour-market participation and unemployment rates, respectively. The projections show that the relief on public finances due to a lower unemployment rate and a lower relative share of young people can only marginally compensate for the increase of expenditure on pensions, healthcare and long-term care.

These long-term common projections estimate the budgetary impact of ageing based on commonly agreed underlying assumptions and under policies currently in place in the EU Member States. They do not assess the efficiency of such policies nor their desirability compared to alternative policies. Indeed, they do not assume changes in policies that could result in an improvement in the health status of the population or higher educational attainment levels. Implementing such policies could contribute to higher labour force participation and higher labour productivity and thus in higher economic activity ([1]). Moreover, such policy changes could result in lower public spending over the long term and thus contribute to the sustainability of public finances. The budgetary impact of alternative assumptions (e.g. with respect to the health status of the population) is discussed in Chapter III. Moreover, additional sensitivity tests are produced to analyse the impact of various changes in the key assumptions. The demographic and economic projections underlying the government expenditure projections are summarised in Box I.1.

2.2. Projecting budgetary balances over a long period

The long-term budgetary projections from the Ageing Report are the main input to project future budgetary developments. To extrapolate debt developments and to calculate the sustainability indicators, one also needs projections and/or assumptions for other public expenditure and revenue items over a long period of time under current policies (see Table I.2) ([2]).

- **Interest expenditure** is derived according to the evolution of debt and the projected real interest rate, which is set at 3 % for all countries over the entire period ([3]).

- **Other primary expenditure**, as well as total revenue, is assumed to be constant as a share of GDP and equal to the last-known year ([4]). Temporary factors (business cycle and one-off measures) on the general government balance are however netted out so that such effects are not extended over the long term ([5]).

([1]) For example, by investing in educational services, governments can contribute to productivity and encourage job-creating investment. Moreover, investing in education would contribute positively to employment prospects, see the Commission's communication 'Efficiency and equity in European education and training systems' (2006).

([2]) Defining current policies in a long-term perspective is not an easy task. Indeed, some public arrangements are designed for the very long run. This is typically the case for pensions and can be projected as such. However, other rules are not set in a long-term perspective: this is typically the case of nominal tax brackets for income tax. If they were to be kept constant in nominal or even in real terms in the long run, the entire population would eventually be subject to the maximum marginal tax rate: such a change in the redistributive feature of the tax system can hardly be considered as an 'unchanged policy' scenario. Other modelling choices are therefore more appropriate in a long-term perspective (e.g. keeping the overall tax rate constant on household income). For a more detailed discussion see, for example, Donders (2006).

([3]) The choice of the interest rate is discussed in 'Economic Policy Committee and European Commission (Economic and Financia Affairs DG) (2005a), pages 92–95. The impact of changing the assumption on the interest rate is shown in Chapter III.2.4.

([4]) Hauner (2005) argues that other hypotheses for non-age-related primary expenditure could be envisaged. For example, one could keep real expenditure constant or constant per capita. Those assumptions would drive down the risks to sustainability, albeit differently across countries.
Alternative assumptions for revenue developments are discussed in Chapter IV.3.

([5]) The method for calculating the cyclically adjusted balance is the commonly agreed method used in the assessment of the stability/convergence programmes (see Denis et al., 2006).

Table I.2

Adjustment to the primary balance and the debt concept and sources

		Primary balance	Debt level
	Initial government items	**Primary balance** (i.e. government balance excluding interest expenditure)	**Maastricht gross debt**
Corrections	Cyclical adjustment	European Commission spring 2006 economic forecast)	—
	One-off or temporary measures	European Commission spring 2006 economic forecast	—
	Liquid financial assets in public pension funds		2005/06 updates of the Stability and Convergence programme
	Switch to private pension fund (if the Eurostat decision is not already implemented)	Eurostat (2006c) (1)	Eurostat (2006c) (1)
	'Adjusted' government items	**Structural primary balance**	**Adjusted gross debt**

(1) Interest expenditure is estimated with the level of additional debt and the implicit level of the interest rate in 2005.

Source: Commission services.

Two additional corrections have been implemented.

- First, a number of Member States have switched a part of their social security pension schemes into defined-contribution-funded schemes. According to the decision of Eurostat (2 March 2004) those schemes should be recorded in the private sector in the national accounts (1). This implies that pension outlays from those schemes are not included in the long-term projections for public pensions. Symmetrically, the corresponding revenues and the assets in those funds deductible from the Maastricht debt should not be considered as part of the general government (2). Given that countries are required to implement the Eurostat decision by March 2007, adjusting the budget balance figure is necessary for countries that currently publish general government figures including those funds (DK, HU, PL, SK, SE).

- Second, the debt concept used by the Commission, the Maastricht gross debt, is only one of the several different definitions of public debt that can be envisaged. The gross debt concept is defined in the Protocol on the excessive deficit procedure annexed to the Maastricht Treaty (3). The concept has the advantage of being measurable with a high degree of certainty and being comparable across countries in the EU. The choice of focusing on gross debt is therefore logical. However, governments may hold assets which contribute positively to the sustainability of public finances. Since reducing debt or accumulating assets in public pension funds has a similar effect on fiscal sustainability, with the latter strategy however not reflected in the gross debt measure, the net position of liquid consolidated pension fund assets is taken into account in the analysis of public finances sustainability (4).

Finally, given that the common projections are conducted for the period up to 2050, the total primary balance of the government is assumed to remain constant as a share of GDP after 2050 in order to calculate the intertemporal constraint over an infinite horizon (S2 indicator).

(1) The rationale underlying the decision is that the assets of these schemes, even when run by government, should be considered as indirectly owned by the pension beneficiaries, who are the ultimate economic owners, i.e. those bearing most of the risk, associated mainly with financial market developments.

(2) That is assets held by those funds that are consolidated (e.g. government bonds) should be deconsolidated.

(3) The text of this protocol annexed to the Treaty establishing the European Community can be found at: http://europa.eu/eur-lex/en/treaties/selected/livre335.html

(4) This is in accordance with the EPC guidelines on taking account of assets in public pension funds (see Annex 14 to the Ageing Report, 2006).

3. Interpreting the sustainability indicators

3.1. Information on the size of adjustment and the cost of delay

First, the sustainability indicators are used to assess if current policies in a country are sustainable or not. A positive value suggests that current policies are not sustainable while a negative value indicates that current policies are sustainable. Projecting long-term budgetary trends requires several assumptions which may not materialise and are therefore subject to uncertainty. As the sensitivity analysis carried out in Chapter III reveals, sustainability indicators are indeed sensitive to a number of assumptions. It may therefore be difficult to assess exactly whether current policies are sustainable or not — particularly for countries for which indicators are close to zero.

Second, the sustainability indicators also give the indication of the magnitude of the budgetary challenge caused by ageing populations: this is particularly important in the budgetary surveillance framework, since fiscal situations are very different across the EU and since countries have reformed pension systems to various degrees. It is also possible to calculate the budgetary cost of a delay in budgetary consolidation: the additional explanatory value of the sustainability indicators is that it estimates the cost of a delay calculated as the increase in those indicators that would follow a postponing of the budgetary adjustment by, for example, five years.

3.2. Measure of implicit liabilities

Sustainability indicators also provide an estimate of implicit liabilities. Implicit liabilities are liabilities that may not be backed by law or contractual obligations but are simply grounded in strong expectations by the public. There are several different concepts for implicit liabilities ([1]).

An important aspect is the coverage which can be limited to the pension rights that current workers have accrued so far in the system (sometimes referred to as 'accrued pension debt'). Alternatively, it can be extended to also include future pension rights as well as the continuation of current policies with regard to other public expenditure. Assessing sustainability of current policies needs to measure implicit liabilities on the assumption that the current rules will apply also in the future for current and future generations.

Furthermore, the notion of implicit liabilities could be gross or net of future revenues. To be meaningful, a forward-looking concept of implicit liabilities needs to consider not only the future implicit commitments of governments but also their entitlement to receive revenues, i.e. net implicit liabilities.

Against this background, the analysis of public finance sustainability made by the Commission and the Council in the context of budgetary surveillance considers a relatively broad definition of net implicit liabilities that incorporates the projected impact of ageing populations over the long term. In particular, it includes the projected change in the age-related expenditure items covered by the common projections exercise.

As shown in Section I.2, the S2 sustainability indicator provides an estimate of the gap between current policies and sustainable policies, which expresses the current level of debt plus the net present value of all future primary deficits as a flow measure, i.e. as a perpetual annuity, constant as a share of GDP. It is also possible to express this gap in present value terms, i.e. as a stock measure. The current level of debt (explicit debt) less the net present value of the sustainability gap (net implicit debt) is therefore a measure of the current net implicit debt of the general government. In practice, 'stock' measures (net implicit liabilities) are more volatile than 'flow' measures (sustainability gap indicators), especially with relation to the assumed discount rate. It is

([1]) For a taxonomy of government liabilities see Part II.4 in European Commission (2004).

arguably also more intuitive to understand the policy implications of a constant budgetary adjustment rather than an additional stock of debt. Measuring long-term public finance imbalances as 'flow' indicators (i.e. sustainability gaps) is therefore preferred to equivalent 'stock' measures (i.e. implicit net debt).

3.3. The indicators have no normative content

Sustainability gap indicators are sometimes called tax gap indicators, which refers to one possible interpretation of the indicators, i.e. the permanent increase in the tax ratio that would ensure sustainability. This expression can, however, be misleading since there are different ways to ensure long-term sustainability and a uniform increase in tax over time is only one of them.

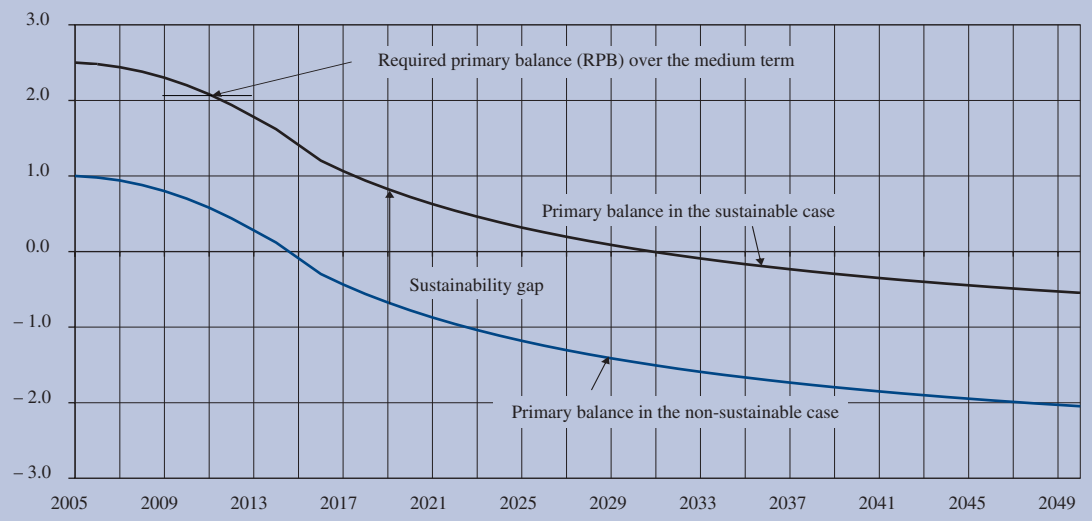
Namely, governments typically choose a combination of consolidating the budgetary position over the medium term (either through expenditure reduction and/or tax hikes) and implementing structural reforms aiming at curbing long-term public expenditure (through lower nominal spending or higher GDP growth). Sustainability indicators should therefore be understood as measures of imbalances and not as a policy invitation to increase taxes in the medium term or to undertake any other specific policy measure.

Instead of presenting public finances imbalances as a gap towards a sustainable situation, it is also possible to present the resulting target in terms of a primary balance that would result from a consolidation in the medium term that ensures sustainability (the required primary balance (RPB)). It is also a more stable indicator than the sustainability gap ([1]).

The primary balance will evolve in the future in line with the impact of ageing on expenditure (see Graph I.1), but the RPB indicates a sufficient starting position that, if reached, ensures sustainability of public finances under a 'no policy change' assumption. The RPB is not a fixed target over time, even if structural reforms are not implemented.

([1]) Indeed, it only depends on the current level of debt, long-term projection of government spending and revenues and of the interest rate. Those data do not change often except if pension reforms are implemented or if future outlooks on demography, potential growth or interest rate are changed. By contrast, the sustainability gap also depends on the measurement of the current structural primary balance, which is also subject to uncertainties.

Graph I.1: **Sustainability gap and required primary balance**



NB: The graph is an illustration of the evolution for the primary balance in the 'baseline' scenario. The sustainability gap is assumed to be 1.5 % of GDP. If the country was to reach a sustainable position only through medium-term budgetary consolidation, reaching the RPB over the medium term would be sufficient.
Source: Commission services.

The RPB can be used to compare the actual or planned budgetary strategy with the structural primary balance required for fulfilling the intertemporal budget constraint. In practice, in the EU sustainability analysis framework, the RPB is calculated as the projected average structural primary balance over the first five years after the programme period plus the S2 indicator, and in this report it is calculated over the period 2011–15.

3.4. The indicators do not assess intergenerational equity

Intergenerational fairness is also one of the motivations to address long-term sustainability issues in order to avoid leaving 'unpaid bills' to future generations. However, to assess this, one needs information on distribution of social benefits, public spending and taxes to different age cohorts in the past and in the future ([1]). While partly implicit in the calculations of the indicators, this cannot be done through the aggregate approach used in this report.

([1]) Generational accounting aims at describing intergenerational fairness. See e.g. European Commission (1999) for an analysis of the EU-15 Member States at the time.

3.5. The indicators are not sufficient to give a full overview of possible sustainability risks

The sustainability indicators are synthetic tools but they do not necessarily encompass all factors that are relevant for the sustainability analysis.

They are based on demographic, economic and budgetary projections that are surrounded by uncertainties and as such may underestimate or overestimate risks.

They can only assess the factors taken into account in the framework (mainly ageing and current budgetary imbalances) and therefore do not address other issues that may be relevant for debt dynamics (contingent liabilities, competing budgetary pressures from non-age-related expenditure, etc). They do not assess the feasibility of possible government actions. For example, indicators are independent of the current level of taxation, which if already high, may prove difficult to be raised further.

The intertemporal budget constraint does not impose any level of debt. Moreover, an adverse macroeconomic shock or other budgetary developments may lead to an explosive debt already in the short run. These factors point to a careful interpretation of the indicators and need for integrating such considerations in the formulation of an overall assessment (see Chapter IV).

Box I.1: **Demographic and economic projections in the Ageing Report**

European populations will be much older by 2050

Population ageing in Europe is occurring due to the interaction of four different demographic developments, each with its own cause, and each having different economic policy repercussions. The magnitude, timing and relative importance of these four demographic trends differs considerably across EU countries (for details, see Chapter 2.1 of the Ageing Report, 2006) ([1]).

First, in all EU countries, fertility rates are below the natural replacement rate needed to stabilise the size and age structure of the population. For the EU-25, fertility rates in the baseline scenario are projected to rise from 1.5 in 2004 to 1.6 by 2030 and to stay constant around that level until 2050. Second, the recent decline in fertility rates followed the post-war baby-boom, and that generation's impending entry into retirement will lead to a transitory (albeit lasting several decades) increase in the old-age dependency ratio which will act as a downward drag on per capita GDP growth and place upward pressure on public spending. Third, having increased by 8 years since 1960, life expectancy at birth is projected to rise by a further 6.3 years for males and by 5.1 years for females by 2050, with most gains resulting from lower mortality rates at older ages. Fourth, annual net migration inflows are projected to fall from an estimated 1.3 million people in 2004 to some 800 000 people by 2015 (0.2 % of the population). These net inflows cumulate to close to 40 million people between 2004 and 2050, but they are insufficient to stabilise the age structure of the population.

The population in the EU-25 will be slightly smaller, but much older, in 2050 (see Graph I.2). Between 2004 and 2050, the number of young persons in the EU-25 (aged 0–14) is projected to drop by 19 %. From an economic perspective, the key change concerns the working-age population (15–64), which will fall by 48 million, or 16 %. In contrast, the elderly population aged 65+ will rise sharply, by 58 million (or 77 %) and the fastest growing segment of the population will be the very old (80+) and rise by almost 32 million, or 174 %. The old-age dependency ratio (the number of people aged 65 years and above, relative to those between 15 and 64) is projected to double to 51 % by 2050, which means the EU will move from having four to only two persons of working age for every elderly citizen aged 65 or above.

Main repercussions for Europe's labour markets and potential growth

The overall employment rate of the EU-25 is projected to rise from 63 % in 2004 to 67 % by 2010 and to 70 % by 2020. This improved performance mainly results from higher female employment rates, which are projected to

Graph I.2: **Age pyramids for EU-25 population in 2004 and 2050 (in 1 000s)**

Sources: Economic Policy Committee and European Commission (Economic and Financial Affairs DG) (2006a).

(Continued on the next page)

Box I.1 (continued)

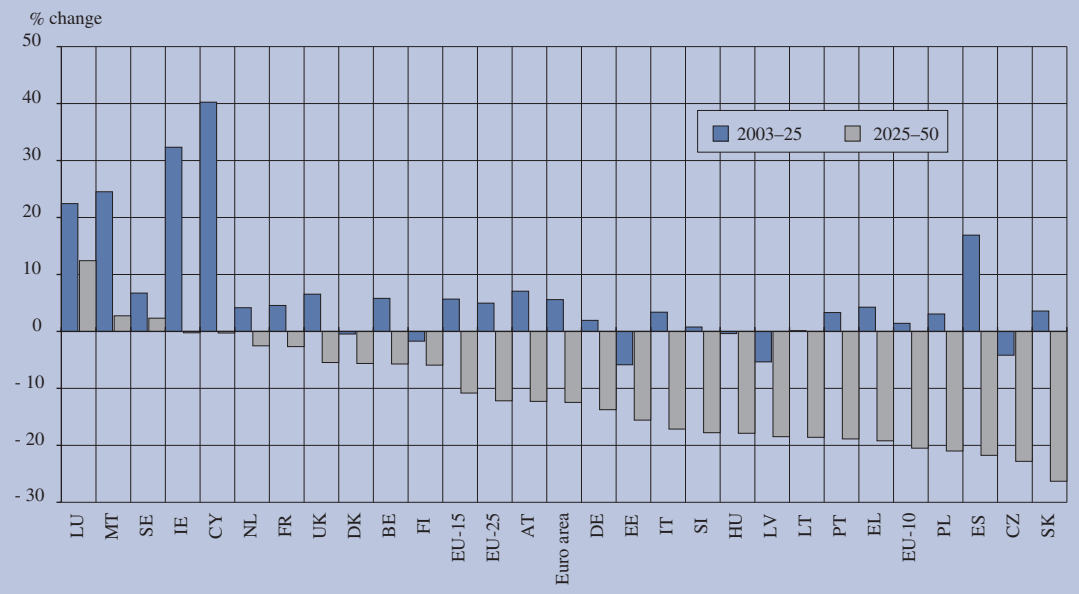
rise from just over 55 % in 2004 to almost 65 % by 2025. The increase is explained by the gradual replacement of older women by younger women who have higher educational attainment and a stronger attachment to the labour market. In addition, the employment rate of older workers (aged 55–64) is projected to increase massively from 40 % in 2004 to 59 % in 2025. This reflects the large increases of 5 percentage points observed since 2000 (a remarkable reversal of the decade's long trend towards earlier retirement during a period of slow economic growth) as well as the estimated positive effects of recent pension reforms.

Rising employment rates, however, can only provide a temporarily cushion, and eventually the weight of demographic change prevails (see Graph I.3). Three distinct time periods can be observed. Between 2004 and 2011, the size of the EU-25 working-age population and overall employment levels will continue to rise, and thus can be considered as a 'window of opportunity' when conditions will be relatively favourable to undertake structural reforms. Between 2012 and 2017, rising employment rates will offset the projected decline in the size of the working-age population brought about by the baby-boom generation entering retirement. After 2018, the trend towards higher female employment rates will have come to an end and in the absence of further pension reform, the employment rate of older workers is projected to reach a steady state. Having increased by some 20 million between 2004 and 2017, employment during this last period is projected to contract by almost 30 million, giving a reduction of 9 million over the entire 2004–50 time horizon. For the EU-25, the annual average potential GDP growth rate is projected to decline from 2.4 % in the period 2004–10 to only 1.2 % between 2031 and 2050. For the EU-10, the fall is much steeper, in part due to their less favourable demographic prospects. The sources of growth will alter dramatically. Employment will make a positive contribution to growth in both the EU-15 and the EU-10 up to 2010, but become neutral in the period 2011–30 and turn significantly negative thereafter. Over time, productivity will become the dominant source of growth (see Graph I.4).

The overall impact of ageing population on public spending

Overall, ageing populations are projected to lead to increases in public spending in most Member States by 2050 on the basis of current policies, although there is a wide degree of diversity across countries (see Table I.3). For the EU-15 and the euro area as a whole, public spending is projected to increase by about 4 percentage points between 2004 and 2050. For the

Graph I.3: **Baseline labour force projection (change in % of people aged 15–64 between 2003 and 2050)**

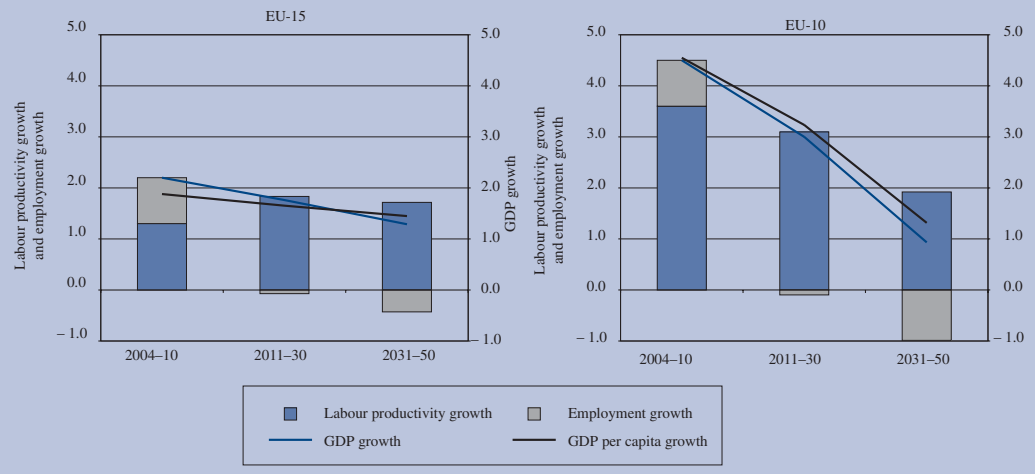


Sources: Economic Policy Committee and European Commission (Economic and Financial Affairs DG) (2006a).

(Continued on the next page)

Box I.1 (continued)

Graph I.4: **Projected (annual average) potential growth rates in the EU-15 and EU-10 and their determinants**



Sources: Economic Policy Committee and European Commission (Economic and Financial Affairs DG) (2006a).

EU-10, the increase in the overall age-related spending is projected to rise by only about 1.5 percentage points. This apparently low budgetary impact of ageing is mainly due to the sharp projected drop in public pension spending in Poland, which (in common with several other EU-10 countries) is partly the result of the switch from a public pension scheme into a private-funded scheme. Excluding Poland, age-related spending in the other EU-10 countries would increase by more than 5 percentage points of GDP. Most of the projected increase in public spending will be on pensions, healthcare and long-term care. Potential offsetting savings in terms of public spending on education and unemployment benefits are likely to be limited.

Table I.3

Projected changes in age-related public expenditure between 2004 and 2030/50 (% of GDP)

	Pensions			Healthcare			Long-term care			Unemployment benefits			Education			Total (*) (without long term care)		Total (*) (without education)		Total (*) of all available items	
	Level	*Change from 2004 to:*		Level	*Change from 2004 to:*		Level	*Change from 2004 to:*		Level	*Change from 2004 to:*		Level	*Change from 2004 to:*		*Change from 2004 to:*		*Change from 2004 to:*		*Change from 2004 to:*	
	2004	*2030*	*2050*	2004	*2030*	*2050*	2004	*2030*	*2050*	2004	*2030*	*2050*	2004	*2030*	*2050*	*2030*	*2050*	*2030*	*2050*	*2030*	*2050*
BE	10.4	*4.3*	*5.1*	6.2	*0.9*	*1.4*	0.9	*0.4*	*1.0*	2.3	*– 0.5*	*– 0.5*	5.6	*– 0.6*	*– 0.7*	*4.1*	*5.3*	5.1	7.0	*4.5*	*6.3*
DK	9.5	*3.3*	*3.3*	6.9	*0.8*	*1.0*	1.1	*0.6*	*1.1*	1.5	*– 0.3*	*– 0.3*	7.8	*– 0.4*	*– 0.3*	*3.4*	*3.7*	*4.4*	*5.1*	*4.0*	*4.8*
DE	11.4	*0.9*	*1.7*	6.0	*0.9*	*1.2*	1.0	*0.4*	*1.0*	1.3	*– 0.4*	*– 0.4*	4.0	*– 0.8*	*– 0.9*	*0.6*	*1.7*	*1.8*	*3.6*	*1.0*	*2.7*
EL				5.1	*0.8*	*1.7*				0.3	*– 0.1*	*– 0.1*	3.5	*– 0.5*	*– 0.4*	*:*	*:*	*:*	*:*	*:*	*:*
ES	8.6	*3.3*	*7.1*	6.1	*1.2*	*2.2*	0.5	*0.0*	*0.2*	1.1	*– 0.4*	*– 0.4*	3.7	*– 0.7*	*– 0.6*	*3.3*	*8.3*	*4.0*	*9.1*	*3.3*	*8.5*
FR	12.8	*1.5*	*2.0*	7.7	*1.2*	*1.8*	0.3	*0.1*	*0.2*	1.2	*– 0.3*	*– 0.3*	5.0	*– 0.5*	*– 0.5*	*1.9*	*2.9*	*2.5*	*3.7*	*2.0*	*3.2*
IE	4.7	*3.1*	*6.4*	5.3	*1.2*	*2.0*	0.6	*0.1*	*0.6*	0.7	*– 0.2*	*– 0.2*	4.1	*– 0.9*	*– 1.0*	*3.2*	*7.2*	*4.3*	*8.8*	*3.3*	*7.8*
IT	14.2	*0.8*	*0.4*	5.8	*0.9*	*1.3*	1.5	*0.2*	*0.7*	0.4	*– 0.1*	*– 0.1*	4.3	*– 0.8*	*– 0.6*	*0.9*	*1.1*	*1.8*	*2.4*	*1.0*	*1.7*
LU	10.0	*5.0*	*7.4*	5.1	*0.8*	*1.2*	0.9	*0.2*	*0.6*	0.3	*– 0.0*	*– 0.1*	3.3	*– 0.5*	*– 0.9*	*5.2*	*7.6*	*6.0*	*9.1*	*5.4*	*8.2*
NL	7.7	*2.9*	*3.5*	6.1	*1.0*	*1.3*	0.5	*0.3*	*0.6*	1.8	*– 0.2*	*– 0.2*	4.8	*– 0.2*	*– 0.2*	*3.5*	*4.4*	*4.0*	*5.2*	*3.8*	*5.0*
AT	13.4	*0.6*	*– 1.2*	5.3	*1.0*	*1.6*	0.6	*0.4*	*0.9*	0.8	*– 0.1*	*– 0.1*	5.1	*– 0.9*	*– 1.0*	*0.5*	*– 0.7*	*1.8*	*1.2*	*0.9*	*0.2*
PT	11.1	*4.9*	*9.7*	6.7	*– 0.1*	*0.5*	0.5	*0.1*	*0.4*	1.0	*– 0.1*	*– 0.1*	5.1	*– 0.6*	*– 0.4*	*4.1*	*9.7*	*4.9*	*10.5*	*4.3*	*10.1*
FI	10.7	*3.3*	*3.1*	5.6	*1.1*	*1.4*	1.7	*1.2*	*1.8*	1.5	*– 0.4*	*– 0.4*	6.0	*– 0.6*	*– 0.7*	*3.5*	*3.4*	*5.3*	*5.9*	*4.7*	*5.2*
SE	10.6	*0.4*	*0.6*	6.7	*0.7*	*1.0*	3.8	*1.1*	*1.7*	1.1	*– 0.2*	*– 0.2*	7.3	*– 0.7*	*– 0.9*	*0.3*	*0.5*	*2.0*	*3.1*	*1.3*	*2.2*
UK	6.6	*1.3*	*2.0*	7.0	*1.1*	*1.9*	1.0	*0.3*	*0.8*	0.4	*– 0.0*	*– 0.0*	4.6	*– 0.5*	*– 0.6*	*1.9*	*3.2*	*2.7*	*4.6*	*2.2*	*4.0*
CY	6.9	*5.3*	*12.9*	2.9	*0.7*	*1.1*				0.4	*– 0.0*	*– 0.0*	6.3	*– 1.9*	*– 2.2*	*4.1*	*11.8*	*6.0*	*14.1*	*4.1*	*11.8*
CZ	8.5	*1.1*	*5.6*	6.4	*1.4*	*2.0*	0.3	*0.2*	*0.4*	0.2	*– 0.0*	*– 0.0*	3.8	*– 0.9*	*– 0.7*	*1.6*	*6.8*	*2.6*	*7.9*	*1.8*	*7.2*
EE	6.7	*– 1.9*	*– 2.5*	5.4	*0.8*	*1.1*	0.3	*0.1*	*0.3*	0.1	*– 0.0*	*– 0.0*	5.0	*– 1.1*	*– 1.3*	*– 2.3*	*– 2.7*	*– 1.1*	*– 1.1*	*– 2.2*	*– 2.5*
HU	10.4	*3.1*	*6.7*	5.5	*0.8*	*1.0*	0.6	*0.3*	*0.6*	0.2	*– 0.0*	*– 0.0*	4.5	*– 1.0*	*– 0.7*	*2.8*	*7.0*	*4.1*	*8.3*	*3.1*	*7.6*
LT	6.7	*1.2*	*1.8*	3.7	*0.7*	*0.9*	0.5	*0.2*	*0.4*	0.1	*– 0.1*	*– 0.1*	5.0	*– 1.6*	*– 1.6*	*0.2*	*1.0*	*2.0*	*3.1*	*0.3*	*1.4*
LV	6.8	*– 1.2*	*– 1.2*	5.1	*0.8*	*1.1*	0.4	*0.1*	*0.3*	0.3	*– 0.1*	*– 0.1*	4.9	*– 1.2*	*– 1.4*	*– 1.7*	*– 1.6*	*– 0.4*	*0.1*	*– 1.5*	*– 1.3*
MT	7.4	*1.7*	*– 0.4*	4.2	*1.3*	*1.8*	0.9	*0.2*	*0.2*	1.2	*– 0.2*	*– 0.2*	4.4	*– 1.2*	*– 1.2*	*1.6*	*0.1*	*2.9*	*1.5*	*1.8*	*0.3*
PL	13.9	*– 4.7*	*– 5.9*	4.1	*1.0*	*1.4*	0.1	*0.0*	*0.1*	0.5	*– 0.4*	*– 0.4*	5.0	*– 2.0*	*– 1.9*	*– 6.1*	*– 6.8*	*– 4.1*	*– 4.8*	*– 6.1*	*– 6.7*
SK	7.2	*0.5*	*1.8*	4.4	*1.3*	*1.9*	0.7	*0.2*	*0.6*	0.3	*– 0.2*	*– 0.2*	3.7	*– 1.5*	*– 1.3*	*0.1*	*2.3*	*1.8*	*4.1*	*0.3*	*2.9*
SI	11.0	*3.4*	*7.3*	6.4	*1.2*	*1.6*	0.9	*0.5*	*1.2*	0.5	*– 0.1*	*– 0.1*	5.3	*– 0.7*	*– 0.4*	*3.9*	*8.4*	*5.1*	*10.1*	*4.4*	*9.7*
EU-25	10.6	*1.3*	*2.2*	6.4	*1.0*	*1.6*	0.9	*0.3*	*0.7*	0.9	*– 0.3*	*– 0.3*	4.6	*– 0.7*	*– 0.6*	*1.3*	*2.8*	*2.3*	*4.1*	*1.6*	*3.4*
EU-15	10.6	*1.5*	*2.3*	6.4	*1.0*	*1.6*	0.9	*0.3*	*0.7*	0.9	*– 0.2*	*– 0.2*	4.6	*– 0.6*	*– 0.6*	*1.6*	*3.0*	*2.6*	*4.3*	*1.9*	*3.7*
EU-12	11.5	*1.6*	*2.6*	6.3	*1.0*	*1.5*	0.8	*0.2*	*0.6*	1.0	*– 0.3*	*– 0.3*	4.4	*– 0.7*	*– 0.6*	*1.7*	*3.2*	*2.6*	*4.4*	*1.9*	*3.8*
EU-10	10.9	*– 1.0*	*0.3*	4.9	*0.9*	*1.3*	0.4	*0.1*	*0.3*	0.4	*– 0.2*	*– 0.2*	4.7	*– 1.5*	*– 1.3*	*– 1.8*	*0.0*	*– 0.2*	*1.7*	*– 1.7*	*0.3*
EU-9 *(EU10-PL)*	8.8	*1.6*	*4.8*	5.5	*0.9*	*1.3*	0.5	*0.2*	*0.5*	0.3	*– 0.1*	*– 0.1*	4.4	*– 1.1*	*– 0.9*	*1.4*	*5.1*	*2.7*	*6.5*	*1.6*	*5.6*

(*) Total expenditure for pensions does not include Greece. For long-term care, there are no projections available for Greece and Cyprus. Since the release of the Ageing Report, Estonia, France, Portugal and Hungary have provided the data required to conduct the projections for long-term care for these countries. Table I.3 includes these projections. The projection results for public spending on long-term care for Germany does not reflect current legislation where benefit levels are fixed. A scenario which comes closer to the current setting of legislation projects that public spending would remain constant as a share of GDP over the projection period.

NB: These figures refer to the baseline projections for social security spending on pensions, education and unemployment transfers. For healthcare and long-term care, the projections refer to 'AWG reference scenarios'.

Sources: Economic Policy Committee and European Commission (Economic and Financial Affairs DG) (2006a, 2006b).

Chapter II

Results of the sustainability analysis

Summary

The analysis in this chapter reveals that in the absence of reform measures and budgetary consolidation, a considerable sustainability gap of about 3½ % of GDP, i.e. the gap between the structural budgetary position in 2005 and a sustainable position, emerges in both the EU and the euro area. Unless measures are taken to fill this gap, the government debt/GDP ratio is projected to remain above 60 % over the coming decades for the EU as a whole, and towards 2020 it is projected to start rising considerably, reaching almost 200 % of GDP in 2050. On the basis of current policies, 11 countries will have a debt/GDP ratio above the 60 % of GDP reference value by 2030 and by 2050; another seven countries will have been added to the list of 'high-debt' countries, implying that debt/GDP ratio will be above 60 % in more than two thirds of the Member States.

There is a large variety in terms of the size of the sustainability gap across the EU Member States. This implies that, based on the current budgetary position and with no changes in policies, an adjustment is necessary so as to render the public finances sustainable over the long term for most Member States. In about half of the Member States, a considerable adjustment, of more than 2 % of GDP, is required.

The sustainability indicators are decomposed into the impact of: (i) the initial budgetary position, which illustrates whether the public finances are sustainable, considering only the current budgetary position, i.e. the current structural primary balance and the current level of government debt; and (ii) the long-term budgetary impact of ageing, which reflects the impact of the projected change in age-related government expenditure on public finances.

The initial budgetary position (IBP) illustrates that the public finances are on an unsustainable path, even before considering the long-term budgetary impact of ageing populations, in about half of the Member States. This implies that for these Member States strengthening of the fiscal position is a matter of urgency, particularly for those which have a high debt/GDP ratio (Greece and Italy). The long-term budgetary impact of ageing (LTC) is most significant in more than a third of Member States, with an increase of close to 5 % of GDP or more. These countries have so far made only limited progress in reforming their pension systems or are experiencing maturing pension systems.

The quantitative results in this report are to a large degree similar to those in the 2005/06 assessment round of SCPs although differences emerge due to the use of national projections in the previous exercise as well as due to the 2005 fiscal out-turns, which were in several cases better than estimated in the 2005/06 stability and convergence programmes, owing in most cases to better than expected tax receipts.

1. Overall results of the sustainability indicators and debt projections

1.1. The quantitative indicators

Table II.1. presents the results of the quantitative indicators, which have been calculated on the basis of the structural budgetary position in 2005 and the projected change in age-related expenditure in the period to 2050 according to the methodology described in Chapter I (henceforth referred to as the 'baseline scenario'). A decomposition of the indicators is made in order to determine whether the risks to public finance sustainability can be attributed to the current budgetary position and/or to the long-term budgetary impact of ageing. In particular, this decomposition distinguishes between the impact on the sustainability indicators (S1 and S2) from:

(i) the **initial budgetary position** — i.e. the gap between the structural primary balance in 2005 and the long-term debt-stabilising primary balance ([1]); and

(ii) the **long-term change in the budgetary position** — i.e. the impact of the rise in age-related expenditure on the indicators ([2]).

The analysis reveals that there is a large variety in terms of the size of the sustainability gaps as well as of the relative importance of the initial budgetary position (IBP) and the pure impact of ageing (LTC) (see Table II.1 and Graph II.1). Overall, a majority of Member States have sustainability gaps; 16 Member States according to the S1 indicator, and 20 Member States according to the more stringent S2 indicator. This implies that based on the current budgetary position and with no changes in policies, an adjustment is necessary so as to render public finance sustainable over the long term for most Member States.

In about half of the Member States, a considerable adjustment, of more than 2 % of GDP, is required (see Graph II.1). In the EU as a whole and in the euro area, the sustainability gap is about 2¼ % of GDP according to the S1 indicator and about 3½ % of GDP according to the S2 indicator. In both cases, the long-term budgetary impact of ageing is the main factor behind the sustainability gaps. The EU aggregates, however, mask considerable variety between the Member States.

The long-term budgetary impact of ageing

The indicator reflects the large differences of the budgetary impact of ageing on public finances and notably the large differences between countries with regard to the change in pension expenditure to 2050 — ranging from a reduction in Estonia, Malta and Poland to an increase of more than 10 % of GDP in Cyprus. It reflects the diversity in public pension arrangements, their degree of maturity and the effects of pension reforms enacted so far. Differences in other age-related expenditure items projections are smaller; the difference between the projected highest and lowest increase is respectively 1.7 % and 1.9 % of GDP for expenditure on long-term care and education, around 1 % of GDP for healthcare expenditure and 0.5 % of GDP for unemployment benefits. The projected increase in healthcare and long-term care is, aside from the projected demographic change, notably affected by current spending as a share of GDP, i.e. the current public provision of healthcare and long-term care.

The decomposition of the sustainability gap indicators provides information on the pure budgetary impact of ageing, the long-term change in the budgetary position

([1]) The long-term debt-stabilising primary balance refers to the primary balance that, if reached and maintained, would stabilise the debt at its current level in the long run. It therefore depends on the long-term prospects of GDP growth and interest rates. It can differ from the short-term debt-stabilising primary balance that can be calculated with the current nominal GDP growth and the nominal interest rates.

([2]) In the case of S1, the decomposition also separates the impact of the debt position (60 % of GDP in 2050), in particular if the current debt/GDP ratio is below 60 % of GDP, debt is allowed to rise and this component reduces the sustainability gap as measured by the S1 indicator, and vice versa (see Chapter I).

(LTC). The size of the contribution of the LTC for the S2 indicator is in general higher than for the S1 indicator, as the latter only takes into account budgetary developments up to 2050 (see Annex I for more details). However, the ranking of the countries according to the S2 indicator corresponds relatively well with that of the S1 indicator across countries (see Table II.1). In the following paragraphs the results from the S2 indicator are referred to ([1]).

- The long-term budgetary impact of ageing (LTC) is very significant in Luxembourg, Cyprus, Slovenia, Portugal, Ireland, Spain, Belgium, Hungary and the Czech Republic, with an increase of close to 5 % of GDP or more. These countries have so far made only limited progress in reforming their pension systems or are experiencing maturing pension systems. In some countries (e.g. HU and SI), pension reforms were introduced in the late 1990s, which curtailed pension spending; however, recent policies have gone in the opposite direction, resulting in part in a backtracking of the previous reform.
- For a second group of countries — the Netherlands, Finland, Denmark, the United Kingdom, Germany, France and Slovakia — the long-term budgetary impact of ageing is more limited, ranging from 2 % to

([1]) The correlation coefficient between the LTC according to the S1 and the S2 across countries in Table II.1 is 0.98.

Table II.1

Results of the sustainability gap calculations in the baseline scenario (% GDP)

	Change in age-related expenditure	S1				S2		
		Total	IBP ([1])	DR ([1])	LTC ([1])	Total	IBP ([1])	LTC ([1])
BE	6.6	**0.4**	– 3.5	0.2	3.7	**1.8**	– 3.5	5.3
CZ	7.7	**2.5**	0.5	– 0.6	2.6	**5.5**	0.7	4.8
DK	4.5	**– 4.2**	– 6.1	– 1.0	3.0	**– 2.2**	– 6.1	3.9
DE	4.0	**3.5**	1.5	0.2	1.7	**4.4**	1.6	2.8
EE	– 1.8	**– 4.4**	– 1.7	– 1.2	– 1.5	**– 3.4**	– 1.8	– 1.7
EL ([2])	*1.4*	***3.2***	*2.1*	*0.8*	*0.4*	***3.0***	*2.2*	*0.9*
ES	8.9	**0.2**	– 2.7	– 0.6	3.5	**3.2**	– 2.7	5.9
FR	3.2	**3.2**	1.3	0.1	1.8	**4.0**	1.4	2.6
IE	7.8	**– 0.8**	– 3.1	– 1.2	3.5	**2.9**	– 3.1	6.0
IT	2.3	**3.4**	1.3	0.8	1.3	**3.1**	1.3	1.8
CY	11.7	**4.0**	– 0.3	0.0	4.3	**8.5**	0.2	8.3
LV	1.6	**– 0.6**	– 0.5	– 1.0	0.9	**0.8**	– 0.4	1.2
LT	2.1	**0.3**	0.4	– 0.8	0.7	**1.8**	0.5	1.3
LU	8.4	**4.6**	1.2	– 1.8	5.2	**9.5**	1.2	8.3
HU	7.1	**7.9**	4.5	0.3	2.7	**9.8**	4.8	5.1
MT	– 0.6	**0.4**	– 0.5	0.3	0.6	**– 0.3**	– 0.1	– 0.1
NL	5.2	**– 0.2**	– 3.1	– 0.4	3.3	**1.3**	– 3.1	4.4
AT	1.1	**0.1**	– 0.9	– 0.1	1.0	**0.3**	– 0.8	1.1
PL	– 3.2	**– 0.4**	2.2	– 0.1	– 2.5	**– 0.2**	2.6	– 2.8
PT	9.7	**7.9**	3.6	0.3	4.1	**10.5**	3.8	6.7
SI	9.9	**3.9**	0.1	– 0.6	4.4	**7.3**	0.2	7.1
SK	3.7	**1.3**	0.7	– 0.5	1.1	**3.0**	0.9	2.1
FI	5.0	**– 3.3**	– 5.0	– 1.6	3.3	**– 0.9**	– 5.1	4.2
SE	2.4	**– 2.7**	– 3.1	– 1.0	1.5	**– 1.1**	– 3.1	2.0
UK	4.2	**3.4**	1.6	– 0.2	1.9	**4.9**	1.8	3.2
EUR-12 ([2])	4.4	**2.3**	0.1	0.1	2.1	**3.5**	0.2	3.3
EU-25 ([2])	4.1	**2.1**	0.2	0.0	1.9	**3.4**	0.3	3.0

([1]) IBP = the initial budgetary position, DR = the debt requirement in 2050, LTC = the long-term changes in the primary balance.
([2]) No pension projections were available for Greece and the rise in age-related expenditure is therefore underestimated in the case of Greece. Pension expenditure was projected to rise between 2005 and 2050 by 12.4 % of GDP in the 2001 common projections exercise and 10.2 % in the 2002 update of the Greek stability programme. The aggregate results for the European Union (EU-25) and the euro area (EUR-12) exclude Greece.

Source: Commission services.

5 % of GDP. Several of these countries have implemented pension reforms that contribute to limiting the increase in pension expenditure (SI, FI, FR and DE). The projected increase in public pension expenditure is also limited in the United Kingdom, Denmark and the Netherlands, influenced by their historically stronger reliance on private pension arrangements.

- Finally, the increase is more moderate, 2 % of GDP or less, in Sweden, Italy, Lithuania, Latvia, Austria, Malta, Estonia and Poland. Most of these countries have implemented comprehensive pension reforms, in several cases also involving a partial switch to private pension schemes (Sweden, Lithuania, Latvia, Estonia and Poland). There is one exception though, Malta has not reformed its public pension system and the specific design of the Maltese pension system in effect puts a cap on both pension expenditure and contributions. As a result, pension expenditure (and contributions) as a share of GDP will start to fall between the 2020s and 2050. For most of the countries mentioned above with a relatively limited long-term budgetary impact of ageing, the projected increase in expenditure on healthcare and generally on long-term care rises more than on pensions (see Table I.3).

It should be noted that for Greece and Cyprus projections for expenditure on long-term care were not available in time for the completion of this report and the budgetary cost of ageing and the sustainability gaps are thus underestimated for these countries. The projected increase in expenditure of long-term care is, however, quite small on average in the EU, although it shows significant variation across the Member States (see Table I.3).

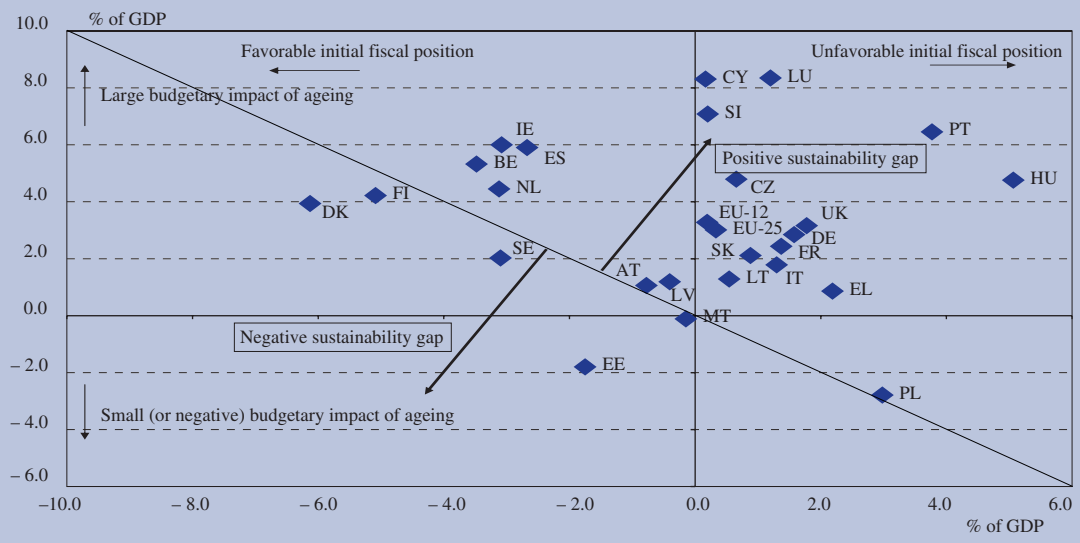
Finally, concerning Greece, projections were not available in time for the finalisation of the common projections exercise nor for the present report. The rise in age-related expenditure is therefore underestimated in the case of Greece. In the 2002 stability programme, pension expenditure was projected to rise by 10.2 % of GDP between 2005 and 2050.

The impact of the initial budgetary position

In addition to the long-term budgetary impact of ageing, the current budgetary position and level of debt can also present a risk to public finance sustainability. The initial budgetary position (IBP) illustrates whether the public finances are sustainable, considering only the current budgetary position, i.e. the current structural primary balance and the current level of government debt.

Table II.1 shows that, given the initial budgetary position in 2005, the public finances are on an unsustainable path

Graph II.1: **Decomposition of the S2 indicator**



Source: Commission services.

even before considering the long-term budgetary impact of ageing populations in about half of the Member States according to the S1 and S2 sustainability indicators ([1]).

In Hungary, Portugal, Poland and Greece, an adjustment of the structural primary balance of more than 2 % of GDP is required to avoid an unsustainable path for the public finances and in another five countries, the United Kingdom, Germany, France, Italy and Luxembourg, an adjustment of between 1 % and 2 % of GDP would be required ([2]). This implies that for these countries the initial budgetary position poses a risk to the sustainability of the public finances and a strengthening of the fiscal position is a matter of urgency, particularly for those which have a high debt/GDP ratio such as Italy and Greece.

Finally, for 11 countries (MT, LV, AT, EE, ES, IE, SE, NL, BE, FI and DK), the current fiscal policy would be sustainable if there was no impact of ageing on public finances. It can thus contribute to cover part of the budgetary impact of ageing over the long term by reducing public debt and/or accumulating assets in the next decades.

As shown in Chapter I, a change in the initial structural primary balance results in, *ceteris paribus*, a corresponding change in a sustainability indicator. In practical terms, an improvement in the structural primary balance of, for example, 1 % of GDP reduces, *ceteris paribus*, the initial budgetary position and the sustainability gap by 1 % of GDP.

([1]) The contributions of the IBP are of similar size for both indicators. In the following paragraphs, the results from the S2 indicator are referred to.

([2]) Poland is however in a very specific position. The projected decrease in age-related expenditure as a share of GDP results in a negative long-term budgetary impact of ageing. This almost exactly offsets the weak initial budgetary position.

Table II.2

Government balances (% of GDP)

	Cyclically adjusted balance	Cyclically adjusted balance	Cyclically adjusted balance	Structural balance
	2001–05 average	Difference between 2005 and 2001	2005 out-turn	2005 out-turn
BE	0.2	0.5	0.6	0.1
CZ	– 4.3	3.1	– 2.5	– 1.4
DK	2.9	3.8	5.4	5.2
DE	– 3.4	0.3	– 3.0	– 3.1
EE	1.5	0.9	1.5	1.5
EL	– 5.9	0.1	– 5.3	– 5.3
ES	– 0.2	2.8	1.3	1.3
FR	– 3.3	0.1	– 2.5	– 3.1
IE	0.0	2.2	1.5	1.9
IT	– 3.5	0.7	– 3.4	– 3.9
CY	– 4.0	1.2	– 2.1	– 2.9
LV	– 1.2	1.8	– 0.2	– 0.1
LT	– 1.4	0.2	– 1.2	– 1.1
LU	1.2	– 6.5	– 1.3	– 1.3
HU	– 5.6	– 2.4	– 5.8	– 6.3
MT	– 6.1	5.0	– 2.4	– 3.1
NL	– 1.0	2.3	1.0	1.0
AT	– 0.7	– 0.8	– 1.0	– 1.0
PL	– 3.3	0.7	– 2.6	– 2.6
PT	– 3.9	0.3	– 5.1	– 5.2
SI	– 2.5	3.2	– 1.4	– 1.5
SK	– 4.3	3.8	– 2.4	– 1.6
FI	3.6	– 1.6	3.2	3.2
SE	1.6	0.7	3.0	2.6
UK	– 2.3	– 3.7	– 3.3	– 3.3

Source: Commission services.

The current budgetary position in 2005 can be compared to the recent past. Table II.2 provides the cyclically adjusted balances for 2005, on average over the period 2001– 05, and the change in the cyclically adjusted balance between 2001 and 2005 ([1]). This table also provides the structural balance in 2005, i.e. the cyclically adjusted balance net of one-offs and temporary measures.

It reveals that the cyclically adjusted balances (CABs) were better in 2005 than on average over the period 2001–05 in 18 countries (1 percentage point of GDP or more in 11 of those) while for six countries the 2005 CAB was weaker than the average over 2001–05.

Overall, for the EU-25, the cyclically adjusted budgetary position in 2005 was ½ % of GDP higher than the average over the period 2001–05 ([2]).

As noted above, one way to cope with the budgetary implications of ageing is to achieve and maintain sound public finances. This can be illustrated by the required primary balance (RPB), which is derived from the S2 sustainability indicator. The RPB indicates the structural primary budgetary position over the medium term that is consistent with sustainable public finances. The RPB as well as the structural primary balances are shown in Table II.3.

In this table two sets of structural primary balances are given for countries which have not yet implemented the Eurostat decision regarding the classification of funded defined-contribution pension schemes but which are required to do so from March 2007 (DK, HU, PL, SK, SE). The figure in parenthesis includes the revenue-reducing impact of the implementation of this reclassification. Given that the required primary balance is calculated excluding funded defined-contribution pension schemes on the expenditure side, the required primary balance should be compared to the current structural primary balance excluding the revenue from those pension schemes.

The required primary balance is the primary balance that is sufficient to pay interest on outstanding debt and to cover the increase in age-related expenditure: it therefore mainly depends on the projected increase in age-related expenditure and, to a lesser degree, on the current level of the debt. There is a large dispersion with regard to the required primary balance among Member States, ranging from almost 10 % of GDP to below zero, which mainly reflects the large dispersion of the projected changes in age-related expenditure (see the last column of Table II.3). Reaching and sustaining very high structural primary balances implies running considerable government surpluses, which might prove difficult in view of competing budgetary pressures.

Table II.3

Required primary balance (% of GDP)

	Structural primary balance	Required primary balance	Increase in age-related expenditure
	2005	Average 2011–15 ([1])	Between 2010 and 2050
BE	4.5	6.2	6.6
CZ	– 0.2	5.4	7.7
DK	7.1 (6.2)	3.5	4.5
DE	– 0.3	4.4	4.0
EE	1.7	– 1.0	– 1.8
EL	*– 0.3*	*2.8*	*1.4*
ES	3.1	6.4	8.9
FR	– 0.5	3.4	3.2
IE	3.1	5.5	7.8
IT	0.6	3.8	2.3
CY	0.5	9.0	11.7
LV	0.5	1.7	1.6
LT	– 0.3	1.9	2.1
LU	– 1.2	7.7	8.4
HU	– 2.5 (– 3.6)	6.2	7.1
MT	0.9	0.2	– 0.6
NL	3.6	4.4	5.2
AT	1.7	2.2	1.1
PL	– 0.2 (– 1.7)	– 0.4	– 3.2
PT	– 2.5	7.6	9.7
SI	0.2	7.3	9.9
SK	0.2 (– 0.4)	2.9	3.7
FI	4.7	3.4	5.0
SE	4.2 (3.2)	2.2	2.4
UK	– 1.1	3.8	4.2

([1]) The required primary balance is given as an average over the period 2011–15. In the assessment of the stability and convergence programmes, the required primary balance was calculated as an average of the required primary balance over the next five years after the programme period, which ends in 2008, 2009 and 2010 depending on the country. A common period of 2011–15 for all countries ensures relatively comparable results with the last and future rounds of assessment of stability and convergence programmes.

Source: Commission services.

([1]) The government finances have improved in a number of countries as a result of lower interest expenditure on debt due to a reduction of interest rate levels in recent years. The improvement in the primary balance is therefore in general smaller.

([2]) The Commission's spring 2006 forecast expects broadly unchanged CABs in 2006 and 2007 for the EU-25.

1.2. Government debt projections

Another way to look at the prospects for long-term public finance sustainability is to project the debt/GDP ratio over the long term, using the same assumptions as for the calculations of S1 and S2. The debt/GDP ratio is projected to remain above 60 % of GDP over the coming decades for the EU as a whole and, towards 2020, it is projected to start rising considerably, revealing that the public finances are on an unsustainable path (see Graph II.2). The projected deterioration of the public debt situation is more pronounced in the euro area than in the entire EU due to a higher initial level of debt.

The debt/GDP ratio is currently above the Treaty reference value of 60 % of GDP in nine countries (BE, DE, EL, FR, IT, CY, MT, AT and PT), which makes debt reduction a matter of urgency in these cases (see Table II.4. Projected debt developments in the EU Member States). For countries with a very high government debt level, i.e. above 100 % of GDP, such as Greece and Italy, public finance consolidation is therefore of utmost importance. The issue of the importance of the current level of debt in the context of the sustainability of public finances is discussed further in Chapter IV.1 of this report.

On the basis of current policies, 11 countries will have a debt/GDP ratio above the 60 % of GDP reference value by 2030 and by 2050; another seven countries will have been added to the list of high-debt countries, implying that more than two thirds of the Member States will be breaching the 60 % threshold.

Table II.4

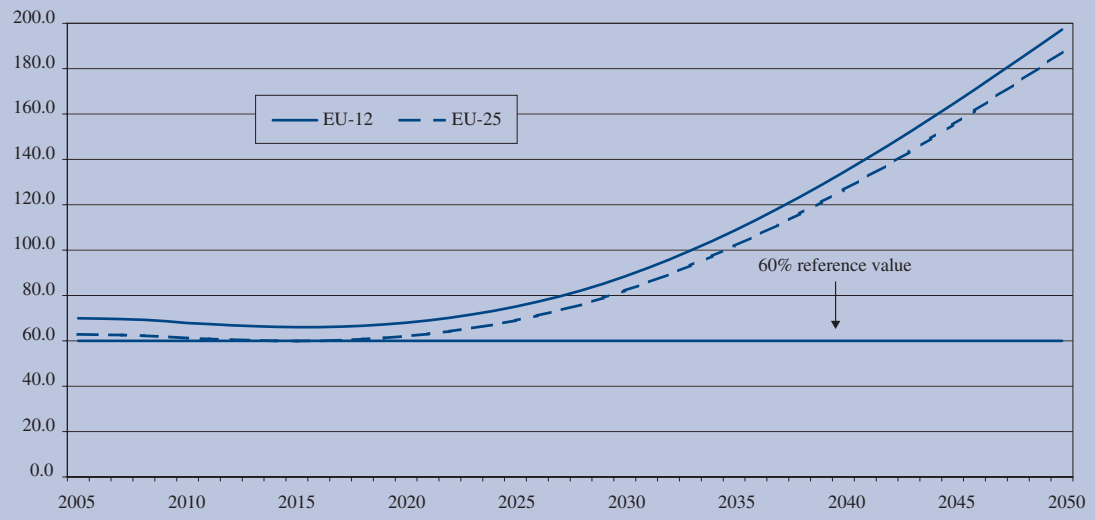
Projected debt developments in the EU Member States (% of GDP)

	Gross debt			
	2005	2010	2030	2050
BE	93.3	72	31	83
CZ	30.5	28	49	207
DK	35.8	6	– 96	– 162
DE	67.7	74	123	261
EE	4.8	– 3	– 64	– 178
EL	107.5	106	147	255
ES	43.2	25	– 16	72
FR	66.8	70	120	239
IE	27.6	10	– 18	31
IT	106.4	110	142	261
CY	70.3	63	77	249
LV	11.9	6	1	29
LT	18.7	17	23	77
LU	6.2	10	88	268
HU	58.4	79	189	493
MT	74.7	73	78	79
NL	52.9	37	9	47
AT	62.9	56	42	63
PL	42.5	56	45	40
PT	63.9	79	192	528
SI	29.1	27	67	274
SK	34.5	31	40	134
FI	41.1	18	– 37	– 42
SE	50.3	32	– 21	– 41
UK	42.8	48	100	239
EUR-12 (1)	70	67	87	196
EU-25 (1)	63	61	79	180

(1) Aggregates exclude Greece.

Source: Commission services.

Graph II.2: **Debt developments in the EU and the euro area 2005–50**



NB: Since long-term pension projections for Greece were not available in time for the completion of this report, the EU and euro-area aggregates are calculated without Greece.
Source: Commission services.

2. Comparison with the results of the public finance sustainability analysis in the 2005/06 assessment round of stability and convergence programmes

The quantitative results in this report are to a large degree similar to those in the 2005/06 assessment round of SCPs. Yet there are two main sources of differences (see Graph II.3).

First, the results of the common projections exercise were not available in time for the submission of the stability and convergence programmes. The national projections were therefore used in the assessment of the sustainability of public finances ([1]). Some of the budgetary items covered by the Ageing Report were missing in the stability and convergence programmes, for healthcare (ES, LU, HU and PL), long-term care (DE, EE, EL, ES, FR, CY, LU, HU, MT, NL, PL and SK), education (ES, FR, LU, HU, NL and SI) and unemployment benefits (DK, ES, FR, CY, LU, HU, NL, PL, SI, FI and UK).

Moreover, the drivers behind healthcare and/or long-term care were sometimes different, leading to more dynamic healthcare expenditure in the programmes than in the Ageing Report projections in a number of cases (BE, CZ, FR, IE, CY, NL, PT, SI, FI and SE) and in two cases to less dynamic healthcare expenditure (EE and MT).

Finally, for two countries (CY and HU), labour productivity growth and real GDP growth were assumed to be substantially higher in the convergence programmes than in the Ageing Report, limiting the increase of age-related expenditure as a share of GDP (See Table II.5).

Second, for a number of countries, the 2005 fiscal outturns were better than estimated in the 2005/06 stability and convergence programmes, owing in most cases to better than expected tax receipts (see Table II.6). In particular, in the Czech Republic, Denmark, Estonia, Latvia, Lithuania, Slovakia and Sweden the government balance was at least 1 % of GDP higher than expected in the SCPs, in nominal terms but also in structural terms according to the commonly agreed methodology for calculating output gaps. Yet, some factors, which are not related to the business cycle, could be of temporary nature and significant for some countries, such as volatile tax revenues related to oil/gas prices. This would call for prudence in terms of policy conclusions since such budgetary developments may not be of a permanent nature.

It should be noted that in Sweden, the mandatory private scheme was considered as a public scheme in the 2005 convergence programme assessment. It is excluded from the public sector in this report. The impact of this change on the sustainability indicator is broadly neutral but changes the balance between the impact of the current budgetary situation and the impact of long-term developments.

Graph II.3 shows the quantitative results for the S2 indicator and the two main sources of differences (long-term economic and budgetary projections and budgetary out-turn). In Luxembourg and Hungary, the quantitative indicator is substantially larger essentially due to the inclusion of all age-related expenditure items not reported in the update. In the case of Hungary this is also due to more favourable long-term

([1]) No long-term projection was available in the 2005/06 update of the Greek stability programme. Data from the 2004/05 sustainability assessment were used instead in that case.

Table II.5

Change in the age-related budgetary items (between last year of the programme and 2050)

	Pension		Healthcare		Long-term care		Education		Unemployment benefits		Total age-related	
	SCP	AR	SCP	AR	SCP	AR	SCP	AR	SCP	AR	SCP	AR
BE	4.2	5.1	1.9	1.2	1.1	0.9	– 0.3	– 0.3	– 0.9	– 0.3	6.0	6.5
CZ	5.4	5.8	2.6	1.7	0.3	0.4	– 0.3	– 0.3	0.0	0.0	8.0	7.5
DK	0.4	2.7	1.1	0.8	1.1	1.1	– 0.4	– 0.1	:	0.0	2.2 (1)	4.5
DE	2.5	2.4	1.1	1.0	:	1.0	– 0.4	– 0.5	– 0.2	– 0.3	2.9 (1)	3.7
EE	– 2.6	– 2.9	– 0.3	0.8	:	0.3	0.0	– 0.4	0.0	0.0	– 2.9 (1)	– 2.1
EL	10.3	:	1.5	1.6	:	:	0.0	– 0.1	– 0.2	– 0.1	11.6 (1)	1.3
ES	6.9	6.8	:	2.1	:	0.3	:	– 0.2	:	– 0.3	6.9 (1)	8.7
FR	1.9	1.9	2.4	1.5	:	0.2	:	– 0.2	:	– 0.2	4.3 (1)	3.1
IE	6.1	6.1	2.7	1.8	1.0	0.6	– 0.4	– 0.5	0.0	0.0	9.4	8.0
IT	0.5	0.6	0.9	1.2	0.4	0.7	– 0.4	– 0.2	– 0.1	– 0.1	1.3	2.1
CY	7.7	12.1	1.9	1.0	:	:	– 0.1	– 1.3	:	0.1	9.5 (1)	11.8
LV	0.1	0.1	0.6	0.8	0.1	0.3	– 0.4	– 0.4	– 0.1	0.0	0.3	0.8
LT	2.3	2.0	0.8	0.7	0.2	0.3	– 1.2	– 1.1	0.0	0.0	2.0	1.9
LU	6.5	7.7	:	1.1	:	0.6	:	– 0.8	:	– 0.1	6.5 (1)	8.4
HU	1.7	5.9	:	0.9	:	0.6	:	– 0.3	:	0.0	1.7 (1)	7.1
MT	– 1.4	– 1.2	0.5	1.7	:	0.3	– 0.7	– 0.7	– 0.2	– 0.3	– 1.8 (1)	– 0.2
NL	3.1	3.7	3.2	1.2	:	0.6	:	– 0.1	:	0.0	6.3 (1)	5.4
AT	– 0.8	– 0.9	1.2	1.4	0.7	0.9	– 0.6	– 0.7	0.0	0.0	0.5	0.7
PL	– 4.3	– 4.4	:	1.2	:	0.1	– 1.2	– 1.2	:	– 0.3	– 5.5 (1)	– 4.6
PT	8.6	8.9	1.1	0.4	0.6	0.4	0.1	0.0	– 0.1	0.0	10.4	9.8
SI	7.3	7.2	2.9	1.4	1.0	1.1	:	0.0	:	0.0	11.2 (1)	9.8
SK	2.1	2.1	1.4	1.7	:	0.5	– 0.8	– 0.8	– 0.1	– 0.2	2.5 (1)	3.4
FI	2.7	2.7	1.8	1.3	2.4	1.6	– 0.4	– 0.4	:	– 0.1	6.5 (1)	5.1
SE (2)	1.4	1.3 (0.0)	1.3	1.0	2.9	1.8	– 0.1	– 0.5	– 0.2	0.0	5.3	3.6 (2.3)
UK	1.8	1.9	1.5	1.7	0.6	0.8	– 0.1	– 0.3	:	0.0	3.7 (1)	4.2

NB: Projections on unemployment benefits were provided after the submission of the programmes by the Irish, Portuguese and Estonian authorities. For Cyprus, data under a no-reform scenario were not included in the programme but was provided after the submission of the programme by the Cypriot Ministry of Finance. For Belgium, projections for the period 2030–50 were provided by the Bureau Fédéral du Plan after the submission of the programme. For Greece, the projections from 2004/05 assessment were used and are given in the 'SCP' columns. Moreover, it should be noted that the total age-related expenditures according to the Ageing Report does not include pension expenditure projections in the case of Greece. For Austria, the projections for healthcare, long-term care, education and unemployment benefits from last year's assessment were used and are given in the 'SCP' columns.

(1) One or several expenditure items were not available in the updated stability and convergence programmes. If the projected change in expenditure on healthcare or long-term care is missing, the increase in age-related expenditures is underestimated. If the projected change in expenditure on education or unemployment benefits is missing, the increase in age-related expenditures is in general overestimated. The change in total age-related expenditure as a share of GDP is therefore not fully comparable across the Member States.

(2) The data for Sweden are shown including the private mandatory scheme as they are published in the Ageing Report and in the 2005/06 convergence programme. The data in brackets exclude the private mandatory scheme.

Sources: Commission services, 2005/06 updated stability and convergence programmes, 2006 Ageing Report.

GDP growth assumptions in the programme. By contrast, the indicator is substantially lower in six countries. For five countries (CZ, IE, NL, FI and SE), this is mainly due to better 2005 budgetary outcome and to less dynamic long-term projections, notably less dynamic healthcare and/or long-term care expenditure. For Greece, pension projections were not available in the Ageing Report.

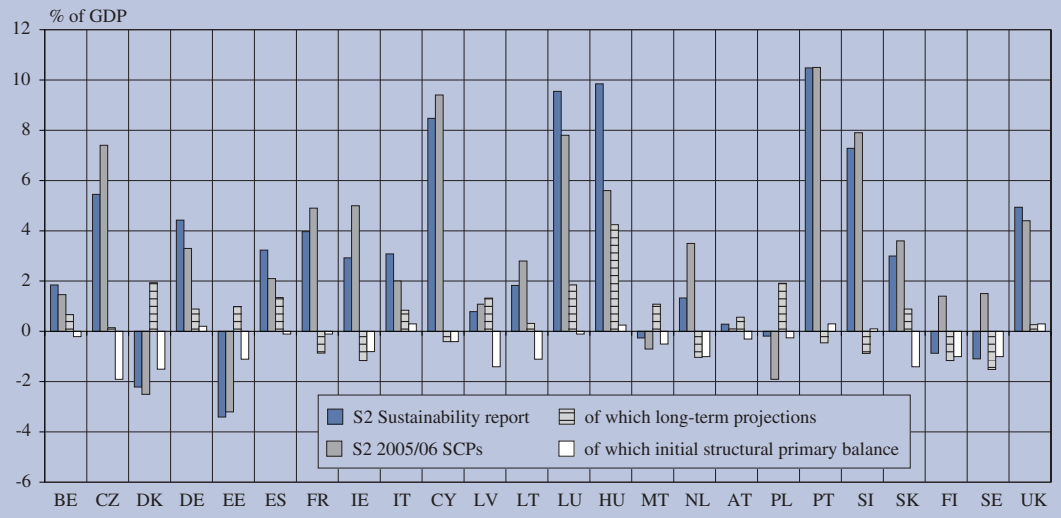
Table II.6

Estimated and actual government balances in 2005

	General government	balance	Structural government	balance
	SCP	out-turn	SCP	out-turn
BE	0.0	0.1	0.0	0.1
CZ	– 4.8	– 2.6	– 3.4	– 1.4
DK	3.6	4.9	3.6	5.2
DE	– 3.3	– 3.3	– 3.0	– 3.1
EE	0.3	1.6	0.4	1.5
EL	– 4.3	– 4.5	– 4.8	– 5.3
ES	1.0	1.1	1.2	1.3
FR	– 3.0	– 2.9	– 3.3	– 3.1
IE	0.3	1.0	1.1	1.9
IT	– 4.3	– 4.1	– 4.0	– 3.9
CY	– 2.5	– 2.4	– 3.1	– 2.9
LV	– 1.5	0.2	– 1.7	– 0.1
LT	– 1.5	– 0.5	– 2.3	– 1.1
LU	– 2.3	– 1.9	– 1.5	– 1.3
HU	– 6.1	– 6.1	– 5.7	– 6.3
MT	– 3.9	– 3.3	– 3.8	– 3.1
NL	– 1.2	– 0.3	0.0	1.0
AT	– 1.9	– 1.5	– 1.6	– 1.0
PL	– 2.9	– 2.5	– 2.9	– 2.6
PT	– 6.0	– 6.0	– 5.0	– 5.2
SI	– 1.7	– 1.8	– 1.2	– 1.5
SK	– 4.1	– 2.9	– 2.8	– 1.6
FI	1.8	2.6	2.1	3.2
SE	1.6	2.9	1.6	2.6
UK	– 3.1	– 3.5	– 2.9	– 3.3

Source: 2005/06 updates of stability and convergence programmes, Commission services calculations, Commission services spring 2006 economic forecasts.

Graph II.3: **S2 indicator in the baseline scenario compared to the results of the 2005/06 SCP assessment round and main source of differences**



NB: The graph compares:

- the results of the '2005' scenario of the assessment of the 2005/06 stability and convergence programme; in this scenario, it is assumed that the structural primary balance is stable at the 2005 level over the programme period and thereafter evolves in line with the projected change in age-related expenditure according to the stability/convergence programme.
- the results presented in this chapter; it similarly assumes that the structural primary balance is stable at the 2005 level over the period up to 2010 and thereafter evolves in line with the projected change in age-related expenditure according to the Ageing Report in the years after 2010.

Source: Commission services.

3. Comparison of long-term pension projections

Table II.5 presents the change in pension expenditure as a share of GDP between 2005 and 2050 in consecutive projections: the common projection exercises in 2001 and 2006; and Member States' projections as included in their stability and convergence programme updates ([1]). It reveals that, for most countries, the change in pension expenditure as a share of GDP has been revised over time, sometimes significantly.

The revisions of projected changes in pension expenditure over the long term are due to several factors, notably but not exclusively due to reforms of pension systems. The effects of pension reforms enacted since 2001 is noticeable in several countries (DE, EL, FR, IT, NL, AT, SI and FI). Except for Slovenia where the indexation of pension after retirement was made more generous for pensioners in 2005, reforms resulted in a smaller increase in pension expenditure.

However, other changes that were not policy-related also had significant impact on the projections, notably demographic assumptions (DK, ES, IE and PT), economic assumptions (LU, CY, HU and PL) or coverage of expenditure (inclusion of public-sector employee in UK and LU, exclusion of quasi-mandatory scheme in LV and HU). Changes may be linked to new models (IE for public pension, LU regarding the treatment of cross-border workers) or also to new assumptions regarding pensions. This is the case for the United Kingdom, where indexation rules are not fixed in a long-term perspective and where the increase in pension expenditure in the 2005 CP is partly linked to a change in the assumptions regarding indexation. Finally, countries have also extended the period over which pensions are projected (e.g. FR and PL).

Table II.7 sums up the main reasons behind the change in the projections. It mainly focuses on the changes that had a large impact in the change in pension expenditure as a share of GDP. Smaller changes are therefore not explained. Moreover, one should not read the change in the projections from one year to the next as the result of one single factor (for example a pension reform) since it is sometimes difficult to disentangle the different factors at play (see the Ageing Report 2006, Section 3.3.1). This comparison shows that the changes are in many cases related to policy changes or result from a better coverage of public pension expenditure, improved methodology or a longer period of projections. These changes increase the comparability between countries and improve the assessment of long-term sustainability of the public finances.

Some changes are, however, due to a different set of assumptions regarding demographic developments or the long-term economic outlook. It is interesting to note that such factors may have an impact on projections that are of the same magnitude as far-reaching pension reforms (i.e. a couple of points of GDP). It shows the crucial importance of using the common framework to ensure comparability of the projections and of the sustainability assessments in the context of the EU's multilateral budgetary surveillance.

([1]) In some cases, Member States have provided additional information to the Commission in order to clarify/extend the information included in the stability and convergence programmes.

Table II.7

Evolution of pension expenditure compared: EPC and SCP projections (as change in % of GDP between 2005-2050)

	Common projections	Updates of the stability and convergence programmes					Common projections
	2001	2001	2002	2003	2004	2005	2006
BE	3.8	3.9	3.8	3.7	4.0	4.0	5.1
DK	2.0	2.3	2.5	2.3	3.0	0.8	3.2
DE	5.5	4.8	3.9	3.9	2.7	1.9	1.9
GR	12.4	12.0	10.2	10.2	10.2	:	:
ES	8.5	8.3	5.1	5.1	5.1	7.0	7.0
FR	3.6 (1)	3.6 (1)	3.6 (1)	2.2 (1)	2.2 (1)	2.0	2.0
IE	4.5 (2)	4.5 (2)	4.5 (2)	4.5 (2)	4.5 (2)	6.5	6.5
IT	0.3	0.2	0.2	0.0	0.3	0.3	0.4
LU	1.9	:	1.9	1.9	1.9	6.3	7.4
NL	5.3	3.6	3.6	3.7	3.3	3.5	3.8
AT	2.5	2.5	1.8	0.4	– 0.6	– 1.1	– 1.0
PT	2.3	2.3	2.3	1.2	:	8.7	9.3
FI	5.0	5.1	3.1	3.2	3.6	3.3	3.3
SE	1.5	1.2	1.8	1.1	0.9	1.3	0.9
UK	– 0.9	– 1.0	– 0.2	0.3	0.6	1.9	1.9
CZ	:	:	:	6.8	6.5	5.2	5.6
EE	:	:	:	– 3.0	– 3.0	– 2.9	– 3.0
CY	:	:	:	6.0	4.9	8.3	12.8
LV	:	:	:	3.0	2.5	– 0.8	– 0.9
LT	:	:	:	1.7	1.7	2.2	1.9
HU	:	:	:	3.0	1.6	1.3	6.4
MT	:	:	:	– 1.4	– 1.4	– 0.6	– 0.5
PL	:	:	:	– 10.0 (3)	– 3.4 (4)	– 5.7	– 5.7
SI	:	:	:	4.3	4.9	7.3	7.3
SK	:	:	:	0.2	0.2	1.8	1.5

(1) Change between 2005 and 2040.
(2) % of GNP.
(3) Change between 2002 and 2050.
(4) Change between 2005 and 2020.

Sources: EPC report 2001, EPC report 2006, stability and convergence programmes.

Table II.8

Main factors with an impact on the pension projection results over time

	Pension reform	Coverage	Demographic assumptions	Economic assumptions	Modelling
BE					
CZ					
DK		Different coverage in some CPs Exclusion of ATP in EPC 2006 compared to EPC 2001	Higher life expectancy in EPC 2006 compared to national projection. Larger dependency ratio in EPC 2006 compared to EPC 2001		
DE	Pension reform				
EE					
EL	Pension reform				
ES			Higher immigration flows than in EPC 2001		
FR	Pension reform				Projections were available up to 2040
IE			Larger dependency ratio in EPC 2006 compared to EPC 2001		Public pension
IT	Pension reform				
CY		Improved coverage		Higher productivity growth in SCP 2006 compared to EPC 2006	
LV		Exclusion of the private part of the mandatory pension scheme			
LT					
LU		Public-sector employee		Lower long-term growth in EPC 2006 compared to EPC 2001	Treatment of careers of cross-border workers
HU		Exclusion of the private part of the mandatory pension scheme		Higher productivity growth in SCP 2006 compared to EPC 2006	
MT					
NL	Reform of disability scheme				
AT	Pension reform				
PL				Lower GDP growth in EPC 2006 compared to 2003 and 2004 convergence programmes	Projections were available up to 2020 in the 2004 convergence programme
PT	Pension reform		Larger dependency ratio in EPC 2006 compared to EPC 2001		
SI	Change in indexation rule	Change in coverage			
SK					
FI	Pension reform				
SE		Disability pensions			
UK		Public-sector employee			Change in assumptions regarding long-term indexation of public pensions (which are not fixed by law)

Source: Commission services.

Chapter III

Sensitivity analysis

Summary

The sustainability indicators are sensitive to a number of underlying assumptions, required to project developments in public finances over a long period of time. Given the uncertainties surrounding the assumptions it is important to test the robustness of the results. There are three different types of sensitivity tests that can be implemented regarding: (i) assumptions for the demographic and economic outlook over the long term; (ii) main drivers of some public expenditure items such as healthcare and long-term care; and (iii) the initial budgetary position — the current structural primary balance and debt — which has a strong impact on the sustainability gaps.

The results show that the exact level of the sustainability gap is subject to uncertainty. In this respect, a low sustainability gap does not suggest that there is no risk at all to the long-term sustainability of public finances; rather, it suggests that the challenges and the size of the adjustment are smaller than in other EU countries. The sensitivity of the indicators should be put in perspective with the large diversity shown by the S2 sustainability gap indicator in the EU (ranging from less than – 3 % of GDP to more than 10 % of GDP in the baseline scenario). In particular, large sustainability gaps are likely to remain so even under alternative and more favourable hypotheses and the analysis can therefore be considered to be robust in view of signalling large fiscal imbalances.

Regarding the impact of specific tests, the analysis shows that if employment rates, and in particular those of older workers, increased more than projected fiscal sustainability would improve. Public spending on healthcare is sensitive to the health status of elderly citizens. This suggests that policies geared towards increasing the health status of elderly persons can result in non-negligible budgetary savings. Besides, further pressures on government expenditure on long-term care cannot be excluded in the future since there may be an increasing gap between the need for formal care and the services provided by the public sector, notably in countries where the current coverage is limited. Finally, the sensitivity tests also show that changing the underlying assumptions does not necessarily have a uniform impact across EU countries; for example, some public pension schemes are more resilient than others with respect to an increase in life expectancy.

Moreover, budgetary consolidation over the medium term can very efficiently limit the public finance sustainability challenge over the long term. In order to illustrate the impact of a medium-term improvement of the budgetary position on long-term sustainability, an alternative scenario was analysed in which all the Member States are assumed to be at their MTO in 2010. Under this assumption, the sustainability gaps in the EU and in the euro area would be about 1½ % of GDP. Regarding the implications for debt in the euro area, if the MTOs are attained in 2010, the debt/GDP ratio is projected to be about 80 % of GDP in 2050, compared to close to 200 % of GDP if the 2005 budgetary position remained unchanged. For the EU as a whole, the debt/GDP ratio is projected to be below the 60 % of GDP reference value until the early 2040s. The long-term budgetary challenge posed by ageing populations can thus be reduced, in fact more than halved, if Member States attain their MTOs in 2010 compared to the budgetary situation in 2005. This clearly illustrates that fiscal consolidation over the medium term can contribute very significantly to reducing the fiscal sustainability challenge in the EU and the euro area. However, it is not sufficient to fully cater for it. Unless additional measures are taken that modify the long-term budgetary trends, the debt/GDP ratio would still be on an upward trend in most countries in 2050.

1. The budgetary impact of modifying underlying assumptions

The sustainability indicators are sensitive to a number of underlying assumptions, required to project developments in public finances over a long period of time. Given the uncertainties surrounding the assumptions it is important to test the robustness of the results. There are three different types of sensitivity tests that can be implemented.

- First, there are some uncertainties about assumptions regarding demographic and economic outlook over the long term. For example, there is no consensus among experts regarding the size of the future increase in life expectancy, future labour productivity growth or the impact of enacted pension reforms on employment rates. In order to take such uncertainties into account, the Ageing Report provides, in addition to the evolution of public finances under a central scenario, a set of projections under alternative assumptions (labour productivity growth, employment rate, interest rate and life expectancy) ([1]).

- Second, there are also uncertainties regarding the main drivers of some public expenditure items such as healthcare and long-term care. This contrasts with pensions where the built-in characteristics of the pension scheme are known (e.g. the formula to calculate a pension or indexation rules after retirement) ([2]).

- Third, the initial budget position (the current structural primary balance and debt) has a strong impact on the sustainability gaps ([3]). A large majority of countries still have budget deficits above their medium-term objectives (MTOs) and plan consolidating their public finances over the next few years; it is therefore important to estimate the impact of such medium-term budgetary developments in the sustainability analysis. In this chapter, we evaluate the impact of Member States reaching their MTOs, as defined for the first time in the 2005/06 updated stability and convergence programmes according to the principles of the revised SGP ([4]).

([1]) Uncertainties surrounding the demographic and economic assumptions can also be dealt with, using stochastic methods to project a distribution of the different demographic and economic parameters over the long term. This enables a distribution of public expenditure to be obtained, which can, to a certain extent, measure the uncertainties on the numerical results of the budgetary projections. This is for example done by the CBO (see Congressional Budget Outlook, 2005a).

([2]) The issue of risks related to pension projections is explored in Chapter V.2.

([3]) However, compared to the first two types of sensitivity tests (economic and demographic assumptions, alternative healthcare and long-term care scenarios), it has no impact on the required primary balance.

([4]) In the assessments of the 2005/06 stability and convergence programmes, an evaluation of the impact of reaching the budgetary targets at the last year of the programme period was made.

2. Sensitivity tests on the underlying demographic and macroeconomic assumptions

Table III.1 shows the impact of alternative demographic and macroeconomic assumptions on the S2 indicator, as compared to the baseline scenario. A detailed description of the changes in the parameters and of the additional assumptions needed to calculate the impact on the sustainability indicator is given in Annex II.

2.1. Life expectancy

A higher life expectancy (around 1 year to 1.5 years at birth by 2050 in the EU Member States) would lead to higher public expenditure on pensions but also on healthcare and long-term care. The sustainability gap would therefore be higher on average in the EU by around ½ % of GDP, to which pension expenditure would contribute most. The impact is, however, not uniform across countries.

- It will depend on the extent to which the pension schemes react to a change in life expectancy. The impact of longer life expectancy appears to be smaller in countries where the annuity explicitly depends on life expectancy at retirement (e.g. in IT, FI, SE, LV and PL) or in countries where automatic stabilisers are built into the system to compensate for some fiscal imbalances (e.g. the sustainability factor in DE). This type of features increases the resilience of pension schemes to certain external shocks. Analogously, the impact is the largest in countries with a large level of pension expenditure in 2050 and where no such automatic stabilisers have been put in place (e.g. BE, DK, FR, PT and SI) ([1]).

- It will also depend on the current coverage of public long-term care which displays a large diversity across Member States, although to a lesser degree ([2]). The impact of higher life expectancy is expected to be larger in countries where formal care is already well developed (notably SE).

2.2. Higher labour productivity growth

Higher labour productivity growth has a different impact on pension expenditure across countries. It will have virtually no impact in countries where the public pension scheme provides a flat-rate pension whose level is indexed to wage growth (e.g. DK and NL). It will by contrast lead to less dynamic pension expenditure development as a share of GDP in countries where:

- pensions are not fully indexed to wages after retirement, in which case the higher the productivity growth, the higher the gap between the average pension and the average wage;

- pensions are earnings related and are calculated over a long period of the career; a more dynamic productivity growth will lead immediately to higher GDP growth. Workers will have higher wages and therefore accumulate more pension rights but this will result in higher pension spending only when those workers retire.

The impact of higher productivity growth on other age-related expenditure items as a share of GDP is broadly

([1]) In France the automatic tightening of the eligibility conditions for a full pension, implemented in the 2003 pension reform, ends in 2020.
([2]) Moreover, there is no projection for long-term care in some countries, which adds to the observed diversity.

Table III.1

Impact on the sustainability indicator of changes in demographic and macroeconomic assumptions (deviation from S2 in percentage points of GDP)

	Impact on the S2 indicator and on the required primary balance (RPB)										
	Higher life expectancy				Higher labour productivity	Higher employment of older workers	Higher employment		Higher interest rate		
	Total	of which:					If due to an increase in labour supply	If due to a decrease in the NAIRU	Total	of which	
		Pensions	Healthcare	Long-term care						IBP	LTC
BE	0.7	0.4	0.2	0.1	– 0.3	– 0.3	– 0.2	– 0.5	0.0	0.7	– 0.7
CZ	0.4	0.2	0.2	0.0	– 0.3	– 0.3	– 0.2	– 0.3	– 0.6	0.2	– 0.9
DK	0.9	0.5	0.2	0.2	0.0	– 0.4	– 0.1	– 0.4	– 0.4	0.1	– 0.4
DE	0.6	0.2	0.3	0.1	0.0	– 0.1	– 0.1	– 0.3	0.2	0.7	– 0.5
EE	0.3	0.1	0.1	0.0	– 0.2	– 0.4	0.0	0.0	0.0	0.0	0.1
EL	0.2	:	0.2	:	:	:	:	:	0.8	1.0	– 0.2
ES	0.2	0.0	0.2	0.0	– 0.6	– 0.1	– 0.1	– 0.2	– 0.8	0.2	– 1.0
FR	0.7	0.4	0.2	0.0	– 0.3	– 0.4	– 0.2	– 0.3	0.3	0.6	– 0.3
IE	0.5	0.2	0.2	0.1	0.0	– 0.1	– 0.1	– 0.3	– 0.9	0.0	– 0.9
IT	0.4	0.2	0.1	0.1	– 0.4	0.0	– 0.1	– 0.2	0.8	1.0	– 0.2
CY	0.1	:	0.1	:	– 1.0	:	0.0	– 0.1	– 1.0	0.4	– 1.4
LV	0.3	0.1	0.1	0.1	– 0.1	– 0.1	– 0.1	– 0.1	– 0.1	0.0	– 0.2
LT	0.6	0.5	0.1	0.0	0.0	– 0.1	0.0	0.0	– 0.1	0.1	– 0.2
LU	0.0	:	:	:	– 0.1	:	:	:	– 1.2	– 0.1	– 1.1
HU	0.3	0.1	0.1	0.1	– 0.3	– 1.0	– 0.6	– 0.7	– 0.2	0.6	– 0.7
MT	0.7	0.4	0.2	0.1	– 0.6	0.0	– 0.1	– 0.3	0.8	0.6	0.2
NL	0.7	0.4	0.2	0.1	0.0	– 0.1	– 0.1	– 0.7	– 0.1	0.4	– 0.5
AT	0.5	0.3	0.1	0.1	– 0.6	– 0.4	– 0.2	– 0.5	0.4	0.5	– 0.1
PL	0.2	0.1	0.1	0.0	– 0.3	0.0	– 0.1	– 0.2	0.5	0.4	0.1
PT	0.6	0.4	0.1	0.0	– 0.9	– 0.2	– 0.2	– 0.4	– 0.4	0.7	– 1.0
SI	0.7	0.4	0.2	0.1	– 0.1	– 0.9	– 0.4	– 0.5	– 0.8	0.2	– 1.1
SK	0.5	0.3	0.1	0.1	– 0.1	0.0	– 0.1	– 0.1	– 0.2	0.2	– 0.4
FI	0.6	0.2	0.2	0.2	– 0.4	– 0.3	– 0.1	– 0.3	– 0.6	– 0.2	– 0.4
SE	0.9	0.3	0.2	0.4	– 0.2	:	– 0.1	– 0.4	– 0.2	0.1	– 0.2
UK	0.5	0.2	0.3	0.1	– 0.3	– 0.1	– 0.1	– 0.2	– 0.1	0.4	– 0.5
EU-25	0.5	0.2	0.2	0.1	– 0.3	– 0.2	– 0.1	– 0.3	0.2	0.6	– 0.5
EUR-12	0.5	0.2	0.2	0.1	– 0.3	– 0.2	– 0.1	– 0.3	0.1	0.6	– 0.5
Standard deviation	0.2	0.1	0.1	0.1	0.3	0.3	0.1	0.2	0.6	0.3	0.4

NB: Aggregation for EU-25 and EUR-12 is calculated on the set of countries for which data are available.
The impact on the S2 indicator is presented in relation to the baseline scenario. In addition: (i) the impact of higher employment rates on public finances depends on whether the increase in employment comes from an increase in labour supply or a decrease in the NAIRU, otherwise whether new workers were previously inactive or unemployed. In the second case, it also decreases unemployment benefits, leading to a larger impact on public finance; (ii) the impact of a higher interest rate is decomposed in two parts to separate the impact on the initial budgetary position (IBP) and on the long-term change of the primary balance (LTC).

Source: Commission services.

neutral given that they are assumed to develop in line with the increase in GDP/capita or GDP/worker. Similarly, non-age-related expenditure and revenue will grow faster given that they are assumed to progress in line with nominal GDP maintaining their GDP share constant. So, the impact of higher productivity on the sustainability

indicators will be limited to the effect on pensions ([1]). A permanent increase of 0.25 % in the productivity growth rate would reduce the sustainability indicators for the EU-25 by 0.3 % of GDP ([2]). The impact of a higher productivity growth is globally welfare enhancing; it leaves more room to redistribute future income and makes it easier to implement budgetary adjustment but this effect does not translate in the indicators since non-age-related expenditures progress in line with GDP. In that respect, public finances may be in a better position than illustrated by the indicator. On the other hand, the main mechanism behind the improvement of the sustainability indicators is the fact that, with higher productivity growth, pensions will not grow as fast as the overall income of the economy. But, as shown in Chapter IV.2, this may lead to a higher risk of inadequacy of pensions.

2.3. Higher employment and higher employment of older workers

An increase of the total employment rates by 1 percentage point or an increase of the employment rates of older workers by 5 percentage points compared to the baseline would decrease the sustainability indicators by around 0.15 % of GDP due to a slight reduction in pension expenditure and education as a share of GDP. Namely, higher employment growth would lead immediately to higher GDP growth but would also enable workers to accumulate further pension rights, leading to a limited impact on pension expenditure as a share of GDP in the long term. It has a slightly larger impact when it results from higher employment of older workers since it will mechanically reduce the number of retirees, but the total impact will depend on the extent to which extending working lives will translate into higher pension entitlements.

Higher employment will also increase public revenue through higher taxes and contributions and, as such, will decrease the financing gap. However, this effect does not fully translate in the sensitivity test presented here since most public expenditure (i.e. except education and long-term care) are also indexed on GDP growth and will increase with employment. Yet, some parts of public spending which are not modelled explicitly here (e.g. defence, family, housing benefits) are likely to be unchanged with higher employment. In that respect, the sensitivity test gives a lower bound for the impact of higher employment on the sustainability of public finances. Sensitivity tests should be interpreted with caution as they show the uncertainties surrounding the value of the indicators within the current framework of assessing sustainability but should not be used to estimate the impact of changes in policy. Moreover, the size of the employment rate shock is arguably rather small when compared for example to the average increase in employment rates projected in the EU-25 up to 2050 in the Ageing Report (8 percentage points for the total employment rate and 19 percentage points for the employment rate of older workers) ([3]). For example, if the total employment rate was to stay at its current level, it would lead to an increase in the sustainability indicator by around 1¼ % of GDP for the EU, highlighting the importance of increasing the employment rates in the future.

As with the case for higher productivity, higher employment is globally welfare enhancing. It also enables workers to accumulate more pension rights, which may help to compensate the reduction in the benefit ratio projected in some Member States that may result from pension reforms (see Chapter IV.2). Finally, if the increase in employment rates comes from a decrease of the NAIRU, as assumed in the Ageing Report, it would lead to further savings on unemployment benefits. It could reduce the S2 indicator by a further 0.2 % of GDP on average in the EU ([4]).

2.4. Higher interest rate

Changing the assumption on the interest rate has an impact on public expenditure only in a few countries with funded components in the public pension schemes, such as Finland and Sweden, and even there the effect is very limited.

By contrast, a higher interest rate has a strong impact on the dynamics of debt and therefore on the quantitative

([1]) It is also assumed that the interest-rate/growth-rate differential is unchanged. Indeed if GDP growth changes compared to the baseline scenario, returns on assets will increase accordingly and so will interest rates. This keeps the real cost for the general government to finance its debt unchanged compared to the baseline. The impact of a higher interest-rate/growth-rate differential is analysed in a separate sensitivity analysis, namely in Section 2.4.

([2]) In addition, a higher productivity growth could lead to higher private pension premiums, if pension funds adjust pension rights in line with the wage increase. This would have an additional impact on public finances in countries with large private pension schemes (see Van Ewijk et al., 2006). This effect is not taken into account here.

([3]) The sensitivity shock on life expectancy increases the economic dependency ratio by around 5 % while the sensitivity shock on employment rate decreases the economic dependency ratio by around 1.5 %.

([4]) The projected structural unemployment rates in the Member States display some variation also in 2050; ranging between some 3 % to some 7 % (see Table 7.4 in the Ageing Report). For countries with relatively high unemployment rates projected in 2050, there could be scope for increasing employment further.

indicators. The overall impact of an increase of 1% of interest rate on the sustainability indicators for the EU as a whole is small (+ 0.15 % of GDP) but the impact is not homogenous across countries. The total change in the indicators will result from two effects with opposing impact on sustainability.

- On the one hand, it will increase the cost of servicing debt and therefore increase substantially sustainability risks for countries with a large level of debt, by increasing the impact of the initial budgetary position on the indicator for those countries (IT, EL, BE, DE, FR, HU, MT and PT).
- On the other hand, it will reduce the budgetary cost of ageing. A higher interest rate implies that the general government needs to save less to finance a given level of additional expenditure. It therefore leads to a lower budgetary impact of ageing compared to the baseline for the countries with a large increase in public expenditure over the long term (CZ, ES, IE, CY, LU, HU, PT and SI).

Table III.2

Impact on the sustainability indicator of alternative healthcare assumptions (deviation from S2 in percentage points of GDP)

	Pure ageing	Constant health status	Death-related costs	Income elasticity	Unit-costs GDP per worker
BE	0.1	– 0.6	– 0.2	0.4	0.4
CZ	– 0.1	– 0.8	– 0.5	0.4	0.8
DK	0.1	– 0.6	– 0.2	0.4	0.6
DE	0.1	– 0.5	– 0.2	0.3	0.3
EE	– 0.2	– 0.7	– 0.5	0.3	– 0.3
EL	0.0	– 0.4	– 0.2	0.2	0.6
ES	0.0	– 0.5	– 0.3	0.3	0.4
FR	0.0	– 0.6	– 0.3	0.4	0.5
IE	0.0	– 0.7	– 0.4	0.4	0.2
IT	0.0	– 0.4	– 0.2	0.2	0.3
CY	– 0.1	– 0.4	– 0.2	0.2	0.0
LV	– 0.3	– 0.8	– 0.6	0.2	– 0.5
LT	– 0.2	– 0.5	– 0.4	0.2	– 0.4
LU	– 0.1	– 0.7	– 0.3	0.4	– 1.4
HU	0.0	– 0.6	– 0.5	0.3	0.2
MT	0.1	– 0.5	– 0.6	0.3	0.2
NL	0.0	– 0.4	– 0.2	0.2	0.4
AT	0.1	– 0.5	– 0.2	0.3	0.5
PL	– 0.1	– 0.6	– 0.4	0.3	– 0.4
PT	0.1	– 0.5	– 0.2	0.3	0.8
SI	– 0.2	– 0.6	– 0.5	0.2	0.8
SK	– 0.1	– 0.7	– 0.5	0.3	0.4
FI	0.0	– 0.5	– 0.3	0.3	0.3
SE	0.0	– 0.6	– 0.3	0.4	0.9
UK	0.3	– 0.8	– 0.1	0.6	– 0.1
EU-25	0.1	– 0.6	– 0.2	0.4	0.3
EUR-12	0.1	– 0.5	– 0.2	0.3	0.4
Standard deviation	0.1	0.1	0.1	0.1	0.5

NB: Results are given for the S2 indicator as a reference to the Ageing Report reference scenario which is used in the calculations of the indicators in Chapter I. Therefore the table shows the impact on S2 indicators that would result from using the alternative scenarios instead of the Ageing Report reference scenario. However, most scenarios have been designed as a reference to the pure ageing scenario, i.e. changing one hypothesis compared to the 'pure ageing' scenario. The differences versus the reference scenario therefore include the result of the variant (i.e. constant health-status) plus the assumptions made in the reference scenario (see Annex).

Source: Commission services.

Table III.3

Change in the age-related budgetary items up to 2050 (% of GDP) ([1])

	Healthcare		Long-term care	
	SCP	AR	SCP	AR
BE	1.9	1.2	1.1	0.9
CZ	2.6	1.7	0.3	0.4
DK	1.1	0.8	1.1	1.1
DE	1.1	1.0	:	1.0
EE	– 0.3	0.8	:	0.3
EL	1.5	1.6	:	:
ES	:	2.1	:	0.3
FR	2.4	1.5	:	0.2
IE	2.7	1.8	1.0	0.6
IT	0.9	1.2	0.4	0.7
CY	1.9	1.0	:	:
LV	0.6	0.8	0.1	0.3
LT	0.8	0.7	0.2	0.3
LU	:	1.1	:	0.6
HU	:	0.9	:	0.6
MT	0.5	1.7	:	0.3
NL	3.2	1.2	:	0.6
AT	1.2	1.4	0.7	0.9
PL	:	1.2	:	0.1
PT	1.1	0.4	0.6	0.4
SI	2.9	1.4	1.0	1.1
SK	1.4	1.7	:	0.5
FI	1.8	1.3	2.4	1.6
SE	1.3	1.0	2.9	1.8
UK	1.5	1.7	0.6	0.8

([1]) Specifically, between the last year of the stability/convergence programme of the country (2008, 2009 or 2010) and 2050.

Source: Commission services.

A higher interest rate gives more weight to the current level of outstanding debt and less weight to future budgetary developments. While such a hypothesis of real interest rates (4 % real interest rate) may look pessimistic in the future, it underlines possible short-term risks regarding the evolution of debt. Indeed, a higher interest-rate/growth-rate differential cannot be excluded in the short/medium run. If such an outcome was to materialise, this would lead to a faster increase of debt in the medium term, raising concerns regarding the sustainability of public finances even before taking into account the impact of ageing (the importance of debt level is addressed in Chapter IV.1).

3. Alternative scenarios for healthcare and long-term care

3.1. Healthcare

In addition to the uncertainties regarding the future demographic and economic outlook, there are also large uncertainties regarding the main drivers of healthcare and their potential impact on the public finances. There has been an upward trend in healthcare expenditure as a share of GDP in most Member States in the past, despite differences in the institutional arrangements and the health status prevailing in the different Member States ([1]). At the same time, the increase in the old-age dependency ratio in the EU has been limited ([2]). Indeed, whether the increase in life expectancy will result in longer years spent in good health or not, and whether new technologies and medical progress will result in lower or higher cost are important questions that may receive ambiguous empirical answers and strongly influence the projections.

Such uncertainties led to the simulations of several alternative scenarios of the future evolution of healthcare in the Ageing Report. The reference scenario chosen in the Ageing Report takes into account the results of two alternative scenarios (constant health and income elasticity) compared to the pure 'ageing' scenario ([3]). The projections of this reference scenario are quite close to the 'pure ageing' one since the relieving impact of the better health status of citizens is compensated for by a higher income elasticity.

The sensitivity tests show that public spending on health is sensitive to changes in the health status of elderly citizens, in fact improved health status halve the projected increase in healthcare expenditure. This points to the possible budgetary alleviating impact of policies aiming at improving the health of elderly citizens (see Table III.2). Healthcare expenditure is also very sensitive to even relatively modest changes in the assumptions on income elasticity of demand, and also on the evolution of unit costs ([4]). Increased demand for healthcare services could occur due to higher pressure for a better quality of health services in the face of rising per capita income. More dynamic spending could also occur if prices within the health sector, mostly wages of skilled workers and pharmaceuticals, were to grow faster than in the economy as a whole. In particular, the net impact of technological progress on healthcare spending is ambiguous: while it will reduce unit cost for existing cures, it will increase the supply of treatments which can induce higher demand for healthcare services.

Moreover, many of these alternative scenarios (except the unit-cost scenario) would lead to a relatively uniform impact across countries. However, it cannot be excluded that if the institutional features of the public healthcare systems in the Member States ([5]) were explicitly modelled, a larger diversity across Member States might be

([1]) Box 1 in Chapter 4 of the Ageing Report shows a trend increase in the EU in both total healthcare expenditure and public healthcare expenditure as shares of GDP since the 1970s.

([2]) In the EU-25, the old-age dependency ratio increased from 13 % in 1950 to 22 % in 2000, compared to a large projected increase to 49 % in 2050, see Table I.26 in Economic Policy Committee and European Commission (Economic and Financial Affairs DG) (2005a).

([3]) It supposes that the health status of the population will improve by half as much as in the constant health status scenario. The costs are assumed to evolve following GDP per capita developments. Finally, it includes the effect of income elasticity of healthcare spending converging from 1.1 in 2004 to unity by 2050.

([4]) The income elasticity converges from 1.1 in 2004 to unity by 2050. The reference scenario supposes that unit costs progress in line with GDP/capita. Under that assumption, healthcare would remain constant as share of GDP without ageing. The alternative assumption of unit costs indexed on GDP/worker (i.e. productivity) suppose that healthcare is more labour intensive than other budget sectors and/or that costs in that sector are more dynamic.

([5]) The country-specific features taken into account are the current size of public healthcare expenditure, which ranges from 2.9 % of GDP in Cyprus to 7.7 % in France, and the age profile of public healthcare expenditure.

Table III.4

Impact on the sustainability indicator of alternative long-term care assumptions (deviation from S2 in percentage points of GDP)

	Pure ageing	Constant disability	Increase formal care	Benefit indexed on price
BE	0.2	– 0.2	0.4	:
CZ	0.1	– 0.1	0.4	:
DK	0.3	– 0.3	:	:
DE	0.2	– 0.2	0.6	– 0.7
EE	0.1	– 0.1	0.2	:
EL	:	:	:	:
ES	0.0	0.0	0.6	:
FR	0.1	– 0.1	0.4	:
IE	0.1	– 0.1	0.3	:
IT	0.1	– 0.1	0.8	:
CY	:	:	:	:
LV	0.1	– 0.1	1.7	:
LT	0.1	– 0.1	0.5	:
LU	0.2	– 0.2	0.6	:
HU	0.1	– 0.1	0.6	:
MT	0.1	– 0.1	0.1	:
NL	0.1	– 0.1	1.0	:
AT	0.0	0.0	:	:
PL	0.0	0.0	0.2	:
PT	0.1	– 0.1	0.4	:
SI	0.2	– 0.2	1.1	:
SK	0.1	– 0.1	0.3	:
FI	0.4	– 0.4	0.9	:
SE	0.6	– 0.6	1.1	:
UK	0.2	– 0.2	1.5	:
EU-25	0.1	– 0.1	0.7	
EUR-12	0.1	– 0.1	0.6	
Standard deviation	0.1	0.1	0.4	

Source: Commission services.

present (e.g. as regards effectiveness of aggregate budgetary control measures, micro-incentives for patients and healthcare professionals favouring rational resource use).

As shown in Table III.3, Member States reported in the SCPs in most cases more dynamic healthcare expenditure in their programmes than in the Ageing Report baseline projections (BE, CZ, FR, IE, CY, NL, PT, SI, FI and SE) ([1]). This is also the case for long-term care in the case of Ireland, Finland and Sweden. This is mainly explained by different assumptions concerning the drivers of spending increases in national projections compared to the reference scenario in the Ageing Report ([2]). For example, in several of the national projections it is assumed that wages in the healthcare/long-term care sectors increase faster than assumed in the Ageing Report. When countries establish their fiscal targets (e.g. in the context of the new SGP), they may choose to use a more prudent approach regarding the future evolution of healthcare, and also long-term care, to prepare themselves for higher provision of public care. Such alternative (and more dynamic) scenarios are

([1]) See Chapter I.4 of the PFR 2006.

([2]) In some cases the coverage may be different, e.g. for Ireland and Italy.

more appropriate to understand the fiscal objectives that countries have set for themselves.

3.2. Long-term care

In the baseline scenario, long-term care projections show a larger set of outcomes due to a large diversity in the current public provision on long-term care in the EU (which ranges today from 0.1 % of GDP in PL to 3.8 % of GDP in SE). The current level of public spending on long-term care as a share of GDP has a strong impact on the projected future spending. As a result, alternative assumptions will show a larger diversity across Member States for long-term care than for healthcare.

Moreover, in contrast with sensitivity tests on pensions or healthcare, there is a scenario which departs from the 'no policy change' assumption. The 'increase in formal care' scenario assumes a 1 % decrease in the number of persons receiving informal care up to 2020, with half of the additional persons receiving formal care going to institutions and the other half receiving formal care at home (see Table III.4). This would increase the sustainability gap by more than ½ % of GDP in the EU. Such a change in policy is not considered in the reference scenario, following the 'no policy change' approach of the Ageing Report. However, the scenario points to the additional pressure on public finances that could result from an increasing gap between the need of formal care and services provided by the general government. In particular, Member States with low levels of formal care provision at present — and correspondingly low levels of public spending — will also experience a large increase in the projected number of older persons in need of care. Pressures may therefore emerge in the future for policy changes to increase formal care provision if countries would rely less on informal care. Such a scenario cannot be excluded in view of the rather large projected increase in labour force participation, especially among women. Employment rates of women are projected to increase by 10 percentage points between 2003 and 2050 on average in the EU, and by more than 15 percentage points in Spain, Malta and Poland.

Finally, it should also be noted that under the existing rules in Germany, all long-term care benefits are fixed by law. Keeping them constant in nominal terms — with no indexation at all — cannot be considered as meaningful of constant policy approach in a long-term analysis of this kind. Thus an alternative scenario was run assuming an indexation on price. Calculations following this approach would lead to a constant share of long-term care in GDP and would reduce the sustainability gap for Germany by 0.7 % of GDP. However, if unit costs of supplying long-term care increase more than general price levels of the economy, this could lead to an increasing gap between needs and provisions of public long-term care.

4. Illustrating the sustainability impact of attaining the medium-term objective

4.1. The quantitative indicators

A vast majority of Member States' budgetary plans involve consolidating the budgetary position over the medium term. This is required by the Stability and Growth Pact for countries which have not yet reached their medium-term objective (MTO) and by the budgetary pressures arising from ageing populations in the EU over the coming decades. Reconciling this policy challenge with the medium-term budgetary policy formulation process was an important factor in the reform of the Stability and Growth Pact in 2005. As a part of the new SGP, MTOs that reflect country-specific characteristics were introduced ([1]).

In order to illustrate to what extent the 'in most cases' budgetary consolidation can contribute to reduce risks to public finance sustainability a scenario is run in which it is assumed that all Member States attain their MTOs in 2010. The MTO is defined as the structural government balance. For the purposes of long-term public finance sustainability analysis, the structural primary balance underlying the MTO in 2010 is required. The structural primary balance in 2010 is calculated with the following assumptions.

- The general government balance is assumed to converge in a linear fashion towards the MTO in 2010 and the cyclical impact is assumed to be zero by 2010.
- The interest rate on debt in 2010 is assumed to be the implicit interest rate on debt in the last year of the stability/convergence programme of the country concerned ([2]).

Interpreting the MTO scenario

The MTO scenario is essentially a sensitivity test related to the initial budgetary position.

First, it does not mean that the Commission expects all countries to reach the MTO exactly in 2010; some countries had already attained their MTO in 2005 while some might reach it only after 2010. About half of the Member States do not reach their MTO by the end of the stability/convergence programme period, which in most cases is in 2008 and, in general, a target year beyond the last year of the programme is not given.

Second, the interpretation of this scenario will depend on whether the country is above or below its MTO. For countries which have not yet reached their MTO, it illustrates how much consolidating public finances can contribute to the long-term sustainability of public finances. By contrast, for countries who are already above their MTO in 2005, the MTO scenario implies a fiscal loosening and thus a negative impact on sustainability.

Third, for countries where the debt/GDP ratio is expected to remain broadly unchanged over the medium term (i.e. up to 2010), the date when the MTO is reached, whether it is 2005 or 2010, implies a similar underlying primary balance. However, some countries with a rapidly declining debt over the next years, notably Belgium and Denmark, can expect a significant reduction of interest expenditure. Therefore, keeping the MTO target for the deficit implies a lower pri-

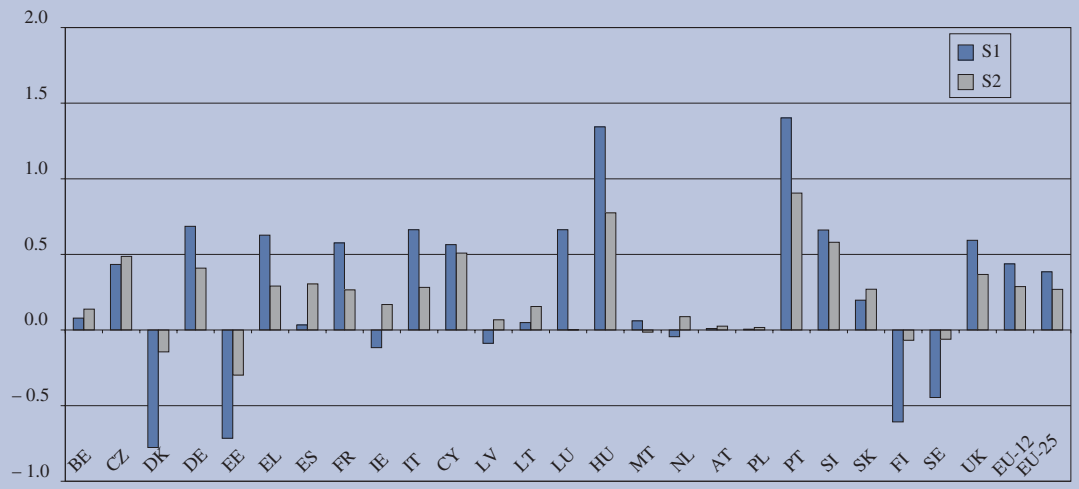
([1]) The reformed SGP specifies that MTOs pursue a triple aim, namely: (i) providing a safety margin with respect to the 3 % deficit limit; (ii) ensuring rapid progress towards sustainability; and, taking the first two objectives into account, (iii) allowing room for budgetary manoeuvre, in particular taking into account the needs for public investment. Country-specific MTOs in the current phase were set by the Member States themselves, taking into account: (i) the current government debt ratio (in 2004); (ii) potential economic growth (average 2005–50); and (iii) a measure of safety margin with respect to the reference value of 3 % of GDP. For a discussion of the MTOs and on the experiences one year after the reform of the SGP, see Parts II.2 and II.3 of the PFR (2006).

([2]) Proxied by interest expenditure divided by the debt level of the previous year.

Box III.1: **The 'cost of delay' indicator**

The 'cost of a delay' indicator shows the increase in the sustainability indicators that would result from a delay of five years in implementing budgetary consolidation compared to the baseline. As shown in Graph III.1, it would result in an increase of the sustainability indicators for the EU of around 0.3 percentage points as measured by the S2 indicator and of around 0.4 percentage points of GDP for the S1 indicator. The cost of a delay is proportional to the size of the sustainability gap and is therefore significantly larger for countries with large sustainability gaps (notably HU, PT and SI as regards the S2 indicator), underlying the urgency in implementing reforms in those countries. First, the cost of a delay for the EU as a whole may look relatively small: this is largely because countries which do not implement budgetary consolidation during the next five years have a long period of time to reimburse additional interest on debt (up to infinity in the case of S2 and up to 2050 in the case of S1). However, this does not mean that reforms can be indefinitely postponed; the size of the necessary adjustment increases over time, making it more costly to implement reforms in the future than today.

Graph III.1: **The cost of delay (% of GDP)**



Source: Commission services.

mary balance over the medium term than today and therefore a higher sustainability gap.

Finally, it is a possible sensitivity test of the impact of the changes in the budgetary position on the sustainability indicators. It is different from the 'programme' scenario which is carried out in the assessment of the stability and convergence programmes. In the 'programme' scenario, it is assumed that the public finances over the medium term evolve as planned in the stability/convergence programme and the last year of the programme is the starting point for the long-term sustainability projections ([1]). Another sensitivity test regarding budgetary consolidation is the cost of a delay indicator which estimates the change in the sustainability indicators that would result from postponing the budgetary adjustment (see Box III.1).

Additional assumptions behind the MTO scenario

Table III.5. shows the MTOs as given in the SCPs as well as the government primary balances that were used in the MTO scenario, alongside the structural balances in 2005 (planned and out-turns). Some remarks concerning the MTO scenario — the implementation of the Eurostat's decision regarding the classification of funded defined-contribution pension schemes outside of government by 2007 at the latest may have an impact on the MTO in the countries concerned (DK, SE, SK, PL and HU). As explained in Chapter I, pensions from those funded defined-contribution schemes are not included in

([1]) The structural primary government balance is used, i.e. net of the impact of the cycle as measured by the commonly agreed method for calculating output gaps and cyclically adjusted balances and any possible one-off or temporary measures.

Table III.5

Government balances in 2005 and the MTOs compared (% of GDP)

	Structural balance in 2005		Structural primary balance 2005	MTO in the SCPs	Structural balance	Structural primary balance
	SCP 2005/06	out-turn			in 2010 used in the MTO scenario	
BE	0.0	0.1	4.5	0.5	0.5	3.7
CZ	– 3.4	– 1.4	– 0.2	– 1.0	– 1.0	0.2
DK (1)	3.6 (2.7)	5.2 (4.3)	7.1 (6.2)	1½ to 2½	1.0	1.8
DE	– 3.0	– 3.1	– 0.3	0.0	0.0	2.8
EE	0.4	1.5	1.7	0.0	0.0	0.0
EL	– 4.8	– 5.3	– 0.3	0.0	0.0	4.3
ES	1.2	1.3	3.1	0.0	0.0	1.2
FR	– 3.3	– 3.1	– 0.5	0.0	0.0	2.5
IE	1.1	1.9	3.1	0.0	0.0	0.8
IT	– 4.0	– 3.9	0.6	0.0	0.0	4.5
CY	– 3.1	– 2.9	0.5	– ½	– 0.5	2.0
LV	– 1.7	– 0.1	0.5	≈ – 1.0	– 1.0	– 0.6
LT	– 2.3	– 1.1	– 0.3	≈ – 1.0	– 1.0	– 0.3
LU	– 1.5	– 1.3	– 1.2	– 0.8	– 0.8	– 0.5
HU (1)	– 5.7 (– 7.1)	– 6.3 (– 7.7)	– 2.5 (– 3.6)	– 1.0 to – 0.5	– 1.0	2.0
MT	– 3.8	– 3.1	0.9	0	0.0	3.6
NL	0.0	1.0	3.6	– 1.0 to – 0.5	– 0.75	1.4
AT	– 1.6	– 1.0	1.7	0.0	0.0	2.4
PL (1)	– 2.9 (– 4.8)	– 2.6 (– 4.5)	– 0.2 (– 1.7)	– 1.0	– 1.0	1.6
PT	– 5.0	– 5.2	– 2.5	>– 0.5	– 0.5	2.5
SI	– 1.2	– 1.5	0.2	– 1.0	– 1.0	0.3
SK (1)	– 2.8 (– 3.4)	– 1.6 (– 2.2)	0.2 (– 0.4)	– 0.9	– 1.0 (1)	0.8
FI	2.1	3.2	4.7	≈1½	1.5	2.3
SE (1)	1.6 (0.6)	2.6 (1.6)	4.2 (3.2)	2.0	1.0 (1)	2.4
UK	– 2.9	– 3.3	– 1.1	NA	– 1.0	1.1

(1) For countries that have not yet applied the Eurostat decision (DK, HU, PL, SK and SE), the structural balance in 2005 (SCP 2005/06 and out-turn) and the structural primary balance in 2005 are given including revenue to the funded part of the mandatory pension scheme; data without such revenue are given in brackets. Data in the last two columns exclude the diverted revenue.

Source: 2005 updated stability and convergence programmes, Commission services' calculations on the basis of information contained in the programmes and the Commission services spring 2006 economic forecasts.

the pension projections and the government balance in the medium term is adjusted by the public revenue diverted to those schemes. The MTO set by the country concerned in its stability/convergence programme is therefore adjusted by the revenue-reducing impact of implementing Eurostat's decision. However, since for Slovakia, Poland and Hungary an adjustment of this impact would result in an MTO lower than – 1 % of GDP (i.e. below the lower limit for the MTO for euro-area and ERM II members), we have used, as an illustration, an MTO of – 1 % of GDP for these countries (1). Denmark and Sweden have set an MTO above balance and we have reduced, as an illustration, the MTO by the full revenue-reducing impact of the implementation of Eurostat's decision (of around 1 % of GDP for those two countries); the United Kingdom has not presented an MTO. The projection in its 2005 convergence programmes is a deficit of 1½ % of GDP in 2010/11, which is below the lower limit for the MTO for euro-area and ERM II members. Even though the United Kingdom does not fall in this category at present, we have used, as an illustration, a deficit of 1 % of GDP, i.e. an MTO compatible with the SGP.

(1) Even if they are not yet members of the euro area or ERM II, they are expected to be so.

Comparison of the structural primary balance in both scenarios

Table III.5. Government balances in 2005 and the MTOs compared (% of GDP) shows that a majority of Member States were not at their MTO in 2005. For 17 Member States, reaching the MTOs will imply a budgetary consolidation over the medium term and for 10 (DE, EL, FR, IT, CY, HU, MT, PL, PT and UK), the required budgetary consolidation necessary to reach their MTOs amounts to more than 2 % of GDP. By contrast, eight countries (DK, EE, ES, IE, LV, NL, FI and SE) had achieved their MTO in 2005 and most of them by a margin of more than 1 % of GDP. For the latter group of countries, adjusting towards the MTOs would imply a fiscal loosening over the medium term.

Looking at the structural primary balances in 2005 and the one underlying the achievement of the MTO in 2010, a similar picture emerges. In addition, for countries that had high structural primary surpluses in 2005, in particular Belgium and Denmark but also Spain, Ireland, the Netherlands, Finland and Sweden, interest expenditures on debt are expected to decrease up to 2010 due to a decline of debt; the primary balance underlying the MTO is therefore lower in 2010 than in 2005.

Table III.6

Results of the sustainability gap calculations in the MTO scenario (% of GDP)

	MTO scenario						
	S1				S2		
	Total	IBP	DR	LTC	Total	IBP	LTC
BE	**1.3**	– 2.7	0.3	3.7	**2.7**	– 2.6	5.3
CZ	**2.2**	0.2	– 0.5	2.6	**5.1**	0.3	4.8
DK	**0.7**	– 1.5	– 0.8	3.0	**2.4**	– 1.5	3.9
DE	**0.1**	– 1.7	0.1	1.7	**1.2**	– 1.6	2.8
EE	**– 2.6**	0.0	– 1.1	– 1.5	**– 1.7**	0.0	– 1.7
EL (1)	***– 1.9***	*– 2.8*	*0.5*	*0.4*	***– 1.8***	*– 2.7*	*0.9*
ES	**2.2**	– 0.8	– 0.5	3.5	**5.2**	– 0.7	5.9
FR	**0.0**	– 1.8	– 0.1	1.8	**0.9**	– 1.7	2.6
IE	**1.7**	– 0.7	– 1.0	3.5	**5.3**	– 0.7	6.0
IT	**– 1.0**	– 2.9	0.6	1.3	**– 1.1**	– 2.9	1.8
CY	**2.3**	– 1.8	– 0.1	4.3	**6.9**	– 1.4	8.3
LV	**0.6**	0.6	– 0.9	0.9	**1.9**	0.7	1.2
LT	**0.3**	0.4	– 0.8	0.7	**1.8**	0.5	1.3
LU	**3.9**	0.5	– 1.8	5.2	**8.9**	0.5	8.3
HU	**1.7**	– 1.3	0.0	3.1	**4.0**	– 1.1	5.1
MT	**– 2.5**	– 3.2	0.1	0.6	**– 3.0**	– 2.9	– 0.1
NL	**2.2**	– 0.8	– 0.3	3.3	**3.6**	– 0.8	4.4
AT	**– 0.7**	– 1.6	– 0.1	1.0	**– 0.5**	– 1.5	1.1
PL	**– 4.0**	– 1.3	– 0.3	– 2.5	**– 3.7**	– 0.9	– 2.8
PT	**2.5**	– 1.7	0.0	4.1	**5.2**	– 1.5	6.7
SI	**3.8**	0.0	– 0.6	4.4	**7.2**	0.1	7.1
SK	**0.1**	– 0.5	– 0.5	1.1	**1.8**	– 0.3	2.1
FI	**– 0.7**	– 2.6	– 1.5	3.3	**1.6**	– 2.6	4.2
SE	**– 1.9**	– 2.3	– 1.0	1.5	**– 0.3**	– 2.3	2.0
UK	**1.0**	– 0.6	– 0.3	1.9	**2.7**	– 0.5	3.2
EUR-12 (1)	**0.3**	– 1.8	0.0	2.1	**1.6**	– 1.7	3.3
EU-25 (1)	**0.2**	– 1.6	– 0.1	1.9	**1.6**	– 1.5	3.0

NB: IBP = the initial budgetary position, DR = the debt requirement in 2050, LTC = the long-term change in the primary balance.
(1) No pension projections were available for Greece and the rise in age-related expenditure is therefore underestimated in the case of Greece. Pension expenditure was projected to rise between 2005 and 2050 by 12.4 % of GDP in the 2001 common projections exercise and 10.2 % in the 2002 update of the Greek stability programme. The aggregate results for the European Union (EU-25) and the euro area (EUR-12) exclude Greece.

Source: Commission services.

Sustainability gaps in the MTO scenario

The long-term budgetary impact of ageing (LTC) in the MTO scenario is the same as in the baseline scenario (see Table II.1). The initial budgetary position (IBP) is by contrast different for most countries, reflecting the fact that a majority of Member States were not at their MTO in 2005, as shown in Table III.5. The change in the sustainability gaps can therefore be attributed to the difference in the initial budgetary position, i.e. the structural primary balance in 2010 consistent with the MTO and the level of debt in 2010.

In the EU and in the euro area, the sustainability gap is about 1½ % of GDP according to the S2 indicator in the EU and in the euro area (see Table III.6). The sustainability gaps for the EU and the euro area can thus be reduced, in fact more than halved, if Member States reach their MTOs. Yet, 18 Member States have sustainability gaps according to this scenario.

This implies that if the MTOs are reached in 2010 and policies are not changed thereafter, an adjustment — budgetary and/or structural — is necessary so as to render the public finance sustainable over the long term for most Member States. In about half of the Member States, a considerable adjustment, of more than 2 % of GDP, is required according to the S2 indicator.

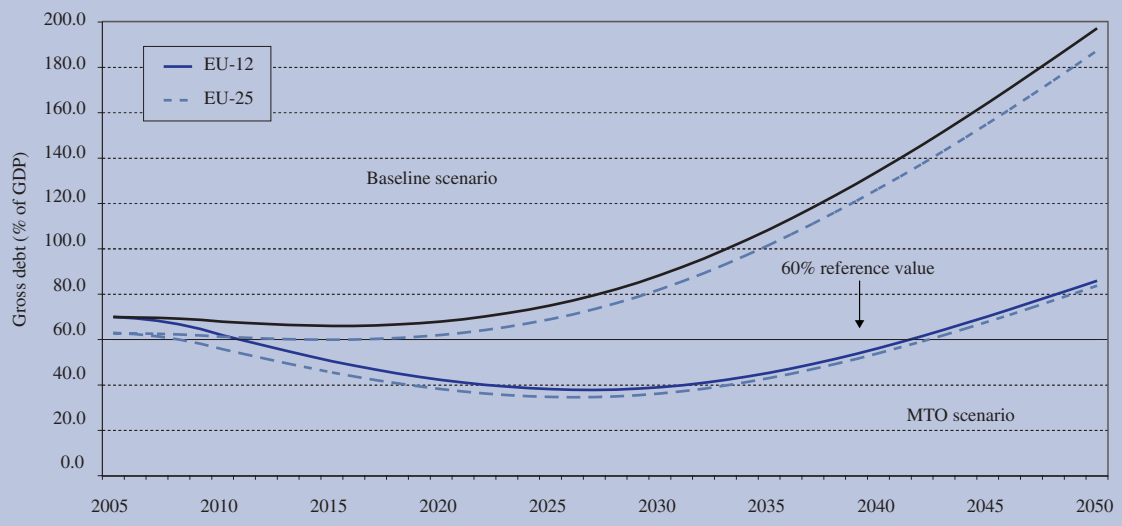
Comparison with the baseline scenario

For a majority of Member States (15), the outlook for the sustainability of public finances in the MTO scenario is more positive compared to the baseline scenario, based on the 2005 budgetary outcomes. This scenario shows that, in those countries, consolidating the public finances can contribute very importantly to reducing risks to the long-term sustainability of public finances. This is of particular importance for the countries that have an S2 sustainability gap larger than 2 % of GDP in the baseline scenario (CZ, DE, EL, FR, IT, CY, LU, HU, PT, SI, SK and UK). In a number of countries (DE, FR, IT and SK), the gap even falls below 2 % of GDP under the assumption that the MTO is reached.

However, in nine countries (BE, DK, EE, ES, IE, LV, NL, FI and SE) the sustainability gap is larger when the MTO is reached, compared to the situation in 2005.

This is mainly due, except for Belgium, to the fact that being at the MTO in 2010 would imply a deterioration of the fiscal position. Namely, the structural balance is lower in 2010 in the MTO scenario compared to the situation in 2005, implying a reduction in the structural primary balance. It should be noted that the structural balance turned out stronger in 2005 than estimated in the SCPs in a number of these countries (DK, ES, IE, LV, NL and SE),

Graph III.2: **Debt developments in the EU and the euro area**



NB: Long-term pension projections were not available for Greece. The EU aggregates, EU-25 and EUR-12, are calculated without Greece.
Source: Commission services.

as shown in Table III.5. Moreover, in Belgium and Denmark, the rapidly declining debt will significantly reduce interest payment up to 2010; the primary balance underlying the MTO is therefore lower in 2010 than it would be today with the same deficit target. The impact on the sustainability indicators of the lower structural primary balance in 2010 compared to 2005 is larger than the impact of the reduction of the debt/GDP ratio.

4.2. Government debt projections

As with the baseline scenario analysed in Chapter II, the debt/GDP ratio is projected over the long term using the same assumptions as for the calculations of S1 and S2. Under the assumption that the MTOs are reached, the debt/GDP ratio is projected to be reduced over the coming two decades as a result of the budgetary consolidation to the MTO. Starting in the mid-2020s, the debt ratio will start rising again and it will more than double as a share of GDP by 2050, revealing that the public finances are on an unsustainable path (see Graph III.2). It should be noted, however, that the impact of reaching the MTOs on future debt developments are considerable in terms of reducing sustainability risks. Namely, when compared to the baseline scenario in Chapter II.1.2, the projected debt developments are less alarming; the debt/GDP ratio is projected to be about 80 % of GDP in 2050, compared to nearly 200 % of GDP in the baseline scenario (see Graph III.2). For the EU as a whole, the debt/GDP ratio in fact is projected to be below the 60 % of GDP reference value — assuming that the MTOs are reached in 2010 and that the debt ratio falls in the coming years — until the early 2040s. The developments in the euro area are similar to that of the EU, although the initial level of debt as a share of GDP is higher. Fiscal consolidation can contribute very significantly to reducing future debt levels. Consolidating the public finances over the medium term enables a reduction of the debt/GDP ratio in the coming decades, which covers part of the long-term budgetary impact of ageing population over the long term.

Nonetheless, the debt/GDP ratio is currently above the Treaty reference value of 60 % of GDP in 10 countries (BE, DE, EL, FR, IT, CY, HU, MT, AT and PT), where debt reduction is of the utmost importance (see Table III.7). For countries, with a high government debt level above 100 % of GDP (such as GR and IT), the required public finance consolidation is even more urgent.

Table III.7 shows that even under the assumption of the Member States reaching the MTOs they have set for themselves, concerns regarding the long-term sustainability of public finances remain in a number of countries. Four countries will have a debt/GDP ratio above the 60 % of GDP reference value by 2030, and by 2050 another 13 countries will have been added to the list of 'high-debt' countries, implying that more than two thirds of the Member States will be breaching the 60 % threshold unless further action is taken.

Table III.7

Debt developments in the Member States assuming that the MTOs are reached in 2010 (% of GDP)

	Gross debt 2005	MTO scenario		
		2010	2030	2050
BE	93.3	74	52	129
CZ	30.5	30	43	188
DK	35.8	18	23	98
DE	67.7	64	37	65
EE	4.8	0	– 25	– 82
EL (1)	107.5	90	18	– 56
ES	43.2	30	33	198
FR	66.8	60	41	66
IE	27.6	17	37	157
IT	106.4	97	32	1
CY	70.3	57	42	172
LV	11.9	9	26	92
LT	18.7	16	22	76
LU	6.2	10	74	240
HU	58.4	61	51	155
MT	74.7	65	16	– 58
NL	52.9	46	70	176
AT	62.9	54	23	18
PL	42.5	45	– 33	– 163
PT	63.9	65	64	208
SI	29.1	27	65	270
SK	34.5	31	16	66
FI	41.1	25	26	96
SE	50.3	34	– 3	– 1
UK	42.8	42	44	114
EUR-12 (1)	70.0	62	38	83
EU–25 (1)	63.0	55	33	76

(1) No pension projections were available for Greece and the change in the debt/GDP ratio is therefore underestimated in the case of Greece. Pension expenditure was projected to rise between 2005 and 2050 by 12.4 % of GDP in the 2001 common projections exercise and 10.2 % in the 2002 update of the Greek stability programme. The aggregate results for the European Union (EU-25) and the euro area (EUR-12) exclude Greece.

Source: Commission services.

5. Conclusions

The results of the indicators are sensitive to the different hypotheses used in the calculations and as such the exact level of the sustainability gap is subject to some uncertainty, notably as regards the evolution of healthcare expenditure which depends on the assumptions made. In particular, a low sustainability gap does not suggest that there is no risk at all to the long-term sustainability of public finances; rather, it suggests that the challenges and the size of the adjustment are smaller than in other EU countries. The sensitivity of the indicators should be put in perspective with the large diversity shown by the indicators in the EU (ranging from – 3 % of GDP to 10 % of GDP in the baseline scenario). In particular, large sustainability gaps are likely to remain so, even under alternative and more favourable hypotheses, and therefore can be considered robust enough to signal large fiscal imbalances.

Moreover, budgetary consolidation over the medium term can very efficiently limit the public finance sustainability challenge over the long term; a significant part of the sustainability risks would be reduced if countries were to reach the medium-term objectives for the government finances that they have set for themselves.

In addition, public spending on healthcare is sensitive to the health status of elderly citizens. This suggests that policies geared towards increasing the health status of elderly persons can result in non-negligible budgetary savings.

Besides, further pressures on government expenditure on long-term care cannot be excluded in the future since there may be an increasing gap between the need for formal care and the services provided by the public sector, notably in countries where the current coverage is limited.

Finally, the sensitivity tests also show that changing the underlying assumptions does not necessarily have a uniform impact across EU countries; for example, some public pension schemes are more resilient than others with respect to an increase in life expectancy.

Chapter IV

Qualitative factors

Summary

The sustainability indicators are indispensable tools for assessing the long-term sustainability of public finances but other factors are also taken into account to reach an overall assessment.

Firstly, while the sustainability indicators already include information on the current level of the debt, they do not incorporate all the specific risks faced by countries with a large initial level of debt. For example, high-debt countries are more vulnerable to negative interest-rate/growth-rate shocks and have to maintain high primary surpluses for a prolonged period of time, which might be difficult to achieve in view of competing budgetary pressures. Countries which have a high current level of gross debt, above the 60 % of GDP reference value, need to ensure its steady reduction. The current level of gross debt is therefore an important factor when reaching an overall assessment of the risks to the long-term sustainability of public finances.

Moreover, the ratio of the average pension and the average wage in the economy — the so-called benefit ratio — is projected to decrease substantially in some EU countries. While contributing positively to public finances sustainability, such a decrease may raise concerns about the adequacy of public pensions that could translate into pressure for higher public spending. In this context, the risks to public finances will crucially depend on the reaction of individuals regarding their future retirement arrangements: accept a lower pension, work longer or increase their savings. Those individual choices will have very different effects on public expenditure and revenues. In that respect, the question of information current and future pensioners have regarding their future rights is central to ensuring that current workers are making appropriate choices for the level of their individual savings in view of the planned length of their working lives and the level of their pension. The success of reforms aiming at increasing the retirement age is also crucial.

To date, no common projections of government revenue have been made at the EU level. Yet, demographic changes may also have an impact on the size and sources of tax revenues, and consequently public revenue developments may have an impact on the sustainability of public finances. However, except in a few cases where large country-specific trends can be identified (notably the tax treatment of private pensions), the impact of revenue projections is more limited, leading to a limited impact on the assessment of the sustainability of public finances. In addition, a more consistent way of treating property income could lead to a higher sustainability gap compared to the baseline scenario, notably in the few countries where property income is relatively large.

Stock-flow adjustments (SFAs) are supposed to cancel out over the medium term in the projections; i.e. the debt level is assumed to be driven only by the general government deficit. Given the level of SFAs in some countries in the recent past, this may not be the case. If maintained over the long term, persistent debt-increasing SFAs may imply further risks on long-term sustainability.

The level of current tax ratio has no impact on the calculations of the sustainability indicators. Nevertheless, the current level of tax burden can be a relevant element in the analysis of the long-term sustainability of public finances. Namely, in the light of the projected increases in the age-related expenditures in the long term, the information regarding the current tax burden provides an important indicator of a government's capacity for a direct increase in revenues.

Finally, the sustainability indicators include explicit debt and implicit liabilities but do not include information on contingent liabilities which may increase pressure on public finances if they materialise. The impact of contingent liabilities although rather limited on the sustainability indicators, could be large on debt. At this stage the lack of data prevents a systematic use of this factor in the sustainability analysis.

1. Government debt and the long-term sustainability of public finances

In the analysis about the long-term sustainability of public finances, the concept of debt/GDP ratio plays a central role. A country is often considered to be in an unsustainable situation if the debt/GDP ratio reaches a level beyond which the country faces difficulties in issuing new debt ([1]). Since this maximum level of debt, beyond which it is considered as unsustainable, is not defined *ex ante*, sustainability is measured by looking at the dynamics over time, in particular whether debt is stable, declining or increasing ([2]). Besides being already integrated in the long-term debt projections on the basis of which the sustainability indicators are calculated, the current debt level provides additional information on the sustainability of public finances, in particular in the light of the following stylised facts.

- High-debt countries are more vulnerable to negative interest-rate/growth-rate shocks through the increased interest burden or through a worsening in the underlying budget balance. If such shocks were to materialise in the near future, they could lead to a rapid accumulation of public debt and question the vulnerability of public finances over the medium term. Moreover, high levels of debt may lead to higher interest rates as investors might require higher premiums thus increasing further the risks to public finance sustainability (see Chapter III.1 for the impact of a higher interest rate on the sustainability indicators).

- In addition, high-debt countries need to maintain primary surpluses over a long period of time in order to reduce debt. This may, however, be particularly difficult in the view of competing budgetary pressures as interest expenditures represent a substantial burden, requiring the primary surplus to be even higher if the debt is to be reduced successfully.

- Sustainability indicators do not take into account any information on debt dynamics in the recent past. An analysis of debt developments over the period prior to the starting point contributes to qualifying the risks to sustainability in relation with the likelihood of realisation of the planned government debt path over the medium term. This is particularly relevant for cases where government debt has been increasing rapidly, even if from relatively moderate levels, where it has been relatively high and increasing or has not been declining at a satisfactory pace ([3]).

- In the context of the EU fiscal framework, Member States are obliged to avoid excessive budgetary deficits and to comply with budgetary discipline by respecting two criteria. Besides the deficit criterion, debt/GDP ratio should not exceed a reference value of 60 %, unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace; as defined in Article 104 of the Treaty and in the protocol on the EDP annexed to the Treaty. Assessment of the long-term sustainability of public finances in the context of the EU budgetary surveillance qualifies the situation with regard to respect of the Treaty reference value for government debt.

([1]) Blanchard (1984).
([2]) Perotti et al. (1997).

([3]) Related to the stock of government debt and its dynamics, the composition of change in debt level needs also to be considered as it can better qualify a change in debt ratio. The breakdown of the change into three components (contribution of primary balance, interest-rate/growth-rate differential and stock-flow operations) allows for understanding the reasons underlying the change in debt ratio. The role of stock-flow transactions requires additional attention as they include various items with different effect on the change in debt ratio. In addition, the effect of different types of operation is changing over time. Thus, changes in debt ratio in some of the new Member States have been heavily influenced by developments regarding the assumption of contingent liabilities related to the period of transition and/or privatisation proceeds. As the transition period has been coming to an end, the stock of contingent liabilities as well as assets to be privatised has been diminishing and the effect of such operations on change in debt ratio has been declining. For a more detailed analysis on stock-flow adjustment see Chapter V.4.

For these reasons, countries which have a high current level of gross debt, above the 60 % of GDP reference value, need to ensure its steady reduction. The current level of gross debt is therefore an important factor when reaching an overall assessment of the risks to the long-term sustainability of public finances.

Recent dynamics government debt in the EU Member States

Following the resolute budgetary consolidation process in the face of meeting the Maastricht criteria for entering the euro area, the government debt of the euro-area Member States declined from 73.9 % of GDP in 1996 to 68.1 % of GDP in 2002. Since then, however, amid the prolonged period of slow growth as well as lack of consolidation effort in some of the large Member States, the government debt in the euro area has been increasing again; reaching 70.8 % of GDP in 2005 (see Table IV.1).

Over the period, Germany, France and Portugal joined the group of euro-area countries characterised by government debt above 60 % of GDP already in 2000 (BE, EL, IT and AT). Particularly worrying is the situation in Greece and Italy, where debt persists at levels higher than 100 % of GDP.

Among the non-euro-area countries, only Cyprus and Malta have government debt higher than the reference value, which they both breached in 2001. The EU-25

Table IV.1

Gross government debt 2000–07 (% of GDP)

	Gross government debt								Change in gross government debt	
	2000	2001	2002	2003	2004	2005	2006 (1)	2007 (1)	2000–05	2005–07
BE	107.7	106.3	103.2	98.5	94.7	93.3	89.8	87.0	– 14.4	– 6.3
CZ	19.1	25.3	28.8	30.0	30.6	30.5	31.5	32.4	11.4	1.9
DK	51.7	47.4	46.8	44.4	42.6	35.8	30.0	26.5	– 15.9	– 9.3
DE	59.2	58.8	60.3	63.8	65.5	67.7	68.9	69.2	8.5	1.5
EE	5.1	4.6	5.5	6.0	5.4	4.8	3.6	3.0	– 0.3	– 1.7
EL	111.6	113.2	110.7	107.8	108.5	107.5	105.0	102.1	– 4.1	– 5.4
ES	59.2	55.6	52.5	48.9	46.4	43.2	40.0	37.9	– 16.0	– 5.2
FR	56.7	56.2	58.2	62.4	64.4	66.8	66.9	67.0	10.1	0.3
IE	37.8	35.3	32.1	31.1	29.4	27.6	27.2	27.0	– 10.3	– 0.6
IT	109.2	108.7	105.5	104.2	103.8	106.4	107.4	107.7	– 2.8	1.3
CY	59.9	61.9	65.2	69.7	71.7	70.3	69.1	67.8	10.4	– 2.5
LV	12.3	14.0	13.5	14.4	14.6	11.9	11.3	10.9	– 0.3	– 1.1
LT	23.6	22.9	22.3	21.2	19.5	18.7	18.9	19.7	– 4.9	1.0
LU	5.3	6.5	6.5	6.3	6.6	6.2	7.9	8.2	0.9	2.0
HU	54.3	51.7	55.0	56.7	57.1	58.4	59.9	62.0	4.1	3.6
MT	56.0	61.7	61.2	71.3	76.2	74.7	74.0	74.0	18.7	– 0.7
NL	53.6	50.7	50.5	51.9	52.6	52.9	51.2	50.3	– 0.6	– 2.6
AT	65.8	66.1	66.0	64.4	63.6	62.9	62.4	61.6	– 2.8	– 1.4
PL	35.9	35.9	39.8	43.9	41.9	42.5	45.5	46.7	6.7	4.2
PT	50.4	52.9	55.5	57.0	58.7	63.9	68.4	70.6	13.5	6.8
SI	27.6	28.3	29.7	29.1	29.5	29.1	29.9	29.7	1.5	0.6
SK	50.0	48.8	43.3	42.7	41.6	34.5	34.3	34.7	– 15.5	0.2
FI	44.3	43.3	41.3	44.3	44.3	41.1	39.7	38.3	– 3.2	– 2.8
SE	52.3	53.8	52.0	51.8	50.5	50.3	47.6	44.8	– 2.0	– 5.5
UK	41.2	38.1	37.6	39.0	40.8	42.8	44.1	44.7	1.6	1.9
EUR-12	**69.2**	**68.3**	**68.1**	**69.3**	**69.8**	**70.8**	**70.5**	**70.1**	**1.6**	**– 0.7**
EU-25	**61.9**	**61.1**	**60.5**	**62.0**	**62.4**	**63.4**	**63.2**	**62.9**	**1.5**	**– 0.5**

(1) Forecast.

Source: Commission services.

aggregate government debt dynamics has been similar and the debt/GDP ratio stands at its highest level since 2002, at 63.4 % of GDP. In both cases, the increase in debt since 2002 is mainly due to relatively high debt increasing contribution of the interest-growth differential while, at the same time, the debt decreasing contribution of primary surpluses has been fading over the period. Namely, the latter did not fully offset the negative contribution from interest expenditure/growth and stock-flow operations.

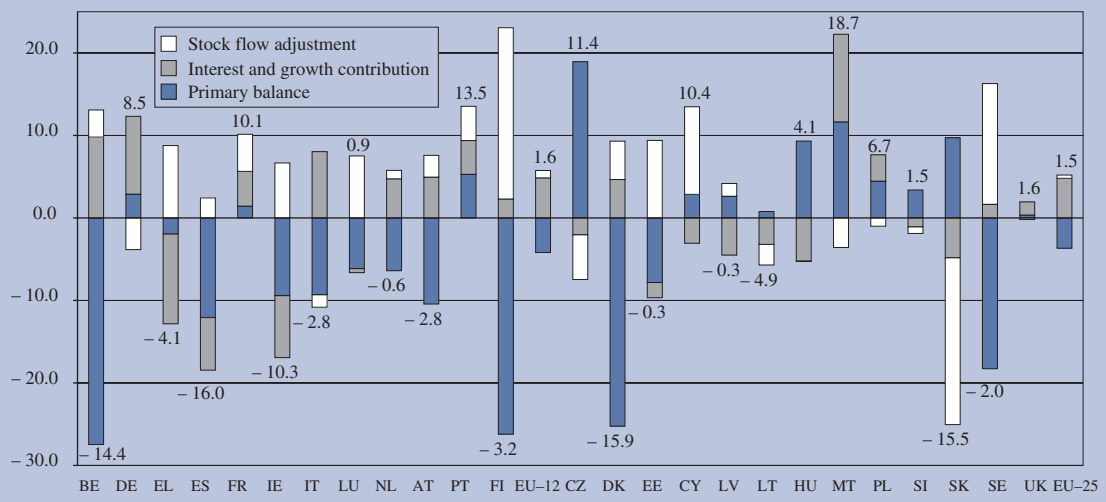
Aggregate figures tend to hide different pictures across countries. The largest reductions of government debt over the period 2000–05 occurred in Belgium (where the debt ratio nevertheless remains above 60 % of GDP), Spain and Ireland at 14.4 %, 16.0 % and 10.3 % of GDP respectively and, outside the euro area, in Denmark and Slovakia at 15.9 % and 15.5 % of GDP respectively. In all cases, with the exception of Slovakia, the dominating positive contribution to debt reduction came from high primary surpluses (see Graph IV.1). High positive contribution to debt reduction from primary surpluses occurred also in Finland and Sweden; however, in both countries this was accompanied by significant debt increasing stock-flow operations, reflecting the build up of pension reserve assets, leading to a significantly lower debt reduction. In Slovakia, however, a relatively high negative contribution from primary balances was more than offset by high-debt-reducing stock-flow operations, mainly reflecting the privatisation proceeds over the period.

It is worth mentioning that strong debt reduction in Spain and Ireland as well as the stabilisation of government debt below 110 % of GDP in Greece has been helped by debt-reducing contribution of interest expenditure-growth differential, which in all three countries reflects the relatively high economic growth rates over the period. The opposite is the case in Italy and Belgium, where relatively low economic growth, coupled with a high level of debt implied a significant negative contribution to an otherwise relatively favourable overall debt dynamics, although to a much lesser extent in the latter, given the already mentioned relatively large primary surpluses.

Among the euro-area countries where government debt increased over the period, Germany, France and Portugal stand out as the worst performers with increments of 8.5 %, 10.1 % and 13.5 % of GDP, respectively. In all three countries, the primary balance and interest expenditure/growth differential components of the change in gross debt have had debt increasing contribution over the period, which points to the lack of consolidation as well as to low economic growth. Stock-flow operations in France and Portugal also contributed negatively to the overall debt dynamics.

Graph IV.1: **Composition of the change in debt levels, 2000–05**

Contributions to changes in gross government debt: period 2000–05 (% of GDP)



Source: Commission services.

While, in general, the non-euro-area Member States are characterised by relatively low debt levels compared to the euro-area Member States, debt dynamics in some of them has been worsening rapidly over the period 2000–05. This is the case for Malta, Cyprus, the Czech Republic and, more recently, Hungary, where government debt increased by 18.7 %, 10.4 %, 11.4 % and 7.3 % of GDP respectively (the latter in the period 2001–05). In all the abovementioned countries, with the exception of Cyprus, the main reason for such negative dynamics is the large debt-increasing effect of relatively high and recurrent primary deficits. While having a positive contribution to the debt dynamics, the size of interest expenditure/growth effect in the CEECs and Cyprus, reflecting improving borrowing conditions, declining but still relatively high inflation rates and relatively high economic growth, could not fully offset the large primary deficits. In Malta, high interest burden due to an already high government debt as well as adverse economic conditions resulted in the debt-increasing effect of this component. In Cyprus, deterioration of debt dynamics is mainly due to debt-increasing stock-flow operations resulting from a significant build up of financial assets in the form of deposits with the Central Bank of Cyprus.

Overall, the analysis points to the fact that in all the countries where significant deterioration of debt occurred, there was a debt-increasing contribution from primary balance. Where in the euro-area Member States this was accompanied by a period of low growth and/or relatively high debt ratio, it implied additional contribution to worsening of debt dynamics. In the non-euro-area Member States, it was a similar case for Malta and Poland. In other countries, however, the combined positive effects of relatively high growth, inflation and improving borrowing conditions resulted in a debt-decreasing effect of the interest expenditure/growth component.

As far as the outlook for government debt developments is concerned, according to the Commission services spring 2006 forecasts, the debt ratio is projected to decline slightly in 2006, which would be for the first time since 2002, to 70.5 % of GDP and again in 2007, reaching 70.1 % of GDP. Over the period 2005–07, it is expected that the primary surplus coupled with the stock-flow adjustment would more than offset the negative contribution to the change in debt ratio from interest expenditure.

The aggregate debt ratio in the EU at 63.4 % of GDP in 2005 is lower in comparison to the euro area. The EU debt ratio is projected to fall over the forecast period and to reach 62.9 % of GDP in 2007. As is the case with the euro area, the overall positive contribution from the primary balance and stock-flow adjustment will more than offset the negative contribution from interest expenditure/growth.

In 2005, Greece and Italy continued to have debt ratios above 100 % of GDP, and this is expected to still be the case in 2007. Belgium managed to reduce its debt below this level already in 2003 and its debt ratio is expected to be reduced further in the future. In addition to these three countries, seven EU Member States are projected to have debt ratios above 60 % of GDP in 2007. This includes Hungary, which is expected to breach the 60 % of GDP reference value in 2007. Despite an overall bright picture, at the euro-area and EU levels the combined effect of poor growth performance and interest expenditure is nevertheless expected to significantly affect the budgetary situation in Italy, Portugal and Poland, where in addition primary deficits are projected over the forecast period.

2. Pension expenditure projections and risks to public finances

In the analysis of the long-term sustainability of public finances, and notably in the calculation of the sustainability indicators in Chapter II, it has been assumed that pension expenditure could evolve as projected in the Ageing Report without triggering further public expenditure. Yet, the Ageing Report shows that under current legislation, the relative level of public pensions is projected to decrease significantly in some countries, which may raise concerns about the adequacy of public pensions and, as such, entail risks for public finances. This issue deserves significant attention since in view of the projected rise in the old-age dependency ratio over the coming decades, policymakers will inevitably be faced with the issue of reconciling the sustainability of public finances with ensuring adequate pensions.

Table IV.2 shows the projected evolution of the public benefit ratio, defined as the average public pension compared to the average wage per worker ([1]). It reveals that a decrease in the public benefit ratio in the period to 2050 is projected in 19 of the Member States, and that there is considerable variation with regard to the projected changes across the countries; ranging from a rise in the benefit ratio of 20 % (CY and LU) to a large decrease of 51 % (PL) ([2]). A decrease in the benefit ratio does not imply that the real purchasing power of the average pension will decrease over time but means that the average pension will not increase as fast as the average wage. Indeed, between today and 2050, the average public pension will increase by 1.2 % per year in real terms in the EU-15 (compared to a 1.7 % per year increase in wage and 1.6 % real growth) and 1.8 % per year for public pensions in NMS10 (compared to a 2.7 % per year increase in wage and 2.3 % real growth). The lowest real increases are projected in Malta (0.6 %), Italy (0.8 %), Austria, Germany (0.9 %) and Poland (1 %).

Seven countries (SE, EE, LV, LT, HU, PL and SK) switched a part of their current public scheme into a funded defined-contribution scheme, to be classified outside the general government. This mechanically reduces the public benefit ratio and has a noticeable impact on the evolution of the public benefit ratio over the next 50 years because the funded part of the mandatory schemes has been introduced recently ([3]). This suggests that when analysing the evolution of the benefit ratios pensions from the funded part of the mandatory scheme have to be taken into account (see second column of Table IV.2). The decrease is not as large as for the public benefit ratio even though it remains substantial at around 40 % for Poland, 25 % for Sweden and Estonia and 17 % for Slovakia. In Latvia the decrease in the public benefit ratio is almost compensated for.

The evolution of the benefit ratio over time gives indications on the evolution of the relative level of public pension under the assumptions commonly agreed in the Ageing Report ([4]). However, the extent to which a decline in the benefit ratio presents risks to public finances (IV.2.1) will first depend on the distribution of pension entitlements across population, notably to assess if it implies higher poverty risks for older people in the future. The Ageing Report does not include such projections of the distribution of pension entitlements and alternative

([1]) For a definition of the benefit ratio and of the replacement rate, see Box IV.1. Relative level of pensions, replacement rates and the benefit ratio.

([2]) Pension projections for Greece were not available in time for the completion of the Ageing Report and the benefit ratio could therefore not be calculated.

([3]) Indeed, the new funded schemes are recent (EE 2002, LV 2001, LT 2004, HU 1997, PL 1999, SK 2005, SE 1999) and the total amount of pensions from those schemes will be limited in the next two decades (no more than 0.2 % of GDP in 2020) reaching significant pension outlays as a share of GDP only after 2040.

([4]) Other indicators are also available, e.g. replacement rates. For a discussion of the link between the two indicators see Box IV.1. Relative level of pensions, replacement rates and the benefit ratio.

Table IV.2

Change in the benefit ratio over time

Countries	Level of the public benefit ratio				
	In 2005	Evolution compared to 2005			
		Without the funded part of the mandatory schemes		With the funded part of the mandatory schemes	
		2030	2050	2030	2050
BE	17.8	– 2 %	– 8 %		
CZ	15.5	– 16 %	– 9 %		
DK	20.1	– 4 %	– 5 %		
DE	18.0	– 18 %	– 26 %		
EE	11.4	– 37 %	– 54 %	– 29 %	– 27 %
EL	NA	NA	NA		
ES	17.5	9 %	– 2 %		
FR	24.6	– 18 %	– 23 %		
IE (1)	14.3	16 %	10 %		
IT	20.1	– 12 %	– 31 %		
CY	25.6	0 %	20 %		
LV	11.0	– 17 %	– 35 %	– 11 %	– 3 %
LT	7.6	12 %	0 %	17 %	24 %
LU	23.8	12 %	18 %		
HU	13.8	14 %	17 %	18 %	39 %
MT	18.2	– 17 %	– 44 %		
NL	18.8	– 4 %	– 4 %		
AT	21.1	– 10 %	– 28 %		
PL	18.6	– 23 %	– 51 %	– 21 %	– 43 %
PT	18.9	– 13 %	– 18 %		
SI	18.6	– 7 %	– 7 %		
SK	13.4	– 15 %	– 34 %	– 7 %	– 17 %
FI	19.1	– 3 %	– 6 %		
SE (1)	20.9	– 25 %	– 31 %	– 21 %	– 24 %
UK (1)	16.4	– 14 %	– 22 %		

(1) The public benefit ratio relates to total public pensions (survivor, old-age and early pensions and disability schemes) except for two countries. The public benefit ratio in the UK relates to old-age and early pensions due to data availability, and in Sweden the public benefit ratio excludes premium pensions, which are included in the pension projections of the Ageing Report as public expenditure (see Table 3-16 of the Ageing Report). In addition to this benefit ratio, an additional benefit ratio is presented including the mandatory private schemes for the countries which implemented such a reform (SE, EE, HU, LV, LT, PL and SK). Finally, the increase in the benefit ratio for Ireland is calculated with regard to 2004, since the benefit ratio in 2005 is significantly lower than in the years before or after. The level of the benefit ratio in 2005 is the same, whether the funded part of the mandatory scheme is taken into account or not, since the introduction of such schemes is still very recent.

Source: EPC/European Commission Ageing Report (2006).

indicators have to be used, for example, the current level of public expenditure and the current distribution of pensions (IV.2.2). The risks to public finances will also depend on the ability of workers to actually earn additional retirement income either through longer working lives or higher private savings. The decrease in the benefit ratio must be assessed in comparison with the prospective coverage of private pensions (IV.2.3) and the current and projected employment rates of older workers (IV.2.4).

2.1. Decrease in the relative level of pensions and risks to public finances

Main risks for public finances

Reducing the relative level of public pensions may reveal an overall preference for longer time spent in retirement over higher pensions. It can result from reducing the accrual value of one working year, introducing

Box IV.1: **Relative level of pensions, replacement rates and the benefit ratio**

Two types of forward-looking indicators are available to measure the future relative level of pensions.

- The benefit ratio, defined as the average pension per GDP per worker, is derived from the long-term projections of the Ageing Report and is therefore a macroeconomic indicator.

- The replacement rate, which is defined as the first pension compared to the last wage, gives an understandable measure of the pension an individual will receive. The replacement rate is specific to each individual and depends on a large number of factors (number of years worked, wage profile, period of unemployment or sick-leave, sometimes the number of children or the gender […]). Theoretical replacement rates are therefore usually calculated for a 'representative' individual or a set of 'representative' individuals. Such replacement rates have been analysed by the SPC (see Social Protection Committee, 2006b ([1])).

The evolution of the benefit ratio and the replacement rate are linked, since a reduction of the replacement rate at retirement will translate into a reduction of the benefit ratio *ceteris paribus*. Due to their nature, they can however evolve differently. The benefit ratio reflects average changes, while the theoretical replacement rate provides changes for typical situations and can thus identify different effects ([2]).

First, the benefit ratio in a given year is the average of pensions received by all pensioners currently alive and as such is an average of the replacement rates of numerous generations. It therefore depends on the past relative level of the pension system and on indexation of pensions after retirement, which has no direct impact on the replacement rate at retirement but affects directly the benefit ratio.

Second, replacement rates, except when a large set of representative individuals are available, generally do not cover all possible schemes (e.g. private-sector employees or civil servants) and all redistributive features that can improve the pension rights of an individual through different features of social security (e.g. for children or periods of unemployment). The benefit ratio normally takes into account all different schemes and models the effect of such benefits.

Finally, the benefit ratio is usually derived from real careers, i.e. more or less complete, with contribution records changing over time. The benefit ratio will reflect long-term trends in the labour market. On the one hand, later entrance into the labour market or longer periods of unemployment will result in a shorter contribution period and, therefore, lower benefits over time. On the other hand, rising female labour force participation, better employment record or maturing pension systems will increase the benefit ratio even with unchanged pension rules.

([1]) Available on the Internet (http://ec.europa.eu/employment_social/social_protection/pensions_en.htm#adequacy).
([2]) See SPC (2006a) (http://ec.europa.eu/employment_social/social_protection/docs/isg_repl_rates_en.pdf).

more links between the contribution record and the level of the pension, or more complex mechanisms, notably from changing the indexation rules or moving to a completely new system. Moreover, the convergence of different pension schemes, with different levels of replacement rates (e.g. between civil servants schemes and social security schemes) may happen towards the less favourable case for the pensioner. Pension reforms can also reduce or abolish some benefits or bonuses which are no longer considered as fair (e.g. accrued pension rights for years spent in university). All these factors can lead to an overall reduction of the benefit ratio.

The convergence between different pension schemes or the reduction of some benefits may result in a lower benefit ratio ([1]). Yet, if those changes, whose redistributive impacts are quite clear at the time they are enacted, have been considered in general as fair, they should not trigger specific demands for those categories later. By contrast, if low pensions are insufficient, this may induce further risk of poverty for older people and therefore translate

([1]) In Austria, the structural shift from public servants into the social security schemes may have noticeably reduced the overall benefit ratio.

into pressures to increase public expenditure through, for example, the improvement of minimum pensions or an increase in benefits in kind to older people.

Many pension reforms are designed in such a way that the decrease in the relative level of the public pensions can be compensated at the individual level by increasing the age of retirement and/or by increasing private savings. Therefore the risks to public finances associated with a decrease in the relative level of public pensions cannot be assessed separately from the capacity of workers to effectively increase their retirement age and/or build up private savings.

An increase in the effective retirement age will be very difficult to achieve if there are no financial incentives for workers to postpone their retirement age. Increasing the number of years to be entitled to a 'full' pension, linking the level of the pension to life expectancy or increasing financial penalties for early retirement, aim at increasing the retirement age but it may also result in lower pensions if workers do not work longer. As an illustration, in Sweden, the pension depends on the unisex life expectancy at the specific date of retirement. The increase in life expectancy between today and 2050 (a little more than three years) will decrease pensions by 13 % if the worker retires in 2050 at the same age as today. Simulations show that extending one's working life by two thirds of the increase in life expectancy is enough to compensate for the decrease in the replacement rate ([1]).

Most pension reforms aim at giving individuals the opportunity to 'choose' a higher pension or longer time spent in retirement. However, if the postponement of the retirement age does not result in a sufficiently large increase in pension entitlements, workers may simply not postpone their retirement age (supply-side barriers). Moreover, an increase in the effective retirement age may also fail if other barriers to old-age employment, if any, are not reduced (demand-side barriers) ([2]). Indeed, the early retirement or the early withdrawal from the labour market may result in lower pensions but if this is not driven by the workers' choice and is a consequence of obstacles limiting the work activity of older workers, this may lead to budgetary pressure.

([1]) See, for example, Riksförsäkringsverket (2003, 2005). For Sweden, the increase in life expectancy used in the projections of the Ageing Report is higher than in this example (four years).

([2]) See, for example, OECD (2006).

A decrease in the relative level of public pensions can also be partly compensated by other types of pensions, whether they are occupational or supplementary pensions (i.e. non-public). A higher coverage of private pensions can diversify the risks and increase the returns on savings. However, a stronger reliance on private savings may also lead to several types of risks for public finances. This is the case if net returns from private pensions turn out to be lower than expected, for example if returns on assets are low or administrative costs are high. The general government may have to compensate part of the shortfall in the revenue of elderly citizens (contingent liabilities), particularly if it concerns low-income pensioners, since a shortfall of pensions may have a more dramatic impact for that group ([3]). The level of private pension arrangements will depend on the extent to which occupational private pensions are binding for employers and employees and on the level of information workers currently have regarding the evolution of their future pension rights. For example, current contributions to private schemes may be too low if workers underestimate their need for savings. More information on existing tax incentives and/or larger tax incentives and/or promoting automatic enrolment to private schemes may be needed ([4]). If those contributions are tax deductible, it will reduce public revenue at the time workers start to increase their contributions to the private schemes.

Assessing risks

The different types of risks discussed above are difficult to assess separately. Comprehensive pension reforms are usually designed to achieve several objectives at the same time: (i) to contain the relative level of pensions; (ii) to increase the effective age of retirement; and (iii) to promote private savings. Such broad reforms aim at giving a wider choice to the individual with regard to his/her replacement rate (from both public and private schemes), his/her contribution rate (including private savings) and his/her retirement age. The impact on public finance of such reforms will therefore ultimately depend on the effective individual choices. Namely, the

([3]) Relying on private savings for low-income groups entails higher risks than for higher income groups, since it is more difficult for them to increase savings. Moreover, the cost of administrative fees and information seeking may be proportionally higher for low-income groups than for higher income groups.

([4]) Such a proposal was included in the Pensions Commission's report (Turner report) with regard to the debate on pension reform in the United Kingdom. It also suggested the possibility of 'opting-out' from the private schemes.

increase in the retirement age leads to higher tax revenue and lower pension expenditure, whereas an increase in private savings reduces public revenue when individuals start to build up their private pensions ([1]). Yet those choices are difficult to anticipate. The Ageing Report pension projections assume, explicitly or implicitly, certain behaviour of individuals in the future, notably regarding the choice of the retirement age. The evolution of the benefit ratio in the projections cannot be assessed separately from the hypothesis in the projections regarding the retirement age. Namely, it cannot be excluded that workers could postpone their retirement age more than it is currently projected, notably if the relative level of their pension is significantly reduced.

Moreover, only a full distribution of public and private pensions across income groups and generations that takes into account the large redistributive effects due to enacted reforms and the impact of past trends in the labour market could give a precise picture of the risks to public finances. This point can be illustrated by the following example. Many countries that project a reduction in the benefit ratio have reinforced the link between the effective contribution record and the level of the pension ([2]). This is usually less favourable for pensioners with incomplete careers or steep wage-profile than for pensioners with complete careers and rather flat wage-profile. For low-income pensioners with incomplete careers, the risks to public finances will depend on whether other redistributive features built into the system (bonuses for childcare, unemployment, etc.) and the lengthening of careers, notably of women, will be sufficient to avoid an increase in the old-age poverty rate. For high-income pensioners (e.g. with steep wage profile), risks for public finances will depend on whether they are currently saving a significant part of their income.

Given that there is no such projection of the distributions of pensions, the analysis must draw on alternative indicators, notably:

- the current level of pension expenditure and the current distribution of pension rights (relative income of older people, poverty rates);
- the prospective coverage of private pensions; and
- the current and projected employment rates of older workers.

The following sections will focus on the 12 countries that project a substantial decrease (around 20 % or more) in the public benefit ratio (DE, FR, AT, IT, PT, SE, UK, EE, LV, PL, SK and MT).

2.2 The current level of public and private pension expenditure and the current distribution of pensions

First, the evolution of the benefit ratio can be compared to the actual relative level of current pensions. Countries that project a large decrease in the public benefit ratio can be grouped in four categories: first, depending on the current level of public expenditure and, second, on the coverage of private pensions.

In Germany, France, Italy, Austria, Portugal and Poland current pensions come essentially from the public PAYG system. The high level of public expenditure may be in some cases due to a low retirement age but is usually linked to a relatively generous public pension scheme at present; indeed, the median income of people aged 65+ is close to those aged 0–64 (AT, DE, FR and IT) or even higher in some cases (PL) ([3]). For those six countries, the

Table IV.3

Coverage of current pension expenditure for the 12 Member States

	Current coverage of private pensions	
Current level of public pension expenditure	Traditionally low	Traditionally high
Low (around 7 % of GDP)	EE, LV, SK, MT	UK
High (between 11 % and 14 % of GDP)	DE, FR, IT, AT, PT, PL	SE

Source: Commission services.

([1]) The net cost for public finances also depends on whether they lead to savings diversion or creation (see Antolin et al., 2004).

([2]) The pension scheme has been often transformed into a notional defined-contribution scheme (SE, PL, LV, IT and, to a certain extent, DE) with various periods of transition, a defined-contribution scheme (EE and SK) or a defined-benefit system calculated over the entire career (PT and AT). In addition, even if reforms do not effectively introduce notional defined-contribution schemes, parametric reforms also tend to make pensions schemes closer to such schemes, for example by lengthening the period over which the pension is calculated (FR), by introducing more incentives to work longer and linking the requirement to reach a full pension to life expectancy (FR up to 2020, AT).

([3]) See the technical annex to Social Protection Committee (2006a).

coverage of private pensions is traditionally more limited: current assets held by occupational or individual schemes are 12 % of GDP in Portugal, around 3 % to 4 % in France, Germany, Austria and Italy and very limited in Poland (see Table IV.3). Sweden has the same type of coverage of public pensions but occupational and supplementary pensions have traditionally played a greater role, with a large coverage of individuals (90 %) and large assets in occupational and individual schemes (around 60 % of GDP) ([1]).

([1]) Except for assets accumulated in the mandatory funded part of the pension system.

The other five countries currently spend around 7 % of their GDP in public pensions. Among these are four new Member States (EE, LV, SK and MT) where the coverage of private occupational and supplementary pensions is recent and rather limited, apart from the mandatory switch to defined-contribution pension schemes. On the other hand, as is the case for Denmark and the Netherlands, the United Kingdom has relied traditionally more on private savings: current assets held in occupational and individual schemes amount to around 100 % of GDP. Yet, the current coverage of supplementary pension schemes is around 50 % (compared with more than 90 % in DK and NL).

The information provided by the current level of pension expenditure can also be completed with additional infor-

Box IV.2: **Impact of indexation rule after retirement**

Rules regarding the indexation of pensions after retirement age do not impact the replacement rate (at retirement) but impact the relative purchasing power of retirees after retirement and therefore the benefit ratio ([1]). The question of indexation after retirement is essentially about the relative purchasing power of older pensioners compared to the pensioners that have just retired. Since wages are increasing over time, new pensions — which are (at least partly) earnings related — increase in line with wages so, with unchanged replacement rate at retirement, new pensioners will be richer than older ones, whose pensions are only indexed on price ([2]). If pensions after retirement are not fully indexed on wages, the relative purchasing power of very old retirees relative to the working-age population or younger retirees will decrease over time. These types of indexation rules may imply an increasing number of poor people among the oldest generations, since the poverty rate is not defined in 'real terms' but relative to the overall income of the economy, more precisely as the share of people whose equivalised disposable income is lower than a fraction of the median equivalised disposable income in the country. (For a definition of poverty rate, see Social Protection Committee, 2006a.)

Such indexation rules range from close to prices (IT, FR, AT, PT, UK, PL and MT) to halfway between price and wage sum (EE, LV and SK). For the other two countries, indexation is primarily on wages. In the case of Sweden, it is wage indexed at the aggregate level, but for the individual there is a front-loading involving an increase of 1.6 % on the accumulated pension capital at the time of retirement and a respective reduction of the increase in subsequent years (e.g. if real wages and salaries increase by 1.6 %, then the pension will rise at the same rate as inflation). In Germany, indexation will be reduced whenever the contribution rate rises (Riesler factor) or the dependency ratio deteriorates (sustainability factor) ([3]). It is worth noting that indexation after retirement does not increase as fast as wages for all the countries concerned.

([1]) More precisely, in the case of earnings-related schemes, the evolution of the benefit ratio mainly depends on when the change of indexation has occurred. For example, in the case of indexation of pensions on prices, the relative purchasing power of retirees compared with that of the rest of the population will decrease over time at the individual level but this is compensated for at the aggregate level, first, because new pensions are higher and, second, because pensions that are no longer paid (usually of the oldest retirees) are on average lower. By contrast, if the rule has been changed recently (for example changed from wage to price as in the case of Austria in 2006) this will decrease the benefit ratio up to the point that the new indexation rule has reached its steady state.

([2]) However pension reforms typically change replacement rates of new retirees over time with long transition periods, thus reducing the gap between the level of pensions between new and old retirees. It should be noted that, in some countries (e.g. DE), the level of the pension depends on the level of the 'pension point', which is the same for new and older retirees. Therefore, an indexation of the pension point below wage will apply to all retirees and will not affect the relative level of pensions between young and old retirees.

([3]) Dependency ratio is defined here as the ratio between the number of pensioners and the number of contributors.

mation regarding the distribution of income amongst old people, notably the current poverty rate ([1]). The income of elderly citizens does not come exclusively from public pensions but it gives strong indications on the contribution of the pension schemes to provide elderly citizens with sufficient income and to prevent old-age poverty. In Estonia, Italy, Latvia, Poland and Slovakia the poverty rate of people aged 65+ is lower than for the rest of the population despite a sometimes relatively small public spending ([2]). It is close to or slightly higher in Germany, France and Sweden and is larger in the United Kingdom, Portugal, Austria and Malta. This relates to the situation in 2003 and does not take into account recent reforms. Besides, the current poverty rate reflects past pensions and may give limited guidance concerning the evolution of the distribution of pensions in the future, though it gives an indication of the current situation ([3]). Yet, the combined effect of more actuarial neutrality (which notably penalises relatively short careers) and of indexation of pensions that does not follow the evolution of wages (see Box IV.2) may induce higher poverty risks for the low-income pensioners.

2.3. Future coverage of private occupational and voluntary pensions

The focus has been so far on public pensions and the private part of the mandatory schemes but the revenue of pensioners can be completed by other types of pensions (e.g. occupational schemes and private savings). In this section, the possible impact of those additional pensions will be considered. They will be referred to as 'private pensions', which excludes here the private part of mandatory schemes whose impact has already been addressed above (see the second column of Table IV.2).

- Case of countries where private pensions have been traditionally low (DE, FR, IT, AT, PT, PL, EE, LV, SK and MT)

The future contribution of occupational and individual private savings to compensate the decrease in the benefit ratio provided by public and private mandatory schemes mainly depends on whether the coverage has recently increased or will increase in the coming years. This distinction is also important for the evolution of public finances. Namely, if the coverage (number of people and/or average contribution rate) has recently increased, the contribution of private pensions to the replacement rate will increase over time, whereas the budgetary cost related to those increased savings has already occurred.

On the other hand, if contributions to individual private schemes are still to increase after the medium term, it may imply further budgetary cost in countries where such savings are tax exempt. The recent evolution of the coverage of pension schemes is not available in a sufficient quality, which makes it difficult to draw strong conclusions. However, assets already accumulated are generally small and the current coverage of private occupational/supplementary pensions is limited (except DE and to a lesser degree AT). Therefore, unless the coverage of private schemes and the level of contributions acknowledge a strong increase, it seems unlikely that current saving rates will totally compensate the decrease in the public benefit ratio. The reform of the TFR in Italy, which will redirect on a silent assent basis lump-sum benefits for redundary payment into a private fund, will increase the coverage of private pensions.

- Case of countries where private pensions have been traditionally higher (SE and UK)

Sweden provides projections for occupational and supplementary schemes in the Ageing Report: when including those additional pensions, the decrease in the benefit ratio is of the same magnitude albeit from a significantly higher level (private pensions outlays are currently around 2½ percentage points of GDP). There is no such projection available for the United Kingdom in the Ageing Report. However, according to the Turner reports, the 'underlying trend in private-sector employer pension contributions has been downwards since the early 1980s' and defined-benefit schemes have been replaced by less generous defined-contribution schemes ([4]). Both trends suggest that current contribution rates to private schemes will not compensate the decrease in the benefit ratio.

([1]) The poverty rate is defined as the share of people whose equivalised disposable income is lower than a fraction of the median equivalised disposable income in the country, see the technical annex to Social Protection Committee (2006a).
([2]) See the technical annex to Social Protection Committee (2006a).
([3]) Moreover, the current measure of the poverty rate does not take into account the impact of house ownership. This may change the relative ranking of older and younger people if house ownership is more widespread in older households.

([4]) See also the UK country factsheet, Social Protection Committee (2006a) (http://ec.europa.eu/employment_social/social_protection/docs/2006/uk_en.pdf).

Table IV.4

Level of assets in occupational/individual pension schemes and coverage

	Levels of assets in occupational schemes and individual schemes as a share of GDP (year)	Percentage of employees contributing to a private pension scheme (individual or occupational)
BE	37 % (2002)	40–45 %
CZ	3.2 % (2003)	40 % individual
DK	120 % (2003)	95 %
DE	3.4 % (2002)	60 % occupational; 13 % 'Riester' legislation
EE	0.7 % (2004)	8 % individual
EL	NA	Nearly no coverage
ES	12.4 % (2003)	44 %
FR	3 % (2003)	10 % occupational and 8 % life insurance
IE	43 % (2002)	52 %
IT	3 % (2003)	8 % occupational and 2 % individual
CY	13.1 % (2000)	27 % in the private sector and 13 % in the public sector
LV	0.3 % (2003)	3 % individual
LT	0.2 % (2004)	8 % individual
LU	4.0 % (2004)	20 % occupational and 2 % individual
HU	2.3 % (2003)	31 % voluntary pension plans
MT	NA	Negligible for occupational schemes and NA for other private schemes
NL	131 % (2001)	90 %
AT	4 % (2004)	35 % occupational and 10 % individual
PL	0.1 % (2003)	NA (< 49 %)
PT	12 % (2002)	4 % occupational and 1.5 % individual
SI	1.7 % (2004)	51 % occupational schemes
SK	0.95 % (2003)	NA (< 27 %)
FI	11.1 % (2003)	5 % occupational and 12 % individual
SE	62 % (2003)	90 % occupational and 40 % individual
UK	102 % (2001)	50 %

NB: Figures for coverage from different types of schemes do not necessarily add up (there can be double counting).

Source: Social Protection Committee (2005).

2.4. Effective age of retirement

Current employment rates of older workers

Table IV.5 and Table IV.6 show that there is a large scope for increasing total employment rates and employment rates of older workers and that the effective exit age from the labour market is often below the official retirement age. The currently low employment rates of people aged 55–64 in some countries (notably IT, AT, MT, PL and SK and to a lesser degree DE, FR and LV) may suggest either low financial incentives to retire later (e.g. generous pre-retirement schemes, generous pay-as-you-go schemes, low age to be entitled to a full pension) or barriers to old-age activity (e.g. age discrimination, differential between wages and productivity of older workers).

Usually supply-side factors are addressed by the pension reforms ([1]). Yet, pension reforms are still recent and transition periods are sometimes long so that the effects on employment rates will be progressive. But the possibility of other barriers limiting old-age activity cannot be ruled out. To ensure that pension reforms will effectively result in a higher effective retirement age

([1]) In Malta, the current ceiling on pensions reduces the possibility for workers to increase their pension rights by working longer. Indeed, Malta features a ceiling on pensions which is indexed on the cost-of-living adjustment (COLA) which grows roughly in line with prices. Over the long run, this indexation rule will decrease the link between pension contributions and the pension level, changing a partly earnings-related system progressively towards a flat-rate system. Therefore, if unchanged, current rules will lead to an ever decreasing replacement rate at retirement and the benefit ratio will decrease by around a half up to 2050.

Table IV.5

Age at retirement of new flows of retirees and average exit age from the labour market

	Age at retirement of new flows of retirees total (men/women)	Average exit age from the labour market (2001)	Average exit age from the labour market (2004)	Statutory retirement age (M=men, W=women, PR=private sector, PU=public sector)
BE	NA (64/61.6)	56.8	59.4	PR 65 M 64W PU 65
CZ	58 (60.2/56.3)	58.9	60.0	63M 61W with two children
DK	62.1 (62/62.3)	61.6	62.1	65
DE	(63.1/63.2)	60.6	61.3	65
EE	60.3 (61.5/59)	61.1	62.3	63M 59.5W
EL	60.4 (61.4/58.6)	59.3	59.5	
ES	62.9 (62.9/63)	60.3	62.2	65
FR	NA (60.6/62.0)	58.1	58.9	60
IE	65	63.2	62.8	65/66 depending on the scheme
IT	59.7 (59.8/59.6)	59.8	61.0	65M 60W
CY	62.7 (Nd/Nd)	62.3	62.7	61M 60W
LV	60.3 (61.4/58.3)	62.4	62.9	62M 60W (62 as of 1.7.2008)
LT	60 (61.4/58.4)	58.9	60.8	62.5M 60W
LU	Nd (60.3/62.4)	56.8	57.7	After 40 years of working life
HU	58.5 (59.7/57.3)	57.6	60.5	62M 60W
MT	60.8 (61.5/60.5)	57.6	57.7	61M 60W
NL	65 (65/65)	60.9	61.1	65
AT	60.4 (62.7/58.9)	59.2	58.8	65 (W phased in by 2033)
PL	56.8 (58.7/56.0)	56.6	57.7	65M 60W
PT	64.2 (63.7/64.8)	61.9	62.2	60.5
SI	63.2 (63.7/62.7)		56.2	63M 61W
SK	58.5 (61.4/56.8)	57.5	58.5	62
FI	59.1 (59.0/59.3)	61.4	60.5	Flexible 63–68
SE	64.7 (64.8/64.7)	61.8	62.8	Flexible, from 61 onwards
UK	62.3 (62.7/61.9)	62.0	62.1	65M 60W

Source: Social Protection Committee (2006b) for the first column, except Deutsche Rentenversicherung (2006) for DE, and Economic Policy Committee for the other three columns. Data refers to the year 2003 except for the United Kingdom (2002) and Germany (2005).

rather than low pensions, it is important to remove such barriers.

While the factors weighing on old-age activity may be very different across the EU, countries with currently low employment rates of older workers should increase them to address jointly the issues of sustainability of public finances and adequacy of pensions.

Prospective increase in employment rates of older workers

It is also important to compare the development of the benefit ratio with the hypothesis regarding the evolution of the retirement age. There are some uncertainties regarding the impact of the pension reforms on the retirement age which depends on the relative preference of workers of the level of their pensions over the time spent in retirement and on their possibility to increase their working lives as long as they would wish to or need to. It is therefore important to compare the evolution of the benefit ratio with the evolution of the employment rates of older workers that underpin the long-term projections. The macroeconomic projections of the Ageing Report include a substantial increase in the employment rates of older workers (19 percentage points between 2003 and 2050 on average in the EU-25) with a lower increase for countries with an already high employment rate of older workers (SE, UK and PT) and for Malta. The case of Sweden is interesting: the implicit hypothesis behind the long-term projections is that individuals will keep retiring at 65 leading to an ever decreasing replacement rate

Table IV.6

Employment rates in the EU in 2003 and in the projections

	Employment rate					
	15–64			55–64		
	2003	2050	Change	2003	2050	Change
BE	59.6	65.5	**5.8**	28.1	44.4	**16.3**
CZ	64.8	69.7	**4.9**	42.5	58.9	**16.4**
DK	74.9	77.9	**2.9**	59.8	66.7	**6.9**
DE	65.4	73.5	**8.1**	39.5	65.7	**26.2**
EE	62.9	70.8	**7.9**	52.7	61.7	**9.0**
EL	58.9	65.1	**6.1**	42.1	52.9	**10.8**
ES	59.7	71.4	**11.7**	40.6	62.5	**21.9**
FR	63.1	68.0	**4.9**	36.3	52.9	**16.6**
IE	65.5	74.6	**9.1**	48.8	68.9	**20.0**
IT	57.2	65.7	**8.4**	29.4	54.6	**25.2**
CY	67.7	77.3	**9.7**	50.2	69.1	**18.8**
LV	61.9	71.4	**9.5**	44.1	58.7	**14.6**
LT	61.2	71.7	**10.5**	45.3	66.2	**20.9**
LU	62.6	65.4	**2.8**	30.3	41.8	**11.5**
HU	56.9	63.2	**6.3**	28.7	49.5	**20.9**
MT	54.1	61.3	**7.2**	32.0	33.1	**1.1**
NL	73.6	77.9	**4.3**	44.4	55.2	**10.7**
AT	69.1	76.4	**7.3**	30.1	58.0	**27.9**
PL	51.0	66.1	**15.1**	26.7	48.7	**22.0**
PT	67.8	73.4	**5.5**	51.4	64.7	**13.3**
SI	62.8	69.3	**6.6**	23.5	52.6	**29.1**
SK	57.8	68.7	**11.0**	25.2	51.2	**26.0**
FI	67.7	74.4	**6.7**	49.4	64.9	**15.5**
SE	73.1	77.6	**4.6**	68.8	76.6	**7.9**
UK	71.5	74.7	**3.2**	55.4	63.9	**8.6**
EU-25	63.1	70.9	**7.8**	39.9	58.9	**18.9**
EU-15	64.6	71.5	**6.9**	41.4	60.2	**18.9**
EUR-12	62.9	70.5	**7.6**	37.4	58.8	**21.3**
NMS10	55.7	67.1	**11.4**	31.7	51.9	**20.2**

Source: Commission services.

and consequently a decreasing benefit ratio. Other modelling choices (such as a rise in the age of retirement with life expectancy) could have resulted in higher replacement rates with limited impact on financial sustainability. By contrast, substantial increases in old-age employment rates are projected in Germany, Italy, Austria, Poland and Slovakia, and to a lesser degree France. The large increase in the effective exit age from the labour market built into the projections will not be sufficient to compensate for the decrease in the benefit ratio. This underlies the importance for those countries of reaching high levels of employment rate for older workers, to ensure adequacy of pensions.

2.5 Conclusions

In some countries, a large decrease in the benefit ratio is being projected. The purchasing power of pensions is still projected to increase in real terms, albeit at a significantly slower pace than wages. It may therefore raise some doubts regarding the 'social' sustainability of current arrangements.

The aim of this section is not to assess current and future pension policies in view of ensuring adequate pensions but to identify pension-related risks to the central Ageing

Report scenario. Drawing strong conclusions is, however, difficult given the diversity of pension arrangements in the EU. Namely, taking account of the large redistributive impact of the already enacted pension reforms as well as the effects of the past trends on the labour market is necessary to anticipate precisely whom the shortfall in pension income will concern, first in comparison with the current income level of today's pensioners and second in terms of the absolute level reached in the future. More importantly, the risks to public finances will crucially depend on the reaction of individuals regarding their future retirement arrangements: accept a lower pension, work longer or increase their savings. Those individual choices will have very different effects on public expenditure and revenues. In that respect, the information that current and future pensioners have regarding their future rights is central to ensuring that current workers are making appropriate choices for the level of their individual savings in view of the planned length of their working lives and the level of their pension.

Some conclusions may be drawn for the 12 countries which project notable reductions in the relative level of public pension schemes.

- First, the partial switch of the mandatory scheme to a funded defined-benefit scheme classified in national accounts as a private scheme mechanically reduces the public benefit ratio (SE, EE, LV, PL, SK) but when corrected for this, the decrease in the benefit ratio remains substantial in all countries except Latvia.

- Second, raising employment rates, notably of older workers, is of prime importance for many of those 12 countries, not only in terms of financial sustainability but also for the adequacy of pensions. While this is true for the EU as a whole, this is particularly the case in countries where the decrease in the benefit ratio is large despite a significant projected increase in employment rates of people aged 55–64 (DE, FR, IT, AT, PL and to a lesser degree PT and SK). Incentives to work longer have usually been increased by pension reforms but this has not necessarily translated immediately into a higher employment rate of older workers. Namely, the incentives remain very different among Member States, with sometimes long transition periods, and may still be low in some countries (e.g. MT due to the effect of the ceiling). In addition, there may still be alternative routes to retirement like disability schemes or early pensions. Also, one cannot exclude that demand-side barriers (perceived lower productivity of older worker, age discrimination, etc.) are still weighting on employment rates of older workers. If those barriers are removed, pension reforms will efficiently translate into higher employment rates.

- Third, the coverage of private pensions (excluding the mandatory private pensions) differs quite significantly between countries. Two out of the 12 countries concerned by a significant decrease in the public benefit ratio traditionally rely more on private pensions (UK and SE). While, in Sweden the coverage of private occupational pension concerns a large share of the population (90 %), the coverage is more limited in the United Kingdom (around 50 % of the population). For the other 10 countries, current assets in occupational and individual schemes are rather low and the current coverage is limited. Despite a lack of data regarding recent trends, the current coverage is unlikely to compensate fully the decrease in the public benefit ratio except if a substantial rise in private savings would arise, which in turn may affect public revenue.

- Fourth, pensions after retirement are for these 12 countries indexed below wage growth. This type of indexation has a strong impact on the budgetary projections and on the relative purchasing power of older retirees compared to new retirees. However, whether it will imply a higher risk of poverty in the future depends on other features of the pension schemes (e.g. minimum pensions, compensation of inactivity) and other socio-demographic trends (e.g. lengthening careers of women) whose total effect on the distribution of pensions is not really known.

3. Revenue projections

To date, no common projections of government revenue have been made at EU level. Yet, demographic changes may also have an impact on the size and sources of tax revenues; and consequently public revenue developments may have an impact on the sustainability of public finances.

In the Commission/Council assessment of the sustainability of public finances, public revenue is assumed to be constant as a share of GDP when calculating the sustainability indicators. Some Member States undertake public revenue projections (3.1) and this additional information is taken into account, on a case-by-case basis, in the sustainability analysis when reaching the overall assessment (3.2). Finally, a method is proposed to take into account the evolution of property income, one of the general government revenue items, in the long-term projections (3.3).

3.1. Current approach in the EU surveillance framework and alternative approaches by Member States

Projecting public primary revenue over the long term requires two types of hypotheses ([1]): (i) regarding the evolution of the tax bases as a share of GDP in the future; and (ii) regarding the evolution of the average tax rate on the different tax bases. A 'basic' approach to project public primary revenue over the long term is to assume a unit elasticity of each revenue item with regard to the relevant tax base and a unit elasticity of the tax bases to GDP. This leads to a constant revenue/GDP ratio over the long term. Two arguments are behind this approach.

- A unit elasticity of each revenue item to the relevant tax base is a good proxy of unchanged policy for the long-term analysis of fiscal policy. The very detailed features of the current tax system are not necessary. More importantly it avoids the inflationary bias that for example could result from extending current tax brackets over the long run ([2]). This hypothesis for projecting constant policy in the tax system is commonly used in long-term projections, and in more sophisticated models (e.g. DK, SE and NL).

- The choice of a unit elasticity of the tax base to GDP is also a good hypothesis in the absence of a model that can estimate the impact of ageing on the different tax bases. Besides, even if the tax bases are expected to change as a share of GDP, the overall impact on the total public revenue/GDP ratio will be limited if the average tax rates on the different tax bases are close and if an increasing tax base is compensated by another decreasing tax base ([3]).

This 'basic' approach has been used in the calculations of the indicators and has been applied to total public revenue in the sustainability analysis (see Chapters II and III). This approach is followed (explicitly or implicitly) by a majority of EU countries. However, a number of countries conduct projections of revenues in their national long-term projections.

([1]) Primary revenue is defined here as public revenue, excluding property income (see Section 3.3). This definition is symmetric to primary expenditure, which is defined as public expenditure, excluding interest expenditure on outstanding debt.

([2]) For example, income tax brackets are usually fixed in nominal or real terms. As income increases in line with GDP, this entails an increase in the overall tax rate over time. While maintaining formal fiscal rules is relevant for short-term and medium-term planning, this is not the case for long-term analysis since this would ultimately lead every citizen to be taxed at the highest marginal level, changing substantially the redistributive properties of the income tax system.

([3]) In practice, tax rates on the different tax bases may be quite different in EU countries (see Eurostat/Taxation and Customs Union, 2006). However, under the assumption that an increase in one tax base is offset by a decrease in another tax base, this will lead to large changes in the overall revenue/GDP ratio only in the case when there are large differences in tax rates and large changes in tax bases. For example, in 2003 in the EU, the tax rate on labour was 10 percentage points higher than on capital; an increase of the wage share by 10 percentage points would lead to an increase in the total tax ratio of 1 percentage point of GDP.

- A large group of countries (e.g. AT, DE, EE, FI and MT) projects part of the public revenue or keeps revenue/GDP constant except for a few budgetary items where there is evidence of a change in the future or only contributions to the pensions scheme. Usually, those items are the impact of direct taxation of pensions or a change in pension contributions as a share of GDP.

- The United Kingdom uses a methodology close to generational accounting for each tax revenue item (30 items). The impact on public revenue results from the combination of the current age-profile and the change in demographics ([1]). There is therefore no explicit projection of the tax bases.

- Three countries (NL, SE and DK) have a complete macroeconomic model where there are substantial changes in the different components of GDP over time, and therefore in the different tax bases. It is interesting to note that the overall change in the revenue/GDP ratio is positive but limited to around 1 to 1.5 percentage points of GDP even though some specific items may show a very large increase/decrease.

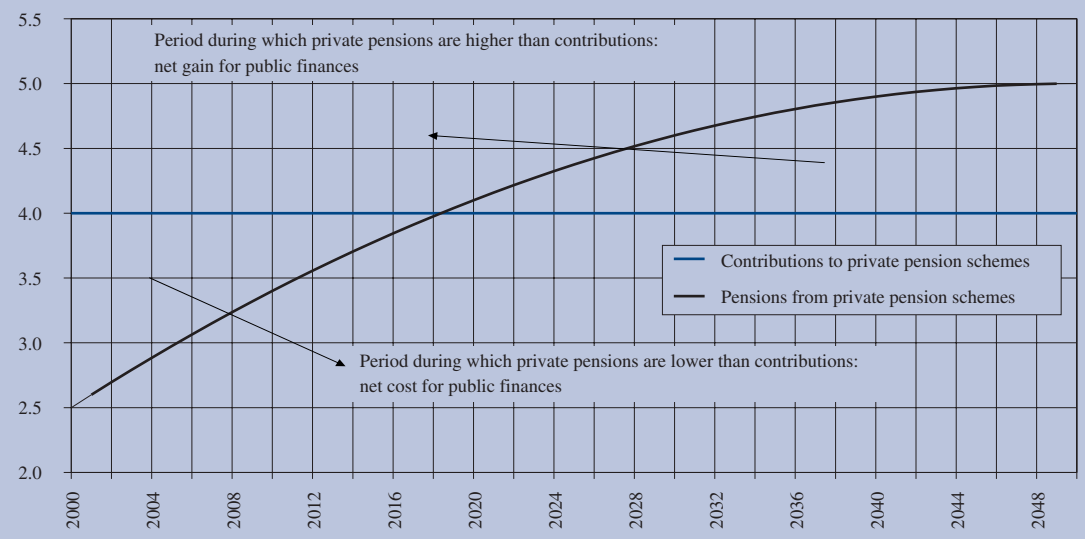
([1]) Those age profiles on the revenue side are indexed on GDP growth to avoid inflationary bias (or fiscal drag) in the long-term projections (see footnote 81).

There is a large diversity in outcomes across the EU regarding both the size and the sign of those changes. According to national projections it ranges from – 3.6 % of GDP (MT) to + 3.9 % of GDP (FI). The main revenue changes projected by the Member States are related to the following factors.

- **Direct taxation of pensions:** Given that pensions are subject to income tax in most EU countries, the rise in net public pension expenditure may be lower than the rise in gross public pension expenditure, leading to a lower sustainability gap. Moreover, some countries have large maturing private pension schemes and should experience a net increase in public revenue. For instance, in Denmark and the Netherlands, contributions to private pensions are still higher than private pension outlays. Given that private pensions are taxable while contributions are not; this currently incurs a net cost to public finances. The situation will be reversed in the future when private pension outlays will be higher than contributions (see Graph IV.2). For example, according to national projections, direct taxes on pensions are projected to increase by around 3 % of GDP in Denmark.

- **Change in the taxation of pensions:** In Germany, taxation of pensions from statutory pensions insurance will be changed from a system where

Graph IV.2: **Impact on public finances of maturing private pension schemes**



contributions were partially taxed whereas pension benefits were practically exempted, to a system where contributions are fully exempted whereas pension benefits are completely subject to tax. Such a change has been enacted and will have a long transition period. Tax revenue from pensions is projected to increase from 4 % to 9.5 % of the tax base. In Hungary, pensions are currently not taxed, but they will be taxed as of 2013.

- **Structural changes in the economy:** In Denmark and in the Netherlands, the depletion of natural resources (oil, gas) will lead to a substantial decrease in the overall revenue/GDP ratio since the economic activities in the oil and gas sector are more heavily taxed than in the rest of the economy. The net impact of the overall revenue/GDP ratio can be as large as 1 percentage point of GDP over the long term in the Netherlands and in Denmark. In Sweden the wage share of the economy is expected to increase due to the assumption of more dynamic wages than the price of capital in the public sector and due to the increasing share of the public sector in the future (linked to an increase in public healthcare and long-term care). This is expected to have a net positive impact on the tax/GDP ratio.

- **Increase in indirect taxes:** some Member States project an increase in national spending as a share of GDP due to an increase in consumption resulting from a larger share of older people. Indirect taxes (like VAT) will increase, as a share of GDP is therefore projected to increase. But more dynamic national spending than income implies a deterioration of the trade surplus/deficit in the future. Therefore, this is possible if already accumulated foreign assets and the current trade surplus are large enough to respect the intertemporal budget constraint of the economy as a whole. Namely, large trade surpluses at present enable an accumulation of foreign assets which can subsequently, when drawn down, finance higher consumption in the future without crowding out private and public investment. For example, in the Netherlands, indirect taxes are projected to increase by 1.5 percentage points of GDP up to 2050.

- **Changes related to the pension scheme:** Some countries switched a part of their current public scheme into a funded defined-contribution scheme, to be classified as a private scheme. This has a large medium-term revenue-reducing impact; it may also have a longer term impact in countries where the new scheme is not compulsory for older generations (e.g. LV where contributions as a share of GDP are expected to decrease by 0.7 of a percentage point of GDP). In Malta, there is a ceiling both on the level of pensions and on the contributions paid to the pension scheme. This ceiling is indexed on price leading to a sharp decrease in the public benefit ratio and in the contributions as a share of GDP of around 3.5 %. Finally, in Austria, the decrease in the number of civil servants as a share of the working age population would lead to a slight decrease in pension contributions since pension contributions for civil servants are currently higher than in the general social security scheme. The effect is however limited (– ¼ of a percentage point of GDP).

- **Increase in the contribution rate:** In Germany (+ 1.6 % of GDP), this is due to the fact that in the field of social security, quasi-automatic adjustments on the revenue side to compensate budgetary gaps are posited in German law. In Finland (+ 2.2 % of GDP), a similar adjustment takes place in the projections: the increase in public pension expenditure that is not covered by the public pension fund will lead to a rise in pension contributions. The change in the contribution rate depends in that case on the assumed returns of the pension fund.

- **A decrease in consumption of fixed capital in the public sector:** This is expected in Sweden. However, in national accounts, capital depreciation in the public sector is considered as a public revenue (equivalent to the operating surplus in the private sector) and as a production cost (since non-market products are valued at the costs of the factors); therefore it has no impact on the general government deficit.

- **Change in property income:** Property income received by the general government consists of the revenues that the government receives from owning financial asset ([1]). The dynamics of property income mainly depend on the type of financial assets (bonds, shares, etc.), the expected return on those assets and, finally, on the net purchase of assets in the future. Property income can be treated separately from other revenue items and a way to project property income is presented below (Section 3.3).

([1]) It also includes rents on land and subsoil assets, which are only large for two countries (DK and NL).

3.2. Treatment of additional revenue projections in the sustainability assessment

As for the assessment of the 2005/06 SCPs, the sustainability indicators have been calculated in this report assuming a constant revenue/GDP ratio. However, additional information regarding different revenue projections is taken into account when reaching the overall assessment ([1]).

The question in terms of assessment of long-term sustainability is whether a given additional budgetary trend is likely to burden or alleviate the risks to public finances. In that respect, the main important factors that are considered are: (i) the size of the change; (ii) the consistency with the Ageing Report assumptions and results; (iii) the impact of possible offsetting factors; and (iv) the country specificity of the change. More precisely, national revenue projections have been considered as follows.

- **Direct taxation of pensions** can be an alleviating factor. Namely, the net increase in public pension may be lower than the gross increase in pension expenditure, leading to a smaller sustainability gap. Moreover, due to the tax exemption of contributions to private pension schemes, some countries have accumulated large public assets in the form of deferred tax on private pensions, which will alleviate the cost of ageing on public finances. However, it is important that the increase in direct taxation of pensions is consistent with the long-term projections on pensions, notably the substantial decrease in the public benefit ratio that is projected in a number of countries. Moreover, the level of private pension expenditure in the future assumes a certain level of contributions to private schemes that may evolve in the future. The impact of such a change in private contributions, which may be tax deductible, must also be taken into account. The impact of direct taxation of pensions is usually taken into account provided that it is consistent with the Ageing Report and is net of other offsetting factors (notably possible changes in contribution rates to private schemes).

- The **change in the taxation of pensions** is usually a long process to avoid double taxation of pensioners and it can be taken into account in the analysis when the process is already ongoing but not when the process will start in the distant future, to avoid excessive uncertainty. Besides, the change in taxation of pensions may also imply a change in the taxation of pension contributions. Therefore only the net impact should be taken into account.

- The **structural changes in the economy** are taken into account to the extent to which they are country specific. This is typically the case for the depletion of natural resources (NL and DK). By contrast, the increase in the wage share due to an increase in the public sector in the economy will only be country specific with regard to the diversity of increases in public long-term care and healthcare expenditure across countries.

- **Increase in indirect taxes:** The impact of ageing, a larger share of older people in the population, on savings and consumption pattern is uncertain ([2]). The increase in consumption as a share of GDP may depend mainly on the extent to which a country has accumulated enough foreign assets or has large enough trade surpluses to enable a rise in consumption without crowding out investment. This is taken into account provided that consistency with the external trade balance is ensured.

- **Changes related to the pension schemes** are usually taken into account. For instance, the partial switch to private mandatory pensions in Latvia, the reduction of civil servants in Austria and the impact of the ceiling in Malta have a strong impact on the public pension projections. Such changes in contributions as a share of GDP are usually taken into account to increase the consistency between the revenue and the expenditure sides of the pension scheme. Yet, except in the case of Malta, the impact is rather limited.

- The question of a **future increase in the pension contribution rate** is linked to the emergence of a gap between pension expenditure and revenue that most PAYG pensions systems will be confronted with. The sustainability gap indicators explicitly aim at measuring such a gap. This change is not considered as a risk-reducing factor but is described in the assessment.

- The **change in property income** is not linked to ageing but results from the consistency between the level of property income and the underlying hypothesis of the purchase/sales of assets and therefore on

([1]) See Chapter VI.

([2]) See Economic Policy Committee and European Commission (Economic and Financial Affairs DG) (2003).

the stock/flow adjustments, which may be different from each other in the national models so that the changes cannot be compared. The evolution of property income can, however, be treated consistently from an EU perspective (see below).

3.3. Changes in property income over time

Property income and proposed way forward

Property income is the income received by the owner of a financial asset (or land and subsoil assets) in return for providing funds to the disposal of another agent ([1]). It can be paid or received by the general government ([2]). It is thus one revenue item of general government revenues, which consists mainly of:

- interest received from deposits, bonds and loans (D41);
- dividends received from shares and withdrawals from the income of quasi-corporations (D42);
- rents on land and subsoil assets (D45), which is usually marginal except for a few countries (DK and NL).

Property income in the future will depend on the return of the assets, their future value and the purchases and sales of those assets. Its evolution is not directly related to ageing and does not depend on the evolution of the different tax bases as a share of GDP or of the tax-system ([3]). It can therefore be projected separately; a methodology to project property income received by the general government is proposed below.

In the sustainability assessment, it is supposed that there is no stock-flow adjustment (SFA) in the long term, i.e. the evolution of debt is only driven by the general government balance. There are therefore neither net purchases nor net sales of financial assets in the future ([4]). The consequence should therefore be that property income is constant in nominal terms rather than as a share of GDP. Namely, the no SFA hypothesis implies that:

- returns from financial assets (property income) are used to reimburse debt and not to buy new assets;
- when a bond matures, it is replaced by a bond with the same nominal value.

Therefore, the value of the assets is constant in nominal terms, implying that the nominal returns from those assets are also constant, if the rate of returns is constant.

Projecting property income

The evolution of property income in the future mainly depends on the current portfolio of assets and the currently observed level of the rate of return. The size of property income in the Member States is given in Table IV.7. A very detailed treatment of property income cannot be envisaged in this report, given data availability regarding property income and financial assets. First, the decomposition of property income notably between interests and dividends is not available for all Member States and, in any case, only up to 2004 (see Table IV.9). Second, the value of the financial assets is not available for all Member States to estimate the current rates of returns of the different assets.

However, it is likely that keeping property income constant as a share of GDP could significantly underestimate the size of the indicators. Therefore considering a common methodology for property income could give a more adequate picture of the sustainability risks in the EU perspective.

Table IV.7 presents projections of property income calculated in assuming that property income comes from bonds which currently yield a nominal rate of returns equal to the average nominal returns for German bonds (3.4 % on average in 2005). This is a good proxy, at least, for interest-bearing assets.

It shows that property income, under the assumptions of no SFAs would first decrease as a share of GDP up to 2010, then it would significantly increase in 2011 when the nominal long-term interest rate of 5 % is supposed to be reached. And it would decrease as a share of GDP over time. The impact on the sustainability indicators is

([1]) It could be noted that returns from real estate (i.e. rentals on buildings) are not included in property income in the national accounts since they are produced (and often consumed) by the general government.

([2]) Property income paid by the general government is almost exclusively due to interest paid on the outstanding level of debt.

([3]) It is related to ageing only through the effect of ageing on interest rates and the rate of return of risky assets and the fact that some governments are explicitly accumulating assets in view of ageing populations.

([4]) Alternative assumptions could be taken regarding the net purchase of assets or net sales of assets in the future. This would be neutral in terms of long-term sustainability since assets and general government debt have the same rate of returns in the current sustainability framework. Therefore the extra revenue from those newly bought assets would exactly compensate the increase in interest expenditure due to the extra debt.

quite limited on average for the EU (0.1 of a percentage point of GDP for S1 and around 0.3 to 0.4 of a percentage point for S2) but the impact is significantly higher for countries with currently large revenue from property income (DK, NL, FI and SE). It may be surprising that countries with relatively large assets are worse off in terms of sustainability than countries without such assets. However, the change should be compared to the current hypothesis of maintaining property income constant as a share of GDP, which is likely to be too favourable since maintaining such a flow of revenue would imply large net assets purchases, which would in turn lead to more dynamic debt growth than implied by the general government balance (i.e. positive SFAs).

Finally, the projections presented in Table IV.7 do not consider the composition of the assets; further work may be done with the Ageing Working Group to better estimate the composition of the assets of the general government. The methodology proposed above can be applied directly to interest-bearing assets but could be modified.

- For dividends-bearing assets (shares): Indeed, returns from those assets can come as dividends (classified as property income) and also as valuation effects (not classified as property income). The current level of property income may underestimate the total returns from those assets.

- For subsoil assets: One needs hypotheses on future prices of oil and information regarding the size of reserves. This mainly concerns two countries (DK and NL).

In addition, given that data on the decomposition of property income and data on financial assets are not available for every EU country, assumptions regarding missing data or additional information from Member States will be needed in order to apply the same methodology for all countries.

Table IV.7

Projections of property income

	Property income (as a share of GDP)						Impact on the sustainability indicators compared with the baseline		
	2005	2010	2011	2030	2050	2070	S1	S2	
								Up to 2050	Up to infinity
BE	0.6	0.5	0.7	0.3	0.2	0.1	0.1	0.2	0.3
CZ	0.7	0.5	0.7	0.3	0.2	0.1	0.1	0.2	0.3
DK	2.2	1.7	2.5	1.3	0.6	0.3	0.3	0.8	1.1
DE	0.6	0.5	0.7	0.4	0.2	0.1	0.1	0.2	0.3
EE	1.1	0.7	0.9	0.4	0.2	0.1	0.2	0.3	0.4
EL	1.0	0.8	1.1	0.6	0.3	0.2	0.1	0.3	0.4
ES	0.7	0.5	0.7	0.4	0.2	0.1	0.1	0.2	0.3
FR	0.6	0.5	0.7	0.3	0.2	0.1	0.1	0.2	0.3
IE	1.1	0.8	1.0	0.4	0.2	0.1	0.3	0.4	0.5
IT	0.6	0.5	0.7	0.4	0.2	0.1	0.1	0.2	0.3
CY	1.0	0.7	1.0	0.4	0.2	0.1	0.3	0.4	0.5
LV	0.8	0.4	0.6	0.2	0.1	0.1	0.2	0.2	0.3
LT	0.7	0.5	0.6	0.2	0.1	0.1	0.2	0.2	0.3
LU	1.0	0.7	1.0	0.4	0.2	0.1	0.3	0.6	0.7
HU	0.8	0.6	0.8	0.4	0.2	0.1	0.2	0.3	0.3
MT	1.5	1.2	1.7	0.7	0.3	0.2	0.4	0.7	0.8
NL	2.3	1.9	2.7	1.4	0.7	0.3	0.4	0.9	1.2
AT	1.4	1.1	1.6	0.8	0.4	0.2	0.2	0.4	0.6
PL	1.6	1.2	1.6	0.6	0.4	0.2	0.4	0.6	0.7
PT	0.5	0.4	0.6	0.3	0.2	0.1	0.1	0.2	0.2
SI	0.9	0.7	0.9	0.4	0.2	0.1	0.2	0.3	0.4
SK	2.0	1.3	1.8	0.7	0.4	0.3	0.5	0.6	0.8
FI	3.1	2.5	3.6	1.8	0.9	0.5	0.5	1.1	1.5
SE	2.3	1.8	2.5	1.1	0.5	0.3	0.5	1.0	1.3
UK	0.9	0.7	1.0	0.5	0.2	0.1	0.2	0.3	0.4
EUR-12	0.8	0.7	0.9	0.5	0.2	0.1	0.1	0.3	0.4
EU-25	0.9	0.7	1.0	0.5	0.3	0.1	0.2	0.3	0.4

Source: Commission services.

It should be noted that when a consistent treatment of property income is applied the correction for the assets owned by the general government in public pension schemes (see Chapter I) should be revised accordingly, to project the level of assets in those pension funds consistent with the evolution of property income that will be projected.

3.4. Conclusions

Ideally, the sustainability of public finances should be assessed with consistent projections of expenditure and revenue of the general government. Some trends, notably concerning primary revenue, may have a substantial impact on future budgetary developments. However, except in a few cases where large country-specific trends can be identified (notably the tax treatment of private pensions), the impact of revenue projections is more limited, leading to a limited impact on the assessment of the sustainability of public finances.

The feasibility of common projections at the EU level on the revenue side will be discussed for the next common projections round, notably in view of the cost/benefit of undertaking such an exercise.

Finally, a more consistent way of treating property income could lead to a higher sustainability gap compared to the baseline scenario, which underestimates the sustainability gap, notably in the few countries where property income is relatively large (DK, NL, FI and SE) of around 1 to 1.5 points of GDP, i.e. 0.5 to 1 point of GDP higher than on average in the EU. However, further work may be required in coordination with the Ageing Working Group to ensure a better estimate of property income for the EU-25 countries that takes into account the composition of assets owned by the general government.

Table IV.8

Property income in the EU (% of GDP)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
BE	1.1	1.2	1.0	1.0	0.8	1.0	1.2	0.9	0.8	0.6	0.6
CZ	1.0	0.8	0.9	0.8	0.6	0.5	0.8	1.2	1.0	0.8	0.7
DK	2.8	3.3	2.9	2.6	2.3	2.2	2.4	2.2	2.1	2.4	2.2
DE	1.0	1.0	0.9	0.8	0.9	0.8	0.9	0.9	0.8	0.5	0.6
EE	0.3	0.4	0.9	0.6	0.5	0.8	1.0	1.2	1.1	1.1	1.1
EL	2.5	2.1	2.3	2.2	1.8	1.7	1.8	1.5	1.3	1.1	1.0
ES	1.6	1.7	1.4	1.2	1.2	1.1	1.4	1.0	0.8	0.7	0.7
FR	1.2	1.0	0.8	0.8	0.7	0.7	0.9	0.8	0.6	0.6	0.6
IE	1.4	1.4	1.2	1.1	1.0	1.1	1.3	1.2	1.0	1.0	1.1
IT	1.1	1.0	0.8	0.6	0.7	0.6	0.7	0.6	0.6	0.5	0.6
CY	:	:	:	0.9	0.8	0.9	1.6	0.8	2.2	0.7	1.0
LV	0.6	0.5	0.5	0.4	0.6	0.7	0.8	0.7	0.6	0.8	0.8
LT	0.3	0.3	0.4	0.9	1.0	1.3	1.5	1.1	0.9	0.8	0.7
LU	2.3	2.0	2.2	2.1	1.9	2.1	2.0	1.7	1.3	1.2	1.0
HU	:	:	:	:	1.1	1.1	1.0	0.7	0.7	1.1	0.8
MT	:	:	:	3.3	3.5	2.6	2.7	2.4	2.7	2.8	1.5
NL	2.8	2.7	2.4	2.0	1.8	1.9	2.4	2.0	1.9	2.0	2.3
AT	1.9	1.5	1.5	1.3	1.4	1.5	1.5	1.5	1.5	1.3	1.4
PL	1.8	0.8	1.1	0.5	1.0	1.2	1.1	1.5	1.5	1.5	1.6
PT	1.2	1.2	1.3	1.0	0.9	0.8	0.8	0.8	0.7	0.8	0.5
SI	:	:	:	:	:	0.9	0.9	0.9	0.9	0.7	0.9
SK	1.6	1.5	1.0	1.1	1.9	1.8	1.7	0.8	1.3	1.7	2.0
FI	3.9	3.7	3.3	3.0	2.6	3.4	3.6	3.3	3.2	3.4	3.1
SE	5.2	4.9	4.3	4.1	3.4	3.3	2.5	2.2	2.3	2.1	2.3
UK	1.6	1.5	1.3	1.3	1.2	1.2	1.2	1.1	1.0	0.9	0.9

NB: Data on property income received by the general government

Source: Eurostat.

Table IV.9

Decomposition of D4 for some countries

		2000	2001	2002	2003	2004			2000	2001	2002	2003	2004
Belgium (BE)	**D4**	**1.1**	**1.3**	**1.1**	**1.0**	**0.7**	**Lithuania (LT)**	**D4**	**1.3**	**1.5**	**1.1**	**1.0**	**0.8**
	D41	0.4	0.6	0.5	0.4	0.4		D41	0.7	0.9	0.5	0.4	0.3
	D42	0.6	0.7	0.6	0.5	0.3		D42	0.4	0.3	0.2	0.3	0.3
	D43	0.0	0.0	0.0	0.0	0.0		D43	:	:	:	:	:
	D44	0.0	0.0	0.0	0.0	0.0		D44	0.0	0.0	0.0	0.0	0.0
	D45	0.0	0.0	0.1	0.1	0.1		D45	0.2	0.3	0.4	0.2	0.2
Czech Republic (CZ)	**D4**	**0.5**	**0.8**	**1.1**	**1.3**	**:**	**Luxembourg (LU)**	**D4**	**1.8**	**1.9**	**1.8**	**1.5**	**:**
	D41	0.4	0.4	0.8	0.5	:		D41	1.2	1.6	1.4	1.2	:
	D42	0.1	0.4	0.2	0.6	:		D42	0.2	0.1	0.4	0.2	:
	D43	:	:	:	:	:		D43	0.0	0.0	0.0	0.0	:
	D44	:	:	:	0.0	:		D44	0.0	0.0	0.0	0.0	:
	D45	0.1	0.1	0.1	0.1	:		D45	0.4	0.1	0.1	0.1	:
Denmark (DK)	**D4**	**2.2**	**2.4**	**2.2**	**2.1**	**2.4**	**Netherlands (NL)**	**D4**	**2.0**	**2.7**	**2.2**	**2.0**	**2.1**
	D41	1.6	1.6	1.5	1.3	1.3		D41	0.8	0.9	0.8	0.7	0.6
	D42	0.5	0.6	0.5	0.6	0.7		D42	0.7	1.0	0.8	0.6	0.8
	D43	0.0	0.0	0.0	0.0	0.0		D43	:	0.0	0.0	0.0	0.0
	D44	:	0.0	0.0	0.0	0.0		D44	0.0	0.0	0.0	0.0	0.0
	D45	0.1	0.2	0.2	0.2	0.4		D45	0.5	0.7	0.6	0.7	0.7
Germany (DE)	**D4**	**0.8**	**1.0**	**0.9**	**0.8**	**0.6**	**Austria (AT)**	**D4**	**1.5**	**1.6**	**1.5**	**1.5**	**1.4**
	D41	0.5	0.5	0.5	0.4	0.4		D41	0.8	0.8	0.8	0.7	0.7
	D42	0.3	0.4	0.4	0.3	0.1		D42	0.5	0.6	0.6	0.7	0.6
	D43	0.0	0.0	0.0	0.0	0.0		D43	0.0	0.0	0.0	0.0	0.0
	D44	0.0	0.0	0.0	0.0	0.0		D44	0.0	0.0	0.0	0.0	0.0
	D45	0.0	0.0	0.0	0.0	0.0		D45	0.1	0.1	0.1	0.1	0.1
Estonia (EE)	**D4**	**0.8**	**1.1**	**1.3**	**1.2**	**:**	**Poland (PL)**	**D4**	**1.2**	**1.2**	**1.6**	**1.5**	**1.6**
	D41	0.3	0.3	0.3	0.6	:		D41	0.7	0.5	1.1	0.8	0.9
	D42	0.5	0.7	0.9	0.5	:		D42	0.4	0.5	0.4	0.6	0.6
	D43	:	:	:	:	:		D43	:	:	:	:	:
	D44	0.0	0.0	0.0	0.0	:		D44	0.0	0.0	0.0	0.0	0.0
	D45	0.1	0.1	0.1	0.1	:		D45	0.2	0.2	0.1	0.1	0.1
Greece (EL)	**D4**	**1.9**	**1.9**	**1.7**	**1.5**	**1.3**	**Portugal (PT)**	**D4**	**0.9**	**0.9**	**1.0**	**0.9**	**:**
	D41	1.2	0.8	0.6	0.5	0.4		D41	0.5	0.5	0.4	0.4	:
	D42	0.6	1.0	1.1	0.8	0.8		D42	0.4	0.4	0.5	0.4	:
	D43	0.0	0.0	0.0	0.0	0.0		D43	0.0	0.0	0.0	0.0	:
	D44	0.0	0.0	0.0	0.0	0.0		D44	0.0	0.0	0.0	0.0	:
	D45	0.1	0.1	0.1	0.1	0.1		D45	0.0	0.0	0.0	0.0	:
Spain (ES)	**D4**	**1.2**	**1.4**	**1.1**	**0.9**	**0.9**	**Slovakia (SI)**	**D4**	**2.2**	**1.8**	**0.8**	**1.3**	**:**
	D41	0.3	0.5	0.4	0.3	0.3		D41	0.9	0.9	0.6	0.9	:
	D42	0.8	1.0	0.7	0.6	0.5		D42	1.2	0.8	0.1	0.3	:
	D43	0.0	0.0	0.0	0.0	0.0		D43	0.0	0.0	0.0	0.0	:
	D44	0.0	0.0	0.0	0.0	0.0		D44	0.0	0.0	0.0	0.0	:
	D45	0.0	0.0	0.0	0.0	0.0		D45	0.0	0.0	0.1	0.1	:
France (FR)	**D4**	**0.8**	**1.0**	**0.9**	**0.7**	**0.6**	**Finland (FI)**	**D4**	**4.2**	**4.1**	**3.6**	**3.3**	**3.4**
	D41	0.3	0.4	0.3	0.3	0.2		D41	2.6	2.6	2.3	2.0	1.8
	D42	0.4	0.5	0.5	0.3	0.3		D42	1.4	1.4	1.1	1.1	1.4
	D43	0.0	0.0	0.0	0.0	0.0		D43	:	:	0.0	0.1	0.1
	D44	0.0	0.0	0.0	0.0	0.0		D44	:	:	:	:	:
	D45	0.1	0.1	0.1	0.1	0.1		D45	0.1	0.2	0.2	0.2	0.2

(Continued on the next page)

Table IV.9 (continued)

		2000	2001	2002	2003	2004			2000	2001	2002	2003	2004
Ireland (IE)	**D4**	**:**	**1.3**	**1.2**	**1.0**	**1.0**	**Sweden (SE)**	**D4**	**3.3**	**2.4**	**2.3**	**:**	**:**
	D41	:	0.4	0.2	0.1	0.2		D41	2.0	1.3	1.2	:	:
	D42	:	0.9	1.0	0.9	0.9		D42	1.1	1.0	1.0	:	:
	D43	:	0.0	0.0	0.0	0.0		D43	:	:	:	:	:
	D44	:	0.0	0.0	0.0	0.0		D44	:	:	:	:	:
	D45	:	0.0	0.0	0.0	0.0		D45	0.1	0.1	0.1	:	:
Italy (IT)	**D4**	**0.7**	**0.8**	**0.8**	**0.8**	**0.7**	**United Kingdom (UK)**	**D4**	**1.7**	**1.7**	**1.5**	**1.4**	**1.2**
	D41	0.4	0.5	0.4	0.4	0.3		D41	0.8	0.7	0.6	0.6	0.5
	D42	0.1	0.2	0.2	0.2	0.2		D42	0.8	0.7	0.6	0.6	0.6
	D43	0.0	0.0	0.0	0.0	0.0		D43	0.0	0.0	0.0	0.0	0.0
	D44	0.0	0.0	0.0	0.0	0.0		D44	0.0	0.0	0.0	0.0	0.0
	D45	0.2	0.2	0.2	0.2	0.2		D45	0.1	0.2	0.2	0.1	0.1
Latvia (LV)	**D4**	**0.8**	**0.9**	**0.8**	**0.7**	**0.9**							
	D41	0.5	0.5	0.2	0.1	0.1							
	D42	0.2	0.4	0.6	0.5	0.7							
	D43	0.0	0.0	0.0	0.0	0.0							
	D44	0.0	0.0	0.0	0.0	0.0							
	D45	0.1	0.0	0.0	0.0	0.0							

NB: The decomposition of property income for countries where data are available shows that the main components are D41 (interests) and D42 (dividends).

Source: Eurostat.

4. Stock-flow adjustment

Given the importance of the initial budgetary position (initial stock of government debt and primary balance) in the long-term sustainability analysis, it is worth pointing out that due to the specific definitions of deficit and debt applied for the EU budgetary surveillance, the change in the debt level in any given year can be larger or smaller than the deficit and the snowball effect combined ([1]).

The difference between the change in the outstanding debt stock and the yearly deficit flow combined with the growth-rate effect is known as the stock-flow adjustment (SFA) ([2]). While the SFA is typically set to zero in the theoretical analysis of debt dynamics, the actual data show this may not be the case. A careful analysis of the SFA is, therefore, important to countercheck the reliability and plausibility of the deficit figures, and may non-negligibly affect the starting point of the long-term sustainability analysis and the subsequent long-term debt projections, if the primary balance was to be modified for the size of a certain stock-flow adjustment category.

The reconciliation of deficit and debt figures requires a number of intermediate steps involving the breakdown of the SFA in several categories. The analysis of SFA is all the more important as the EU budgetary surveillance — which so far has focused attention on the deficit — may have provided incentives for shifting items from the deficit to the SFA, that is, from above to below the line.

The SFA can be split into three components along with these differences (see Graph IV.3):

- differences between the accrual and cash bases of recording transactions;
- differences in the gross and net recording of transactions with financial assets;
- valuation effects and remaining statistical adjustments.

Differences between the accrual and cash bases of recording transactions

The government expenditure and revenue are recorded on an accrual basis, i.e. at the time of the underlying transaction irrespective of effective cash payments and receipts. The Maastricht debt is, however, a cash concept, insofar as it conventionally excludes 'payables': it depends on the effective debt issuance or redemptions, which in turn depend on effective cash payments and receipts, not on underlying revenue and expenditures. Therefore, stock-flow adjustment may result from transactions that have been recorded as expenditures or revenue, but for which effective cash payment has not yet taken place. Therefore, the debt does not increase when government commits a payment, but only when government has obtained resources from financial markets to finance effective cash outflows.

Although the differences between cash and accrual accounting should mainly cancel out over the years, data shows that lately this has not been the case. Namely, the data for Greece point to positive and relatively large cumulated differences which have been explained mainly by statistical discrepancies. However, in the context of the EU budgetary surveillance — which so far has focused attention on the deficit — increased pressure may have provided incentives for shifting items from the deficit to the SFA, that is, from above to below the line, which could result in some cases in repeatedly positive differences between cash and accrual accounting ([3]).

Data for 2005 show non-negligible differences between the accrual and cash bases of recording transactions in

([1]) The deficit and debt definitions that are relevant for the EU budgetary surveillance procedures have been established by the Treaty Protocol on the excessive deficit procedure and specified in Council Regulation (EC) No 3605/93. The deficit and debt are defined through cross references to the European System of Accounts (nowadays ESA 95).

([2]) A positive (negative) SFA means that factors other than the government deficit increase (reduce) the government debt.

([3]) For more on political incentives for the SFA see Buti et al. (2006).

most Member States. These are particularly large and positive in the case of Greece (2.2 % of GDP), Sweden (1.7 % of GDP) and Lithuania (1.3 % of GDP). On the other hand, countries that recorded the largest differences on the negative side are Denmark (– 3.6 % of GDP), Luxembourg (– 1.0 % of GDP) and Spain (– 0.9 % of GDP) ([1]).

If maintained over the long term, the debt increasing differences between cash and accrual bases of recording transactions may imply a further pressure for the long-term sustainability of public finances. If the average over the period 2002–05 is considered, the largest adjustment of the initial budgetary situation would be required in the case of Greece (deficit increasing effect of 0.7 % of GDP), Lithuania, the Czech Republic, Cyprus, Hungary and the Netherlands (of around ½ % of GDP), which if projected over the long term would imply an increase in the sustainability indicators by approximately the same magnitude. If a gradual phase-out of the SFA over the medium term is assumed instead, its impact on the sustainability indicator would be smaller. For example, if a deficit-increasing effect of ½ % of GDP is assumed to continue for, say, five years and then cancel out, the negative impact on the sustainability indicator would be smaller than 0.05 % of GDP. The persistence of assuming non-zero differences in cash accruals (or other SFA components for that matter) is therefore crucial.

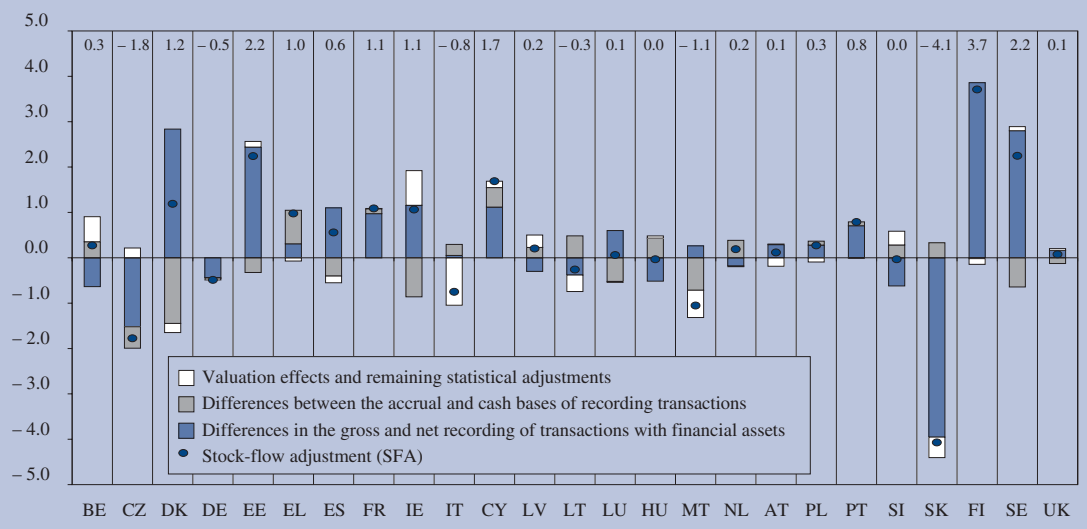
([1]) See Eurostat (2006a).

Differences in the gross and net recording of transactions with financial assets

The accumulation of financial assets by government is quantitatively the most significant component of the SFA. Financial transactions are not taken into account in the government deficit, which is based on the net concept, while they enter the debt, which is measured in gross terms. An accumulation of financial assets leads to a positive SFA; a reduction in financial assets implies a negative SFA. Data available allow for distinguishing the net accumulation of financial assets in four categories: liquidities, loans, securities other than shares (e.g. mostly private-issued bonds traded on stock exchanges) and shares and other equity.

The Member States that have registered the largest accumulation of financial assets are those that have been in surplus and have relatively small government debt, such as Denmark, Estonia, Ireland, Luxembourg, Finland and Sweden. These governments prefer to invest their surpluses in financial assets, rather than reimbursing government debt. For some of them — such as Estonia and Luxembourg — the government debt is so low that the accumulation of assets is the only option, as there is virtually no debt to redeem. In some countries (e.g. SE) data

Graph IV.3: **Stock-flow adjustment in the EU Member States, average 2002–05 (% of GDP)**



Source: Eurostat, 28 April 2006.

on the accumulation of financial assets depends heavily on changes in the investment strategy of social security, shifting investment from government paper to private bonds and shares.

The countries showing a larger reduction in their financial assets are the Czech Republic and Slovakia, given their privatisation programmes. This is also the main reason for reduction of financial assets in most other recently acceded central and east European Member States, such as Latvia, Lithuania, Hungary and Slovenia, although to a lesser extent.

From the viewpoint of the analysis of the long-term sustainability of public finances, liquidities and securities other than shares that are publicly traded appear as fiscally neutral. Operations involving loans and shares may be, however, to different degrees affected by the government's involvement in public policies, which in some cases may not take place at market conditions. It should be noted that shares include equity in public enterprises as well as in privately controlled companies, and cover both quoted and non-quoted shares. While the transactions in shares by social security, including the pension reserve funds, should generally also be regarded as fiscally neutral, in some cases, financial assets accumulated by government might include a disguised subsidisation of certain economic activities as operations with non-quoted shares or loans may not be done at the market conditions. In addition, from the accounting point of view, granting a loan is preferable to providing a subsidy, as the former is not recorded as capital expenditure. In several cases, Eurostat requested Member States to reclassify capital injection into public enterprises, from below to above the line, thus revising the government deficit upwards. The rules on the accounting classification of capital injections into public enterprises are now relatively strict, but their implementation has been particularly difficult.

In practical terms, data availability is too limited to enable a proper analysis to be conducted on the basis of which relevant operations affecting the primary balance could be taken into account when adjusting the initial budgetary situation for the purpose of the analysis of the long-term sustainability of public finances.

Valuation effects and remaining statistical adjustments

The third component of the SFA consists of valuation changes, reclassifications and other technicalities. The valuation of foreign-currency-denominated debt used to be a significant component of SFA in a number of Member States until some years ago. It is now almost irrelevant in those which are part of the euro area. Nevertheless, there may still be cases of regular underestimation of deficits, where governments issue debt in foreign currency and underestimate the related interest expenditures. There is also a need to register an entry in the SFA when the government reimburses debt at a price other than its face value, in particular in the case of early redemptions in secondary markets (IE and IT). These transactions and the respective SFA are very frequent, though with relatively small macroeconomic relevance.

Among other adjustments, it is worth pointing to relatively large reclassifications from non-government to government sectors and vice versa. In the recent past, these reclassifications have occurred in some of the new Member States (e.g. CZ), notably concerning transition-related restructuring of economic entities. In Belgium, a relatively high adjustment concerns the takeover of the debt of the national railway company, SNCB. This latter recording is, however, under discussion with Eurostat.

As far as the long-term sustainability of public finances is concerned, this component of the SFA is relatively small and, above all, very erratic, which makes it difficult to include it in the initial budgetary position.

Conclusion

If the initial budgetary positions were to be adjusted for the SFA, an assumption of the persistence of the SFA should be made, especially given the long-term character of the analysis. If non-zero SFAs are assumed over a certain period of time, the impact on the long-term sustainability is likely to be negligible, while the assumption of constant SFA over the period up to 2050 appears overstated.

Due to limited data availability for proper consideration of transactions with financial assets of the SFA components as well as the erratic character of valuation effects and remaining statistical adjustments, only the SFAs derived from the differences between the accrual and cash bases of recording transactions could be fully taken into account. This would result in an incomplete adjustment of the initial budgetary situation for the SFAs, since the potentially offsetting components in the remaining two SFA categories would not be taken into account.

Given the abovementioned reasons, keeping the assumption of no SFAs over the entire projection period remains appropriate.

5. Tax burden

The level of current tax burden has no impact on the calculations of the indicators ([1]). Yet, the level of the tax burden, both current and future, is a long-debated issue, in particular with respect to its possible links with economic activity. Inter alia, the viability and desirability of high tax ratios over long term may be affected by increased factor mobility affecting tax bases. Namely, countries with a relatively high tax burden may be under greater pressure as high taxes could encourage economic agents, in particular firms, to relocate their economic activities to locations where the tax burden is lower. This could be particularly the case in the high-tax-burden countries where the already relatively high share of age-related expenditure in total expenditure is expected to rise further, significantly putting pressure for increasing tax burden.

This is, however, a wider issue which also involves the desired degree of public provision of goods, the composition of tax burden according to different tax bases and redistribution of income, which goes beyond the scope of this report.

Nevertheless, the current level of tax burden can be a relevant element in the analysis of the long-term sustainability of public finances. Namely, in the light of the projected increases in the age-related expenditures in the long term, the information regarding the current tax burden provides an important indicator of a government's capacity for a direct increase in revenues.

An already high tax ratio suggests that there may be more limited room of manoeuvre to adjust the budget on the revenue side for high-tax-burden countries compared to other countries.

For example, in Sweden and Denmark, the tax ratio is close to 50 % of GDP and for Belgium, France, Austria and Finland it is higher than 45 % of GDP (see Table IV.10). By contrast, the lowest tax ratios can be found in Estonia, Ireland, Cyprus, Latvia, Lithuania and Slovakia, where the average over the period 2000–04 has been below 33 % of GDP. These countries should have more room for manoeuvre in adjusting the budget on the revenue side. However, this does not mean that taxes could/would be increased, since this will depend on many other factors than those mentioned above.

([1]) The overall tax burden is defined as taxes on production and imports, current taxes on income and wealth, capital taxes and compulsory and voluntary actual social contributions and imputed social contributions.

Table IV.10

Total taxes in the EU Member States (% of GDP)

	1995	2000	2001	2002	2003	2004	Avg. 2000–04
BE	45.9	47.3	47.4	47.5	47.2	47.4	47.4
CZ	36.2	34.5	34.6	35.5	36.1	36.6	35.5
DK	49.8	50.2	49.3	49.1	48.7	49.9	49.4
DE	41.3	43.3	41.4	40.9	41.0	40.0	41.3
EE	37.9	32.6	31.7	32.5	33.0	32.7	32.5
EL	34.7	40.9	39.1	39.9	39.0	37.7	39.3
ES	33.6	34.8	34.3	34.7	34.8	35.4	34.8
FR	44.5	45.9	45.6	44.9	45.0	45.3	45.3
IE	34.9	32.9	31.0	29.7	30.4	31.7	31.1
IT	42.9	43.0	42.8	42.4	43.0	42.1	42.7
CY	26.7	30.0	30.9	31.2	32.9	33.7	31.7
LV	33.7	30.1	29.0	28.7	29.0	29.1	29.2
LT	28.6	30.1	28.7	28.4	28.2	28.7	28.8
LU	43.7	41.3	41.5	42.0	41.9	41.1	41.6
HU	41.7	39.6	40.0	39.1	39.1	39.2	39.4
MT	31.3	30.1	32.6	34.8	34.5	36.7	33.7
NL	40.5	41.5	39.4	38.7	38.5	38.8	39.4
AT	43.6	44.8	46.5	45.5	44.8	44.3	45.2
PL	39.4	35.2	34.7	35.5	34.4	34.3	34.8
PT	32.7	35.2	34.9	35.7	36.3	35.6	35.5
SI	40.5	38.8	39.1	39.4	39.7	39.9	39.4
SK	40.6	33.2	32.9	32.5	31.4	30.6	32.1
FI	46.2	47.9	45.8	45.7	44.8	44.5	45.7
SE	49.7	54.1	52.1	50.5	51.2	51.2	51.8
UK	36.7	38.7	38.5	37.0	37.0	37.7	37.8
EU-25	41.2	42.2	41.4	40.8	40.9	40.7	41.2
EUR-12	41.6	42.8	41.9	41.4	41.5	41.1	41.7

NB: Tax revenue of general government is defined as taxes on production and imports, current taxes on income and wealth, capital taxes and compulsory and voluntary actual social contributions and imputed social contributions. The definition differs slightly from the one used in the publication 'Structures of the taxation systems in the EU' (see News Release 134/2005, 21 October 2005). The latter excludes the voluntary and imputed social contributions and the difference between the two measures amounts to around 1 % of GDP.

Source: Eurostat (2006b).

6. Contingent liabilities

In spite of capturing a substantial part of government liabilities, the 'Maastricht' debt as defined in the protocol on the excessive deficit procedure annexed to the Maastricht Treaty in 1992 and further defined in Council Regulation (EC) No 3605/93, as for most definitions of government debt used in budgetary surveillance, excludes some categories of government liabilities and other obligations such as contingent and implicit liabilities ([1]). In the analysis of the long-run sustainability of public finances, only the latter are included in the form of long-term projections of age-related expenditures. Contingent liabilities, the focus of this section, are, however, not taken into account due to problems of data availability and measurement.

The stock of contingent liabilities has been relatively high in recently acceded Member States, especially those of central and eastern Europe, due to the transition-related operations of restructuring and privatisation of the economy. According to the 2004 updates of their convergence programmes, for example, the reported stock of explicitly guaranteed debt not included in the ESA 95 government debt and estimated by the MS themselves varies between 5 and 10 % of GDP in most countries ([2]). As the transformation of the economy has been coming to an end, the stock of related contingent liabilities is expected to be reduced. Nevertheless, in sectors where restructuring has been delayed, such liabilities are expected to remain a significant source of risks in the coming years. Despite the lack of information on contingent liabilities in EU-15 countries, there are indications that they may increase in the future due to an ongoing shift from direct government financing towards alternative financing involving government support in the form of guarantees or insurance schemes, e.g. in the case of the widespread increasing tendency in the number of public–private partnerships (PPPs) ([3]). In addition, in many countries, growing financial autonomy of regional or local authorities in promoting regional development may also give rise to contingent liabilities.

However, a number of issues impede proper treatment of contingent liabilities in the assessment of the long-term sustainability in public finances, of which the two most important are the following. Firstly, in the absence of an appropriate EU-wide reporting framework of contingent liabilities until recently, data availability concerning the existing stock of such liabilities in the EU Member States has been limited ([4]). The recently acceded Member States were regularly reporting information on contingent liabilities already before their accession to the EU as a part of the regular reporting in their pre-accession economic programmes (PEPs) and some continue to do so after the accession in their respective convergence programmes. However, given that such information is not required to be reported according to the code of conduct, this is generally not the case and in the 2005 updates of convergence programmes only the Czech Republic, Lithuania, Poland and Slovakia included some information or discussion regarding contingent liabilities. None of the EU-15 Member States include such information in the updates of their respective stability or convergence programmes. In addition, where available, given the absence of appropriate

([1]) First, all kinds of liabilities backed by legal obligations but which may never lead to an actual government payment (e.g. government guarantees), generally known as contingent liabilities, are not included. Second, there is no account of future obligations that are not backed by law but that are very likely to translate into actual government expenditure (e.g. future health expenditure, pensions related to contributions yet to be paid). These are often referred to as implicit liabilities.

([2]) The quantitative information included in the convergence programmes is, however, not comparable across the Member States (see European Commission, 2005).

([3]) For a discussion on PPPs in the context of assessing debt sustainability, see IMF (2005).

([4]) As a general rule, contingent liabilities are not recognised in the ESA 95 or SNA systems of national accounts. ESA 95 and SNA record contingent liabilities when these liabilities are tradable and have a market value. State guarantees are very rarely tradable. In the new 'Questionnaires related to EDP tables', now explicitly foreseen in Council Regulation (EC) No 3605/93, as amended, Eurostat requests information on guarantees in relation to (i) the stock of guarantees and the volume of calls, including information on repeated calls, notably, (ii) the national accounts recording and (iii) the reporting within EDP tables.

statistical standards, such information is not fully comparable across the countries.

Secondly, if contingent liabilities were to be included in the quantitative part of the analysis of the long-term sustainability by adjusting the initial budgetary position for an appropriate amount, an estimation of the impact of contingent liabilities on government finances would be required. While a number of techniques are available for this, they all require high-quality data on the individual contingent liabilities and estimates of the probability of the occurrence of the relevant events, none of which is currently available at the EU level ([1]).

In order to approximately illustrate the impact of the stock of contingent liabilities on the sustainability indicators, an assumption can be made that the entire stock of State guarantees in the reporting year is called in the following year and assumed directly by the government debt as a one-off debt increasing measure. To better exemplify the magnitude of the impact, the case of Malta can be considered as it is a country with the highest quantified stock of State guarantees reported in its respective 2004 update of stability/convergence programme (14 % of GDP) ([2]). Under the above assumption, the impact of realisation of the entire stock of contingent liabilities would result in a deterioration of sustainability indicator S2 of 0.2. Even though the impact on the sustainability indicators can appear modest, the realisation of contingent liabilities can lead to a large increase in nominal debt in the medium term, which is a factor of risk particularly if the debt is already at a high level.

While the impact of contingent liabilities can be relatively large on the debt and as such increase risks to sustainability for countries with an already large level of debt, the lack of data prevents a systematic use of this factor in the sustainability analysis.

([1]) For a discussion on valuation of the contingent liabilities see European Commission (2004) and IMF (2005).

([2]) The case of Maltese State guarantees was considered for purely illustrative purposes as it reported the largest stock of State guarantees among the NMS10. Since all of the NMS10 countries that reported some information on the stock of contingent liabilities included data on the outstanding State guarantees, only this category was taken into account. Other reported categories include litigation costs, deposit insurance, reprivatisation and decommissioning. While some of this information is quantified, some is not, which makes it impossible to compare the size of contingent liabilities across the Member States.

Chapter V

Overall assessment of the risks to the sustainability of public finances

Summary

The overall assessment of risks to the sustainability of public finances, carried out on the basis of the quantitative and qualitative elements, confirms that while the budgetary impact of ageing populations is a major concern for all the EU Member States, the EU aggregates mask considerable variety. There is a large variation across the EU in the degree of risks and where they mainly come from. Overall, among the 25 Member States of the EU, 6 countries are assessed to be at high risk, 10 at medium risk and 9 at low risk, which overall confirms the assessments of the stability and convergence programmes, carried out in the early months of 2006. The main characteristics of the sustainability challenges they face can be summarised as follows:

- High-risk countries

The high-risk group of countries (CZ, EL, CY, HU, PT and SI) is characterised by a very significant rise in age-related expenditure over the long term, underlining that measures aimed at curbing them will prove strictly necessary. Moreover, the Czech Republic, Greece, Cyprus, Hungary and Portugal have large deficits and, in some cases, Greece in particular, a high level of debt as well. Budgetary consolidation is necessary and urgent in order for these countries to reduce risks to public finance sustainability.

- Medium-risk countries

The intermediate group of countries (BE, DE, ES, FR, IE, IT, LU, MT, SK and UK) consists of countries with very different characteristics, but a relatively clear-cut distinction appears between: (i) countries with a significant cost of ageing and where measures might be needed to curb these costs, but which currently have relatively strong budgetary positions (ES, IE and LU); and (ii) countries that need to consolidate, though to different degrees, their public finances over the medium term but for which the costs of ageing are less of a concern, usually as a result of reforms made to their pension systems (SK, IT, DE, FR, UK and MT); within this group the situation of Italy should be highlighted, where a rapid budgetary consolidation is required to ensure a steady reduction of the currently very high level of debt. Belgium shares some characteristics of both subgroups; maintaining a strong budget balance is necessary so as to reduce the very high level of debt as well as measures to offset the high increase in age-related expenditure.

- Low-risk countries

The low-risk countries (DK, EE, LV, LT, NL, AT, PL, FI and SE) have in general come furthest in coping with ageing, which results from a strong budgetary position (running large surpluses, reducing debt and/or accumulating assets) and/or comprehensive pension reforms, sometimes including a shift towards private pension schemes. This does not mean that in these countries there are no risks regarding the long-term sustainability of public finances. In fact, their situation relies on the successful implementation of the far-reaching reforms which have reduced significantly the long-term budgetary impact of ageing (EE, LV, LT, AT, PL and SE) and on maintaining the budgetary position or, in some cases, on strengthening it. Other countries with a relatively high projected cost of ageing, notably on pensions, may also need to consider structural reforms aimed at modifying the projected long-term budgetary trends at some point, should the current strong budgetary position not be maintained over the long term (DK, NL and FI), although the overall adjustment would be of a lesser degree than for medium- and high-risk countries.

* * *

On the basis of the quantitative results (Chapter II), the sensitivity analysis (Chapter III) and qualitative factors (Chapter IV), an overall assessment of the risks to public finance sustainability the different Member States might face is reached, i.e. how important the risks to public finance sustainability are and where they mainly stem from.

This chapter sums up the results of the analysis carried out in the previous chapters and explains how the different factors are taken into account so as to reach an overall assessment of the long-term sustainability of public finances.

In order to indicate the relative importance of the risks, a three-level categorisation is used in this report: low/medium/high risk ([1]). It provides a clear distinction of the degree of risk countries might face with regard to public finance sustainability and at the same time recognises that ageing population represents a budgetary challenge over the long term for all countries, albeit to varying degrees. In particular, low-risk countries also face a risk and may need to implement reforms and/or pursue budgetary consolidation. The need for a strong policy response will increase the higher the risks.

While this risk categorisation gives a clear indication of the relative degree of risk different countries are facing, the overall assessment also provides an indication of where the risks mainly stem from. In particular, the extent to which the risks are mainly related to medium-term or to long-term budgetary developments is addressed.

([1]) This three-level categorisation was introduced by the Commission and the Council for the 2005/06 round of assessment of the stability and convergence programmes.

1. Reaching an overall assessment of the risks to the long-term sustainability of public finances

The sustainability indicators

The sustainability indicators provide a firm basis to classify the public finances sustainability risks in the EU Member States, in particular the S2 indicator based on the 2005 budgetary developments. The S2 indicator is consistent with the sustainability of public finances over an infinite horizon and is based on the latest available information regarding budgetary developments and on the most recent comparable information regarding the long-term impact of ageing populations on public expenditure. The sustainability indicators are synthetic tools, but they do not sum up the qualitative factors that can influence the sustainability of public finances, as shown in Chapters III and IV.

To make an overall assessment of the sustainability of public finances, qualitative factors are taken into account in order to better qualify the assessment with regard to where the main risks are likely to stem from and to consider the impact of relevant factors not (or not sufficiently) reflected in the sustainability indicators. Taking into account these factors may lead to a different overall assessment than the one that would result from evaluating the sustainability indicators only. All additional factors are, however, not necessarily quantifiable and comprehensive information may not be available; a cautious approach is therefore called for.

Qualitative factors concerning the current and medium-term budgetary position

- The level of the outstanding government debt is arguably the most important additional factor (see Chapter IV.1). Namely, while the sustainability indicators already include information on the current level of debt, they do not incorporate all the specific risks faced by countries with a large initial level of debt. First, high-debt countries are more sensitive to short-/medium-term shocks to economic growth and to interest-rate changes. Second, a high level of debt may lead to a higher interest rate than assumed in the projections and increase further the risks to public finance sustainability. Third, when calculating the sustainability indicators, it is assumed that all countries can keep their current primary balance constant as a share of GDP. High-debt countries need to maintain large primary surpluses for a prolonged period of time in order to reduce the level of debt. This may prove difficult in view of other competing budgetary pressures. This factor is used symmetrically as a risk-increasing factor for very high-debt countries (notably BE, EL and IT) and a risk-decreasing factor for very low-debt countries (notably EE, LT, LVand LU).

- The sustainability indicators are based on the 2005 budgetary outcomes, which are corrected by the effects of the business cycle and possible one-off and temporary measures so as to capture the underlying, structural budgetary position. However, the budgetary position is bound to be different from one year to the next and the starting point has a one-to-one impact on the sustainability indicators ([1]). Evaluating the change in the structural government balance between 2005 (the starting point for the sustainability indicators) and 2007 as presented in the Commission services 2006 spring forecast enables short-term trends of the public finances based on current policies to be taken into account. It enables evaluation of whether

([1]) An increase of the structural primary balance by 1 percentage point of GDP would result in a decrease of the sustainability indicator by the same amount.

fiscal policies are headed towards the MTO, whose impact on sustainability has been assessed in Chapter III.3. Also, it allows avoidance of a single-year effect. Namely, other temporary factors not linked to the business cycle may influence the budgetary position in some Member States in a specific year (2005), for example exceptionally high revenues due to high returns on stock markets or high oil/gas prices. The structural balance is not corrected for these temporary factors, which will be included in the structural balance even though they are not of a permanent nature. The Commission's budgetary forecasts for the years 2006/07 take into account such temporary factors. The change in the structural balance between 2005 and 2007 in the Commission services spring 2006 forecast provides a good proxy for permanent factors.

- **Contingent liabilities** (see Chapter IV.6) are an important part of the budgetary surveillance process, notably regarding the medium-term budgetary developments, as their stock is non-negligible and may entail significant fiscal risks.

- **The level of SFAs** (see Chapter IV.4) in past years has been quite large in some countries, with potentially important implications for the budgetary developments. However, lack and poor quality of data for contingent liabilities and SFAs prevents a consistent analysis and use of these factors across the EU at this stage.

Qualitative factors concerning the long-term budgetary developments

- **Additional long-term trends for revenue and non-age-related expenditure items**. Additional national projections are described in the country analysis pages in Chapter VI of this report. They are explicitly assessed as a risk-reducing or risk-increasing factor if: (i) they are mainly country specific; (ii) they are estimated in a consistent way using assumptions and results of the Ageing Report; and (iii) the impact has been estimated net of other possible offsetting factors (see Chapter IV.3).

- **The evolution of the benefit ratio** is strongly driven by the pensions reforms enacted (or lack thereof) in recent years (see Chapter IV.2). A decrease in the public benefit ratio can lead to further risks to public finances, notably if: (i) it leads to a substantial increase in the poverty rate of older people; (ii) it leads to a large increase in contributions of private occupational/supplementary schemes over the long term, which may affect public revenue; (iii) there are obstacles limiting the job activity of older workers that prevent them from accumulating additional pensions rights or if prolonging substantially their working lives does not result in a substantial increase in pensions. Data availability is not currently sufficient to fully assess each of these risks. However, the evolution of the benefit ratio can better qualify the assessment, notably when the decrease in the benefit ratio is coupled with a strong increase in the employment rates of older workers. In that case, increasing the participation rates of older workers would improve workers' pension rights in the future and therefore reduce the sustainability risks.

- The assessment is made on the basis of the central demographic and macroeconomic scenario of the Ageing Report. However, sensitivity tests provide information on the robustness of the results with respect to changes in some key parameters (see Chapter III). For example, the resilience of the pension schemes of some Member States, which may be less sensitive to external shocks than others. Moreover, different assumptions concerning the main drivers of expenditure can have a large impact on the size of the increase in age-related expenditures, for example concerning the income elasticity for healthcare. There is therefore some uncertainty regarding the size of the sustainability challenge that EU countries are facing. Sensitivity tests illustrate the possible impact of different uncertainties materialising.

- A high current tax ratio leaves limited room of manoeuvre for using tax increases to finance additional public expenditure as compared to a lower tax ratio (see Chapter IV.5). By contrast, low tax ratios are not considered to be risk free, since it also depends on the size of public procurement of goods and services, the effectiveness of tax systems, the structure of the tax system and its impact on growth.

- **Missing projections:** If some projections are missing, the sustainability indicators provide an incomplete picture of the sustainability risks. The common projections exercise provides pension projections for all EU Member States with the exception of Greece ([1]). Similarly, missing long-term care pro-

([1]) In the 2002 updated stability programme, pensions were projected to increase by 10.2 % of GDP between 2005 and 2050 and in the 2001 common projections, an increase of 12.4 % of GDP was projected.

jections underestimate the risks to long-term sustainability and limit the comparability of the indicators. This is the case for two countries (EL and CY). However, the size of the underestimation of the sustainability risks is significantly lower than for the missing pension projections. Indeed, on average in the EU, long-term care expenditure is projected to increase by 0.7 % of GDP up to 2050.

Overall assessment

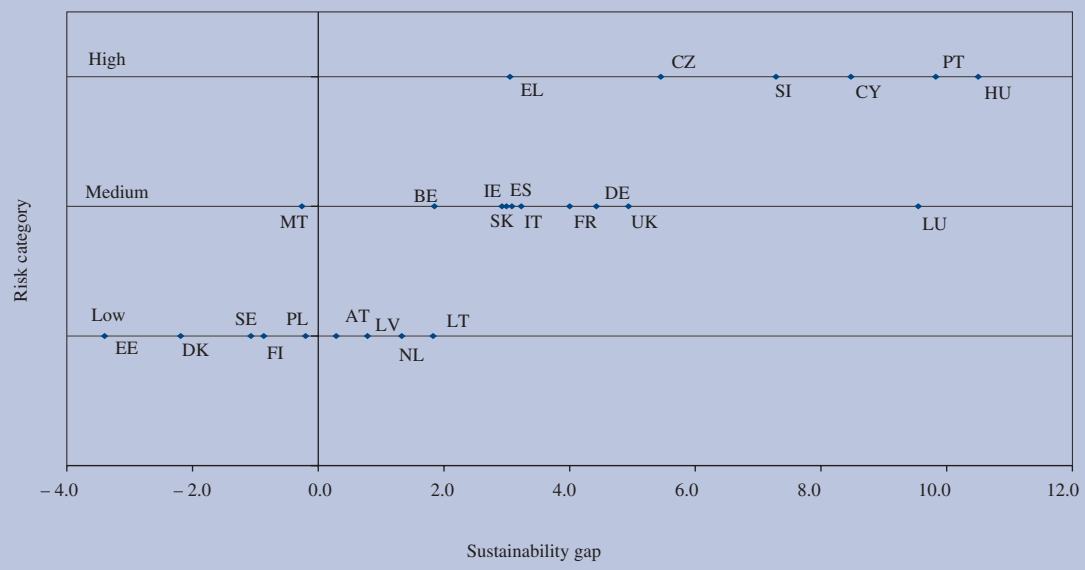
Table V.1 sums up the value of the S2 indicator and lists the main qualitative factors (debt, structural balance change, property income, revenue projections and missing projections) that are taken into account when reaching an overall assessment for the 25 Member States. As noted in this section, information on certain factors is incomplete, which prevents, to some extent, a consistent analysis and use of all factors at this stage. While the evolution of the benefit ratio, the sensitivity tests, the MTO scenario and the tax ratio help to qualify the overall assessment, contingent liabilities and SFAs are not used in this report.

Graph V.1. shows that in general, the synthetic S2 indicator summarises the overall degree of risks well. Specifically, the overall assessment is different from an assessment that would be based solely on the value of the S2 indicator in the baseline scenario in a few cases.

- Greece is assessed to be at high risk, mainly due to missing pension projections but also because of the large level of debt.
- Luxembourg is assessed to be at medium risk due to the current very low level of debt and the large level of assets in their public pension funds.
- Malta is considered to be a medium-risk country, as the ceiling on pension expenditure as well as on pension contributions reduces pension contributions considerably and thus public revenues as a share of GDP and also reduces considerably the replacement rate of public pensions.
- Belgium is assessed to be a medium-risk country, notably due to the currently very high level of debt.

It should be noted that countries with different characteristics can overall face a similar degree of risks to fiscal sustainability. For example, the projected cost of ageing in Ireland is very high while the budgetary position is relatively

Graph V.1: **Overall risk classification and the sustainability gap (S2 in the baseline scenario)**



Source: Commission services.

sound, with a structural surplus and a low level of government debt. By contrast, in Italy the projected cost of ageing is low while the budgetary position is very weak, with a large structural deficit and a very high level of government debt. The overall impact of the situation in these countries leads to a sustainability gap of the same magnitude, around 3 % of GDP, and also an overall assessment of medium risk. Still, priorities for reducing the sustainability risks are different; Italy needs to consolidate its public finances and Ireland may rather consider introducing measures to curb the high increase in age-related expenditure.

An overall assessment of risks to the long-term sustainability of public finances is given in the following section for the 25 Member States. Moreover, a more detailed assessment per Member State is given in Chapter VI.

Table V.1

Main factors considered in reaching an overall assessment of public finance sustainability risks

	S2 indicator	Level of debt (1)	Change in the structural balance (2), 2005–07	Missing projections	Additional projections		Overall assessment
	Baseline scenario				Property income	Revenue projections	
BE	1.8	Very high	– 0.4				Medium
CZ	5.5	Low	– 2.6				High
DK	– 2.2	Low	– 1.5		+	—	Low
DE	4.4	High	0.8				Medium
EE	– 3.4	Very low	– 1.0				Low
EL	3.0	Very high	0.9	Pensions and LTC			High
ES	3.2	Medium	– 0.3				Medium
FR	4.0	High	0.6				Medium
IE	2.9	Low	– 1.1				Medium
IT	3.1	Very high	0.1				Medium
CY	8.5	High	0.6	LTC			High
LV	0.8	Very low	– 0.7				Low
LT	1.8	Very low	0.1				Low
LU	9.5	Very low	0.3				Medium
HU	9.8	Medium	– 2.2			—	High
MT (3)	– 0.3	High	– 0.2				Medium
NL	1.3	Medium	– 1.2		+	—	Low
AT	0.3	High	– 0.2				Low
PL	– 0.2	Medium	– 0.9				Low
PT	10.5	High	1.3				High
SI	7.3	Low	– 0.2				High
SK	3.0	Low	– 0.6				Medium
FI	– 0.9	Medium	– 0.5		+	—	Low
SE	– 1.1	Medium	– 0.5		+	—	Low
UK	4.9	Medium	0.8				Medium

NB: A plus sign signals a risk-increasing factor while a minus sign signals a risk-decreasing factor. LTC stands for long-term care. The heading 'Additional projections' comprises national long-term projections of changes in primary revenues and changes in property income as a share of GDP, see Chapter V.3 for further details.
(1) For the debt/GDP ratio, the following thresholds are used: a debt level of 0 to 20 % of GDP is 'very low', of 21 to 40 % is 'low', of 41 to 60 % is 'medium', of 61 to 80 % is high and 80 % or more is 'very high'.
(2) According to the Commission services 2006 spring forecast up to 2007.
(3) It should be noted that for Malta, the significant decrease in pension contributions and in public revenues — and pension expenditure — is a risk-increasing factor.

Source: Commission services.

2. Main sustainability challenges that Member States are facing

The budgetary impact of ageing populations is a concern for all EU Member States. There is, however, a large variation in the degree of risks that they are facing and where they mainly come from. This section summarises the different risks that the EU Member States are facing with regard to the long-term sustainability of the public finances. The results are very similar in the Council/Commission assessment of the 2005/06 stability/convergence programmes ([1]). Overall, 6 countries are assessed to be at high risk, 10 at medium risk and 9 at low risk. The assessments made by the Council of the 2005/06 SCPs are provided in Annex 3.

High-risk countries

All high-risk countries exhibit a strong increase in age-related expenditures up to 2050 (for Greece the 2002 stability programme projected an increase of pension expenditure of around 10 percentage points of GDP) ([2]).

As regards the current budgetary position, only Slovenia has relatively sound public finances with a level of debt slightly under 30 % of GDP and a relatively limited structural public deficit (– 1.5 % of GDP in 2005). However, it should be noted that Slovenia has not yet reached its MTO, set at – 1 % of GDP.

The Czech Republic has a level of debt under 40 % of GDP and the structural balance in 2005 was – 1.4 % of GDP. However, this was due to the favourable economic situation and deferred spending, rather than structural expenditure cuts. The Commission services spring 2006 forecast projects a worsening of the structural budget balance to – 4.0 percentage points of GDP in 2007.

Hungary's debt/GDP ratio is close to the Treaty threshold but its current structural deficit is very large, which implies large sustainability risks for the Hungarian public finances, even without taking account of the impact of ageing on public finances and is even projected to deteriorate further under current policies at – 6.9 percentage points of GDP in 2007 in the Commission services spring 2006 forecast.

Finally, Greece, Cyprus and Portugal have a debt above 60 % of GDP and the structural deficit is close to (CY) or above 3 % of GDP (EL and PT) in 2005.

The high-risk group of countries (CZ, EL, CY, HU, PT and SI) is characterised by a very significant rise in age-related expenditure over the long term, underlining that measures aimed at curbing them will prove necessary. Moreover, the Czech Republic, Greece, Cyprus, Portugal and Hungary have large deficits and in some cases also a high level of debt, in particular in Greece. Budgetary consolidation is therefore necessary and urgent in order to reduce risks to public finance sustainability.

Medium-risk countries

The intermediate category consists of countries with very different characteristics but they can still be classified in four different groups depending on the budgetary costs of ageing population.

- In Slovakia, Italy, France, Germany, the United Kingdom, the increase in age-related expenditure over the long term is close to or below the EU average due to pension reforms (SK, IT, DE and FR) or to the traditionally lower level of public pensions (SK and UK). While not identical, the current budgetary position can be qualified as weak or very weak. Two countries have a medium level of debt (UK and SK); however, the current structural deficit

([1]) See European Commission (2006b).
([2]) For Greece, the 2002 stability programme projected an increase of pension expenditure of 10.2 % of GDP between 2005 and 2050.

is large in the UK (– 3.3 %) and in Slovakia while the current structural deficit is smaller (– 1.6 %), it would be larger by 0.6 of a percentage point of GDP when taking into account the diverted revenue to the private part of the mandatory pension schemes (which will take effect from 2007 onwards). France and Germany have a level of debt above the 60 % of GDP reference value and they have structural deficits close to the Treaty threshold. Finally, Italy still has a large very high level of debt, above 100 % of GDP and a current structural deficit close to 4 %. For these countries, medium-term consolidation of the public finances is key to ensuring the long-term sustainability of public finances, notably for countries with a high current level of debt.

- In Belgium, Ireland and Spain the increase in age-related expenditure is significantly higher than on average in the EU, due to relatively high expenditure on pensions being projected. The current budgetary position contributes to alleviate part of this increase; with the level of debt being well below the 60 % of GDP threshold in Ireland and Spain. In Belgium, the current level of the debt is very high but the high primary surplus, subject to being maintained for a long period of time, can compensate for a significant part of the budgetary costs of ageing. Nonetheless, measures to curb the future costs of ageing may be necessary so as to put the public finances on a more sustainable path in Belgium, Ireland and Spain, unless the current budgetary position is strengthened further, which would imply higher primary surpluses than at present.

- In Luxembourg, a significant increase in pension expenditure is projected over the long term. Though the level of debt is very low and large assets have been accumulated in public pension funds, it will not be sufficient to compensate for the large projected increase in pension expenditure and some changes in the pension schemes will prove necessary at some point.

- Although public expenditures are projected to show little change over the long term, the pension system in Malta is currently being reviewed and reforms are envisaged, with a view to improving its financial sustainability and adequacy over the long term. Moreover, the currently high structural deficit, if not corrected, will prevent the necessary reduction of the debt/GDP ratio, currently above the 60 % reference value.

The intermediate group of countries (BE, DE, ES, FR, IE, IT, LU, MT, SK and UK) consists of countries with very different characteristics but a relatively clear-cut distinction appears between: (i) countries with a significant cost of ageing and where measures might be needed to curb these costs, but which currently have relatively strong budgetary positions (ES, IE and LU); and (ii) countries that need to consolidate, though to different degrees, their public finances over the medium term but for which the costs of ageing are less of a concern, usually as a result of enacted reforms to their pension systems (SK, IT, DE, FR, UK and MT). In Italy rapid budgetary consolidation is required to ensure a steady reduction of the currently very high level of debt. Belgium shares some characteristics of both subgroups. Maintaining a strong budget balance is necessary so as to reduce the very high level of debt as well as to offset the high increase in age-related expenditure, being above the EU average. However, even if it is maintained for a long period of time, the current high primary surplus is not sufficient to fully cover the relatively high cost of ageing populations over the long term. Measures aiming at curbing the projected increases in pension expenditure would undoubtedly contribute to reduce the risks to sustainability.

Low-risk countries

Finally, the low-risk countries can be divided into three different groups.

- In Poland, pension expenditure is projected to decrease significantly by 6 percentage points of GDP between 2004 and 2050, thus showing no adverse budgetary impact of ageing. At the same time, the current deficit is – 2.5 % of GDP and the debt amounts to 42.5 % of GDP. However, when corrected for the diverted revenue to the private mandatory scheme and the Maastricht debt deductible assets in this private pension fund, with effect as of 2007, the general government deficit and debt would be higher by 1.9 percentage points of GDP and 5.4 percentage points of GDP respectively.

- In Austria, Sweden, Estonia, Lithuania and Latvia, the pension reforms have strongly contained the increase in pensions over the next 50 years. Except for Austria where the debt level is still slightly above the Treaty threshold, the level of debt is rather low

(in SE) and sometimes very low (in EE, LT and LV). Moreover, the structural deficit is close to balance (in LT and LV) or in surplus (EE and SE).

- In Denmark, Finland and the Netherlands, the rise in age-related expenditure is higher than on average in the EU. Yet those countries currently have a low (DK) or medium (NL and FI) level of debt and are currently experiencing structural surpluses, sometimes very high (DK and FI), which strongly contribute to cover a large part of the future cost of ageing. However, over the medium term, those countries may be faced with the policy choice between maintaining large surpluses or implementing pension reforms (DK and NL) or additional pension reforms (FI).

The low-risk countries (DK, EE, LV, LT, NL, AT, PL, FI and SE) have in general come furthest in coping with ageing, which implies either a strong budgetary position (running large surpluses, reducing debt and/or accumulating assets) and/or comprehensive pension reforms, sometimes including a shift towards private pension schemes. This does not mean that in these countries there are no risks regarding the long-term sustainability of public finances. In fact, their situation (assessment) relies on the successful implementation of the far-reaching reforms, which have reduced significantly the long-term budgetary impact of ageing (EE, LV, LT, AT, PL and SE) and maintaining the budgetary position, and in some cases strengthening it. Other countries with a relatively high projected cost of ageing, notably on pensions, may also need to consider structural reforms aimed at modifying the projected long-term budgetary trends at some point, unless the strong budgetary position is maintained (DK, NL and FI), although to a lesser degree than medium- and high-risk countries.

Chapter VI

Country analysis

Legend to the country tables

SP	Stability programme
CP	Convergence programme
MTO	Medium-term objective for the government's budgetary position
NAIRU	Non-accelerating inflation rate of unemployment
S1	Sustainability indicator that measures the size of a permanent budgetary adjustment that enables a debt ratio of 60 % of GDP to be reached in 2050
S2	Sustainability indicator that measures the size of a permanent budgetary adjustment that fulfils the government's intertemporal budget constraint over an infinite horizon
IBP	Initial budgetary position, the distance between the current primary balance and the primary balance that stabilises debt as a share of GDP over the long term, see Chapter I
LTC	Long-term change in the budgetary position, the increase in age-related expenditure over the long term, see Chapter I
GRD	Debt requirement in 2050; the impact of the distance between the initial level of debt as a share of GDP and a level of 60 % of GDP in 2050 (specific to the S1 indicator), see Chapter I
RPB	Required primary balance; the S2 sustainability indicator plus the structural primary balance over the first five years of the projections period, see Chapter I
Baseline scenario	Scenario in which the sustainability indicators are calculated using the structural primary balance in 2005 at the outset and the projected change in age-related expenditure in the period 2010–50, see Chapter II
MTO scenario	Scenario in which it is assumed that all Member States attain their MTOs in 2010, see Chapter III
Cost of delay	The 'cost of a delay' indicator shows the increase in the sustainability indicators that would result from a delay of five years in implementing budgetary consolidation compared to the baseline, see Chapter III
Sensitivity to changes in assumptions	This shows the impact on the S2 sustainability indicator of changes in demographic and macroeconomic assumptions, see Chapter III
Scenarios for healthcare	These show the impact on the S2 sustainability indicator of alternative healthcare assumptions, see Chapter III
Scenarios for long-term care	These show the impact on the sustainability indicator of alternative long-term care assumptions, see Chapter III

Belgium

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Belgian economy is projected to experience a slowdown of economic growth over the coming decades, from 2.4 % during 2004–10 to 1.8 % in 2011–30 and a further decline to 1.5 % in 2031–50, influenced by an ageing population ([1]). The old-age dependency ratio is projected to rise from 26 % in 2004 to 47 % in 2050, albeit a smaller rise than on average in the EU.

The projected increase in age-related spending in Belgium of 6.3 percentage points of GDP between 2004 and 2050 is significantly above the EU average. Most of the projected increase during this period is due to the rise in pension expenditures, amounting to 5.1 percentage points of GDP. The increase in public spending on healthcare and long-term care is close to the EU average.

The Belgian public finances have been sound in the recent past with the government finances in balance or in surplus since 2001, and a surplus of 0.1 % of GDP in 2005 ([2]). This has enabled a reduction of the debt/GDP ratio, which has fallen from over 130 % of GDP in 1993 to 93.3 % in 2005, thus still above the 60 % of GDP Treaty reference value. The budgetary strategy outlined in the stability programme aims at gradually building up surpluses to 0.7 % of GDP by 2009, in order to maintain the debt ratio on a downward trend. The programme projects the debt ratio to decline by 16 percentage points of GDP over the programme period, to less than 80 % of GDP in 2009. The MTO set in the stability programme at + 0.5 % of GDP in structural terms is according to the programme expected to be achieved in 2007. According to the Commission services 2006 spring forecast, a deficit of 0.9 % of GDP is expected in 2007 on the basis of the current policies, below the programme's forecast of a surplus of 0.3 % (0.4 % in structural terms), suggesting that budgetary outcomes could be worse than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Belgium has a sustainability gap of 1.8 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is above the EU average, reflecting an important increase in pension expenditure as a share of GDP.

The initial budgetary position, with a currently still high although declining structural primary balance of 4.5 % of GDP in 2005 (compared to 6.1 % in 2001), contributes to a rapid reduction of debt, which will on the basis of the current policies continue over the medium term ([3]). Therefore, assuming that the MTO of a structural balance of 0.5 % of GDP is reached in 2010, the structural primary balance becomes smaller; falling from 4.5 % in 2005 to 3.7 % of GDP in 2010 since interest expenditure on debt falls over the medium term. The lower structural primary balance in 2010 would have a negative impact on the sustainability gap, rising to 2.4 % of GDP in the MTO scenario, since the impact of a lower primary surplus is larger than the impact of a lower level of debt. This shows that maintaining a high structural primary surplus over the medium term is key to reduce risks to the long-term sustainability of public finances.

The current level of debt is very high, although it has been resolutely reduced for a number of years. Indeed,

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

([2]) The assumption of debt (2.5 % of GDP) from the railway company SNCB by the government in 2005 has been treated as debt increasing, but without impact to the deficit and primary surplus. Eurostat considers that this debt assumption must be recorded as a capital transfer, increasing the government deficit by the same amount. However, Belgium has informed Eurostat of its intention to introduce legislation to retroactively annul this transaction (see Eurostat, 2006c).

([3]) Excluding the impact of the debt assumption from the SNCB (see previous footnote).

debt reduction is the backbone of the Belgian strategy to face ageing. The Belgian authorities have opted to channel most of the future surpluses to an 'ageing fund', created in 2001. Investing in the fund amounts to a direct reduction of gross debt but this set-up has the advantage that it reinforces the political commitment of the Belgian government to maintain the necessary primary surpluses to prepare for the cost of ageing. Ensuring a reduction of debt to below the 60 % of GDP reference value at a satisfactory pace is necessary so as to strengthen the resilience of the public finances to adverse shocks and to reduce public finance sustainability risks.

The tax burden on labour in Belgium is among the highest in the EU and the government's current strategy is to reduce it. These measures, aiming at increasing employment rates and fostering growth, could therefore ease pressure on public finances in the long term, though it may reduce revenues in the short term.

It should be noted that the Belgian authorities project a slight reduction of family allowances (of around half a percentage point of GDP) up to 2050. At the same time, a higher increase in healthcare expenditures compared to the reference scenario is projected up to 2050 by the Belgian authorities, about three quarters of a percentage point of GDP higher. The overall impact is, however, small.

Overall assessment

The long-term budgetary impact of ageing in Belgium is above the EU average, influenced notably by a large increase in pension expenditure as a share of GDP over the coming decades.

The initial budgetary position with a high primary surplus contributes to easing the projected long-term budgetary impact of an ageing population, but it is not sufficient to fully cover the substantial increase in expenditure. Moreover, the current level of gross debt, while declining, remains well above the Treaty reference value. The steady reduction of the debt/GDP ratio requires sustaining high primary surpluses for a long period of time, which would be key in view of reducing risks to the sustainability of public finances.

Overall, Belgium appears to be at medium risk with regard to the sustainability of public finances.

Belgium

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	10.4	10.6	10.7	10.8	10.9	11.0	11.0	10.8	0.5
Working age population (15–64) % of total	65.6	66.1	65.1	63.8	61.9	59.9	58.0	57.9	– 7.7
Old-age dependency ratio (65+/15–64)	26.1	26.4	29.1	32.2	36.3	41.1	46.7	47.2	21.0
Participation rate (15–64)	65.4	66.8	68.6	69.1	69.2	69.5	70.1	70.0	4.6
— older workers (55–64)	29.9	33.8	39.6	42.8	43.2	43.3	44.7	44.9	15.0
Unemployment rate (15–64)	7.9	7.0	6.5	6.5	6.5	6.5	6.5	6.5	– 1.4
Real GDP (growth rate)	2.2	2.7	2.0	1.5	1.3	1.3	1.6	1.5	– 0.7
Expenditure projections									
Pensions	10.4	10.4	11.0	12.1	13.4	14.7	15.7	15.5	5.1
Healthcare	6.2	6.4	6.6	6.8	6.9	7.1	7.5	7.6	1.4
Long-term care	0.9	0.9	1.0	1.1	1.1	1.3	1.6	1.8	1.0
Education	5.6	5.2	5.0	4.9	4.9	5.0	5.0	5.0	– 0.7
Unemployment benefits	2.3	2.0	1.8	1.8	1.8	1.8	1.7	1.8	– 0.5
Total age-related expenditure	25.4	25.1	25.5	26.6	28.2	29.9	31.6	31.7	6.3
p.m. benefit ratio for public pension (1)	*17.7*	*17.8*	*17.8*	*17.8*	*17.6*	*17.4*	*16.9*	*16.4*	*– 7.4*
p.m. benefit ratio for old-age and early pension (1)	*17.9*	*18.0*	*18.0*	*17.9*	*17.8*	*17.5*	*17.0*	*16.5*	*– 7.8*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0.5
2005 SP/CP (2)	0.0	– 0.3	0.4	0.7	0.9		**MTO scenario (2010)**	
Commission spring 2006 forecast	0.1	– 0.5	– 0.3				*Structural balance*	0.5
Gross debt							*Structural primary balance*	3.7
2005 SP/CP	94.3	90.7	87.0	83.0	79.1			
Commission spring 2006 forecast	93.3	89.8	87.0					
size of one-offs	0.4	0.6	0.2	0.1	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	– 3.5	0.2	3.7	0.4	0.1	
MTO scenario	– 2.7	0.3	3.7	1.3	0.2	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	– 3.5		5.3	1.8	0.1	6.2
MTO scenario	– 2.6		5.3	2.7	0.2	6.2

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	93.3	72.4	52.7	38.3	30.8	31.4	51.7	82.8	– 10.5
MTO scenario	93.3	73.6	58.1	48.2	45.6	51.8	84.0	128.7	35.4

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.7	0.4	0.2	0.1
Higher labour productivity	**Total**			
	– 0.3			
Higher employment older workers	**Total**			
	– 0.3			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.2		– 0.5	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	0.0	0.7	– 0.7	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.1	– 0.6	– 0.2	0.4	0.4
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.2	– 0.2	0.4		

Czech Republic

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the economy of the Czech Republic is projected to experience a slowdown of economic growth over the coming decades, from 3.5 % during 2004–10 to 2.6 % in 2011–30 and a further decline to 0.8 % in 2031–50, influenced by an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to more than double from 20 % in 2004 to 55 % in 2050, a significantly higher rise than on average in the EU.

The projected increase in age-related spending in the Czech Republic of 7.2 percentage points of GDP between 2004 and 2050 is significantly above the EU average. Most of the expected increase during this period is due to the rise in pension expenditures of 5.6 percentage points of GDP. The increase in expenditure on healthcare is projected to be 2 percentage points of GDP, slightly above the EU average, while on long-term care an increase of 0.4 of a percentage point of GDP is projected, slightly below the EU average.

In 2005, the deficit of the Czech Republic was below the 3 % of GDP reference value for a second consecutive year. The fiscal out-turn of – 2.6 % of GDP was considerably better than expected in the last update of the convergence programme (– 4.8 % of GDP). This was due to the favourable economic situation and deferred spending, rather than structural expenditure cuts. Low deficits in latest years facilitated a stabilisation of the debt/GDP ratio. The budgetary strategy outlined in the convergence programme aims at reducing the deficit to 2.7 % in 2008, in line with the Council recommendation under Article 104(7). The adjustment towards the MTO set in the convergence programme at around – 1 % of GDP is expected to be achieved beyond the programme period, in 2012. According to the Commission services 2006 spring forecast a deficit of 3.4 % of GDP is expected in 2007 on current policies, close to the programme's forecast of 3.3 %, despite the better than expected out-turn in 2005.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, the Czech Republic has a sustainability gap of 5.5 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is above the EU average, reflecting an important increase in pension expenditure as a share of GDP.

The initial budgetary position, with a structural primary balance of – 0.2 % of GDP in 2005 constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of ageing, pointing to the importance of strengthening the budgetary position. Indeed, assuming that the MTO of a structural balance of – 1 % of GDP is reached in 2010, the structural primary balance improves; rising from – 0.2 % in 2005 to 0.2 % of GDP in 2010. The higher structural primary balance in 2010 would have a positive impact on the sustainability gap; however, the gap would still be 5.1 % of GDP in the MTO scenario.

It should be noted that the authorities in the Czech Republic project a higher increase in healthcare expenditures over the long term compared to the reference scenario, of about 1 % of GDP, suggesting that the budgetary cost of ageing could be higher.

Overall assessment

The long-term budgetary impact of ageing in the Czech Republic is higher than the EU average; influenced notably by an important increase in pension expenditure as a share of GDP.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

The initial budgetary position constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of an ageing population. Consolidating the public finances further than currently planned together with the implementation of structural reforms aimed at containing the significant increase in age-related expenditures would be key in view of reducing risks to the sustainability of public finances.

Overall, the Czech Republic appears to be at high risk with regard to the sustainability of public finances.

Czech Republic

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	10.2	10.1	10.0	9.9	9.8	9.7	9.3	8.9	– 1.3
Working age population (15–64) % of total	70.8	70.9	68.0	65.4	64.1	63.5	61.1	56.5	– 14.4
Old-age dependency ratio (65+/15–64)	19.2	21.5	26.1	31.0	34.0	36.0	41.6	52.0	32.8
Participation rate (15–64)	70.4	72.0	75.2	76.9	77.2	76.2	73.6	74.5	4.1
— older workers (55–64)	44.4	49.7	54.1	59.1	61.3	62.5	58.7	60.1	15.7
Unemployment rate (15–64)	7.8	7.3	6.5	6.5	6.5	6.5	6.5	6.5	– 1.3
Real GDP (growth rate)	3.1	3.6	2.8	2.4	2.3	1.9	0.4	0.8	– 2.3
Expenditure projections									
Pensions	8.5	8.2	8.2	8.4	8.9	9.6	12.2	14.0	5.6
Healthcare	6.4	6.8	7.1	7.4	7.6	7.8	8.1	8.4	2.0
Long-term care	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.4
Education	3.8	3.3	2.9	2.8	2.9	3.0	3.0	3.1	– 0.7
Unemployment benefits	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Total age-related expenditure	19.3	18.8	18.6	19.2	20.0	21.0	24.1	26.4	7.2
p.m. benefit ratio for public pension (1)	*15.7*	*14.1*	*13.5*	*13.2*	*13.0*	*13.1*	*13.7*	*14.1*	*– 10.6*
p.m. benefit ratio for old-age and early pension (1)	*16.4*	*14.5*	*13.9*	*13.5*	*13.4*	*13.3*	*14.0*	*14.3*	*– 12.6*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	≈ – 1.0
2005 SP/CP (2)	– 3.4	– 3.8	– 3.4	– 3.0			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 1.4	– 3.4	– 4.0				*Structural balance*	– 1.0
Gross debt							*Structural primary balance*	0.2
2005 SP/CP	37.4	37.1	37.9	37.8				
Commission spring 2006 forecast	30.5	31.5	32.4					
size of one-offs	1.1	0.2	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay
Baseline scenario	0.5	– 0.6	2.6	**2.5**	0.4
MTO scenario	0.2	– 0.5	2.6	**2.2**	0.4

	IBP	LTC	S2	Cost of delay	RPB
Baseline scenario	0.7	4.8	**5.5**	0.5	5.4
MTO scenario	0.3	4.8	**5.1**	0.5	5.4

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	30.5	28.0	28.1	30.3	36.7	48.7	103.6	206.9	176.4
MTO scenario	30.5	29.6	27.8	28.1	32.6	42.5	91.9	188.0	157.5

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

	Total	– pensions	– healthcare	– long-term care
Higher life expectancy	0.4	0.2	0.2	0.0

	Total
Higher labour productivity	– 0.3
Higher employment older workers	– 0.3

	– increase in labour supply	– decrease in the NAIRU
Higher employment	– 0.2	– 0.3

	Total	– IBP	– LTC
Higher interest rate	– 0.6	0.2	– 0.9

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	– 0.1	– 0.8	– 0.5	0.4	0.8

– Scenarios for long-term care	Pure ageing	Constant disability	Increase in formal care
	0.1	– 0.1	0.4

Denmark

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Danish economy is projected to experience some slowdown of economic growth over the coming decades, from 2.0 % during 2004–10 to 1.6 % in 2011–30 and in 2031–50, influenced by an ageing population ([1]). The old-age dependency ratio is projected to rise from 22 % in 2004 to 42 % in 2050, albeit a smaller increase than on average in the EU.

The projected increase in age-related spending is above the average of the EU; rising by 4.8 percentage points of GDP between 2004 and 2050. Most of the projected increase during this period is due to the higher pension expenditures of 3.3 percentage points of GDP. The increase in expenditure on healthcare is projected to be 1 percentage point of GDP, below the EU average, while on long-term care a rise of 1.1 percentage points of GDP is projected, slightly above the EU average.

In the calculations, the Danish government finances are reduced by the revenue-reducing impact of Eurostat's decision on the classification of funded defined-contribution pension schemes that will take effect from 2007 onwards. The MTO is also technically adjusted downwards, by 1 % of GDP in the MTO scenario (see Chapter III for further information). The figures with this adjustment are given in brackets in this part.

The Danish public finances have been sound in the recent past; with the government finances in surplus since the latter half of the 1990s and in 2005 an exceptionally high surplus of 4.9 % (4 %) of GDP was noted, considerably better than the 3.6 % (2.7 %) of GDP expected in the 2005 convergence programme. As a result of the strong fiscal position in recent years, the debt/GDP ratio has been reduced by more than 10 % of GDP in four years to reach 35.8 % (36.2 %) of GDP in 2005. The Danish 2005 convergence projects a return towards the fiscal target range over the medium term and aims for a surplus of 2.9 % (1.9 %) of GDP in 2010. The MTO set in the convergence programme at 1½ % to 2½ % (½ % to 1½ %) of GDP is already attained with the better than expected fiscal out-turn in 2005 (according to the Danish authorities, temporarily high tax revenues in 2005 contribute to the very large surplus by around 2 % of GDP) ([2]). The Commission services 2006 spring forecast expects a surplus of 4 % (3 %) of GDP in 2007 on the basis of current policies, above the programme's forecast of 3.2 % (2.2 %), suggesting that budgetary outcomes could be better than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Denmark does not have a sustainability gap (S2 is – 2.2 % of GDP) in the baseline scenario. The long-term budgetary impact of ageing is higher than the EU average, reflecting notably a relatively high increase in pension expenditure as a share of GDP over the long term.

The initial budgetary position with a currently very high structural primary balance of 7.1 % (6.2 %) of GDP in 2005 contributes to a rapid reduction of debt, which will on current policies continue over the medium term. Assuming that the MTO of a structural balance of 1 % of GDP is reached in 2010, the structural primary balance becomes smaller; falling from 6.2 % in 2005 to 1.8 % of GDP in 2010, influenced in part by interest expenditure on debt falling over the medium term. The lower

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

([2]) According to the Danish authorities, temporarily high pension yield tax contributes, with 1.2 % of GDP, corporate tax by 0.5 % of GDP and North Sea revenue by 0.3 % of GDP, totalling 2 % of GDP.

structural primary balance in 2010 would have a negative impact on the sustainability gap, rising to 2.4 % of GDP in the MTO scenario. It should be noted that the Danish 2005 convergence programme projects a surplus of 2.9 % (1.9 %) of GDP in 2010, above the MTO of 1½ % to 2½ % (½ % to 1½ %). Under the assumption that this surplus in 2010 would materialise, the sustainability gap would be reduced by some 1 % of GDP as compared to the MTO scenario.

According to Danish long-term projections, revenues are projected to increase over the long term by 1 % of GDP between 2010 and 2050, mainly due to deferred taxation of private pensions (+ 3 % of GDP). This impact is important in Denmark, as private pension schemes currently hold large assets and are expected to accumulate them further since contributions to these schemes should still be higher than the corresponding pension outlays for a long period of time.

However, general government property income in Denmark, consisting of both revenues from financial assets and from natural resources, amounted to 2.2 % of GDP in 2005 which is higher than on average in the EU. As shown in Chapter IV, revenues from property income might be lower by about half of this amount over the long term, suggesting that risks to public finance sustainability might be underestimated. General government property income revenues could in fact be even lower in the future under the assumption that natural resources would be depleted and that those revenues would vanish over the long term, which is also projected in the Danish convergence programme. These revenue projections suggest that the long-term budgetary position could be better by around 1 percentage point of GDP. Overall, these national projections do not significantly alter the outlook for the long-term sustainability of the Danish public finances.

Denmark has among the highest levels of taxation in the EU, suggesting that there is limited room of manoeuvre to meet expenditure increases by adjusting the budget on the revenue side.

Pension policy is currently under review in Denmark, and the government has proposed a welfare reform package ([1]). Some of these main elements of the welfare reform package are: (i) gradual increase of the retirement age by in total two years; (ii) indexation of the age thresholds to increased longevity; (iii) increased contribution to the early retirement system; (iv) earlier start of tertiary education; (v) faster study completion; (vi) earlier activation of the unemployed. The total net effect on public finances of the reform package is foreseen by the Danish authorities to equal about 1.5 % of GDP; the gross impact of the package of 2 % of GDP consists of 1.5 % from later retirement and indexation of the retirement age and 0.5 % from the other measures. Of these resources, 0.5 % of GDP will be used to finance a globalisation fund that will invest in research and development.

Overall assessment

The long-term budgetary impact of ageing in Denmark is higher than on average in the EU; influenced notably by a relatively high increase in pension expenditure as a share of GDP over the coming decades.

The initial budgetary position with a currently very high primary surplus in 2005 (which is influenced by temporary factors) would, if maintained, contribute significantly to ease the long-term budgetary impact of ageing. The projected future rise of revenues as a share of GDP, mainly due to deferred taxation of pensions, would further alleviate the increase in public expenditure over the long term. Maintaining high primary surpluses over the medium term would be key in view of containing risks to the sustainability of public finances.

Overall, Denmark appears to be at low risk with regard to the sustainability of public finances.

([1]) The welfare reform package has broad political backing. The agreement was reached by five of the main political parties representing more than 80 % of the votes in the Danish parliament (Folketinget).

Denmark

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	5.4	5.5	5.5	5.5	5.6	5.6	5.6	5.5	0.1
Working age population (15–64) % of total	66.2	65.7	64.5	63.9	62.7	60.8	58.4	59.6	– 6.7
Old-age dependency ratio (65+/15–64)	22.5	24.9	28.8	31.5	34.2	37.7	43.3	41.9	19.4
Participation rate (15–64)	79.6	79.8	80.6	80.7	80.7	80.5	80.9	81.3	1.8
— older workers (55–64)	64.1	63.7	66.6	67.9	67.7	66.1	65.3	69.0	5.0
Unemployment rate (15–64)	5.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	– 1.0
Real GDP (growth rate)	1.8	2.1	1.9	1.6	1.4	1.1	1.5	1.8	– 0.1
Expenditure projections									
Pensions	9.5	10.1	10.8	11.3	12.0	12.8	13.5	12.8	3.3
Healthcare	6.9	7.0	7.2	7.4	7.6	7.7	7.8	7.8	1.0
Long-term care	1.1	1.1	1.1	1.2	1.5	1.7	2.0	2.2	1.1
Education	7.8	7.5	7.6	7.5	7.3	7.3	7.6	7.5	– 0.3
Unemployment benefits	1.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2	– 0.3
Total age-related expenditure	26.8	27.0	27.9	28.6	29.5	30.8	32.1	31.6	4.8
p.m. benefit ratio for public pension (1)	*20.2*	*19.9*	*19.5*	*19.4*	*19.3*	*19.2*	*19.0*	*19.2*	*– 5.2*
p.m. benefit ratio for old-age and early pension (1)	*19.4*	*19.2*	*18.8*	*18.6*	*18.5*	*18.5*	*18.2*	*18.2*	*– 6.0*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	1½ – 2½
2005 SP/CP (2)	3.6	2.7	3.3	3.3	3.3		**MTO scenario (2010)**	
Commission spring 2006 forecast	5.2	3.6	3.7				*Structural balance*	1
Gross debt							*Structural primary balance*	1.8
2005 SP/CP	35.6	31.7	28.9	26.5	21.5			
Commission spring 2006 forecast	35.8	30.0	26.5					
size of one-offs	0.2	0.3	0.3	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	– 6.1	– 1.0	3.0	– 4.2	– 0.8	
MTO scenario	– 1.5	– 0.8	3.0	0.7	0.1	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	– 6.1		3.9	– 2.2	– 0.1	3.5
MTO scenario	– 1.5		3.9	2.4	0.2	3.6

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	35.8	5.7	– 23.0	– 49.5	– 74.3	– 96.5	– 131.1	– 162.0	– 197.8
MTO scenario	35.8	18.3	13.0	11.5	14.3	23.5	58.3	97.8	62.0

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.9	0.5	0.2	0.2
Higher labour productivity	**Total**			
	0.0			
Higher employment older workers	**Total**			
	– 0.4			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.1		– 0.4	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	– 0.4	0.1	– 0.4	

– Scenarios for healthcare	Pure ageing	Constant health	Death– related costs	Income elasticity	Unit costs: GDP/worker
	0.1	– 0.6	– 0.2	0.4	0.6
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.3	– 0.3	n.a.		

Germany

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the German economy is projected to experience a slowdown of economic growth over the coming decades, from 1.7 % during 2004–10 to 1.4 % in 2011–30, and to 1.2 % in 2031–50. This is partly due to the ageing of the population ([1]), with the old-age dependency ratio projected to rise from 27 % in 2004 to 52 % in 2050, close to the average increase in the EU.

The projected increase in age-related spending in Germany is slightly below the EU average, rising by 2.7 percentage points of GDP between 2004 and 2050. The increase in expenditure on pensions is also projected to be relatively limited in Germany, rising by only 1.7 percentage points of GDP, as a result of large reforms having already been enacted since the beginning of the 1990s, the most recent (2004) involving the introduction of a 'sustainability factor' which reflects changes in the ratio between pension contributors and pension recipients and helps to make the pension system robust to changes in assumed life expectancy, as pensions are automatically adjusted. The increase in healthcare expenditure is projected to be 1.2 percentage points of GDP, lower than the EU average.

The projected increase in expenditure on long-term care in the reference scenario does not however reflect current legislation in Germany, where long-term care benefits (i.e. benefits paid out by the public insurance scheme for people receiving formal care at home, care in institutions or cash benefits) are fixed by law without any indexation. A scenario in which long-term care expenditure remains constant as a share of GDP would come closer to the current legislative setting, and would mean that the increase in age-related expenditure would be lower, at only 1 percentage point of GDP (reducing the S2 sustainability indicator by 0.7 % of GDP) ([2]). However, if the unit costs of supplying long-term care increase more than the general price level of the economy, as is assumed in the Ageing Report, this could lead to an increasing gap between the needs and provisions of public long-term care.

Germany has been placed in the excessive deficit procedure and is required to bring the deficit below 3 % of GDP by 2007 at the latest. The deficit has been above 3 % of GDP since 2002 and stood at 3.3 % in 2005. As a result of the weak fiscal position of recent years, the debt/GDP ratio has risen by almost 10 percentage points of GDP in four years, to reach 67.7 % of GDP in 2005, above the Treaty reference value. The German stability programme of February 2006 projects a gradual strengthening of the public finances over the medium term, with the aim of reducing the deficit to 1½ % of GDP in 2009, while the MTO, set in the stability programme at balance in structural terms, is expected to be achieved only after the end of the programme period. According to the Commission services 2006 spring forecast a deficit of 2.5 % of GDP is expected in 2007 on the basis of current policies, coinciding with the programme's forecast of 2½ % of GDP, suggesting that Germany's budgetary plans seem to be attainable.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Germany has a sustainability gap of 4.4 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is below the EU average, with the relatively limited increase in pension expenditure as a share of GDP reflecting the earlier enactment of pension reforms.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

([2]) See the box on pages 155 and 156 in the Ageing Report (2006).

The initial budgetary position, with a structural primary balance of – 0.3 % of GDP in 2005, constitutes a risk to sustainable public finances even before the long-term budgetary impact of ageing is considered. Assuming that the MTO of balance in structural terms is reached in 2010, the structural primary balance improves, rising from – 0.3 % in 2005 to 2.8 % of GDP in 2010. This would have a positive impact on the sustainability gap, which is reduced to 1.2 % of GDP in the MTO scenario. This shows the importance of strengthening the structural primary surplus over the medium term so as to reduce sustainability risks.

Germany's current level of debt is higher than 60 % of GDP and it has been increasing in recent years. Ensuring a reduction of debt to below the 60 % of GDP reference value at a satisfactory pace is necessary so as to strengthen the resilience of the public finances to adverse shocks and to reduce the risks to public finance sustainability.

The benefit ratio in Germany is projected to decrease relatively markedly, by around 20 %, in the period to 2050. Employment rates of older workers in Germany (39 %) are currently close to the EU average (40 %) but are projected to increase by more than on average in the EU. A greater increase in the employment rate of older workers than assumed in the projections would mean that the benefit ratio would decrease less markedly, since it would foster GDP growth and ensure that workers can accumulate more pension rights. Furthermore, the increase in recent years of private pension contributions (occupational and individual) in Germany may partly compensate for the projected decrease in the public benefit ratio — indeed notably so if this trend continues.

The German 2006 stability programme projects that pension contributions (*Beitragseinnahmen*) will rise by 1.6 % of GDP between 2010 and 2050. Such an increase would fill part of the gap that would emerge in that period between pension expenditure and contributions, taking also into account the abovementioned sustainability factor. Nevertheless, a sustainability gap would remain.

Overall assessment

The long-term budgetary impact of ageing in Germany is close to the EU average, though with pension expenditure showing a somewhat more limited increase than in many other countries, as a result of the pension reforms already enacted. However, current pension arrangements might come under pressure at some point if the projected decrease in the benefit ratio were to fully materialise, and risks to the public finances in the future cannot be excluded. Increasing the employment rates of older workers would improve workers' pensions in the future and ensure the success of the pension reforms.

The initial budgetary position constitutes a risk to sustainable public finances even before the long-term budgetary impact of ageing populations is considered. Moreover, the current level of gross debt is above the Treaty reference value. Consolidating the public finances will therefore be essential to reduce risks to the sustainability of public finances.

Overall, Germany appears to be at medium risk with regard to the sustainability of public finances.

Germany

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	82.5	83.1	83.4	83.5	83.3	82.7	80.7	77.7	– 4.8
Working age population (15–64) % of total	67.3	66.1	66.0	64.7	62.9	60.4	58.1	57.9	– 9.4
Old-age dependency ratio (65+/15–64)	26.8	30.7	31.5	34.2	38.1	44.0	50.9	51.4	24.6
Participation rate (15–64)	73.0	77.4	78.7	79.1	78.7	78.6	79.5	79.0	6.0
— older workers (55–64)	45.9	61.7	67.9	69.5	69.0	67.4	70.7	69.2	23.3
Unemployment rate (15–64)	9.5	8.5	7.0	7.0	7.0	7.0	7.0	7.0	– 2.5
Real GDP (growth rate)	1.1	2.3	1.6	1.2	1.0	0.8	1.4	1.2	0.1
Expenditure projections									
Pensions	11.4	10.5	10.5	11.0	11.6	12.3	12.8	13.1	1.7
Healthcare	6.0	6.3	6.5	6.7	6.8	6.9	7.1	7.2	1.2
Long-term care	1.0	1.0	1.0	1.2	1.3	1.4	1.6	2.0	1.0
Education	4.0	3.6	3.3	3.2	3.2	3.3	3.3	3.2	– 0.9
Unemployment benefits	1.3	1.1	0.9	0.9	0.9	0.9	0.9	0.9	– 0.4
Total age-related expenditure	23.7	22.5	22.2	22.9	23.8	24.7	25.7	26.4	2.7
p.m. benefit ratio for public pension (1)	*18.5*	*16.6*	*16.6*	*16.2*	*15.6*	*14.8*	*13.9*	*13.3*	*– 28.0*
p.m. benefit ratio for old-age and early pension (1)	*18.5*	*16.6*	*16.6*	*16.2*	*15.6*	*14.8*	*13.9*	*13.3*	*– 28.0*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0
2005 SP/CP (2)	– 3.0	– 2.9	– 1.8	– 1.5	– 1.1		**MTO scenario (2010)**	
Commission spring 2006 forecast	– 3.1	– 3.0	– 2.3				*Structural balance*	0
Gross debt							*Structural primary balance*	2.8
2005 SP/CP	67.5	69.0	68.5	68.0	67.0			
Commission spring 2006 forecast	67.7	68.9	69.2					
size of one-offs	0.1	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	1.5	0.2	1.7	**3.5**	0.7	
MTO scenario	– 1.7	0.1	1.7	**0.1**	0.0	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	1.6		2.8	**4.4**	0.4	4.4
MTO scenario	– 1.6		2.8	**1.2**	0.1	4.2

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	67.7	73.5	77.1	85.4	100.4	122.9	182.6	260.7	193.0
MTO scenario	67.7	64.3	51.8	42.4	37.2	36.7	46.1	65.3	– 2.4

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.6	0.2	0.3	0.1
Higher labour productivity	**Total**			
	0.0			
Higher employment older workers	**Total**			
	– 0.1			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.1		– 0.3	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	0.2	0.7	– 0.5	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.1	– 0.5	– 0.2	0.3	0.3

– Scenarios for long-term care	Pure ageing	Constant disability	Increase in formal care	Benefit indexed on price
	0.2	– 0.2	0.6	– 0.7

Estonia

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Estonian economy is projected to experience a slowdown of economic growth over the coming decades, from 6.1 % during 2004–10 to 3 % in 2011–30 and a further decline to 1.2 % in 2031–50, influenced by an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 24 % in 2004 to 43 % in 2050, albeit a smaller increase than on average in the EU.

Age-related spending is projected to fall by 2.4 percentage points of GDP in Estonia between 2004 and 2050, the second largest decrease in the EU. This is mainly due to a projected fall in public expenditure on pensions by 2.5 percentage points of GDP, as a result of a comprehensive pension reform. The pension system consists of a PAYG scheme and a compulsory funded defined-contribution scheme, the latter enacted in 2002. The increase in expenditure on healthcare is projected to be 1.1 percentage point of GDP, below the EU average and close to that of the NMS10. An increase of 0.3 of a percentage point of GDP is projected for expenditure on long-term care, a lower rise than on average in the EU.

The Estonian public finances have been sound in the recent past; with the government finances in surplus since 2001. In 2005, a surplus of 1.6 % of GDP was recorded, considerably better than the 0.3 % of GDP expected in the 2005 convergence programme. As a result of the strong fiscal position in recent years, the debt/GDP ratio has been kept at very low levels, reaching 4.8 % of GDP in 2005. The Estonian 2005 convergence programme targets a balanced budget from 2007 to 2009, coinciding with the MTO set to balance in structural terms. The MTO is thus already more than attained. According to the Commission services 2006 spring forecast, a surplus of 0.8 % of GDP is expected in 2007 on the basis of the current policies, above the programme's forecast of a balanced budget, suggesting that the budgetary outcomes could be better than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Estonia does not have a sustainability gap in the baseline scenario (S2 is – 3.4 % of GDP). The long-term budgetary impact of ageing is among the lowest in the EU, reflecting a projected reduction in pension expenditure as a share of GDP over the long term, influenced by the pension reforms enacted.

The initial budgetary position with a structural primary surplus of 1.7 % of GDP in 2005 enables debt to be maintained at a very low level. Assuming that the MTO of a structural balance is reached in 2010, the structural primary surplus becomes smaller; falling from 1.7 % of GDP in 2005 to balance in 2010. The lower structural primary balance in 2010 would have a negative impact on the sustainability indicator; however, a sustainability gap does not emerge in the MTO scenario either (S2 is – 1.7 % of GDP).

Under current policies, the benefit ratio in Estonia is projected to decrease quite markedly, by more than 25 % in the period to 2050, despite a relatively low level of public pension expenditure today ([2]). Pressure on current pension arrangements cannot be excluded in the long term.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

([2]) If the pensions from the private funded schemes are not considered, the reduction in the benefit ratio is larger, of more than 50 %.

Overall assessment

The long-term budgetary impact of ageing in Estonia is among the lowest in the EU; influenced notably by the projected reduction in pension expenditure as a share of GDP over the coming decades. However, current pension arrangements may come under pressure at some point if the decrease in the benefit ratio was to fully materialise, and risks to the public finances in the future cannot be excluded.

The current level of gross debt is very low in Estonia and maintaining sound government finances, of a balanced budget, would contribute to containing the risks to the long-term sustainability of public finances.

Overall, Estonia appears to be at low risk with regard to the sustainability of public finances.

Estonia

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.1	– 0.2
Working age population (15–64) % of total	67.9	68.4	66.7	64.9	63.9	63.6	63.1	59.6	– 8.3
Old-age dependency ratio (65+/15–64)	23.2	24.1	25.5	27.7	30.0	31.9	34.7	40.3	17.1
Participation rate (15–64)	70.6	74.2	77.2	77.8	77.3	77.0	76.6	76.1	5.5
— older workers (55–64)	57.2	58.4	62.6	64.8	64.2	65.9	66.7	63.7	6.5
Unemployment rate (15–64)	9.6	7.8	7.0	7.0	7.0	7.0	7.0	7.0	– 2.6
Real GDP (growth rate)	6.3	5.6	3.3	2.6	2.4	2.3	1.3	0.6	– 5.8
Expenditure projections									
Pensions	6.7	6.8	6.0	5.4	5.1	4.7	4.4	4.2	– 2.5
Healthcare	5.4	5.8	6.0	6.1	6.1	6.2	6.4	6.5	1.1
Long-term care	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.6	0.3
Education	5.0	3.8	3.4	3.5	3.8	3.8	3.5	3.6	– 1.3
Unemployment benefits	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Total age-related expenditure	17.4	16.8	15.8	15.4	15.4	15.2	14.8	15.0	– 2.5
p.m. benefit ratio for public pension (1)	*10.5*	*11.3*	*10.2*	*9.0*	*8.0*	*7.2*	*6.2*	*5.3*	*– 50.0*
p.m. benefit ratio for old-age and early pension (1)	*11.7*	*12.6*	*11.4*	*10.0*	*8.8*	*7.9*	*6.8*	*5.7*	*– 51.6*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0
2005 SP/CP (2)	0.4	0.3	0.2	0.1	0		**MTO scenario (2010)**	
Commission spring 2006 forecast	1.5	1.1	0.5				*Structural balance*	0
Gross debt							*Structural primary balance*	0
2005 SP/CP	4.6	4.4	3.3	3.0	2.8			
Commission spring 2006 forecast	4.8	3.6	3.0					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	– 1.7	– 1.2	– 1.5	– 4.4	– 0.7				
MTO scenario	0.0	– 1.1	– 1.5	– 2.6	– 0.4				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	– 1.8		– 1.7	– 3.4	– 0.3	– 1.0			
MTO scenario	0.0		– 1.7	– 1.7	– 0.1	– 1.0			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	4.8	– 3.4	– 14.9	– 30.0	– 46.4	– 64.2	– 110.9	– 177.8	– 182.6
MTO scenario	4.8	0.5	– 3.0	– 9.7	– 17.1	– 25.4	– 48.6	– 82.1	– 86.9

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)					
– Underlying assumptions					
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**	
	0.3	0.1	0.1	0.0	
Higher labour productivity	**Total**				
	– 0.2				
Higher employment older workers	**Total**				
	– 0.4				
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**		
	0.0		0.0		
Higher interest rate	**Total**	**– IBP**	**– LTC**		
	0.0	0.0	0.1		
– Scenarios for healthcare	**Pure ageing**	**Constant health**	**Death–related costs**	**Income elasticity**	**Unit costs: GDP/worker**
	– 0.2	– 0.7	– 0.5	0.3	– 0.3
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	0.2		

Ireland

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Irish economy is projected to experience a slowdown of economic growth over the coming decades, from 5.5 % during 2004–10 to 3.3 % in 2011–30 and a further decline to 1.6 % in 2031–50, influenced by an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 16 % in 2004 to 45 % in 2050, a higher rise than on average in the EU.

The projected increase in age-related spending is well above the average of the EU, rising by 7.8 percentage points of GDP between 2004 and 2050. Most of the projected increase during this period is due to the high increase in pension expenditures, of 6.4 percentage points of GDP. The increase in expenditure on healthcare is projected to be 2 percentage points of GDP higher than on average in the EU, while on long-term care a rise of 0.6 of a percentage point of GDP is projected, coinciding with the EU average.

Irish public finances have been sound in the recent past and in 2005 a surplus of 1.0 % of GDP was noted, better than the 0.3 % of GDP expected in the stability programme. This has enabled a reduction of the debt/GDP ratio, which has fallen by almost 8 % of GDP in four years, to reach 27.6 % of GDP in 2005, and accumulation of assets in the national pension reserve fund. The Irish 2005 stability programme aims for a deficit of 0.8 % of GDP in 2008. The MTO set in the stability programme to close-to-balance in structural terms and the Irish authorities plan to maintain a structural position that satisfies the MTO throughout the programme period. The structural balance was estimated in the Commission services spring 2006 forecast as a surplus of 1.9 % of GDP in 2005. Attaining the MTO in 2010 thus implies a weakening of the fiscal position of almost 2 percentage points of GDP. According to spring forecast, a deficit of 0.4 % of GDP is expected in 2007 on the basis of the current policies, slightly stronger than the programme's forecast of 0.8 %, suggesting that budgetary outcomes could be better than projected in the programme. However, it should also be noted that the medium-term budgetary projections could be vulnerable if the downside macroeconomic risks, notably stemming from a downturn in the housing sector, were to be realised.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Ireland has a sustainability gap of 2.9 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is significantly above the EU average, reflecting notably a relatively high increase in pension expenditure as a share of GDP over the long term, influenced in part by the maturing of the pension system.

The initial budgetary position, with a high structural primary balance of 3.1 % of GDP in 2005, contributes to reducing debt. Assuming that the MTO of balance in structural terms is reached in 2010, the structural primary balance becomes smaller, falling from 3.1 % in 2005 to 0.8 % of GDP in 2010. Such a reduction in the structural primary balance of more than 2 % of GDP would have a negative impact on the sustainability gap, the gap rising to 5.3 % of GDP in the MTO scenario. This shows that maintaining a high structural primary surplus over the medium term is key to reducing risks to the long-term sustainability of public finances

In addition to the continued accumulation of assets in public pension schemes, pension policy is currently under review in Ireland. The Pensions Board recently

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

launched the national pensions review, covering overall pension arrangements ([1]). The review raised a number of issues, including that a significant increase is predicted in the annual costs of social welfare retirement pensions and public service pensions and that supplementary pension coverage is currently insufficient and a cause for concern. Against that background, and in the context of the forthcoming planned social partnership agreement, the government has committed itself to the early publication of a Green Paper on pensions policy and to develop a framework for 'comprehensively addressing the pensions agenda over the longer-term' ([2]).

It should be noted that the Irish authorities project a higher increase in healthcare expenditures over the long term compared to the reference scenario, by about 1 % of GDP, suggesting that the budgetary cost of ageing could be even higher.

Overall assessment

The long-term budgetary impact of ageing in Ireland is well above the EU average, as a result of a relatively high increase in pension expenditure as a share of GDP over the coming decades, influenced in part by the maturing of the pension system.

The initial budgetary position with a high primary surplus contributes to ease the projected long-term budgetary impact of ageing populations, but is not sufficient to fully cover the substantial increase in expenditure due to the ageing of the population. Maintaining high primary surpluses over the medium term and implementing measures aimed at curbing the significant increase in age-related expenditures would be key to reducing risks to the sustainability of public finances.

Overall, Ireland appears to be at medium risk with regard to the sustainability of public finances.

([1]) The Pensions Board is a statutory body set up to monitor and supervise operation of the Pensions Act (1990). The Board also advises the Minister for Social and Family Affairs on pension matters generally. See 'The national pensions review', report by the Pensions Board, October 2005 (http://www.pensionsboard.ie).

([2]) See 'Towards towards 2016, 10-year framework social partnership agreement 2006–2015' (http://www.taoiseach.gov.ie/index.asp?locID=181&docID=2755).

Ireland

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	4.0	4.3	4.6	4.8	4.9	5.1	5.3	5.5	1.4
Working age population (15–64) % of total	68.0	67.3	66.0	65.4	65.3	64.8	61.7	57.8	– 10.1
Old-age dependency ratio (65+/15–64)	16.4	17.5	20.0	22.5	25.2	28.3	36.0	45.2	28.8
Participation rate (15–64)	69.7	73.4	75.1	75.7	76.1	76.7	77.1	77.2	7.4
— older workers (55–64)	51.0	56.3	61.6	65.4	67.5	69.3	69.8	69.5	18.5
Unemployment rate (15–64)	4.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	– 0.9
Real GDP (growth rate)	6.1	5.2	4.0	2.9	2.6	2.1	1.4	1.6	– 4.5
Expenditure projections									
Pensions	4.7	5.2	5.9	6.5	7.2	7.9	9.3	11.1	6.4
Healthcare	5.3	5.5	5.7	5.9	6.2	6.4	6.9	7.3	2.0
Long-term care	0.6	0.6	0.6	0.6	0.6	0.7	0.9	1.2	0.6
Education	4.1	3.5	3.5	3.4	3.4	3.2	3.0	3.1	– 1.0
Unemployment benefits	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	– 0.2
Total age-related expenditure	15.5	15.4	16.3	17.1	18.0	18.8	20.7	23.3	7.8
p.m. benefit ratio for public pension (1)	*14.3*	*14.9*	*15.9*	*16.2*	*16.6*	*16.5*	*16.1*	*15.7*	*9.7*
p.m. benefit ratio for old-age and early pension (1)	*16.3*	*17.1*	*18.2*	*18.3*	*18.5*	*18.2*	*17.3*	*16.5*	*1.2*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	≈ 0.0
2005 SP/CP (2)	1.1	0.1	0.1	0.1			**MTO scenario (2010)**	
Commission spring 2006 forecast	1.9	1	0.8				*Structural balance*	0.0
Gross debt							*Structural primary balance*	0.8
2005 SP/CP	28	28.0	28.2	28.3				
Commission spring 2006 forecast	27.6	27.2	27.0					
size of one-offs	– 0.3	0.1	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay
Baseline scenario	– 3.1	– 1.2	3.5	**– 0.8**	– 0.1
MTO scenario	– 0.7	– 1.0	3.5	**1.7**	0.3

	IBP	LTC	S2	Cost of delay	RPB
Baseline scenario	– 3.1	6.0	**2.9**	0.2	5.5
MTO scenario	– 0.7	6.0	**5.3**	0.3	5.6

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	27.6	9.9	– 3.6	– 12.3	– 16.8	– 17.5	– 6.6	30.8	3.2
MTO scenario	27.6	17.4	14.7	17.2	24.7	37.2	80.0	157.5	129.9

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

	Total	– pensions	– healthcare	– long-term care
Higher life expectancy	0.5	0.2	0.2	0.1

	Total
Higher labour productivity	0.0
Higher employment older workers	– 0.1

	– increase in labour supply	– decrease in the NAIRU
Higher employment	– 0.1	– 0.3

	Total	– IBP	– LTC
Higher interest rate	– 0.9	0.0	– 0.9

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.0	– 0.7	– 0.4	0.4	0.2

– Scenarios for long-term care	Pure ageing	Constant disability	Increase in formal care
	0.1	– 0.1	0.3

Greece

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Greek economy is projected to experience a slowdown of economic growth over the coming decades, from 2.9 % during 2004–10 to 1.6 % in 2011–30 and a further decline to 0.8 % in 2031–50, influenced by an ageing population ([1]). The old-age dependency ratio is projected to increase from 26 % in 2004 to 60 % in 2050, a higher rise than on average in the EU.

The projected increase in age-related spending in Greece is not comparable with the other Member States, since projections for pension expenditure are not available in the Ageing Report. The latest available projections included in the 2002 Greek stability programme showed a very considerable increase of 10.2 percentage points of GDP from 2005 up to 2050. The increase in expenditure on healthcare is projected to be 1.6 percentage points of GDP from 2005 up to 2050, close to the EU average. No projections of long-term care expenditure are available.

Greece has been placed in the excessive deficit procedure and is required to bring the deficit below 3 % of GDP by 2006 at the latest. The deficit was 4.5 % in 2005, after having been above 3 % for many years. As a result of the weak fiscal position in recent years, the debt/GDP ratio has remained very high and was 107.5 % of GDP in 2005, well above the Treaty reference value ([2]). The Greek 2005 stability programme projects a gradual strengthening of the public finances over the medium term, aiming at reducing the deficit to 1.7 % of GDP in 2008. The adjustment towards the MTO set in the stability programme at balance in structural terms is expected to be achieved beyond the programme period. According to the Commission services 2006 spring forecast a deficit of 3.6 % of GDP is expected in 2007 based on a no-policy-change scenario, well above the programme's forecast of 2.3 % of GDP, suggesting that budgetary outcomes could be significantly worse than expected.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, even without including projected expenditure on pensions, which in all likelihood significantly underestimates the sustainability gap, Greece has a gap of 3 % of GDP in the baseline scenario. This is due to the weak initial budgetary position with a structural primary balance of – 0.3 % of GDP in 2005 that constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of ageing. Assuming that the MTO of balance in structural terms is reached in 2010, the structural primary balance improves; rising from – 0.3 % in 2005 to 4.3 % of GDP in 2010. The higher structural primary balance in 2010 would have a positive impact on the sustainability gap. However, given that the latest available pension projections point to an increase of more than 10 percentage points of GDP up to 2050, a significant sustainability gap is likely to remain.

The current level of debt is very high in Greece, at 107.5 % of GDP in 2005. Ensuring a reduction of the very high debt to below the 60 % of GDP reference value at a satisfactory pace is necessary so as to strengthen the resilience of the public finances to adverse shocks and to reduce risks to public finance sustainability.

Overall assessment

The long-term budgetary impact of ageing in Greece is uncertain as common long-term projections of pension expenditure are not available. However, it is likely to

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

([2]) Despite the recent improvement in the statistical processes, a number of issues remain pending related to the Greek government accounts (see Eurostat, 2006c).

be well above the EU average. According to the latest available information from the 2002 updated Greek stability programme, a significant increase in pension expenditure as a share of GDP is projected over the long term.

The initial budgetary position is weak and constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of an ageing population. Moreover, the current level of gross debt is well above the Treaty reference value and reducing it requires achieving high primary surpluses for a long period of time. Consolidating the public finances as currently planned together with reform measures aimed at containing the likely significant increase in age-related expenditures would be key in view of reducing risks to the sustainability of public finances.

Overall, Greece appears to be at high risk with regard to the sustainability of public finances.

Greece

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	11.0	11.3	11.4	11.4	11.4	11.3	11.1	10.7	– 0.3
Working age population (15–64) % of total	67.7	67.1	65.8	64.8	63.8	62.7	58.4	54.7	– 12.9
Old-age dependency ratio (65+/15–64)	26.4	28.0	30.3	32.7	35.8	39.5	50.7	60.4	34.0
Participation rate (15–64)	66.0	68.6	69.9	70.2	69.8	69.2	69.0	70.0	3.9
— older workers (55–64)	44.0	45.6	48.6	50.8	52.6	53.3	53.8	53.7	9.7
Unemployment rate (15–64)	9.3	8.6	7.0	7.0	7.0	7.0	7.0	7.0	– 2.3
Real GDP (growth rate)	3.7	2.2	1.9	1.5	1.2	1.0	0.7	1.1	– 2.6
Expenditure projections									
Pensions	NA	NA	NA	NA	NA	NA	NA	NA	NA
Healthcare	5.1	5.4	5.5	5.6	5.7	5.9	6.5	6.8	1.7
Long-term care	NA	NA	NA	NA	NA	NA	NA	NA	NA
Education	3.5	3.1	2.9	2.9	3.0	3.0	3.0	3.1	– 0.4
Unemployment benefits	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	– 0.1
Total age-related expenditure	8.9	8.7	8.7	8.7	8.9	9.1	9.7	10.2	1.2
p.m. benefit ratio for public pension (1)	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
p.m. benefit ratio for old-age and early pension (1)	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0.0
2005 SP/CP (2)	– 4.8	– 3.7	– 2.8	– 2.4			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 5.3	– 4.4	– 4.4				*Structural balance*	0.0
Gross debt							*Structural primary balance*	4.3
2005 SP/CP	107.9	104.8	101.1	96.8				
Commission spring 2006 forecast	107.5	105.0	102.1					
size of one-offs	– 0.2	– 0.5	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay			
Baseline scenario	2.1	0.8	0.4	**3.2**	0.6			
MTO scenario	– 2.8	0.5	0.4	**– 1.9**	– 0.4			
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**		
Baseline scenario	2.2		0.9	**3.0**	0.3	2.8		
MTO scenario	– 2.7		0.9	**– 1.8**	– 0.2	2.5		
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	107.5	105.8	111.3	119.5	131.4	147.3	193.6	255.5	148.0
MTO scenario	107.5	89.7	71.1	53.2	35.7	18.2	– 17.7	– 56.0	– 163.5

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.2	NA	0.2	0.0
Higher labour productivity	**Total**			
	NA			
Higher employment older workers	**Total**			
	NA			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	NA		NA	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	0.8	1.0	– 0.2	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.0	– 0.4	– 0.2	0.2	0.6
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	NA	NA	NA		

Spain

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Spanish economy is projected to experience a slowdown of economic growth over the coming decades, from 3 % during 2004–10 to 2 % in 2011–30, and to 0.6 % in 2031–50. This is partly due to the ageing of the population: Spain's old-age dependency ratio is projected to rise from 25 % in 2004 to 66 % in 2050, the highest increase in the EU ([1]).

The projected increase in age-related spending in Spain is considerably higher than on average in the EU, rising by 8.5 percentage points of GDP between 2004 and 2050. Expenditure on pensions is projected to increase by a relatively large amount in Spain: 7.1 percentage points of GDP, while healthcare expenditure is also projected to increase by 2.2 percentage points of GDP, more than on average in the EU. However, expenditure on long-term care is projected to increase by only 0.2 of a percentage point of GDP, less than the EU average.

The Spanish public finances have been relatively sound in the recent past; in 2005 a surplus of 1.1 % of GDP was recorded, following a close-to-balance position in the previous two years. As a result, the debt/GDP ratio has been reduced by more than 10 percentage points of GDP in four years, to 43.1 % in 2005. The Spanish 2005 stability programme projects continued surpluses over the medium term, though gradually reducing to 0.6 % of GDP in 2008. The programme projects a continued rapid reduction of the debt ratio by 8 percentage points of GDP over the programme period, to less than 36 % of GDP in 2008. The structural balance projected in the programme meets the MTO, set in the stability programme at balance in structural terms of GDP, for each year in the programme period up to 2008. According to the Commission services 2006 spring forecast a surplus of 0.4 % of GDP is expected in 2007 on the basis of the current policies, slightly below the programme's forecast of 0.7 %, suggesting that budgetary outcomes could be close to the projections in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Spain has a sustainability gap of 3.2 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is significantly above the EU average, owing in particular to a relatively high increase in pension expenditure as a share of GDP over the long term.

The initial budgetary position, with a currently high structural primary balance of 3.1 % of GDP in 2005, has contributed to a rapid reduction of debt, which will on current policies continue over the medium term. Therefore, assuming that the MTO of balance in structural terms is reached in 2010, the structural primary balance becomes smaller, falling from 3.1 % in 2005 to 1.2 % of GDP in 2010 since interest expenditure on debt falls over the medium term. The lower structural primary balance in 2010 of almost 2 % of GDP would have a negative impact on the sustainability gap, which rises to 5.2 % of GDP in the MTO scenario. It should be noted that the stability programme projects a surplus in the government finances of 0.6 % of GDP, and 0.9 % in structural terms, in 2008. The assumption that the MTO is achieved in 2010 therefore implies that the structural budgetary position will be reduced by almost 1 % of GDP between 2008 and 2010. In addition, a lower primary surplus has a greater impact than a lower level of debt. This shows that maintaining a high structural primary surplus over the medium term is vital to reduce risks to the long-term sustainability of public finances.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

Pension policy is currently under review in Spain, and the government proposed a reform package in July 2006 ([1]). The main points of the proposed reform are: (i) increasing the contribution period; (ii) raising the partial retirement age; (iii) discouraging early retirement; (iv) strengthening incentives to extend working life; (v) extending the widow's pension to cohabiting couples; (vi) adapting the list of occupational illnesses to prevent misuse.

Overall assessment

The long-term budgetary impact of ageing in Spain is significantly higher than the EU average, influenced notably by a considerable increase in pension expenditure as a share of GDP over the coming decades.

The initial budgetary position with a high primary surplus will ease the projected long-term budgetary impact of ageing populations but is not sufficient to cover the substantial increase in expenditure in its entirety. Therefore, it is important to implement the measures within the announced social welfare reform package aimed at containing the significant budgetary impact of ageing, notably those concerning pensions, in order to reduce the risks to the sustainability of public finances.

Overall, Spain appears to be at medium risk with regard to the sustainability of public finances.

([1]) An agreement between the government and the social agents has been reached on the reform proposal in July 2006.

Spain

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	42.3	44.6	45.3	45.6	45.6	45.4	44.7	43.0	0.6
Working age population (15–64) % of total	68.6	67.9	66.6	66.0	65.3	63.8	58.1	53.4	– 15.2
Old-age dependency ratio (65+/15–64)	24.6	25.3	27.5	29.8	33.2	38.2	52.5	65.6	41.0
Participation rate (15–64)	68.6	72.7	74.8	75.5	75.6	75.6	75.7	76.8	8.2
— older workers (55–64)	44.4	47.9	52.4	57.8	60.9	63.3	63.5	63.9	19.5
Unemployment rate (15–64)	10.8	8.7	7.0	7.0	7.0	7.0	7.0	7.0	– 3.8
Real GDP (growth rate)	3.1	2.8	2.4	2.0	1.5	1.0	0.4	1.0	– 2.1
Expenditure projections									
Pensions	8.6	8.9	8.8	9.3	10.4	11.8	15.2	15.7	7.1
Healthcare	6.1	6.3	6.5	6.7	7.0	7.3	7.9	8.3	2.2
Long-term care	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.8	0.2
Education	3.7	3.2	3.1	3.2	3.1	3.0	2.9	3.1	– 0.6
Unemployment benefits	1.1	0.9	0.7	0.7	0.7	0.7	0.7	0.7	– 0.4
Total age-related expenditure	20.1	19.7	19.6	20.4	21.7	23.4	27.3	28.6	8.5
p.m. benefit ratio for public pension (1)	*17.2*	*19.6*	*19.1*	*18.9*	*19.0*	*19.1*	*18.8*	*17.1*	*– 0.4*
p.m. benefit ratio for old-age and early pension (1)	*19.6*	*22.0*	*20.7*	*20.2*	*20.4*	*20.5*	*20.5*	*18.6*	*– 4.9*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0.0
2005 SP/CP (2)	1.2	1.2	1.2	0.9			**MTO scenario (2010)**	
Commission spring 2006 forecast	1.3	1.3	1				*Structural balance*	0.0
Gross debt							*Structural primary balance*	1.2
2005 SP/CP	43.1	40.3	38	36.0				
Commission spring 2006 forecast	43.2	40.0	37.9					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	– 2.7	– 0.6	3.5	**0.2**	0.0				
MTO scenario	– 0.8	– 0.5	3.5	**2.2**	0.4				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	– 2.7		5.9	**3.2**	0.3	6.4			
MTO scenario	– 0.7		5.9	**5.2**	0.5	6.5			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	43.2	25.3	9.4	– 4.5	– 13.7	– 15.9	7.8	72.3	29.1
MTO scenario	43.2	30.4	23.9	20.2	22.2	33.0	90.4	197.5	154.3

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions					
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**	
	0.2	0.0	0.2	0.0	
Higher labour productivity	**Total**				
	– 0.6				
Higher employment older workers	**Total**				
	– 0.1				
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**		
	– 0.1		– 0.2		
Higher interest rate	**Total**	**– IBP**	**– LTC**		
	– 0.8	0.2	– 1.0		
– Scenarios for healthcare	**Pure ageing**	**Constant health**	**Death–related costs**	**Income elasticity**	**Unit costs: GDP/worker**
	0.0	– 0.5	– 0.3	0.3	0.4
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.0	0.0	0.6		

France

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the French economy is projected to experience a slowdown of economic growth over the coming decades, from 2.2 % during 2004–10 to 1.8 % in 2011–30, and to 1.6 % in 2031–50. This is partly due to the ageing of the population ([1]). The old-age dependency ratio is projected to rise from 25 % in 2004 to 46 % in 2050, which is a smaller rise than on average in the EU.

The projected increase in age-related spending in France is also slightly below the EU average, rising by 3.2 percentage points of GDP between 2004 and 2050. The increase in expenditure on pensions is projected to be relatively limited in France, at 2 percentage points of GDP, due to large-scale reforms already enacted in the past: in 1993 for private-sector employees and in 2003 mainly for public-sector employees though to a lesser degree also for private-sector employees. Despite the positive effects of the 2004 health reform, the increase in expenditure on healthcare is still projected to be 2 percentage points of GDP, slightly higher than the EU average, influenced by relatively high expenditure on healthcare at present compared to the EU average. An increase of 0.2 of a percentage point of GDP is projected for expenditure on long-term care, a lower rise than on average in the EU.

France, having been placed in the excessive deficit procedure, was required to bring the deficit below 3 % of GDP by 2005. After having been above 3 % since 2002, the deficit was reduced to 2.9 % of GDP in 2005 despite the economic slowdown, but the reduction was achieved mainly by one-off measures (notably by means of the exceptional payments linked to the inclusion of the specific electricity and gas companies' pension schemes in the general regime, which amounted to 0.5 % of GDP). As a result of the weak fiscal position in recent years, the debt/GDP ratio rose by around 10 percentage points of GDP in four years to reach 66.8 % of GDP in 2005, above the Treaty reference value. The French 2005 stability programme projects a gradual strengthening of the public finances over the medium term, with the aim of reducing the deficit to 1 % of GDP in 2009. The MTO set in the stability programme at balance in structural terms is expected to be achieved after the end of the programme period, by 2010. The programme deficit targets of 2.9 % of GDP in 2006 and 2.6 % in 2007 were updated at the time of the budget preparatory debate that took place in June 2006 to 2.8 % of GDP in 2006 and 2.5 % in 2007. According to the Commission services 2006 spring forecast, on the basis of the current policies, deficits of 3.0 % of GDP in 2006 and 3.1 % in 2007 are expected, i.e. worse budgetary outcomes than targeted in the stability programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, France has a sustainability gap of 4.0 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is slightly lower than the EU average, as a result of the pension reforms already enacted.

The initial budgetary position with a structural primary balance of – 0.5 % of GDP in 2005 constitutes a risk to sustainable public finances even before the long-term budgetary impact of ageing is considered. However, assuming that the MTO of balance in structural terms is reached in 2010, the structural primary balance improves, rising from – 0.5 % in 2005 to 2.5 % of GDP in 2010. This would have a considerable positive impact on the sustainability gap, reducing it to 0.9 % of GDP in the MTO scenario. This shows the importance of

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

strengthening the structural primary surplus over the medium term to reduce sustainability risks.

The current level of debt is higher than 60 % of GDP and has been increasing in recent years. Ensuring a reduction of debt to below the 60 % of GDP reference value at a satisfactory pace is necessary to strengthen the resilience of the public finances to adverse shocks and to reduce risks to public finance sustainability. The authorities committed, in their budget preparatory debate documents, to reduce the debt/GDP ratio by 2 percentage points in 2006 after the worse than expected outcome in 2005.

The benefit ratio in France is projected to decrease relatively markedly, by around 20 %, in the period to 2050. Employment rates of older workers are currently lower in France (36 %) than on average in the EU (43 %) and, while assumed to rise, are projected to remain below the EU average up to 2050. A greater increase in the employment rate of older workers than assumed in the projections would mean that the benefit ratio would decrease less markedly, as it would foster GDP growth and ensure that workers can accumulate enough pension rights to limit the decrease in the benefit ratio, which would reduce the risks of possible pressures on public finances emerging in the future.

As underlined by the 2005/06 update of the stability programme, the increase in contribution years necessary to be entitled to a full pension, which is based on an automatic rule meant to keep the ratio between the number of contribution years and the number of years in pension constant up to 2020, is still subject to review after the opinion of an independent commission in 2008 is put forward. It is therefore not clear at this stage if there will be any modification to the current increase in the contribution period and, if there is, whether it will strengthen or soften eligibility criteria for a full pension.

Overall assessment

The long-term budgetary impact of ageing in France is slightly lower than the EU average, with pension expenditure showing a somewhat more limited increase than in many other countries, as a result of the pension reforms enacted in 1993 and 2003. However, current pension arrangements might come under pressure at some point if the projected decrease in the benefit ratio were to fully materialise, and risks to the public finances in the future cannot be excluded. Increasing the employment rates of older workers would improve workers' pensions in the future and ensure the success of the pension reforms.

The initial budgetary position constitutes a risk to sustainable public finances even before the long-term budgetary impact of an ageing population is considered. Moreover, the current level of gross debt is above the Treaty reference value. Consolidating the public finances will therefore be essential to reduce risks to the sustainability of public finances.

Overall, France appears to be at medium risk with regard to the sustainability of public finances.

France

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	59.9	61.5	62.6	63.5	64.3	64.9	65.6	65.1	5.2
Working age population (15–64) % of total	65.1	65.0	63.5	62.3	61.0	59.6	57.5	57.5	– 7.6
Old-age dependency ratio (65+/15–64)	25.2	25.8	29.4	33.0	36.5	40.2	45.9	46.4	21.2
Participation rate (15–64)	69.6	70.2	71.1	71.1	71.7	72.5	73.4	73.1	3.5
— older workers (55–64)	40.2	43.8	46.5	48.5	50.5	53.4	54.9	54.1	13.9
Unemployment rate (15–64)	9.3	8.3	7.0	7.0	7.0	7.0	7.0	7.0	– 2.3
Real GDP (growth rate)	2.1	2.4	1.7	1.6	1.8	1.6	1.6	1.6	– 0.5
Expenditure projections									
Pensions	12.8	12.9	13.2	13.7	14.0	14.3	15.0	14.8	2.0
Healthcare	7.7	8.0	8.2	8.4	8.6	8.9	9.3	9.5	1.8
Long-term care	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.2
Education	5.0	4.7	4.6	4.6	4.6	4.5	4.5	4.5	– 0.5
Unemployment benefits	1.2	1.1	0.9	0.9	0.9	0.9	0.9	0.9	– 0.3
Total age-related expenditure	26.9	27.0	27.2	27.9	28.4	29.0	30.1	30.1	3.2
p.m. benefit ratio for public pension (1)	*24.4*	*24.1*	*23.0*	*22.0*	*21.1*	*20.3*	*19.3*	*18.9*	*– 22.5*
p.m. benefit ratio for old-age and early pension (1)	*24.4*	*24.1*	*23.1*	*22.0*	*21.1*	*20.3*	*19.3*	*18.9*	*– 22.5*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0.0
2005 SP/CP (2)	– 3.3	– 2.9	– 2.3	– 1.5	– 0.6		**MTO scenario (2010)**	
Commission spring 2006 forecast	– 3.1	– 2.7	– 2.5				*Structural balance*	0.0
Gross debt							*Structural primary balance*	2.5
2005 SP/CP	65.8	66.0	65.6	64.6	62.8			
Commission spring 2006 forecast	66.8	66.9	67.0					
size of one-offs	0.6	0.2	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	1.3	0.1	1.8	**3.2**	0.6				
MTO scenario	– 1.8	– 0.1	1.8	**0.0**	0.0				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	1.4		2.6	**4.0**	0.3	3.4			
MTO scenario	– 1.7		2.6	**0.9**	0.1	3.2			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	66.8	69.9	76.0	87.1	102.0	120.4	173.5	238.6	171.8
MTO scenario	66.8	60.0	50.6	44.8	41.8	41.1	50.7	66.1	– 0.7

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.7	0.4	0.2	0.0
Higher labour productivity	**Total**			
	– 0.3			
Higher employment older workers	**Total**			
	– 0.4			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.2		– 0.3	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	0.3	0.6	– 0.3	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.0	– 0.6	– 0.3	0.4	0.5
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	0.4		

Italy

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Italian economy is projected to experience a slowdown of economic growth over the coming decades, from 1.9 % during 2004–10 to 1.5 % in 2011–30, and to 0.9 % in 2031–50. This is partly due to the ageing of the population ([1]), with the old-age dependency ratio projected to rise from 29 % in 2004 to 62 % in 2050, a significantly higher rise than on average in the EU.

The projected increase in age-related spending in Italy is below the average of the EU, rising by 1.7 percentage points of GDP between 2004 and 2050. The increase in expenditure on pensions is also projected to be limited, rising by only 0.4 of a percentage point of GDP, due to large reforms enacted in the past, including the reform approved in 2004. This reform sharply tightens eligibility conditions for early pensions as from 2008. But the projections hinge upon the implementation of the planned periodical actuarial updates which adjust pension entitlements to life expectancy, the first of which was due in 2005, but was postponed. The increase in healthcare expenditure is projected to be 1.3 percentage points of GDP, lower than on average in the EU, while for long-term care an increase of 0.4 of a percentage point of GDP is projected, close to the EU average.

Italy has been placed in excessive deficit procedure and is required to bring the deficit below 3 % of GDP by 2007. The deficit has been above 3 % since 2003 and in 2005 was 4.1 % of GDP. As a result of a shrinking primary surplus in recent years, the debt/GDP ratio started rising again in 2005 after a 10-year decline, to 106.4 % of GDP, and is projected to rise further in 2006 and, in the no-policy-change scenario, in 2007. The Italian 2005 stability programme plans a gradual strengthening of the public finances over the medium term, with the aim of reducing the deficit to 1.5 % of GDP in 2009. The programme expects the adjustment towards the MTO set in the stability programme at balance in structural terms to be completed after the end of the programme period. However, according to the Commission services 2006 spring forecast a deficit of 4.5 % of GDP is expected in 2007 on the basis of the current policies, below the programme's target of 2.8 %, suggesting that a significant additional correction would be needed to meet this target.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Italy has a sustainability gap of 3.1 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is lower than the EU average, as a result of pension reforms already enacted that limit the increase in pension expenditure as a share of GDP.

The initial budgetary position with a structural primary balance of 0.6 % of GDP in 2005 constitutes a risk to sustainable public finances even before the long-term budgetary impact of ageing is considered. Assuming that the MTO of balance in structural terms is reached in 2010, the structural primary balance improves, rising from 0.6 % in 2005 to 4.5 % of GDP in 2010. This would have a considerable positive impact on the sustainability gap, eliminating it altogether in the MTO scenario (– 1.1 % of GDP). This shows the importance of strengthening the structural primary surplus over the medium term so as to reduce sustainability risks.

Moreover, the current level of debt is very high, above 100 % of GDP. Ensuring a reduction of debt to below the 60 % of GDP reference value at a satisfactory pace is necessary so as to strengthen the resilience of the public finances to adverse shocks and to reduce risks to public finance sustainability. An increase of the discount rate

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

by just 1 percentage point would increase the sustainability gap by as much as 0.8 % of GDP, due to the very high level of debt and accompanying high-debt servicing costs.

Data on pension expenditure incorporate the impact of the reform approved in July 2004. Pension expenditure is projected to be below the pre-reform scenario by 0.6–0.7 % of GDP for the next 30 years. The reform sharply tightens eligibility conditions for early pensions from 2008 onwards, introducing differentiated treatment of workers in contiguous age groups. Discussions are ongoing on how to distribute the increase in the retirement age more evenly, and on possibly bringing it forward in the light of the need to consolidate public finances.

The benefit ratio in Italy is projected to decrease relatively markedly, by around 30 % in the period to 2050, despite a large increase in the employment rate of older workers. Although employment rates of older workers are currently lower in Italy (29 %) than on average in the EU (40 %) the gap is projected to narrow in the future. A greater increase in the employment rate of older workers than assumed in the projections would mean that the benefit ratio would decrease less markedly, since it would foster GDP growth and ensure that workers can accumulate enough pension rights to limit the decrease in the benefit ratio and hence reduce the risks of possible pressures on public expenditure emerging in the future. A measure establishing a second pillar pension scheme for private-sector workers was approved in November 2005, but its implementation has been delayed until 2008. The measure involves the transfer of the end of service allowance (*trattamento di fine rapporto* (TFR)) to occupational pension schemes.

Overall assessment

The long-term budgetary impact of ageing in Italy is lower than the EU average, with pension expenditure showing a more limited increase than on average in the EU, thanks to the pension reforms enacted, assuming they are fully implemented, notably the planned periodical actuarial adjustment in line with life expectancy. However, current pension arrangements might come under pressure at some point if the projected decrease in the benefit ratio were to fully materialise, and risks to the public finances in the future cannot be excluded. Increasing the employment rates of older workers would improve workers' pensions in the future and ensure the success of the pension reforms.

The initial budgetary position constitutes a risk to sustainable public finances even before the long-term budgetary impact of an ageing population is considered. Moreover, the current level of gross debt is well above the Treaty reference value and reducing it — and risks to the sustainability of public finances — will require high primary surpluses to be achieved and maintained over a long period.

Overall, Italy appears to be at medium risk with regard to the sustainability of public finances.

Italy

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	57.9	58.5	58.6	58.4	58.0	57.5	56.1	53.8	– 4.1
Working age population (15–64) % of total	66.6	65.5	64.3	63.8	63.0	61.1	56.1	54.6	– 12.0
Old-age dependency ratio (65+/15–64)	28.9	31.4	34.2	36.4	39.2	44.4	57.6	62.2	33.3
Participation rate (15–64)	62.6	65.8	67.4	68.1	68.0	68.6	69.7	70.2	7.6
— older workers (55–64)	31.2	36.8	41.7	47.4	50.0	53.2	54.2	55.3	24.1
Unemployment rate (15–64)	8.4	7.3	6.5	6.5	6.5	6.5	6.5	6.5	– 1.9
Real GDP (growth rate)	1.9	1.9	1.8	1.5	1.2	0.9	0.8	1.2	– 0.7
Expenditure projections									
Pensions	14.2	14.0	13.8	14.0	14.4	15.0	15.9	14.7	0.4
Healthcare	5.8	6.0	6.1	6.3	6.5	6.7	7.0	7.1	1.3
Long-term care	1.5	1.5	1.5	1.6	1.6	1.7	1.9	2.2	0.7
Education	4.3	3.9	3.8	3.7	3.6	3.5	3.6	3.7	– 0.6
Unemployment benefits	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	– 0.1
Total age-related expenditure	26.2	25.7	25.6	25.9	26.4	27.3	28.7	28.0	1.7
p.m. benefit ratio for public pension (1)	*20.0*	*20.8*	*20.4*	*19.8*	*18.8*	*17.7*	*15.7*	*14.0*	*– 29.9*
p.m. benefit ratio for old-age and early pension (1)	*20.2*	*21.2*	*20.8*	*20.2*	*19.1*	*18.0*	*15.9*	*14.1*	*– 30.1*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0.0
2005 SP/CP (2)	– 4.0	– 3.2	– 2.3	– 1.7	– 1.2		**MTO scenario (2010)**	
Commission spring 2006 forecast	– 3.9	– 3.8	– 3.8				*Structural balance*	0.0
Gross debt							*Structural primary balance*	4.5
2005 SP/CP	108.5	108.0	106.1	104.4	101.7			
Commission spring 2006 forecast	106.4	107.4	107.7					
size of one-offs	0.5	0.4	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	1.3	0.8	1.3	**3.4**	0.7	
MTO scenario	– 2.9	0.6	1.3	**– 1.0**	– 0.2	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	1.3		1.8	**3.1**	0.3	3.8
MTO scenario	– 2.9		1.8	**– 1.1**	– 0.1	3.6

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	106.4	109.8	112.3	116.9	126.2	141.6	197.0	261.5	155.1
MTO scenario	106.4	96.7	78.3	60.4	44.6	31.5	16.3	0.8	– 105.6

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.4	0.2	0.1	0.1
Higher labour productivity	**Total**			
	– 0.4			
Higher employment older workers	**Total**			
	0.0			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.1		– 0.2	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	0.8	1.0	– 0.2	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.0	– 0.4	– 0.2	0.2	0.3
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	0.8		

Cyprus

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Cypriot economy is projected to experience a slowdown of economic growth over the coming decades, from 4.3 % during 2004–10 to 3.5 % in 2011–30 and a further decline to 1.9 % in 2031–50, influenced by an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 17 % in 2004 to 43 % in 2050, a higher increase than on average in the EU.

The projected increase in age-related spending in Cyprus is the highest in the EU; rising by 11.8 percentage points of GDP between 2004 and 2050. This is predominantly due to a very high rise in pension expenditure, projected to show the highest increase in the EU of 12.9 percentage points of GDP. The increase in expenditure on healthcare is projected to be 1.1 percentage points of GDP, below the EU average. No projections of long-term care expenditure are available in the Ageing Report.

Cyprus has consolidated the public finances in the recent past; after having been above 3 % of GDP since 2002, the deficit was brought below the 3 % of GDP reference value in 2005 and it stood at 2.4 % of GDP. As a result, the Commission recommended in June 2006 that the decision on the existence of an excessive deficit should be abrogated. The reduction of the deficit has facilitated a stabilisation of the debt/GDP ratio, which however remains high at 70.3 % of GDP in 2005. The budgetary strategy outlined in the convergence programme projects a gradual strengthening of the public finances over the medium term, and the MTO set in the stability programme at a deficit of 0.5 % of GDP in structural terms is expected to be almost reached by 2009. According to the Commission services 2006 spring forecast a deficit of 2 % of GDP is expected in 2007 based on no-policy-change scenario, close to the programme's forecast of 1.8 % of GDP, suggesting the budgetary plans in the programme are attainable.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Cyprus has a very large sustainability gap of 8.5 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is among the highest in the EU, reflecting a very high increase in pension expenditure as a share of GDP.

The initial budgetary position, with a structural primary balance of 0.5 % of GDP in 2005 constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of ageing. Assuming that the MTO of a structural balance of – 0.5 % of GDP is reached in 2010, the structural primary balance improves; rising from 0.5 % in 2005 to 2 % of GDP in 2010. The higher structural primary balance in 2010 would have a positive impact on the sustainability gap; however, the gap would still be very high, at 6.9 % of GDP in the MTO scenario.

The current level of debt is higher than 60 % of GDP and ensuring a reduction of debt to below the debt reference value at a satisfactory pace is necessary so as to strengthen the resilience of the public finances to adverse shocks and to reduce risks to public finance sustainability.

Overall assessment

The long-term budgetary impact of ageing in Cyprus is among the highest in the EU, influenced notably by a very large increase in pension expenditure as a share of GDP.

The initial budgetary position constitutes a risk to sustainable public finances even before considering the

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

long-term budgetary impact of an ageing population. Moreover, the current level of debt is higher than 60 % of GDP. Continuing the consolidation of the public finances simultaneously with adopting pension reform measures aimed at containing the significant increase in age-related expenditures will be necessary, as recognised by the authorities, and would be key in view of reducing risks to the sustainability of public finances.

Overall, Cyprus appears to be at high risk with regard to the sustainability of public finances.

Cyprus

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.0	0.2
Working age population (15–64) % of total	68.1	70.0	69.5	67.4	65.2	63.8	63.6	60.5	– 7.5
Old-age dependency ratio (65+/15–64)	16.9	18.5	21.4	24.7	28.3	31.6	34.0	40.2	23.3
Participation rate (15–64)	72.3	76.8	79.6	81.2	81.7	81.6	80.9	80.7	8.4
— older workers (55–64)	54.6	62.8	65.5	66.9	67.1	69.0	72.6	70.6	16.0
Unemployment rate (15–64)	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	0.0
Real GDP (growth rate)	3.9	4.5	4.0	3.2	2.9	2.8	2.0	1.2	– 2.7
Expenditure projections									
Pensions	6.9	8.0	8.8	9.9	10.8	12.2	15.0	19.8	12.9
Healthcare	2.9	3.1	3.3	3.4	3.5	3.6	3.9	4.0	1.1
Long-term care	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Education	6.3	5.1	4.3	4.0	4.1	4.3	4.2	4.0	– 2.2
Unemployment benefits	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0
Total age-related expenditure	16.4	16.5	16.7	17.6	18.8	20.5	23.4	28.2	11.8
p.m. benefit ratio for public pension (1)	*25.6*	*28.6*	*27.9*	*26.9*	*25.5*	*25.7*	*28.9*	*30.8*	*20.2*
p.m. benefit ratio for old-age and early pension (1)	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	– ½
2005 SP/CP (2)	– 3.1	– 2.1	– 2.1	– 1.5	– 0.6		**MTO scenario (2010)**	
Commission spring 2006 forecast	– 2.9	– 2.2	– 2.3				*Structural balance*	– 0.5
Gross debt							*Structural primary balance*	2.0
2005 SP/CP	70.5	67.0	64	56.9	53.5			
Commission spring 2006 forecast	70.3	69.1	67.8					
size of one-offs	0.9	0.3	0.3	0.3	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	– 0.3	0.0	4.3	**4.0**	0.6	
MTO scenario	– 1.8	– 0.1	4.3	**2.3**	0.3	
	IBP		LTC	S2	Cost of delay	RPB
Baseline scenario	0.2		8.3	**8.5**	0.5	9.0
MTO scenario	– 1.4		8.3	**6.9**	0.4	8.9

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	70.3	62.7	55.9	55.4	61.8	76.8	135.7	249.2	178.9
MTO scenario	70.3	57.1	43.5	36.0	34.9	42.2	83.2	172.3	102.0

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.1	n.a.	0.1	0.0
Higher labour productivity	**Total**			
	– 1.0			
Higher employment older workers	**Total**			
	n.a.			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	0.0		– 0.1	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	– 1.0	0.4	– 1.4	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	– 0.1	– 0.4	– 0.2	0.2	0.0
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	n.a.	n.a.	n.a.		

Latvia

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Latvian economy is projected to experience a significant slowdown of economic growth over the coming decades, from 7.7 % during 2004–10 to 3.4 % in 2011–30 and a further decline to 1.1 % in 2031–50, influenced by the ageing of its population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 24 % in 2004 to 44 % in 2050, albeit a smaller increase than on average in the EU.

Age-related spending is projected to fall by 1.3 percentage points of GDP in Latvia between 2004 and 2050, the second largest decrease in the EU. This is mainly due to a projected fall in public expenditure on pensions by 1.2 percentage points of GDP, as a result of a comprehensive pension reform. The pension system consists of notional individual accounts, introduced in 1996, and a mandatory funded defined-contribution scheme, implemented in 2001. The increase in expenditure on healthcare is projected to be 1.1 percentage points of GDP, below the EU average. For long-term care an increase of 0.3 of a percentage point of GDP is projected, lower than on average in the EU.

Latvian public finances have strengthened in the recent past and in 2005 a surplus of 0.2 % of GDP was recorded, considerably better than the deficit of 1.5 % of GDP expected in the 2005 convergence programme. As a result, the debt/GDP ratio has been reduced slightly over the last four years, standing at 11.9 % of GDP in 2005. The Latvian 2005 convergence programme targets a deficit of 1.3 % of GDP in 2008, close to the MTO of a deficit of 1 % of GDP set in structural terms, the latter also being expected to be achieved by 2008. According to the Commission services 2006 spring forecast, a deficit of 1.0 % of GDP is expected in 2007 on the basis of the current policies, slightly better than the programme's forecast of 1.4 %, suggesting that the budgetary plans in the programme are attainable.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Latvia has a sustainability gap of 0.8 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is well below the EU average, reflecting a limited increase in pension expenditure as a share of GDP over the long term, influenced by the pension reforms already enacted.

The initial budgetary position with a structural primary balance of 0.5 % of GDP in 2005, if maintained, contributes to ease the long-term budgetary impact of ageing. Moreover, the current level of debt is very low, at 11.9 % of GDP in 2005. Assuming that the MTO of – 1 % of GDP in structural terms is reached in 2010, the structural primary balance deteriorates; falling from 0.5 % of GDP in 2005 to – 0.6 % of GDP in 2010. The lower structural primary balance in 2010 would increase the sustainability gap to 1.9 % of GDP.

Overall assessment

The long-term budgetary impact of ageing in Latvia is lower than the EU average, with pension expenditure showing a more limited increase than in many other countries, influenced by the pension reforms already enacted.

The current level of gross debt is very low in Latvia and maintaining sound government finances, with very limited deficits, would contribute to contain the risks to the long-term sustainability of public finances.

Overall, Latvia appears to be at low risk with regard to the sustainability of public finances.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

Latvia

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	2.3	2.2	2.2	2.1	2.1	2.0	1.9	1.9	– 0.4
Working age population (15–64) % of total	68.4	68.9	67.2	65.5	64.1	63.7	63.0	59.1	– 9.3
Old-age dependency ratio (65+/15–64)	23.1	24.7	25.6	27.0	29.5	31.8	35.5	41.2	18.2
Participation rate (15–64)	70.1	75.6	79.1	79.2	78.6	78.1	77.6	76.8	6.7
— older workers (55–64)	48.4	56.3	61.2	61.6	61.5	63.3	64.4	60.5	12.1
Unemployment rate (15–64)	9.8	7.6	7.0	7.0	7.0	7.0	7.0	7.0	– 2.8
Real GDP (growth rate)	7.5	7.4	3.8	2.7	2.4	2.1	1.2	0.4	– 7.2
Expenditure projections									
Pensions	6.8	4.9	4.6	4.9	5.3	5.6	5.9	5.6	– 1.2
Healthcare	5.1	5.5	5.8	5.8	5.9	5.9	6.1	6.2	1.1
Long-term care	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.3
Education	4.9	3.5	3.0	3.2	3.5	3.7	3.3	3.5	– 1.4
Unemployment benefits	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	– 0.1
Total age-related expenditure	17.5	14.6	14.1	14.6	15.5	16.0	16.2	16.2	– 1.3
p.m. benefit ratio for public pension (1)	*11.4*	*9.9*	*9.4*	*9.2*	*9.1*	*9.1*	*8.9*	*7.2*	*– 36.6*
p.m. benefit ratio for old-age and early pension (1)	*11.2*	*10.3*	*9.7*	*9.5*	*9.5*	*9.5*	*9.2*	*7.3*	*– 35.2*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	≈ – 1.0
2005 SP/CP (2)	– 1.7	– 1.6	– 1.3	– 1			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 0.1	– 1.2	– 0.8				*Structural balance*	– 1.0
Gross debt							*Structural primary balance*	– 0.6
2005 SP/CP	14.9	13.6	13.7	14.7				
Commission spring 2006 forecast	11.9	11.3	10.9					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	– 0.5	– 1.0	0.9	**– 0.6**	– 0.1				
MTO scenario	0.6	– 0.9	0.9	**0.6**	0.1				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	– 0.4		1.2	**0.8**	0.1	1.7			
MTO scenario	0.7		1.2	**1.9**	0.2	1.8			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	11.9	6.5	1.2	– 2.4	– 2.2	1.4	13.6	29.0	17.1
MTO scenario	11.9	8.9	8.6	10.3	16.3	26.2	53.9	91.8	79.9

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)					
– Underlying assumptions					
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**	
	0.3	0.1	0.1	0.1	
Higher labour productivity	**Total**				
	– 0.1				
Higher employment older workers	**Total**				
	– 0.1				
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**		
	– 0.1		– 0.1		
Higher interest rate	**Total**	**– IBP**	**– LTC**		
	– 0.1	0.0	– 0.2		
– Scenarios for healthcare	**Pure ageing**	**Constant health**	**Death–related costs**	**Income elasticity**	**Unit costs: GDP/worker**
	– 0.3	– 0.8	– 0.6	0.2	– 0.5
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	1.7		

Lithuania

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Lithuanian economy is projected to experience a slowdown of economic growth over the coming decades, from 6.5 % during 2004–10 to 3.3 % in 2011–30 and a further decline to 1.1 % in 2031–50, influenced by an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 22 % in 2004 to 45 % in 2050, albeit a smaller increase than on average in the EU.

The projected increase in age-related spending in Lithuania is well below the EU average; rising by 1.4 percentage points of GDP between 2004 and 2050. This is particularly due to a limited increase in pension expenditure, being projected to rise only by 1.8 percentage points of GDP, as a result of a comprehensive pension reform. The pension system consists of a PAYG scheme and a compulsory funded defined-contribution scheme, the latter enacted in 2004. The increase in expenditure on healthcare is projected to be 0.9 of a percentage point of GDP, lower than on average in the EU. For long-term care an increase of 0.4 of a percentage point of GDP is projected, below the EU average.

The Lithuanian public finances have been showing limited deficits in the recent past; in 2005, a deficit of 0.5 % of GDP was recorded, better than the 1.5 % of GDP expected in the December 2005 update of the convergence programme. The debt/GDP ratio has been reduced slightly over the last four years, standing at 18.7 % of GDP in 2005. The updated Lithuanian 2005 convergence programme sets as MTO reducing the general government deficit in structural terms to or below 1 % of GDP by 2008 and foresees that the headline deficit will reach also a level of 1 % of GDP in 2008. According to the Commission services 2006 spring forecast, the deficit is expected to increase to 0.9 % of GDP in 2007 assuming a no-policy-change scenario and including the impact of a decrease in personal income tax and increasing costs of pension reform. Nevertheless, this is higher than the programme's forecast of 1.3 % for 2007, suggesting that budgetary outcomes could be slightly better than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Lithuania has a sustainability gap of 1.8 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is well below the EU average, reflecting a limited increase in pension expenditure as a share of GDP over the long term, influenced by the pension reforms enacted.

The initial budgetary position with a structural primary balance of – 0.3 % of GDP in 2005 constitutes a risk to sustainable public finances over the long term. However, the current level of debt is very low. Assuming that the MTO of – 1 % of GDP in structural terms is reached in 2010, the structural primary balance remains unchanged at – 0.3 % of GDP, as does the sustainability gap at 1.8 % of GDP.

Further changes to the pension systems are envisaged. Starting from 2012, the retirement age is planned to be increased by two months for men and four months for women every year until it reaches 65 years for both men and women in 2026 (from 60 years for women and 62.5 years for men in 2006). This envisaged measure aims both at ensuring the financial sustainability of the pension system and increasing the replacement rates for pensioners.

Overall assessment

The long-term budgetary impact of ageing in Lithuania is lower than the EU average, with pension expenditure

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

showing a more limited increase than in many other countries, influenced by the pension reforms enacted.

The current level of gross debt is very low in Lithuania and maintaining sound government finances, with very limited deficits, would contribute to contain the risks to the long-term sustainability of public finances.

Overall, Lithuania appears to be at low risk with regard to the sustainability of public finances.

Lithuania

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	3.4	3.3	3.3	3.2	3.1	3.1	3.0	2.9	– 0.6
Working age population (15–64) % of total	67.3	69.0	68.9	67.5	65.7	63.9	62.2	59.6	– 7.7
Old-age dependency ratio (65+/15–64)	21.7	22.9	23.4	24.9	27.9	31.9	37.3	41.8	20.1
Participation rate (15–64)	70.6	73.8	76.7	78.9	79.0	78.6	78.0	77.1	6.5
— older workers (55–64)	52.3	57.5	62.7	68.3	67.9	68.9	70.6	68.4	16.1
Unemployment rate (15–64)	11.9	8.9	7.0	7.0	7.0	7.0	7.0	7.0	– 4.9
Real GDP (growth rate)	6.3	6.1	4.0	2.9	2.2	1.9	1.3	0.4	– 5.8
Expenditure projections									
Pensions	6.7	6.6	6.6	7.0	7.6	7.9	8.2	8.6	1.8
Healthcare	3.7	4.0	4.2	4.3	4.3	4.4	4.5	4.6	0.9
Long-term care	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.9	0.4
Education	5.0	4.2	3.5	3.2	3.2	3.3	3.3	3.3	– 1.6
Unemployment benefits	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	– 0.1
Total age-related expenditure	16.0	15.3	14.8	15.1	15.7	16.3	16.8	17.4	1.4
p.m. benefit ratio for public pension (1)	*7.7*	*7.9*	*8.1*	*8.4*	*8.6*	*8.4*	*8.0*	*7.5*	*– 1.8*
p.m. benefit ratio for old-age and early pension (1)	*8.1*	*8.3*	*8.5*	*8.8*	*9.0*	*8.9*	*8.3*	*7.7*	*– 4.1*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	≈ – 1.0
2005 SP/CP (2)	– 2.3	– 2	– 1.4	– 1.2			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 1.1	– 1	– 1				*Structural balance*	– 1.0
Gross debt							*Structural primary balance*	– 0.3
2005 SP/CP	19.2	19.9	19.8	18.9				
Commission spring 2006 forecast	18.7	18.9	19.7					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	0.4	– 0.8	0.7	**0.3**	0.0				
MTO scenario	0.4	– 0.8	0.7	**0.3**	0.0				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	0.5		1.3	**1.8**	0.2	1.9			
MTO scenario	0.5		1.3	**1.8**	0.2	1.9			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	18.7	16.6	14.7	13.9	16.4	22.8	44.0	77.1	58.4
MTO scenario	18.7	15.5	13.8	13.1	15.5	21.9	42.9	75.9	57.2

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.6	0.5	0.1	0.0
Higher labour productivity	**Total**			
	0.0			
Higher employment older workers	**Total**			
	– 0.1			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	0.0		0.0	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	– 0.1	0.1	– 0.2	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	– 0.2	– 0.5	– 0.4	0.2	– 0.4
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	0.5		

Luxembourg

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, Luxembourg is projected to experience a slowdown of economic growth over the coming decades, from 4 % during 2004–10 to 3 % in 2011–30 and in 2031–50, influenced by an ageing population ([1]). The old-age dependency ratio is projected to rise from 21 % in 2004 to 36 % in 2050, among the smallest increases in the EU ([2]).

The projected increase in age-related spending in Luxembourg is among the five highest increases in the EU, rising by 8.2 percentage points of GDP between 2004 and 2050. This is particularly due to pension expenditure being projected to rise considerably more than on average in the EU, by 7.4 percentage points of GDP. This is considerably higher than projected in 2001 by the EPC, which projected an increase of 1.9 percentage points of GDP between 2005 and 2050. The 2002 revaluation of social security pensions and the inclusion of civil servants' pensions may explain part of such increase. Moreover, since the 2001 projection exercise, further analysis has been carried out at the national level to better take into account cross-border workers and lengthening careers of women. Indeed, over the last two decades Luxembourg has experienced a period of exceptionally strong employment growth which will progressively translate into a similar increase in the number of pensioners and into a large increase in pension expenditure, influenced by a large number of cross-border workers. The increase in expenditure on healthcare is projected to be 1.2 percentage points of GDP, lower than on average in the EU, while on long-term care an increase of 0.6 of a percentage point of GDP is projected, coinciding with the EU average.

In Luxembourg, a deficit of 1.9 % of GDP was recorded in 2005, a slightly higher deficit than in the previous year following a period of consecutive surpluses in public finances. The gross debt/GDP ratio has remained very small in Luxembourg, standing at 6.2 % of GDP in 2005. Moreover, considerable assets have been accumulated by social security. Luxembourg's 2005 stability programme projects a gradual strengthening of the public finances over the medium term, and the MTO set in the stability programme a deficit of 0.8 % of GDP in structural terms is expected in the programme to be achieved in 2008. According to the Commission services 2006 spring forecast a deficit of 1.5 % of GDP is expected in 2007 on the basis of the current policies, below the programme's forecast of 1 %, suggesting that budgetary outcomes could be slightly worse than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Luxembourg has a sustainability gap of 9.5 % of GDP in the baseline scenario ([3]). The long-term budgetary impact of ageing is among the highest in the EU reflecting notably a relatively high increase in pension expenditure as a share of GDP over the long term.

While the current level of gross debt is very low in Luxembourg, the initial budgetary position, with a weak structural primary balance of – 1.2 % of GDP in 2005 constitutes a risk to sustainable public finances even

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

([2]) It should be noted that the relatively low increase in the old-age dependency ratio in Luxembourg which refers to the projected resident population in Luxembourg, i.e. excludes cross-border workers.

([3]) It should be noted that real GDP growth in Luxembourg is projected to be higher than in the rest of the EU up to 2050, which implies that the differential between interest rate and growth rate is particularly low. In the calculation of S2, this mechanically gives no weight to the current level of debt, being very low, while it gives a large weight to the latest year of the long-term projection, which displays a large increase in expenditure compared to the base year.

before considering the long-term budgetary impact of ageing. Assuming that the MTO of – 0.8 % of GDP in structural terms is reached in 2010, the structural primary balance improves; rising from – 1.2 % in 2005 to – 0.5 % of GDP in 2010. The higher structural primary balance in 2010 would have a positive impact on the sustainability gap; however, it would remain high at 8.9 % of GDP in the MTO scenario.

Several measures were decided by a 'tripartite agreement' (employers, trade unions and government) at the end of April 2006 in order to bring public finance back to balance over the next coming years. They include a rise in several taxes and social contributions as well as measures that aim at curbing the increase in spending, which has been very fast in recent years. The most important of these measures is the suspension of the 'normal' indexation of wages and social benefits on consumer prices up to 2009, which will be replaced by a system where indexation thresholds are set beforehand about once a year.

Overall assessment

The long-term budgetary impact of ageing in Luxembourg is among the highest in the EU, influenced notably by a very considerable increase in pension expenditure as a share of GDP over the coming decades.

The current level of gross debt is very low in Luxembourg and considerable assets have been accumulated in social security. However, while the current size of social security assets contributes significantly to public finance sustainability, it will not be sufficient to offset the sizeable increase in age-related expenditure. Therefore, as recognised by the authorities, some changes to the pension schemes will prove necessary at some point so as to contain future increase in public expenditure and reduce the risk to the long-term sustainability of public finances.

Overall, Luxembourg appears to be at medium risk with regard to the sustainability of public finances.

Luxembourg

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.2
Working age population (15–64) % of total	67.1	67.5	67.4	66.6	64.9	62.8	60.7	61.3	– 5.9
Old-age dependency ratio (65+/15–64)	21.0	21.6	22.8	24.7	27.7	31.6	36.7	36.1	15.1
Participation rate (15–64)	65.5	67.2	67.8	67.9	67.8	67.9	68.6	68.3	2.8
— older workers (55–64)	31.7	35.7	39.5	41.1	40.5	39.7	41.6	42.2	10.4
Unemployment rate (15–64)	3.8	4.2	4.2	4.2	4.2	4.2	4.2	4.2	0.4
Real GDP (growth rate)	4.0	3.9	2.9	2.8	2.9	3.0	3.0	3.0	– 1.0
Expenditure projections									
Pensions	10.0	9.8	10.9	11.9	13.7	15.0	17.0	17.4	7.4
Healthcare	5.1	5.3	5.4	5.6	5.7	5.9	6.2	6.3	1.2
Long-term care	0.9	1.0	1.0	1.0	1.0	1.1	1.3	1.5	0.6
Education	3.3	3.1	2.9	2.8	2.8	2.7	2.6	2.4	– 0.9
Unemployment benefits	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	– 0.1
Total age-related expenditure	19.5	19.4	20.5	21.6	23.5	25.0	27.4	27.8	8.2
p.m. benefit ratio for public pension (1)	*23.5*	*23.4*	*24.7*	*25.0*	*26.4*	*26.6*	*27.5*	*28.0*	*19.0*
p.m. benefit ratio for old-age and early pension (1)	*24.5*	*24.9*	*26.6*	*26.9*	*28.3*	*28.4*	*28.8*	*29.6*	*20.6*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	– 0.8
2005 SP/CP (2)	– 1.5	– 1.2	– 0.6	0.1			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 1.3	– 1.3	– 1				*Structural balance*	– 0.8
Gross debt							*Structural primary balance*	– 0.5
2005 SP/CP	6.4	9.6	9.9	10.2				
Commission spring 2006 forecast	6.2	7.9	8.2					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	1.2	– 1.8	5.2	**4.6**	0.7				
MTO scenario	0.5	– 1.8	5.2	**3.9**	0.6				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	1.2		8.3	**9.5**	0.0	7.7			
MTO scenario	0.5		8.3	**8.9**	0.0	7.7			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	6.2	10.4	19.2	34.1	56.9	88.0	171.2	267.9	261.7
MTO scenario	6.2	9.8	15.2	26.6	46.0	73.6	150.0	240.0	233.8

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.0	n.a.	n.a.	n.a.
Higher labour productivity	**Total**			
	– 0.1			
Higher employment older workers	**Total**			
	n.a.			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	n.a.		n.a.	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	– 1.2	– 0.1	– 1.1	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	– 0.1	– 0.7	– 0.3	0.4	– 1.4
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.2	– 0.2	0.6		

Hungary

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Hungarian economy is projected to experience a slowdown of economic growth over the coming decades, from 3.7 % during 2004–10 to 2.6 % in 2011–30 and to 1.1 % in 2031–50. This is partly due to the ageing of the population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 23 % in 2004 to 48 % in 2050, close to the EU average.

The projected increase in age-related spending is well above the EU average, rising by 7.6 percentage points of GDP between 2004 and 2050. Most of the projected increase during this period is due to the high increase in pension expenditures of 6.7 percentage points of GDP. The increase in expenditure on healthcare is projected to be 1 percentage point of GDP, below the EU average. An increase of 0.6 of a percentage point of GDP is projected for expenditure on long-term care, the same rise as on average in the EU.

In the calculations, the Hungarian government revenues are reduced by the revenue-reducing impact of Eurostat's decision on the classification of funded defined-contribution pension schemes that will take effect from 2007 onwards. The MTO is assumed to be – 1 % of GDP in the MTO scenario (see Chapter III for further information). The figures with this adjustment are given in brackets in this part.

Hungary has been placed in the excessive deficit procedure and is required to bring the deficit below 3 % of GDP by 2008 at the latest. The deficit has been above 3 % for the last four years and in 2005 stood at 6.1 % (7.5 %) of GDP. As a result of the weak fiscal position in recent years, the debt/GDP ratio has risen by almost 7 % of GDP in four years, to reach 58.4 % (62.4 %) of GDP in 2005. The Hungarian 2005 convergence programme projects a gradual strengthening of the public finances over the medium term, with the aim of reducing the deficit to 1.9 % (3.4 %) of GDP in 2007. The MTO set in the convergence programme at – 0.5 % to – 1 % of GDP in structural terms is expected to be achieved after the end of the programme period. However, according to the Commission services 2006 spring forecast, which expects a deficit of 7 % (8.4 %) of GDP in 2007 on the basis of the current policies, well above the programme's forecast of 3.3 % (4.8 %) of GDP, budgetary outcomes could be significantly worse than expected ([2]).

Main findings and results

On the basis of the end-2005 budgetary position and the projected budgetary changes over the long term, Hungary has a large sustainability gap of 9.8 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is well above the EU average, reflecting a significant increase in pension expenditure as a share of GDP.

The initial budgetary position, with a structural primary balance of – 2.5 % (– 3.6 %) of GDP in 2005, constitutes a risk to sustainable public finances even before the long-term budgetary impact of ageing is considered. Assuming that the MTO of – 1 % of GDP in structural terms is reached in 2010, the structural primary balance improves; rising from – 3.6 % in 2005 to 2 % of GDP in 2010 (including the cost of the reclassification of the pension reform). This would have a positive impact on the sustainability gap; however, the gap would still be 4.0 % of GDP in the MTO scenario.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004-10.

([2]) The re-elected government announced in early June, that due to significant budgetary slippages in 2006, the end-year deficit without corrective measures would be around 9.5 % (11 %) of GDP as compared to 6.7 % (8.2 %) in the Commission's spring 2006 budgetary forecast.

Finally, as of 2013, pensions will be taxed in Hungary. According to the projections by the Hungarian authorities, this will reduce the net cost for public finances by around 2½ % of GDP by 2050, which reduces the S2 sustainability indicator by around 2 % of GDP and the S1 indicator by around 1.5 % of GDP. Nevertheless, a significant sustainability gap would still remain.

Overall assessment

The long-term budgetary impact of ageing in Hungary is well above the EU average, notably as a result of the significant increase in pension expenditure as a share of GDP over the long term.

Moreover, and importantly, the initial budgetary position is very weak: the very high structural deficit constitutes a risk to sustainable public finances even before the long-term budgetary impact of an ageing population is considered. It is therefore necessary to effect a substantial consolidation of the public finances over the medium term as planned, further strengthen the budgetary position thereafter, and address the significant increase in pension expenditure.

Overall, Hungary appears to be at high risk with regard to the sustainability of public finances.

Hungary

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	10.1	10.0	9.8	9.7	9.6	9.5	9.2	8.9	– 1.2
Working age population (15–64) % of total	68.6	68.6	67.5	65.2	63.7	63.6	61.6	58.1	– 10.5
Old-age dependency ratio (65+/15–64)	22.0	23.8	25.8	30.1	33.2	33.7	38.0	45.0	23.1
Participation rate (15–64)	61.1	63.8	65.5	67.5	68.5	67.8	65.6	66.4	5.2
— older workers (55–64)	31.3	40.2	41.4	44.6	50.4	51.7	48.6	50.1	18.8
Unemployment rate (15–64)	5.5	4.8	4.8	4.8	4.8	4.8	4.8	4.8	– 0.8
Real GDP (growth rate)	3.9	3.3	2.7	2.4	2.4	2.1	0.8	1.1	– 2.7
Expenditure projections									
Pensions	10.4	11.1	11.6	12.5	13.0	13.5	16.0	17.1	6.7
Healthcare	5.5	5.7	5.9	6.0	6.2	6.3	6.4	6.5	1.0
Long-term care	0.6	0.8	0.8	0.8	0.9	1.0	1.2	1.2	0.6
Education	4.5	3.9	3.7	3.5	3.5	3.5	3.7	3.8	– 0.7
Unemployment benefits	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Total age-related expenditure	21.3	21.8	22.1	23.1	23.8	24.4	27.5	28.9	7.6
p.m. benefit ratio for public pension (1)	*13.4*	*14.4*	*14.7*	*15.3*	*15.5*	*15.6*	*16.1*	*16.2*	*21.1*
p.m. benefit ratio for old-age and early pension (1)	*14.9*	*16.3*	*16.3*	*16.5*	*16.7*	*16.7*	*16.9*	*16.9*	*13.7*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	– 0.5 – – 1
2005 SP/CP (2)	– 5.7	– 4.5	– 3.3	– 2.2			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 6.3	– 7.6	– 8.5				*Structural balance*	– 1
Gross debt							*Structural primary balance*	2
2005 SP/CP	57.7	58.4	57.9	56.2				
Commission spring 2006 forecast	58.4	59.9	62.0					
size of one-offs	0.0	0.0	0.1	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	4.5	0.3	3.1	**7.9**	1.3				
MTO scenario	– 1.3	0.0	3.1	**1.7**	0.3				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	4.8		5.1	**9.8**	0.8	6.2			
MTO scenario	– 1.1		5.1	**4.0**	0.3	5.9			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	58.4	78.5	97.1	122.0	152.8	189.0	312.4	493.1	434.7
MTO scenario	58.4	60.8	51.2	46.9	47.2	50.9	85.2	155.4	97.0

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions					
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**	
	0.3	0.1	0.1	0.1	
Higher labour productivity	**Total**				
	– 0.3				
Higher employment older workers	**Total**				
	– 1.0				
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**		
	– 0.6		– 0.7		
Higher interest rate	**Total**	**– IBP**	**– LTC**		
	– 0.2	0.6	– 0.8		
– Scenarios for healthcare	**Pure ageing**	**Constant health**	**Death–related costs**	**Income elasticity**	**Unit costs: GDP/worker**
	0.0	– 0.6	– 0.5	0.3	0.2
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	0.6		

Malta

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Maltese economy is projected to experience a mild slowdown of economic growth over the long term; after average real GDP growth of 2.2 % during the period 2004–10, an increase to 2.8 % in 2011–30 is projected, followed by a decline to 2 % in 2031–50, influenced by an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 19 % in 2004 to 41 % in 2050, albeit a smaller increase than on average in the EU.

The projected increase in age-related spending in Malta is well below the EU average; rising by 0.3 of a percentage point of GDP between 2004 and 2050. This is mainly due to a projected fall in public expenditure on pensions by 0.4 of a percentage point of GDP, as a result of the specific design of the Maltese pension system, which, in effect puts a cap on the level of both pensions and contributions, which are projected to fall as a share of GDP between the 2020s and 2050. The increase in expenditure on healthcare is projected to be 1.8 percentage points of GDP, close to the EU average, while on long-term care an increase of 0.6 of a percentage point of GDP is projected, below the EU average.

Malta has been placed in the excessive deficit procedure and is required to bring the deficit below 3 % of GDP by 2006 at the latest. The deficit was 3.3 % in 2005, after having been above 3 % for the last four years. As a result of the weak fiscal position in recent years, the gross debt/GDP ratio has increased by almost 7 % of GDP over the last four years and was 74.7 % of GDP in 2005, above the Treaty reference value. The budgetary strategy outlined in the convergence programme projects a gradual strengthening of the public finances over the medium term and the MTO set in the convergence programme at balance in structural terms is expected to be achieved in 2008. According to the Commission services 2006 spring forecast, a deficit of 3.2 % of GDP is expected in 2007 on the basis of the current policies, well above the programme's forecast of 2.3 % of GDP, suggesting that budgetary outcomes could be worse than expected.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Malta does not have a sustainability gap in the baseline scenario (S2 is – 0.3 % of GDP). The long-term budgetary impact (of ageing) is close to zero and is the third lowest in the EU, influenced notably by the design of the pension system.

The initial budgetary position with a structural primary balance of 0.9 % of GDP in 2005 is insufficient to result in a steady reduction of the debt/GDP ratio. Assuming that the MTO of balance in structural terms is reached in 2010, the structural primary balance improves; rising from 0.9 % of GDP in 2005 to 3.6 % of GDP in 2010. The higher structural primary balance in 2010 would reduce the sustainability gap. This shows the importance of strengthening the structural primary surplus over the medium term to reduce sustainability risks.

The current level of debt is higher than 60 % of GDP and it has been increasing in recent years. Ensuring a reduction of debt to below the 60 % of GDP reference value at a satisfactory pace is necessary so as to strengthen the resilience of the public finances to adverse shocks and to reduce risks to public finance sustainability.

The benefit ratio in Malta is projected to decrease markedly, by about 45 % in the period to 2050. Indeed, under current legislation, pensions are indexed to wage growth but are also subject to a maximum which grows in line

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

with the cost of living adjustment (COLA), which in turn increases more slowly than the inflation rate. This implies a very slow growth of individual pensions such that pension expenditure will fall as a share of GDP after 2020 despite an increasing number of pensioners. Moreover, the current pension system contains a similar ceiling on income which is subject to pension contributions. Currently, this ceiling is 33 % higher than the average wage and increases with the COLA index. Given that real wages will grow in line with productivity, average wages will increase more rapidly than the ceiling. As more wages approach the ceiling, the share of wages subject to pension contributions will decrease relative to GDP. As a result, the revenue of the pension schemes will decrease as a share of GDP over the projection period. As a consequence, despite the profile of pension expenditure, the pension system will show an increasing deficit, reaching 5 % of GDP in 2020 and improving somewhat thereafter to a deficit of around 4 % of GDP. Indeed, the projections in the 2005 convergence programme update show a deficit in the pension system over the long term.

Pension policy is currently under review in Malta. Following the government's White Paper 'Pensions adequate and sustainable', released in November 2004, the Pensions Working Group proposed a wide range of reform options in their June 2005 report with regard to improving the Maltese pension system. The report reaches the conclusion that the option of 'no reform' is not a solution. The government has announced a pension reform in March 2006 ([1]). The main points of the proposed reform are: (i) the retirement age will increase from the current 61 years to 65 in a gradual manner; (ii) raising the future minimum pension compared to the current system; (iii) the period for which contributions have to be paid will increase to 40 years (from 30 years before) in a gradual manner; (iv) increasing the highest pension, which will rise in line with inflation or according to a periodic revision. An analysis will be carried out every five years to assess the state of the pension system and to implement revisions accordingly. The first revision will be carried out in 2010.

Overall assessment

The long-term budgetary impact of ageing in Malta is among the lowest in the EU, with pension expenditure falling as a share of GDP over the long term. This is due to the specific design of the pension system, which puts a cap on the level of pensions and is projected to result in a fall of pension expenditure as a share of GDP. However, current pension arrangements might come under pressure at some point if the projected decrease in the benefit ratio was to fully materialise, and risks to the public finances in the future cannot be excluded. The Maltese authorities have announced a pension reform, aiming at ensuring adequacy and sustainability of the pension system.

The initial budgetary position is not sufficient to ensure a steady reduction of the gross debt ratio, which is necessary in order to reduce debt to below the Treaty reference value. Consolidating the public finances and implementing measures to ensuring adequacy and sustainability of the pension system would therefore be key in view of reducing risks to the sustainability of public finances.

Overall, Malta appears to be at medium risk with regard to the sustainability of public finances.

([1]) The pension reform has not yet been enacted.

Malta

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.1
Working age population (15–64) % of total	68.7	69.6	67.1	64.8	63.1	62.2	62.9	60.8	– 8.0
Old-age dependency ratio (65+/15–64)	18.4	19.9	25.0	29.1	32.7	34.6	33.5	37.8	19.3
Participation rate (15–64)	59.5	61.8	64.6	66.1	67.1	68.0	66.0	66.0	6.5
— older workers (55–64)	33.9	30.1	31.4	31.4	31.1	35.1	34.6	33.7	– 0.2
Unemployment rate (15–64)	8.4	8.3	7.0	7.0	7.0	7.0	7.0	7.0	– 1.4
Real GDP (growth rate)	1.9	2.5	2.8	2.7	2.9	3.1	1.8	1.7	– 0.2
Expenditure projections									
Pensions	7.4	8.8	9.8	10.2	10.0	9.1	7.9	7.0	– 0.4
Healthcare	4.2	4.5	4.8	5.0	5.3	5.5	5.9	6.1	1.8
Long-term care	0.9	0.9	0.9	0.9	0.9	1.0	1.1	1.1	0.2
Education	4.4	3.7	3.3	3.2	3.3	3.3	3.3	3.3	– 1.2
Unemployment benefits	1.2	1.2	1.0	1.0	1.0	1.0	1.0	1.0	– 0.2
Total age-related expenditure	18.2	19.1	19.7	20.4	20.5	20.0	19.2	18.5	0.3
p.m. benefit ratio for public pension (1)	*18.4*	*19.9*	*20.1*	*19.0*	*17.2*	*15.2*	*12.4*	*10.3*	*– 44.1*
p.m. benefit ratio for old-age and early pension (1)	*21.1*	*23.7*	*23.9*	*22.5*	*20.4*	*18.1*	*14.7*	*12.1*	*– 42.6*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0
2005 SP/CP (2)	– 3.8	– 2.3	– 1.4	0.3			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 3.1	– 3.2	– 3.3				*Structural balance*	0
Gross debt							*Structural primary balance*	3.6
2005 SP/CP	76.7	70.8	68.9	67.3				
Commission spring 2006 forecast	74.7	74.0	74.0					
size of one-offs	1.0	1.0	1.0	0.1	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	– 0.5	0.3	0.6	**0.4**	0.1	
MTO scenario	– 3.2	0.1	0.6	**– 2.5**	– 0.4	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	– 0.1		– 0.1	**– 0.3**	0.0	0.2
MTO scenario	– 2.9		– 0.1	**– 3.0**	– 0.2	0.1

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	74.7	72.9	71.5	73.6	77.1	78.2	79.4	78.5	3.8
MTO scenario	74.7	64.9	50.0	38.3	28.1	16.0	– 15.7	– 57.8	– 132.5

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.7	0.4	0.2	0.1
Higher labour productivity	**Total**			
	– 0.6			
Higher employment older workers	**Total**			
	0.0			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.1		– 0.3	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	0.8	0.6	0.2	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.1	– 0.5	– 0.6	0.3	0.2
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	0.1		

Netherlands

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Dutch economy is projected to experience relatively stable economic growth over the coming decades, at 1.7 % during 2004–10, 1.6 % in 2011–30 and 1.7 % in 2031–50, despite an ageing population ([1]). The old-age dependency ratio is projected to rise from 20 % in 2004 to 41 % in 2050, albeit a smaller rise than on average in the EU.

The projected increase in age-related spending in the Netherlands (5 percentage points of GDP between 2004 and 2050) is higher than the average of the EU. This is particularly due to pension expenditure being projected to rise more than on average in the EU, by 3.5 percentage points of GDP, although the recent reform of the disability scheme contributes to curb long-term public spending. The increase in expenditure on healthcare is projected to be 1.3 percentage points of GDP, slightly lower than on average in the EU, while on long-term care an increase of 0.6 of a percentage point of GDP is projected, close to the EU average.

The Netherlands achieved a considerable improvement of the public finances in the recent past; a small deficit of 0.3 % of GDP was recorded in 2005, after a deficit of 3.1 % of GDP in 2003. This was almost 1 % of GDP better than expected in the 2005 stability programme. The improvement in the budgetary position contributed to stabilise the debt/GDP ratio, at 52.9 % of GDP in 2005. The Dutch 2006 stability programme projects that the public finances will show a small deficit over the medium term, aiming at a deficit of 1.1 % of GDP in 2008. The structural balance projected in the programme satisfies the MTO set at between – 0.5 % and – 1 % of GDP in structural terms throughout the programme period to 2008. According to the Commission services 2006 spring forecast a deficit of 0.7 % of GDP is expected in 2007 on the basis of the current policies, below the programme's forecast of 1.2 %, suggesting that budgetary outcomes could be better than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, the Netherlands has a sustainability gap of 1.3 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is higher than the EU average, reflecting notably a relatively high increase in pension expenditure as a share of GDP over the long term.

The initial budgetary position, with a currently high structural primary balance of 3.6 % of GDP in 2005 contributes to reducing debt, which will on current policies continue over the medium term. Assuming that the MTO set as a structural deficit between – 0.5 % and – 1 % of GDP is attained in 2010, the structural primary balance becomes smaller; falling from 3.6 % in 2005 to 1.4 % of GDP in 2010. The reduction of the structural primary balance in 2010 of more than 2 % of GDP would have a negative impact on the sustainability gap, rising to 3.6 % of GDP in the MTO scenario. This shows that maintaining a high structural primary surplus over the medium term is key to reduce risks to the long-term sustainability of public finances.

According to Dutch long-term projections, revenues are projected to increase over the long term, mainly due to deferred taxation of pension disbursements and an increase in VAT as a share of GDP. This impact is important in the Netherlands, as private pension schemes currently hold large assets (around 135 % of GDP in 2004) and are expected to accumulate them further since, for the next two decades, contributions to these schemes

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

should still be higher than the corresponding pension outlays.

However, general government property income in the Netherlands, consisting of both revenues from financial assets and from natural resources, amounted to 2.3 % of GDP in 2005 which is higher than the EU average. As shown in Chapter IV, risks to public finance sustainability might be underestimated by around half of this amount. According to Dutch projections healthcare expenditures could rise faster than the common projections, by 2 % of GDP, as different assumptions regarding the main drivers of healthcare costs are used, which would more than offset the positive impact of the projected increase in revenues. Overall, these additional projections do not significantly alter the outlook for the long-term sustainability of the Dutch public finances.

Finally, the considerable assets, already accumulated in private pension schemes, will contribute strongly to the income of pensioners in the future. Indeed, occupational and private mandatory pensions will almost double as a share of GDP (from 4.6 % in 2004 to 8.7 % of GDP in 2050). This should enable a total (public and private) benefit ratio to be maintained at its current level over the long term.

Overall assessment

The long-term budgetary impact of ageing in the Netherlands is higher than the EU average, influenced notably by a relatively high increase in pension expenditure as a share of GDP over the coming decades.

The initial budgetary position with a relatively high structural primary surplus contributes to ease the projected long-term budgetary impact of an ageing population, but it is not sufficient to fully cover the substantial increase in age-related expenditure. The projected future rise of revenues as a share of GDP, mainly due to deferred taxation of pensions, would partly compensate for the increase in public expenditure over the long term. However, maintaining high primary surpluses over the medium term would be key in view of containing risks to the sustainability of public finances.

Overall, the Netherlands appears to be at low risk with regard to the sustainability of public finances.

Netherlands

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	16.3	16.7	17.0	17.2	17.5	17.6	17.8	17.6	1.4
Working age population (15–64) % of total	67.6	67.3	65.8	64.8	63.2	61.1	58.7	60.0	– 7.6
Old-age dependency ratio (65+/15–64)	20.5	22.2	26.0	29.2	32.8	37.2	42.8	40.6	20.2
Participation rate (15–64)	76.8	77.8	78.9	79.1	79.1	79.3	80.8	80.5	3.6
— older workers (55–64)	46.8	49.0	52.6	54.1	54.3	53.8	55.4	56.0	9.3
Unemployment rate (15–64)	3.7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	– 0.4
Real GDP (growth rate)	1.3	2.1	1.8	1.6	1.4	1.3	1.8	1.7	0.4
Expenditure projections									
Pensions	7.7	7.6	8.3	9.0	9.7	10.7	11.7	11.2	3.5
Healthcare	6.1	6.3	6.5	6.7	6.9	7.1	7.4	7.4	1.3
Long-term care	0.5	0.5	0.5	0.5	0.6	0.8	0.9	1.1	0.6
Education	4.8	4.7	4.7	4.6	4.5	4.6	4.7	4.6	– 0.2
Unemployment benefits	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	– 0.2
Total age-related expenditure	20.9	20.6	21.5	22.4	23.4	24.7	26.2	25.8	5.0
p.m. benefit ratio for public pension (1)	*19.5*	*18.8*	*18.6*	*18.4*	*18.2*	*18.1*	*18.0*	*18.1*	*– 7.4*
p.m. benefit ratio for old-age and early pension (1)	*18.3*	*17.6*	*17.6*	*17.6*	*17.6*	*17.7*	*17.8*	*17.9*	*– 1.8*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	– 0.5 – – 1
2005 SP/CP (2)	0.0	– 0.7	– 0.6	– 0.6			**MTO scenario (2010)**	
Commission spring 2006 forecast	1	– 0.3	– 0.2				*Structural balance*	– 0.75
Gross debt							*Structural primary balance*	1.4
2005 SP/CP	54.4	54.5	53.9	53.1				
Commission spring 2006 forecast	52.9	51.2	50.3					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay
Baseline scenario	– 3.1	– 0.4	3.3	**– 0.2**	0.0
MTO scenario	– 0.8	– 0.3	3.3	**2.2**	0.4

	IBP	LTC	S2	Cost of delay	RPB
Baseline scenario	– 3.1	4.4	**1.3**	0.1	4.4
MTO scenario	– 0.8	4.4	**3.6**	0.2	4.5

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	52.9	37.5	23.8	14.0	8.4	8.6	25.3	47.4	– 5.5
MTO scenario	52.9	46.1	44.0	46.6	54.6	70.1	119.1	175.8	122.9

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

	Total	– pensions	– healthcare	– long-term care
Higher life expectancy	0.7	0.4	0.2	0.1

	Total
Higher labour productivity	0.0
Higher employment older workers	– 0.1

	– increase in labour supply	– decrease in the NAIRU
Higher employment	– 0.1	– 0.7

	Total	– IBP	– LTC
Higher interest rate	– 0.1	0.4	– 0.5

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.0	– 0.4	– 0.2	0.2	0.4

– Scenarios for long-term care	Pure ageing	Constant disability	Increase in formal care
	0.1	– 0.1	1.0

Austria

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Austrian economy is projected to experience a slowdown of economic growth over the coming decades, from 2.2 % during 2004–10 to 1.6 % in 2011–30 and a further decline to 1.2 % in 2031–50, influenced by an ageing population ([1]). The old-age dependency ratio is projected to rise from 23 % in 2004 to 52 % in 2050, a higher increase than on average in the EU.

The projected increase in age-related spending in Austria is among the smallest in the EU, rising by 0.2 of a percentage point of GDP between 2004 and 2050. This small increase is particularly due to the large pension reforms of 2003 and 2004, which is projected to result in a fall in pension expenditure of 1.2 percentage points of GDP over the long term. The set of comprehensive reforms of the Austrian pension system in recent years has been finalised with the harmonisation of previously existing various pension schemes for different groups of the population, coming into force on 1 January 2005. Thus, a single pension system for most segments of the population with equal rules governing contributions and benefits has been established. Civil servants of the federal government under the age of 50 are integrated into the new system. The increase in expenditure on healthcare is projected to be 1.6 percentage points of GDP, coinciding with the EU average, while spending on long-term care is projected to rise by 0.9 of a percentage point of GDP, slightly above the EU average.

The Austrian public finances have been showing relatively small deficits in the recent past; and a deficit of 1.5 % of GDP was recorded in 2005, slightly better than expected in the 2005 stability programme. As a result, the debt/GDP ratio has been reduced slightly over the last four years, to 62.9 % of GDP in 2005. The Austrian 2005 stability programme projects a gradual strengthening of the public finances over the medium term, and the MTO set in the stability programme at balance in structural terms is expected in the programme to be achieved in 2008. According to the Commission services 2006 spring forecast a deficit of 1.4 % of GDP is expected in 2007 on the basis of the current policies, below the programme's forecast of 0.8 %, suggesting that budgetary outcomes could be worse than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Austria has a small sustainability gap of 0.3 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is well below the EU average, reflecting a limited increase in pension expenditure as a share of GDP over the long term, influenced by the pension reforms enacted.

The initial budgetary position with a structural primary balance of 1.7 % of GDP in 2005 contributes to ease the long-term budgetary impact of ageing. Assuming that the MTO set to balance in structural terms is reached in 2010, the structural primary balance improves; rising from 1.7 % in 2005 to 2.4 % of GDP in 2010. The higher structural primary balance in 2010 would have a positive impact and the sustainability gap would be eliminated (being – 0.5 % of GDP).

The benefit ratio in Austria is projected to decrease relatively markedly, by almost 30 % in the period to 2050. Employment rates of older workers are currently lower in Austria (30 %) than on average in the EU (40 %), but are expected to increase more than on average in the EU up to 2050 to reach 58 %, very close to the average of 59 %. A further increase in the employment rate of older workers than assumed in the projections would contrib-

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

ute to reducing the projected relatively marked decrease in the benefit ratio. Indeed, a large increase in employment rates of older workers would foster GDP growth and ensure that workers can accumulate more pension rights.

The current level of debt is higher than 60 % of GDP in Austria. Ensuring a reduction of the debt ratio to below the reference value at a satisfactory pace is necessary so as to strengthen the resilience of the public finances to adverse shocks and to reduce public finance sustainability risks.

Overall assessment

The long-term budgetary impact of ageing in Austria is well below the EU average; with pension expenditure projected to fall over the long term, influenced by the considerable expenditure-reducing impact of the reform of the pension systems. However, current pension arrangements might come under pressure at some point if the projected decrease in the benefit ratio was to fully materialise, and risks to the public finances in the future cannot be excluded. Increasing the employment rates of older workers would improve workers' pensions in the future and ensure the success of the pension reforms.

The initial budgetary position with a primary surplus contributes to the reduction of debt, currently above 60 % of GDP, which is necessary. Maintaining sound government finances over the medium term would be key in view of limiting risks to the long-term sustainability of public finances.

Overall, Austria appears to be at low risk with regard to the sustainability of public finances.

Austria

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	8.1	8.3	8.4	8.4	8.5	8.5	8.4	8.2	0.1
Working age population (15–64) % of total	68.2	67.4	66.9	66.0	64.1	61.5	58.2	57.5	– 10.7
Old-age dependency ratio (65+/15–64)	22.8	26.3	28.1	30.3	34.4	40.6	50.0	52.4	29.6
Participation rate (15–64)	72.6	76.1	77.4	78.1	77.7	78.3	79.5	79.1	6.5
— older workers (55–64)	32.3	41.6	47.9	54.4	55.3	56.8	59.5	59.2	26.9
Unemployment rate (15–64)	4.2	3.4	3.4	3.4	3.4	3.4	3.4	3.4	– 0.7
Real GDP (growth rate)	1.8	2.6	1.9	1.6	1.1	1.0	1.4	1.2	– 0.6
Expenditure projections									
Pensions	13.4	12.8	12.7	12.8	13.5	14.0	13.4	12.2	– 1.2
Healthcare	5.3	5.5	5.7	5.9	6.1	6.3	6.7	6.8	1.6
Long-term care	0.6	0.7	0.7	0.8	0.9	1.0	1.2	1.5	0.9
Education	5.1	4.6	4.3	4.1	4.1	4.2	4.2	4.1	– 1.0
Unemployment benefits	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	– 0.1
Total age-related expenditure	25.2	24.2	24.0	24.2	25.2	26.0	26.1	25.3	0.2
p.m. benefit ratio for public pension (1)	*21.8*	*21.4*	*21.0*	*20.6*	*19.9*	*19.0*	*16.7*	*15.2*	*– 30.4*
p.m. benefit ratio for old-age and early pension (1)	*24.6*	*24.3*	*23.9*	*23.5*	*22.6*	*21.5*	*19.2*	*17.9*	*– 27.4*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	0
2005 SP/CP (2)	– 1.6	– 1.2	– 0.4	0.2			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 1	– 1.7	– 1.2				*Structural balance*	0
Gross debt							*Structural primary balance*	2.4
2005 SP/CP	63.4	63.1	61.6	59.5				
Commission spring 2006 forecast	62.9	62.4	61.6					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	– 0.9	– 0.1	1.0	**0.1**	0.0	
MTO scenario	– 1.6	– 0.1	1.0	**– 0.7**	– 0.1	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	– 0.8		1.1	**0.3**	0.0	2.2
MTO scenario	– 1.5		1.1	**– 0.5**	0.0	2.2

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	62.9	55.8	48.0	41.4	39.2	42.2	55.0	62.9	0.0
MTO scenario	62.9	53.5	42.1	31.5	24.7	22.7	24.0	18.5	– 44.4

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.5	0.3	0.1	0.1
Higher labour productivity	**Total**			
	– 0.6			
Higher employment older workers	**Total**			
	– 0.4			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.2		– 0.5	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	0.4	0.5	– 0.1	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.1	– 0.5	– 0.2	0.3	0.5
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.0	0.0	n.a.		

Poland

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Polish economy is projected to experience a slowdown of economic growth over the coming decades, from 4.6 % during 2004–10 to 3.2 % in 2011–30 and to 0.9 % in 2031–50. This is partly due to an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 19 % in 2004 to 51 % in 2050, higher than on average in the EU.

Age-related spending is projected to fall by 6.7 percentage points of GDP in Poland between 2004 and 2050. This is mainly due to a projected fall in public expenditure on pensions by 5.9 percentage points of GDP as a result of a comprehensive pension reform enacted in 1999 when a notional defined-contribution scheme was put into place, consisting of a notional defined-contribution PAYG scheme and a private funded defined-contribution scheme. The latter will be classified outside government from 2007 onwards. The increase in expenditure on healthcare is projected to be 1.4 percentage points of GDP, slightly below the EU average, while for long-term care a small rise of 0.1 of a percentage point of GDP is projected, the lowest increase in the EU.

In the calculations, the Polish government finances are reduced by the revenue-reducing impact of Eurostat's decision on the classification of funded defined-contribution pension schemes that will take effect from 2007 onwards. The MTO is assumed to be – 1 % of GDP in the MTO scenario (see Chapter III for further information). The figures with this adjustment are given in brackets in this part.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

Poland has been placed in excessive deficit procedure and is required to bring the deficit below 3 % of GDP by 2007. The deficit, having been above 3 % of GDP for the last four years, stood at 2.5 % (4.4 %) of GDP in 2005. As a result of the weak fiscal position in recent years, the debt/GDP ratio has risen by almost 7 % of GDP in four years, to reach 42.5 % of GDP in 2005. The Polish 2005 stability programme projects a slight strengthening of the public finances over the medium term, with the aim of reducing the deficit to 1.9 % (3.8 %) of GDP in 2008. The adjustment towards the MTO set in the convergence programme at – 1 % of GDP in structural terms is expected to be achieved after the end of the programme period. According to the Commission services 2006 spring forecast, however, a deficit of 3 % (4.9 %) of GDP is expected in 2007 on the basis of the current policies, above the programme's forecast of 2.2 % (4.1 %) of GDP.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Poland has no sustainability gap in the baseline scenario (S2 is – 0.2 % of GDP). The long-term budgetary impact of ageing is the lowest in the EU, influenced in particular by the comprehensive pension reform already implemented which results in a fall in pension expenditure as a share of GDP over the long term.

This puts Poland in a very unusual position. The projected decrease in age-related expenditure as a share of GDP means that the long-term budgetary impact is to improve the budget position to an extent that almost exactly offsets the weak initial budgetary position, with a structural primary balance of – 0.2 % (– 1.7 %) of GDP in 2005. This weak initial position would result in an increase in the debt/GDP ratio over the medium term, but the projected future decrease in age-related expenditures as a share of GDP — assuming that the full impact of the pension reform materialises — would compensate for this and eventually stabilise the debt/GDP ratio.

Assuming that the MTO of – 1 % of GDP in structural terms is reached in 2010, the structural primary balance improves, rising from – 1.7 % of GDP in 2005 to 1.6 % of GDP in 2010 (including the cost of the reclassification of the pension scheme). This would have a considerable positive impact and eliminate the sustainability gap altogether (S2 being – 3.7 % of GDP in the MTO scenario).

The benefit ratio in Poland is projected to decrease markedly, by around 40 %, in the period to 2050 ([1]). Employment rates of older workers in Poland are currently considerably below the EU average (40 %), but are projected to increase slightly more than on average in the EU. A greater increase in the employment rate of older workers than assumed in the projections would mean that the decrease in the benefit ratio would be less marked than projected, as it would foster GDP growth and ensure that workers can accumulate more pension rights.

([1]) If the pensions from the private funded scheme are not considered, the reduction in the benefit ratio is even larger, at 57 %.

Overall assessment

The long-term budgetary impact of ageing in Poland is the lowest in the EU, with age-related expenditure projected to fall over the long term, partly as a result of the considerable expenditure-reducing impact of the reform of the pension system — assuming that the pension reforms are fully implemented. However, current pension arrangements might come under pressure at some point if the projected decrease in the benefit ratio were to fully materialise, and risks to the public finances in the future cannot be excluded. Increasing the employment rates of older workers would improve workers' pensions in the future and ensure the success of the pension reforms.

The initial budgetary position is not strong enough to prevent the risk of unsustainable public finances, partly due to the large revenue-reducing impact of the pension reform; consolidating the public finances would help to contain risks to the sustainability of public finances.

Overall, Poland appears to be at low risk with regard to the sustainability of public finances.

Poland

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	38.2	37.8	37.4	37.1	36.8	36.5	35.4	33.7	– 4.5
Working age population (15–64) % of total	69.8	71.8	70.5	67.3	64.3	63.3	62.4	57.6	– 12.2
Old-age dependency ratio (65+/15–64)	18.1	18.4	21.0	26.1	31.6	34.4	37.6	47.2	29.1
Participation rate (15–64)	64.3	67.7	69.9	72.0	73.6	73.8	71.1	71.0	6.7
— older workers (55–64)	29.9	37.1	40.2	41.0	43.6	49.1	51.3	49.3	19.4
Unemployment rate (15–64)	19.0	15.8	12.9	9.9	7.0	7.0	7.0	7.0	– 12.0
Real GDP (growth rate)	3.3	5.0	3.5	3.1	2.9	2.2	0.7	0.4	– 2.9
Expenditure projections									
Pensions	13.9	11.3	9.8	9.7	9.5	9.2	8.6	8.0	– 5.9
Healthcare	4.1	4.4	4.6	4.8	5.0	5.1	5.3	5.5	1.4
Long-term care	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1
Education	5.0	3.9	3.3	3.0	2.9	3.0	3.0	3.1	– 1.9
Unemployment benefits	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2	– 0.4
Total age-related expenditure	23.7	20.2	18.1	17.9	17.7	17.6	17.3	17.0	– 6.7
p.m. benefit ratio for public pension (1)	*18.6*	*18.4*	*16.8*	*16.3*	*15.4*	*14.2*	*11.6*	*9.1*	*– 51.2*
p.m. benefit ratio for old-age and early pension (1)	*20.6*	*20.1*	*18.0*	*17.3*	*16.3*	*14.8*	*11.6*	*8.7*	*– 57.8*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	– 1
2005 SP/CP (2)	– 2.9	– 2.7	– 2.3	– 2.1			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 2.6	– 3.3	– 3.5				*Structural balance*	– 1
Gross debt							*Structural primary balance*	1.6
2005 SP/CP	42.5	45.0	45.3	45.4				
Commission spring 2006 forecast	42.5	45.5	46.7					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	2.2	– 0.1	– 2.5	**– 0.4**	– 0.1				
MTO scenario	– 1.2	– 0.3	– 2.5	**– 4.0**	– 0.6				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	2.6		– 2.8	**– 0.2**	0.0	– 0.4			
MTO scenario	– 0.9		– 2.8	**– 3.7**	– 0.3	– 0.6			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	42.5	56.1	54.0	50.7	47.5	45.1	42.7	39.9	– 2.6
MTO scenario	42.5	44.8	27.0	7.6	– 12.2	– 33.4	– 86.9	– 163.4	– 205.9

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.2	0.1	0.1	0.0
Higher labour productivity	**Total**			
	– 0.3			
Higher employment older workers	**Total**			
	0.0			
Higher employment	**– increase in labour supply**	**– decrease in the NAIRU**		
	– 0.1	– 0.2		
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	0.5	0.4	0.1	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	– 0.1	– 0.6	– 0.4	0.3	– 0.4
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.0	0.0	0.2		

Portugal

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Portuguese economy is projected to experience a slowdown of economic growth over the coming decades; after average growth of 1.9 % during 2004–10, it is projected to decline from 2.1 % in 2011–30 to 0.8 % in 2031–50, influenced by an ageing population ([1]). The old-age dependency ratio is projected to rise from 25 % in 2004 to 59 % in 2050, among the largest increases in the EU.

The projected increase in age-related spending is well above the average of the EU, rising by 10.1 percentage points of GDP between 2004 and 2050. Most of the projected increase during this period is due to the high increase in pension expenditures of 9.7 percentage points of GDP. The increase in expenditure on healthcare is projected to be 0.5 of a percentage point of GDP, considerably below the average increase in the EU. An increase of 0.4 of a percentage point of GDP is projected for expenditure on long-term care, a somewhat lower rise than on average in the EU.

Portugal was placed in the excessive deficit procedure in September 2005 and is required to bring the deficit below 3 % of GDP by 2008 at the latest. The government deficit jumped to 6 % of GDP in 2005, after having been around 3 % for the last four years, albeit with recourse to large one-off operations. As a result of the weak fiscal position in recent years, the government debt/GDP ratio has risen by more than 10 percentage points of GDP in four years, to reach 63.9 % of GDP in 2005. The Portuguese December 2005 stability programme update projects a gradual strengthening of the public finances over the medium term, aiming at reducing the deficit to 1.5 % of GDP in 2009. The adjustment towards the MTO set in the stability programme of 'at least – 0.5 % of GDP' is expected to be achieved beyond the programme period. According to the Commission services 2006 spring forecast a deficit of 4.9 % of GDP is expected in 2007 on the basis of the current policies, above the programme's target of 3.7 % of GDP, suggesting the existence of significant risks and uncertainties attached to the corrective measures that have been adopted since mid-2005 as well as the need of a very substantial effort to achieve the deficit reduction targets.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Portugal has a large sustainability gap of 10.5 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is well above the EU average, essentially reflecting a significant increase in pension expenditure as a share of GDP.

The initial budgetary position, with a structural primary balance of – 2.5 % of GDP in 2005 constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of ageing. Assuming that the MTO of – 0.5 % of GDP in structural terms is reached in 2010, the structural primary balance improves, rising from – 2.5 % in 2005 to + 2.5 % of GDP in 2010. The higher structural primary balance in 2010 would have a positive impact on the sustainability gap; however, the gap would still be 5.2 % of GDP in the MTO scenario.

In April 2006, the Portuguese government presented in parliament five principles for the reform of the general pension scheme. The principles are: (i) include an actuarial element by linking outlays to the beneficiary's residual life expectancy and payments into the system, together with the options to choose retirement age and

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

higher contribution rates, rather than leaving the old-age benefit replacement rate as a function of the working career length only, as is currently the case; (ii) speed up the transition towards the new pension benefit formula decided in the 2002 reform (essentially, enlarging the assessment period to the entire career from the current rule of considering only the best 10 out of the last 15 working years); (iii) introduce an automatic link between annual benefits increases and nominal GDP growth, instead of deciding increases on an ad hoc annual basis; (iv) differentiate contribution rates according to the contributor's family size in a regressive way, such that contributors with more (less) than two children will pay less (more); (v) expand coverage for disability, incapacity and survivors' pensions and single-parent families.

These proposals are the basis for ongoing discussion with the social partners and are expected to underpin new legislation, whose first draft may come out over the summer, and expected to be implemented by January 2007. While the proposals seem to be of help in promoting the sustainability of the pension system, a more thorough assessment can only be made on the basis of a detailed legislative proposal that would reveal how the envisaged changes will be implemented.

The current level of debt is higher than 60 % of GDP in Portugal. Ensuring a reduction of debt to below the 60 % of GDP reference value at a satisfactory pace is necessary so as to strengthen the resilience of the public finances to adverse shocks and to reduce public finance sustainability risks.

Overall assessment

The long-term budgetary impact of ageing in Portugal is well above the EU average, influenced notably by a significant increase in pension expenditure as a share of GDP over the long term.

The weak initial budgetary position constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of ageing populations. Quickly achieving a marked and lasting medium-term consolidation of the public finances, continuing beyond the correction of the excessive deficit by the 2008 deadline, together with reform measures aimed at containing the significant increase in age-related expenditures would be key in view of reducing risks to the sustainability of public finances.

Overall, Portugal appears to be at high risk with regard to the sustainability of public finances.

Portugal

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	10.5	10.7	10.8	10.8	10.7	10.7	10.5	10.1	– 0.4
Working age population (15–64) % of total	67.4	66.6	65.5	64.5	63.7	62.2	58.3	54.9	– 12.6
Old-age dependency ratio (65+/15–64)	24.9	26.5	28.8	31.6	34.8	39.2	49.1	58.5	33.6
Participation rate (15–64)	73.4	76.2	77.2	77.4	77.2	77.1	77.0	77.7	4.2
— older workers (55–64)	54.7	58.3	60.7	62.8	64.5	66.4	66.0	66.2	11.5
Unemployment rate (15–64)	6.2	5.6	5.6	5.6	5.6	5.6	5.6	5.6	– 0.6
Real GDP (growth rate)	1.4	2.4	2.4	2.2	2.1	1.0	0.6	1.0	– 0.4
Expenditure projections									
Pensions	11.1	11.9	12.6	14.1	15.0	16.0	18.8	20.8	9.7
Healthcare	6.7	6.8	6.8	6.7	6.6	6.6	6.9	7.2	0.5
Long-term care	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.9	0.4
Education	5.1	4.7	4.6	4.7	4.6	4.5	4.5	4.8	– 0.4
Unemployment benefits	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	– 0.1
Total age-related expenditure	24.3	24.7	25.4	26.9	27.6	28.6	31.9	34.4	10.1
p.m. benefit ratio for public pension (1)	*18.6*	*18.4*	*18.1*	*17.9*	*17.2*	*16.5*	*15.9*	*15.4*	*– 17.0*
p.m. benefit ratio for old-age and early pension (1)	*22.2*	*22.1*	*21.6*	*21.2*	*20.1*	*19.1*	*18.2*	*17.6*	*– 21.0*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	>– 0.5
2005 SP/CP (2)	– 5.0	– 3.4	– 2.6	– 1.8	– 1.2		**MTO scenario (2010)**	
Commission spring 2006 forecast	– 5.2	– 4.1	– 3.9				*Structural balance*	– 0.5
Gross debt							*Structural primary balance*	2.5
2005 SP/CP	65.5	68.7	69.3	68.4	66.2			
Commission spring 2006 forecast	63.9	68.4	70.6					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	3.6	0.3	4.1	**7.9**	1.4	
MTO scenario	– 1.7	0.0	4.1	**2.5**	0.4	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	3.8		6.7	**10.5**	0.9	7.6
MTO scenario	– 1.5		6.7	**5.2**	0.5	7.4

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	63.9	79.1	95.4	119.2	150.5	191.6	326.3	528.2	464.3
MTO scenario	63.9	64.9	55.4	52.4	55.2	63.7	112.6	207.6	143.7

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.6	0.4	0.1	0.0
Higher labour productivity	**Total**			
	– 0.9			
Higher employment older workers	**Total**			
	– 0.2			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.2		– 0.4	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	– 0.4	0.7	– 1.0	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.1	– 0.5	– 0.2	0.3	0.8
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	0.4		

Slovenia

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Slovenian economy is projected to experience a slowdown of economic growth over the coming decades, from 3.7 % during 2004–10 to 2.5 % in 2011–30 and a further decline to 1.1 % in 2031–50, influenced by an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 21 % in 2004 to 56 % in 2050, a higher rise than on average in the EU.

The projected increase in age-related spending is well above the average of the EU; rising by 9.7 percentage points of GDP between 2004 and 2050. Most of the projected increase during this period is due to the pension expenditure, rising by 7.3 percentage points of GDP, among the highest increases in the EU. This is influenced by a modification of the pension indexation rule enacted in 2005 which partly offsets the expenditure-reducing impact of the 1999 pension reform. The increase in expenditure on healthcare is projected to be 1.6 percentage points of GDP coinciding with the EU average, while on long-term care a rise of 1.2 percentage points of GDP is projected, higher than on average in the EU.

Slovenia has reduced the deficit by about 2½ % of GDP over the last four years and a deficit of 1.8 % of GDP was recorded in 2005, in line with plans in the December 2005 convergence programme. The debt/GDP ratio has remained broadly stable over the same period. The budgetary strategy outlined in the convergence programme aims at a gradual reduction of the deficit. The adjustment towards the MTO set in the convergence programme at – 1 % of GDP is expected to be achieved by 2008. According to the Commission services 2006 spring forecast a deficit of 1.6 % of GDP is expected in 2007 on the basis of the current policies, close to the programme's forecast of 1.4 %.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Slovenia has a sustainability gap of 7.3 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is well above the EU average, reflecting a considerable increase in pension expenditure as a share of GDP.

The initial budgetary position, with a structural primary balance of ¼ % of GDP in 2005, contributes to stabilise the debt ratio over the medium term, before considering the long-term budgetary impact of ageing. Assuming that the MTO of a structural balance of – 1 % of GDP is reached in 2010, the structural primary balance and the sustainability gap are broadly unchanged in the MTO scenario.

It should be noted that the Slovenian authorities project a higher increase in healthcare expenditures over the long term compared to the reference scenario, of about 1½ % of GDP, suggesting that the budgetary cost of ageing could be higher.

Overall assessment

The long-term budgetary impact of ageing in Slovenia is among the three largest increases in the EU, influenced notably by a considerable increase in pension expenditure as a share of GDP.

Although the initial budgetary position contributes to stabilise the debt ratio over the medium term, it is not sufficient to cover the substantial increase in expenditure due to an ageing population. Further changes to the pension system will prove necessary at some point, as recognised by the Slovene authorities, so as to render the public finances sustainable over the long term.

Overall, Slovenia appears to be at high risk with regard to the sustainability of public finances.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

Slovenia

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	– 0.1
Working age population (15–64) % of total	70.4	70.0	68.7	66.1	63.8	62.1	59.5	56.0	– 14.3
Old-age dependency ratio (65+/15–64)	20.8	23.1	25.1	29.7	34.4	38.8	45.4	51.9	31.1
Participation rate (15–64)	68.0	71.6	72.5	73.6	74.0	73.6	72.3	73.4	5.4
— older workers (55–64)	25.6	40.9	43.2	46.2	50.4	52.9	54.3	53.0	27.4
Unemployment rate (15–64)	6.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	– 0.7
Real GDP (growth rate)	3.5	3.6	2.7	2.4	2.1	2.0	1.0	1.1	– 2.4
Expenditure projections									
Pensions	11.0	11.1	11.6	12.3	13.3	14.4	16.8	18.3	7.3
Healthcare	6.4	6.7	6.9	7.2	7.4	7.6	7.9	8.0	1.6
Long-term care	0.9	1.1	1.2	1.3	1.4	1.5	1.9	2.2	1.2
Education	5.3	4.6	4.3	4.3	4.5	4.7	4.7	4.9	– 0.4
Unemployment benefits	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	– 0.1
Total age-related expenditure	24.2	24.0	24.5	25.5	27.0	28.6	31.7	33.8	9.7
p.m. benefit ratio for public pension (1)	*18.9*	*18.5*	*18.0*	*17.7*	*17.4*	*17.3*	*17.2*	*17.3*	*– 8.4*
p.m. benefit ratio for old-age and early pension (1)	*29.8*	*28.8*	*27.2*	*25.8*	*24.6*	*23.8*	*22.7*	*21.8*	*– 26.9*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	– 1
2005 SP/CP (2)	– 1.2	– 1.4	– 1.3	– 1			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 1.5	– 1.7	– 1.7				*Structural balance*	– 1
Gross debt							*Structural primary balance*	0.3
2005 SP/CP	29	29.6	29.8	29.4				
Commission spring 2006 forecast	29.1	29.9	29.7					
size of one-offs	0.0	0.1	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	0.1	– 0.6	4.4	**3.9**	0.7				
MTO scenario	0.0	– 0.6	4.4	**3.8**	0.7				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	0.2		7.1	**7.3**	0.6	7.3			
MTO scenario	0.1		7.1	**7.2**	0.6	7.3			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	29.1	27.3	27.3	32.5	45.0	66.5	145.5	273.8	244.7
MTO scenario	29.1	27.4	27.0	31.9	44.0	65.2	143.2	270.3	241.2

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)					
– Underlying assumptions					
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**	
	0.7	0.4	0.2	0.1	
Higher labour productivity	**Total**				
	– 0.1				
Higher employment older workers	**Total**				
	– 0.9				
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**		
	– 0.4		– 0.5		
Higher interest rate	**Total**	**– IBP**	**– LTC**		
	– 0.8	0.2	– 1.1		
– Scenarios for healthcare	**Pure ageing**	**Constant health**	**Death–related costs**	**Income elasticity**	**Unit costs: GDP/worker**
	– 0.2	– 0.6	– 0.5	0.2	0.8
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.2	– 0.2	1.1		

Slovakia

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the economy of Slovakia is projected to experience a slowdown of economic growth over the coming decades, from 4.6 % during 2004–10 to 3.4 % in 2011–30 and a further decline to 0.6 % in 2031–50, influenced by an ageing population and an assumed slowdown of labour productivity growth ([1]). The old-age dependency ratio is projected to rise from 16 % in 2004 to 51 % in 2050, a higher increase than on average in the EU.

The projected increase in age-related spending in Slovakia is lower than the EU average; rising by 2.9 percentage points of GDP between 2004 and 2050. The increase in expenditure on pensions is projected to be relatively limited in Slovakia, rising by 1.8 percentage points of GDP as a result of a pension reform. The pension system consists of a PAYG scheme and a funded defined-contribution scheme, enacted in 2005. The increase in expenditure on healthcare is projected to be 1.9 percentage points of GDP, slightly above the EU average, while on long-term care an increase of 0.6 of a percentage point of GDP is projected, coinciding with the EU average.

In the calculations, the Slovak government finances are reduced by the revenue-reducing impact of Eurostat's decision on the classification of funded defined-contribution pension schemes that will take effect from 2007 onwards, estimated at 0.6 % of GDP in 2005. The MTO is assumed to be – 1 % of GDP in the MTO scenario (see Chapter III for further information). The figures with this adjustment are given in brackets in this part.

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

Slovakia has been placed in the excessive deficit procedure and is required to bring the deficit below 3 % of GDP by 2007 at the latest. The deficit was 2.9 % (3.5 %) in 2005, after having been above 3 % for the last four years. The debt/GDP ratio has been reduced over the last four years by almost 9 % of GDP and stood at 34.5 % of GDP in 2005. The Slovak 2005 convergence programme projects a gradual strengthening of the public finances over the medium term, aiming at reducing the deficit to 1.3 % (2.7 %) of GDP in 2008. The adjustment towards the MTO set in the stability programme at – 0.9 % of GDP in structural terms is expected to be achieved beyond the programme period, in 2010. According to the Commission services 2006 spring forecast, a deficit of 2.1 % (3.4 %) of GDP is expected in 2007 on the basis of the current policies, above the programme's forecast of 1.6 % (3 %) of GDP, suggesting that budgetary outcomes could be worse than expected.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Slovakia has a sustainability gap of 3 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is lower than the EU average, influenced by the pension reforms enacted.

The initial budgetary position with a structural primary balance of 0.2 % (– 0.4 %) of GDP in 2005 constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of ageing. Assuming that the MTO of – 1 % of GDP in structural terms is reached in 2010, the structural primary balance improves; rising from – 0.4 % of GDP in 2005 to 0.8 % of GDP in 2010 (including the impact of Eurostat's decision). The higher structural primary balance in 2010 would reduce the sustainability gap; though it would remain at 1.8 % of GDP. This shows the importance of strengthening the structural primary surplus over the medium term so as to reduce sustainability risks.

The benefit ratio in Slovakia is projected to decrease relatively markedly, by almost 20 % in the period to 2050 ([1]). Employment rates of older workers are currently lower in Slovakia (25 %) than on average in the EU (40 %) and are projected to remain so up to 2050, although the gap is projected to narrow. A further increase in the employment rate of older workers than assumed in the projections would contribute to reduce the projected relatively marked decrease in the benefit ratio. Indeed, a large increase in employment rates for older workers would foster GDP growth and ensure that workers can accumulate enough pension rights to limit the decrease in the benefit ratio, which would reduce the risks of possible pressures on the public finance emerging in the future.

In addition, property income in Slovakia amounted to 2 % of GDP in 2005, which is above the EU average. As shown in Chapter IV, risks to public finance sustainability might be underestimated by around half of this amount, by around 1 % of GDP. It should also be noted that the Slovak authorities project a slight reduction of child benefits (of some 0.1 of a percentage point of GDP) up to 2050. Overall, these additional projections suggest that the risks to public finance sustainability could be slightly underestimated.

Overall assessment

The long-term budgetary impact of ageing in Slovakia is lower than the EU average, with pension expenditure showing a more limited increase than in many other countries, influenced by the pension reforms enacted. However, current pension arrangements might come under pressure at some point if the projected decrease in the benefit ratio was to fully materialise, and risks to the public finances in the future cannot be excluded. Increasing the employment rates of older workers would improve workers' pensions in the future and ensure the success of the pension reforms.

The initial budgetary position constitutes a risk to sustainable public finances even before considering the long-term budgetary impact of an ageing population. Given the large revenue-reducing impact of the pension reform, projected to increase over the medium term, consolidating the public finances would therefore be of key importance in view of reducing risks to the sustainability of public finances.

Overall, Slovakia appears to be at medium risk with regard to the sustainability of public finances.

([1]) If the pensions from the private funded scheme are not considered, the reduction in the benefit ratio is even larger, by 34 %.

Slovakia

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	5.4	5.3	5.3	5.3	5.2	5.2	5.0	4.7	– 0.6
Working age population (15–64) % of total	70.9	72.7	71.9	69.4	67.1	65.7	63.2	57.9	– 13.1
Old-age dependency ratio (65+/15–64)	15.9	16.6	18.6	23.0	27.4	30.9	36.7	48.0	32.1
Participation rate (15–64)	70.7	73.3	76.2	77.8	78.2	78.0	74.7	73.9	3.3
— older workers (55–64)	30.4	41.3	50.7	53.4	52.9	55.8	53.5	52.0	21.6
Unemployment rate (15–64)	16.9	15.2	12.5	9.7	7.0	7.0	7.0	7.0	– 9.9
Real GDP (growth rate)	3.9	5.3	3.9	3.1	2.9	2.0	0.4	0.3	– 3.6
Expenditure projections									
Pensions	7.2	6.7	6.6	7.0	7.3	7.7	8.2	9.0	1.8
Healthcare	4.4	4.7	5.0	5.2	5.5	5.7	6.0	6.3	1.9
Long-term care	0.7	0.8	0.7	0.7	0.8	0.9	1.1	1.3	0.6
Education	3.7	3.0	2.4	2.2	2.1	2.2	2.3	2.4	– 1.3
Unemployment benefits	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	– 0.2
Total age-related expenditure	16.2	15.4	14.9	15.3	15.8	16.5	17.7	19.1	2.9
p.m. benefit ratio for public pension (1)	*13.0*	*12.6*	*12.4*	*12.3*	*12.0*	*11.4*	*9.9*	*8.8*	*– 32.4*
p.m. benefit ratio for old-age and early pension (1)	*14.4*	*13.7*	*13.0*	*12.4*	*11.8*	*11.1*	*9.8*	*8.9*	*– 38.5*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	– 0.9
2005 SP/CP (2)	– 2.8	– 2.6	– 1.7	– 1.5			**MTO scenario (2010)**	
Commission spring 2006 forecast	– 1.6	– 2.4	– 2.2				*Structural balance*	– 1
Gross debt							*Structural primary balance*	0.8
2005 SP/CP	33.7	35.5	35.2	36.2				
Commission spring 2006 forecast	34.5	34.3	34.7					
size of one-offs	– 0.8	0.0	0.1	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay			
Baseline scenario	0.7	– 0.5	1.1	**1.3**	0.2			
MTO scenario	– 0.5	– 0.5	1.1	**0.1**	0.0			
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**		
Baseline scenario	0.9		2.1	**3.0**	0.3	2.9		
MTO scenario	– 0.3		2.1	**1.8**	0.2	2.9		
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	34.5	30.8	28.5	28.5	32.0	39.9	73.0	134.5	100.0
MTO scenario	34.5	30.9	22.9	17.3	15.0	16.2	31.0	66.3	31.8

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.5	0.3	0.1	0.1
Higher labour productivity	**Total**			
	– 0.1			
Higher employment older workers	**Total**			
	0.0			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.1		– 0.1	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	– 0.2	0.2	– 0.4	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	– 0.1	– 0.7	– 0.5	0.3	0.4
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.1	– 0.1	0.3		

Finland

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the Finnish economy is projected to experience a slowdown of economic growth over the coming decades, from 2.7 % during 2004–10 to 1.7 % in 2011–30 and a further decline to 1.5 % in 2031–50, influenced by an ageing population ([1]). The old-age dependency ratio is projected to rise from 23 % in 2004 to 47 % in 2050, albeit smaller than on average in the EU.

The projected increase in age-related spending is above the average of the EU; rising by 5.2 percentage points of GDP between 2004 and 2050. Most of the projected increase during this period is due to pension expenditure, which is projected to increase by 3.1 percentage points of GDP. The increase in expenditure on healthcare is projected to be 1.4 percentage points of GDP, slightly below the EU average, while on long-term care a rise of 1.8 percentage points of GDP is projected, the highest increase in the EU.

The Finnish public finances have been sound in the recent past; with the government finances in surplus since the latter half of the 1990s and in 2005 a high surplus of 2.6 % of GDP was noted, better than 1.8 % of GDP expected in the 2005 stability programme. As a result of the strong fiscal position in recent years, the debt/GDP ratio has been reduced by 2 % of GDP in four years to reach 41.1 % of GDP in 2005; the limited decrease in the debt ratio is explained by a considerable accumulation of assets in the public pension schemes. The Finnish 2005 stability programme aims for a surplus of 1.5 % of GDP in 2009. The MTO set in the stability programme at around 1½ % of GDP is already more than attained with the better than expected fiscal out-turn in 2005. According to the Commission services 2006 spring forecast a surplus of 2.5 % of GDP is expected in 2007 on the basis of the current policies, above the programme's forecast of 1.5 % of GDP, suggesting that budgetary outcomes could be better than projected in the programme ([2]).

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Finland does not have a sustainability gap (S2 is – 0.9 % of GDP) in the baseline scenario. The long-term budgetary impact of ageing is higher than the EU average reflecting a relatively high increase in pension expenditure as a share of GDP over the long term.

The initial budgetary position with a currently high structural primary balance of 4.7 % of GDP in 2005 contributes to reducing debt and enables the continuation of accumulating assets in public pension schemes over the medium term. Assuming that the MTO of a structural balance of 1.5 % of GDP is attained in 2010, the structural primary balance becomes smaller, falling from 4.7 % of GDP in 2005 to 2.3 % of GDP in 2010, influenced in addition by interest expenditure on debt falling over the medium term. The lower structural primary balance in 2010 would have a negative impact on the sustainability gap, rising to 1.6 % of GDP in the MTO scenario.

According to Finnish national long-term projections, taxes on pensions are projected to increase by 1.3 % of GDP between 2010 and 2050; which may further ease the increase in age-related expenditures over the long term. The contribution rate is assumed to increase, raising public revenues by 1.6 percentage points of GDP

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred (e.g. for the unemployment rate) and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

([2]) Also, the Finnish Ministry of Finance economic forecast of June 2006 has revised the outlook for general government surplus significantly upwards to 2.6 % of GDP in 2007.

over the long term. On the other hand, general government property income in Finland, consisting mainly of revenues from financial assets, amounted to 3.1 % of GDP in 2005 which is higher than on average in the EU. As shown in Chapter IV, revenues from general government property income might be lower by about half of this amount over the long term, suggesting that the risks to public finance sustainability might be underestimated. Moreover, a higher increase in expenditure on long-term care is projected by the Finnish authorities by about three quarters of a percentage point of GDP higher than the common projections, suggesting that the budgetary cost of ageing could be higher. Overall, these additional projections do not significantly alter the outlook for the long-term sustainability of the Finnish public finances.

Finland has among the highest levels of taxation in the EU, suggesting that there is limited room of manoeuvre to meet expenditure increases by adjusting the budget on the revenue side.

Overall assessment

The long-term budgetary impact of ageing in Finland is higher than the EU average, influenced notably by the increase in pension expenditure as a share of GDP over the coming decades.

The initial budgetary position with a currently high primary surplus in 2005 would, if maintained, contribute significantly to ease the long-term budgetary impact of ageing. The large assets accumulated in the public pension fund contribute to finance part of the increase in pension expenditure. However, maintaining high primary surpluses over the medium term would be key in view of containing risks to the sustainability of public finances.

Overall, Finland appears to be at low risk with regard to the sustainability of public finances.

Finland

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	5.2	5.3	5.4	5.4	5.4	5.4	5.4	5.2	0.0
Working age population (15–64) % of total	66.8	66.6	63.7	61.3	59.4	58.1	58.1	57.8	– 9.0
Old-age dependency ratio (65+/15–64)	23.3	25.4	31.6	37.0	41.3	45.0	46.0	46.7	23.4
Participation rate (15–64)	74.8	75.3	77.2	78.5	78.9	79.2	79.4	79.6	4.8
— older workers (55–64)	55.0	56.5	60.6	64.3	64.9	64.8	67.1	67.5	12.5
Unemployment rate (15–64)	8.5	6.8	6.5	6.5	6.5	6.5	6.5	6.5	– 2.0
Real GDP (growth rate)	3.1	2.2	1.9	1.7	1.5	1.4	1.5	1.4	– 1.7
Expenditure projections									
Pensions	10.7	11.2	12.0	12.9	13.5	14.0	13.8	13.7	3.1
Healthcare	5.6	5.8	6.0	6.2	6.4	6.6	7.0	7.0	1.4
Long-term care	1.7	1.9	2.0	2.1	2.4	3.0	3.4	3.5	1.8
Education	6.0	5.6	5.4	5.3	5.3	5.4	5.3	5.3	– 0.7
Unemployment benefits	1.5	1.2	1.1	1.1	1.1	1.1	1.1	1.1	– 0.4
Total age-related expenditure	25.4	25.6	26.5	27.7	28.8	30.1	30.7	30.6	5.2
p.m. benefit ratio for public pension (1)	*19.8*	*19.6*	*19.4*	*19.1*	*18.8*	*18.5*	*18.3*	*18.0*	*– 9.5*
p.m. benefit ratio for old-age and early pension (1)	*19.4*	*20.0*	*19.5*	*19.1*	*18.6*	*18.3*	*18.1*	*18.0*	*– 7.5*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	1½
2005 SP/CP (2)	2.1	1.7	1.7	1.7	2		**MTO scenario (2010)**	
Commission spring 2006 forecast	3.2	2.8	2.7				*Structural balance*	1.5
Gross debt							*Structural primary balance*	2.3
2005 SP/CP	42.7	41.7	41.1	40.6	40.1			
Commission spring 2006 forecast	41.1	39.7	38.3					
size of one-offs	0.0	0.3	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	– 5.0	– 1.6	3.3	**– 3.3**	– 0.6	
MTO scenario	– 2.6	– 1.5	3.3	**– 0.7**	– 0.1	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	– 5.1		4.2	**– 0.9**	– 0.1	3.4
MTO scenario	– 2.6		4.2	**1.6**	0.1	3.5

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	41.1	17.9	– 2.8	– 19.1	– 30.7	– 36.8	– 39.1	– 42.5	– 83.6
MTO scenario	41.1	24.8	16.4	13.4	16.2	25.9	58.1	96.4	55.3

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions

Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.6	0.2	0.2	0.2
Higher labour productivity	**Total**			
	– 0.4			
Higher employment older workers	**Total**			
	– 0.3			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.1		– 0.3	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	– 0.6	– 0.2	– 0.4	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.0	– 0.5	– 0.3	0.3	0.3
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.4	– 0.4	0.9		

Sweden

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report ([1]), the Swedish economy is projected to experience a slowdown of economic growth over the coming decades, from 2.7 % during 2004–10 to 2.4 % in 2011–30 and a further decline to 1.8 % in 2031–50, influenced by an ageing population. The old-age dependency ratio is projected to rise from 26 % in 2004 to 41 % in 2050, albeit a smaller rise than on average in the EU.

The projected increase in age-related spending is below the EU average; rising by 1.3 percentage points of GDP between 2004 and 2050 ([2]). However, public expenditure on pensions is projected to slightly fall in Sweden, to a large extent explained by the comprehensive pension reform enacted in 1998, when a notional defined-contribution scheme was put into place, consisting of a notional defined-contribution PAYG scheme (main part) and a private funded defined-contribution scheme ([3]). The latter will be classified outside government from 2007 onwards. The increase in expenditure on healthcare is projected to be 1 percentage point of GDP, lower than on average in the EU while for long-term care an increase of 1.7 percentage points of GDP is projected, second-highest in the EU, influenced by Sweden spending the most in the EU on long-term care at present (3.8 % of GDP in 2004).

In the calculations, the Swedish government finances (and the MTO of 2 % of GDP) are reduced by the revenue-reducing impact of Eurostat's decision on the classification of funded defined-contribution pension schemes that will take effect from 2007 onwards. The MTO is also technically adjusted downwards, to 1 % of GDP in the MTO scenario (see Chapter III for further information). The figures with this adjustment are given in brackets in this part.

Swedish public finances have been sound in the recent past; with the government finances close to balance or in surplus since 1998. In 2005 a surplus of 2.9 % (1.9 %) of GDP was noted, considerably better than the 1.6 % (0.6 %) of GDP expected in the 2005 convergence programme (partially explained by one-off tax receipts). As a result of the strong fiscal position in recent years, the gross debt/GDP ratio has been reduced by around 3.5 % of GDP in four years to reach 50.3 % of GDP in 2005; the limited decrease in the debt ratio is explained by the accumulation of assets in the public pension schemes. The Swedish 2005 convergence programme projects broadly unchanged public finances over the medium term and aims for a surplus of 1.7 % (0.7 %) of GDP in 2008. The MTO set in the stability programme at 2 % (1 %) of GDP is, with the better than expected fiscal outturn in 2005, already more than attained. According to the Commission services 2006 spring forecast a surplus of 2.3 % (1.3 %) of GDP is expected in 2007 on the basis of the current policies, above the programme's forecast of 1.2 % (0.2 %), suggesting that budgetary outcomes could be better than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, Sweden does not have a sustainability gap (S2 is – 1.1 % of GDP) in the baseline scenario. The long-term budgetary impact of ageing is lower than on average in the EU, due to the limited change in pension expenditure as a share of GDP influenced by the comprehensive pension reform enacted.

The initial strong budgetary position with a structural primary balance of 4.2 % (3.2 %) of GDP in 2005

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

([2]) This figure excludes the part of pensions that is attributed to the funded defined-contribution scheme, the PPM, which will be classified outside general government as of 2007. In the Ageing Report (2006), this scheme was included in the projections of public pensions.

([3]) See previous footnote.

contributes to the reduction of gross debt and the accumulating assets in pension schemes. Assuming that the MTO of a surplus of 2 % (1 %) of GDP is reached in 2010, the structural primary balance deteriorates; falling from 3.2 % in 2005 to 2.4 % of GDP in 2010 (including the cost of the reclassification of the pension scheme). The lower structural primary balance in 2010 would have a negative impact on the sustainability indicator; however, a sustainability gap does not emerge in the MTO scenario either (S2 is – 0.3 % of GDP).

The benefit ratio in Sweden is projected to decrease relatively markedly, by almost 25 % in the period to 2050 ([1]). This is explained in part by the fact that the projections assume no change in the retirement age in the future compared to today. However, if people choose to work longer in the future (with the pension reform, it is possible to retire later than at 65), they can increase their pension rights and therefore limit the decrease in the benefit ratio in the future (by extending the working life by two thirds of the increase in life expectancy by 2050, the replacement rate of an individual would remain unchanged).

According to Swedish long-term projections, taxes on pensions are projected to increase over the long term by 0.7 % of GDP between 2010 and 2050. However, general government property income in Sweden amounted to 2.3 % of GDP in 2005, which is higher than on average in the EU. As shown in Chapter IV, risks to public finance sustainability might be underestimated by around half of this amount, by around 1 % of GDP.

([1]) If the pensions from the private funded scheme are not considered, the reduction in the benefit ratio is larger, 31 %.

These additional projections suggest that the long-term budgetary trends would be largely unchanged. However, a higher increase in expenditure on long-term care by about 1 percentage point of GDP is projected by the Swedish authorities compared to the common projections, due to an assumption of higher wage growth in the long-term care sector compared to the rest of the economy, suggesting that the budgetary cost of ageing could be higher. Overall, these additional projections do not significantly alter the outlook for the long-term sustainability of the Swedish public finances.

Finally, Sweden has the highest level of taxation in the EU, suggesting that there is more limited room of manoeuvre to adjust the budget on the revenue side compared to other countries.

Overall assessment

The long-term budgetary impact of ageing in Sweden is lower than the EU average, with pension expenditure projected to remain relatively stable as a share of GDP over the long term, influenced by the considerable expenditure-reducing impact of the reform of the pension system.

The initial budgetary position with a high primary surplus contributes to the reduction of gross debt and the accumulation of assets in pension schemes. Maintaining sound government finances with continued surpluses as planned would be key in view of limiting risks to the sustainability of public finances.

Overall, Sweden appears to be at low risk with regard to the sustainability of public finances.

Sweden

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	9.0	9.2	9.4	9.6	9.8	9.9	10.0	10.2	1.2
Working age population (15–64) % of total	65.0	65.3	63.1	61.7	60.8	60.0	59.3	59.4	– 5.6
Old-age dependency ratio (65+/15–64)	26.4	28.0	31.9	34.4	36.4	38.4	41.4	40.9	14.5
Participation rate (15–64)	77.5	78.3	80.3	80.8	80.8	80.7	80.9	81.1	3.6
— older workers (55–64)	71.8	73.4	75.3	76.3	77.5	77.3	78.0	79.0	7.2
Unemployment rate (15–64)	5.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	– 1.0
Real GDP (growth rate)	2.1	2.9	2.7	2.4	2.2	1.6	1.9	1.8	– 0.4
Expenditure projections									
Pensions	10.6	10.1	10.3	10.4	10.7	11.1	11.6	11.2	0.6
Healthcare	6.7	6.8	7.0	7.2	7.4	7.5	7.7	7.7	1.0
Long-term care	3.8	3.7	3.5	3.7	4.2	4.9	5.2	5.5	1.7
Education	7.3	6.7	6.5	6.4	6.4	6.6	6.6	6.4	– 0.9
Unemployment benefits	1.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	– 0.2
Total age-related expenditure	29.6	28.2	28.3	28.6	29.5	30.9	31.9	31.8	2.2
p.m. benefit ratio for public pension (1)	*21.3*	*20.0*	*18.7*	*17.5*	*16.9*	*16.5*	*16.2*	*15.9*	*– 25.4*
p.m. benefit ratio for old-age and early pension (1)	*20.8*	*19.7*	*18.5*	*17.4*	*16.8*	*16.6*	*16.6*	*16.5*	*– 20.9*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	2
2005 SP/CP (2)	1.6	0.9	1.1	1.7			**MTO scenario (2010)**	
Commission spring 2006 forecast	2.6	2.1	2.1				*Structural balance*	1
Gross debt							*Structural primary balance*	2.4
2005 SP/CP	50.9	49.4	47.8	46.0				
Commission spring 2006 forecast	50.3	47.6	44.8					
size of one-offs	0.4	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay				
Baseline scenario	– 3.1	– 1.0	1.5	**– 2.7**	– 0.4				
MTO scenario	– 2.3	– 1.0	1.5	**– 1.9**	– 0.3				
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**			
Baseline scenario	– 3.1		2.0	**– 1.1**	– 0.1	2.2			
MTO scenario	– 2.3		2.0	**– 0.3**	0.0	2.2			
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2050**	**Change 2005–50**
Gross debt (% of GDP)									
Baseline scenario	50.3	32.5	16.5	1.1	– 11.9	– 20.7	– 29.6	– 40.9	– 91.2
MTO scenario	50.3	33.6	21.6	10.2	1.5	– 2.6	– 0.8	– 0.7	– 51.0

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions					
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**	
	0.9	0.3	0.2	0.4	
Higher labour productivity	**Total**				
	– 0.2				
Higher employment older workers	**Total**				
	n.a.				
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**		
	– 0.1		– 0.4		
Higher interest rate	**Total**	**– IBP**	**– LTC**		
	– 0.2	0.1	– 0.2		
– Scenarios for healthcare	**Pure ageing**	**Constant health**	**Death–related costs**	**Income elasticity**	**Unit costs: GDP/worker**
	0.0	– 0.6	– 0.3	0.4	0.9
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.6	– 0.6	1.1		

United Kingdom

Long-term budgetary projections, recent budgetary developments and medium-term prospects

According to the recently published Ageing Report, the UK economy is projected to experience a slowdown of economic growth over the coming decades, from 2.8 % during 2004–10 to 2.1 % in 2011–30 and to 1.5 % in 2031–50. This is partly due to the ageing of the population ([1]), with the old-age dependency ratio projected to rise from 24 % in 2004 to 45 % in 2050, although this is a smaller rise than on average in the EU.

The projected increase in age-related spending in the United Kingdom is somewhat higher than on average in the EU, rising by 4 percentage points of GDP between 2004 and 2050. The increase in expenditure on public pensions in the United Kingdom is relatively limited, rising by 2 percentage points of GDP. This reflects the fact that the United Kingdom has historically relied relatively more on private pension arrangements (occupational and individual schemes) than most other EU Member States do. The increase in expenditure on healthcare is projected to be 1.9 percentage points of GDP, slightly higher than on average in the EU, influenced by relatively high expenditure on healthcare at present compared to the EU average; and on long-term care an increase of 0.8 of a percentage point of GDP is projected, close to the EU average.

The United Kingdom has been placed in excessive deficit procedure and the European Council has recommended that the United Kingdom bring the deficit below 3 % of GDP by the financial year 2006/07 at the latest. The deficit has been above 3 % since 2003 and in 2005 stood at 3.5 % of GDP (3.2 % for the financial year 2005/06). As a result of the weak fiscal position in recent years, the debt/GDP ratio has risen by around 5 % of GDP in three years, to 42.8 % of GDP in 2005 (42 % for the financial year 2005/06), although it remains below the EU average. The UK 2005 convergence programme projects a gradual strengthening of the public finances over the medium term, with the aim of reducing the deficit to 1.5 % of GDP in 2010/11. The programme does not specify an MTO. According to the Commission services 2006 spring forecast, however, in which a deficit of 2.7 % of GDP is expected in 2007/08 on the basis of the current policies, higher than the programme's forecast of 2.4 %, budgetary outcomes could be worse than projected in the programme.

Main findings and results

On the basis of the current budgetary position and the projected budgetary changes over the long term, the United Kingdom has a sustainability gap of 4.9 % of GDP in the baseline scenario. The long-term budgetary impact of ageing is close to the EU average.

The initial budgetary position with a structural primary balance of – 1.1 % of GDP in 2005 constitutes a risk to sustainable public finances even before the long-term budgetary impact of ageing is considered. Assuming that a structural balance of – 1 % of GDP is reached in 2010, the structural primary balance improves, rising from – 1.1 % in 2005 to 1.1 % of GDP in 2010. This would have a positive impact on the sustainability gap, though it would still be 2.7 % of GDP in this scenario.

The benefit ratio in the United Kingdom is projected to decrease relatively markedly, by about 20 %, in the period to 2050. The United Kingdom traditionally relies on private pension arrangements, while State pension provision remains at relatively low levels. The report of the Pensions Commission, a government-appointed body tasked with reviewing provision of public and State pensions, has identified a clear risk that 'the current system of private funded pensions combined with the current State system will deliver increasingly inadequate

([1]) The demographic and macroeconomic data in this paragraph are those underlying the long-term projections in the Ageing Report (2006). They were published in November 2005. Since then, data revisions may have occurred and new prospects for GDP growth in 2006 and 2007 may affect the average growth rate in 2004–10.

results', mainly as a consequence of a decreasing trend in private-sector employer pension contributions since the early 1980s, which has not been matched by adequate personal savings ([1]). The closure of more generous defined-benefit schemes in favour of defined-contribution schemes, as well as the trend towards expanding means-testing in State pension provision could exacerbate this risk in the future. Therefore, higher age-related expenditures over the present baseline cannot be excluded as the signs of insufficient private pension provision, linked to rising demographic costs that are leading to the closure particularly of the most generous occupational schemes, might lead to greater enrolment in contributory State schemes and in greater recourse to means-testing of pensions and other benefits.

However, there have been significant developments in pension policy in the United Kingdom in relation to this situation. The Pensions Commission made a number of proposals on how the pension system could be reformed (the Turner Report) ([2]). The government endorsed most of its conclusions and proposals in its White Paper 'Security in retirement: towards a new pensions system'.

The White Paper's main measures include: (i) a reform of private pension provision, creating individual accounts into which most employers would be automatically enrolled, funded by a combination of Exchequer, employee and employer contributions; (ii) a reform of State pension provision, which on the one hand would be simplified, moving towards a flat-rate system, and on the other hand would become more generous, as State pensions would grow in line with earnings rather than prices as is currently the case ([3]). The costs of the latter reform would be partly offset by an increase in the State pension age in line with increases in longevity (to 66 years by 2024 and to 68 by 2046).

Thus the UK authorities project that public pension expenditure would increase by an additional half of a percentage point of GDP by 2050 with the implementation of the reform package ([4]). If it is indeed successfully implemented, the proposal appears to tackle the problem of inadequate savings, thus mitigating the risks discussed above, at a relatively affordable cost. However, making room for the projected increase in pension expenditure will require early fiscal action, given the current fiscal position and the desirability of smoothing any fiscal adjustment over time.

According to the UK's long-term projections, tax revenues are projected to increase by some 2 % of GDP between 2010 and 2050 as a result of demographic change, assuming that the existence of more pensioners in the future will lead to higher tax revenues (directly through income tax and indirectly through indirect taxes). However, given the projected reduction in the public benefit ratio of some 20 % up to 2050, this suggests that private pensions will increase over the long term so as to compensate for the reduction. This would entail an increase in private pension contributions, which could in turn reduce tax revenues in the medium term. Given the lack of projections on the future evolution of private pension provision (and contributions), it is not possible to assess the overall impact of changes in tax revenues over the long term.

Overall assessment

The long-term budgetary impact of ageing in the United Kingdom is close to the EU average, with pension expenditure showing a somewhat more limited increase than the EU average, partly as a result of the United Kingdom historically relying relatively more on private pension arrangements. However, current pension arrangements might come under pressure at some point if the projected decrease in the benefit ratio were to fully materialise, and risks to the public finances in the future cannot be excluded. Moreover, the current proposed reforms, while addressing the risk of inadequate provision, could involve an (albeit modest) increase in expenditure compared to the pension projections used in this report.

The initial budgetary position constitutes a risk to sustainable public finances even before the long-term budgetary impact of an ageing population is considered. Consolidating the public finances will therefore be crucial in reducing risks to the sustainability of public finances.

Overall, the United Kingdom appears to be at medium risk with regard to the sustainability of public finances.

([1]) Pensions Commission (2005).
([2]) Pensions Commission (2006).
([3]) It should be noted that part of the reform announced in the White Paper, namely the uprating of the pension credit (i.e. the means-tested part of pension support) in line with earnings was already incorporated both in the Ageing Report and in the UK authorities' own projections.
([4]) This report uses the projections in the Ageing Report, and the impact of the proposed reform package is not included in the analysis.

United Kingdom

Underlying assumptions	2004	2010	2015	2020	2025	2030	2040	2050	Change 2004–50
Population (millions)	59.7	60.9	61.9	62.9	63.8	64.4	64.7	64.2	4.6
Working age population (15–64) % of total	65.7	66.3	65.2	64.2	63.0	61.3	59.2	58.8	– 6.9
Old-age dependency ratio (65+/15–64)	24.3	25.1	28.1	30.3	33.1	37.3	43.6	45.0	20.7
Participation rate (15–64)	75.5	76.4	77.7	77.9	77.8	77.9	78.7	78.3	2.8
— older workers (55–64)	57.5	58.5	62.8	63.6	63.9	63.5	65.6	65.2	7.7
Unemployment rate (15–64)	4.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6	– 0.3
Real GDP (growth rate)	2.6	3.0	2.5	2.1	1.7	1.3	1.7	1.3	– 1.3
Expenditure projections									
Pensions	6.6	6.6	6.7	6.9	7.3	7.9	8.4	8.6	2.0
Healthcare	7.0	7.2	7.4	7.6	7.9	8.1	8.7	8.9	1.9
Long-term care	1.0	1.0	1.0	1.1	1.1	1.3	1.5	1.8	0.8
Education	4.6	4.2	4.0	4.0	4.0	4.1	4.0	4.0	– 0.6
Unemployment benefits	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Total age-related expenditure	19.6	19.4	19.5	19.9	20.7	21.8	22.9	23.6	4.0
p.m. benefit ratio for public pension (1)	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
p.m. benefit ratio for old-age and early pension (1)	*16.3*	*15.2*	*15.2*	*15.2*	*14.7*	*14.1*	*13.0*	*12.9*	*– 21.1*

(1) *% change between 2004 and 2050.*

Medium-term budgetary developments	2005	2006	2007	2008	2009	2010	Medium–term objective	
Structural balance							**MTO in SP/CP**	n.a.
2005 SP/CP (2)	– 2.9	– 2.3	– 2.1	– 1.7	– 1.5		**MTO scenario (2010)**	
Commission spring 2006 forecast	– 3.3	– 2.7	– 2.5				*Structural balance*	– 1
Gross debt							*Structural primary balance*	1.1
2005 SP/CP	43.3	44.4	44.8	44.7	44.6			
Commission spring 2006 forecast	42.8	44.1	44.7					
size of one-offs	0.0	0.0	0.0	0.0	0.0			

(2) Commission calculation based on the 2005 SP/CP.

Quantitative results	IBP	DR	LTC	S1	Cost of delay	
Baseline scenario	1.6	– 0.2	1.9	**3.4**	0.6	
MTO scenario	– 0.6	– 0.3	1.9	**1.0**	0.2	
	IBP		**LTC**	**S2**	**Cost of delay**	**RPB**
Baseline scenario	1.8		3.2	**4.9**	0.4	3.8
MTO scenario	– 0.5		3.2	**2.7**	0.2	3.7

	2005	2010	2015	2020	2025	2030	2040	2050	Change 2005–50
Gross debt (% of GDP)									
Baseline scenario	42.8	48.4	54.9	64.1	78.2	100.0	160.6	238.7	195.9
MTO scenario	42.8	42.3	37.8	35.4	36.8	44.2	73.0	114.1	71.3

Sensitivity to changes in assumptions and scenarios (difference in percentage points from the S2 baseline scenario)

– Underlying assumptions				
Higher life expectancy	**Total**	**– pensions**	**– healthcare**	**– long-term care**
	0.5	0.2	0.3	0.1
Higher labour productivity	**Total**			
	– 0.3			
Higher employment older workers	**Total**			
	– 0.1			
Higher employment	**– increase in labour supply**		**– decrease in the NAIRU**	
	– 0.1		– 0.2	
Higher interest rate	**Total**	**– IBP**	**– LTC**	
	– 0.1	0.4	– 0.5	

– Scenarios for healthcare	Pure ageing	Constant health	Death–related costs	Income elasticity	Unit costs: GDP/worker
	0.3	– 0.8	– 0.1	0.6	– 0.1
– Scenarios for long-term care	**Pure ageing**	**Constant disability**	**Increase in formal care**		
	0.2	– 0.2	1.5		

Chapter VII

Resources

1. References

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2. Glossary

Annuity A regular (e.g. monthly) income receivable established by public pension authorities or offered by insurance companies for a specified period or from retirement until death.

Budget balance The balance between total public expenditure and revenue (according to *ESA 95*); with a positive balance indicating a surplus and a negative balance indicating a deficit (also known as government net borrowing). For the monitoring of Member States' budgetary positions, the EU uses *general government* aggregates. See also *cyclically adjusted balance*, *primary balance*, *structural balance* and *reference values*.

Budget constraint A basic condition applying to the public finances, according to which total public expenditure in any one year must be financed by taxation, borrowing or changes in the monetary base; the latter is prohibited in the EU. See also *stock-flow adjustment* and *long-term sustainability*.

Code of conduct Policy document adopted by the *Economic and Financial Committee* and endorsed by the Council of Ministers responsible for Economic and Financial Affairs (Ecofin) in October 2005, containing specifications on the implementation of the *Stability and Growth Pact* and guidelines on the format and content of *stability programmes* and *convergence programmes*.

Contingent liabilities A possible government obligation to pay, the existence of which will be confirmed by the occurrence of one or more uncertain events in the future not wholly under the control of government. For instance, government guarantees on debt issued by private or public companies are contingent liabilities, since the government obligation to pay depends on the non-ability of the original debtor to honour its obligations. See also *implicit liabilities*.

Convergence programme Medium-term budgetary and monetary strategy presented by each Member State that has not yet adopted the euro; updated annually, according to the provisions of the *Stability and Growth Pact*. See also *stability programme, code of conduct* and *medium-term objective*.

Cyclical component The transient part of the *budget balance* that reflects the public revenue and expenditure linked to the *output gap*. See *automatic stabilisers*, *budgetary sensitivity*, *cyclically adjusted balance* and *structural balance*.

Cyclically adjusted balance The *budget balance* adjusted for its *cyclical component*, i.e. the budget balance that would prevail if GDP were at its potential level. See also *structural balance* and *output gap*.

Cyclically adjusted primary balance The *cyclically adjusted balance* net of interest expenditure on *general government* debt. See also *interest burden*.

Debt dynamics The evolution of *government debt* as a ratio to GDP; it depends on the *primary deficit*, the debt-increasing impact of interest payments, the dampening effect of GDP growth on the ratio and the *stock-flow adjustment*.

Defined-benefit pension scheme Pension plan in which the sponsor company faces a legal or constructive obligation to pay further contributions to an ongoing plan in the event of an unfavourable plan experience. Benefits are usually determined by such factors as salary history and duration of employment. See also *defined-contribution pension scheme, funded pension scheme and pay-as-you-go pension scheme*.

Defined-contribution pension scheme Pension scheme in which the plan sponsor pays fixed contributions and has no legal or constructive obligation to pay further contributions to an ongoing plan in the event of an unfavourable plan experience. Pension plan benefits are determined by such factors as contribution rates and

returns on the plan's investments. See also *defined-benefit pension scheme*, *funded pension scheme* and *pay-as-you-go pension scheme*.

Dependency ratio A measure of the ratio of people who receive government transfers, especially pensions, relative to those who are available to provide the revenue to pay for those transfers. See also *old-age dependency ratio*.

Direct taxes Taxes that are levied on personal or corporate incomes and property. See also *indirect taxation*.

ESA 95 European accounting standards for the compilation and reporting of macroeconomic (including budgetary) data by the EU Member States. See also *Eurostat*.

Eurostat The Commission department in charge of EU statistics. It is particularly responsible to check the quality of *budget balance* and *government debt* data notified by Member States. The quality check includes checking compliance with the *ESA 95* accounting rules, completeness, reliability, timeliness and consistency of the data. See also *ESA 95.*

Excessive deficit procedure (EDP) A procedure according to which the Commission and the Council monitor the development of national *budget balances* and *public debt* in order to assess the risk of an excessive deficit in each Member State. Its application has been further clarified in the *Stability and Growth Pact*. See also s*tability programmes* and *Stability and Growth Pact*.

Expected return Gain from holding a financial claim net of expected loss from default risk, etc.

Funded pension scheme Pension system in which current pension expenditures are financed by running down assets accumulated over the years on the basis of contributions by the scheme beneficiaries. According to *ESA 95*, defined-contribution funded pension schemes are not considered as part of the *general government* sector. See also *defined-benefit pension scheme*, *defined-contribution pension scheme* and *pay-as-you-go pension scheme*.

General government The focus of EU budgetary surveillance under the *Stability and Growth Pact* and the *excessive deficit procedure* is on general government aggregates, with the general government sector covering national, regional and local government, as well as social security. In principle, public enterprises are excluded.

Government debt See *public debt*.

Implicit liabilities Future government expenditure which has not yet been funded, even when future expenditure is not backed by law or contractual obligations, but is simply grounded in strong expectations of the public. To be meaningful for economic analysis, implicit liabilities should be assessed net of future revenue assuming that the government will keep collecting taxes (and other non-tax revenue) at rates comparable to current levels. See also *contingent liabilities*.

Indirect taxation Taxes that are levied during the production stage rather than on the income and property arising from economic production processes (which are called *direct taxes*). Prominent examples of indirect taxation are value added tax (VAT), excise duties, import levies, energy and other environmental taxes.

Indexation of benefits A revaluation of benefits, most often in line with prices and/or wages.

Interest burden *General government* interest expenditure on *government debt* as a share of GDP.

Intertemporal budget constraint It imposes that current total liabilities of the government, i.e. the current public debt and the discounted value of future expenditure, should be covered by the discounted value of future government revenue. See also *long-term sustainability.*

Lisbon strategy Partnership between the EU and Member States for growth and more and better jobs. Originally approved in 2000, the Lisbon strategy was revamped in 2005. Based on the integrated guidelines (merger of the *broad economic policy guidelines* and the employment guidelines, dealing with macroeconomic, microeconomic and employment issues) for the period 2005–08, Member States drew up three-year national reform programmes at the end of 2005. They reported on the implementation of the national reform programmes for the first time in autumn 2006. The Commission analyses and summarises these reports in an EU annual progress report each year, in time for the spring European Council.

Maturity structure of public debt The profile of debt in terms of when it is due to be paid back. Interest rate

changes affect the *budget balance* directly to the extent that the *general government* sector has debt with a relatively short maturity structure. Long maturities reduce the sensitivity of the *budget balance* to changes in the prevailing interest rate. See also *public debt*.

Mature pension fund A pension fund with a long-term equilibrium ratio of workers to pensioners.

Medium-term objective (MTO) According to the *Stability and Growth Pact*, *stability programmes* and *convergence programmes* present a *medium-term objective* for the budgetary position. It is country-specific to take into account the diversity of economic and budgetary positions and developments as well as of fiscal risk to the sustainability of public finances, and is defined in structural terms (see *structural balance*).

Occupational pension scheme A pension plan whose access is linked to an employment or professional relationship between the plan member and the entity that establishes the plan (the plan sponsor). Occupational pension plans may be established by employers or groups thereof (e.g. industry associations) and labour or professional associations, jointly or separately.

Old-age dependency ratio Population aged over 65 as a percentage of the working age population (usually defined as persons aged between 15 and 64). See also *dependency ratio*.

One-off and temporary measures Government transactions having a transitory budgetary effect that does not lead to a sustained change in the budgetary position. See also *structural balance*.

Output gap The difference between actual GDP and *potential GDP* in any given year, usually expressed as a percentage of *potential GDP*. Potential GDP is an unobserved variable and needs to be estimated from actual data. See also *cyclical component* and *production function method*.

Pay-as-you-go (PAYG) pension scheme Pension system in which current pension expenditures are financed by the contributions of current employees (also known as unfunded pension scheme). See also *funded pension scheme, defined-benefit pension scheme* and *defined-contribution pension scheme*.

Pension fund A legal entity set up to accumulate, manage and administer pension assets. See also *private pension scheme*.

Potential GDP The level of real GDP in a given year that is consistent with a stable rate of inflation. If actual output rises above its potential level, then constraints on capacity begin to bind and inflationary pressures build; if output falls below potential, then resources are lying idle and inflationary pressures abate. See also *production function method* and *output gap*.

Primary balance The *budget balance* net of interest expenditure on *general government* debt. See also *interest burden*.

Private pension scheme Pension plan where a private entity receives pension contributions and administers the payment of pension benefits.

Production function method A method to estimate *potential GDP* typically based on a Cobb-Douglas production function. Potential GDP is estimated as the level of GDP consistent with a full utilisation of capital, an unemployment rate that does not accelerate inflation and factor productivity at its trend level. See also *output gap, cyclical component* and *cyclically adjusted balance*.

Pension benefit Benefit paid to a participant (beneficiary) in a pension plan.

Pension contribution Payment made to a pension plan by the sponsor company or by scheme participants.

Property income Property income received by the general government consists mainly of the revenues that the government receives from owning financial assets (including rents on land and sub-soil assets).

Public debt (or government debt) Consolidated gross debt for the *general government* sector. It includes the total nominal value of all debt owed by government units, except that part of the debt which is owed to government units in the same Member State. It is a gross debt measure meaning that government financial assets on other sectors are not netted out. See also *debt dynamics* and *reference values*.

Public investment The component of total public expenditure which consists in the acquisition of durable assets and through which governments increase and

improve the stock of capital employed in the production of the goods and services they provide. Also known as government gross fixed capital formation (GFCF).

Public–private partnerships (PPP) Agreements between government and corporations according to which the latter build and operate public-use infrastructure (roads, tunnels, bridges, but also hospitals, prisons, concert halls, etc.) which were traditionally directly controlled by government. In exploiting the infrastructure, the corporation receives prices paid by final users, rentals or fees from the government or both. Infrastructure built under PPPs is considered as either government investment or corporate investment depending on a number of specific criteria.

Replacement ratio The ratio of pension to earnings at the point of retirement.

Sensitivity analysis An econometric or statistical simulation designed to test the robustness of an estimated economic relationship or projection to changes in the underlying assumptions.

'Snowball' effect The self-reinforcing effect of *public debt* accumulation or decumulation arising from a positive or negative differential between the implicit interest rate on public debt and the GDP growth rate. See also *debt dynamics*.

Social contributions Payments by employers and employees to a social insurance scheme to cover for pension, healthcare and other welfare provisions.

Stability and Growth Pact (SGP) Approved in 1997 and reformed in 2005, the SGP clarifies the provisions on budgetary surveillance in the EC Treaty. The 'preventive' arm of the SGP obliges Member States to submit annual *stability* and *convergence programmes*, while the 'corrective' arm of the SGP clarifies and speeds up the *excessive deficit procedure*.

Stability programme Medium-term budgetary strategy presented by each Member State that has already adopted the euro; updated annually, according to the provisions of the *Stability and Growth Pact*. See also *convergence programme, code of conduct* and *medium-term objective*.

Stock-flow adjustment (SFA) The stock-flow adjustment (also known as the debt-deficit adjustment) ensures consistency between *government net borrowing*, which is a flow variable, and the variation in *government debt*, which is a stock variable. It includes differences between cash and accrual accounting, accumulation of financial assets, changes in the value of debt denominated in foreign currency and remaining statistical adjustments. See also *debt dynamics*.

Structural balance The *budget balance* adjusted for its *cyclical component* and excluding *one-off and temporary measures*. See also *fiscal stance*.

Structural primary balance The *structural balance* net of interest expenditure on *general government* debt. See also *interest burden*.

Tax elasticity A parameter measuring the relative change in tax revenues with respect to a relative change in GDP. The tax elasticity is an input to the *budgetary sensitivity*.

Tax gaps A measure used in the assessment of the *sustainability* of public finances. Tax gaps measure the difference between the current tax ratio and the constant tax ratio over a given projection period to achieve a predetermined level of debt at the end of that projection period or to fulfil the intertemporal budget constraint.

Annex I: Deriving the sustainability indicators

0. Legend

1. Deriving the S1 and S2 indicator under the assumption of constant interest-rate/growth-rate differential

2. Deriving the S1 and S2 indicator under the assumption of time-varying interest-rate/growth-rate differential

3. Deriving the cost of a delay indicator

4. Deriving the equivalence between sustainability indicators and implicit liabilities/debt

0. Legend

t is the index for the year

t_0 the last year before the long-term projection

D_t (adjusted) gross debt relative to GDP

PB_t structural primary balance relative to GDP

ΔPB_t change in structural primary balance compared to the base year $PB_t = PB_{t_0} + \Delta PB_t$ relative to GDP

r differential between the nominal interest rate and the nominal GDP growth rate, i.e. $1 + r = \frac{1+R}{1+G}$ where R and G are respectively the nominal interest rate (or discount rate) and the nominal growth rate

1. Deriving the S1 and S2 indicator under the assumption of constant interest-rate/growth-rate differential ([1])

(i) The intertemporal budget constraint and the S2 indicator

There is no agreed definition on what constitutes a sustainable position for the public finances. One can, however, impose that the debt (relative to GDP) remains bounded at any time in the future so that it does not follow an explosive path. This implies (see proof in appendix) that the discounted value of future structural primary balances should cover the current level of debt, i.e.:

$$D_{t_0} - \sum_{t=t_0+1}^{\infty} \frac{PB_t}{(1+r)^{t-t_0}} = 0 \quad (1)$$

This condition is referred to as the intertemporal budget constraint or the solvency condition. Given an initial debt, an interest-growth differential assumption and a future path of the structural primary balance, condition (1) may not be fulfilled. The S2 indicator is thus the change in the structural primary balance for every future year that ensures that condition (1) is true.

$$S_2 = \underbrace{rD_{t_0} - PB_{t_0}}_{D} - \underbrace{r \sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}}}_{E} \quad (2)$$

S2 is a sum of two different terms. The first term (D) is a condition concerning the initial budgetary position: if the structural primary balance (relative to GDP) remains unchanged in the future, the intertemporal budget constraint condition simply says that the structural primary balance should be equal to 'apparent real' interest paid on the current level of debt. In that case, the level of debt would remain stable as a GDP. Indeed, debt relative to GDP increases by the difference between the nominal interest rate and the nominal growth rate. If the structural primary balance compensates for this increase, the debt relative to GDP will remain stable. (D) is the distance between current structural budgetary primary balance and the debt-stabilising primary balance.

([1]) It is also supposed to be strictly positive.

The second term (E) is a condition concerning future developments in the structural primary balance: the bigger the decrease of the structural primary balance, the higher the immediate raise in the structural primary balance should be to fully compensate those changes. (E) is a synthetic measure of the time-varying future changes in the primary balance expressed as a constant change in the primary balance as a share of GDP.

(ii) The S1 indicator

The S1 indicator is the change in the structural primary balance for every future year that is required to reach a debt ratio in 2050 of 60 % of GDP. The calculations below are valid for any date T in the future and for any level of debt D_T.

$$S_1 = \underbrace{rD_{t_0} - PB_{t_0}}_{A} + \underbrace{\frac{r(D_{t_0} - D_T)}{(1+r)^{T-t_0} - 1}}_{B} - \underbrace{\frac{\sum_{i=t_0+1}^{T} \frac{\Delta PB_i}{(1+r)^{i-t_0}}}{\sum_{i=t_0+1}^{T} \frac{1}{(1+r)^{i-t_0}}}}_{C} \quad (3)$$

As for S2, the S1 indicator is a sum of several terms. The first term (A) is the same as in S2. Contrary to S2, S1 also assumes that debt reaches a certain level of debt; the first term only ensures that debt as a share of GDP will remain at its starting level at a certain point in time. Additional effort measured by the second term (B) is therefore necessary to ensure that the debt will reach 60 % of GDP in 2050. It tends to be large if the desired level of debt is small, the period of time given to reach this debt level is short or the initial debt is large. For countries with a lower initial level of debt, the term (B) is negative and reduces the sustainability gap.

The last term (C) is a condition concerning future developments of the structural primary balance. It is slightly different from the term (E) in the S2 indicator because S1 only takes into account changes in the structural primary balance up to 2050, which in most cases, underestimates the cost of ageing.

(iii) Comparison of S1 and S2

The two indicators are in fact very close and the S1 indicator can be seen as a finite version of the intertemporal budget constraint. Indeed, if the debt requirement is set at a very distant date in the future, the two indicators S1 and S2 will be very close.

Given that $A = rD_{t_0} - PB_{t_0} = D$; $\quad B \xrightarrow{T\to\infty} 0$; $\quad C \xrightarrow{T\to\infty} r \sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}} = E$

$$S_1(T, D_T) \xrightarrow{T\to\infty} S_2 \quad (4)$$

In practice, given the not so distant requirement (2050) and the low differential between interest and growth rates, S1 and S2 are different.

Table A.1.1 sums up the calculations of S1 and S2.

Two different reasons may lead S1 to be greater than S2.

— The debt requirement will increase S1 if the initial level of debt is above 60 % and decrease S1 otherwise: nothing similar is imposed in the calculations of S2. Therefore high-debt countries, i.e. countries whose debt is above 60 % in 2005 or at the end of the programme period, may have a higher S1 than S2. For instance, the debt requirement will increase S1 by around ¾ of a percentage point of GDP, for a country with an initial adjusted gross debt level of 100 % ([1]).

([1]) If the difference between the interest rate and growth rate is 1.5 %.

Table A.1.1. Comparison of S1 and S2

	Current budgetary position		Debt requirement in 2050		Long-term changes in the primary balance
S1 =	$A = rD_{t_0} - PB_{t_0}$	+	$B = \frac{r(D_{t_0} - D_T)}{(1+r)^T - 1}$	+	$C = -\frac{\sum_{i=t_0+1}^{T} \frac{\Delta PB_i}{(1+r)^{i-t_0}}}{\sum_{i=t_0+1}^{T} \frac{1}{(1+r)^{i-t_0}}}$
S2 =	$D = rD_{t_0} - PB_{t_0}$	+	0	+	$E = -r \sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}}$ (5) $= \alpha C + (1-\alpha)(-\Delta PB_{2050})$

— The other difference between the two indicators comes from the horizon over which future changes in the primary balance are taken into account: over the period up to 2050 in the case of S1 and over an infinite horizon in the case of S2. In EU countries, the overall budgetary impact of ageing is usually increasing over the next decades so that the maximum budgetary impact happens towards the end of the period. In that case, the change in the primary balance is higher in 2050 than it is on average over the period 2010–50: the impact of changes in primary balances is then larger in S2 than in S1 ([1]). However, some countries have enacted a large pension reform that is progressively implemented so that the increase in public expenditure reaches its maximum in the middle of the period before being significantly reduced afterwards. Those countries may exhibit a higher S1 than S2.

To sum up, S2 should be in most cases greater than S1 except for countries where the initial level of debt is substantially higher than 60 % and/or the increase in expenditure due to ageing is lower in 2050 than on average over the period up to 2050.

(iv) The required primary balance

Instead of presenting public finance imbalances as a gap towards a sustainable situation, it is also possible to present the resulting target in terms of primary balance (the required primary balance) that would result from a budgetary consolidation in the medium term that ensures sustainability. The required primary balance can be calculated for both indicators (though the Commission regularly calculates the required primary balance for the S2 indicator).

$$RPB_{t_0} = PB_{t_0} + S_2 = rD_{t_0} - r \sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}} \quad (6)$$

Formula (6) shows that the RPB is a more stable indicator than the sustainability indicator. Indeed, it only depends on the current level of debt, the projected budgetary change over the long term and the interest-rate/growth-rate differential. These data typically change infrequently, e.g. if a pension reform is implemented or if the future outlook on demography, potential growth or interest rate are changed. By contrast, sustainability gaps are also sensitive to changes in the current structural primary balance, which are more common.

([1]) Formally (E) can be written as a weighted average of (C) and the change in primary balance in 2050 (see annex).

2. Deriving the S1 and S2 indicator under the assumption of time-varying rate growth/interest-rate differential

The interest-growth-rate differential has so far been assumed constant. This is not the case in the current EU framework to assess public finance sustainability. The real interest rate is constant for all EU-25 countries and equal to 3 % while GDP growth projections are country specific.

Let's introduce $\alpha_{i;j} = (1+r_i)(1+r_{i+1})\ldots(1+r_j)$ if $i \leq j$ and 1 otherwise.

The dynamics of debt is: $D_t = D_{t_0}\alpha_{t_0+1;t} - \sum_{i=t_0+1}^{t} PB_i\alpha_{i+1;t}$;

The intertemporal budgetary constraint is: $D_{t_0} = \sum_{i=t_0+1}^{\infty} \frac{PB_i}{\alpha_{t_0+1,i}}$

The S2 indicator is: $$S_2 = \frac{D_{t_0}}{\sum_{i=t_0+1}^{\infty} \frac{1}{\alpha_{t_0+1,i}}} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{\infty} \frac{\Delta PB_i}{\alpha_{t_0+1,i}}}{\sum_{i=t_0+1}^{\infty} \frac{1}{\alpha_{t_0+1,i}}} \quad \text{(2bis)}$$

In the case where the interest-rate/growth-rate differential and the structural primary balance are constant after a certain date (here 2050):

$$S_2 = \underbrace{\frac{D_{t_0}}{\sum_{i=t_0+1}^{2050} \frac{1}{\alpha_{t_0+1,i}} + \frac{1}{r_{2050}\alpha_{t_0+1,2050}}}}_{D} - PB_{t_0} - \underbrace{\frac{\sum_{i=t_0+1}^{2050} \frac{\Delta PB_i}{\alpha_{t_0+1,i}} + \frac{\Delta PB_\infty}{r_\infty \alpha_{t_0+1,2050}}}{\sum_{i=t_0+1}^{2050} \frac{1}{\alpha_{t_0+1,i}} + \frac{1}{r_\infty \alpha_{t_0+1,2050}}}}_{E} \quad \text{(2ter)}$$

S1 is such that $D_T = D_{t_0}\alpha_{t_0+1;T} - \sum_{i=t_0+1}^{T} (PB_i + \Sigma_1)\alpha_{i+1;T}$

$$S_1 = \frac{D_{t_0}\alpha_{t_0+1;T} - D_T}{\sum_{i=t_0+1}^{T} \alpha_{i+1;T}} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{T} \Delta PB_i\alpha_{i+1;T}}{\sum_{i=t_0+1}^{T} \alpha_{i+1;T}} = \quad \text{(3bis)}$$

$$\underbrace{\frac{D_{t_0}(\alpha_{t_0+1;T} - 1)}{\sum_{i=t_0+1}^{T} \alpha_{i+1;T}} - PB_{t_0}}_{A} + \underbrace{\frac{D_{t_0} - D_T}{\sum_{i=t_0+1}^{T} \alpha_{i+1;T}}}_{B} - \underbrace{\frac{\sum_{i=t_0+1}^{T} \Delta PB_i\alpha_{i+1;T}}{\sum_{i=t_0+1}^{T} \alpha_{i+1;T}}}_{C}$$

Box A.1.2. Proofs

Equation 1

Let's suppose the debt (relative to GDP) remains bounded at any time in the future.

It means that $\exists M$ such as $|D_t| = \left| D_{t_0}(1+r)^{t-t_0} - \sum_{i=t_0+1}^{t} PB_i(1+r)^{t-i} \right| < M$

So $\left| D_{t_0} + \sum_{i=t_0+1}^{t} PB_i(1+r)^{-i} \right| = \left| \frac{D_t}{(1+r)^{t-t_0}} \right| < \frac{M}{(1+r)^{t-t_0}} \xrightarrow{t \to \infty} 0$ because r is strictly positive.

$$D_{t_0} - \sum_{i=t_0+1}^{\infty} PB_i(1+r)^{-(i-t_0)} = 0 \quad (1)$$

Equation 2

The S2 indicator is the change in the structural primary balance compared to the base year for every future year that ensures that condition (1) is fulfilled.

Mathematically, it can be written: $D_{t_0} = \sum_{t=t_0+1}^{\infty} \frac{PB_t + S_2}{(1+r)^{t-t_0}}$ (1)

Since the discount rate is strictly positive, $\sum_{t=t_0+1}^{\infty} \frac{1}{(1+r)^{t-t_0}} = \frac{1}{r}$.

$$D_{t_0} = \frac{\Sigma_2}{r} + \sum_{t=t_0+1}^{\infty} \frac{PB_t}{(1+r)^{t-t_0}} = \frac{S_2}{r} + \frac{PB_{t0}}{r} + \sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}}$$

$$S_2 = rD_{t_0} - PB_{t0} - r\sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}} \quad (2)$$

Equation 3

The calculations are made for any date T in the future and for any target level of debt in the future. The dynamics of the debt can be written:

$$D_t = D_{t_0}(1+r)^{t-t_0} - \sum_{i=t_0+1}^{t} PB_{t_0}(1+r)^{t-i} - \sum_{i=t_0+1}^{t} \Delta PB_i(1+r)^{t-i}$$

S_1 is such that $D_t = D_T$

$$S_1 = \frac{D_{t_0}(1+r)^{T-t_0} - D_T}{\sum_{i=t_0+1}^{T} (1+r)^{T-i}} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{T} \Delta PB_i(1+r)^{T-i}}{\sum_{i=t_0+1}^{T} (1+r)^{T-i}}$$

(Continued on the next page)

Box A.1.2. (continued)

Given $\sum_{i=t_0+1}^{T}(1+r)^{T-i} = \sum_{i=t_0}^{T-1}(1+r)^{i} = \frac{(1+r)^{T-t_0}-1}{r}$

$$S_1 = \frac{rD_{t_0}(1+r)^{T-t_0} - rD_{t_0} + rD_{t_0} - rD_T}{(1+r)^{T-t_0}-1} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{T}\Delta PB_i(1+r)^{T-i}}{\sum_{i=t_0+1}^{T}(1+r)^{T-i}}$$

$$S_1 = rD_{t_0} - PB_{t_0} + \frac{r(D_{t_0}-D_T)}{(1+r)^{T-t_0}-1} - \frac{\sum_{i=t_0+1}^{T}\Delta PB_i(1+r)^{T-i}}{\sum_{i=t_0+1}^{T}(1+r)^{T-i}}$$

$$S_1 = rD_{t_0} - PB_{t_0} + \frac{r(D_{t_0}-D_T)}{(1+r)^{T-t_0}-1} - \frac{\sum_{i=t_0+1}^{T}\frac{\Delta PB_i}{(1+r)^{i-t_0}}}{\sum_{i=t_0+1}^{T}\frac{1}{(1+r)^{i-t_0}}} \quad (3)$$

Equation 5

$$E = -r\sum_{t=t_0+1}^{\infty}\frac{\Delta PB_t}{(1+r)^{t-t_0}} = -\frac{\sum_{t=t_0+1}^{\infty}\frac{\Delta PB_t}{(1+r)^{t-t_0}}}{\sum_{t=t_0+1}^{\infty}\frac{1}{(1+r)^{t-t_0}}} = -\frac{\sum_{t=t_0+1}^{T}\frac{\Delta PB_t}{(1+r)^{t-t_0}} + \sum_{t=T+1}^{\infty}\frac{\Delta PB_t}{(1+r)^{t-t_0}}}{\sum_{t=t_0+1}^{\infty}\frac{1}{(1+r)^{t-t_0}}}$$

$$E = \frac{C\sum_{i=t_0+1}^{T}\frac{1}{(1+r)^{i-t_0}} - \Delta PB_T\sum_{t=T+1}^{\infty}\frac{1}{(1+r)^{t-t_0}}}{\sum_{t=t_0+1}^{\infty}\frac{1}{(1+r)^{t-t_0}}} = \alpha C + (1-\alpha)(-\Delta PB_T)$$

3. Deriving the cost of a delay indicator

It provides an estimate of the cost of delay in making a complete adjustment according to the old S1 and S2 indicators. It further assumed a constant interest-rate/growth-rate differential. The costs of a delay with non-constant interest rate for the currently used indicators, S1 and S2, are given here.

S1 indicator

The expression for the cost of delay using the S1 indicator is:

$$S'_1 = S_1 \frac{\sum_{t=t_0+1}^{2050} \frac{1}{\alpha_{t_0+1;t}}}{\sum_{t=t_0+1+delay}^{2050} \frac{1}{\alpha_{t_0+1;t}}} = S_1 \left(1 + \frac{\sum_{t=t_0+1}^{delay} \frac{1}{\alpha_{t_0+1;t}}}{\sum_{t=t_0+1+delay}^{50} \frac{1}{\alpha_{t_0+1;t}}} \right)$$

S2 indicator

If the adjustment is made today, $D_{t_0} = \sum_{i=t_0+1}^{\infty} \frac{PB_t + S_2}{\alpha_{t_0+1;t}}$

If the adjustment is postponed in five years then, $D_{t_0} = \sum_{i=t_0+1}^{\infty} \frac{PB_t}{\alpha_{t_0+1;t}} + \sum_{t=t_0+1+delay}^{\infty} \frac{S'_2}{\alpha_{t_0+1;t}}$

Relationships between the two indicators:

$$S'_2 = S_2 \frac{\sum_{t=t_0+1}^{\infty} \frac{1}{\alpha_{t_0+1;t}}}{\sum_{t=t_0+1+delay}^{\infty} \frac{1}{\alpha_{t_0+1;t}}} = S_2 \frac{\sum_{t=t_0+1}^{50} \frac{1}{\alpha_{t_0+1;t}} + \frac{1}{r_\infty \alpha_{1.50}}}{\sum_{t=t_0+1+delay}^{50} \frac{1}{\alpha_{t_0+1;t}} + \frac{1}{r_\infty \alpha_{1.50}}}$$

The cost of the delay is proportional to the initial tax gap indicator. If r is constant, the former formula is significantly reduced: $S'_2 = S_2(1+r)^{delay}$

4. Deriving the equivalence between sustainability indicators — a 'flow' measure — and implicit liabilities/ debt — a 'stock' measure

Chapter I.3.2 showed that the sustainability indicators can also be expressed as the stock of net implicit liabilities, or, net implicit debt under certain assumptions. In particular, if for both the sustainability gap measure and the net implicit debt measure it is assumed that: (i) they have the same starting point, i.e. the structural primary balance of general government; (ii) they have the same discount rate; (iii) they have the same coverage of future government commitments (i.e. age-related expenditures evolving in line with demographic developments); and (iv) they take into account that government's ability to receive the same revenues as a share of GDP as today, the S2 sustainability indicator less the current level of debt can be expressed as the current stock of net implicit debt. Specifically, one can define the net implicit liabilities of the general government, ID_{t_0}, as the discounted future structural primary balances, or equiv-

alently the net present value of future primary deficits: $ID_{t_0} = \sum_{t=t_0+1}^{\infty} \frac{-PB_t}{(1+r)^{t-t_0}}$ i.e. the net present value of non-financed future public spending.

In this case, the S2 can be rewritten as:

$$S_2 = rD_{t_0} - r \sum_{t=t_0+1}^{\infty} \frac{PB_t}{(1+r)^{t-t_0}} = r(D_{t_0} + ID_{t_0})$$

One can express the level of implicit debt as a function of S2 and current level of debt, showing that those two measures are indeed equivalent.

$$ID_{t_0} = \frac{S_2}{r} - D_{t_0}$$

This definition of net implicit debt covers all future imbalances linked to age-related social spending on pensions, healthcare, long-term care, education and unemployment. It is however not limited to those five expenditure items. The starting point is defined for the total general government sector, which also includes other items. If the current structural primary balance is lower than the debt-stabilising structural primary balance, it is also included in this definition of the implicit debt. By contrast, if the current structural primary balance is larger than the debt-stabilising primary balance, it means that the general government is in the process of accumulating assets and/or reducing debt.

In the calculation of S2 sustainability gap, explicit debt and net implicit debt are given equal importance. It should be borne in mind that the value of net implicit debt depends on the long-term projections and strongly on the discount rate. It is therefore not as 'observable' as the current level of debt.

It should be noted that implicit debt is even more sensitive to the interest rate than the sustainability indicator. Indeed, sustainability indicators are bounded, because the impact ageing reaches a maximum (at the latest in 2050, after which the primary deficit is kept constant). The intuition behind the result is straightforward. If a country is expected to experience a maximum increase of 5 % of GDP of public spending, current adjustment to cover this increase is necessarily less than 5 %, as the interest-rate/growth-rate differential is positive. In general, the lower the interest rate, the higher the overall increase will be. By contrast, implicit debt is not bounded. In the extreme where the interest rate is very close to the growth rate (or equivalently r is close to zero), the implicit debt can be very large. Changing the assumptions for the interest rate can therefore give rise to a larger variation in the 'stock' measure (implicit debt) compared to the 'flow' measure (sustainability indicators).

Annex II: Sensitivity tests

1. Hypotheses on demographic and economic assumptions

Table A.2.1

Budgetary items affected by changes in assumptions

	Pensions	Healthcare	Long-term care	Unemployment benefits	Education
Higher life expectancy	AR	AR	AR	= 0	= 0
Higher employment	AR	~ 0	~ 0	Projection made with the same methodology as in the Ageing Report	Projection made with the same methodology as in the Ageing Report
Higher employment of older workers	AR	~ 0	~ 0	= 0	Projection made with the same methodology as in the Ageing Report
Higher labour productivity	AR	~ 0	= 0	= 0	= 0
Higher interest rate	AR	= 0	= 0	= 0	= 0

The sensitivity tests are run on the total public expenditure. Non-age-related expenditure and public revenue are supposed to be unchanged as a share of GDP in all alternative scenarios as is the case in the baseline scenario. Regarding age-related expenditure, sensitivity tests, available in the Ageing Report, have been used ('AR' in Table A.2.1).

In the Ageing Report, not every sensitivity test has been run on every of the four age-related budgetary items other than pensions (healthcare, long-term care, unemployment benefits and education) for the following reasons.

- In many cases, the impact on expenditure as a share of GDP following the Ageing Report methodology is strictly nil ('= 0' in Table A.2.1). This is straightforward for the impact on interest rates on healthcare, long-term care, unemployment benefits and education. The change in labour productivity impacts directly on GDP growth but impacts also accordingly GDP/worker growth on which long-term care, unemployment benefits and education are indexed. This leaves unchanged the ratio of those expenditure items to GDP. Finally higher life expectancy has no impact on unemployment benefits and education.

- In other cases, the impact on expenditure as a share of GDP is theoretically non-zero but can be neglected in the calculations ('~ 0' in Table A.2.1). In the Ageing Report reference scenario, healthcare is indexed on GDP/capita so, in that respect, its GDP share is not impacted by higher productivity and/or higher unemployment. However, there is an income elasticity for healthcare in the reference scenario; therefore higher GDP growth should normally result in an increase in the GDP share of healthcare but the effect is small.

- The scenario of an increase in the employment rate is supposed to come from a decrease in the NAIRU (see Box A.2.1), which also reduces unemployment benefits as a share of GDP. This sensitivity test on unemployment benefits is not in the Ageing Report, therefore an additional scenario has been run using the same methodology as in the Ageing Report with a lower NAIRU. However, it should be recalled that the reading of the results will depend on its use. To estimate the uncertainty surrounding the sustainability indicator regarding the level of the future employment rate (with an unchanged NAIRU), only the budgetary impact of the sensitivity test on pensions should be considered. To estimate the uncertainty surrounding the indicator regarding the level of the NAIRU (with unchanged participation rates), both the impact on pensions and on unemployment expenditure should be considered.

Box A.2.1: **Description of the alternative hypotheses**

Higher life expectancy scenario assumes an increase in life expectancy, which corresponds roughly to an increase in life expectancy at birth of 1 to 1.5 years by 2050. Specifically, it was introduced by decreasing the age-specific mortality rates by 15 % linearly over the period 2004–50.

Higher employment rate scenario assumes that the employment rate will increase by 1 percentage point over the period 2005–15 and thereafter will remain at a 1 percentage point higher level in the period 2015–50 compared to the baseline projection. The higher employment rate was assumed to be achieved by lowering the rate of structural unemployment (i.e. the NAIRU).

Higher employment rate of older workers scenario assumes that the employment rate of older workers will increase by 5 percentage points over 2005–15 and thereafter will remain at a 5 percentage points higher level over the period 2015–50, compared to the baseline projection. The higher employment rate is assumed to be achieved through a reduction in the inactive population.

Higher labour productivity scenarios assumes an increase in the labour productivity growth rate by 0.25 of a percentage point over 2005–15 and thereafter remaining at the 0.25 of a percentage point higher/lower level in comparison with the labour productivity growth rate in the baseline projection.

Higher interest rate scenarios assume interest rates of 4 % vs. 3 % in the baseline scenario.

The following points should be noted.

- Alternative scenarios on productivity and employment impact on GDP growth. But if GDP growth changes compared to the baseline scenario, returns on assets will increase accordingly and so will interest rates. To keep the same real cost for the general government to finance its debt, the same interest-rate/growth-rate differential as in the baseline is used in the calculations of the sensitivity analysis. The impact of a higher interest-rate/growth-rate differential is analysed as a separate sensitivity test (namely higher interest rate).

- The impact of life expectancy on healthcare and long-term care expenditure was run on the so-called 'pure-ageing' scenario. The Ageing Report reference scenario assumes that the health status improves by half as much as in the constant health scenario. Therefore the sensitivity test on healthcare may slightly overestimate the impact of higher life expectancy compared to the baseline scenario.

2. Alternative scenarios for healthcare

As shown in Table A.2.2, all alternative scenarios have been run using the pure ageing scenario as a baseline. In the main text the S2 indicators have been calculated as if the Ageing Report reference scenario was replaced by the alternative scenario.

Table A.2.3 shows the change on the S2 indicator resulting from implementing one of the alternative scenarios instead of the 'pure ageing' scenario.

Table A.2.2

Alternative scenarios of healthcare

	Pure ageing	Constant health	Death-related costs	Income elasticity of demand	Unit costs — GDP per worker	Ageing Report reference scenario
Age-related expenditure profile	Constant 2004 profiles over the projection period	2004 profiles shift in line with changes in age-specific life expectancy	Constant 2004 profiles but split into spending on decedents and survivors	Constant 2004 profiles over the projection period	Constant 2004 profiles over the projection period	2004 profiles shift by half the change in life expectancy
Unit cost development	GDP per capita	GDP per capita	GDP per capita	GDP per capita	GDP per worker	GDP per capita
Income elasticity of demand	1	1	1	1.1 in base year converging to 1 by 2050	1	1.1 in base year converging to 1 by 2050

Table A.2.3

Impact on the sustainability indicator of alternative healthcare assumptions (deviation from S2 in percentage points of GDP)

	Constant health	Death-related costs	Income elasticity	Unit costs — GDP per worker	Ageing Report reference scenario
BE	– 0.7	– 0.4	0.3	0.2	– 0.1
CZ	– 0.7	– 0.4	0.5	0.9	0.1
DK	– 0.7	– 0.3	0.3	0.5	– 0.1
DE	– 0.6	– 0.3	0.2	0.2	– 0.1
EE	– 0.5	– 0.3	0.5	– 0.1	0.2
EL	– 0.5	– 0.3	0.2	0.5	0.0
ES	– 0.5	– 0.3	0.3	0.4	0.0
FR	– 0.7	– 0.3	0.3	0.4	0.0
IE	– 0.7	– 0.4	0.4	0.2	0.0
IT	– 0.5	– 0.2	0.2	0.3	0.0
CY	– 0.3	– 0.2	0.2	0.1	0.1
LV	– 0.4	– 0.3	0.6	– 0.1	0.3
LT	– 0.3	– 0.2	0.4	– 0.2	0.2
LU	– 0.6	– 0.2	0.5	– 1.3	0.1
HU	– 0.6	– 0.4	0.4	0.3	0.0
MT	– 0.6	– 0.7	0.2	0.1	– 0.1
NL	– 0.4	– 0.3	0.2	0.4	0.0
AT	– 0.6	– 0.3	0.2	0.4	– 0.1
PL	– 0.5	– 0.3	0.4	– 0.3	0.1
PT	– 0.6	– 0.3	0.2	0.7	– 0.1
SI	– 0.4	– 0.3	0.4	1.0	0.2
SK	– 0.5	– 0.3	0.4	0.6	0.1
FI	– 0.5	– 0.3	0.3	0.3	0.0
SE	– 0.7	– 0.3	0.3	0.8	0.0
UK	– 1.1	– 0.4	0.4	– 0.3	– 0.3
EU-25	– 0.7	– 0.3	0.3	0.2	– 0.1
EUR-12	– 0.6	– 0.3	0.3	0.3	– 0.1
Standard deviation	0.2	0.1	0.1	0.5	0.1

Annex III: Council opinions on the 2005/06 stability and convergence programmes

Table A.3

Policy conclusions by the Council on the sustainability of public finances based on the assessment of the 2005/06 updated stability and convergence programmes

	Are public finances sustainable?	What are the main issues?
BE	Belgium appears to be at medium risk on the grounds of the projected budgetary costs of ageing populations and considering the need to sustain high primary surpluses for a prolonged period of time.	The current level of gross debt, while declining, remains well above the reference value and the steady reduction of the debt ratio foreseen in the update is necessary. The Belgian strategy of putting longer-term concerns at the heart of fiscal policy, including by reducing debt, will undoubtedly alleviate sustainability risks and the 'ageing fund law' reinforces the political commitment by setting legally binding budgetary targets. Furthermore, recent measures aimed at increasing the effective retirement age and the employment ratio should contribute positively to sustainability. However, the current budgetary position may not be sufficient to cover fully the substantial increase in expenditure due to ageing populations, underlining the importance of maintaining large primary surpluses in the coming years.
CZ	The Czech Republic appears to be at high risk on the grounds of the projected budgetary costs of ageing populations.	While the debt ratio is currently relatively low in an EU perspective, the high deficit contributes to a rising debt ratio in the long-term projections until 2050, which increases the risk to debt sustainability. At the same time, the projected high increases of pension expenditure over the projection period are expected to put a significant burden on the public finances. A rigorous implementation of the planned consolidation of public finances over the medium term and a further strengthening of the budgetary position together with additional structural reforms to contain the increase in age-related expenditures, in particular on pensions and healthcare, appear to be of key importance in order to mitigate the risks to public finance sustainability.
DK	Denmark appears to be at low risk on the grounds of the projected budgetary costs of an ageing population, due to its solid public finances and provided that the assumed employment increases and low government consumption growth are achieved, which requires further labour market reforms and spending restraint.	The strategy of putting sustainability concerns at the heart of fiscal policymaking, including containing pension expenditure and involving accumulation of assets, contributes positively to the long-term outlook for public finances. The currently favourable budgetary position contributes to the financing of the projected budgetary impact of an ageing population and the medium-term budgetary plans are consistent with sustainable public finances.
DE	Germany appears to be at medium risk on the grounds of the projected budgetary costs of ageing populations.	The structural reforms carried out in previous years, and in particular the pension reform, have helped to contain future rises in public expenditure. In view of the current level of government gross debt exceeding the Treaty reference value of 60 % of GDP and the currently high structural deficit, implementing rigorously a strong budgetary consolidation over the programme period is necessary so as to reduce the risks to long-term sustainability.
EE	Estonia appears to be at low risk on the grounds of the projected budgetary costs of ageing populations.	The level of gross debt is currently very low and is projected to remain below the 60 % reference value throughout the projection period. Estonia's strategy of putting sustainability concerns at the heart of fiscal policymaking, including the pension system reform which involves the accumulation of assets, contributes positively to the outlook for the public finances. The current budgetary position in surplus contributes towards limiting the projected budgetary impact of an ageing population, and the medium-term budgetary plan of maintaining balanced budgets is consistent with low risks to public finance sustainability.
EL	Greece appears to be at high risk on the grounds of the projected budgetary costs of ageing populations.	The debt ratio is currently the highest in the EU, and is projected to remain at very high levels throughout the projection period up to 2050. It is therefore necessary to implement rigorously the planned consolidation of public finances over the medium term and to further strengthen the budgetary position in order to reduce risks to public finance sustainability. At the same time, the projected increase of government expenditure, notably on pensions, over the projection period is expected to put a high burden on public finances. To this end, resolutely implementing measures enacted and designing and carrying out additional structural reforms, notably on pensions, are necessary so as to reduce the risks to public finance sustainability.

(Continued on the next page)

Table A.3 (continued)

ES	Spain appears to be at medium risk on the grounds of the projected budgetary costs of ageing populations.	The currently favourable budgetary position, including the debt position and accumulation of assets in the social security reserve fund, contribute to absorb somewhat the projected increase of pension expenditures. However, the significant increase in these expenditures over the projection period suggests that the implementation of the measures within the announced social welfare reform aimed at containing the budgetary impact of ageing, notably concerning pensions, could be an important element in reducing risks to the sustainability of public finances.
FR	France appears to be at medium risk on the grounds of the projected budgetary costs of ageing populations.	Recent reforms, notably the 2003 pension reform, have substantially helped to contain future rises in public expenditure and their full implementation will be crucial to ensure the expected results. The current level of government gross debt is above the Treaty value of 60 % of GDP, and the currently high structural deficit, if unchanged, will prevent the necessary reduction of debt in view of the future cost of ageing. Therefore, in the absence of additional reforms, strong budgetary consolidation is needed in order to reduce the risks to long-term sustainability.
IE	Ireland appears to be at medium risk on the grounds of the projected budgetary costs of an ageing population.	The currently sound budgetary position, in conjunction with the low debt level and the accumulation of assets in the National Pension Reserve Fund, helps partly to offset the significant rise in age-related government expenditure, notably on pensions, projected over the long term. Ireland has also recently enacted reforms to the pension system for public servants, and the authorities envisage further measures that should contribute to a more sustainable basis for the provision of public-service pensions. The commitment to monitoring the adequacy of contribution rates through regular actuarial reviews is helpful. Implementing additional measures aimed at easing the budgetary impact of an ageing population over the long term would be nevertheless an important element in reducing risks to the sustainability of public finances.
IT	Italy appears to be at medium risk on the grounds of the projected budgetary costs of an ageing population.	Past reforms have helped to contain future rises in public expenditure and their full implementation, notably of the 2004 pension reform, will be crucial to obtain the expected results. The currently high level of gross debt and the weak budgetary position indicate the necessity for strong consolidation of public finances over the medium term to reduce risks to public finance sustainability
CY	Cyprus appears to be at high risk on the grounds of the projected budgetary costs of ageing populations.	Implementing rigorously the planned consolidation of public finances over the medium term will alleviate the risks to long-term sustainability and, as recognised in the programme, substantial pension and healthcare reform measures will also be necessary to contain the projected high increase in age-related expenditure in the period up to 2050 and to reduce the risk to long-term sustainability.
LV	Latvia appears to be at low risk on the grounds of the projected budgetary costs of ageing populations.	The currently very low level of gross debt is projected to remain below the 60 % reference value throughout the 2005–50 projection period. Latvia is implementing a pension reform launched in 1996 which contributes significantly to containing the budgetary impact of ageing populations.
LT	Lithuania appears to be at low risk on the grounds of the projected budgetary costs of ageing populations.	The level of gross debt is currently very low and is projected to remain below the 60 % of GDP reference value throughout most the projection period and a contained government deficit is planned over the programme period. Lithuania has enacted a pension reform which contributes significantly to containing the budgetary impact of ageing populations. Further changes to the pension system are envisaged by the Lithuanian authorities, aiming at increasing the replacement rates for pensioners and at the same time gradually raising the retirement age. The implementation of the latter measure would be key to ensuring the financial sustainability of the public pension system.
LU	Luxembourg appears to be at medium risk on the grounds of the projected budgetary costs of ageing populations.	The current level of debt is certainly very low and the planned consolidation over the medium term should contribute to partly alleviating the risk to public finance sustainability. However, Luxembourg has experienced, over the past two decades, a period of exceptionally strong employment growth which will progressively translate into a similar increase in the number of pensioners and into a large increase in pension expenditure. While it contributes significantly to public finance sustainability, the current size of pension fund assets will not be sufficient and, as recognised by the programme, some changes in the pension schemes will prove necessary at some point to contain future increase in public expenditure and reduce the risk to long-term sustainability.

(Continued on the next page)

Table A.3 (continued)

HU	Hungary appears to be at high risk on the grounds of the projected budgetary costs of ageing populations.	The gross debt/GDP ratio is currently close to the reference value and is projected to increase in the period up to 2050. Hungary reformed its pension system in the late 1990s, aimed at contained future rises in expenditure on pensions, which helped to reduce the budgetary impact of ageing. However, increases in government expenditure on pensions could be higher than projected in the update, suggesting that a close monitoring of factors that are assumed to offset such higher expenditures as well as developments in pension and other age-related expenditures is important. Moreover, the currently high structural deficit contributes to increase sustainability risks. It is therefore necessary to carry out a large consolidation of public finances over the medium term and to further strengthen the budgetary position in order to reduce risks to public finance sustainability.
MT	Malta appears to be at medium risk on the grounds of the projected budgetary costs of ageing populations.	The level of gross debt is currently above the 60 % reference value and the currently high structural deficit, if unchanged, will prevent the necessary reduction of the gross debt ratio from falling below the Treaty reference value over the long term. Implementing rigorously the planned budgetary consolidation over the programme period would therefore contribute to reducing debt below the reference value, with positive consequences for risks to public finance sustainability. Changes to the pension system are envisaged by the Maltese authorities, aiming at ensuring adequacy and sustainability of the pension system. The implementation of the reform would be key in ensuring the financial sustainability of the public pension system.
NL	The Netherlands appears to be at medium risk on the grounds of the projected budgetary costs of ageing populations.	The current level of debt is under the Treaty value of 60 % of GDP and the recent improvement of the budgetary situation in the Netherlands has helped alleviate risks to long-term sustainability. The implementation of recent reforms of the disability scheme will also contribute to curb long-term public spending. However, even fully taken into account, the projected future rise in revenue, notably due to delayed taxation of pensions is not sufficient to compensate the rise in public expenditure over the long term. Further budgetary consolidation may therefore be necessary to fully offset the impact of ageing.
AT	Austria appears to be at low risk on the grounds of the projected budgetary costs of ageing populations.	The level of debt, currently above 60 % of GDP, is projected to fall and remain below the reference value up to 2050 on the assumption that the planned budgetary consolidation is implemented. Austria's recent pension reform should contribute significantly to the containment of future increases in public expenditure. However, the structural deficit in the government finances, if not corrected, could pose a risk to public finance sustainability. Implementing the planned consolidation of public finances over the medium term is therefore instrumental to reducing the risks to public finance sustainability.
PL	Poland appears to be at low risk on the grounds of the projected budgetary costs of ageing populations.	The level of debt is currently under the 60 % reference value and should remain so under the assumption that savings related to the implementation of the 1999 pension reform will materialise. The reform is ambitious and contributes to the solving of the ageing problem, but measures recently adopted by the government to exclude particular employment groups from the reformed pension scheme could weaken the reform's long-term outcome, particularly if further exemptions from the pension schemes were granted. The realisation of contingent liabilities as well as the currently high structural deficit may increase the debt/GDP ratio faster than planned over the medium term. Implementing rigorously the planned consolidation of public finances over the medium term would reduce risks to long-term sustainability.
PT	Portugal appears to be at high risk on the grounds of the projected budgetary costs of ageing populations.	The currently high level of gross debt and the weak budgetary position indicate the necessity of implementing rigorously the planned consolidation of public finances over the medium term and ensuring the attainment of the budgetary targets in order to reduce risks to public finance sustainability. However, the projected increases in pension and healthcare expenditures over the projection period clearly indicate the necessity of a comprehensive strategy in dealing with the challenge posed by ageing populations that goes beyond improving the currently weak budgetary position. The ongoing introduction of changes to the pension and healthcare systems should go some way to making these systems more sustainable. However, further reforms are required to curb the projected growth of age-related expenditures.

(Continued on the next page)

Table A.3 (continued)

SI	Slovenia appears to be at high risk on the grounds of the projected budgetary costs of ageing populations.	The relatively low debt ratio will contribute to limit the budgetary impact of ageing. However, Slovenia will still face a very large increase in government expenditure. Even though the 1999 pension reform has significantly alleviated future increases in expenditure, its effects have been partly offset by the modification of the indexation rule. Further changes in the pension schemes, as recognised by the programme, will prove necessary at some point to contain future increase in government expenditure and reduce the risk to long-term sustainability. If no further measures are taken to relieve the pressures of age-related expenditure, the long-term sustainability of public finances will be undermined. A careful planning and timely adoption of measures are key in this regard.
SK	With regard to the sustainability of public finances, Slovakia appears to be at low risk on the grounds of the projected budgetary costs of ageing populations, subject to the sustained fiscal consolidation even beyond the programme period and the full implementation of enacted reforms, as well as other reforms of a structural nature (including a reduction of unemployment).	The level of debt is significantly under the 60 % reference value and should remain so under the assumption of unchanged policies for the coming two decades. However, the continuation of the currently high structural deficit will prevent the reduction of the debt/GDP ratio, which increases the risk to long-term sustainability. Implementing rigorously the planned consolidation of public finances over the medium term is necessary in order to reduce risks to long-term sustainability.
FI	Finland appears to be at low risk on the grounds of the projected budgetary costs of ageing populations.	The gross debt ratio is currently below the 60 % of GDP reference value, and is projected to remain below this value throughout most of the projection period which extends until 2050. The significant assets of social security and the currently favourable budgetary position contribute to limit the budgetary impact of ageing populations. However, in the long run, a risk to public finance sustainability could emerge, reflecting rising pension expenditure. Containing age-related expenditure over the long term, including the successful implementation of recent reform measures aimed at rising the effective retirement age, while maintaining sound budgetary positions would be key components in reducing risks to public finance sustainability.
SE	With regard to the sustainability of public finances, Sweden appears to be at low risk on the grounds of the projected budgetary costs of ageing populations.	The level of gross debt is currently comfortably below the 60 % reference value and is projected to remain below the reference value throughout most of the programme period. The Swedish strategy of putting sustainability concerns at the heart of fiscal policymaking, including the pension system reform which contains pension expenditure and involves accumulation of assets, contributes positively to the outlook for the public finances. The currently favourable budgetary position contributes to limiting the projected budgetary impact of ageing populations while the planned consolidation towards the 2 % MTO at the end of the programme period contributes to improving sustainability.
UK	With regard to the sustainability of public finances, in combination with an increase in the cost of ageing, the possibility of insufficient provision of private pensions increasing fiscal costs would put the United Kingdom at medium risk, unless changes are made to improve fiscal sustainability.	Over the period until 2050, a contained rise in public pension expenditure is projected. However, higher age-related expenditure pressures cannot be excluded as there is a possibility of insufficient provision of private pensions. Pension policy is currently under review and the government's response to the November 2005 Pensions Commission report is expected in spring this year. The currently favourable debt position contributes to limit somewhat the budgetary impact of ageing populations; however, gross debt is projected to go above the 60 % of GDP reference value during the projection period to 2050 if, compared to the structural budgetary position in 2005/06, no further budgetary consolidation takes place during the programme period. Improving the structural balance of government finances over the medium term would contribute to reducing risks to public finance sustainability.

Sources: Council opinions on the 2005/06 updated stability and convergence programmes on the basis of the Commission's assessment.

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