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Sustainability of public finances for a recovering economy

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Sustainability Report - 2009

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ABBREVIATIONS AND SYMBOLS USED

Member States

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

EA European Union Member States having adopted the single currency (BE, DE, EL, ES, FR, IE, IT, CY, LU, MT, NL, AU, PT, SI, SK, FI), i.e. countries participating in the economic and monetary union without a derogation

EU-27 European Union, 27 Member States

Other

AR	Ageing Report
CAB	Cyclically-Adjusted Balance
CBO	Congress Budget Office
DR	Debt Requirement in 2060
EDP	Excessive Deficit Procedure

EMU	Economic and Monetary Union
EPC	Economic Policy Committee
ERM II	European Exchange Rate Mechanism, replacing the original ERM in 1999
ESA95	European System of national Accounts 1995
GDP	Gross Domestic Product
IBP	Required adjustment given the initial budgetary position
IMF	International Monetary Fund
LTC	Required adjustment given the long-term change in the budgetary position
MTO	Medium-Term Objective
NAIRU	Non-Accelerating Inflation Rate of Unemployment
PAYG	Pay-As-You-Go
RPB	Required Primary Balance
SCP	Stability and Convergence Programmes
SFA	Stock-Flow Adjustment
SGP	Stability and Growth Pact

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EDITORIAL

The European economy is showing signs of entering a phase of recovery after a deep crisis. Thanks to effective and substantive policy action since autumn 2008, coordinated in the context of the European Economic Recovery Plan (EERP), a financial meltdown and a generalised loss of confidence has been avoided. However, uncertainty remains high, and there are still risks of negative feedback loops between the financial sector and the real economy. Given the output losses in previous quarters, economic activity is set to shrink by 4 percent this year, followed by a gradual recovery in 2010.

Fiscal policymaking has been successfully targeted to the need and urgency of pulling the economy out of the recession. Discretionary fiscal stimulus and unfettered automatic stabilisers have provided a cushion to economic activity and contributed to the recent signs of improvement, but have led to a substantial deterioration in government accounts. From a deficit of 0.8 percent of GDP in 2007 – the best result for thirty years – the government deficits in the EU are forecast to average 6 percent of GDP in 2009 and around 7 percent in 2010. In the three years to 2010, the gross debt ratio for the EU as a whole is increasing by more than 20 points. Moreover, very large contingent liabilities may translate into actual costs over the coming years, although some costs in support of the banking sector may be recouped.

The sustainability of public finances in a longer-term perspective must not be ignored. Though the debt and deficit increases are by themselves quite impressive, the projected impact on public finances of ageing populations is anticipated to dwarf the effect of the crisis many times over. The fiscal costs of the crisis and of projected demographic development compound each other and make fiscal sustainability an acute challenge. The available projections show that, in the absence of ambitious efforts to implement structural reforms and consolidate government accounts, there would be large increases in expenditure on debt interest and public pensions, as well as on healthcare and long-term care during the coming decades. Rising government expenditure and prospects of an ever-increasing debt would be an obstacle to a sustained and recovery and balanced economic growth in the longer run.

Successful fiscal expansion to counter recession and longer-term fiscal sustainability are not incompatible. Fiscal measures to increase confidence and support demand are only successful if they are perceived by the markets and public opinion as temporary and consistent with long-term sustainability. Otherwise, if economic agents expect a durable widening of debt, fiscal support will lose its effectiveness and can become counterproductive, in particular when the crisis climax has been overcome and one enters a phase of recovery.

Fiscal exit strategies aiming at achieving ambitious and realistic medium-term objectives need to be designed now, and implemented in a coordinated manner as soon as recovery takes hold, taking into account the specific situations of individual countries. To support the required reforms and enhance the credibility of fiscal adjustment – which inevitably stretches over a number of years – Member States may also need to develop further their own budgetary frameworks. In the Stability and Growth Pact context, debt sustainability should get a very prominent and explicit role in surveillance procedures.

Marco Buti
Director General
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EXECUTIVE SUMMARY

Alongside households and firms, governments too have to meet their financial obligations over time. The concept of the sustainability of the public finances concerns the ability of a government to finance its current debt and expected expenditure. There is no one clear-cut definition of a sustainable fiscal position; instead there are alternative theoretical and practical approaches to assessing the sustainability of public finances. In general, it can be stated that, at first instance, a sustainable position involves a debt level that does not entail interest payments so large that they cannot be paid. Thus, the sustainability of the public finances considers the ability of a government to service the costs of its debt through future revenues. Sustainability of public finances is therefore a long-term concept and differs from solvency which is concerned with the immediate (short run) ability of a country to finance its expenditure.

This report takes into account the crisis context and its impact on public finances at the moment when the first signs of stabilisation become apparent. As long as the recovery is not sustained and the discretionary measures deployed by governments are not withdrawn, the effect of the crisis on public finances cannot be fully determined. However, given the large impact of the crisis on public debt, it provides a timely input at a stage where fiscal policies must progressively be reoriented towards sustainability and exit strategies need to be designed now and implemented in a coordinated manner as soon as the recovery takes hold, taking into account the specific situation of individual countries.

The fiscal costs of the crisis and of projected demographic developments compound each other and make fiscal sustainability an acute challenge. The available projections show that, in the absence of ambitious efforts to implement structural reforms and consolidate government accounts, there would be very large increases in expenditure on debt interest and public pensions, as well as on healthcare and long-term care during the coming decades.

The assessment of the long-term sustainability of fiscal policy is now a well established part of budgetary surveillance in the EU. However, in a context of crisis and recovery, the sustainability assessment is undertaken under larger than usual uncertainty. On the one hand, it is difficult to correctly judge the initial structural fiscal position. This is related to the uncertainty on the potential output and the output gap, but also on the way that tax revenue has been affected by the crisis, as well as on the durable or temporary nature of the support measures adopted by governments. On the other hand, the crisis may constitute a structural break in our economies and have a protracted impact on the way these economies will grow over the next decades.

Population ageing is a phenomenon that the Member States are already familiar with, but whose consequences are yet to be felt in full force. Already, the European Union has experienced an ageing of its population through an increase in life expectancy and a fall in fertility rates. Over the next 50 years the EU population is expected to age further – this will have consequences for the public finances and their sustainability. The economic and budgetary consequences of the expected change in population structure stem mainly from a reduction in the working age population and an increase

in the number of elderly people requiring support. A lower number of economically active people leads to lower economic growth and lower taxes, while a higher number of retired people entails additional public provision of age-related transfers and services.

On the basis of current policies, age-related public expenditure is projected to increase on average by 4.3 percentage points of GDP by 2060 in the EU. The increase is mainly due to pension, healthcare and long-term care spending. As there are significant differences in both the structure of ageing and the social security systems that provide support for the elderly across the Member States, the projected increase in public expenditure also varies by country.

In order to asses the sustainability of fiscal policy in each Member State, a number of indicators have been developed. In general, these indicators assume a continuation of current revenue and expenditure policies over a finite or infinite timescale, usually taking the expected development of population size and structure into account. More specifically, these indicators reflect the projected development of main tax revenues (usually direct and indirect taxes and social contributions) and expenditure (i.e. pensions, health care, long-term care etc.) under current policy over a very long horizon. The sustainability indicators quantify the gap that must be closed to ensure the public obligations can be financed in the future.

In this report – in line with previous assessments – two main sustainability gap indicators are derived: the S1 and S2 indicators. Both S1 and S2 show the size of the permanent budget adjustment required to ensure that the public budget constraints are met. The S1 indicator shows the adjustment to the current primary balance required to reach a target government gross debt of 60% of GDP in 2060, including paying for any additional expenditure arising from an ageing population. The S2 indicator shows the adjustment to the current primary balance required to fulfil the infinite horizon intertemporal budget constraint, including paying for any additional expenditure arising from an ageing population. Thus, the difference between S1 and S2 is the length of the time horizon taken into account when assessing the sustainability of the public finances. In both cases, non-age related and non-interest spending is assumed to remain constant as a share of GDP in the relevant time period. In addition to those two indicators, the required primary balance (RPB) is also used to illustrate the sustainability situation. The RPB indicates the starting budgetary position which, if attained, ensures the sustainability of the public finances under no policy change assumptions. The RPB can then be used to compare the actual or planned budgetary strategy with the structural primary balance required for fulfilling the inter-temporal budget constraint. The major inputs into S1, S2 and RPB indicators are the current levels of gross government debt, the structural primary balance (i.e. public budget balance excluding interest payments on public debt, cyclical factors and one-off transactions) and the expected additional costs arising from population ageing.

A positive value of the gap indicators like S1 and S2 signifies the permanent adjustment to the fiscal policy that is necessary to ensure sustainability. The analysis is undertaken on the basis of current policy continuing in the future; this does not imply that it is realistic to assume that these policies will continue, but serves to quantify the necessary magnitude of the change in

policy in order to inform the debate. Indeed, the greater the value of the indicator the greater adjustment that is required to restore the sustainability of public budgets. On the contrary, a negative value indicates that fiscal policy is sustainable. The value of S1 and S2 can be further decomposed into parts characterising the required adjustment given the initial budgetary position (IBP), required adjustment given the long-term change in expenditure (LTC) and, in case of S1, the effect of the starting level of debt relative to the 60% target for 2060 (DR) to allow consideration and comparison of the contribution these components make to sustainability. Still, the indicators do not in themselves provide any guide as to how the adjustment should take place as the necessary adjustments could occur as result of an increase in government receipts or a reduction in its spending, or structural reforms.

The value of the S2 indicator shows a sustainability gap of 6.5% of GDP for the whole EU and of 5.8% of GDP for the euro area, albeit with wide variation between countries. The S1 indicator shows a sustainability gap for the EU countries and for the euro area, of 5.4% and 4.8% of GDP respectively. The decomposition results show that for the EU-27 countries, the IBP is responsible for 3.3 points of the S2 gap and 3.1 points for the S1 gap. This means that even without taking the cost of ageing into account, that is assuming that age-related expenditure in government accounts remained constant as a share of GDP, European countries should tighten their fiscal stance (in terms of the structural primary balance) by an average of 3.3% of GDP, or adopt structural reforms, for their public finances to return to a sustainable path. The long term cost of ageing (LTC) contributes 3.2 points to the S2 gap and 2 points to the S1 gap, with the figures being 3.5 and 2.4 points respectively for the euro area. This shows that the LTC has a significant fiscal impact on average. For the S1 gap, the requirement to reach a debt level of 60% of GDP by 2060 (DR) adds an adjustment of 0.2 points for the EU-27 and 0.3 points for the euro area.

Overall, the baseline results in this report differ significantly from those presented three years ago in the 2006 Sustainability Report. While the EU-25 average sustainability gap was estimated at 3.4% of GDP on S2, the current estimates are for 6.5% of GDP. On average, the sustainability gap has increased by 3.1% of GDP for the 25 countries that were members of the EU in 2006. While four Member States (Hungary, Portugal, Italy and Germany) show a lower sustainability gap than in the 2006 exercise, the remaining Member States show deterioration. Of these, in all cases expect Greece, Luxembourg and Malta, the deterioration is essentially due to the crisis-related weakening of the initial budgetary position rather than to an increase in the age-related costs and the delay in the required adjustment that leads to a higher LTC. For Spain, Greece, Ireland, Latvia and the UK the weakened initial budgetary position is responsible for an increase of the estimated sustainability gap of over 5% of GDP.

The financial and economic crisis has added to countries' sustainability difficulties, through the significantly worse than expected macro-economic and fiscal developments in 2008 and 2009 it has led to. In addition, there is marked uncertainty regarding economic growth in the medium and long-term perspective. As a consequence, a number of alternative macroeconomic scenarios were produced to look at the impact of the crisis. In a lost decade scenario, pension expenditure is 0.9% of GDP higher in 2060 relative to the

baseline, while total age related expenditure is 1.4% of GDP higher, with the most of the increases occurring between 2007 and 2020.

Although the crisis has added to the sustainability problems, the recovery is not likely to solve all the difficulties on its own. For some Member States the current deficits may return to surplus when the recovery comes, but where this is not the case budgetary consolidation will be necessary and should be undertaken as soon as the time is right in order to reduce long-term risks to public finance sustainability. Projections based on a scenario of growth returning to the long-term path of before the crisis show that without consolidation, the gross debt-to-GDP ratio for the EU as a whole could reach 100 percent as early as 2014, and keep on increasing. A consolidation effort of 0.5 percent of GDP per year until the Member States' MTOs are reached will only stabilise the debt ratio at around 100 percent of GDP if growth takes time to return to the pre-crisis trend. Thus, although fiscal support must be maintained until recovery is secured, fiscal policies must progressively be reoriented towards sustainability. Exit strategies need to be designed now and implemented in a coordinated manner as soon as recovery takes hold, taking into account the specific situations of individual countries.

Of course, the estimates presented in the report are partly determined by the underlying assumptions made. To assess the robustness of the sustainability indicators and to better understand the long-term sustainability risks in each country, the Sustainability Report quantifies the impact of changes in main assumptions on the sustainability indicators. In particular, alternative assumptions are presented for life expectancy, labour productivity, participation of older workers in the labour market, total employment, migration and the interest rate. For all these elements there is considerable uncertainty when predicting into the future, so considering the response of sustainability results to the underlying assumptions is important. Again, the final change of S2 as a response to a change in some of the mentioned parameters may differ country-by country as eligibility and indexation rules for age related expenditure are country specific.

On the basis of the sustainability indicators, as well as a number of other factors (including debt and assets, average pensions and tax burden), the EU Member States are classified in three categories depending on the degrees of long-term risk they face. Overall, only five countries are classified as low-risk countries, nine countries are classified as facing medium long-term risk, while thirteen countries are exposed to higher long-term risks.

Bulgaria, Denmark, Estonia, Finland and Sweden have relatively stronger budgetary positions and have undertaken comprehensive pension reforms in recent years. Though the crisis is leading to a deterioration in government balances and a substantial increase in government debt ratios of each of these countries, their structural fiscal positions remain sounder than in most other EU countries, and present therefore a low long-term risk. In Bulgaria, Denmark, Estonia and Sweden, the increase in age-related expenditure over the next decades is projected to be well below the EU average. Note, however, that the projections for Bulgaria and Estonia do not include any strengthening of social protection in the coming decades that may be necessary for their systems to converge with other EU countries. In Finland, the projected increase in expenditure is substantial and the fiscal cost of the

crisis has been large. However, the large stock of financial assets in the social security portfolio provides a cushion to absorb a deterioration in government accounts.

Belgium, Germany, France, Italy, Hungary, Luxembourg, Austria, Poland and Portugal are countries with very different characteristics in relation to their initial budgetary position and age-related expenditure. Belgium, Germany and Austria are projected to bear costs of ageing close to, or above, the EU average, but their initial budgetary positions are relatively sound, provided that the crisis-related deterioration in government accounts does not become structural. Though medium-term consolidation will improve the sustainability indicators, reforms to address rising age-related costs will be indispensable. For Belgium, the debt ratio – which is returning to above 100 percent of GDP – constitutes a burden and a specific risk. The projected increase in the age-related expenditure in Luxembourg is the highest of the whole EU; however, this risk is cushioned by the currently low debt and large government-owned financial assets. In general, for this group of countries, the long-term sustainability risk is medium. For France, Italy, Hungary, Poland and Portugal, the long-term costs of ageing are not projected to be particularly high. However, their initial budgetary positions imply that fiscal policy is unsustainable even without considering any increase in age-related expenditure. In all these countries, the crisis and the support to recovery are leading to a very fast increase in debt ratios, quickly offsetting the consolidation gains achieved in recent years. For Poland, projections indicate a fall in age-related expenditure over the long term because of the shift of pension provision to funded schemes; however, the projected reduction in expenditure is also related to a large cut in benefit ratios. This may raise issues of social sustainability by increasing old-age poverty. For France, ambitious fiscal consolidation, once the recovery is firmer, is indispensable and will constitute a major step to improve sustainability. In Portugal, a recent pension reform have done much to improve sustainability; however, the structural budgetary position remains largely unbalanced. In the case of Italy, fast fiscal consolidation once the recovery takes hold is indispensable to ensure a steady reduction in the very high debt ratio. The low sustainability gap of Hungary results from pension reform and recent fiscal consolidation; however, the correction in structural imbalances in recent years needs to be pursued further in order to reduce debt.

The Czech Republic, Cyprus, Ireland, Greece, Spain, Latvia, Lithuania, Malta, the Netherlands, Romania, Slovenia, Slovakia and the United Kingdom have sustainability gaps above 6 percent of GDP; over double that level in Ireland, Greece, Spain, Slovenia and the United Kingdom. In nearly all of these countries, the sustainability gaps are the result of a very large projected increase in age-related expenditure, compounded in most cases by large initial imbalances, and hence they are exposed to higher long-term risks. This indicates that closing their gaps will require both ambitious consolidation programmes that reduce debts and deficits in the coming years, and profound reforms of social protection. This is particularly the case for Greece, which faces the second highest increase in age-related expenditure of the entire EU, while its very high debt ratio adds to the concerns on sustainability. The possible continuing effects of the crisis on the budgetary position and on medium-term growth are a serious concern for most of the countries exposed to high long-term sustainability risks – in particular,

Ireland, Greece, Latvia, Spain and United Kingdom – for whom avoiding exponentially increasing debts is a policy challenge already in a medium-term perspective.

The report is structured as follows. Chapter I introduces the concept of sustainability and discusses how it will be measured. It introduces the additional difficulties that demographic changes and the fiscal costs of the crisis poses to sustainability. Chapter II presents data on projected demographics in the EU for the years until 2060, and the projected increases in a number of age-related expenditure categories. Chapter III presents the results of the sustainability analysis in the form of the S1 and S2 indicators and breaks the results down in their constituent parts. It compares the results with those presented in the 2006 Sustainability Report and considers the cost of delaying action. Chapter IV considers the effect that the economic crisis might have on sustainability and by presenting the effect that alternative post-crisis macroeconomic scenarios might have. It considers the impact that consolidation in line with the existing medium term budgetary objectives would have, if undertaken once the economies are firmly in the recovery phase. Finally it presents a sensitivity analysis which considers how different underlying assumptions would affect the value of the S2 indicator. Chapter V discusses other factors that affect sustainability but which do not directly enter the calculation of the indicators. These are the additional risk of debt and the value of government assets, the level of pensions and the social and political risks that these may entail, the role of contingent liabilities and the implications that different levels of existing tax ratios have for governments' policy choices. Chapter VI presents an overall classification of countries according to the long-term sustainability risks that they face, while detailed data, and discussion of the results, for each Member State is set out in Chapter VII.

Chapter I

Sustainability of public finances

SUMMARY

The crisis-related fiscal expansions and the ageing of European Union's population raise questions about the sustainability of the Member States' public finances. As the share of working age people in the population falls and the share of the old increases, economies are faced with lower economic growth and higher costs associated with providing services for the ageing population. This results in pressure on the public finances; bold measures will be necessary to ensure that they return to a sustainable footing before the full effect of ageing is felt.

Sustainability relates to the ability of a government to assume the financial burden of its debt currently and in the future. While there is no one clear-cut definition of a sustainable fiscal position, this chapter defines two sustainability gap indicators which are most widely used in the EU to measure the sustainability challenges that Member States face. These are:

The S1 indicator shows the durable adjustment to the current primary balance required to reach a target debt of 60% of GDP in 2060, including paying for any additional expenditure arising from an ageing population.

The S2 indicator shows the durable adjustment of the current primary balance required to fulfil the infinite horizon intertemporal budget constraints, including paying for any additional expenditure arising from an ageing population.

The sustainability indicators quantify the required permanent budgetary adjustment (e.g. a durable reduction of non age-related public expenditure as a share of GDP or a constant increase in public revenue as a share of GDP) to ensure the sustainability of the public finances. 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 in a long-term perspective. They can be decomposed into a part that relates to the starting fiscal position and a part that relates to the additional costs of an ageing population. Decomposing them in this way gives additional information about the nature of the policy response that is appropriate. In particular, where the costs of ageing are a significant risk factor to the sustainability of the public finances, the case for reforming the social protection systems becomes strong. The sustainability indicators also provide information on the cost that would result from a delay in addressing the long-term sustainability issues.

The analysis in this report uses the projected changes in age-related expenditure from the Commission and EPC's 2009 Ageing Report. It considers the additional expenditure on pensions, healthcare and long-term care that population forecasts entail, as well as the potentially offsetting effect of changes to education expenditure and unemployment benefits. The different social protection structures and demographic trends of the Member States mean that such expenditure is expected to evolve in very different ways across countries.

The analysis undertaken in this report takes the 2009 fiscal position as a basis and projects the trajectory of the public finances on a partial equilibrium basis. All projections are done on a 'no policy change' assumption, whereby it is assumed that already approved legislation continues to apply, but that most tax receipts and spending stay constant as a share of GDP over the long term. This assumption of unchanged polices over the whole projection period is not adopted for reasons of realism, but because it is the assumption that allows a robust assessment of the required remedial action to avoid that the EU public finances enter in an exponentially increasing debt spiral.

1. DEFINING SUSTAINABILITY

1.1. WHAT IS MEANT BY THE SUSTAINABILITY OF THE PUBLIC FINANCES

The concept of the sustainability of the public finances relates to the ability of a government to assume the financial burden of its debt currently and going forward. There is no clear-cut definition of a sustainable fiscal position, though the concept is rather intuitive. At a first instance it involves a debt level that does not entail – either now or in the foreseeable future – interest payments so large that they cannot be paid.

A first way of writing down the widest definition of sustainability is to look at the solvency condition for the general government through the government's inter-temporal budget constraint. ([1]) This considers the ability of the government to meet the costs of its debt through future revenues. The intertemporal budget constraint is satisfied if the projected outflows of the government (current public debt and the discounted value of all future expenditure, including the projected increase in age-related expenditure) are covered by the discounted value of all future government revenue. This is equivalent to saying that the government must run sufficiently large primary surpluses (receipts minus spending excluding interest payments) going forward to cover the cost of servicing its debt.

The intertemporal budget constraint is most often considered over an infinite horizon with no implications about when the primary surpluses should be larger or smaller, nor what balance of expenditure and receipts they should be driven by. Nor does it imply that that the debt should stand at a particular finite value at any given point in time. As such it could, theoretically, be satisfied by very high levels of debt and, therefore, very high interest payments, in the short term or at any time horizon, as long as there is reason to believe that sufficiently large primary surpluses will be achieved afterwards.

While the infinite horizon gives a comprehensive picture of the sustainability of the public finances, it can prove weak from a policy point of view due to its lack of immediacy and raises issues of time consistency. Alternatively, a finite version of the budget constraint can be defined, by setting a target date and a target debt level and considering whether and how this can be achieved. The choice of target date reflects the aim of the exercise in terms of how it is expected to guide policy. By picking a short timescale, the requirements placed on the government are stronger as there is little possibility of adjusting the fiscal position in the future to ensure that this budget constraint is met, though some challenges (such as the demographic developments and potential growth after the target date) are disregarded. Conversely, the further away the target date, the more abstract the exercise becomes as a guide to policymakers, and the more relevant time consistency issues become. By choosing too high a target debt level, there is the possibility that sustainability is compromised in the period beyond the target date, while choosing too low a debt level can implicitly impose an undue burden on current taxpayers versus those in the more distant future. In this report, the target date is 2060 – ten years more than 2050, the target date in the Commission's previous Sustainability Report. ([2]) The target level of debt is 60 % of GDP, which is the threshold for the general government gross debt in the EC Treaty.

The analysis presented in this report aims to provide an estimate of whether the current budgetary position in the Member States presents a sustainability gap going forward, once the effects of an ageing population are taken into account. The analysis aims to aid the understanding of the choices the governments of the Member States face over the long term and to inform the debate about the magnitude of changes that need to be considered.

([1]) $$D_{t_0} - \sum_{t=t_0+1}^{\infty} \frac{PB_t}{(1+r)^{t-t_0}} = 0$$

where D_{t0} is gross debt as a share of GDP in the year before the long-term projections, PB_t is the structural primary balance (receipts minus spending excluding debt interest payments) at time t and r is the differential between the nominal interest rate and the nominal GDP growth rate.

([2]) 'Long-Term Sustainability of Public Finances in the EU,' *European Economy*, 4/2006 and respective Commission communication , COM (2006) 574 final, 12 October 2006.

1.2. DEFINING THE SUSTAINABILITY INDICATORS

In this report sustainability is assessed using current levels of gross government debt, the primary balance in structural terms (*i. e.* the cyclically-adjusted primary balance and removing one-off transactions) and expected additional costs arising from ageing to see whether an infinite and a finite version of the intertemporal budget constraint are met. The greater the expected costs of ageing, the harder it is for the intertemporal constraints to be met, other things being equal, as the current primary balance will need to be sufficiently large to account for these additional future costs. Corresponding to each version of the budget constraint – over an finite or infinite horizon – two sustainability gap indicators are derived, showing the size of the permanent budget adjustment required to ensure that the constraints are met.

The S1 indicator shows the durable adjustment to the structural primary balance required to reach a target debt of 60% of GDP in 2060, including paying for any additional expenditure from now to the target date, arising from an ageing population.

The choice of the debt target for the S1 indicator is in line with the debt threshold in the Treaty. The timescale has been chosen to be long enough to allow the impact of ageing to be analysed in a meaningful way, while still remaining within the sights of current taxpayers and policy makers.

The S2 indicator shows the adjustment to the structural primary balance required to fulfil the infinite horizon intertemporal budget constraint, including paying for any additional expenditure arising from an ageing population.

1.3. INTERPRETING THE SUSTAINABILITY INDICATORS

The sustainability indicators quantify the gap that must be closed to ensure the sustainability of the public finances. The larger the value of the gap indicators, the greater is the necessary adjustment to the structural primary balance to ensure sustainability. A negative value indicates that the intertemporal budget constraint is met; even deterioration in the primary balance could allow the constraint to be met.

The indicators do not provide any guide as to how the adjustment should take place. Although the sustainability indicators are sometimes referred to as *tax* gaps, the necessary adjustments could occur as result of an increase in government receipts (usually through higher direct or indirect taxes), a reduction in non age related spending, or through policy responses aimed at reducing the cost of ageing. The choice of measure, or combination of measures, may itself have an impact on the economy or on fiscal sustainability. For example, a large increase in the tax burden to fill the sustainability gap may itself lead to deterioration in the economy's growth prospects, with consequences for sustainability.

The sustainability gap indicators are one way of presenting the results of the sustainability analysis. An alternative would be to look at the future level of debt assuming no policy action in response to the sustainability imbalances. This exercise is also presented later in the report, showing a more cumulative or 'stock assessment' of the challenge faced by each Member State.

The required primary balance (RPB) is another indicator used to present the sustainability situation. The RPB indicates the starting budgetary position which, if attained, ensures the sustainability of the public finances under no policy change assumptions. Unlike the S2 indicator, it is a level for the budgetary position, rather than a gap. It is important to note that the RPB is not a static indicator. For a country that has reached its RPB (so with a S2 gap which is zero and which is projected to remain zero), the actual and required primary balance will progressively deteriorate given the increase in ageing-related expenditure, though sustainability is ensured.

Where the actual (or planned for the medium term) budgetary balance is equal or more positive than the RPB, the public finances are sustainable. The opposite is true where the actual or planned budgetary balance is smaller or more negative than the RPB. In practice, the RPB is often calculated as the projected average structural primary balance over several years. In this report it is given for the first five years after the Commission Spring 2009 forecast horizon (2011–15). Like the sustainability

gaps (S1 and S2), the RPB does not provide firm guidance on which policy measures (such as tax increases, spending cuts or reforms in social protection) are required to return to sustainable public finances. However, when the RPB is so large that it is not realistic, medium-term fiscal consolidation via tax or spending measures will not be enough and reform of the demographic-driven spending categories (notably public pensions and healthcare) appear indispensable.

1.4. OTHER CONCEPTS OF SUSTAINABILITY

Depending on the public policy interest, other concepts of sustainability exist. For example, concepts of political or social sustainability or of inter-generational equity would be assessed using a different approach to that pursued in this report. Debt involves the deferral of payments to future taxpayers and restricts choice about how to spend the products of their labour and investment. Questions about inter-generational equity, therefore, also need to be considered by policy makers. It might, for example, be informative to look at the marginal benefit to future taxpayers of the expenditure financed through debt whose repayment may fall on them. For small economies outside the monetary union, the currency denomination of debt and whether debt is held internally or externally may also be important.

Moreover, while a given level of debt may not be unbearable, the budgetary pressures caused by the debt burden can create political incentives for governments to default on their debt, either explicitly or through inflation. The EU, and in particular, the euro area countries, is well equipped to resist pressures to inflate away government debts.

2. DERIVING THE SUSTAINABILITY INDICATORS

The sustainability indicators, S1 and S2, show the gap between the current budgetary position expressed in terms of the structural balance and that required to ensure sustainability.

Table II.2.1 breaks the indicators down into the three factors that the gap depends on, and the three corresponding components of the indicators. It shows that the initial budgetary position and the long term costs of ageing affect both indicators directly, while the S1 indicator is also directly affected by the starting level of debt relative to the 60% target for 2060. In the results shown in later sections of this report, the contribution of these three components is considered in detail.

2.1. REQUIRED ADJUSTMENT GIVEN THE INITIAL BUDGETARY POSITION

Irrespective of the increase in government expenditure due to projected demographic developments, the public finances of a given country may be unsustainable if the initial structural primary balance, the projected interest payments and economic growth imply an ever increasing debt ratio. Thus, the first component of the S1 and S2 indicators corresponds to the gap between the initial structural primary balance and the debt-stabilising primary surplus. This component is referred to as the *required adjustment given the initial budgetary position*, or simply IBP. ([3])

In order to correctly account for the contribution of the budget balance at the starting year, it is important to consider the underlying fiscal position, rather than the actual value of the government surplus or deficit published by the statisticians. This means adjusting the starting balance for the effect of the business cycle and temporary measures, such as one-off expenditure and revenues, to derive the structural balance. This report usually uses the forecasts for 2009, as published in the European Commission 2009 spring Forecasts, for the starting position of the both the structural balance and debt level.

Correctly estimating the structural balance requires an estimation of the position of the economic activity relative to its potential, the so-called output gap, and an estimation of the effect of the economic cycles on government revenues and spending. ([4]) Cyclical adjustment always entails a certain level of imprecision. However, under the current circumstances, with the European economy in the early phases of recovery after a deep financial and economic crisis, the inherent difficulties are unusually large. First, it is difficult to correctly judge the position of the output gap. In the light of possible structural changes, the potential output of today, as well as its trajectory in the future contains a substantial element of uncertainty. These factors act to compound the fact that tax elasticities tend to vary over the economic cycle and that they are implicitly affected by asset price changes which are difficult to model or predict. The nature of the crisis has been such that the element of uncertainty linked to judging the initial budgetary position and its contribution to sustainability over time is of particular significance.

The forecast trajectory of economic growth over the medium- and long-term is a crucial factor in determining the impact of the initial budgetary position and debt on sustainability, and the required adjustment given the initial budgetary position. As this trajectory is particularly uncertain given the economic and financial crisis, Chapter IV derives alternative estimates for the sustainability indicators under alternative scenario.

([3]) As the size of this component depends on expected growth and interest rates, it is not necessarily the case that it will have the same magnitude in the S1 and S2 indicators, as expected growth and interest rates might vary over time. However, in practice IBP (S1) an IBP (S2) are quite close to each other. Moreover, also because of the expected movements in growth and interest rates, including those of a cyclical nature, the concept of 'debt stabilisation' should be understood in a long-term perspective and not year by year.

([4]) Cycles in assets prices may also be relevant in estimating the structural balance, though they are usually not considered explicitly in most structural adjustment methods.

Table I.2.1: **Summarising the indicators**

	Required adjustment given the initial budgetary position (IBP)		Required adjustment to reach debt to GDP ratio of 60% in 2060 (DR)		Required adjustment due to long-term changes in the primary balance (LTC)
S1=	Gap to the debt-stabilising primary balance	+	Additional adjustment required to reach a debt target of 60% of GDP in 2060	+	Additional adjustment required to finance the increase in public expenditure due to ageing up to 2060
S2=	Gap to the debt-stabilising primary balance	+	0	+	Additional adjustment required to finance the increase in public expenditure due to ageing over an infinite horizon

Source: Commission services

2.2. THE DEBT REQUIREMENT BY 2060

The starting level of debt enters the definition of both indicators through the initial budgetary position, as it determines the size of interest payments on government debt that must be covered. In the case of the S1 indicator only, the size of adjustment required also directly depends on the debt requirement set at end of the time period (60% of GDP in 2060). For countries with starting government gross debt above 60% of GDP the *required adjustment to reach the target debt by 2060* (DR) term will increase the size of the indicator as the effort of debt reduction by 2060 needs to be considered. For countries with current debt of below 60%, the DR component will be negative and reduce the S1 indicator.

The current financial and economic crisis, adds an element of uncertainty to the DR estimate too. The estimates presented later in the report use debt from 2009 as the base. Yet with the historically large deficit ratios being recorded in several European countries, in some cases up to 10% of GDP, the increase in debt likely to be seen over the next couple of years could lead to very different estimates of the contribution of the debt component to the S1 indicator. Moreover, the accumulation of financial assets – such as shares, other equity or loans, as part of the bail out of banks and other entities heavily hit by the crisis – by governments also implies that the government gross debts of several countries are increasing much faster than implicit by the deficit ([5]).

2.3. THE REQUIRED ADJUSTMENT GIVEN THE INCREASE IN AGE-RELATED COSTS

Finally, both S1 and S2 include a component which corresponds to the *required adjustment due to the long-term changes in government expenditure* (or simply, LTC). The third component of both indicators is the additional adjustment required as a result of these expenses either to 2060 or over an infinite horizon. The magnitude of the LTC component depends on both the demographic outlook for countries and their social protection arrangements. The LTC component represents either the change required to pay for the additional expenses or the size of a structural reform ([6]) to social protection schemes to avoid the increase that would otherwise ensue.

The size of this component is likely to vary between the S1 and S2 indicators. The larger the part of the expected ageing of the population that is to occur in the short- rather than medium-term

([5]) See European Commission (2009), 'Public Finances in EMU-2009', chapter II-1, *European Economy*, 5, for more details on how government transactions to bail out banks and other entities hit by the crisis are recorded in government accounts – in particular with respect to the government deficit and debt. See also *Eurostat News Release* 103/2009 of 15 July 2009: 'The statistical recording of public interventions to support financial institutions and financial markets during the financial crisis.'

([6]) The *size* of a structural reform to social protection schemes (such as public pensions and healthcare) means here the discounted sum of the spending savings implied by that reform.

future, the larger the impact on the S1 indicator relative to the S2 indicator. Conversely, if the costs of an ageing population are mainly borne closer to 2060 than now, the larger the relative impact of ageing on the S2 indicator.

The economic crisis has an impact on LTC in so far as the crisis leads to a durable fall in potential growth, and indirectly on several government outlay that somehow depend on growth. Moreover, the shock to asset prices and asset returns also impact on the net costs of providing pension for the pension schemes that control large assets.

2.4. POLICY IMPLICATIONS

The decomposition of the indicators allows an analysis of the driving forces behind the results summarised by the indicators. The same overall sustainability gap may be the result of either the current fiscal position (see IBP), the level of debt (see DR) or the expected increase in ageing-related expenditure (see LTC). In relation to the latter, comparing LTC components in S1 and S2 (*i.e.* the finite- and infinite-horizon versions of the sustainability indicators) also allows identification of the urgency in addressing the demographic-related sustainability issues.

An optimal policy response requires an understanding of these issues. For example, a sustainability gap arising primarily from an imbalanced initial budgetary position being insufficient or one that is insufficient to stabilise debt might be easier to rectify politically through tax increases or spending cuts, than one due primarily to the costs of ageing. In the latter case, costs on government budgets might only become directly visible in the future and anticipatory remedial action may be more difficult to implement. The overall efficiency of fiscal consolidation approach (increasing taxes or cutting expenditure) or of approaches based on structural reforms of social protection also depends on the source (IBP, DR or LTC) of the sustainability imbalances.

3. ESTIMATING THE COST OF AGEING

3.1. PROJECTING AGE-RELATED EXPENDITURE

An ageing population puts pressure on a country's finances primarily through its effects on the labour market and hence economic growth and age-related expenditure. With fewer people being of working age, the potential growth rate of the economy is reduced. These changes affect each of the components of the S1 and S2 indicators, through changes in the estimated rate of economic growth.

The direct costs of ageing involve increases in age-related expenditure. This report uses the estimates of the fiscal impact of these changes as presented in the 2009 Ageing Report. ([7]) As the aim is to provide an estimate of the long-term effect on sustainability of ageing, the analysis takes the figures for age-related costs starting in 2010. The projections are made on a basis of no-policy change assumption where it is assumed that current tax and spending arrangements continue in the future.

The Ageing Report considers the public cost of ageing using five expenditure categories. This report uses the projected changes to these categories to quantify the impact of ageing on the sustainability of the public finances.

Public pensions' expenditure increases with an older population. This category consists of old age pensions and survivors' pensions, early retirement funding, various disability benefits and other items of public expenditure that provide support for those unable to work. The extent to which such expenditure increases depends on both the degree of ageing – the number of retirees and the average length in retirement, which is directly linked with longevity – but also very significantly on the retirement age and the structure of the pension and support systems in place. Such systems typically constitute a significant portion of the public budget, but their structures vary widely, in terms of their current generosity and of their dynamic properties.

Healthcare expenditure is also affected by the age structure of the population and the way total health-related costs are split between the government, patients or private insurance bodies. However, the link between age and the cost of healthcare is much less linear than for pensions. Although there is evidence that the consumption of healthcare services by the elderly is substantially larger than that by prime-age adults, an increase in life expectancy is typically also accompanied by an increase in the average number of healthy years and so healthcare costs need not increase in a linear fashion. The reference scenario from the Ageing Report which is used in the baseline results in this report assumes that half the increase in life expectancy is spent in good health.

Long-term care expenditure relates to the costs associated with helping people carry out daily living activities. This is also expected to increase with an ageing population. The increase depends, as with the healthcare expenditure, on the 'quality' of the ageing, but also crucially on the government support available for individuals less able to look after themselves. There is large variation between Member States in terms of their reliance on informal care (usually provided by family members) which might be difficult to maintain going forward.

Education expenditure as a share of GDP tends to fall as the population ages, as young people make up a smaller share of the population. In order to estimate the size of this change, the Ageing Report considers the impact of the change in the number of children and young people on total staff compensation, other costs (such as educational infrastructure) and the cost of direct and indirect transfers to students and their households.

Unemployment benefits and other benefits for those outside the labour market are also expected to put relatively less pressure on government balances, as the higher dependency ratio is likely to result in lower levels of unemployment amongst labour market participants and greater incentives to participate in the labour market for working age individuals.

([7]) '2009 Ageing Report' joint report of the European Commission and the EPC, *European Economy*, 2, and Commission Communication 'Dealing with the Impact of an Ageing Population in the EU,' COM (2009) 180 final, 21 April 2009.

The social protection systems in place determine how a change in the population translates into costs for government accounts. The projections used for the analysis are presented in Chapter II. Sensitivity scenarios in Chapter IV show the uncertainty involved in projections for these variables and the implications on the different measures of sustainability gaps.

Neither the Ageing Report nor this report make any normative judgement about the efficiency or desirability of Member States' social protection systems – it merely assesses their expected costs. Nor are the second-order effects of these policies on the economy taken into account. For example, inadequate healthcare may reduce the labour market participation of individuals who might otherwise be able and willing to work to an older age. Higher education standards may require higher expenditure but increase the efficiency of labour force and potential output in the medium to long term. Inadequate provision of formal long-term care may adversely effect the labour market participation of women, which in turn would have a knock-on effect on economic growth.

3.2. A PARTIAL EQUILIBRIUM ANALYSIS

The sustainability indicators presented in this report are derived on the basis of a partial equilibrium analysis. A number of assumptions are therefore necessary for estimation to be possible.

On the real side of the economy, the growth path uses the demographic profile to estimate future labour input by making assumptions about the total population, employment rate, the share of the working age population and the average hours worked. This is combined with assumptions about total factor productivity (TFP) and capital deepening to reach a forecast of potential GDP, using a production function approach. This depends on demographic developments (*i.e.* on working age population) but is exogenous relative to public finance and therefore fiscal policy developments. The growth projection does not, therefore, consider the impact that unsustainable fiscal policies or the increase in tax burden to close sustainability gaps may have on economic activity. In the same manner, the real interest rates are set in an exogenous manner at 3% for all Member States, irrespective of the government debt developments in the EU, the euro area and globally.

3.3. UNCHANGED POLICY ASSUMPTION

The projections assume that social protection arrangements remain unchanged going forward, and that nearly all government revenues and non-age related expenditure stays constant as a share of GDP. This no-policy change assumption is a purely technical assumption. It does not mean that such a scenario is realistic. However it is a necessary assumption, given that the purpose of the exercise is to identify unsustainable fiscal policies and to measure the size of the required remedial action.

Two components of government revenue form an exception to the constant share assumption. Projections for revenues from pension taxation and property income are modelled separately. In the former case it is because revenues from pension taxation as themselves a consequence of ageing. It is modelled using elasticities of personal income tax revenues with respect to the tax base. This is a technical improvement as compared to the 2006 Sustainability Report where such modelling was not undertaken.

Moreover, in the 2006 Sustainability Report property income was assumed to remain constant as a share of GDP. In addition no accumulation of financial assets (or other components of the stock-flows adjustment (SFA)) were incorporated in the long-run so that the evolution of nominal debt was only driven by the actual government deficit/surplus. These two assumptions are, however, not mutually consistent. A constant ratio-to-GDP of property income would have required a regular accumulation of financial assets, with implications for gross debt developments. Therefore the assumption of constancy of property income as ratio to GDP in the Sustainability Report of 2006 was, therefore, abandoned.

The assumption of no accumulation of financial assets and, therefore, no SFA assumption is kept in this report. It implies that the nominal value of government-owned financial assets remains constant and so there is a decrease of the share of those assets in GDP. Under the assumption that nominal returns on assets are constant over time,

property income from those assets also decreases as a share of GDP. This is clearly the case for interest-bearing assets (bonds) but also applies to shares and other equity. ([8])

The increases in age-related expenditure due to demographic change are added to a constant level of other public spending as a share of GDP. For the years beyond 2060 – the horizon of the available demographic projections – further assumptions are also necessary in relation to the infinite-horizon budgetary constraint and the S2 indicator. Beyond that year it is assumed that government revenue and primary expenditure, including age-related expenditure, remain constant as a share of GDP, while interest payments evolve in line with debt developments. In so far as the EU population keeps ageing beyond 2060, this assumption implies underestimating the sustainability gap (S2), though the size of such a projection error is minimised by the discounting of all future flows.

([8]) Returns on assets that are currently owned by government are recorded as property income, and therefore included in government revenue reducing the general government deficit. This is why the change in the primary balances implied by the property income projections is included in the required adjustment given the initial budgetary position (IBP) term of the sustainability indicators. More details on property income projections and revenue projections from pension taxation are included in an appendix.

Chapter II

The economic and budgetary implications of ageing

SUMMARY

An increase in life expectancy, alongside a fall in fertility rates is leading to an accelerated ageing of the population in the EU and other parts of the world. Over the years to 2060, the time period covered by this report, the EU population is set to age further. Aside from the social consequences, population ageing has significant economic consequences due to a reduction in the working age population and an increase in government expenditure related to ageing.

Population ageing is not a new phenomenon in the European Union. Already, increased life expectancy and falling fertility rates have led to a change in the demographic structure. Over the next 50 years, the phenomenon of an ageing population is projected to intensify with life expectancy increasing by 7 years for women and 8 ½ years for men, on average. Alongside this, fertility rates are projected to pick up somewhat from their current level of 1.5 children per woman, to 1.6. They will therefore remain well below the stable population level of 2.1, thus contributing to a falling population. A continuation of net migration into the European Union should alleviate some of the effects of increased longevity and low birth rates, but this too is projected to slow, albeit with great uncertainty underpinning the projections.

These changes in the population structure have significant economic consequences, stemming mainly from a reduction in the working age population and an increase in the number of elderly people requiring support. Overall, the old age dependency ratio defined as the population aged 65 or over as a percentage of the population aged 15 to 64, is projected to increase from 25% in 2007 to 54% in 2060. In parallel, the number of individuals aged 15 to 64 is set to fall from 332 million in 2007 to 283 million by 2060.

A decrease in the number of people of working age reduces the potential economic growth rate of a country. For the EU – before considering any durable impact on medium- to long-term growth of crisis which is discussed in chapter IV – potential growth is forecast to fall from 2.4% per annum over 2007–20 to 1.3% over 2041–60.

Aside from the effect on economic growth, an ageing population also entails additional government expenditure in terms of public provision of age-related transfers and services. The fiscal impact of ageing is therefore projected to be substantial in almost all Member States; these costs will accelerate significantly over the course of the next decade.

An elderly population requires support in the form of pensions, healthcare and long-term care. Of these, old-age pension provision is currently the most significant budget item, although its share of GDP varies widely, ranging from 5% in Latvia to 14% in Italy. By 2060, the Member States' public finances would face spending increases of 2.3 percentage points of GDP, on average, on the basis of current pension structures. The size of the increase differs significantly across Member States and pension reforms enacted in a number of countries are bringing positive results in terms of expenditure containment and sustainability of public finances. Almost all Member States have tightened the eligibility requirements for receiving a public pension, mainly by raising the retirement age and restricting access to early retirement schemes.

Once projected spending on healthcare and long-term care has been added, and the decreases in unemployment benefit and education expenditure have been netted out, age-related expenditure over the EU is forecast to rise by 4½ percentage points of GDP by 2060, from a base of 23¼% of GDP (projected for 2010). However, while Poland is expecting a reduction in age-related expenditure, Greece and Luxembourg are forecast to have increases of over 15 percentage points of GDP, with all other countries lying between these two extremes.

1. THE EFFECT OF DEMOGRAPHIC CHANGES

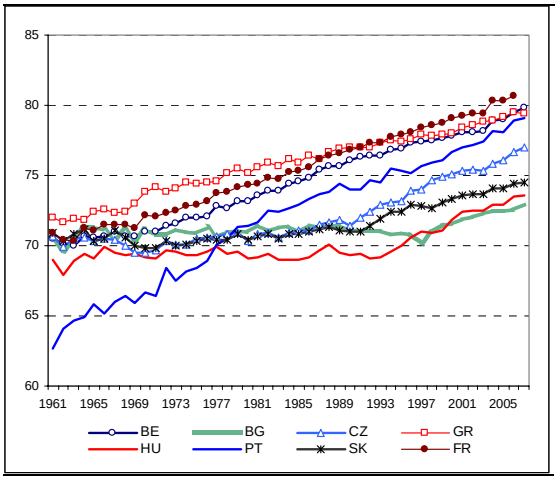
An increase in life expectancy, alongside a fall in fertility rates is leading to an accelerated ageing of the population in the EU and other parts of the world. Over the years to 2060, the time period covered by this report, the EU population is set to age further. Aside from several social consequences, population ageing has significant economic consequences due to a reduction in the working age population and an increase in government expenditure.

This chapter looks at population projections that underpin this report and considers the way in which they are likely to affect the economies of the Member States of the European Union.

1.1. POPULATION AGEING

Population ageing is a phenomenon that the Member States are already familiar with, but whose consequences are yet to be felt in full force. Already, the European Union has experienced an ageing of its population through an increase in life expectancy and a fall in fertility rates. This can be seen in graphs II.1.1 and II.1.2.

Graph II.1.1: **Life expectancy at birth, 1960 to 2008, selected countries (males and females)**

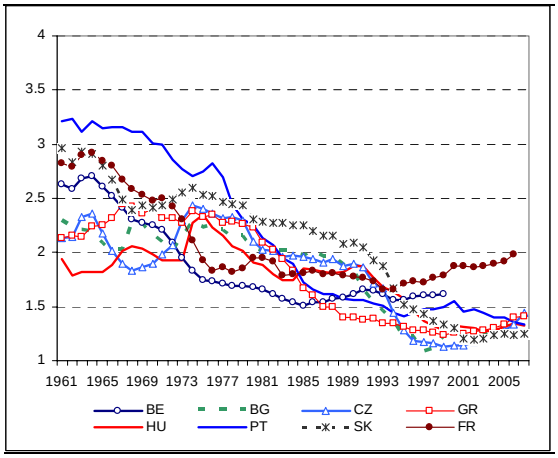


Source: Eurostat.

Graph II.1.1 shows life expectancy at birth for eight selected EU Member States from 1961 to 2008. Although there is variation between countries the overall trend is clear. The overall effect is set to intensify over the years to 2060, the years covered by this report. The figures underpinning the analysis in this report are the Eurostat population projections EUROPOP 2008. ([9])

Life expectancy is projected to continue changing over the next 50 years (see Table II.1.1), continuing the trend of increases in life expectancy in all Member States for several decades. Life expectancy at birth for women is projected to increase from 82.1 years in 2008 to 89.0 years by 2060, while for men it is set to increase from 76.0 years to 84.5. Overall, it is in countries that currently have lower life expectancy that the increase is projected to be greatest as the projections assume a catching up in life expectancy.

Graph II.1.2: **Fertility rates, 1960-2008, selected Member States**



Source: Eurostat.

Fertility in the EU has declined sharply in past decades. The total fertility rate, defined as the average number of births per woman, has fallen from a 'baby boom' level of 2.5 in the late 1960s to 1.5 in 2008, on average for the EU as a whole. Graph II.1.2 shows the evolution of fertility rate in eight selected EU Member States over the years 1961 to 2008; the decline over the years is evident to see.

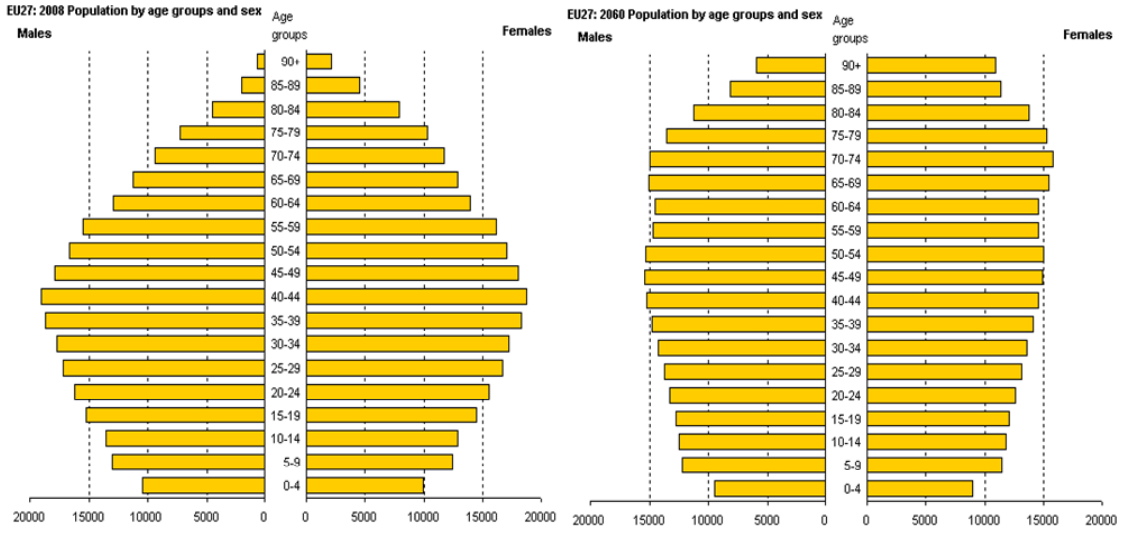
([9]) See Giannakouris, K. (2008), 'Ageing characterises the demographic perspectives of the European societies', *Eurostat Statistics in Focus*, 78/2008..

Table II.1.1: **Demographic projections for the EU countries**

	Fertility rate (briths per woman)		Life expectancy at birth				Net annual migration flow (as % of population)	
			Females		Males			
	2008	2060	2008	2060	2008	2060	2008	2060
BE	1.8	1.8	82.3	88.9	76.7	84.4	0.5	0.2
BG	1.4	1.6	76.7	86.5	69.7	81.6	0.0	0.0
CZ	1.3	1.5	80.2	87.8	73.9	83.2	0.2	0.2
DK	1.9	1.9	81.0	88.4	76.4	84.3	0.2	0.1
DE	1.3	1.5	82.6	89.1	77.3	84.9	0.2	0.2
EE	1.6	1.7	78.7	87.5	68.0	80.8	0.0	0.0
IE	1.9	1.9	81.9	89.2	77.5	85.2	1.4	0.1
EL	1.4	1.6	82.6	88.7	77.4	84.8	0.4	0.2
ES	1.4	1.6	83.9	89.6	77.4	84.9	1.4	0.3
FR	2.0	1.9	84.3	90.1	77.5	85.1	0.2	0.1
IT	1.4	1.6	84.2	90.0	78.5	85.5	0.4	0.3
CY	1.5	1.6	81.7	88.7	78.2	85.2	1.2	0.4
LV	1.4	1.5	76.7	86.8	66.0	80.5	0.0	0.0
LT	1.4	1.5	77.4	86.9	65.9	80.5	-0.1	0.0
LU	1.7	1.7	81.2	88.5	76.3	84.5	0.9	0.4
HU	1.4	1.5	78.1	87.3	69.7	81.9	0.2	0.2
MT	1.4	1.6	81.1	88.6	76.0	84.3	0.2	0.2
NL	1.7	1.8	82.2	88.9	77.9	84.9	0.0	0.1
AT	1.4	1.6	82.9	89.2	77.4	84.9	0.4	0.2
PL	1.3	1.5	79.9	88.0	71.4	82.5	0.0	0.0
PT	1.4	1.5	82.4	88.8	75.8	84.1	0.5	0.3
RO	1.3	1.5	76.6	86.6	69.8	81.9	0.0	0.0
SI	1.3	1.5	81.9	88.8	74.7	83.7	0.3	0.1
SK	1.3	1.5	78.7	87.4	70.9	82.0	0.1	0.1
FI	1.8	1.8	83.1	89.3	76.1	84.3	0.2	0.1
SE	1.9	1.9	83.1	89.3	79.0	85.4	0.5	0.1
UK	1.9	1.8	81.5	88.9	77.4	85.0	0.3	0.1
EU-27	1.5	1.6	82.1	89.0	76.0	84.5	0.3	0.2
EA	1.5	1.7	82.3	89.0	76.6	84.6		

Source: Eurostat, EUROPOP 2008.

Graph II.1.3: **Population pyramids (in thousands) for EU27 in 2008 and 2060**



Source: Eurostat, EUROPOP 2008

The fertility rates for all the countries in the European Union are shown in Table II.1.1, including the Eurostat projections for 2060. It shows that in all countries in the EU, the fertility rate is currently below the population replacement rate of 2.1 (the fertility rate that keeps the population constant), but is set to increase in most countries, to reach a slightly higher average fertility rate of 1.6 by 2060. Despite the projected increase, fertility is projected to remain below the replacement rate for all countries.

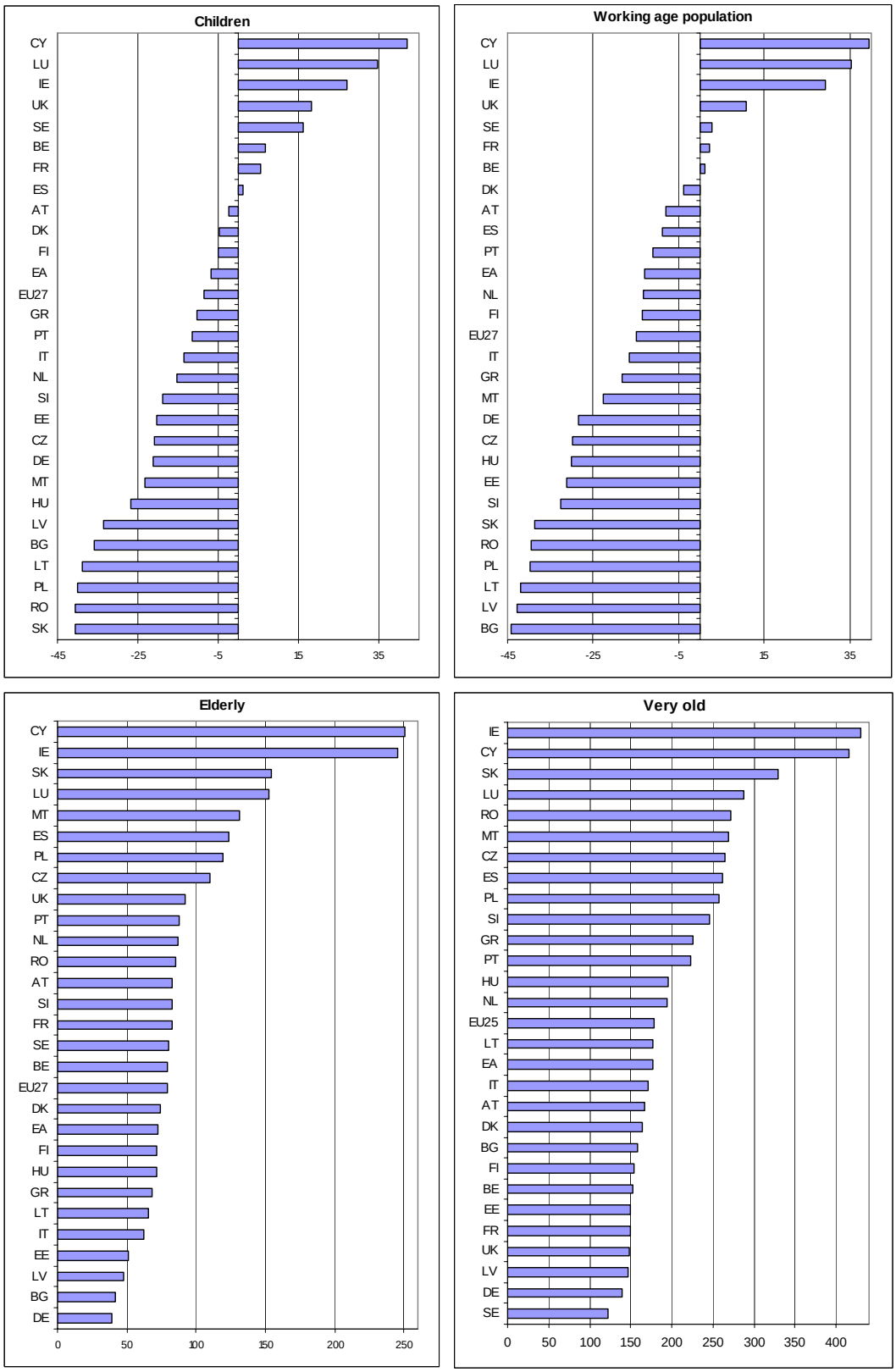
The third factor in population projections is migration. Over time, Europe has become a destination for migrants, although there have been marked differences in the trends between countries. While the large Western European countries were the traditional destinations for migrants, in recent years some traditional emigration countries in Southern Europe have become receiving countries, while many countries in Central and Eastern Europe are currently source and destination countries.

Although migration flows are the hardest to predict, as they depend not only on the socio-economic situation in the EU, but also in third countries, projections for net migration are also presented in Table II.1.1 By 2060, migration into the EU is set to fall from a net annual inflow of 0.3% of the EU population to 0.2%. Overall, cumulative net migration is projected to add up to 59 million people from 2008 to 2060, of which 46 million are expected to arrive in the 16 countries that currently constitute the euro area.

While the demographic developments differ from country to country the overall size of the EU population is projected to remain the same in 2060 as today, due to the slight rebound in fertility and relatively dynamic immigration flows. The age distribution of the population is forecast to differ markedly however.

The population distribution is shown in the age pyramids in Graph II.1.3, while the projected change of main population groups are shown in more detail by Member State in Graph II.1.4.

Graph II.1.4: **Projected change of main population groups (in % change over the period 2008-2060)**



Source: Eurostat, EUROPOP 2008.

1.2. LABOUR FORCE PROJECTIONS

The economic consequences of the expected change in population structure stem mainly from a reduction in the working age population and an increase in the number of elderly people requiring support. Overall, the old-age dependency ratio, defined as the population aged 65 or over as a percentage of the population aged 15 to 64, is projected to increase from 25% in 2007 to 54% in 2060. In parallel, the number of individuals aged 15 to 64 is set to fall from 331.9 million in 2007 to 283.3 million by 2060.

Graph II.1.5 shows the projected trajectory of the working age population and total employment for 2007 to 2060. The figures come from the 2009 Ageing Report, which calculates the economic consequences of an ageing population for the years until 2060. The data provided in that report forms the basis for analysis the impact of ageing on the public finances in this report.

The graph shows that the working age population is forecast to increase until 2013 and then start to fall. The labour market participation rate is projected to increase from 70½% in 2007 to 74% in 2060 for the EU as a whole, most of which will materialise before 2020. The gap between male and female participation rates is expected to narrow gradually, especially in countries where it is currently large. Overall, employment rates are expected to increase from 65½% in 2007 to about 70% in 2060. Within this total, the employment rate of older workers is expected to grow substantially as a result of reforms aimed at prolonging working life in many Member States, and the projected improvement in health conditions of those above 65. These reforms have been enacted to counter some of the increase in costs that will materialise as the population ages. Overall, however, employment in the EU is projected to shrink by about 19 million people by the year 2060. Increasing labour force participation rates in most countries and higher net immigration levels in some will only moderate the fall in employment due to the shrinking working age population over the period from 2020 to 2060.

1.3. LABOUR PRODUCTIVITY AND POTENTIAL GROWTH

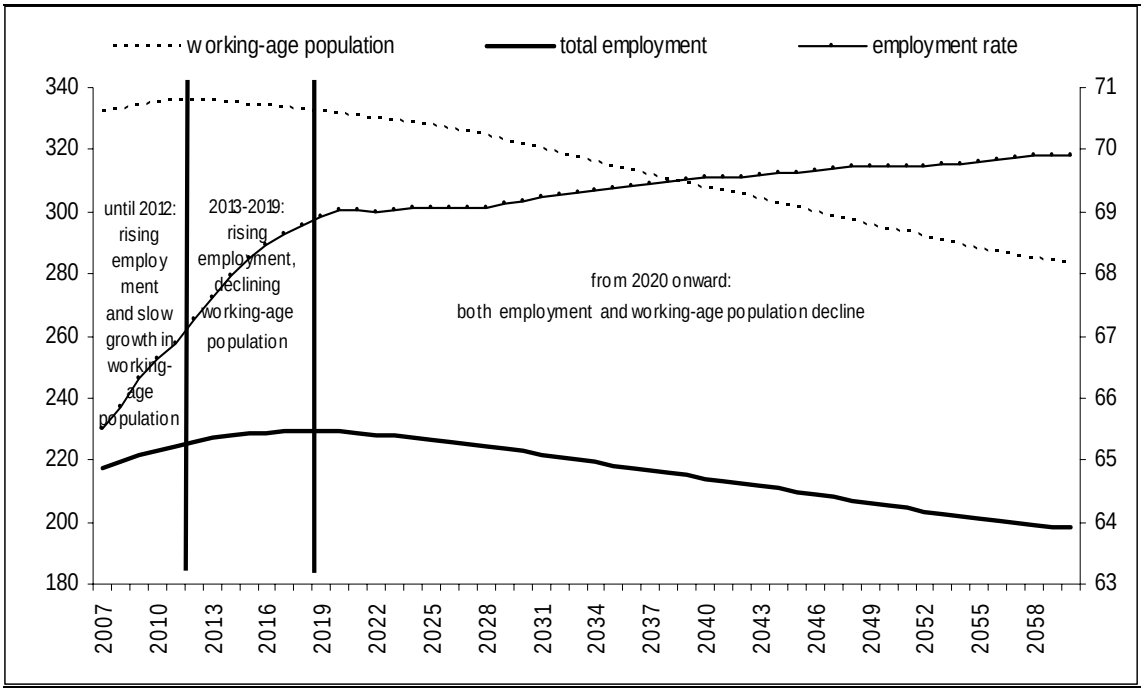
Economic growth is determined by the increase in the number of people in production and the increase in their productivity. A slow down or decrease in employment will therefore act to lower economic growth unless productivity accelerates.

Graph II.1.6 shows the forecast for potential economic growth in the EU from 2007 to 2060, broken down into three time periods. ([10]). In the baseline scenario, the forecast is for potential GDP growth to average 2.4% for the years 2007–20, of which 0.6% is due to the forecast increase in employment. Thereafter, the decrease in the working age population and employment acts to reduce GDP growth and the only source of economic growth will be productivity improvements. Of course, in the light of the financial crisis, the outlook for at least the short term is now likely to be considerably lower than the baseline.

As a result of declining labour input, productivity will eventually be the only source of future economic growth. The assumption used in the potential GDP forecasts is that Member States' labour productivity growth would converge to a long-term historical average in the EU of 1¾% per annum, close to that recorded in the US and the EU over the very long term. As a result, the annual potential GDP growth rate would decline significantly on account of the shrinking working-age population, which will act as a drag on growth and on per capita income. By the 2041–60 period, GDP growth is forecast to average 1.3% per annum.

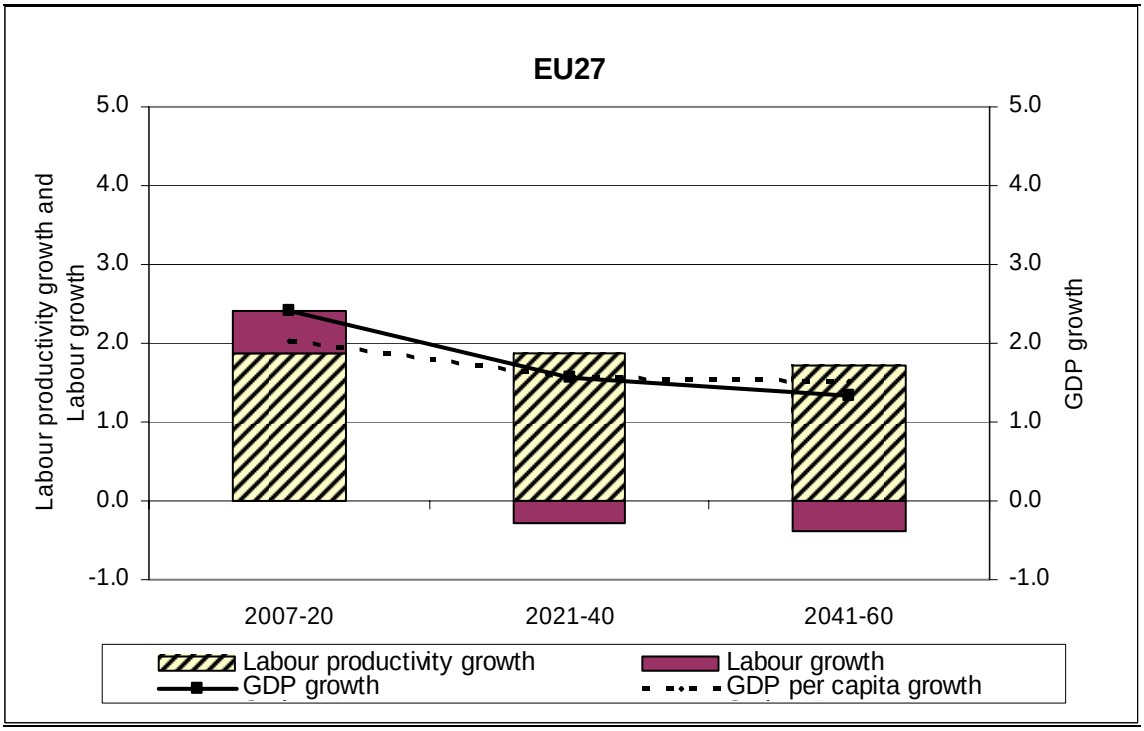
([10]) The figures do not take account any durable impact of the financial crisis on medium- to long-term potential growth, which is discussed in detail in Chapter IV.

Graph II.1.5: **Population of working-age and total employment, EU27**



Source: Commission services, EPC.

Graph II.1.6: **Decomposition of GDP growth, EU27, (annual average growth rate)**



Source: Commission services, EPC.

Graph II.1.6 also shows GDP growth *per capita*. It shows that over the three time periods displayed, this goes from being lower than overall growth until 2020, to being higher after 2040. This is because the overall population falls and results in living standards growing by more than the headline GDP growth figures indicate.

1.4. BUDGETARY PROJECTIONS

Aside from the effect on economic growth, an ageing population also entails additional government expenditure in terms of public provision of age-related transfers and services. The fiscal impact of ageing is therefore projected to be substantial in almost all Member States; these costs will accelerate significantly over the course of the next decade.

In the absence of changes to policy, public pension expenditure is projected to increase significantly in most Member States due to the demographic trends with more people retiring and spending more years in retirement thanks to the increase in longevity. However, pension reforms enacted in a number of Member States are bringing positive results in terms of expenditure containment and sustainability of public finances. Almost all Member States have tightened the eligibility requirements for receiving a public pension, mainly by raising the retirement age and restricting access to early retirement schemes. Reforms are also leading to a gradually smaller share of public pension benefits in overall pension provision. Alongside reforming public pensions systems, many countries have introduced, and/or are planning to expand, supplementary funded pension schemes. Overall, public pension spending is set to increase by 2.3 percentage points GDP by 2060, from a base of 10.2% of GDP. This is shown in Table II.1.2 along with the change to other age-related expenditure items and their projected levels from 2010 on.

As Table II.1.2 shows, public expenditure on health care is projected to grow by 1.4 percentage points of GDP in the EU by 2060 from a base of just under 7% of GDP. The increase in living standard conditions is an important driver of healthcare costs, affecting the demand for healthcare mainly through higher expectations on quantity and quality of care to be provided or financed by government.

Analysis of past trends in healthcare expenditure suggests that technological developments – new and better treatments ([11]) – are responsible for a significant part of overall costs growth, which may result in a significant increase in spending which is not fully captured in the projection. ([12]) However, technological advancement may also have positive effects on reducing costs of medical treatments through efficiency gains (faster and better treatments). There is large uncertainty as to which factor will dominate in the future.

Based on current policies, public spending on long-term care is projected to increase by 1.1 percentage points of GDP by 2060 due to the fact that the very old (aged 80+) will be the fastest growing age class of the population in the future. But there are upside risks to these costs due to changes in family structures, higher labour force participation of women and increased geographical mobility.

Public expenditure on education is also in part determined by demographics. The baseline scenario suggests a small decrease in the public education expenditure ratio over the projection period results solely from changes in the demographic composition (fewer children in the future). However, aside from demographic factors, other factors also affect education spending and it may be that ambitions to increase attainment dominate the savings that demographics can offer.

([11]) Of course, these new and better treatments are also one of the reasons explaining the increases in longevity over the last decades and projected for the future.

([12]) Sensitivity tests in the 2009 Ageing Report suggest that increases in health care expenditure as a share of GDP could be as much as four times higher than in the baseline scenario which is presented above over 2010–60.

Table II.1.2: **Increase in age-related expenditure, 2010-2060, % of GDP**

	Pension spending		Healthcare		Long-term care		Unemployment benefits and education		Total	
	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060	2010	Change 2010 to 2060
BE	10.3	4.5	7.7	1.1	1.5	1.3	7.3	-0.3	26.8	6.6
BG	9.1	2.2	4.8	0.6	0.2	0.2	3.0	0.2	17.1	3.2
CZ	7.1	4.0	6.4	2.0	0.2	0.4	3.3	0.0	17.0	6.3
DK	9.4	-0.2	6.0	0.9	1.8	1.5	8.0	0.1	25.2	2.2
DE	10.2	2.5	7.6	1.6	1.0	1.4	4.6	-0.4	23.3	5.1
EE	6.4	-1.6	5.1	1.1	0.1	0.1	3.2	0.3	14.8	-0.1
IE	5.5	5.9	5.9	1.7	0.9	1.3	5.3	-0.2	17.5	8.7
EL	11.6	12.5	5.1	1.3	1.5	2.1	3.8	0.1	21.9	16.0
ES	8.9	6.2	5.6	1.6	0.7	0.7	4.8	-0.2	20.0	8.3
FR	13.5	0.6	8.2	1.1	1.5	0.7	5.8	-0.2	29.0	2.2
IT	14.0	-0.4	5.9	1.0	1.7	1.2	4.3	-0.2	26.0	1.6
CY	6.9	10.8	2.8	0.6	0.0	0.0	5.8	-0.6	15.5	10.7
LV	5.1	0.0	3.5	0.5	0.4	0.5	3.3	0.3	12.3	1.3
LT	6.5	4.9	4.6	1.0	0.5	0.6	3.5	-0.4	15.1	6.0
LU	8.6	15.3	5.9	1.1	1.4	2.0	4.0	-0.3	19.9	18.2
HU	11.3	2.6	5.8	1.3	0.3	0.4	4.5	-0.3	21.8	4.0
MT	8.3	5.1	4.9	3.1	1.0	1.6	5.0	-0.7	19.2	9.2
NL	6.5	4.0	4.9	0.9	3.5	4.6	5.6	-0.2	20.5	9.4
AT	12.7	1.0	6.6	1.4	1.3	1.2	5.2	-0.2	25.7	3.3
PL	10.8	-2.1	4.1	0.8	0.4	0.7	3.8	-0.6	19.1	-1.1
PT	11.9	1.5	7.3	1.8	0.1	0.1	5.6	-0.4	24.9	2.9
RO	8.4	7.4	3.6	1.3	0.0	0.0	2.7	-0.2	14.7	8.5
SI	10.1	8.5	6.8	1.7	1.2	1.7	5.1	0.7	23.1	12.7
SK	6.6	3.6	5.2	2.1	0.2	0.4	2.9	-0.6	14.9	5.5
FI	10.7	2.6	5.6	0.8	1.9	2.5	6.4	0.0	24.7	5.9
SE	9.6	-0.2	7.3	0.7	3.5	2.2	6.6	0.0	27.1	2.7
UK	6.7	2.5	7.6	1.8	0.8	0.5	4.0	0.0	19.2	4.8
EU-27	10.2	2.3	6.8	1.4	1.3	1.1	4.9	-0.2	23.2	4.6
EA	11.2	2.7	6.8	1.3	1.4	1.3	5.0	-0.2	24.5	5.1

Source: Commission services, EPC.

The projections on unemployment benefit expenditure are based solely on the evolution of the unemployment rates, which stem from the macroeconomic and labour market assumptions. In the EU, expenditure on unemployment benefits is projected to fall from 0.8% of GDP in 2007 to 0.6% of GDP in 2060, though large fluctuations may be expected over such a long period. This reduction is mainly driven by the assumption that unemployment rates in all countries with unemployment rates above the EU15 average would converge to the EU15 average by 2020. Indeed, after 2020, only small changes are projected.

Overall, on the basis of current policies, age-related public expenditure is projected to increase on average by 4.3 percentage points of GDP by 2060 in the EU – especially through pension, healthcare and long-term care spending. There are however marked differences in the impact of ageing across Member States:

- The increase in government spending in ageing-related categories is likely to be very significant (7 percentage points of GDP or more) in nine EU Member States (Luxembourg, Greece, Slovenia, Cyprus, Malta, the Netherlands, Romania, Spain, and Ireland), although for some countries the large increase will be from a fairly low level.

- For a second group of countries – Belgium, Finland, Czech Republic, Lithuania, Slovakia, the United Kingdom, Germany and Hungary – the cost of ageing is more limited, but still very high (between 4 and 7 percentage points of GDP).

- Finally, the increase is more moderate, 4 percentage points of GDP or less, in Bulgaria, Sweden, Portugal, Austria, France, Denmark, Italy, Latvia, Estonia and Poland. Most of these countries have implemented substantial pension reforms, in several cases also involving a partial switch to private funded pension schemes (Bulgaria, Estonia, Latvia, Poland, and Sweden).

The projected increase for the EU as a whole is slightly higher than in the long-term projections, considered in the 2006

Sustainability Report, in part due to the extension of the projection horizon from 2050 to 2060.

At Member State level, large downward revisions in the budgetary impact of ageing have occurred since the 2006 Sustainability Report in Portugal, Hungary, Denmark and the Czech Republic (reflecting the impact of pension reforms). By contrast, large upward revisions are reported in Greece, Luxembourg, Malta, Estonia, Austria, Poland and Lithuania (reflecting primarily revised projected changes in pension expenditure stemming from reform reversals and improved modelling techniques) ([13]).

([13]) In the case of Greece, the large upward revisions are due to the data not being available in time for the previous report. Note also that the cases of Bulgaria and Romania were not considered in the 2006 report.

Chapter III

Quantitative sustainability results

SUMMARY

This chapter presents the baseline results of the sustainability analysis. The S2 indicator shows a sustainability gap of 6.5% of GDP for the European Union overall, while the S1 shows a gap of 5.8%. However there is considerable variation between Member States. While nearly all EU countries display sustainability gaps on both indicators, Denmark and Hungary display no sustainability gaps, and Bulgaria only displays a sustainability gap on the S2, but not on the S1 measure.

According to the S2 indicator, of the 25 Member States that display a gap, around a fifth require an adjustment of below 4% of GDP, a further half below 8% and a third between this and 15% of GDP.

Most countries have sustainability gaps as a result of both an unfavourable starting position for the public finances and due to the projected increase in the cost of ageing. However, a fifth of countries have an underlying fiscal position which would be sustainable over the long term, were it not for the projected increase in age-related expenditure. On average, ½ of the gap is due to the initial fiscal position and another ½ due to the projected increase in age-related expenditure.

The sustainability gap indicators show the size of the permanent adjustment that is required to keep the public finances sustainable. Not making this adjustment would have the short to medium-term effect of increasing debt, before serious sustainability concerns start affecting countries' abilities to raise debt as the perceived long-term risks increase. In the absence of an adjustment, by 2060 the EU government debt-to-GDP ratio could be more than seven times larger than it is now.

In 2006 the first Commission's Sustainability Report was published. The S2 sustainability gap was 3.4% of GDP for the 25 Member States considered in that report, some 3.1 points lower than in the current report. Aside from some methodological changes, and fresher long-term projections, the recent deterioration in the government deficits and debt levels explains most of the worsened sustainability gaps.

It is clear that Member States will need to address the challenges posed by the sustainability gaps. Depending on the size and the cause of their gaps, Member States will need to find some combination of structural reforms of their social protection system that result in a reduction in the cost of ageing, an increase in tax or a reduction in spending. Aside from choosing the optimal way of addressing the anticipated hole in their public finances, the timing of policy action is also important, all the more as fiscal policy is playing an important role in pulling the economy out of the crisis. On average, delaying the response by 5 years increases the gap by 0.5 points of GDP, but this cost of delay is much more severe for a number of Member States. This represents additional measures that must be introduced and permanently maintained.

1. THE SUSTAINABILITY RESULTS

This Section presents the results of the sustainability analysis in terms of the S1 and S2 indicators and their respective components, as described in Chapter I.

1.1. THE QUANTITATIVE INDICATORS

Table III.1.1 shows estimates of the sustainability gap indicators S1 and S2 and decomposes them into their constituent parts. These are: (i) the *required adjustment given the initial budgetary position* (IBP), which gives the gap between the structural primary balance in 2009 and the long-term debt-stabilising budget balance; (ii) the *required adjustment given the long-term change* in the budgetary position due to the costs of ageing (LTC), and (iii), the *adjustment necessary to reach the debt target* of 60% of GDP in 2060. The overall change to the share of GDP to be spent on age-related expenditure in 2060 relative to 2010 is also shown, as is the structural primary balance for 2008 and 2009.

The S2 indicator shows a sustainability gap of 6.5% of GDP for EU-27 and of 5.8% of GDP for the Euro Area. This is the permanent adjustment in the primary balance necessary to meet the intertemporal budget constraint over an infinite horizon. The S1 indicator shows a sustainability gap for the EU-27 countries and for the Euro Area, of 5.4% and 4.8% of GDP respectively.

The decomposition results show that for the EU-27 countries, the IBP is responsible for 3.3 percentage points (p.p.) of the S2 gap and 3.1 p.p. for the S1 gap. This means that even without taking into account the cost of ageing – that is, assuming that age-related expenditure in government accounts remained constant as a share of GDP – European countries would have to tighten their fiscal stances, in terms of the structural primary balance, by an average of 3.3% of GDP for their public finances to return to a sustainable path.

LTC contributes 3.2 p.p. to the S2 gap and 2.0 p.p. to the S1 gap, with the figures being 3.5 p.p. and 2.4 p.p. respectively for the Euro Area. This shows that the projected increase in ageing-related costs has a significant impact on the sustainability position of each.

For the S1 gap, the DR adds a required adjustment of 0.2 p.p. for the EU-27 and 0.3 p.p. for the Euro Area.

The table also shows the absolute increase in age-related expenditure until 2060. Overall, for the EU-27, age related expenditure is expected to be 4.4 percentage points of GDP higher in 2060 relative to 2010 and 4.8 percentage points higher for the Euro Area. This is higher than the impact of the LTC due to the discounting of future flows and time-profile of the age-related expenditure, in particular the fact that moderate increases in expenditure are expected in the early years of the projection. The difference between the projected increase in age-related expenditure and the LTC component of the sustainability gaps is also related to the relationship between the long-term real growth rates and the assumption on real interest rates.

Within the aggregates there are significant differences across Member States both in terms of the indicators and their constituent components. While nearly all EU countries display sustainability gaps on both indicators, Denmark and Hungary display no sustainability gaps, and Bulgaria only displays a sustainability gap on the S2, but not the S1 measure. In Bulgaria's case this is because its low debt allows some leeway in dealing with the costs of ageing through an increase in this debt and because the cost of ageing is higher in the more distant future, thus having a larger impact on S2 than on S1.

Table III.1.1: **Results of the sustainability gap calculations in the baseline scenario (% of GDP)**

	Structural primary balance 2008	Structural primary balance 2009	Change in age-related expenditure	S1				S2		
				Total	IBP*	DR*	LTC*	Total	IBP*	LTC*
BE	1.5	0.7	5.9	4.5	0.5	0.6	3.5	5.3	0.6	4.8
BG	1.0	1.1	3.2	-0.6	-0.7	-0.5	0.6	0.9	-0.6	1.5
CZ	-2.3	-2.9	6.3	5.3	3.6	-0.3	1.9	7.4	3.7	3.7
DK	5.6	2.8	1.0	-0.6	-1.9	-0.5	1.8	-0.2	-1.6	1.4
DE	1.6	0.6	5.1	3.1	0.8	0.2	2.1	4.2	0.9	3.3
EE	-3.9	-0.6	-0.1	0.3	1.0	-0.6	-0.2	1.0	1.1	-0.1
IE	-6.4	-7.6	8.7	12.1	8.2	0.2	3.7	15.0	8.3	6.7
EL	-2.1	-0.9	16.0	10.8	2.4	0.7	7.7	14.1	2.6	11.5
ES	-2.4	-5.2	8.0	9.5	5.9	-0.1	3.6	11.8	6.1	5.7
FR	-1.5	-2.7	2.1	5.5	3.8	0.4	1.4	5.6	3.8	1.8
IT	1.7	2.0	1.6	1.9	-0.2	0.7	1.4	1.4	-0.1	1.5
CY	2.9	0.2	10.7	4.6	0.2	-0.3	4.7	8.8	0.5	8.3
LV	-4.9	-8.1	1.3	9.4	8.8	-0.2	0.9	9.9	8.9	1.0
LT	-4.5	-3.1	6.0	5.4	3.7	-0.3	2.0	7.1	3.9	3.2
LU	2.3	1.2	16.2	6.2	-0.6	-0.8	7.5	12.5	-0.4	12.9
HU	-0.3	3.1	3.3	-1.1	-1.9	0.4	0.4	-0.1	-1.6	1.5
MT	-1.6	-0.2	9.2	4.7	1.1	0.2	3.4	7.0	1.4	5.7
NL	1.7	0.0	6.7	5.2	1.6	0.0	3.7	6.9	1.9	5.0
AT	0.8	-0.2	4.0	3.8	1.5	0.2	2.2	4.7	1.6	3.1
PL	-3.1	-3.1	-1.2	2.9	4.2	0.0	-1.2	3.2	4.4	-1.2
PT	-0.9	-2.4	2.8	4.7	3.4	0.3	1.0	5.5	3.7	1.9
RO	-7.2	-3.7	8.5	6.9	4.1	-0.4	3.2	9.1	4.3	4.9
SI	-1.3	-3.3	12.5	9.2	3.8	-0.3	5.7	12.2	3.9	8.3
SK	-3.5	-3.7	5.5	5.7	4.3	-0.3	1.6	7.4	4.5	2.9
FI	4.3	2.1	5.4	2.6	-0.8	-0.3	3.7	4.0	-0.5	4.5
SE	3.4	0.9	2.4	0.5	-0.1	-0.3	0.8	1.8	0.2	1.6
UK	-3.3	-7.8	4.8	10.8	8.6	0.2	2.0	12.4	8.8	3.6
EU27	-0.4	-2.0	4.4	5.4	3.1	0.2	2.0	6.5	3.3	3.2
EA	0.2	-0.9	4.8	4.8	2.1	0.3	2.4	5.8	2.3	3.5

* IBP = required adjustment given the initial budgetary position, DR = adjustment to reach the debt requirement (60% of GDP) in 2060, LTC = required adjustment given the long-term change in the primary balance due demographic ageing.
Source: Commission services

According to the S2 indicator, of the 25 Member States that display a sustainability gap, around a fifth require an adjustment of below 4% of GDP, a further half below 8% and a third between this and 15% of GDP. In terms of the S1 indicator, of the 24 Member States with a sustainability gap, around a quarter require an adjustment of below 3½% of GDP, a further half between 3½ and 6½% and a quarter between this and 12½% of GDP. Broadly, the countries displaying significant sustainability gaps on one measure, also display it on the other and, in all cases except Italy, ([14]) the sustainability gap is greater according to the S2 than the S1 indicator.

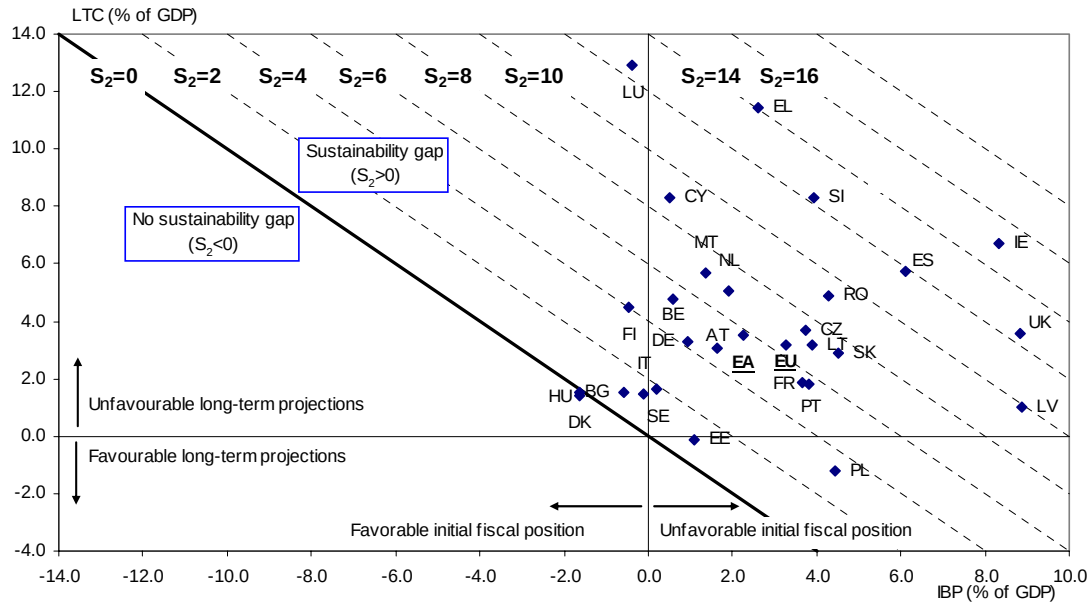
([14]) Due to a series of reforms since 1992 to its pension system, Italy is facing a relatively low increase in the cost of ageing with little difference between the LTC contribution to S1 and S2, but faces a high S1 due to its high debt ratio. The long-term projections for Italy assume, however, that all legislated changes in the pension system will be duly implemented as planned.

1.2. A GRAPHIC REPRESENTATION OF THE SUSTAINABILITY GAP (S2)

Table III.1.1 shows the decomposition of the S1 and S2 indicators into their constituent components (IBP, DR and LTC). Using the data for the S2 indicator, Graph III.1.1 depicts the contribution of the IBP and the LTC components.

The further along the horizontal axis countries are, the larger the required adjustment to stabilise the debt ratios given the initial budgetary position (IBP), before considering the long-term costs of ageing. The higher up the vertical axis, the greater the required adjustment due to the long-term change in age-related costs (LTC). The sustainability gap (S2) is the sum of the vertical and horizontal distances from each dot to the solid diagonal line. Countries that are northeast of the solid diagonal line have a sustainability gap; the further away from that line, the greater their gap. Countries that lie southwest of the solid line (in the chart Denmark and Hungary only) have sustainable public finances, the ageing population notwithstanding. The dotted diagonals are 'isogap' lines: two countries located on the same line have the same sustainability gap (S2) over an infinite

Graph III.1.1: **Decomposition of the S2 indicator**



Source: Commission services.

horizon, though they may have different initial budgetary positions and different ageing-related costs.

Most Member States are in the top right quadrant, showing that their sustainability gap is due to the compounding effects of an unfavourable initial fiscal position and an increase in the budgetary cost of ageing. Countries in the top left quadrant have a favourable initial budgetary position in 2009 thanks to the consolidation efforts of previous years. However for most of them this initial position is not enough given the expected long-term increase in expenditure.

Only Denmark and Hungary have an initial fiscal position that is favourable enough to absorb the expected increase in costs related to ageing. However, the recent consolidation efforts in Hungary must be pursued in coming years in order to reduce its government debt ratio. Finally, Estonia and Poland are in the bottom right quadrant; that means that they have a sustainability gap which is caused by an unfavourable initial fiscal position, but which is reduced by a projected decrease in age-related spending.

1.3. THE LONG TERM BUDGETARY COST OF AGEING

The LTC component shows significant differences between Member States in terms of the budgetary impact of ageing until 2060 and indefinitely. As worked out for the infinite horizon, its impact ranges from a margin of 1.2% of GDP in Poland because of the long-term reduction in expenditure, to a required adjustment of 12.9% in Luxembourg because of the increase in ageing-related spending.

Overall, the LTC components of the sustainability gap lies under 2% of GDP for ten Member States (Poland, Estonia, Latvia, Denmark, Italy, Bulgaria, Hungary, Sweden, France and Portugal). Nine Member States face a budgetary impact of between 2% and 5% of GDP (Slovakia, Austria, Lithuania, Germany, the United Kingdom, the Czech Republic, Finland, Belgium and Romania). The remaining eight countries (the Netherlands Malta, Spain, Ireland, Cyprus, Slovenia, Greece and Luxembourg) have a LTC of 5% of GDP or above, with the costs incumbent on Greece and Luxembourg representing 11.5 and 12.9% of GDP, respectively.

Chapter II decomposed the contribution of pension spending, healthcare, long-term care, education

and unemployment benefits on the projected increase in spending. Overall, however, the Member States facing high expected costs do so primarily on the basis of the high costs of their pension systems – with the exception of the Netherlands, where the projected change in pension spending contribute 4 p.p. points of GDP to the increase in spending, while long term care is expected to increase by 5.8 p.p. of GDP. The countries with the largest projected increases in pension-related expenditure are those have so far introduced at best modest reforms to their pension systems.

In all Member States (except Denmark), the LTC has a larger impact on the S2 than the S1 indicator. As this is due to the time profile of the costs of ageing, it indicates that the budgetary impact of ageing is back loaded and may likely continue increasing for some time after 2060. In Denmark's case, the time profile leads to age-related government expenditure reaching its maximum in 2025 and starting to decline after 2045. For other countries, the structure of ageing and the social protection arrangements in Member States drive the higher contribution to S2 than S1 of the LTC component. Other things being equal, countries that are due to undergo most of their ageing in the near future do not show as large a disparity between the contribution of ageing on the two indicators. Equally, the institutional setup in place plays a crucial role as to how the ageing translates into costs, with a flatter profile for countries whose pension arrangements limit costs to the government sector.

1.4. THE INITIAL BUDGETARY POSITION

Aside from the long-term costs of ageing (LTC) the current budgetary and debt position also contribute to the sustainability gap for a majority of countries. According to the initial budgetary position (IBP) component of both S2 and S1 indicators and the debt requirement (DR) ([15]) for S1, only one fifth of Member States have an initial fiscal position which would be sustainable if long-term costs were left aside. Another third require an adjustment of up to around 3% of GDP to the structural public balance to place their public finances on a sustainable path, even before considering the long-term budgetary impact of an ageing population. The remaining Member States have an initial fiscal position that would require an even greater adjustment.

According to the IBP component of S2 indicator, for the Czech Republic, France, Lithuania, Poland, Portugal, Slovenia Slovakia and Romania, the required correction is in the region of 3 to 5% of GDP. For Spain it is slightly above 6% of GDP, while Latvia, UK and Ireland – given their very large structural imbalances in 2009 – require adjustments of over 8% of GDP.

The IBPs are calculated using the budgetary position of 2009 – drawn from the European Commission spring forecasts ([16]) from May 2009. – as starting point. As discussed in Chapter I, the structural primary balance is used in the calculation of the sustainability gap indicators. This removes the estimated effect of the economic cycle from the primary balance and also removes the effect of one-off measures. Some of the automatic effect of the economic crisis on budgets is therefore stripped out of from the data. However, structural adjustment can only be undertaken imperfectly and this is particularly the case in the middle of such unprecedented economic times. In so far as the crisis leads to a durable reduction in economic activity and growth, the structural deficit and sustainability gaps could be underestimated. However, on the other hand, some of temporary stimulus measures adopted by government may have not been properly filtered out when estimating the structural deficits and may currently appears as deteriorating the structural deficits.

([15]) The initial level of debt enters the IBP term, as it determines the required primary surplus to service it. However, it also directly enters the S1 indicators through the additional effort required to bring debt to 60% of GDP by 2060.

([16]) *European Economy*, 3 (4 May 2009).

Table III.1.2: **Government structural balances (% of GDP)**

	Structural balance				
	2004-2009 average	Difference between 2009 and 2004	2008 out-turn	2009 forecast	2010 forecast
BE	-1.8	-1.9	-2.2	-3.2	-4.0
BG	1.0	-0.4	0.2	0.3	1.6
CZ	-3.1	-2.2	-3.4	-4.0	-3.7
DK	3.1	-0.9	4.2	1.2	-0.4
DE	-2.2	1.1	-1.2	-2.4	-3.9
EE	-0.8	-3.0	-4.1	-1.0	-1.9
IE	-2.6	-10.2	-7.5	-9.8	-12.2
EL	-5.8	2.8	-6.5	-5.7	-4.7
ES	-0.9	-7.5	-3.9	-6.8	-8.2
FR	-4.2	-1.4	-4.3	-5.5	-5.5
IT	-3.8	2.4	-3.4	-2.6	-2.8
CY	-1.5	2.9	0.1	-2.1	-2.1
LV	-4.4	-8.1	-5.8	-9.5	-11.5
LT	-3.1	-1.8	-5.2	-4.3	-5.5
LU	0.3	1.4	2.0	0.6	0.1
HU	-6.4	5.4	-4.5	-1.7	-2.0
MT	-4.1	2.2	-4.9	-3.6	-2.8
NL	-0.8	-1.5	-0.5	-2.6	-4.3
AT	-1.8	-2.8	-1.8	-3.2	-3.8
PL	-4.9	0.0	-5.3	-6.0	-5.6
PT	-4.5	-0.5	-3.8	-5.5	-5.1
RO	-4.1	-3.3	-7.9	-5.2	-4.7
SI	-2.3	-3.2	-2.5	-4.9	-5.2
SK	-3.5	-3.1	-4.7	-5.0	-4.7
FI	2.5	-1.8	2.8	0.8	-0.7
SE	0.8	-0.3	1.7	-0.5	-1.9
UK	-5.1	-6.1	-5.6	-10.0	-12.2
EA-16	-2.7	-0.9	-2.8	-3.9	-4.7
EU-27	-3.0	-1.5	-3.1	-4.6	-5.5

Source: Commission services

While the long-term consequences of the crisis on the economies and public finances of the EU Member States are still unclear, the debt and deficit figures that contribute to deriving the IBP and DR indicators, as well as the growth and other assumptions going forward are therefore liable to change. Alternative scenarios for the macroeconomic environment and its consequences are presented in Chapter IV.

In order to look at the role of the initial structural balance in more detail, Table III.1.2 shows how this has changed in recent years. The first column shows the average for the 2004-09 period, the second the absolute difference and finally the 2008 outturn, and forecasts for 2009 and 2010. Overall just under one quarter of Member States have improved their structural balance, and on average the structural balance for the EU-27 and for the Euro Area countries deteriorated by 1.5 and 0.9 percentage points of GDP respectively between 2004 and 2008.

Amongst Member States with a deterioration in the structural balance, Bulgaria, Denmark, Portugal and Sweden have had a loosening of under 1 p.p. of GDP between 2004 and 2008; Belgium, France, Lithuania, Netherlands and Finland between 1 and 2 p.p. of GDP; the Czech Republic, Estonia, Austria, Romania, Slovenia and Slovakia 2 and 5 p.p. and Ireland, Spain, Latvia and UK over 5 p.p. of GDP. According to the IBP component, most of these countries have large sustainability gaps, indicating that this loosening has been an important contributor to the fiscal adjustment that needs to occur for sustainability to be ensured in the future. This can also be seen by observing the size of the structural balance in Table III.1.2 as the link between the initial structural primary balance and the sustainability indicators is direct – a change in the structural balance feeds into an equivalent increase or decrease into the sustainability gap indicator. Conversely, a number of countries, and in particular Hungary and Cyprus, have strengthened their structural balances significantly.

It is now evident that the fiscal deficits are deteriorating substantially in 2009 relative to 2008 and a further weakening of the public balance

beyond the effects of the business cycle is projected for 2010. The expected deterioration in the structural balances can be seen in Table III.1.2. While the average structural balance for 2008 stood at –3.1% for EU-27, in 2009 it is expected to be –4.6% before falling further to –5.5% in 2010. Thus, if 2010 was used as the base year for the analysis in this report, the results would indicate greater sustainability gaps caused by the weaker starting balances.

1.5. REQUIRED PRIMARY BALANCE

It is informative to see the size of the primary balance required to close the sustainability gaps; that is, to account for the costs of ageing and the interest on current stock of debt. In other words, to see what a sustainable budgetary position looks like.

This is given by the required primary balance (RPB). The RPB represents the structural primary balance that would be necessary at the beginning of the long-term projections to ensure long-term sustainability in the light of these liabilities, once all other spending has been covered. The RPB is usually calculated as an average over five years: the RPB for the years 2011-2015 is shown in Table III.1.2, along with the structural primary balance and the increase in age-related expenditure between 2010 and 2060.

Table III.1.3: **Required primary balance (% GDP)**

	Structural primary balance	Required primary balance	Increase in age-related expenditure
	2009	average 2011-2015	between 2010 and 2060
BE	0.7	5.9	5.9
BG	1.1	2.3	3.2
CZ	-2.9	4.6	6.3
DK	2.8	1.9	1.0
DE	0.6	5.0	5.1
EE	-0.6	0.3	-0.1
IE	-7.6	7.2	8.7
EL	-0.9	12.7	16.0
ES	-5.2	6.4	8.0
FR	-2.7	2.8	2.1
IT	2.0	3.4	1.6
CY	0.2	8.9	10.7
LV	-8.1	2.2	1.3
LT	-3.1	4.2	6.0
LU	1.2	13.6	16.2
HU	3.1	3.5	3.3
MT	-0.2	6.3	9.2
NL	0.0	6.5	6.7
AT	-0.2	4.5	4.0
PL	-3.1	1.1	-1.2
PT	-2.4	3.0	2.8
RO	-3.7	5.4	8.5
SI	-3.3	8.4	12.5
SK	-3.7	4.0	5.5
FI	2.1	5.5	5.4
SE	0.9	3.1	2.4
UK	-7.8	4.5	4.8
EU27	-2.0	4.5	4.4
EA	-0.9	4.9	4.8

Source: Commissions services

The table shows that there is significant variation in terms of the RPB across Member States. While for EU-27 it will represent an average of 4.5% of GDP, and 4.9% for the Euro Area, the figures range from under 2% of GDP for Estonia, Denmark and Poland, to over 10% of GDP for Greece and Luxembourg. Twelve Member States will require a primary balance of 5% of GDP or over.

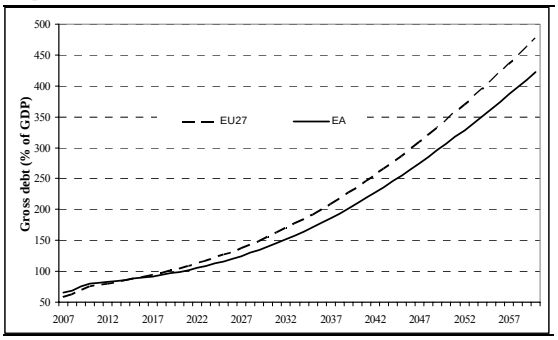
For several countries, the RBP is so large that it is socially and politically unrealistic to reach and sustain; they are well above the largest primary surpluses ever recorded in any EU Member State. For these countries, an effort of consolidation in the medium-term, even if very ambitious would not suffice to put the public finances on a sustainable path without profound reforms of their social protection systems.

1.6. GOVERNMENT DEBT PROJECTIONS

The analysis of sustainability presented so far looks at the adjustment of the structural primary balance required to ensure sustainability in terms of the S2, S1 or RPB indicators. An alternative way of looking at sustainability is to consider the trajectory of debt, if such an adjustment were not undertaken. The results of this exercise are presented in Graph III.1.2 and, in more detail, in

Table III.1.4. The table shows the government gross debt ratio in 2008 and 2009, and the projections for 2010, 2030 and 2060, once the costs of servicing debt and paying for age-related expenditure are taken into account. In a sense, it represents the stock measure of the flow indicators S2 and S1.

Graph III.1.2: **Gross debt (% of GDP)**



Source: Commission services

In 2008, the government gross debt-to-GDP ratio stood above 60% mark for the Euro Area on average and for eight of the 27 EU Member States. These countries are Belgium, Greece, France, Italy, Hungary, Malta, Austria and Portugal. However, Ireland, Spain, Poland and UK are also forecast to reach or exceed this debt ratio by the end of 2010.

On unchanged policy relative to 2009, by 2060 Bulgaria, Denmark, Hungary, Italy and Sweden would have reduced their debt ratios. Conversely, the spectacularly high debt projections for the majority of other countries indicate unsustainable policies and illustrate the magnitude of the issue.

As already mentioned elsewhere in the report, these long-term debt projections have been prepared under a no-policy-change assumption and in partial equilibrium. Given that assumption, these projections are not robust forecasts and are not meant to be realistic scenarios of what may happen in the future. In practice, it is extremely unlikely that financial markets would keep financing government debt which amounted to several times the annual GDP of a country, or that government would not change their policies in the presence of ever increasing debts. The aim of the debt projections is to illustrate the long-term trends and the size of the required remedial action to avoid government debts to enter into an exponentially increasing spiral.

Table III.1.4: **Projected debt developments**

	Gross debt				
	2008	**2009**	2010	**2030**	**2060**
BE	89,6	94,9	98,6	137,8	372,4
BG	14,1	16,0	18,6	-9,9	9,8
CZ	29,8	33,0	37,0	114,9	486,7
DK	33,3	29,8	26,4	11,3	18,3
DE	65,9	72,4	75,1	102,5	318,9
EE	4,8	10,1	13,9	28,5	81,4
IE	43,2	60,0	75,8	260,8	848,5
EL	97,6	104,6	111,6	205,9	884,0
ES	39,5	48,1	55,6	188,2	766,6
FR	68,0	78,5	83,8	177,4	431,3
IT	105,8	113,3	116,7	112,2	205,9
CY	49,1	44,8	42,4	67,8	335,5
LV	19,5	30,9	42,4	230,6	898,1
LT	15,6	24,0	34,1	113,9	545,9
LU	14,7	14,9	13,7	35,6	437,5
HU	73,0	84,1	89,0	21,8	-26,3
MT	64,1	68,4	72,6	114,0	432,5
NL	58,2	55,3	58,0	121,0	450,3
AT	62,5	69,3	72,7	116,7	337,8
PL	47,2	53,9	60,4	108,9	318,4
PT	66,4	73,8	78,9	156,1	389,9
RO	13,6	21,8	30,4	125,1	633,8
SI	22,8	27,2	30,7	158,8	831,6
SK	27,6	32,0	36,3	115,5	561,2
FI	33,4	37,5	40,0	61,3	248,7
SE	38,0	41,6	40,8	32,2	93,1
UK	52,0	64,0	71,2	271,3	759,2
EU27	63,0	70,6	75,2	155,9	477,3
EA	68,6	75,8	80,0	140,2	422,3

The government debt ratio is usually compiled in gross terms, without netting out assets from government liabilities. Gross debt can therefore never be negative. Moreover, the projections is this table assumes that the accumulation of financial assets is nil for countries with debt. In this table, the negative values should be interpreted as net accumulation of assets for the countries that would fully reimburse their debts. Although the assumption of no accumulation of assets until the full repayment of debt is not plausible, it has no implications on the sustainability assessment provided the interest rate paid on government debt and the rate of return on government assets are similar.

Source: Commission services

2. COMPARISON WITH THE 2006 SUSTAINABILITY REPORT

The results in this report differ significantly from those presented three years ago in the 2006 Sustainability Report. While the EU-25 ([17]) average sustainability gap was estimated 3.4% of GDP on S2, the current estimates are for 6.5% of GDP.

Graph III.2.1 compares the S2 indicator calculated in this report with the one of 2006. The difference between S2 in the 2006 and 2009 reports is split in three components: (i) the difference that is due to changes in the initial budgetary position, (ii) the difference that owes to the revision in the long-term projection of age-related expenditure because of new demographic projections and a number of improvements in the projection methods, and (iii) the fact that the long-term projections have been extended from 2050 to 2060.

On average, the sustainability gap has increased by 3.1 percentage points (p.p.) of GDP for the 25 countries that were members of the EU in 2006. While 4 Member States (Hungary, Portugal, Italy and Germany) show a lower sustainability gap than in the 2006 exercise, the remaining 21 Member States show a deterioration. Of these, in all cases expect Luxembourg, Greece and Malta, the deterioration is essentially due to a weakening of the initial budgetary position rather than to an increase in the age-related costs and the delay in the required adjustment that leads to a higher LTC. For Ireland, Spain, Latvia and UK the weakened initial budgetary position is responsible for an increase of the estimated sustainability gap of over 5 points.

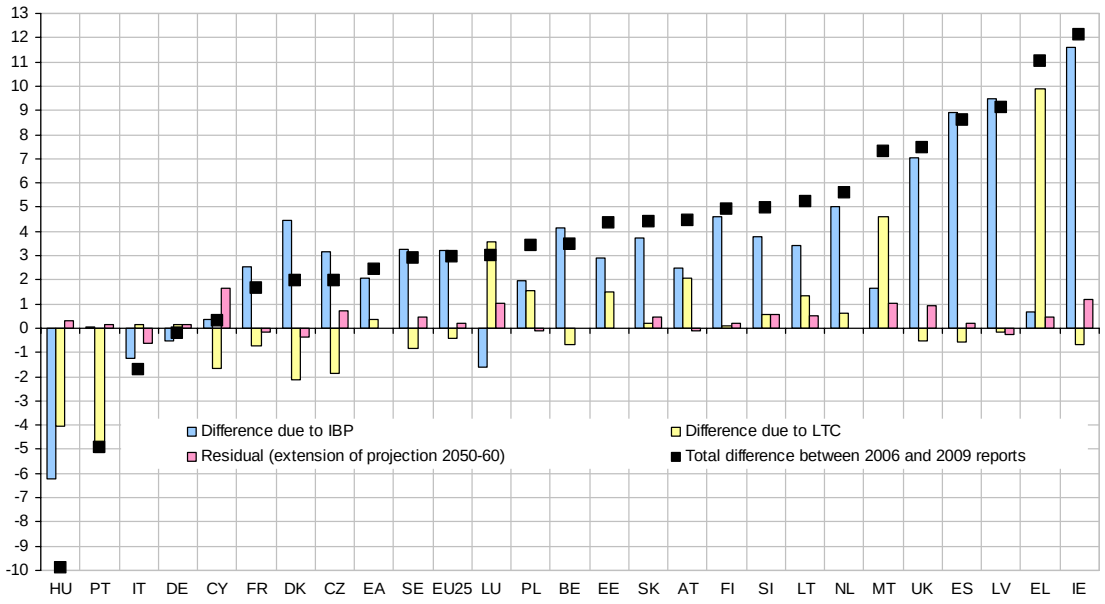
Overall, for the EU-25 countries, the deterioration in S2 is due to the worsening in the starting budgetary position. The required adjustment given the starting position has increase by 3.2 p.p. of GDP between the 2006 and 2009 reports, as the base year for the analysis changed from 2005 to 2009. The fiscal impact of the economic and financial crisis is therefore included in the 2009 estimates and explains the worse initial budgetary position.

Conversely, there has been a slight improvement by 0.1 p.p. of GDP in the LTC component of S2. Almost half of Member States show an improvement on this component. Notable outliers are Luxembourg, Malta and Greece where changes in the estimate of the LTC are equal to 3.6, 4.6 and 9.9 points, respectively. In Greece's case, this is largely explained by the fact that the 2006 estimates did not include pension expenditure as projections were not available at that time. For Luxembourg, the required adjustment given the long-term costs (LTC) now takes into account the pension expenditure that should be paid out to non-residents, while in 2006 this was omitted.

Table III.2.1 shows the LTC component of the S2 indicator calculated until 2050 and 2060, as well as the difference between the two and the S2 sustainability gap. It aims to complement the analysis presented in Graph III.2.1 by showing the evolution of the LTC due to the increase in expenditure in the years after 2050. The figures show that on average there is little difference between the LTC until 2050 and until 2060. For EU-27 the difference equals 0.3 points on average, while for the Euro Area, the difference is 0.1 p.p. of GDP. Little of the difference between the results presented in this report and those presented in the 2006 Sustainability Report can therefore be attributed to the additional costs of ageing beyond 2050. However, it suggests that, on the basis of current projections, the ratio-to-GDP of age-related expenditure will keep increasing beyond 2060 for most. However, it should be noted that the relationship between the cost of ageing and the LTC depends on the discount rates and the time profile of the spending increases. For individual Member States, however, there is more variation with some such as Ireland, Cyprus and Malta having a significant increase in their sustainability gap due to the effect of the additional costs of ageing beyond 2050.

([17]) The comparison in sustainability indicators estimated in 2006 and 2009 concerns 25 countries, since Bulgaria and Romania joined the EU in 2007 after the publication of the 2006 sustainability report.

Graph III.2.1: **S2 indicator in the baseline scenario compared to the results of the 2006 Sustainability Report**



Source: Commission services

Table III.2.1: **LTC component of the S2 indicator until 2050 and 2060**

	LTC		Difference in LTC	S2
	until 2050	until 2060	2050 - 2060	until 2060
BE	4.6	4.8	0.1	5.3
BG	1.1	1.5	0.4	0.9
CZ	2.9	3.7	0.8	7.4
DK	1.8	1.4	-0.4	-0.2
DE	3.0	3.3	0.3	4.2
EE	-0.2	-0.1	0.0	1.0
IE	5.3	6.7	1.4	15.0
EL	10.8	11.5	0.7	14.1
ES	5.4	5.7	0.4	11.8
FR	1.9	1.8	-0.1	5.6
IT	1.9	1.5	-0.5	1.4
CY	6.6	8.3	1.6	8.8
LV	1.0	1.0	0.0	9.9
LT	2.6	3.2	0.6	7.1
LU	11.9	12.9	1.0	12.5
HU	1.0	1.5	0.5	-0.1
MT	4.5	5.7	1.2	7.0
NL	5.0	5.0	0.0	6.9
AT	3.1	3.1	0.0	4.7
PL	-1.3	-1.2	0.0	3.2
PT	1.6	1.9	0.3	5.5
RO	4.4	4.9	0.5	9.1
SI	7.7	8.3	0.7	12.2
SK	2.3	2.9	0.6	7.4
FI	4.3	4.5	0.2	4.0
SE	1.2	1.6	0.4	1.8
UK	2.6	3.6	0.9	12.4
EU27	2.9	3.2	0.3	6.5
EA	3.4	3.5	0.1	5.8

Source: Commission services

3. THE COST OF NO POLICY REACTION

The results of the sustainability gap exercise present a policy challenge for the nearly all the Member States. On average, policies are required that will close a sustainability gap equal to 6.5% of GDP, with a half of this effect being due to the long-term costs of ageing. This can be achieved through some combination of a reduction in the additional costs of ageing, an increase in tax, a reduction in non-age related spending or structural reforms that slows down age-related expenditure.

The sustainability gap indicators show the correction that is required for the years covered by the analysis. Implicitly, the gap given by the indicators is the size of the correction that must occur *now* and be maintained for the years until 2060 and beyond.

If the correction were to be undertaken later, then countries with a sustainability gap would need to make a greater adjustment. Table III.3.1 presents this additional cost of delay – that is the increase in the S1 and the S2 indicators. It shows how much greater the adjustment would have to be, if it were undertaken in 5 years' time rather than now. For ease of comparison it also shows the S2 gap presented in Table III.1.1 and the size this would be with a 5-years delay. For the EU on average, a 5 year delay would result in an additional required adjustment of 0.5 percentage points of GDP being necessary to ensure sustainability according to the S2 indicator.

For twelve Member States, the additional cost of delayed response is greater than 0.5 p.p. of GDP. These countries are the Czech Republic, Ireland, Greece, Spain, Latvia, Lithuania, Malta, Netherlands, Romania, Slovenia, Slovakia and the UK. For Greece and Slovenia, the cost of delay exceeds 1 percentage point of GDP, thus significantly increasing an already sizeable sustainability gap.

The absolute additional costs in terms of required adjustment of the delay is related to the size of the sustainability gap and the government gross debt but its relative size also depends on the projected economic growth in the future.

Table III.3.1: **Cost of delaying the response by 5 years**

	Cost of delay (% of GDP)		Sustainability gap	
	S1	S2	original S2	S2 delayed
BE	0.7	0.3	5.3	5.7
BG	-0.1	0.1	0.9	1.0
CZ	0.8	0.6	7.4	8.1
DK	-0.1	0.0	-0.2	-0.3
DE	0.5	0.4	4.2	4.6
EE	0.0	0.1	1.0	1.0
IE	1.5	0.7	15.0	15.7
EL	1.6	1.1	14.1	15.1
ES	1.3	0.8	11.8	12.6
FR	0.8	0.3	5.6	5.9
IT	0.3	0.1	1.4	1.5
CY	0.5	0.4	8.8	9.2
LV	1.4	0.9	9.9	10.8
LT	0.8	0.7	7.1	7.8
LU	0.8	0.5	12.5	13.1
HU	-0.2	0.0	-0.1	-0.1
MT	0.7	0.6	7.0	7.6
NL	0.8	0.6	6.9	7.5
AT	0.6	0.3	4.7	5.1
PL	0.4	0.3	3.2	3.5
PT	0.7	0.4	5.5	5.9
RO	0.9	0.8	9.1	9.9
SI	1.4	1.1	12.2	13.3
SK	0.8	0.7	7.4	8.1
FI	0.4	0.3	4.0	4.3
SE	0.1	0.1	1.8	1.9
UK	1.5	0.7	12.4	13.1
EU27	0.8	0.5	6.5	6.9
EA	0.7	0.4	5.8	6.2

Source: Commission services

The results presented in Table III.3.1 make it clear that inaction carries a cost. Moreover, there is a question of intergenerational fairness to be considered. The additional costs of ageing will fall at least in part on future taxpayers for countries with a sustainability gap. By closing the gap later, more of the burden is incumbent on future taxpayers rather than current ones and the burden is greater in absolute terms too.

The cost of delay indicates show the increase in the sustainability gap if no remedial action is taken. In so far as the crisis and the fiscal support that is necessary in support of the recovery do not allow an ambitious fiscal consolidation effort in the short- to medium term, the relentless increase in the sustainability gaps suggests the urgency in considering in earnest profound reforms in social protection system, even if the impact of those reforms may take time to appear in government accounts.

Chapter IV

The potential impact of the current economic crisis and sensitivity analysis

SUMMARY

The baseline analysis in this report uses projections for potential growth that do not take into account any durable effect of the ongoing financial and economic crisis. Instead, the pre-crisis potential growth estimate is forecast forward taking changing demographics into account. This chapter presents three alternative growth scenarios for the medium and long terms in the light of the economic crisis and then shows the corresponding estimates of the sustainability gaps.

The financial and economic crisis has already led to significantly worse than expected macro-economic and fiscal developments in 2008 and 2009. While the prospects for 2010 appear disappointing, there is also marked uncertainty regarding economic growth in the medium and long-term perspective. The unusually sharp and rapid deterioration in economic activity has transformed into a world recession. This poses the question of the extent to which the worsened short-term outlook would have implications for the growth potential of the EU economies also over the medium- and longer-term.

Of the three alternative scenarios presented, the first one assumes that it will take a decade for potential output to reach its pre-crisis growth rate leading to a 'lost decade' of growth. If this situation were to materialise, the sustainability gap would be some 1.2 percentage points (p.p.) of GDP higher on average, purely due to the effect that lower GDP growth over ten years and a lower level of GDP thereafter has. While lower growth means that employees will accrue lower pension entitlements, the effect on pensions will be more modest than on overall output, leading to higher pension spending as a share of GDP.

Of course the 'lost decade' scenario may prove to be too pessimistic. However, as long as the crisis has a long-term impact on the level of output of the economy, the baseline sustainability indicators will prove to have been underestimates of the true gaps.

The economic crisis means that any measures to address the long-term sustainability difficulties will need to be carefully thought through to ensure that they do not lead to short-term choking of the recovery. If action had been taken in previous years, and Member States had attained the medium-term objectives (MTOs) that were in place for the previous cycle of stability and convergence programmes, then, most sustainability gaps would have been closed.

This chapter also presents the results of a sensitivity analysis, which considers the effect on the estimates of the sustainability gaps of alternative scenarios for demographics and for the costs of providing health and long-term care for the elderly. By looking at different scenarios for longevity, health status and health costs, productivity, labour market scenarios, interest rates, long-term care needs and costs, it provides a sense of how the assumptions made in the baseline affect the final outcome and the robustness of the estimates.

1. THE EFFECT OF THE FINANCIAL CRISIS

The assessment of the sustainability conditions in each of the EU member states requires very long-term projections for demographic developments, interest rates and labour market, macroeconomic and fiscal situation. Given the relatively large margins of error surrounding each of those projections, this chapter considers a series of sensitivity analyses. It starts by presenting alternative growth scenarios for the post-crisis years and then discusses the uncertainty linked to them. It then turns to other issues like the demographic projections, productivity growth, unemployment and interest rates. This allows an assessment of the robustness of the sustainability indicators and a better understanding of the long-term sustainability risks in each country.

1.1. THE PERSPECTIVES FOR ECONOMIC GROWTH

The baseline GDP growth forecasts used in the main analysis do not take account any durable implications of the economic and financial crisis on economic activity. This section presents the alternative economic assumptions in the light of the crisis that will be used to look at the impact it might have on the long-term sustainability of the Member States of the European Union.

The financial and economic crisis has already led to significantly worse than expected macro-economic and fiscal developments in 2008 and 2009. While a number of forecasters are now starting to revise upwards growth forecasts for 2010, economic growth for the EU as a whole and for each Member States will remain quite low or even negative. Moreover, there is also marked uncertainty regarding economic growth in the medium and long-term perspective. The unusually sharp and rapid deterioration in economic activity has transformed into a world recession. This poses the question of the extent to which the worsened short-term outlook would have implications for the growth potential of the EU economies also over the medium- and longer-term. ([18])

Under a conventional business cycle interpretation, a period of low growth would be followed by a period of above trend growth. Given the severity and scope of the current crisis, however, there is however the serious risk of a structural break in growth conditions and that the recovery will be characterised by a protracted period of slow growth, and reduction in potential GDP growth. This might be due to a number of factors, including:

Increases in the cost of capital due to the real economy effects of balance-sheet adjustments in the financial sector, even in the presence of large recapitalisation packages;

Wide-spread credit constraints and higher borrowing costs in the non-financial sector in the light of the restructuring of banks. ([19]) Moreover, there may be a possible shift in attitude to risk leading to a structurally and permanently higher cost of capital;

Slower growth in total factor productivity due to a reduction in investment, which can have a lasting effect;

A permanent loss of human capital due to long term unemployment in the event of a protracted slow-down (the hysteresis effect). This may be more likely in the relatively inflexible EU labour markets;

A collapse in world trade and higher protectionism could have a particularly adverse effect on EU growth (and especially export-oriented countries);

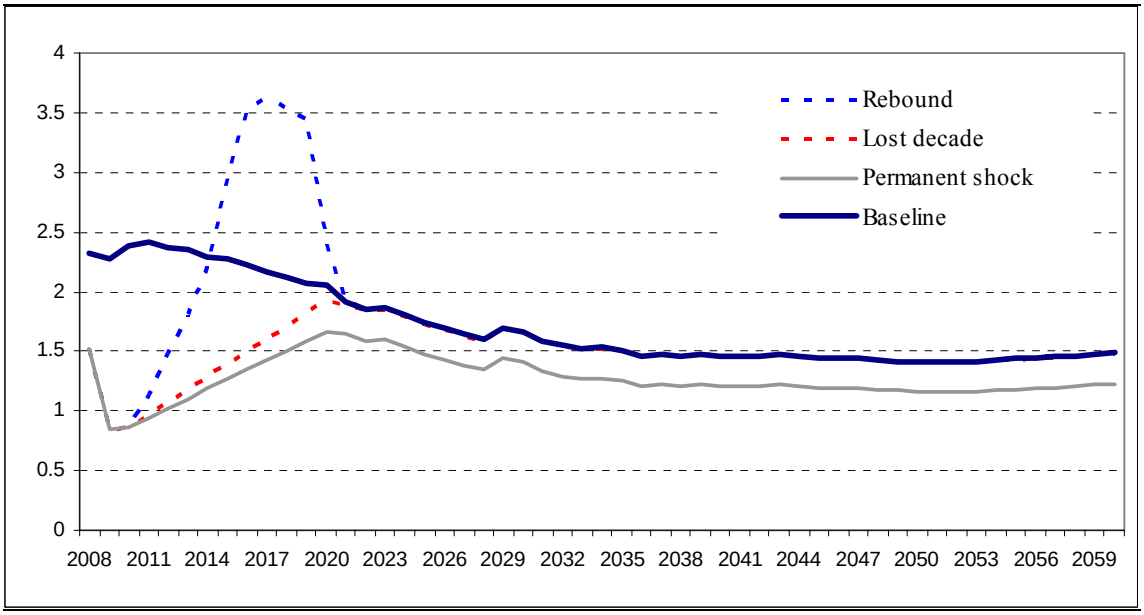
A wide-ranging lack of confidence leading to the postponement of household consumption and investment by firms;

A lasting increase in the weight of government in the economies, with a heavier tax burden that is

([18]) It should be borne in mind that estimating potential output growth is subject to uncertainty and that different methods for doing so exists. While in principle only structural factors matter for the estimation of the growth potential, it is very difficult to distinguish cyclical and structural factors in real time. This is all the more the case in times of rapid changes in economic activity or structural breaks, like for instance at the current juncture. For this reason, real-time estimates of potential growth, and of output gaps, need to be interpreted with caution.

([19]) Although EU consumers have lower deleveraging needs than US consumers, firms are more heavily indebted.

Graph IV.1.1: **Potential GDP growth compared: different crisis scenarios (annual % change)**



Source: Commission services

necessary to finance the increase in government expenditure and debt.

1.2. THREE MEDIUM-TERM POST-CRISIS SCENARIOS

In order to look at the possible effects of the economic crisis, three scenarios for medium and long terms economic growth have been modelled in addition to the baseline scenario. These are presented in Graph IV.1.1 for EU 27. It should be noted, that the trajectory of growth differs between Member States and that the EU27 average may hide substantially different developments and prospects among member states. ([20])

The baseline scenario shows a gradual reduction in potential growth due to population ageing, as explained in previous chapters. This scenario assumes that the loss in output in 2008–10 is of a cyclical nature without a durable impact on current and projected potential. This scenario is basically the same that one could have prior to the emergence of the crisis. Though it is labelled 'baseline' and most indicators in this report are based on that scenario, it appears at this stage an overoptimistic scenario.

The first alternative scenario, 'the rebound,' is also of an optimistic nature. Though it acknowledges a loss in potential growth as measured by the usual techniques, during the crisis years, it assumes a rebound in potential growth the years until 2020 or so, with the longer-term outcomes being unchanged.

The 'lost decade' scenario shows potential growth taking ten years to return to its pre-crisis level; both labour productivity and labour input are assumed to reach the baseline growth rate in 2020. Thereafter it follows the same path as in the absence of the crisis, but the output lost during the crisis years is definitely lost.

The most pessimistic scenario is the 'permanent shock' scenario, where not only is there no rebound, but there is a permanent hit to potential growth going forward. In this case, labour productivity growth and labour input are assumed to be permanently lower due to the crisis. This appears to be an over pessimistic scenario.

([20]) The calculations for the alternative scenarios are based on the Commission's spring 2009 forecasts of May 2009 and therefore an update on those presented in the 2009 Ageing Report, which were based on the January 2009 forecast.

Table IV.1.1: **The effects on the level of real GDP per capita of the three post-crisis scenarios**

	EU27 Level of GDP per capita, difference from baseline in %				
	2010	**2015**	**2020**	**2040**	**2060**
Rebound	-2	-6	0	0	0
Lost decade	-2	-9	-11	-11	-11
Permanent shock	-2	-9	-12	-16	-20

Source: Commission services

Box IV.1.1: Estimating the impact on pension spending of changes in macroeconomic variables.

For the analysis in this report, the potential budgetary impact of varying the underlying assumptions (productivity, employment) on pension spending, is estimated by the Commission using the sensitivity scenarios on the labour productivity growth rate and the structural unemployment rate, rather than by the Member States using the national pension models.

The elasticity of public pension expenditure with respect to changes in GDP is calculated as follows:

$$\varepsilon_t^{alt.scenario} = \frac{\left(\frac{P_t^{alt.scenario} - P_t^{baseline}}{P_t^{baseline}} \right)}{\left(\frac{GDP_t^{alt.scenario} - GDP_t^{baseline}}{GDP_t^{baseline}} \right)} \qquad (1)$$

where: *P*: pension expenditure (level)
GDP: GDP (level)
alt.scenario: the higher labour productivity scenario and the higher employment rate scenario, respectively

This elasticity is time-varying so as to capture potential changes over time that pension reforms might have induced in the relationship between GDP growth and pension expenditure.

Using the estimated elasticity, the alternative 'crisis' scenario is imposed as the *'alt.scenario'*, and the change in pension expenditure vis-à-vis the baseline is solved for. The alternative scenarios for pension expenditure carried out in the projection exercise relate to specific shocks (the 0.25 p.p higher labour productivity growth rate and 1 p.p. lower structural unemployment rate). For shocks of a different size, the calculated elasticity above can be used as a proxy for the effect of such a shock on pension expenditure. However, it should be noted that the elasticity with respect to a shock of a different size might be different. This would occur if there are non-linearities in the relationship. This simple model does not reflect such cases.

The effects on the level of real GDP per capita of the three scenarios, relative to the baseline are shown in Table IV.1.1. As over the first few years, trend growth follows the 2009 spring forecasts in all cases, the initial loss in GDP by 2010 equals 2% in all cases. Thereafter, in the rebound scenario, GDP per capita continues to fall but has caught up by 2020 when the recover is complete. This is not the case in the either scenarios where annual GDP growth over 2007-2020 is on average 0.8-0.9% lower than in the baseline. In the lost decade scenario, despite potential growth having reached its pre-crisis level by 2020, the years of the crisis leave a level effect equal to 11% of the

baseline GDP per capita. This will never be caught up. The permanent effect on growth in the permanent shock scenario is more dramatic however; in this case the lower rate of growth leads to an ever increase difference in level in GDP per capita going forward. While in 2020 GDP per capita is 12% lower than in the baseline, but 2060 it is 20% lower.

1.3. THE BUDGETARY IMPACT OF THE POST-CRISIS SCENARIOS

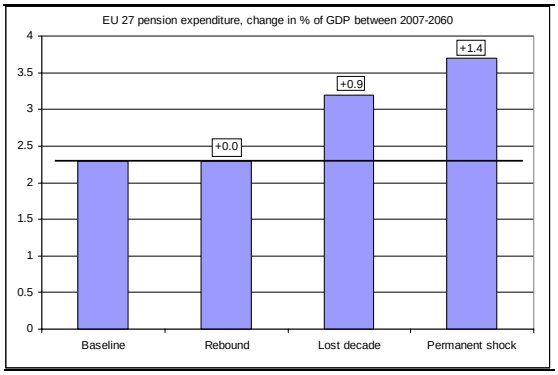
The budgetary impact of the shocks on age-related expenditure is modelled according to the three scenarios and compared with the baseline.

For public pension expenditure, the sensitivity tests of the projections to a change in the structural unemployment rate and to the productivity growth rate is used to calculate an elasticity of public pension with respect to changes in output.([21]) Details are provided in box IV.1.1. For the other age-related government expenditure items, the projections were obtained re-running the different models (health care, long-term care, education and unemployment benefits) with the respective alternative macro-economic scenarios.

The magnitude of the budgetary impact is determined by the nature of the shock. As the lost decade and permanent shock scenarios are negative – in the sense of implying a lower GDP level – they lead to higher age-related expenditure as a share of GDP, while the rebound scenario is neutral. Graphs IV.1.2 and IV.1.3 show the effect of the three potential growth scenarios on public pension expenditure and the overall age related expenditure, cumulatively over the 2007–60 period. They show, that relative to the baseline, the permanent shock has a bigger impact than the lost decade scenario, while the rebound scenario is neutral overall, both for pension spending and the overall age related expenditure.

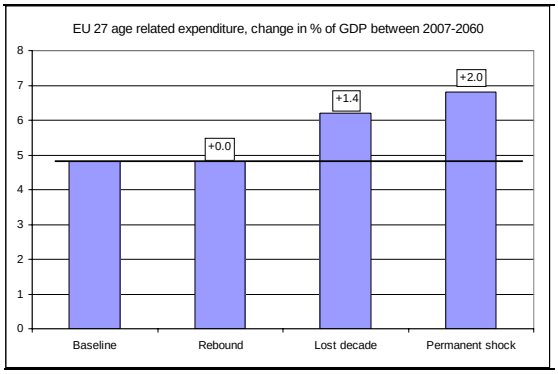
([21]) The sensitivity tests carried out in the 2009 Ageing Report were used to calculate the elasticities.

Graph IV.1.2: **Potential impact of the budgetary crisis on pensions**



Source: Commission services

Graph IV.1.3: **The potential budgetary impact of the crisis on total age-related expenditure**



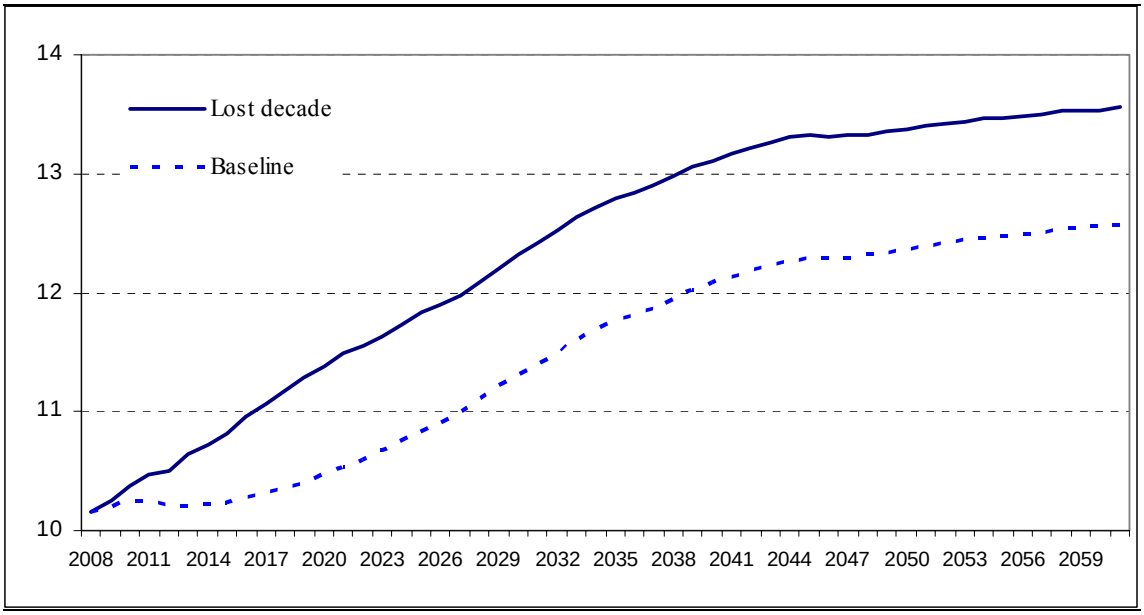
Source: Commission services

In the case of the rebound scenario, the additional costs in the years when GDP growth in at below the baseline rate are offset by lower costs when GDP growth is at above trend growth. In the lost decade scenario, pension expenditure is 0.9% of GDP higher in 2060 relative to the baseline, while the age related expenditure is 1.4% of GDP higher, with the increases occurring between 2007 and 2020, before gradually falling. In the permanent shock scenario, however, the increase in both pension expenditure and the overall age related expenditure are not only higher (at 1.4% and 2.0% of GDP respectively), but also continue increasing beyond 2020 into the future.

1.3.1. The dynamics of the impact of the crisis on public pension expenditure

The economic crisis leads to lower nominal GDP in the short term and, in the case of the lost decade and permanent shock scenarios lower potential GDP levels relative to the baseline scenario going forward. In parallel, public pension expenditure

Graph IV.1.4: **The dynamics of public pension expenditure (baseline versus lost decade scenario, % of GDP)**



Source: Commission services

will be lower than in the baseline scenario. Due to the design of contribution and entitlement systems and as pensions tend not to be indexed with wages, the short-term elasticity of pension expenditure to GDP is less than 1. Pension expenditure will therefore fall less than GDP, leading to an increase in pension spending as a share of GDP. Over the medium to long term, the estimated elasticity rises reflecting the fact that lower contributions due to the effects of the crisis eventually lead to lower entitlements. The difference in pension expenditure in the crisis scenarios vis-à-vis the baseline starts therefore to fall over the longer-term.

Graph IV.1.4 shows the dynamics of public pension expenditure as a share of GDP for the baseline and lost decade scenarios. It shows that, while overall pension spending as a share of GDP is higher in the lost decade scenario than in the baseline scenario by 0.9 p.p. of GDP, most of the increase happens in the early years. Indeed, for the years 2020–60 the lost decade scenario has a marginally lower increase in public pension spending relative to GDP – by 0.1 p.p. – as lower entitlements start to have an effect.

Overall, the no-policy change assumption involves the (partial) indexation of pensions alongside earnings-related entitlements. These features lead to the crisis scenarios resulting in rising and then falling level of pension spending as a share of GDP.

1.4. IMPLICATIONS ON SUSTAINABILITY INDICATORS OF THE ALTERNATIVE POST-CRISIS CENARIOS

Table IV.1.2 shows the sustainability gap, as measured by S2 indicator, estimated for the three alternative scenarios. The results show the effect of the different outcomes for GDP growth on sustainability, but do not account for the additional costs associated with the fiscal cost of the recovery measures which will add to the stock of debt and increase the primary surplus required to service the debt. If these additional costs were added on, an increase in the gap through the IBP component of the order of magnitude presented in the last column of the table would emerge. While this is not insignificant, it is not as large as the overall effect of ageing and is also highly uncertain as the final fiscal cost of the crisis will depend on the ability of governments to recoup some or all of the funds they used for the recapitalisation of banks and on which share of contingent liabilities borne by the government in the context of the crisis (for example State guarantees to deposits and to liabilities issued by the banks) will materialise.

Table IV.1.2: **Sustainability calculations under alternative crisis scenarios**

Effect of different crisis scenarios on the S2 indicator and required primary balance (RPB)

	Baseline Level			Rebound Difference from baseline			Lost decade Difference from baseline			Permanent shock Difference from baseline		
	S2	IBP*	LTC	S2	IBP	LTC	S2	IBP	LTC	S2	IBP	LTC
BE	5.3	0.6	4.8	0.0	0.0	0.0	1.7	0.1	1.6	2.8	0.3	2.5
BG	0.9	-0.6	1.5	0.0	0.0	0.0	-0.6	0.0	-0.7	-0.6	0.0	-0.6
CZ	7.4	3.7	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1
DK	-0.2	-1.6	1.4	0.0	0.0	0.0	-0.2	0.0	-0.2	0.1	0.0	0.1
DE	4.2	0.9	3.3	0.0	0.0	0.0	1.6	0.1	1.5	1.6	0.2	1.3
EE	1.0	1.1	-0.1	0.0	0.0	0.0	-0.3	0.0	-0.4	-0.2	0.1	-0.3
IE	15.0	8.3	6.7	0.0	0.0	0.0	5.6	0.2	5.4	5.4	0.4	5.0
EL	14.1	2.6	11.5	0.0	0.0	0.0	-0.8	0.0	-0.8	0.5	0.3	0.3
ES	11.8	6.1	5.7	0.0	0.0	0.0	3.0	0.1	2.9	3.7	0.2	3.6
FR	5.6	3.8	1.8	0.0	0.0	0.0	1.0	0.1	0.9	2.0	0.3	1.7
IT	1.4	-0.1	1.5	0.0	0.0	0.0	0.5	0.1	0.4	1.3	0.4	0.9
CY	8.8	0.5	8.3	0.0	0.0	0.0	-0.1	0.0	-0.1	0.2	0.1	0.1
LV	9.9	8.9	1.0	-0.1	-0.1	0.0	0.7	0.1	0.5	1.0	0.2	0.7
LT	7.1	3.9	3.2	0.0	0.0	0.0	0.7	0.1	0.6	0.5	0.1	0.3
LU	12.5	-0.4	12.9	0.0	0.0	0.0	0.6	0.0	0.6	0.1	0.0	0.1
HU	-0.1	-1.6	1.5	-0.1	-0.1	0.0	0.9	0.2	0.7	1.3	0.4	0.9
MT	7.0	1.4	5.7	0.0	0.0	0.0	4.1	0.1	4.0	4.5	0.2	4.3
NL	6.9	1.9	5.0	0.0	0.0	0.0	0.6	0.0	0.5	0.8	0.1	0.7
AT	4.7	1.6	3.1	0.0	0.0	0.0	1.4	0.0	1.4	2.5	0.2	2.3
PL	3.2	4.4	-1.2	0.0	0.0	0.0	-0.1	0.0	-0.2	0.3	0.1	0.1
PT	5.5	3.7	1.9	0.0	0.0	0.0	1.3	0.1	1.2	2.1	0.3	1.8
RO	9.1	4.3	4.9	0.0	0.0	0.0	0.8	0.0	0.7	0.6	0.1	0.5
SI	12.2	3.9	8.3	0.0	0.0	0.0	2.9	0.0	2.8	2.3	0.1	2.2
SK	7.4	4.5	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1
FI	4.0	-0.5	4.5	0.1	0.1	0.0	0.4	0.0	0.4	0.9	0.0	0.8
SE	1.8	0.2	1.6	0.0	0.0	0.0	1.5	0.0	1.5	1.7	0.1	1.7
UK	12.4	8.8	3.6	0.0	0.0	0.0	0.9	0.1	0.8	0.9	0.2	0.6
EU-27	6.5	3.3	3.2	0.0	0.0	0.0	1.1	0.1	1.0	1.5	0.2	1.3
EA	5.8	2.3	3.5	0.0	0.0	0.0	1.2	0.1	1.2	1.8	0.2	1.6

Source: Commission services

For the rebound scenario, the differences with the baseline are all in the short-term, and cancel each other out over the long-term. Conversely, for both the other scenarios, the lasting impact of the economic crisis puts more pressure on the sustainability of the public finances. While the lost decade scenario assumes a return to previously expected trend growth, the lower productivity growth for ten years and the lower output that results is forecast to increase the sustainability gap as measured by the S2 indicator of 1.1% of GDP to 6.0% of GDP for EU 27. This increase is essentially driven by an increase in the long-term cost of ageing, as an unchanged assumption about inflation and therefore the up-rating of pensions leads to higher spending as a share of the (lower) GDP.

In the case of the permanent shock the effect of the crisis on long-term sustainability is more marked, as both the productivity and GDP growth are assumed to be on a lower trajectory going forward. This leads to an ever growing difference in output levels and an increase in the sustainability gap of 1.5% of GDP. This is primarily due to higher long term costs of ageing, but the initial budgetary position also contributes more to the gap due to the lower GDP growth. Although the analysis undertaken in this report is primarily a partial equilibrium exercise, in the case of the permanent shock scenario, a departure from the permanent real interest rate of 3% has been made. Instead, it is assumed that the interest rate and GDP growth rate differential remains constant, so that interest rates in this case are lower than in the baseline. This is because with a permanent change in the trend rate of output it would be expected that there is additionally an effect on the return to capital and therefore the interest rate.

For a few countries, the crisis scenarios lead to a decrease in the sustainability gaps. This somehow counterintuitive result is due to eligibility and up rating rules for pensions, where the lower accrual of pension rights dominates the lower GDP effects during the years covered by the analysis.

2. THE EFFECT OF FISCAL CONSOLIDATION: AN MTO SCENARIO

The impact of the ageing population on the sustainability of the public finances requires that the sustainability gaps be closed, where they exist.

In the light of the current financial and economic crisis, the short-term priority for fiscal policy is to find a balance between supporting the recovery of the economies of the Member States and without imposing too heavy a burden on the public finances over the long-term. For this reason, it is not the time to recommend immediate action to address long-term sustainability issues related to ageing populations without an in-depth understanding of the situations in the various countries.

Table IV.2.1: **Effect of the MTO balance on the S2 indicator and required primary balance (RPB)**

	Baseline	MTO scenario			Baseline	MTO
	S2	S2	IBP*	LTC	RPB	RPB
BE	5.3	1.0	-3.7	4.7	5.9	5.5
BG	0.9	-6.9	-9.1	2.2	2.3	2.6
CZ	7.4	2.0	-2.2	4.2	4.6	4.9
DK	-0.2	-3.0	-3.4	0.4	2.0	1.1
DE	4.2	0.0	-3.7	3.8	5.1	5.1
EE	1.0	-5.0	-5.1	0.1	0.3	0.5
IE	15.0	2.0	-4.5	6.5	7.2	7.0
EL	14.1	8.1	-3.4	11.5	12.7	12.4
ES	11.8	2.8	-2.9	5.7	6.5	6.6
FR	5.6	-1.4	-3.2	1.8	2.9	2.7
IT	1.4	-1.7	-3.2	1.6	3.4	3.2
CY	8.8	4.3	-4.0	8.3	8.9	8.4
LV	9.9	0.3	-1.3	1.6	2.3	2.5
LT	7.1	-0.3	-4.2	3.9	4.1	4.6
LU	12.5	12.0	-1.3	13.4	13.6	13.4
HU	-0.1	-2.4	-4.7	2.4	3.4	3.7
MT	7.0	0.8	-4.4	5.2	6.2	6.0
NL	6.9	3.4	-1.3	4.7	6.6	6.2
AT	4.7	0.1	-3.0	3.1	4.5	4.3
PL	3.2	-3.1	-3.2	0.2	1.1	1.4
PT	5.5	-1.3	-3.2	1.9	3.1	3.0
RO	9.1	-0.6	-5.8	5.2	5.3	5.6
SI	12.2	4.4	-3.7	8.1	8.4	8.4
SK	7.4	1.1	-2.5	3.6	4.0	4.4
FI	4.0	-0.7	-4.4	3.7	5.6	4.5
SE	1.8	-2.3	-4.6	2.2	3.2	3.2
UK	12.4	1.1	-2.5	3.6	4.6	4.6
EU-27	6.5	0.2	-3.2	3.4	4.5	4.5
EA	5.8	0.6	-3.1	3.7	4.9	4.8

Source: Commission services

Nevertheless, over the medium term a correction of the budgetary positions or reforms to reduce the cost of ageing will be necessary. Table IV.2.1 presents the effect of the sustainability calculations in terms of S2, assuming that the medium-term objectives (MTO) that were in place at the time of the 2008/09 round of stability and convergence programmes of Member States were met, through a gradual improvement in the underlying fiscal position between 2010 and 2015. The MTOs used for the exercise are shown in the final column of the table. Where the actual MTOs are given as a range, the MTO used and presented in the table is from within this range. For Member States with an MTO of a balanced budget (such as Ireland) and MTO of 0 is chosen. For the United Kingdom, which has not submitted a formal MTO in its convergence programme, an MTO of –1% of GDP is used.

The results show, that overall, if fiscal policy followed this path, the improvement in the underlying position would be nearly sufficient to offset the increase in the long term cost of ageing, with an S2 gap of 0.2 % of GDP for EU 27, though large gaps would still exist for a number of Member States.

This scenario shows that reaching the MTOs would give a first and decisive step towards sustainable public finances. However, it also suggests that the MTOs of some countries may need to be updated. Moreover, it confirms the evidence presented elsewhere in the report that for the many countries, in particular those with the largest sustainability imbalances, fiscal consolidation efforts – if not accompanied by structural reforms – will not suffice to close the sustainability gaps.

Box IV.2.1: **Medium-term debt projections under alternative consolidation scenarios**

Rising government deficits and low growth, as well as financial support to the banking sector are leaving a legacy of fast growing government debt ratios in the EU. Reflecting concerns arising from durably high deficits, this box projects the gross debt-to-GDP ratio of the EU Member States up to next 20 years or so, under three stylised scenarios.

These projections are based on the Commission services' spring 2009 forecast till 2010, which are then extended into the future taking into account the 'lost decade' macroeconomic scenario (see Chapter IV, section 1.1). Beyond 2020, the scenarios discussed in the box assume a return of growth to the long-term trend.

These additional assumptions are also considered:

- The increase in age-related expenditure is consistent with the macroeconomic scenario. Age-related expenditure in the EU increases, on average, by 0.4 p.p. of GDP in the EU as a whole up to 2020 (0.6 p. p. in the euro area) and by 1.9 p.p. (2.2 in the euro area) up to 2030;

- The tax-to-GDP ratios are projected to converge to their pre-2007 level for countries with 2010 tax burdens below their 2007 level. For countries with 2010 tax-to-GDP ratio above the pre-crisis level, it is assumed that the tax ratio remains constant;

- The implicit interest rate on government debt converges to 3% in real terms (the value assumed for the purposes of the long-term sustainability of public finance assessment) in 2020 and remains constant thereafter, for all countries;

- Specific stimulus measures projected for 2010 are withdrawn in 2011;

- Zero stock-flow adjustment; this means no further purchases of financial assets or recapitalisations of financial institutions, nor disposal of such assets.

Graph 1 depicts the projected evolution for the government gross debt ratio, for the EU as a whole. The solid thick line shows the outcome for this stylised scenario under the assumption of no fiscal consolidation measures (Scenario 1). The gross debt-to-GDP ratio would rise steadily over the projection period. By 2015, the average debt ratio would be at around 100% of GDP, both in the EU and the euro area. It will continue increasing to around 120% of GDP in 2020, though with large differences across countries.

The highest increases in the debt ratio would take place in Ireland and Latvia. A particularly fast rise in the debt ratio would also occur under this simplified scenario for the United Kingdom. Bulgaria, Denmark, Estonia, Cyprus, Luxembourg, Finland and Sweden would be the only Member States with debt ratios below 60% of GDP in 2020.

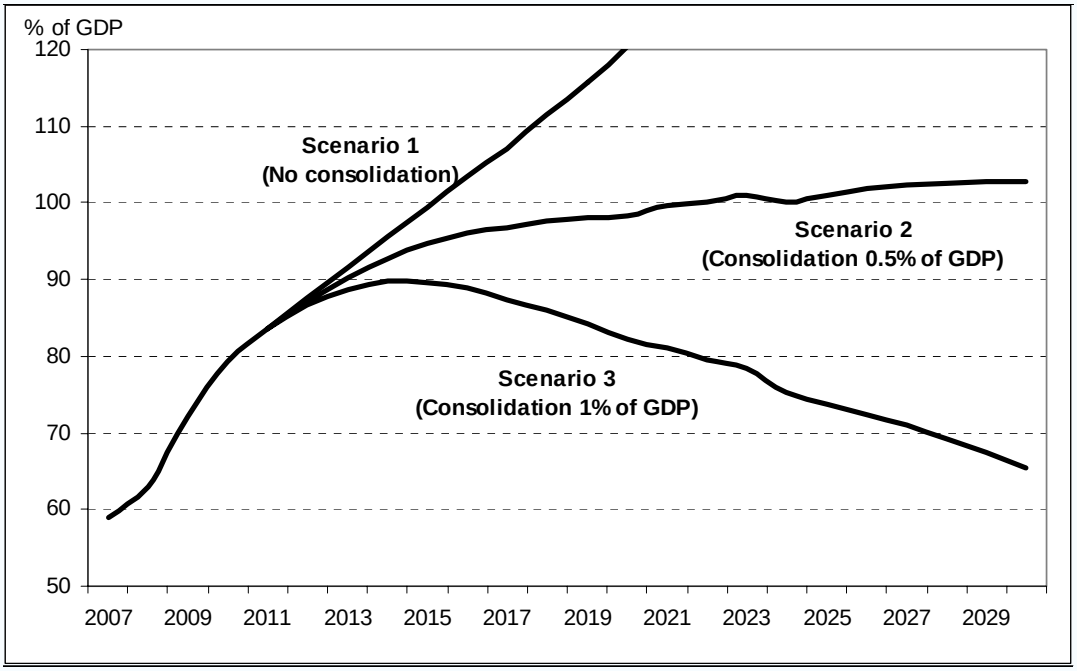
The graph also shows the results of two further scenarios. In Scenario 2, from 2011 on, all Member States would implement fiscal consolidation efforts (measured in terms of structural primary balance) of 0.5% of GDP per year until they reach their medium-term objectives (MTOs). ([1]) The graph clearly illustrates that this consolidation rhythm – which is the benchmark consolidation effort in the SGP – would not be enough to stabilise, let alone reduce, the debt ratio by 2030.

([1]) The MTOs of Member States are shown in Table IV.2.1, taking into account information contained in the latest round of stability and convergence programmes.

(Continued on the next page)

Box (continued)

Graph 1: **Medium-term debt projections under alternative assumptions (% of GDP)**



Source: Commission services.

A consolidation effort of 1% of GDP per year (Scenario 3) until the MTOs of each Member State are reached would stabilise the government debt ratio in the EU in 2016. Note, however, that by 2030, the debt ratio would still be substantially larger than in the pre-crisis years, and 5 points above the Maastricht reference value.

Though these scenarios are based on a number of simplifying assumptions, they show that a fast debt reduction requires serious consolidation efforts, sales of assets and may also, in some countries require the update on their MTOs to more ambitious levels. Structural measures that contribute to avoid a 'lost decade' of slow GDP growth would also decisively contribute to an early stabilisation, and then fast reduction, of the government debt ratio.

3. SENSITIVITY ANALYSIS NOT LINKED TO THE FINANCIAL CRISIS

The analysis presented in this report is based on the projections set out in the 2009 Ageing Report. This section presents the changes in the S2 indicator under alternative assumptions for life expectancy, labour productivity, participation in the labour market, including for older workers, total employment, migration and the interest rate. For all these elements there is considerable uncertainty when predicting into the future, so considering the response of sustainability results to the underlying assumptions is important. The results are presented in Table IV.3.1. It should be noted that the scenarios considered in this analysis are not necessarily the most realistic ones, but serve to indicate how the results vary with the changes in the underlying assumptions. ([22])

As the analysis in this report is a partial equilibrium analysis, some of the mechanisms for change are not fully taken into account. Thus, the sensitivity results may be either under or overestimated in case of some scenarios. The results presented should therefore be viewed within the context of the *caveats* presented below.

3.1. LIFE EXPECTANCY

The baseline projections of this report are based on the EUROPOP 2008 population projection published in April 2008 by Eurostat. The projections are based on assumptions about fertility and mortality rates and the level of net migration in each Member State. Life expectancy at birth in 2008 averaged 76.1 years for men and 82.1 for women ([23]). Eurostat demographers forecast to increase to 84.6 and 89.1 years respectively, by 2060, with a narrowing in the range seen between countries.

The higher life expectancy scenario assumes an increase in life expectancy of 1 year by 2060 on top of the Eurostat projections. Within this scenario, mortality falls for all age groups, which translates into a slightly larger labour force and slightly higher GDP levels. Public expenditure increases as life expectancy improves over time, thus usually implying longer periods in retirement ([24]) and higher healthcare expenditure. Since the impact of higher life expectancy on public expenditure exceeds the positive impact on GDP, total age-related expenditure to GDP tends to increase. The S2 indicator therefore increases with rising life expectancy. Table IV.3.1 shows the effect on S2.

It shows that a 1 year increase in life expectancy would result in a widening of the S2 sustainability gap by 0.5% of GDP across EU-27 and 0.4% in the euro area. This is driven by a required increase in health-care and pension expenditure that an even older population would require.

The degree to which an increased life expectancy will lead to increased costs depends on the pension schemes and the range of coverage of health and long-term care. Member States where the pension annuity explicitly depends on life expectancy at retirement age (such as Italy, Poland, Finland or Sweden) or where there system is set-up to take account of fiscal imbalances (such as through the sustainability factor in Germany) show a smaller increase in the gap due to a higher life expectancy. Conversely, Member States with high levels of pension expenditure with no such adjustment factors, such as Belgium, are expected to face a higher increase in costs.

Increases in life-expectancy also affect healthcare expenditure. The extent to which healthcare expenditure will change depends in part on the particular healthcare system of the different Member States and on whether the additional year(s) of life are spent in good health. ([25]) Increases in life expectancy due to improved

([22]) It may be just as plausible that the actual outcome is in the opposite direction to the example in the table; for example, while the analysis considers the effect of higher life expectancy, it could be that life expectancy is shorter rather than longer. While the results are not necessarily symmetric, they can serve as an informal 'ready reckoner' for alternative outcomes.

([23]) The range of forecasts is from 65.9 in Lithuania to 79.0 in Sweden for men and 76.6 in Romania and 84.3 in France for women.

([24]) Note, however, that the pension systems of some Member States include clauses which automatically adjust retirement ages to changes in longevity.

([25]) The assumption is that half of the extra year of life will be healthy.

Table IV.3.1: **Sensitivity scenarios, difference in S2 indicator compared to the baseline scenario**

	Baseline	Higher life expectancy				Labour productivity	Older workers	Total Employment	Zero migration	Interest rate		
	S2	Total	Pension	Healthcare	Long term care	Total	Total	Total	Total	Total	IBP	LTC
BE	5.3	**0.5**	0.2	0.3	0.0	**-0.6**	-0.4	-0.5	2.9	**0.2**	0.9	-0.7
BG	0.9	**0.3**	0.2	0.2	0.0	**-0.2**	0.0	-0.2	0.3	**-0.3**	0.1	-0.5
CZ	7.4	**0.5**	0.2	0.3	0.0	**-0.1**	0.5	0.5	1.1	**-0.6**	0.3	-0.9
DK	-0.2	**0.3**	0.1	0.3	-0.1	**0.0**	-0.2	-0.4	1.2	**0.3**	0.1	0.1
DE	4.2	**0.4**	0.1	0.3	0.0	**0.1**	-0.1	-0.2	1.9	**0.1**	0.7	-0.6
EE	1.0	**0.4**	0.1	0.3	0.0	**-0.1**	0.0	0.0	0.3	**0.1**	0.1	0.0
IE	15.0	**0.4**	0.2	0.3	0.0	**0.0**	-0.2	0.1	1.8	**-0.7**	0.6	-1.4
EL	14.1	**0.3**	0.2	0.2	0.0	**-1.3**	-0.4	0.1	2.2	**:**	:	:
ES	11.8	**0.4**	0.2	0.2	0.0	**-0.7**	-0.2	-0.4	2.6	**-0.7**	0.4	-1.1
FR	5.6	**0.6**	0.3	0.3	0.0	**-0.6**	-0.5	-0.5	1.4	**:**	:	:
IT	1.4	**0.3**	0.1	0.2	0.0	**-0.4**	-0.1	-0.1	3.4	**:**	:	:
CY	8.8	**0.4**	0.2	0.2	0.0	**-0.5**	-0.1	0.6	4.7	**:**	:	:
LV	9.9	**0.2**	0.0	0.2	0.0	**-0.1**	-0.1	-0.1	0.2	**:**	:	:
LT	7.1	**0.4**	0.2	0.2	0.0	**0.0**	-0.2	0.2	-0.1	**-0.4**	0.2	-0.7
LU	12.5	**0.6**	0.3	0.3	0.0	**-0.1**	-0.2	-0.2	6.8	**-2.4**	0.0	-2.5
HU	-0.1	**0.6**	0.2	0.4	0.0	**-0.2**	-0.2	-0.1	1.4	**0.2**	0.7	-0.5
MT	7.0	**0.5**	0.2	0.4	-0.1	**-0.4**	-0.2	0.5	1.8	**-0.5**	0.6	-1.1
NL	6.9	**0.2**	0.2	0.2	-0.2	**0.0**	-0.2	-0.4	1.1	**-0.3**	0.4	-0.7
AT	4.7	**0.6**	0.3	0.3	0.0	**-0.8**	-0.5	-0.5	4.4	**:**	:	:
PL	3.2	**0.4**	0.1	0.4	0.0	**-0.3**	-0.1	0.0	0.5	**0.4**	0.4	0.0
PT	5.5	**0.7**	0.3	0.4	0.0	**-0.5**	-0.2	-0.4	3.0	**0.3**	0.7	-0.4
RO	9.1	**0.5**	0.2	0.2	0.0	**0.0**	-0.3	0.5	0.3	**-0.7**	0.2	-0.9
SI	12.2	**0.1**	0.3	0.3	-0.5	**-0.3**	-0.5	-0.2	1.0	**:**	:	:
SK	7.4	**0.4**	0.2	0.3	0.0	**-0.1**	-0.1	0.3	0.4	**-0.4**	0.2	-0.6
FI	4.0	**0.6**	0.1	0.4	0.1	**-0.3**	-0.2	-0.3	0.9	**-0.2**	0.2	-0.4
SE	1.8	**0.3**	0.1	0.3	-0.1	**-0.1**	-0.2	-0.3	1.5	**-0.1**	0.3	-0.4
UK	12.4	**0.7**	0.3	0.5	0.0	**0.0**	-0.1	0.0	3.1	**-0.1**	0.6	-0.7
EU27	6.5	**0.5**	0.2	0.3	0.0	**-0.3**	-0.2	-0.3	2.2	**:**	:	:
EA	5.8	**0.4**	0.2	0.3	0.0	**-0.4**	-0.3	-0.3	2.3	**:**	:	:

Source: Commission services

health are likely to be less costly to the healthcare budget than increases primarily due to advances in medical technology.

3.2. LABOUR PRODUCTIVITY

A difference in labour productivity to that set out in the baseline scenario leads to a different trajectory for GDP growth. Age-related expenditures are also affected, although the indexation rules in place will determine the size of the effect. In particular, if pension, health care and long-term care expenditure are closely related to productivity growth, for example by being indexed to wages, the time patterns of GDP and age-related expenditure are similar. On the contrary, if the indexation rules do not reflect the developments in productivity the two variables diverge.

In the baseline scenario, labour productivity is assumed to increase at an average annual rate of 1.8%, with higher rates in the earlier period for the new Member States, given their relative stages of development. In the alternative scenario considered in this section, the labour productivity growth rate is 0.25 percentage points higher than in the baseline. The increase in labour productivity is assumed to occur linearly between 2010 and 2020 and to remain at the higher level thereafter.

The results in Table IV.3.1 show the effect of the higher labour productivity scenario on the S2 indicator. As age-related expenditure in percent of GDP falls with growing labour productivity in most of the EU Member States, the overall impact on S2 indicator is positive, i.e. S2 falls. The results indicate that such an increase in productivity would reduce the sustainability gap by 0.3% of GDP on average for EU-27, and by 0.4% in the Euro area.

When considering this scenario, the partial equilibrium approach used should be borne in mind. In line with this approach, the analysis does not capture any increase in the government revenue-to-GDP ratio. In other words, the no-policy assumption is implemented in such a manner that the faster GDP growth does not imply fiscal drag..

3.3. EMPLOYMENT RATE

The baseline scenario assumes that the employment rate of the working age population overall, and of older workers in particular, increases over the medium term from 70.4% of individuals aged 15-64 in 2007 to around 74% for EU-27 in 2060. Most of this increase is assumed to come from older workers; those aged 55-64 are

assumed to see a rise in participation from 47.5% to around 62½% between 2007 and 2060.

The higher total employment scenario is based on the assumption of a further increase in the employment rate of 1 percentage point, relative to the baseline projection. It assumes that this increase occurs linearly between 2010 and 2020 and that employment remains higher from there on. The increase in employment is assumed to occur through a lowering of the NAIRU.

The other employment scenario assumes an increase in the employment rate of older workers, equal to 5 percentage points relative to the baseline scenario, though the retirement age remains unchanged as compared to the baseline. Again, the increase is assumed to occur linearly between 2010 and 2020 and remain higher thereafter. The increase occurs through a reduction in the inactive population.

In the first instance, higher labour force increases GDP growth compared to the baseline However, an increase in the employment of older workers also has an impact on pension expenditure. Insofar as individuals postpone their exit from the labour market, pension expenditure decreases, due to individuals working rather than claiming pension benefits. However, as individuals work longer they accumulate more rights and subsequently receive higher pensions once they retire. Thus, the effect of higher employment changes over time and is spread over a long horizon. Indeed, the exact effect will depend on the pension system (including penalties or encouragement for earlier retirement) the coverage and the ageing structure of each Member State.

In general, a further increase in participation rates, either overall or specifically for older workers would reduce the sustainability gap in many of the Member States. Table IV.3.1 sets out the effect on the S2 sustainability gap. An increase in the employment rate of older workers will reduce the EU 27 sustainability gap by 0.2% of GDP, while an increase in total employment by 0.3%. In some Member States, though, the effect of higher pension entitlements which are accrued during the extra years of work overrides the GDP effect of more workers and is therefore costly to the public finances.

As in the case of the increase in labour productivity scenario, any increase in government revenues as a share of GDP, due to higher employment, faster growth and fiscal drag is not captured.

3.4. MIGRATION

The baseline scenario assumes that the average net annual migration rate falls from 0.3% of the population in 2008 and 0.2% in 2060 for EU 27. Overall, an additional 59 million migrants are projected to join the Union between 2007 and 2060, with most joining the euro area. Countries that have recently experiences net outflows of migration (Estonia, Lithuania, Latvia, Poland, Bulgaria and Romania) are assumed to see a tapering off or reversal of the situation.

Migration is of course very difficult to predict as it depends on socioeconomic and political, legal and social developments in both the EU and the rest of the world, in particular in the neighbouring countries.

Migrants are an important addition to the work force as they tend to be of working age. Moreover, there is a longer-term effect on population since immigrant populations usually have higher fertility rate. Therefore, in the short and medium-run, an inflow of migrants leads to increase in GDP of receiving country. However, as working migrants accumulate pension rights, over the long-term they too receive pensions and other social benefits paid the host country.

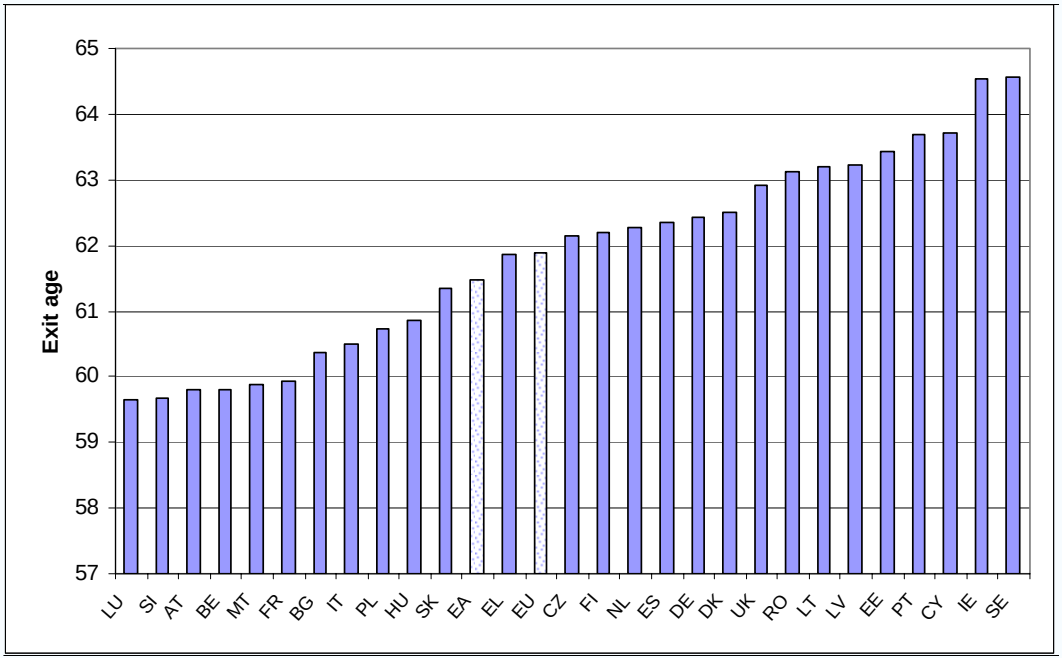
Table IV.3.1 presents the effects that zero migration between each EU Member State and the rest of the world would have on the sustainability gap. This scenario should not be taken as a realistic prediction of possible outcomes for the future. It is included to provide a bound for the effect of reduced migration by showing the overall contribution that migrants are assumed to make to the growth rates of the EU economies and fiscal sustainability. Overall, assuming zero migration in the EU as a whole and in each Member States from now until 2060 would increase the sustainability gap by 2.2% of GDP in EU 27, with considerable variation between countries.

Box IV.3.1: **Scenario on postponing retirement**

This box presents a scenario where effective retirement ages of all Member States are increased in a uniform manner. The aim is to illustrate the impact of reforms aimed at increasing the retirement age on sustainability of public finances.

Labour market exit ages vary however significantly between countries, which are thus in differing positions to address their sustainability challenges through reforms that would defer retirement. The effective exit ages in 2008 are reported in Graph 1: Luxembourg and Slovenia have the lowest exist ages, while the highest exist ages are in Sweden and Ireland.

Graph 1: **Effective exit ages in 2008**



Source: Ageing Report 2009.

In the absence of policy measures aimed at postponing retirement ages – like a change in the statutory retirement ages or other encouragements for older workers to remain in the labour market – there will be a very slow increase in the exit ages (see Graph 2, baseline). This increase is related to the fact that different age cohorts have different participation rates. The average exit age for the EU-27 aggregate would increase from slightly below 62 in 2008 to just above 63 years in 2060. It should be noted that, according to the demographic projections, the remaining life expectancy at 62 is expected to increase from 20.2 years in 2008 to 26.2 in 2060.

The scenario is based on the assumption that exit ages for each Member State increase by two years – on top of the baseline – from 2010 to 2020 in a linear fashion. After 2020, the exit ages keep rising by two-thirds of the increase in remaining life expectancy. Graph 2 shows the trajectories of average exit ages in the baseline scenario and the postponed retirement scenario for the EU as a whole. The projected evolution in the remaining life expectancy at 62 is also shown.

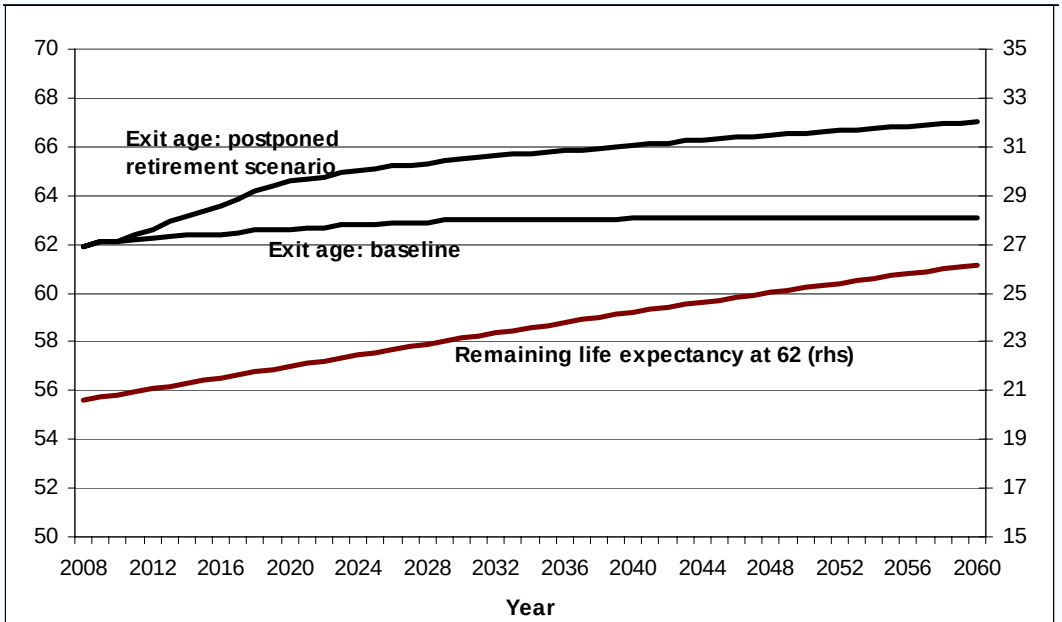
The scenario is purely illustrative; it is not realistic to assume that the retirement ages will increase the same in all countries. One may expect the retirement ages to converge, that is, one may expect retirement ages to

(Continued on the next page)

Box (continued)

increase more in the countries that currently have the lows retirement ages, and by relatively less in the countries with the relatively high exit ages.

Graph 2: **Exit ages (EU27, baseline and postponed retirement scenario)**



Source: Commission services.

These additional assumptions are also considered n this scenario:

- The extension of working lives increases total labour supply in a proportional manner. Labour productivity for those older workers who continue to stay in the labour force due the deferral of the exit age is assumed to be 90 percent of the productivity of an average worker;
- Total pension expenditure is reduced in proportion to the decrease of average years in retirement, which is proxied by the remaining life expectancy at the average exit age. Compared with the baseline, the average pension increases in line with GDP;
- The ratio-to-GDP of other age-related expenditure (health care, long-term care, education and unemployment benefits) evolves according to the baseline scenario.

The main implications of the increase in exit ages are related to increase in labour supply and the cut in overall pension expenditure as compared with the baseline. Given the increase in labour supply, GDP growth rises on average 0.14 percent per year: by 2060 the GDP level is around 7½ percent larger than in the baseline. The ratio to GDP of pension expenditure in the EU as a whole falls by 1.8 percentage points of GDP; the average pension increases in line with GDP, but the number of pensions paid is lower than in the baseline.

The postponed retirement scenario yields a sustainability gap (S2) for EU-27 of 4.8 percent of GDP, which is 1.7 points lower than in the baseline scenario. Therefore, a substantial gap would remain.

The intuition behind these results is as follows: postponing exit ages, as described, practically eliminates the increase in pension expenditure as a share of GDP, though there is an increase in the average pension. Note,

(Continued on the next page)

Box (continued)

however, that the projected increase in pension expenditure in the baseline scenario is only half of the overall long-term increase in age-related expenditure (healthcare spending and long-term care remain unchanged). Moreover, for EU-27, LTC (the required adjustment given the long-term change in expenditure) is around half of S2 in the baseline scenario. Therefore, the reduction in the sustainability imbalance is around one-fourth of S2 in the baseline scenario.

Aside from the plausibility of the scenario, the results for certain Member States need to be considered within the context of their economies. For Luxembourg and Cyprus, the baseline scenario is for net migration between 2008 and 2060 to contribute to an increase of around 40 and 50% of their 2007 populations. Both these countries' economies are heavily reliant of migrant workers at the moment, and despite the strong increase in population in the baseline assumptions, it still corresponds to a marked decrease in the rate of net migration. When interpreting the results of the sensitivity analysis, however, it should be borne in mind that the zero migration scenario is a large departure from the baseline for these (and a number of other) countries, so the magnitude of these results should be interpreted carefully.

3.5. INTEREST RATE

The alternative scenario considered in Table IV.3.1. assumes a real interest rate of 4%, rather than the 3% assumed in the baseline.

The effect of this change in the interest rate assumption is to reduce the LTC component but increase the IBP component. A higher interest rate reduces the amount that a country has to save to pay for an ageing population in the future, but increases the amount required to service existing debt. ([26])

For Member States with ageing profiles where the costs are set to increase further rather than earlier in the future, a higher interest rate allows them to finance these costs through smaller increases now compared with the baseline. Countries such as Ireland, Spain, Luxembourg and Malta, with a large increase in public expenditure over the medium term, therefore benefit from a higher real interest rate.

In interpreting all these results, it should be borne in mind that the effect of a higher interest rate on the growth rate of the economy has not been modelled. The implicit assumption is that a higher interest rate is consistent with unchanged GDP growth rates.

3.6. ALTERNATIVE HEALTH CARE SCENARIOS

Table IV.3.2 shows the impact on the sustainability gap of a faster increase in healthcare and long-term care spending, irrespective of demographic and macroeconomic assumptions. The data shows that several variables drive the evolution in healthcare expenditure.

Healthcare spending tends to increase with GDP growth and is an important component of government spending. Moreover, its response to increased longevity is more difficult to predict that pension spending because it crucially depends on both on the health status of the population and, in many Member States, on demand factors. It is also difficult to predict the effect that technology will have on the demand for government spending in this area.

The baseline scenario assumes that half the additional years of life from the increase in life expectancy are healthy, whereas half entail additional costs associated with age and morbidity.

The 'pure ageing' scenario assumes that the age-related morbidity rates do not improve and all gains in life expectancy are assumed to be spent in bad health. This attempts to isolate the pure effect of an ageing population on health-care spending, but in doing so ignores the fact that people might,

([26]) It can be seen that the effect of changing the interest rate assumption has a larger effect on countries with higher starting levels of debt, such as Greece and Italy.

Table IV.3.2: **Sensitivity scenarios, difference in S2 indicator compared to the baseline scenario**

	Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
BE	0.2	-0.7	0.1	0.4	:	0.7
BG	0.0	-0.5	0.0	0.3	1.9	0.6
CZ	0.1	-0.7	0.0	0.4	0.4	1.1
DK	0.2	-0.5	0.1	0.4	:	0.6
DE	0.1	-0.6	-0.1	0.4	:	0.6
EE	0.0	-0.6	0.0	0.3	1.3	0.8
IE	0.2	-0.6	0.0	0.4	:	0.8
EL	0.0	-0.5	0.0	0.3	:	0.7
ES	0.1	-0.5	0.0	0.3	:	0.6
FR	0.1	-0.6	0.0	0.4	:	0.7
IT	0.1	-0.4	0.0	0.3	:	0.5
CY	0.2	-0.4	0.1	0.3	3.1	0.5
LV	0.0	-0.4	0.0	0.2	2.5	0.7
LT	0.1	-0.5	0.0	0.3	1.6	0.7
LU	0.1	-0.6	0.0	0.4	:	0.1
HU	0.3	-0.7	0.1	0.6	1.1	0.9
MT	0.3	-0.7	-0.4	0.6	1.3	0.9
NL	0.1	-0.4	0.0	0.3	:	0.7
AT	0.1	-0.6	0.0	0.4	:	0.8
PL	0.2	-0.9	0.2	0.5	2.1	0.9
PT	0.2	-0.7	0.0	0.5	:	0.8
RO	0.0	-0.5	0.0	0.3	2.1	0.7
SI	0.0	-0.6	-0.1	0.4	0.4	1.4
SK	0.0	-0.7	-0.1	0.4	1.0	0.6
FI	0.3	-0.5	0.2	0.5	:	0.8
SE	0.1	-0.5	0.1	0.3	:	0.7
UK	0.2	-0.7	-0.4	0.5	:	0.6
EU27	0.1	-0.6	-0.1	0.4	:	0.7
EA	0.1	-0.5	0.0	0.4	:	0.6

Source: Commission services

in part, be living longer because they are healthier. Such a scenario would increase the EU 27 sustainability gap by 0.1% of GDP.

Conversely, the 'constant health' scenario assumes that the number of years spent in bad health are constant with all gains longevity from now on being healthy ageing. Such a scenario would reduce the sustainability gap by 0.6% of GDP in the EU-27 countries. This is a much bigger absolute effect than in the opposite case (the pure demographic scenario) because health-care costs increase disproportionately with age and this scenario looks at changing the assumptions made about the oldest old.

Spending on healthcare is concentrated on individuals' final years. The 'death-related costs' scenario projects healthcare spending by linking health-care spending to the remaining years of life. This scenario has been constructed by looking at the different costs for descendents and survivors provided by Member States and applies them to the EUROPOP2008 demographic projections. It shows a small fall in the sustainability gap overall, but some variation across countries.

The 'income elasticity' scenario departs from the baseline assumption of a constant income elasticity of demand for healthcare of 1. Instead, it assumes an elasticity of 1.1 which converges to 1 by 2060, reflecting a higher demand for healthcare as society becomes wealthier. It shows an increase of the sustainability gap of 0.4% of GDP for the EU 27 countries.

So far, all the scenarios presented approach the costs of healthcare as being demand rather than supply driven. The final two scenarios do the opposite. The 'EU12 cost convergence' scenario

assumes that the costs of delivering healthcare in the most recently acceded Member States (EU12) increase to the average observed in the EU15 countries by 2060, thus increasing significantly the cost of ageing in the new Member States. As healthcare spending in EU is significantly below spending in the rest of the EU, if this scenario materialised, the sustainability gap in those countries would widen quite substantially.

Finally, the 'labour intensity' scenario assumes that healthcare costs are driven by productivity increases, as healthcare is a relatively labour intensive sector. This scenario serves to provide and insight into the effects of unit costs on healthcare expenditure. It assumes that costs increase with GDP per worker rather than per capita and shows an overall increase in the sustainability gap of 0.7% of GDP for EU 27.

3.7. CHANGES IN THE LONG-TERM CARE ASSUMPTIONS

The final section of this chapter considers the effect on the sustainability gap of changing the underlying assumptions on the costs associated with long-term care. The results are shown in table IV.3.3.

The first two columns show the effect on S2 of a pure demographic change, where, just as in the healthcare scenario, it is assumed that there is not improvement in the rate of disability and ability of individuals to care for themselves as life expectancy increases. This would increase the sustainability gap by an average of 0.1 percentage points (p.p.) of GDP. The overall effect on the gap though would the sum of this and the effect on healthcare presented in the previous section.

Conversely, the constant disability scenario assumes that trends in age-specific disability rates decline in the future – it is therefore analogous to the constant health states assumption in the healthcare scenarios. It assumes that the level of disability in the Member States stays constant despite the increase in older people. This would lead to a decrease in the contribution of long term care to the S2 indicator by an average 0.1 % of GDP. The next two scenarios show the impact on S2 of a change in care arrangements. The baseline scenario assumes no policy change, meaning that Member States which currently offer little long term care assistance will continue to do so in the future. In the light of an ageing population this may not be realistic and, moreover, may have other adverse consequences on the relatives of the old.

The first scenario looks at the increase in S2 from a shift away from informal care to home-based care. It models the impact of a yearly shift of 1% of the disabled elderly who receive only informal care receiving formal care at home, over the first 10 years of the forecasting period. Such a shift would increase the gap by an average of 0.2 % of GDP. A shift to institutional care, however, would be more expensive with a corresponding increase in S2 of 0.5% of GDP.

Finally, the last two scenarios look at the supply side and present the results for different assumptions about the growth in the costs of providing care. The fast/slow unit growth scenarios show the effect of increasing or reducing the assumed rate of growth of unit costs which are supposed to evolve in line with GDP per worker in the baseline scenario. The effect is to increase the sustainability gap by an average of 0.3% of GDP for the fast growth or reduce it by 0.8% in the slow growth scenario.

Table IV.3.3: **Sensitivity scenarios, difference in S2 indicator compared to the baseline scenario**

			Shift to formal care			
	Pure Ageing	Constant Disability	At home	In an institution	Fast growth in unit costs	Slow growth in unit costs
BE	0.1	-0.1	0.3	0.6	0.3	-1.0
BG	0.0	0.0	0.1	0.1	0.0	-0.1
CZ	0.0	0.0	0.0	0.1	0.1	-0.3
DK	0.2	-0.2	0.4	0.2	0.4	-1.2
DE	0.1	-0.1	0.2	0.4	0.2	-0.9
EE	0.0	0.0	0.0	0.1	0.0	-0.1
IE	0.1	-0.1	0.2	0.4	0.2	-1.0
EL	0.1	-0.1	0.3	0.6	0.4	-1.4
ES	0.0	0.0	0.1	1.3	0.1	-0.5
FR	0.1	-0.1	0.1	0.4	0.2	-0.6
IT	0.1	-0.1	0.4	0.8	0.3	-0.8
CY	0.0	0.0	0.0	0.0	0.0	0.0
LV	0.0	0.0	0.1	0.6	0.1	-0.3
LT	0.0	0.0	0.1	0.2	0.1	-0.3
LU	0.1	-0.1	0.3	0.7	0.4	-1.6
HU	0.0	0.0	0.1	0.3	0.1	-0.2
MT	0.1	-0.1	0.1	0.5	0.3	-1.0
NL	0.3	-0.3	0.5	1.1	0.9	-3.3
AT	0.1	-0.1	0.2	0.1	0.3	-0.8
PL	0.0	0.0	0.2	0.0	0.1	-0.4
PT	0.0	0.0	0.0	0.1	0.0	-0.1
RO	0.0	0.0	0.0	0.0	0.0	0.0
SI	0.0	0.0	0.2	0.4	0.2	-1.1
SK	0.0	0.0	0.1	0.0	0.0	-0.2
FI	0.1	-0.1	0.2	0.9	0.4	-1.9
SE	0.2	-0.2	0.4	0.8	0.6	-1.7
UK	0.0	0.0	0.1	0.1	0.1	-0.4
EU27	0.1	-0.1	0.2	0.5	0.3	-0.8
EA	0.1	-0.1	0.2	0.6	0.3	-0.9

Source: Commission services

Chapter V

Other factors

SUMMARY

Chapter III of this report presented the sustainability indicators and chapter IV discussed and quantified some of the uncertainty surrounding them. This chapter expands on the discussion of the uncertainty by looking at aspects that cannot be quantified as readily, but are nonetheless important in assessing the overall sustainability of a country's public finances.

The level of debt of an economy enters the sustainability indicators directly and affects sustainability through the need to service the debt. However, beyond this direct effect, the level of debt can have further consequences on both the real and political side of the economy. A high level of debt can reduce a country's ability to deal with even a temporary shock to its interest rate or growth rate. With the costs of servicing the debt being more significant the higher the level of debt, a shock to the cost of servicing has the potential to be markedly more significant than for countries with a lower stock of debt to re-finance. Moreover, a high level of debt can also affect the interest rate paid on it with threshold effects being a possibility. These occur when debt reaches a certain level beyond which interest rates are pushed up. The levels of debt in the EU Member States are therefore considered as an additional risk factor over and above their contribution to the sustainability gaps.

The chapter also considers the possibility that the assumptions about pension expenditure underlying the Member States' pension expenditure projections may be difficult to implement socially and politically. While pension reform is important for many countries, it is also important that the expected levels of average pension are realistic. Countries forecasting a strong fall in the relative generosity of their pensions may find that they are unable to deliver this for political, electoral and social reasons. For this reason, such countries may face a higher sustainability challenge than is apparent by looking just at the indicators, although the extent to which this occurs will depend on private pension provision and whether individuals anticipate the decline in the state pension and make alternative arrangements for the retirement.

Moreover, private pensions themselves are not without risk. Insofar as they depend on the vagaries of financial markets a shortfall in their performance can result in pressure on the government to address shortfalls. Indeed, there is a wide range of expenditure that governments may be faced with that is not included in the projections. Contingent liabilities are those which the government only needs to assume if particular situations arise. These may be implicit – such as dealing with natural disasters – or explicit, such as loan guarantees. In the light of the economic and financial crisis, many Member States have taken on explicit contingent liabilities to aid the functioning of the financial sector and other industries. Depending on whether or not these are called in, the public finances of the Member States may find themselves with additional spending that is currently not being budgeted for.

A final factor that is considered is the apparent scope which Member States' governments have to address the sustainability problems illustrated in this report. In theory, a sustainability gap can be filled by increasing tax revenues or reducing spending, while in the short-term an increase in debt is a possibility for countries with low levels of debt and a back loaded ageing profile. Reducing spending means either reducing spending on non-age-related expenditure or reforming the social security system so that the costs of ageing can be contained. For countries with current very high levels of tax or low levels of spending the options may be more limited as it may be difficult and economically costly for them to increase tax further.

1. DEBT AND ASSETS

Chapter III of this report presented the estimates of the sustainability indicators and chapter IV discussed and quantified some of the uncertainty surrounding them. This chapter expands on the discussion of the uncertainty by looking at aspects that cannot be integrated in the sustainability indicators, or quantified, as readily, but are nonetheless important in assessing the overall sustainability of a country's public finances. The issues discussed in this chapter will be taken into account in the overall assessments presented in chapter VI and, on a country by country basis, chapter VII.

1.1. THE LEVEL AND EVOLUTION OF GROSS DEBT

The current level of government debt directly affects sustainability through the need to service the interest payments on the debt. It enters S1 and S2 through the term that relates to the initial budgetary position (IBP) ([27]). It also enters S1 in the debt requirement (DR) term which measures additional effort to the debt stabilisation for Member States with debt initially above 60% of GDP to reach that level in 2060.

Beyond this direct effect, the level of debt can have further consequences on the economy and on policy making. A high level of debt can reduce a country's ability to deal with shocks to interest rates or growth rates, even if those are temporary. With the costs of servicing the debt being more significant the higher the level of debt, a shock to the cost of servicing has the potential to be markedly more significant than for countries with a lower stock of debt to re-finance. For example, in countries where government debt exceeds annual GDP, a relatively small rise of 10 basis points in financing costs increase government outlays by more than 0.1% of GDP per year.

A high level of debt is likely to lead to threshold effects, whereby once debt reaches a certain level, further increases to debt will push interest rates higher. This increase occurs in order to continue to attract buyers of government debt, and may have the effect of crowding out private investment. The level of debt at which it happens will vary by country and depend on characteristics such as size, economic development, the structure of financial market, debt maturity, external imbalances and the monetary regime.

The effect of increasing debt servicing costs and a consequent increase in interest rates faced by governments issuing (and/or re-financing) debt, can also play a disciplinary role. In particular, once the financial markets signal a decreased willingness to take on a government's debt by requiring higher interest rates in return, this can exert pressure on governments to contain their fiscal deficits. By setting out credible plans to stop and reverse the increase in their debt levels, governments can try to reduce the perceived sovereign risk. Once debt reaches a certain high level, such actions may become necessary to contain the snowball effect of government debt and ensure the continued sustainability of a country's economy.

Table V.1.1 shows the government debt-to-GDP ratios for the EU Member States for 2000, 2005 to 2008, as well as forecasts for 2009 and 2010 on the Commission 2009 Spring forecasts. The forecast change in ratio between 2009 and 2010 is also shown. The figures show a marked increase in debt between 2009 and 2010 – primarily as result of the ongoing economic and financial crisis. At the end of 2008 Italy had a government gross debt that exceeded 100% of annual GDP, while Greece's debt was close to that threshold and Belgium's stood at nearly 90% of GDP. By 2010, the forecasts show both Greece and Belgium returning to above the 100% threshold.

([27]) The definition of debt used in this report is the one relevant for the EU budgetary surveillance procedures. It has been established by the Treaty Protocol on the excessive deficit procedure and specified in Council Regulation (EC) No 479/2009 (which has recently codified Regulation (EC) No 3605/93 and a number of amending acts) through cross references to the European System of Accounts (ESA95). It is gross debt for all government, consolidated at face value. It includes loans, deposits and bonds, in national and foreign currencies. The debts of public enterprises, which are classified by statisticians in the corporate sector, are not included, even if some governments take over public enterprises' debts from time to time. Spending in arrears is not included either. Contingent liabilities (which are discussed later in this chapter) and the debts of special purpose vehicles active in the management of the current crisis are not included. It also does not include the net present value of the accrued-to-date pensions to be paid to civil servants or beneficiaries of social security.

Table V.1.1: **General government gross debt ratio**

Debt as a % of GDP, outturn and forecast

	2000	2005	2006	2007	2008	2009 (forecast)	2010 (forecast)	Change in debt ratio in 2009 and 2010
BE	107.8	92.2	87.9	84.0	**89.6**	95.7	100.9	11.4
BG	74.3	29.2	22.7	18.2	**14.1**	16.0	17.3	3.2
CZ	18.5	29.8	29.6	28.9	**29.8**	33.7	37.9	8.1
DK	51.7	37.1	31.3	26.8	**33.3**	32.5	33.7	0.3
DE	59.7	67.8	67.6	65.1	**65.9**	73.4	78.7	12.8
EE	5.2	4.5	4.3	3.5	**4.8**	6.8	7.8	3.0
IE	37.7	27.5	24.9	25.0	**43.2**	61.2	79.7	36.4
EL	101.8	98.8	95.9	94.8	**97.6**	103.4	108.0	10.4
ES	59.2	43.0	39.6	36.2	**39.5**	50.8	62.3	22.8
FR	57.3	66.4	63.7	63.8	**68.0**	79.7	86.0	18.0
IT	109.2	105.8	106.5	103.5	**105.8**	113.0	116.1	10.3
CY	58.8	69.1	64.6	59.4	**49.1**	47.5	47.9	-1.3
LV	12.3	12.4	10.7	9.0	**19.5**	34.1	50.1	30.7
LT	23.7	18.4	18.0	17.0	**15.6**	22.6	31.9	16.3
LU	6.4	6.1	6.7	6.9	**14.7**	16.0	16.4	1.7
HU	54.2	61.7	65.6	65.8	**73.0**	80.8	82.3	9.3
MT	55.9	69.8	63.7	62.1	**64.1**	67.0	68.9	4.8
NL	53.8	51.8	47.4	45.6	**58.2**	57.0	63.1	4.8
AT	66.4	63.7	62.0	59.4	**62.5**	70.4	75.2	12.7
PL	36.8	47.1	47.7	44.9	**47.1**	53.6	59.7	12.7
PT	50.4	63.6	64.7	63.5	**66.4**	75.4	81.5	15.1
RO	24.6	15.8	12.4	12.7	**13.6**	18.2	22.7	9.1
SI	26.8	27.0	26.7	23.4	**22.8**	29.3	34.9	12.1
SK	50.3	34.2	30.4	29.4	**27.6**	32.2	36.3	8.7
FI	43.8	41.4	39.2	35.1	**33.4**	39.7	45.7	12.3
SE	53.6	51.0	45.9	40.5	**38.0**	44.0	47.2	9.2
UK	41.0	42.3	43.4	44.2	**52.0**	68.4	81.7	29.7
EA-16	69.2	70.0	68.3	66.0	**69.3**	77.7	83.8	14.5
EU-27	61.8	62.7	61.3	58.7	**61.5**	72.6	79.4	17.8

Source: Commission services, Eurostat.

1.2. PRIMARY BALANCE

The primary balance is a crucial determinant of the change in the debt ratio. Table V.1.1 shows the structural primary balance for the years 2005-2010, with the values given for 2009 and 2010 being the Commission 2009 Spring forecasts. It shows that overall, for the years 2005 to 2007, EU 27 countries had a structural primary surplus, while for 2008, 2009 and 2010 a growing structural primary deficit is forecast. For countries which already have a significant level of debt, a weak structural primary balance is a risk that must be taken into consideration.

The level of debt also affects the political climate within which economic policy is determined. Even in the absence of adverse shocks, a high level of debt involves a higher level of interest payments and therefore requires a consistently positive primary surplus purely to service the debt, and higher surpluses to reduce its level. This can be politically and socially difficult to sustain and when compounded with the need for additional surpluses to address the needs of an ageing population, can make the required adjustments even more difficult. How significant a factor this is will depend on the institutions and the political debate within a country; experience shows that while some countries are able to find the political consensus and will to reduce high levels of debt, others have proven less able or willing to do this.

Whether or not the ability to take measures to contain the cost of ageing will be correlated with past experience in reducing debt remains to be seen. However, insofar as countries with large sustainability gaps also have persistently high levels of debt, the ability to run required surpluses must be judged as an additional risk point, over and above the risk attributable to the high levels of debt.

Table V.1.2: **General government financial assets as a share of GDP**

	1995	2000	2005	2006	2007
BE	20.8	16.2	13.9	14.3	14.6
BG	..	78.9	39.3	35.2	30.7
CZ	..	..	45.5	44.6	..
DK	43.3	31.4	33.7	36.6	35.7
DE	25.4	26.0	21.2	21.3	21.0
EE	52.6	40.2	41.1	40.1	38.4
IE	..	23.5	26.2	27.6	28.5
EL	20.2	26.1	28.6	29.6	33.9
ES	17.7	22.3	20.5	22.4	23.5
FR	24.6	30.0	32.2	33.5	35.0
IT	23.6	26.1	26.3	26.5	25.4
CY	..	25.1	28.8	26.8	27.1
LV	..	31.2	19.7	19.3	17.9
LT	65.3	54.3	35.5	35.2	31.6
LU	47.2	59.9	56.3	..	..
HU	64.1	28.2	22.5	20.2	19.3
MT	..	..	32.8	25.6	25.5
NL	35.5	28.9	26.1	23.4	24.1
AT	30.9	36.2	32.7	32.7	31.2
PL	66.6	29.9	34.6	35.5	..
PT	43.8	33.7	29.1	29.0	26.9
RO	..	74.8	36.6	30.2	31.2
SI	..	..	41.7	42.9	46.5
SK	68.9	45.1	33.5	27.4	33.0
FI	69.4	83.5	106.3	112.9	112.6
SE	55.5	59.2	64.3	69.1	68.2
UK	..	..	..	..	..

Source: Commission services.

At the end of 2008, six countries (Germany, France, Hungary, Malta, Austria and Portugal) had a debt ratio between 60% and 80% of GDP. By 2010, it is forecast that four countries (France, Hungary, Portugal and the United Kingdom) will have debts between 80% and 100% of GDP, while six (Germany, Ireland, Spain, Malta, the Netherlands and Austria) will stand at between 60% and 80%.

All countries except Cyprus are expected to see an increase in their debt ratios between 2009 and 2010 and for some of these the increase is substantial. While on average the EU 27 debt ratio is set to increase by 14.5 percentage points, for Ireland, Latvia and the United Kingdom the increase is forecast to be around or above 30 percentage point of GDP. Nine countries, however, (Bulgaria, the Czech Republic, Denmark, Estonia, Lithuania, Luxembourg, Romania, Slovenia and Slovakia) are still expected to have debt at below 40% of GDP at the end of 2010.

1.3. GOVERNMENT ASSETS

The debt figures used in this report are defined in gross and consolidated terms; this means that financial and non-financial assets controlled by government are not netted out, unless they are liabilities issues by other government units. Governments may, however, have significant other financial assets in their possession as shown in Table V.1.2.

Assets should be taken into account when assessing the sustainability position of countries, as their disposal may contribute to reimburse debt and because they generate property income. Assets have particularly an impact on sustainability in cases where the real value and the book value of assets differ or the returns on assets are different from the interest rate on debt.

Table V.1.3: **Structural primary balances as a share of GDP**

	Structural primary balance as a % of GDP, outturn and forecast					
	2005	2006	2007	2008	2009	2010
BE	3.2	2.5	2.3	1.5	0.7	0.0
BG	2.7	3.3	3.1	1.0	1.1	2.4
CZ	-1.6	-2.8	-1.4	-2.3	-2.9	-2.5
DK	6.5	5.2	4.5	5.6	2.9	1.2
DE	-0.2	0.7	1.6	1.6	0.6	-0.9
EE	0.4	-0.5	-0.7	-3.9	-0.6	-1.4
IE	2.3	2.8	-0.9	-6.4	-7.6	-9.0
EL	-1.3	0.0	-0.4	-2.1	-1.0	0.1
ES	2.9	3.4	3.2	-2.4	-5.2	-6.3
FR	-1.5	-0.9	-1.2	-1.5	-2.7	-2.5
IT	-0.6	0.7	2.1	1.8	2.0	2.0
CY	0.4	1.9	5.8	2.9	0.2	0.1
LV	-1.1	-2.8	-4.1	-4.9	-8.1	-9.2
LT	-1.0	-1.4	-2.1	-4.5	-3.1	-3.9
LU	-0.2	-0.4	1.1	2.3	1.2	0.7
HU	-4.8	-6.6	-1.5	-0.2	3.1	2.9
MT	-0.2	0.4	0.0	-1.6	-0.2	0.7
NL	2.6	2.4	1.2	1.7	0.0	-1.6
AT	1.5	0.6	1.0	0.8	-0.1	-0.6
PL	-1.6	-1.9	-0.9	-3.1	-3.1	-2.7
PT	-2.9	-1.1	-0.5	-0.9	-2.5	-1.8
RO	-0.7	-2.3	-3.7	-7.2	-3.7	-3.1
SI	0.3	-0.7	-0.4	-1.3	-3.3	-3.4
SK	-0.1	-2.3	-2.4	-3.5	-3.7	-3.3
FI	4.4	4.3	4.6	4.2	2.1	0.7
SE	2.9	2.3	3.7	3.4	0.9	-0.5
UK	-1.9	-1.2	-1.5	-3.3	-7.8	-9.2
EA-16	0.2	0.9	1.1	0.2	-0.9	-1.5
EU-27	0.0	0.5	0.7	-0.4	-1.8	-2.5

Source: Commission services.

2. PENSION PROJECTIONS

2.1. PENSION EXPENDITURE PROJECTIONS AND SOCIAL AND POLITICAL RISKS.

The relationship between having an ageing population and the increase in the long-term expenditure on pensions is not linear. Countries with less generous schemes or with planned reductions to their generosity face less pressure on their public finances for same ageing profile than countries which provide more generous benefits for the aged.

Public pension expenditure can be decomposed into four main parts. These are (i) the change in the dependency ratio which is a function of the demographic profile, (ii) the change in the coverage ratio which considers the number of individuals eligible for public pensions relative to population aged over 65, (iii) the change in the employment rate amongst those of working age and (iv) the benefit ratio which measures the generosity of public pensions in relation to the average wage ([28]).

Overall, the expected change in the benefit ratio will contribute to lessening the impact of an ageing population on the public finances as the generosity of public pensions is expected to fall. This is shown in Table V.2.1, along with the effect that any change in the benefit ratio will have on public pension expenditure as a share of GDP. Only in Ireland, Greece, Cyprus, Romania and the United Kingdom are changes in the benefit ratio expected to contribute to the increase in the long-term change in expenditure – in all other countries a reduction in the relative value of age related social security benefits compared with the gross average wage is envisaged. Greece not only has an increasing benefit ratio, but starts from the highest benefit ratio of all EU Member States.

At the other end of the scale, reductions in the benefit ratio in Poland, Italy, Austria, Portugal, Sweden, France, Latvia and Estonia are expected to lead to a decline in the ratio of the public pension expenditure relative to GDP of over 3% of GDP. For all these countries, the ratio between the average pensions and the economy-wide average wage is set to fall by between 25% (France) and 54% (Poland). The effect that this will have on the standard living of pensioners will depend on the extent that it is anticipated and on the other provision that pensioners have made (whether through mandatory or voluntary private funded pension provision or their own personal savings). For example, in Sweden, Estonia, Latvia, Poland and Slovakia, reductions in the public pension benefit ratio are not so stark once the accompanying increase in funded private pension is taken into account. Alternatively, individuals may change their behaviour in the light of reduced public pensions and choose to work longer, thus accumulating pension entitlements and relieving pressure on the pension system and providing them with a higher standard of living when they do retire.

Countries whose current policy will lead to strong declines in their benefit ratios may come under significant political pressure to introduce *ad hoc* increases to pension levels or to change their social security systems to increase the standard living of pensioners. As Chapter 2 showed, the ratio of people aged 65 or above relative to the working age population is projected to more than double from 25% in 2007 to 2060 to 54% making them a significant constituent of electorates.

Aside from the countries that are forecast to have significant falls in their benefit ratios, there are countries that are expected to have low levels of pension provision, even if the decrease in the ratio is not as significant. By 2060, Bulgaria, the Czech Republic, Denmark, Estonia, Ireland, Latvia, Lithuania, Hungary, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Sweden and the UK are predicted to have benefit ratios of below 40%, although once private pensions are taken into account only the Czech Republic, Estonia, Ireland, Latvia, Lithuania, Hungary, Austria, Poland,

([28]) To wit:

$$\frac{Pension\ Exp.}{GDP} = \overbrace{\frac{Population\ 65+}{Population\ 15-64}}^{Dependency\ \ Ratio\ Effect} \times \overbrace{\frac{Number\ of\ Pensioners}{Population\ 65+}}^{Coverage\ \ Ratio\ effect} \times \overbrace{\frac{Population\ 15-64}{Working\ People\ 15-64}}^{Employment\ \ Rate\ Effect} \times \overbrace{\frac{\frac{Average\ Pension}{GDP}}{Hours\ Worked\ 15-71}}^{Benefit\ \ Ratio\ Effect}$$

:

Table V.2.1: **Benefit ratio –**

	benefit ratio %						Change in	Average real
	public pensions			public and private pensions			GDP ratio due	%change in pensions
	2007	2060	% change	2007	2060	% change	to benefit ratio	per year 2010-2060
BE	45	43	-4				-1.0	1.6
BG	44	36	-20	44.4	40.9	-7.8	-1.8	2.4
CZ	45	38	-17				-1.2	1.8
DK	39	38	-4	64.0	74.6	16.6	-0.5	1.6
DE	51	42	-17	51.4	42.5	-17.3	-2.2	1.3
EE	26	16	-40	26.5	21.8	-17.7	-3.1	1.5
IE	27	32	16				0.7	2.0
EL	73	80	10				0.8	2.2
ES	58	52	-10	62.1	56.9	-8.3	-1.7	1.6
FR	63	48	-25				-4.0	1.1
IT	68	47	-31				-5.5	0.8
CY	54	57	5				-0.3	1.9
LV	24	13	-47	24.0	24.8	3.5	-3.9	1.3
LT	33	28	-16	33.1	32.5	-1.9	-1.8	2.2
LU	46	44	-4	45.8	44.0	-3.9	1.2	2.0
HU	39	36	-8	38.9	37.6	-3.2	-1.1	2.1
MT	42	40	-6				-0.5	1.8
NL	44	41	-7	73.8	80.9	9.6	-0.6	1.6
AT	55	39	-30				-5.0	1.0
PL	56	26	-54	56.2	31.2	-44.4	-7.1	0.9
PT	46	33	-29	47.3	32.6	-31.2	-4.5	1.2
RO	29	37	26	29.4	41.4	41.0	1.7	3.4
SI	41	39	-6	40.9	40.2	-1.7	-0.7	2.1
SK	45	33	-27	45.2	40.2	-10.9	-2.4	1.9
FI	49	47	-5				-0.9	1.7
SE	49	30	-39	63.9	46.4	-27.5	-4.3	0.8
UK	35	37	7				0.5	1.9
EA-16								1.4
EU-27								1.3

Source: Commission services

Portugal and the UK remain below this threshold ([29]).

The countries forecasting low benefit ratios are also liable to pressure to increase spending. This may be particularly in the case of the newer Member States, which have lower benefit ratios on average. However, it is difficult to assess the possible magnitude of these pressures, as even in the absence of private pensions individuals may have other forms of support such as drawing down of accumulated assets or savings and it is likely to be the overall standard of living of pensioners that is important. Individuals might also change their behaviour by choosing to retire later or provide for their retirement. On the other hand, the provision of support from a private scheme also entails substantial of uncertainty in so far as the level of the pensions received depends on the performance of asset markets or other factors of the economy, depending on the way the private pension schemes are organised, how they invest their assets and the kind of guarantees or other support the government provides to those schemes.

The final column in table V.2.1 shows the average real increase in pensions implied by the benefit ratios for the public pensions. On average, pensions are set to increase by 1.4% per annum in real terms for the EU as a whole. Within that total, all countries, even those with marked falls in their benefit ratios are forecasting real terms increases. In addition, some countries with falls in their benefit ratios (such as Latvia) have reasonably high increases in their real levels, as comparatively high growth is forecast. Nevertheless, a real rate of growth may not be sufficient to ease the political pressure of pensions falling relative to wages in a number of Member States.

The projections of pension expenditure depend significantly on the statutory rules (and assumptions) on indexation. In a large number of countries (Belgium, Bulgaria, the Czech Republic, Denmark, Germany, Estonia, Greece, Spain, Ireland, Italy, Latvia, the Netherlands, Portugal,

([29]) For some countries, data on the expected benefit ratios from funded private pensions are not available, which may have implication on data comparability.

Finland, Sweden, the UK) ([30]) the projection for minimum pensions/old age allowances assumes indexation in part to wages, and in some of them (Bulgaria, the Czech Republic, Greece, Spain, Ireland, Italy, Finland, Sweden, Lithuania), the pension projection for minimum pensions/old age allowances assumes a higher indexation than foreseen in the legislation (e.g. to wages despite the fact that the legislated indexation postulates indexation to prices). Under the assumption that the minimum pension/old age allowances are set at a level considered to ensure a minimum income for subsistence (a basic social safety net), this modelling choice may be considered as fairly neutral.

For the countries that assume price indexation, the projections, may underestimate the future actual spending on minimum pensions due to the political need to ensure adequate pension income for older people – particularly those at the bottom of the income distribution. Still, since in almost all Member States the proportion of public minimum pensions in relation to total public pension expenditure is small, the size of this possible underestimation may not be of a very significant magnitude.

2.2. PRIVATE FUNDED PENSION SCHEMES AND FINANCIAL RISKS

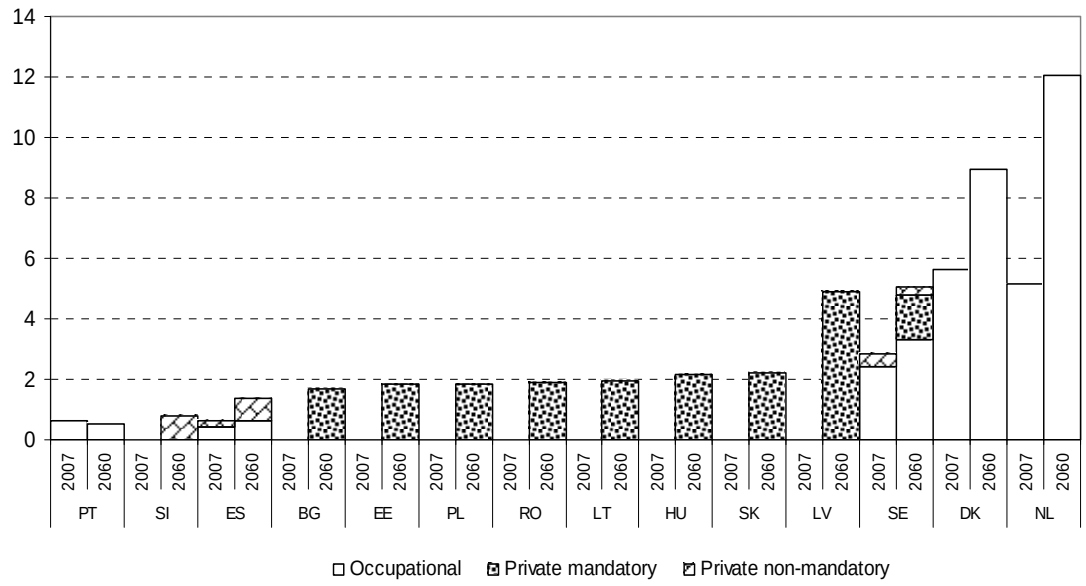
Alongside public pensions, private funded pension schemes, both mandatory and voluntary, are increasingly becoming an important part of retirement income, and are likely to be even more so in the future. This development is supported by policies in a number of Member States; reforms that enhance the sustainability of public pension systems reduce their generosity, and incentives for private pillars are being initiated to fill the gap in pension provision.

Graph V.2.1 shows the private pension projections by pillar for the Member States for which data are available. The graph is not comprehensive; for some countries' private pensions schemes it was not possible to provide data or projections. This is in part because the expenditure of non-public pension schemes will depend on the assets held in them and this can be difficult to quantify,. Indeed, for occupational pension expenditure, only six Member States (Denmark, Ireland, Spain, Netherlands, Portugal and Sweden) provided projections, while only thirteen Member States (Denmark, Greece, Ireland, the Czech Republic, Estonia, Hungary, Lithuania, Latvia, Malta, Poland, Slovakia, Bulgaria and Romania) have indicated that non-public occupational pension schemes do not exist. For the remaining eight countries the data are missing. For private mandatory pension schemes, eight Member States (Bulgaria, Estonia, Latvia, Lithuania, Hungary, Poland, Slovakia and Sweden) have provided projections while nine Member States (Belgium, Denmark, Greece, Spain, Ireland, Netherlands, Portugal, Czech Republic and Malta) report that such pension do not exist. For private non-mandatory pension expenditure, only three Member States (Spain, Slovenia and Sweden) have provided projections and seven (Denmark, Germany, Ireland, Latvia, Malta, Poland and Bulgaria) report that they do not exist.

A number of countries have implemented systemic pension reforms, shifting part of the previously public pillar to a mandatory funded private pillar (Bulgaria, Germany, Estonia, Latvia, Lithuania, Hungary, Poland, Slovakia and Sweden). For the Member States for which data on these schemes are available, graph V.3.1 shows that while these private pillars are making very small disbursements for the time being, their importance will increase in the future reaching around 1.5 to 2.5% of GDP in Bulgaria, Estonia, Poland, Romania, Lithuania, Hungary, Slovakia and Sweden and nearly 5% of GDP in Latvia. As these funds have not started to pay out pensions, only Hungary and Sweden provided a level of pension expenditures by mandatory private funds for 2007, although in comparison to GDP the value is close to zero. In addition, significant pension income is already received in Sweden, Denmark and the Netherlands from occupational pension schemes and this is set to increase considerably by 2060. By then it is forecast to reach over 3% of GDP in Sweden, around 9% in Denmark and over 12% in the Netherlands. It should be pointed out that these schemes have been in place for a long time and so are already providing top-ups to public schemes.

([30]) It should be noted that for some countries, projection for minimum pensions or social allowances are not available. This missing data may underestimate pension expenditure.

Graph V.2.1: **Expenditure of non-public occupational, private mandatory and non-mandatory pension (% of GDP)**



Source: Commission services, EPC

Pension income from these pension funds is affected not only by the contributions made, but also by developments in the financial markets. The volatility of pension income, at least in the short term, with respect to financial markets will depend on the design of the pension scheme, which can influence the final effect of shocks on the value of the fund's assets. A first distinction is that between defined benefit and defined contribution schemes. In a defined benefit scheme, a contributor to the scheme received an pension scheme that is fixed in advance – this is the case, for example, in final salary schemes where the level of pension income is set as a percentage of final (or average) salary. Conversely, purely individual schemes where individuals contribute over the working lives into a personal fund which is invested and which is then used to purchase an annuity are defined contribution schemes, where the value of the pension is a function of the total size of the assets of accumulated. Defined contribution schemes are typically more affected by the performance of financial markets in the short term, although the extent to which they are will depend on the investment strategy followed. An important characteristic of such schemes though is that all the risk associated with the level of pension income is transferred to the individuals while in defined benefit schemes the organisation running the scheme absorbs some or all of the risk.

However, over the longer terms economic shocks or lower returns to capital will also affect defined benefit schemes, albeit while spreading the risk between more individuals and over the longer period. Over the longer term, however, all private pension schemes will need to break even and the returns to individuals investing in the schemes will need to adjust to reflect the overall returns to capital. Nevertheless, for a given individual just before retirement, there is usually more risk in a defined contribution scheme.

In recent years, many defined benefit occupational pension schemes have switched towards defined contribution schemes. Most private pension funds were constructed as defined contribution schemes from the beginning. An increasing role of defined contribution schemes has and will have important implications for the pensioners' asset value depending on the rate of return and the volatility of asset markets. While they provide an addition to the pension income provided by the state, they also present an element of risk in the event of the performance of the funds not matching expectations.

3. CONTINGENT LIABILITIES

Government debt includes the explicit liabilities that governments have incurred through borrowing – short and long-term loans and bonds –and that they need to service. However, there are a number of other government commitments that are typically not included in debt. These consist of implicit and contingent liabilities. Implicit liabilities are not backed up by law, but involve spending for which there is an expectation that it will continue or materialise. Contingent liabilities are those which the government will only need to assume if certain situations occur.

Implicit and contingent liabilities are not mutually exclusive categories but different dimensions of categorisation. Spending commitments can be either implicit or explicit depending on their legal backing and contingent or non-contingent depending on whether their status depends on the realisation of an uncertain event outside the government's full control.

The scale of contingent commitments of the public sector can only be assessed by setting out explicit parameters that determine what will and what will not be considered. This is because aside from the explicit contingent liabilities that are backed up by legal provision – such as guarantees to borrowing of public and private enterprises –, there are also implicit contingent liabilities whose scope is open. Moreover, even once the scope of liabilities to be considered has been decided, the data may not be available. Increased interest in contingent liabilities due to government support measures in the crisis should lead to improved statistical understanding and measures of these liabilities in due course. An assessment of the value of those liabilities and commitments would require an understanding of the probability of situations that give rise to liabilities occurring, and the size of these liabilities under the various outcomes. This is an exercise beyond the scope of this report and which can only ever be undertaken incompletely.

In the light of the economic and financial crisis, many Member States have taken on explicit contingent liabilities to aid the functioning of the financial sector. These are presented in the first six data columns of table V.3.1, and how they affect the public sector risk differs depending on their nature. Columns three and four show the approved and effective guarantees provides to financial institutions. These are explicit contingent liabilities as they represent the magnitude of government underwriting that will not appear on the government's balance sheet unless the guarantees are called in. For some Member States these are particularly significant.

In addition to these, the government have aided their financial sectors through capital injections, the relief of impaired assets, and underwriting liquidity and bank support schemes. The capital injections appear on the public sector's balance sheet and so provide the governments with assets which they sell in the future, but whose value is nevertheless subject to uncertainty. The asset relief and liquidity and bank support schemes, are a mixed set of interventions, some of which transfer risk to the public sector without an outlay that appears in debt, thereby also increasing the explicit contingent liabilities of the government ([31]).

However, aside from these schemes which have been quantified, governments also provide guarantees to depositors, which will only impose a cost to the government if they are called in. The final column of table V.3.1 shows the value of limit of the deposits that Member States guarantee. While different governments have different explicit limits, implicitly it might well be the case that Member States with lower limits find themselves under political pressure to reimburse the full amount of deposits in the event of a bank run or collapse.

([31]) For an explanation on the recording in national accounts of these measures, see 'Public Finances in EMU-2009,' section II.1, *European Economy*,5/2009.

Table V.3.1: **Public interventions in the banking sector as a share of GDP**

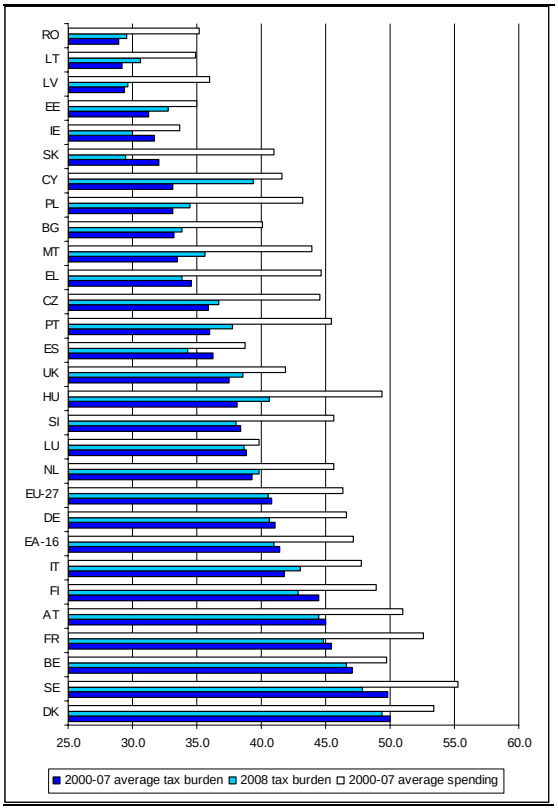
	Public interventions in the banking sector (% GDP)						
	Capital injections		Guarantees on bank liabilities		Relief of impaired asset and liquidity and bank support		
	Total approved measures	Effective capital injections	Total approved measures	Guarantees granted	Total approved measures	Effective interventions	guarantees on deposits (€ or % of deposits)
BE	5.3	6.1	70.8	16.3	8.1	8.1	100 000
BG	0.0	0.0	0.0	0.0	0.0	0.0	50 000
CZ	0.0	0.0	0.0	0.0	0.0	0.0	50 000
DK	6.1	2.4	253.0	2.5	0.3	0.3	100%
DE	4.4	2.0	18.6	7.2	1.4	1.4	100%
EE	0.0	0.0	0.0	0.0	0.0	0.0	50 000
IE	6.6	6.5	164.7	164.7	0.0	0.0	100 000
EL	2.0	1.5	6.1	1.2	3.3	1.8	100 000
ES	0.0	0.0	18.6	2.1	2.8	1.8	100 000
FR	1.2	1.2	16.6	5.5	0.2	0.2	70 000
IT	1.3	0.1	NA	0.0	0.0	0.0	circa 103 000
CY	0.0	0.0	0.0	0.0	0.0	0.0	100 000
LV	1.4	0.9	25.7	2.8	10.9	4.7	50 000
LT	0.0	0.0	0.0	0.0	0.0	0.0	100 000
LU	6.9	7.9	12.4	NR	0.9	0.9	10000.0
HU	1.1	0.1	5.9	0.0	0.0	2.6	100%
MT	0.0	0.0	0.0	0.0	0.0	0.0	100 000
NL	6.4	6.8	34.3	7.7	11.4	5.5	100 000
AT	5.5	1.7	25.7	6.8	7.1	2.0	100%
PL	0.0	0.0	0.0	0.0	0.0	0.0	50 000
PT	2.4	0.0	10.0	3.3	0.0	0.0	100 000
RO	0.0	0.0	0.0	0.0	0.0	0.0	50 000
SI	0.0	0.4	32.8	6.3	0.0	0.0	100%
SK	0.0	0.0	0.0	0.0	0.0	0.0	100%
FI	0.0	0.0	27.7	0.0	0.0	0.0	50 000
SE	1.6	0.2	48.5	11.0	12.6	0.0	50 000
UK	3.5	2.6	21.7	11.3	16.4	14.7	50 000 (**)
EA-16	2.7	1.7	24.6	7.8	4.1	3.0	
EU-27	2.7	1.7	20.5	7.8	2.1	1.4	

Source: Commission services

4. TAX RATIO

The sustainability gap analysis shows the additional resources that must be channelled into making the public finances sustainable. A first option would be to reduce the costs imposed by ageing population through reform of support for pensioners or through changes to the labour market. Previous chapters presented an overview of the expected trajectory of the level of pensions and discussed potential risks around their level.

Graph V.4.1: **Receipts and spending as a share of GDP**



Source: Eurostat

In the absence of reforms to the costs of ageing, or cuts in other expenditure categories, the sustainability gap will have to be closed by adjusting tax revenues. How feasible or easy that is will depend, in part, on the pre-existing situation in the different Member States. Member States with high levels of tax revenues, might find it hard to increase taxation further. This is both because it might be politically difficult to persuade voting taxpayers to increase taxes and because economically there might be concern about the deadweight cost of high taxes on the economy, as higher taxes will usually constitute a disincentive to work and reduce competitiveness. Conversely, amongst some countries with traditionally high levels of tax, there might be other factors that would ease the pressure against tax raising measures. For example, Member States with relatively efficient tax and expenditure systems, or which place more weight on distributional than efficiency arguments, might be more willing have larger government sectors.

Graph V.4.1 shows general government total tax receipts (including social security contributions) as a share of GDP for the 2000–07 period on average, and for 2008, as well as spending over the 2000-07 year on average. It shows that there is considerable variation between Member States' tax receipts, with Romania, Lithuania, and Latvia receiving under 30% of GDP on average between 2000 and 2007 and France, Belgium, Sweden and Denmark over 45% ([32]).

None of the countries in the top third of tax burdens are amongst the highest in terms of their sustainability gap. Instead, countries with significant sustainability gaps tend to have low to medium tax burdens. It is the countries in the middle of table with very large sustainability gaps (Luxembourg, Slovenia, the United Kingdom and Spain) that will turn into relatively high tax/large government economies if they close their sustainability gaps mainly through additional taxation..

([32]) In addition to tax, countries receive income from property and own production which is not represented in the graph.

Chapter VI

Overall classification of the long-term risks to the sustainability of public finances

SUMMARY

On the basis of the quantitative sustainability indicators (Chapter III), the sensitivity analysis (Chapter IV) and additional factors (Chapter V), an overall assessment of the long-term risks to public finance sustainability the different Member States might face is reached, i.e. how important the long-term 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 long-term risk, similar to the one used in the 2006 Sustainability Report and by the Commission and the Council in the assessments for the previous rounds of the stability and convergence programmes. It provides a clear distinction of the degree of risk countries might face with regard to long-term 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 long-term risk countries also face a risk and may need to implement reforms. However, an assessment of low long-term risk implies that the need for adjustments of the country is less severe or less urgent than for countries assessed to be at medium and high long-term risk.

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

1. OVERALL ASSESSMENT

1.1. THE SUSTAINABILITY INDICATORS

The sustainability indicators provide a firm and objective basis to classify the long-term public finances sustainability risks in the EU Member States, though the margins of error surrounding the projections are large, and there are even some projection inconsistencies given the partial equilibrium approach.

This report has put emphasis on the more stringent S2 indicator. The starting point for the long-term projections was the budgetary projection for 2009 of the Commission's spring 2009 forecasts. The S2 indicator is consistent with the concept of sustainability of public finances over an infinite horizon and is based on regarding budgetary developments and on the most recent comparable information regarding the long-term impact of ageing populations on public expenditure.

Alongside the S2 indicator, the relative value of the S1 indicator is considered as it gives an indication of the urgency of any necessary reforms. Where the S1 indicator is markedly lower than the S2, the satiability constraints will materialise further in the future and therefore allows the Member State a bit more time to implement the necessary reforms without risking as large an impact on their government gross debt.

1.2. ADDITIONAL FACTORS

To make an overall assessment on the sustainability of public finances, other additional relevant 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 other relevant factors may lead to a somehow different overall assessment than the one that would result from evaluating the sustainability indicators only.

1.2.1. Additional 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 V). Indeed, 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 rates changes. Second, a high level of debt may lead to 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 are able keep their primary balance as a share of GDP at its current level in the future. High-debt countries need to maintain large primary surpluses for a prolonged period of time in order to reduce their debt ratio. 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 Belgium, Greece, Italy and Hungary) and a risk-decreasing factor for very low debt countries (notably Bulgaria, Estonia, Luxembourg and Romania). A note of caution is added to assessments of France, Portugal and United Kingdom, where the difficulties of the economic and financial crisis seem likely to add to their sustainability risk through high resulting levels of debt.

A country's primary balance is also informative with regards to changes to its debt level. A negative primary balance is associated with a rising debt burden while a positive one with falling debt as a share of GDP. The Commission 2009 spring forecasts are used to look at the **structural primary balance** evolution over the years 2008 to 2010. The forecast deterioration of the structural primary balance, is seen as risk increasing factor for eleven Member States (Denmark, Germany, Ireland, Spain, Cyprus, Latvia, Netherlands, Slovenia, Finland, Sweden and United Kingdom), of which three (Denmark, Latvia and UK) have a particularly marked deterioration which should be flagged as a strong risk-increasing factor. In the

case of Denmark, however, the deterioration comes from a very healthy starting position.

The analysis **of contingent liabilities** (see Chapter V, Section 4) is an increasingly important part of the budgetary surveillance process regarding the medium-term budgetary developments, as their stock is non-negligible and may entail significant fiscal risks. However, as data are scarce and only available on explicit contingent liabilities and as the distinction between explicit and implicit liabilities is not so clear-cut economically a level of caution must be exercised when determining the relative risks of different countries.

1.2.2. Additional factors concerning the long-term budgetary developments

The evolution of the benefit ratio is strongly driven by the pension system features and therefore by any reforms that have been enacted (see Chapter V). A decrease in the public benefit ratio usually leads to a reduction (or slowdown) in government expenditure in pensions. However, it can also lead to other risks to public finances, if: (i) it leads to a substantial increase in the poverty rate of older people, which may require government assistance; (ii) moreover, the projected fall in the benefit ratio may be associated to a large increase in the relative share of social contributions that are diverted from social security or other public pension schemes to private schemes, which may affect public revenue. The sustainability indicators in Poland are clearly dependent on such a marked decrease in the benefit ratio that there is significant upward risk to the sustainability gap from political pressure. For Austria, Portugal and Sweden the decrease is also an additional risk. Conversely, the high and increasing benefit ratio for Greece must be seen an indication of the types of reforms that are necessary in the country to address its very large sustainability gap.

The assessment is made fundamentally on the basis of a central demographic and macroeconomic scenario, which is further discussed in the Ageing report. However, **sensitivity tests** provide information on the robustness of the results with respect to changes in some key parameters. Also, 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 health-care. 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). This is the case for Belgium, Denmark, Italy and Sweden, with Belgium combining a high tax ratio with a need to reduce its very high debt. By contrast, low tax ratios are not considered to be a risk-reducing factor, since a possible decision regarding an increase of the tax ratio would not only take into account the financing needs resulting from ageing but would depend on the size of public procurement of good and services, the effectiveness of tax systems, the structure of the tax system and its impact on growth.

1.3. OVERALL ASSESSMENT

Table V.1.1 presents an assessment of the long-term risks associated with the S2 indicator and lists the main additional factors that are taken into account when reaching an overall assessment for the 27 Member States. As noted in this section, information on certain factors is incomplete, which prevents a fully consistent analysis and use of all factors at this stage, e.g. concerning contingent liabilities, and the evolution of the benefit ratio.

The relationship between the overall classification and the S2 indicator is shown in Graph V.1.1 which indicates that in general, the synthetic S2 indicator summarises the overall degree of long-term 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 main scenario in a few cases, namely: Both Italy and Hungary are deemed to be at medium long-term risk despite a low S2 indicator due mainly to their very high debt and in the case of Italy also to its high tax ratio. Despite a very large sustainability gap, Luxembourg is assessed as being at medium long-term risk due to its low level of debt, the large level of assets and the significantly lower S1 indicator which allows it

Table VI.1.1: **Main factors considered in reaching an overall assessment of the public finance sustainability risks**

	S2 indicator Baseline	Level of debt 2009	Change in the structural primary balance 2008 - 2010	tax ratio	Difference between the S1 and S2 indicators	Benefit ratio %change	Overall assessment
BE	medium	very high		–			medium
BG	low	very low					low
CZ	high	low					high
DK	low	low	– –	–			low
DE	medium	high	–				medium
EE	low	very low					low
IE	high	high	–				high
EL	high	very high					high
ES	high	medium	–				high
FR	medium	high					medium
IT	low	very high		–			medium
CY	high	medium	–		+		high
LV	high	low	– –				high
LT	high	low					high
LU	high	very low			+		medium
HU	low	very high					medium
MT	high	high					high
NL	high	medium	–				high
AT	medium	high				–	medium
PL	medium	medium				–	medium
PT	medium	high				–	medium
RO	high	very low					high
SI	high	low	–				high
SK	high	low					high
FI	medium	low	–				low
SE	low	medium	–	–		–	low
UK	high	high	– –				high

Note: '-' factor tends to increase the risk to long-term sustainability, '+' factor tends to decrease the risk to long-term sustainability
Source: Commission services

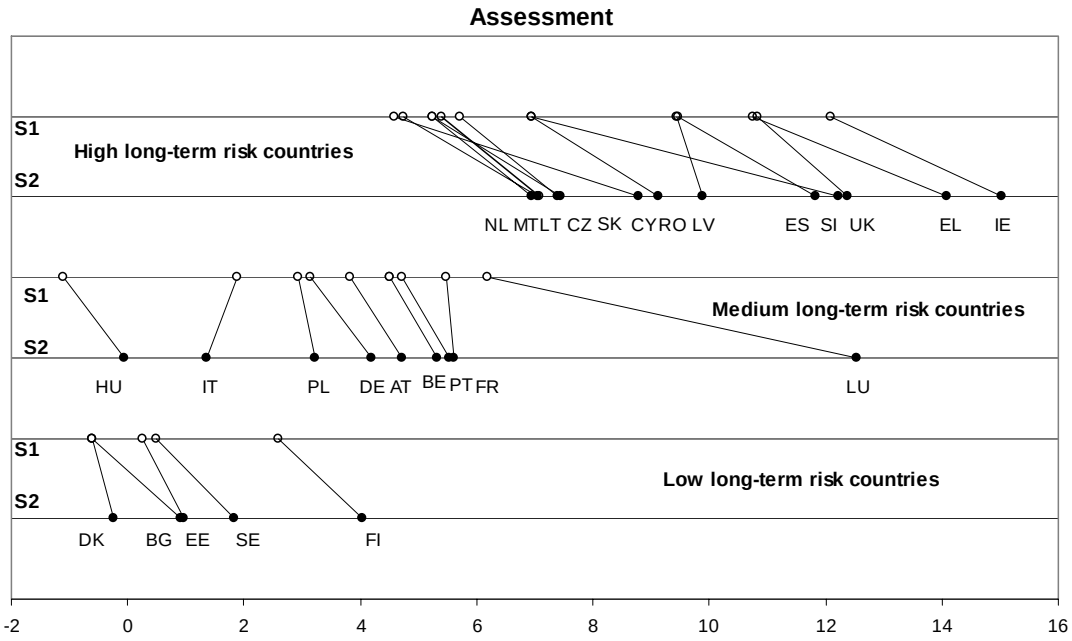
some more time to correct its gap than would be the case with a higher S1.

Finland is assessed to be low long-term risk, though the projected increase on age-related expenditure is substantial and the fiscal cost of the crisis has been large. However, the large stock of financial assets in the government's portfolio (above 100 percent of GDP) provides a cushion to absorb the crisis-related deterioration in government accounts.

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 BE is high while the budgetary position is relatively sound, with a small structural primary deficit and a very high level of government debt. By contrast, PL, which is in the same medium long-term risk category, has a projected cost of ageing which marginally improves its long-term sustainability while its sustainability difficulties arise from its weak budgetary position. Despite having the same classification and S2 gaps within 2 percentage points of GDP of each other, the priorities are different; PL needs to consolidate its public finances once the upswing is underway and the time is right, while BE might consider appropriate introducing measures to curb the projected 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 27 Member States. Moreover, a more detailed assessment per Member State is given in Chapter VI. As noted in this section, information on certain factors is incomplete, which prevents a consistent analysis and use of all factors at this stage, e.g. concerning contingent liabilities.

Graph VI.1.1: **Overall risk classification and the sustainability gaps (S2 and S1 in the baseline scenario)**



Source: Commission services.

2. ASSESSMENT OF SUSTAINABILITY RISKS FOR THE MEMBER STATES

The budgetary impact of ageing populations is a concern for the sustainability of public finances in 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. Overall, thirteen countries are assessed to be at high risk, nine at medium risk and five at low risk. Compared with the results of the 2006 Sustainability Report, ten Member States are in a higher risk category, while two are in lower risk group.

2.1. LOW LONG-TERM RISK COUNTRIES

Bulgaria, Denmark, Estonia, Finland, Sweden have in general come furthest in coping with ageing, which implies a strong budgetary position (running large surpluses prior to the crisis, reducing debt and/or accumulating assets) and/or comprehensive pension reforms, sometimes including a shift towards private funded pension schemes, and present therefore a low long-term risk.

Of these countries, Finland has an above average projected increase in age-related expenditure over the long-term. Although, the large stock of public financial assets provides a buffer against the negative budgetary impacts of the crisis.

For Bulgaria, Denmark, Estonia and Sweden the forecast increases in age-related expenditure are amongst the lowest in EU and their budgetary positions are either in or close to surplus. This does not mean that in these countries there are no risks regarding the long-term sustainability of public finances however, but that their social protection systems (pension and healthcare) at present appear able to deal with the pressures of an ageing population on current estimates. In particular, in case of Bulgaria and Estonia, a positive impact of low debt level and implemented pension reforms should be seen in the context of the ongoing convergence to the levels observed in the rest of EU.

2.2. MEDIUM-RISK COUNTRIES

The intermediate group of countries (Belgium, Germany, France, Italy, Luxembourg, Hungary, Austria, Poland and Portugal) consists of Member States with very different characteristics but three distinct categories can be distinguished:

Belgium, Germany, Austria are 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. For these countries, reforms to address the rising cost of ageing are a priority and these can be undertaken without waiting for the end of the financial crisis, insofar as the reforms do not adversely affect the recovery. This is also the case for Luxembourg which faces the highest increase in age-related expenditure of all EU countries, but which is included in the medium long-term risk category due to its low level of debt, high stock of assets and lower ageing costs at the beginning of the period as shown by its lower S1 indicator. For Belgium, the strong budgetary position in recent years is counterweighted by very high levels of debt ratio-to-GDP which is forecast to reach 100% by 2010. Nevertheless, Belgium is assessed to present medium long-term risk because of its track record of running consistently high primary surpluses over time and reduce its debt when the economy is not in crisis.

France, Poland, and Portugal are countries that need to consolidate, though to different degrees, their public finances over the medium-term but for which the costs of ageing are relatively less of a concern, usually as a result of reforms made to their pension systems. It may be that the government accounts improve when the recovery comes, but where this is not the case budgetary consolidation will be necessary and should be undertaken as soon as the time is right in order to reduce risks to public finance sustainability. In Poland's and Portugal's cases, there is an added risk in relation to the sharp reduction in the benefit ratio.

For Italy and Hungary neither the budgetary position nor the long term cost of ageing are particularly high. However the initial levels of debt

give cause for concern. In both Italy and Hungary, rapid budgetary consolidation is required to ensure a steady reduction of the currently very high level of debt, although it will need to be undertaken at a time when it does not adversely affect the recovery from the economic and financial crisis.

2.3. HIGH LONG-TERM RISK COUNTRIES

This category of countries (Czech Republic, Ireland, Greece, Spain, Cyprus, Latvia, Lithuania, Malta, Netherlands, Romania, Slovenia, Slovakia and United Kingdom) are characterised by a very significant rise in age-related expenditure over the long-term, underlining that measures aimed at curbing them will prove necessary. Of these, Latvia is the exception, where age-related expenditure is forecast to be just 1.3 percentage points (p.p.) of GDP higher in 2060 compared with 2010. For Greece and Slovenia (as well as Luxembourg) the increase in these expenditures is over 10 p.p. of GDP.

Conversely, Romania is characterised by very low levels of debt which stand at below 20% of GDP, while for Czech Republic, Latvia, Lithuania, Slovenia and Slovakia debt ratios stand at below 40%. At the other end of the spectrum, Greece has a government dent of nearly 100% of GDP, which is combined with one of the highest increases in age-related expenditure grouping the whole EU. Latvia, while characterised by very low debt levels, is forecast to have a very large increase in debt by 2010.

For most of the Member States in this high long-term risk category it will be necessary to address both the long-term costs of ageing through reforms to pension systems and the weakness of the budgetary positions. For some Member States the deficits may return to surplus when the recovery comes, but where this is not the case budgetary consolidation will be necessary and should be undertaken as soon as the time is right in order to reduce risks to public finance sustainability.

Conversely, the reforms to the pension and healthcare system which will not adversely affect the recovery of the Member States' economies should be approached with urgency. This is particularly the case for countries where age related expenditure is a significant source of unsustainability: Ireland, Greece, Spain, Cyprus, Malta, Netherlands, Romania and Slovenia. As not all pension and healthcare reforms are neutral with respect to the recovery, care should be taken to consider the effect of any changes undertaken.

Within the high long-term risk countries, the case of Cyprus should also be noted. Thanks to successful consolidation in the pre-crisis years, Cyprus managed to significantly reduce its debt ratio. Moreover, although the planned increases in age-related expenditure is very large, its demographic projections are such that the increase in ageing-related expenditure will be relatively contained in the first half of the projection horizon.

Chapter VII

Sustainability assessment per Member State

1. BELGIUM

1.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure Belgium has a sustainability gap (S2) of 5.3% of GDP, which is below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Belgium should improve its structural primary balance in a durable manner by 5.3% of GDP. In principle, this adjustment could take place via an increase in revenues or cuts in expenditure. Alternatively the social protection system (in particular public pensions, health and long-term care) would have to be reformed to decelerate the planned increase in age-related expenditure.

The Belgian sustainability gap is to a limited extent the result of the initial budgetary position, as the required adjustment to stabilise the debt ratio is slightly positive (0.6% of GDP) but clearly below the EU average (3.3% of GDP). This reflects starting position in terms of the structural primary balance, which is relatively sounder than in several other Member States. On the other hand, the required adjustment given the long-term cost of ageing (4.8% of GDP) is significantly above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 4.5 p.p. in 2060 relative to 2010), while health care and long-term care also contribute less but still significantly to the long-term cost of ageing (increasing by 1.1 p.p. and 1.3 p.p. respectively).

In the 2006 Sustainability Report, the S2 gap was 1.8% of GDP. The difference between that report and the current results (3.5 p.p.) stems from the deterioration of the initial budgetary position (4.2 p.p.), while component of the long-term cost of ageing actually has fallen (-0.5 p.p.). The extension of the projection period from 2050 (in the 2006 report) to 2060 had no impact for Belgium on these results.

The Belgian government debt in 2009, the base year of the analysis, stood at 95.7% of GDP and is forecast to increase to around 100% of GDP in 2010. The structural primary balance is forecast to decrease from 0.7% in 2009 to 0.0% in 2010. Belgian debt is far above both EU average and the 60% ceiling set by the Maastricht criteria thus poses risks for the medium and long term sustainability.

1.2. OVERALL ASSESSMENT

Belgium appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is above the EU average, mainly as a result of a relatively high increase in pension expenditure as a share of GDP over the coming decades. The budgetary position has worsened in 2009 and now compounds the budgetary impact of population ageing on the sustainability gap. Moreover, the current level of gross debt, which is far above the Treaty reference value, adds to the sustainability risk. Also, the further deterioration of the structural primary balance may widen the sustainability gap.

Belgium has little scope to increase its already high tax burden thus focus should be put on decreasing public spending in order to diminish its sustainability gap. Further reforming the Belgian social security system would improve the sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Table VII.1.1: **Summary table (Belgium)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	10.6	10.8	11.1	11.3	11.5	11.7	12.0	12.2	12.3	1.7
Working age population (15-64) % of total	65.9	66.0	65.0	63.8	62.4	60.9	59.2	58.6	57.8	-8.1
Old-age dependency ratio (65+/15-64)	25.9	26.1	28.2	30.6	33.8	37.6	42.3	43.9	45.8	19.9
Participation rate (15-64)	67.3	68.0	69.5	69.8	69.4	69.4	69.7	69.7	69.7	2.4
- Older workers (55-64)	36.2	39.3	46.0	48.9	48.9	48.8	49.5	49.4	49.1	13.0
Unemployment rate (15-64)	7.5	10.3	6.8	6.2	6.2	6.2	6.2	6.2	6.2	-1.3
Real potential GDP (growth rate)	1.9	1.0	2.3	1.9	1.6	1.6	1.8	1.7	1.7	-0.2

Expenditure projections										
Pensions	10.0	10.3	10.9	11.8	13.0	13.9	14.6	14.7	14.7	4.8
Benefit ratio	44.8	46.5	47.5	48.2	48.3	47.9	46.3	44.6	43.2	-1.6
Health care	7.6	7.7	7.9	8.1	8.2	8.4	8.7	8.8	8.8	1.2
Long-term care	1.5	1.5	1.6	1.7	1.8	2.0	2.5	2.8	2.9	1.4
Education	5.5	5.4	5.2	5.1	5.3	5.4	5.4	5.4	5.5	0.0
Unemployment benefits	1.9	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5	-0.4
Total age-related expenditure	26.5	26.8	27.3	28.2	29.7	31.1	32.7	33.3	33.4	6.9

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	1.5	0.7	0.0						
Public debt	89.6	95.7	100.9	103.1	116.3	137.8	199.0	278.1	372.4

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	eloss age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	5.9	0.7	6.6	4.5	1.1	1.3	-0.3	-0.2
Crisis scenario: lost decade	7.7	0.7	8.4	5.7	1.1	1.5	0.1	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	4.5	0.5	0.6	3.5	5.3	0.6	4.8	0.3	5.9
Crisis scenario: lost decade	6.1	0.7	0.6	4.9	7.0	0.7	6.4	0.5	7.0

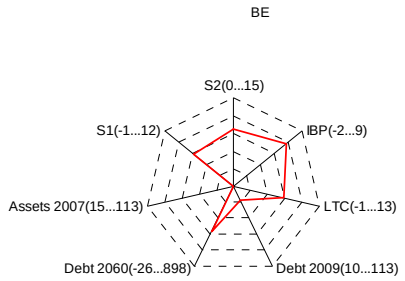
Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero mielation	Interest rate
AWG scenarios	5.3	0.5	-0.6	-0.4	-0.5	2.9	0.2
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.2	-0.7	0.1	0.4	:	0.7
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast elowth in unit costs	Slow elowth in unit costs
Scenarios for long-term care		0.1	-0.1	0.3	0.6	0.3	-1.0

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	1.8	5.3	4.2	-0.7

Tax burden	2008	Average 2000-07
	46.6	47.0

Source: Commission services.

Graph VII.1.1: **Determinants of fiscal sustainability (Belgium)**



Note on interpretation: This chart allows to compare countries on the basis of the main variables that are taken into account in the overall assessment of sustainability risk per country: S2, S1, the required adjustment given the initial budgetary position (IBP), the required adjustment given the long-term change in age-related expenditure (LTC), the government debt ratio in 2009, the debt ratio at the end of the projection horizon (2060) under an unchanged policy assumption, and the stock of financial assets. The scale for each variable corresponds to the range of data in the EU. Data are in percent of GDP. Countries with high sustainability risks have each or most of the variables close to the centre of the chart; for countries with low sustainability risks, the area in the chart is larger.
Source: Commission services.

2. BULGARIA

2.1. OVERVIEW OF THE RESULTS

The sustainability analysis indicates that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure Bulgaria has a sustainability gap (S2) of 0.9% of GDP, which is clearly below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Bulgaria should improve its structural primary balance in a durable manner by 0.9% of GDP. In principle, this adjustment could take place via an increase in revenues or cuts in expenditure. Alternatively the social protection system would have to be reformed to decelerate the planned increase in age-related expenditure.

The Bulgarian sustainability gap is partially offset by the initial budgetary position i.e. the required adjustment to stabilise the debt ratio is negative (-0.6% of GDP), clearly below the EU average (3.3% of GDP). The required adjustment given the long-term cost of ageing (1.5% of GDP) is significantly lower than the EU average (3.2% of GDP). The long-term cost of ageing is driven by an increase in public pension expenditure (by 2.2 p.p. in 2060 relative to 2010) and to a lesser extend by an increase of healthcare and long-term care expenditure (by 0.6 p.p. and 0.2 p.p. increasing).

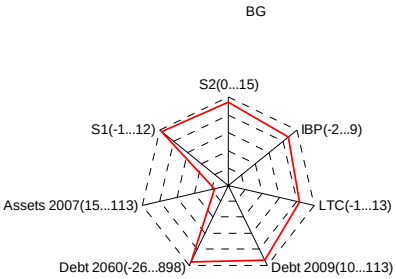
The Bulgarian government debt in 2009, the base year for the analysis, stood at 16.0% of GDP and is forecast to increase to around 17% of GDP in 2010. The structural primary balance is forecast to increase from 1.1% of GDP in 2009 to 2.4% of GDP in 2010. Bulgaria's debt is among the lowest among EU Member States and way below the Maastricht limit.

2.2. OVERALL ASSESSMENT

Bulgaria appears to be at low risk with regard to the long-term sustainability of public finances. The budgetary position in 2009, with a large structural primary surplus, contributes significantly to debt reduction before considering the long-term budgetary impact of ageing. Maintaining high primary surpluses over the medium-term and further reforming the Bulgarian social security system would limit risks to the long-term sustainability of public finances.

The current context of economic and financial crisis entails that any change exacerbating its effects should be ruled out, which means that Bulgaria should keep a prudent fiscal policy stance.

Graph VII.2.1: **Determinants of fiscal sustainability (Bulgaria)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.2.1: **Summary table (Bulgaria)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	7.7	7.6	7.4	7.2	7.0	6.8	6.3	5.9	5.5	-2.2
Working age population (15-64) % of total	69.3	69.1	67.0	65.4	64.7	64.2	61.3	56.4	53.8	-15.5
Old-age dependency ratio (65+/15-64)	24.9	25.3	28.2	31.1	33.7	36.3	43.6	55.4	63.5	38.7
Participation rate (15-64)	66.8	67.8	69.9	70.3	69.6	69.0	68.0	67.9	69.3	2.4
- Older workers (55-64)	46.6	46.4	47.4	48.2	48.8	49.8	49.0	47.6	50.2	3.6
Unemployment rate (15-64)	6.9	7.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7	-2.2
Real potential GDP (growth rate)	5.9	3.5	3.0	2.4	2.0	1.7	1.4	0.3	0.8	-5.1

Expenditure projections										
Pensions	8.3	9.1	8.6	8.4	8.4	8.6	9.5	10.8	11.3	3.0
Benefit ratio	44.4	49.9	47.1	44.3	42.2	40.3	37.3	35.6	35.6	-8.8
Health care	4.7	4.8	4.9	5.0	5.0	5.1	5.4	5.5	5.4	0.7
Long-term care	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.2
Education	3.3	2.9	2.7	2.8	2.9	2.9	2.7	2.9	3.0	-0.2
Unemployment benefits	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Total age-related expenditure	16.6	17.1	16.5	16.5	16.7	16.9	17.9	19.6	20.2	3.7

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	1.0	1.1	2.4						
Public debt	14.1	16.0	17.3	3.4	-3.6	-9.9	-17.2	-11.9	9.8

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	eloss age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	3.2	0.0	3.2	2.2	0.6	0.2	0.2	-0.2
Crisis scenario: lost decade	2.4	0.0	2.4	1.5	0.6	0.2	0.0	-0.3

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	-0.6	-0.7	-0.5	0.6	0.9	-0.6	1.5	0.1	2.3
Crisis scenario: lost decade	-1.2	-0.7	-0.5	0.0	0.3	-0.6	0.9	0.0	1.9

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero mielation	Interest rate
AWG scenarios	0.9	0.3	-0.2	0.0	-0.2	0.3	-0.3
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.0	-0.5	0.0	0.3	1.9	0.6
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast elowth in unit costs	Slow elowth in unit costs
Scenarios for long-term care		0.0	0.0	0.1	0.1	0.0	-0.1

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	:	0.6	:	:

Tax burden	2008	Average 2000-07
	33.9	33.2

Source: Commission services.

3. THE CZECH REPUBLIC

3.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, the Czech Republic has a sustainability gap (S2) of 7.4% of GDP, which is above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, the Czech Republic should improve its structural primary balance in a durable manner by 7.4% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Alternatively, the social protection system (in particular public pensions and health care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Czech sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (3.7% of GDP), slightly above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (3.7% of GDP) is somewhat above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 4.0 p.p. in 2060 relative to 2010), while health care also contributes to the long-term cost of ageing (increasing by 2.0 p.p.).

In the 2006 Sustainability Report, the S2 gap was 5.5% of GDP. The difference between that report and the current results (2.0 p.p.) stems from the deterioration of the initial budgetary position (3.2 p.p.), while the component of the long-term cost of ageing has actually decreased (-1.9 p.p.) due mainly to reforms to the pension and health care systems. The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.7 p.p.

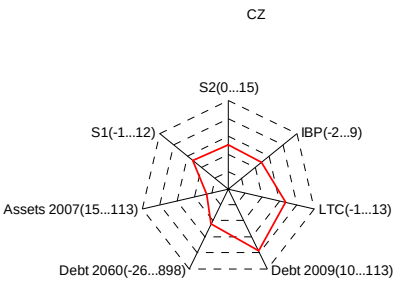
The Czech government debt in 2009, the base year of the analysis, stood at 33.7% of GDP and is forecast to increase to around 37.9% of GDP in 2010. The structural primary balance is forecast to improve slightly from -2.9% in 2009 to -2.6% in 2010. Czech debt is both below the EU average and the 60% ceiling set by the Maastricht criteria, however the continuing structural primary deficits may widen the sustainability gap of its public finances.

3.2. OVERALL ASSESSMENT

The Czech Republic appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is above the EU average according to the projections made in 2009. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

Improving the primary balance over the medium term and further reforms to the social security system would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis

Graph VII.3.1: **Determinants of fiscal sustainability (The Czech Republic)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.3.1: **Summary table (The Czech Republic)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	10.3	10.4	10.5	10.5	10.5	10.4	10.2	9.9	9.5	-0.8
Working age population (15-64) % of total	71.2	70.5	67.5	65.1	64.5	64.3	61.6	56.5	54.4	-16.9
Old-age dependency ratio (65+/15-64)	20.2	21.8	26.5	31.1	33.8	35.7	42.7	54.8	61.4	41.2
Participation rate (15-64)	70.0	71.0	73.5	73.9	72.9	72.5	72.3	73.5	73.5	3.6
- Older workers (55-64)	48.9	53.0	56.8	58.1	58.5	60.8	63.4	66.8	67.5	18.6
Unemployment rate (15-64)	5.3	7.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	-0.8
Real potential GDP (growth rate)	3.9	2.9	3.0	2.5	1.6	1.4	0.9	0.7	1.1	-2.8

Expenditure projections										
Pensions	7.8	7.1	6.9	6.9	7.0	7.1	8.4	10.2	11.0	3.3
Benefit ratio	45.2	41.6	38.7	36.8	35.7	35.4	36.5	37.6	37.6	-7.5
Health care	6.2	6.4	6.7	6.9	7.1	7.4	7.8	8.1	8.4	2.2
Long-term care	0.2	0.2	0.3	0.3	0.3	0.4	0.5	0.5	0.7	0.4
Education	3.5	3.2	3.0	3.0	3.1	3.1	2.9	3.0	3.2	-0.3
Unemployment benefits	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Total age-related expenditure	17.9	17.0	16.9	17.2	17.7	18.1	19.8	22.0	23.4	5.5

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-2.3	-2.9	-2.6						
Public debt	29.8	33.7	37.9	65.9	87.4	114.9	192.4	317.0	486.7

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	eloss age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	6.3	0.0	6.3	4.0	2.0	0.4	0.0	-0.3
Crisis scenario: lost decade	6.3	0.0	6.3	4.0	1.9	0.4	0.0	-0.3

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	5.3	3.6	-0.3	1.9	7.4	3.7	3.7	0.6	4.6
Crisis scenario: lost decade	5.3	3.6	-0.3	2.0	7.5	3.8	3.7	0.6	4.6

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero mielation	Interest rate
AWG scenarios	7.4	0.5	-0.1	0.5	0.5	1.1	-0.6
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.7	0.0	0.4	0.4	1.1
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast elowth in unit costs	Slow elowth in unit costs
Scenarios for long-term care		0.0	0.0	0.0	0.1	0.1	-0.3

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	5.5	6.7	3.2	-1.9

Tax burden	2008	Average 2000-07
	36.7	35.9

Source: Commission services.

4. DENMARK

4.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Denmark has a negative sustainability gap (S2) of -0.2% of GDP, which is clearly below the EU average (6.5% of GDP).

While the Danish sustainability gap is negative, the required adjustment given the long-term cost of ageing is positive (1.4% of GDP), which is below the EU average (3.3% of GDP). In parallel, the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is negative (-1.6% of GDP) clearly below the EU average (3.2% of GDP). The increase in the long-term cost of ageing is mainly driven by long-term care and health care expenditure (increasing by 1.5 p.p. and 0.9 p.p. respectively in 2060 relative to 2010), while the ratio of pension expenditure to GDP decreases by 0.2 p.p.

In the 2006 Sustainability Report, the S2 gap was negative (-2.2% of GDP). The difference between that report and the current results (2.0 p.p.) stems mainly from the deterioration of the initial budgetary position (4.5 p.p.), while the component of the long-term cost of ageing has decreased by 2.1 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 decreases the sustainability gap by 0.4 p.p.

The Danish government debt in 2009, the base year of the analysis, stood at 32.5% of GDP and is forecast to increase to around 33% of GDP in 2010. The structural primary balance is forecast to decrease from 2.8% in 2009 to 1.2% in 2010. Danish debt is both below the EU average and the 60% ceiling set by the Maastricht criteria.

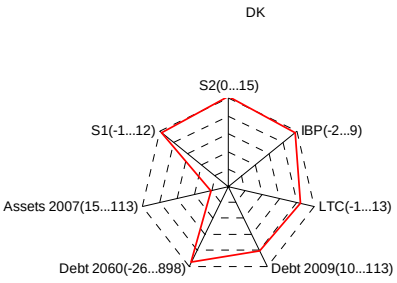
4.2. OVERALL ASSESSMENT

Denmark appears to be at low risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of the cost of ageing is lower than on average in the EU, notably due to the recent pension reform. Moreover, the budgetary position with a structural surplus will further limit risks to the sustainability of public finances.

High primary surpluses over the medium term would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

In addition, Denmark gave guarantees to its banking sector which if actually granted, could threaten the sustainability of Danish public finances, due to their magnitude.

Graph VII.4.1: **Determinants of fiscal sustainability (Denmark)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.4.1: **Summary table (Denmark)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	5.4	5.5	5.6	5.7	5.7	5.8	5.9	5.9	5.9	0.5
Working age population (15-64) % of total	66.1	65.5	64.1	63.1	62.0	60.3	58.2	59.2	58.7	-7.4
Old-age dependency ratio (65+/15-64)	23.2	25.0	29.1	31.8	34.5	37.8	42.7	41.3	42.7	19.5
Participation rate (15-64)	80.3	79.8	79.8	79.6	79.6	79.6	80.6	81.0	80.8	0.6
- Older workers (55-64)	61.3	60.3	61.1	62.6	64.4	64.0	66.6	70.3	69.3	8.1
Unemployment rate (15-64)	3.8	6.6	3.2	3.2	3.2	3.2	3.2	3.2	3.2	-0.6
Real potential GDP (growth rate)	1.7	0.7	1.7	1.6	1.8	1.5	1.7	1.9	1.6	-0.1

Expenditure projections										
Pensions	9.1	9.4	10.2	10.6	10.5	10.6	10.4	9.6	9.2	0.1
Benefit ratio	39.4	39.4	38.9	38.3	38.0	38.3	37.7	37.5	37.8	-1.6
Health care	5.9	6.0	6.2	6.4	6.6	6.7	6.8	6.9	6.9	1.0
Long-term care	1.7	1.8	1.9	2.1	2.3	2.6	3.0	3.2	3.2	1.5
Education	7.1	7.2	7.4	7.4	7.3	7.4	7.5	7.4	7.2	0.2
Unemployment benefits	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	-0.2
Total age-related expenditure	24.8	25.2	26.5	27.4	27.5	28.1	28.6	27.9	27.4	2.6

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	5.6	2.8	1.2						
Public debt	33.3	32.5	33.7	12.2	10.3	11.3	17.4	21.3	18.3

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	1.0	1.2	2.2	-0.2	0.9	1.5	0.1	-1.1
Crisis scenario: lost decade	0.8	1.2	2.0	-0.3	0.8	1.4	0.0	-1.1

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	-0.6	-1.9	-0.5	1.8	-0.2	-1.6	1.4	0.0	1.9
Crisis scenario: lost decade	-0.8	-1.9	-0.5	1.6	-0.4	-1.6	1.2	0.0	1.9

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	-0.2	0.3	0.0	-0.2	-0.4	1.2	0.3
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.2	-0.5	0.1	0.4	:	0.6
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.2	-0.2	0.4	0.2	0.4	-1.2

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	-2.2	0.1	4.5	-2.1

Tax burden	2008	Average 2000-07
	49.4	50.0

Source: Commission services.

5. GERMANY

5.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure Germany has a sustainability gap (S2) of 4.2% of GDP, which is significantly below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Germany should improve its structural primary balance in a durable manner by 4.2% of GDP. In principle, this adjustment could take place via an increase in revenues or cuts in expenditure. The new budgetary rule anchored in the German Constitution, setting a 0.35% of GDP ceiling for the federal budget in structural terms as of 2016 and prescribing structurally balanced budgets for the Länder governments as of 2020, will be a cornerstone of future consolidation efforts. In parallel, the social protection system would have to be reformed further and the achievements of the past reforms would have to be preserved. In particular, recent deviation from the pension adjustment formula resulting in higher outlays for pension benefits in 2008 and 2009 would have to be reversed as envisaged as of 2010.

The German sustainability gap is slightly compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (0.9% of GDP), clearly below the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (3.3% of GDP) is close to the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 2.6 p.p. in 2060 relative to 2010), while health care and long-term care contribute to the long-term cost of ageing by a lesser but still significant amount (increasing by 1.6 p.p. and 1.4 p.p. of GDP respectively).

In the 2006 Sustainability Report, the S2 gap was 4.4% of GDP. The difference between that report and the current results (-0.2 p.p.) stems from the improvement of the initial budgetary position (0.5 p.p.), while the component of the long-term cost of ageing has increased slightly (0.1 p.p.). The extension of the projection period from 2050 (in the 2006 report) increases the sustainability gap by 0.2 p.p.

The German government debt in 2009, the base year of the analysis, stood at 73.4% of GDP and is forecast to increase to around 78% of GDP in 2010. The structural primary balance is projected to decrease from 0.6% in 2009 to -0.9% in 2010. German debt is above both the EU average and the 60% ceiling set by the Maastricht criteria which poses risks for the medium and long term. The deterioration of its structural primary balance may also pose some risk for the long-term sustainability of its public finances.

5.2. OVERALL ASSESSMENT

Germany appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is close to the EU average. The budgetary position has worsened in 2009 and now compounds the budgetary impact of population ageing on the sustainability gap. Moreover the current level of gross debt is above the Treaty reference value and on a rising trend. The decrease of the structural primary balance may widen the sustainability gap.

Improving primary surpluses over the medium term, preserving the achievements of past pension reforms and further reforms to the social security system aimed at curbing the increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Table VII.5.1: **Summary table (Germany)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	82.3	82.1	81.9	81.5	80.9	80.2	77.8	74.5	70.8	-11.6
Working age population (15-64) % of total	66.3	66.0	65.9	64.6	62.6	59.7	56.7	56.2	55.0	-11.3
Old-age dependency ratio (65+/15-64)	29.9	31.2	32.2	35.3	39.5	46.2	54.7	56.4	59.1	29.2
Participation rate (15-64)	76.2	77.3	78.7	79.1	78.8	79.3	80.2	79.7	79.8	3.6
- Older workers (55-64)	57.3	60.3	67.6	69.9	69.6	70.5	74.7	73.9	73.9	16.5
Unemployment rate (15-64)	8.4	10.4	7.1	6.2	6.2	6.2	6.2	6.2	6.2	-2.2
Real potential GDP (growth rate)	0.9	0.8	1.9	1.5	0.9	1.3	1.1	1.0	1.0	0.1

Expenditure projections										
Pensions	10.4	10.2	10.1	10.5	11.0	11.5	12.1	12.3	12.8	2.3
Benefit ratio	51.4	50.4	49.7	49.7	47.8	45.9	42.9	42.5	42.5	-8.9
Health care	7.4	7.6	7.9	8.1	8.3	8.5	9.0	9.2	9.2	1.8
Long-term care	0.9	1.0	1.1	1.2	1.3	1.4	1.8	2.2	2.4	1.4
Education	3.9	3.7	3.4	3.2	3.2	3.3	3.4	3.4	3.5	-0.4
Unemployment benefits	0.9	0.9	0.8	0.6	0.6	0.6	0.6	0.6	0.6	-0.3
Total age-related expenditure	23.6	23.3	23.2	23.6	24.5	25.4	26.9	27.8	28.4	4.8

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	1.6	0.6	-0.9						
Public debt	65.9	73.4	78.7	77.7	86.8	102.5	152.1	222.1	318.9

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	5.1	0.0	5.1	2.5	1.6	1.4	-0.4	-0.2
Crisis scenario: lost decade	6.7	0.0	6.7	3.9	1.5	1.5	-0.3	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	3.1	0.8	0.2	2.1	4.2	0.9	3.3	0.4	5.0
Crisis scenario: lost decade	4.7	1.0	0.2	3.6	5.8	1.0	4.8	0.6	5.7

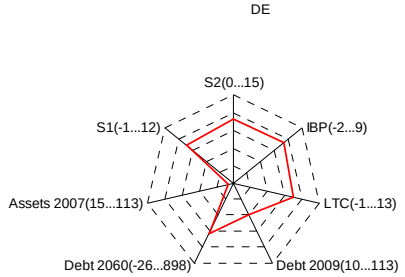
Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	4.2	0.4	0.1	-0.1	-0.2	1.9	0.1
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.6	-0.1	0.4	:	0.6
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.2	0.4	0.2	-0.9

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	4.4	4.0	-0.5	0.1

Tax burden	2008	Average 2000-07
	40.7	41.1

Source: Commission services.

Graph VII.5.1: **Determinants of fiscal sustainability (Germany)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

6. ESTONIA

6.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary of 2009, position based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Estonia has a sustainability gap (S2) of 1.0% of GDP, which is clearly below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Estonia should improve its structural primary balance in a durable manner by 1.0% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure.

The Estonian sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (1.0% of GDP), below the EU average (3.2% of GDP). The sustainability gap is mitigated by the required adjustment given the long-term cost of ageing is negative (-0.1% of GDP) and clearly lower than the EU average (3.3% of GDP). The long-term cost of ageing are driven by an increase in health care expenditure (by 1.1 p.p. in 2060 relative to 2010), while long-term care expenditure contribute less to the long-term cost of ageing (increasing by 0.1 p.p.). At the same time, the GDP share of pension expenditure is expected to fall by 1.6 p.p.

In the 2006 Sustainability Report, the S2 gap was -3.4% of GDP. The difference between that report and the current results (4.4 p.p.) stems mainly from the deterioration of the initial budgetary position (2.9 p.p.), while the component of the long-term cost of ageing has increased by 1.5 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 had no impact for Estonia on these results.

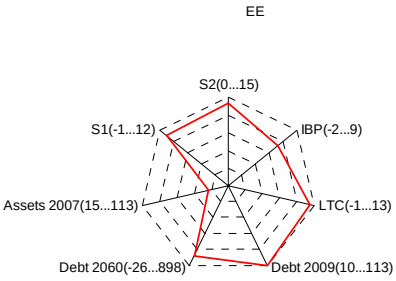
The Estonian government debt in 2009, the base year of the analysis, stood at 6.8% of GDP and is forecast to increase to around 8% of GDP in 2010. The structural primary balance is forecast to increase from -0.6% in 2009 to -1.4% in 2010. Estonian debt is well below the EU average and the 60% ceiling set by the Maastricht criteria. Despite the deterioration of its structural primary balance, Estonia has sustainable public finances.

6.2. OVERALL ASSESSMENT

Estonia appears to be at low risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is among the lowest in the EU, mainly due to the reforms of the pension system, and social protection system at present appears able to deal with the pressures of an ageing population based on current estimates. However, the adjustment needed due to the structural primary deficit in 2009 outweighs the budgetary impact of population ageing and increases the sustainability gap. This assessment should be seen in the context of the ongoing cost convergence, as well as an initially low level of total age-related expenditure compared to the EU average level.

Improving the primary balance over the medium term would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.6.1: **Determinants of fiscal sustainability (Estonia)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.6.1: **Summary table (Estonia)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.1	-0.2
Working age population (15-64) % of total	68.0	67.9	66.1	64.3	63.5	63.2	62.1	58.1	55.3	-12.7
Old-age dependency ratio (65+/15-64)	25.1	25.0	26.7	29.2	31.9	34.4	39.0	47.2	55.6	30.5
Participation rate (15-64)	72.9	74.4	75.4	75.4	74.6	74.3	74.1	73.7	74.5	1.6
- Older workers (55-64)	62.4	63.3	60.6	62.8	63.7	64.6	64.5	61.9	64.1	1.7
Unemployment rate (15-64)	4.7	14.1	3.5	3.5	3.5	3.5	3.5	3.5	3.5	-1.2
Real potential GDP (growth rate)	4.8	1.0	3.2	2.6	2.3	2.2	1.0	0.6	1.2	-3.6

Expenditure projections										
Pensions	5.6	6.4	6.2	5.9	5.8	5.6	5.4	5.3	4.9	-0.7
Benefit ratio	26.5	33.7	31.8	29.2	26.9	24.8	21.9	18.5	15.8	-10.6
Health care	4.9	5.1	5.2	5.3	5.4	5.5	5.8	6.0	6.1	1.2
Long-term care	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Education	3.7	3.1	3.0	3.3	3.5	3.4	3.1	3.2	3.5	-0.2
Unemployment benefits	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total age-related expenditure	14.3	14.8	14.5	14.6	14.7	14.6	14.4	14.7	14.7	0.4

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-3.9	-0.6	-1.4						
Public debt	4.8	6.8	7.8	19.2	23.7	28.5	40.1	57.4	81.4

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	-0.1	0.0	-0.1	-1.6	1.1	0.1	0.3	-0.3
Crisis scenario: lost decade	-0.5	0.0	-0.5	-2.0	1.0	0.1	0.4	-0.4

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	0.3	1.0	-0.6	-0.2	1.0	1.1	-0.1	0.1	0.3
Crisis scenario: lost decade	0.1	1.1	-0.6	-0.5	0.7	1.2	-0.5	0.1	0.1

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	1.0	0.4	-0.1	0.0	0.0	0.3	0.1
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.0	-0.6	0.0	0.3	1.3	0.8
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.0	0.1	0.0	-0.1

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	-3.4	1.0	2.9	1.5

Tax burden	2008	Average 2000-07
	32.8	31.2

Source: Commission services.

7. IRELAND

7.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Ireland has a sustainability gap (S2) of 15.0% of GDP, which is clearly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Ireland should improve its structural primary balance in a durable manner by 15.0% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Additionally, the social protection system (in particular public pensions and health care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Irish sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (8.3% of GDP), clearly above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (6.7% of GDP) is again clearly above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 5.9 p.p. in 2060 relative to 2010), while health care and long-term care also contribute less but still significantly to the long-term cost of ageing (increasing by 1.7 p.p. and 1.3 p.p. of GDP respectively).

In the 2006 Sustainability Report, the S2 gap was 2.9% of GDP. The difference between that report and the current results (12.1 p.p.) stems from the deterioration of the initial budgetary position (11.6 p.p.), while the component of the long-term cost of ageing has decreased by 0.7 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 1.2 p.p.

The Irish government debt in 2009, the base year of the analysis, stood at to 61.2% of GDP and is forecast to increase to around 80% of GDP in 2010. The structural primary balance is forecast to deteriorate from -7.6% % in 2009 to -9.0% in 2010. Irish debt is still both below the EU average but already above the 60% ceiling set by the Maastricht criteria. The widening of already large structural primary deficits will aggravate the stance of Irish public finances.

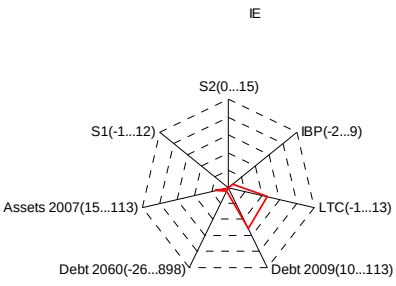
7.2. OVERALL ASSESSMENT

Ireland appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is well above the EU average, mainly as a result of a relatively high projected increase in pension expenditure over the coming decades. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

Improving the primary balance over the medium term and further reforms to the social security system would contribute to reducing the high risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

In addition, the extent of guarantees on bank liabilities granted should be considered a potential risk factor.

Graph VII.7.1: **Determinants of fiscal sustainability (Ireland)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.7.1: **Summary table (Ireland)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	4.3	4.6	5.1	5.4	5.7	5.9	6.2	6.5	6.8	2.4
Working age population (15-64) % of total	68.6	68.0	66.6	65.6	65.2	65.1	63.3	58.8	57.8	-10.7
Old-age dependency ratio (65+/15-64)	16.1	16.7	18.4	20.2	22.3	24.6	30.6	40.4	43.6	27.4
Participation rate (15-64)	72.5	73.9	75.2	75.7	75.7	75.7	76.0	76.3	76.3	3.9
- Older workers (55-64)	55.1	57.1	62.3	65.6	66.6	68.1	68.6	68.3	69.1	14.0
Unemployment rate (15-64)	4.6	15.7	5.1	5.1	5.1	5.1	5.1	5.1	5.1	0.5
Real potential GDP (growth rate)	3.7	-1.2	3.4	2.9	2.6	2.3	1.8	1.6	2.0	-1.7

Expenditure projections										
Pensions	5.2	5.5	5.9	6.4	7.0	7.5	8.7	10.5	11.3	6.1
Benefit ratio	27.3	28.5	29.1	29.7	30.0	30.4	31.0	31.5	31.6	4.3
Health care	5.8	5.9	6.0	6.1	6.3	6.5	6.9	7.3	7.6	1.8
Long-term care	0.8	0.9	0.9	0.9	1.0	1.1	1.4	1.8	2.2	1.3
Education	4.5	4.4	4.4	4.4	4.4	4.4	4.0	4.1	4.2	-0.3
Unemployment benefits	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.1
Total age-related expenditure	17.2	17.5	18.0	18.7	19.5	20.3	21.9	24.5	26.2	8.9

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-6.4	-7.6	-9.0						
Public debt	43.2	61.2	79.7	154.7	203.8	260.8	403.8	606.3	848.5

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	8.7	0.0	8.7	5.9	1.7	1.3	-0.2	-0.1
Crisis scenario: lost decade	14.9	0.0	14.9	10.1	1.5	2.2	1.1	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	12.1	8.2	0.2	3.7	15.0	8.3	6.7	0.7	7.2
Crisis scenario: lost decade	16.7	8.6	0.2	7.9	20.6	8.5	12.1	1.1	11.1

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	15.0	0.4	0.0	-0.2	0.1	1.8	-0.7
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.2	-0.6	0.0	0.4	:	0.8
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.2	0.4	0.2	-1.0

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	2.9	13.8	11.6	-0.7

Tax burden	2008	Average 2000-07
	30.0	31.7

Source: Commission services.

8. GREECE

8.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Greece has a sustainability gap (S2) of 14.1% of GDP, which is clearly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Greece should improve its structural primary balance in a durable manner by 14.1% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Additionally, the social protection system (in particular public pensions) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Greek sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (2.6% of GDP), below the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (11.5% of GDP) is clearly above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 12.5 p.p. of GDP in 2060 relative to 2010).

In the 2006 Sustainability Report, the S2 gap was 3.0% of GDP ([33]). The difference between that report and the current results (11.0 p.p.) stems mainly from the increase in the long term cost of ageing (9.9 p.p.), while the deterioration of the initial budgetary position has a clearly smaller impact (0.7). The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.5 p.p.

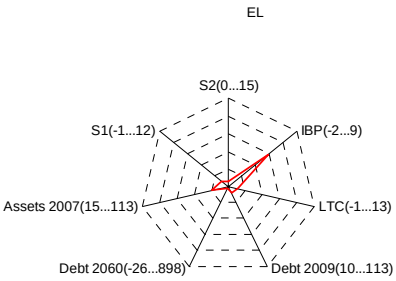
Greek debt is far above both the EU average and the 60% ceiling set by the Maastricht criteria. The Greek government debt in 2009, the base year of the analysis, stood at 103.3% of GDP and is forecast to increase to around 108% of GDP in 2010. The structural primary balance is forecast to improve from -0.9% in 2009 to 0.3% in 2010.

8.2. OVERALL ASSESSMENT

Greece appears to be at high long-term risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is well above the EU average, mainly as a result of a relatively high increase in pension expenditure as a share of GDP over the coming decades. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

Improving primary surpluses over the medium term and especially a further reform of the pension system aimed at curbing the substantial increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.8.1: **Determinants of fiscal sustainability (Greece)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

([33]) In 2006 no pension projections were available for Greece, and the rise in age-related expenditure was therefore underestimated.

Table VII.8.1: **Summary table (Greece)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	11.2	11.3	11.5	11.6	11.6	11.6	11.6	11.4	11.1	-0.1
Working age population (15-64) % of total	67.1	66.8	65.5	64.5	63.8	62.8	58.9	55.3	55.4	-11.7
Old-age dependency ratio (65+/15-64)	27.6	28.2	30.6	32.8	35.4	38.5	48.2	57.0	57.1	29.5
Participation rate (15-64)	67.1	68.2	69.3	69.4	68.8	68.3	68.4	69.1	68.8	1.7
- Older workers (55-64)	44.3	44.8	47.1	48.7	50.4	50.9	51.5	51.3	51.7	7.5
Unemployment rate (15-64)	8.3	9.7	7.1	6.2	6.2	6.2	6.2	6.2	6.2	-2.1
Real potential GDP (growth rate)	3.5	2.0	2.7	2.9	1.8	1.3	1.0	1.2	1.4	-2.1

Expenditure projections										
Pensions	11.7	11.6	12.2	13.2	14.8	17.1	21.4	24.0	24.1	12.4
Benefit ratio	73.1	72.2	74.7	77.9	81.4	85.6	86.9	83.7	80.5	7.4
Health care	5.0	5.1	5.3	5.4	5.5	5.7	6.0	6.3	6.4	1.4
Long-term care	1.4	1.5	1.7	1.8	1.9	2.0	2.5	3.1	3.6	2.2
Education	3.7	3.5	3.3	3.3	3.4	3.4	3.4	3.5	3.7	0.0
Unemployment benefits	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	-0.1
Total age-related expenditure	22.1	21.9	22.7	23.9	25.9	28.5	33.6	37.2	37.9	15.9

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-2.1	-0.9	0.3						
Public debt	97.6	103.3	107.9	133.7	160.3	205.9	360.5	596.5	884.0

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	16.0	0.0	16.0	12.5	1.3	2.1	0.1	-0.2
Crisis scenario: lost decade	15.1	0.0	15.1	3.8	1.3	2.1	7.9	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	10.8	2.4	0.7	7.7	14.1	2.6	11.5	1.1	12.7
Crisis scenario: lost decade	10.1	2.5	0.7	6.9	13.3	2.7	10.6	1.0	12.3

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	14.1	0.3	-1.3	-0.4	0.1	2.2	:
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.0	-0.5	0.0	0.3	:	0.7
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.3	0.6	0.4	-1.4

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	3.0	13.6	0.7	9.9

Tax burden	2008	Average 2000-07
	33.8	34.6

Source: Commission services.

9. SPAIN

9.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Spain has a sustainability gap (S2) of 11.8% of GDP, which is clearly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Spain should improve its structural primary balance in a durable manner by 11.8% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Additionally, the social protection system (in particular public pensions and health care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Spanish sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (6.1% of GDP), clearly above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (5.7% of GDP) is again clearly above the EU average (3.3% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 6.2 p.p. in 2060 relative to 2010), while health care and long-term care also contribute less but still significantly to the long-term cost of ageing (increasing by 1.6 p.p. and 0.7 p.p. respectively).

In the 2006 Sustainability Report, the S2 gap was 3.2% of GDP. The difference between that report and the current results (8.6 p.p.) stems from the deterioration of the initial budgetary position (8.9 p.p.), while the component of the long-term cost of ageing has decreased by 0.5 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.2 p.p.

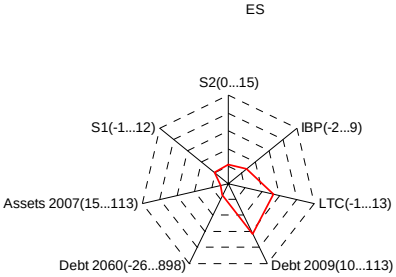
The Spanish government debt in 2009, the base year of the analysis, stood at to 50.8% of GDP and is forecast to increase to around 62% of GDP in 2010. The structural primary balance is forecast to deteriorate from -5.2% % in 2009 to -6.2% in 2010. Spanish debt is still both below the EU average and the 60% ceiling set by the Maastricht criteria, however the widening of already large structural primary deficits will bring Spanish government debt above the Maastricht limit already in 2010 and will aggravate the stance of its public finances.

9.2. OVERALL ASSESSMENT

Spain appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is well above the EU average, mainly as a result of a relatively high increase in pension expenditure as a share of GDP over the coming decades. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

Improving the primary balance over the medium term and further reforms to the social security system would contribute to reducing the high risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.9.1: **Determinants of fiscal sustainability (Spain)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.9.1: **Summary table (Spain)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	44.5	46.7	49.4	51.1	52.1	52.7	53.3	53.2	51.9	7.4
Working age population (15-64) % of total	68.8	68.3	67.0	66.3	65.7	64.5	59.6	54.7	54.7	-14.1
Old-age dependency ratio (65+/15-64)	24.2	24.4	25.8	27.4	30.2	34.3	46.4	58.7	59.1	34.9
Participation rate (15-64)	71.6	73.3	75.2	75.7	75.8	76.4	77.2	77.6	77.3	5.7
- Older workers (55-64)	47.5	51.3	58.4	63.5	66.8	70.9	72.7	73.1	74.0	26.4
Unemployment rate (15-64)	8.3	20.5	7.5	6.2	6.2	6.2	6.2	6.2	6.2	-2.1
Real potential GDP (growth rate)	2.9	0.2	3.1	3.4	2.5	1.8	0.9	1.1	1.6	-1.3

Expenditure projections										
Pensions	8.4	8.9	9.2	9.5	10.1	10.8	13.2	15.5	15.1	6.7
Benefit ratio	57.8	62.6	65.9	65.2	63.3	61.0	57.2	54.5	52.2	-5.6
Health care	5.5	5.6	5.7	5.9	6.1	6.3	6.8	7.1	7.2	1.6
Long-term care	0.5	0.7	0.9	0.9	0.9	1.0	1.1	1.3	1.4	0.9
Education	3.5	3.4	3.4	3.5	3.5	3.4	3.2	3.5	3.6	0.1
Unemployment benefits	1.3	1.4	1.2	0.9	0.9	0.9	0.9	0.9	0.9	-0.4
Total age-related expenditure	19.3	20.0	20.4	20.7	21.5	22.4	25.3	28.4	28.3	9.0

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-2.4	-5.2	-6.2						
Public debt	39.5	50.8	62.3	111.0	144.5	188.2	320.2	528.0	766.6

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	8.0	0.3	8.3	6.2	1.6	0.7	-0.2	-0.3
Crisis scenario: lost decade	11.5	0.3	11.8	8.9	1.5	0.9	0.4	-0.4

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	9.5	5.9	-0.1	3.6	11.8	6.1	5.7	0.8	6.4
Crisis scenario: lost decade	11.9	6.1	-0.1	5.9	14.8	6.2	8.6	1.0	8.5

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	11.8	0.4	-0.7	-0.2	-0.4	2.6	-0.7
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.5	0.0	0.3	:	0.6
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.1	1.3	0.1	-0.5

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	3.2	11.6	8.9	-0.5

Tax burden	2008	Average 2000-07
	34.3	36.2

Source: Commission services.

10. FRANCE

10.1. OVERVIEW OF RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure France has a sustainability gap (S2) of 5.6% of GDP, which is below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, France should improve its structural primary balance in a durable manner by 5.6% of GDP. In principle, this adjustment could take place via an increase in revenues or cuts in expenditure. Alternatively the social protection system would have to be reformed to decelerate the planned increase in age-related expenditure.

The French sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (3.8% of GDP), above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (1.8% of GDP) is below the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in health care expenditure (by 1.1 p.p. in 2060 relative to 2010), while pensions and long-term care contribute to the long-term cost of ageing by a lesser amount (increasing by 0.6 p.p. and 0.7 p.p. respectively).

In the 2006 Sustainability Report, the S2 gap was 4.0% of GDP. The difference between that report and the current results (1.6 p.p.) stems from the deterioration of the initial budgetary position (2.5 p.p.), while the component of the long-term cost of ageing has actually decreased (-0.7 p.p.). The extension of the projection period from 2050 (in the 2006 report) increases the sustainability gap by 1.6 p.p.

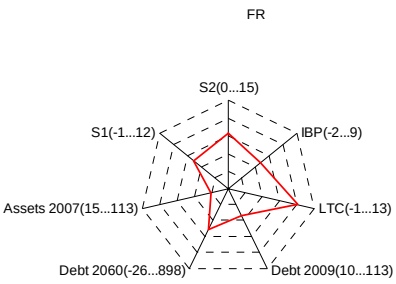
The French government debt in 2009, the base year of the analysis, stood at 79.7% of GDP and is forecast to increase to around 86% of GDP in 2010. The structural primary balance is forecast to slightly improve from -2.7% in 2009 to -2.5% in 2010. French debt is above both the EU average and the 60% ceiling set by the Maastricht criteria which poses risks for the medium and long term. The continuing structural primary deficits may also pose some risk for the long-term sustainability of its public finances.

10.2. OVERALL ASSESSMENT

France appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is lower than the EU average, due to reforms to the social security system already enacted. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap. Moreover, the current level of gross debt, which is above the Treaty reference value, adds to the sustainability risk. Also, the forecast structural primary deficits may widen the sustainability gap.

Given that France has little scope to increase its tax burden, already one of the highest in the European Union, focus should be put on cuts in public expenditure. Specifically, further reforms to the social security system aimed at curbing the increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.10.1: **Determinants of fiscal sustainability (France)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.10.1: **Summary table (France)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	61.5	62.6	64.2	65.6	66.8	68.0	69.9	71.0	71.8	10.3
Working age population (15-64) % of total	65.2	64.8	63.1	61.6	60.5	59.4	57.6	57.3	57.4	-7.8
Old-age dependency ratio (65+/15-64)	25.2	25.8	29.3	32.8	35.8	39.0	44.0	44.7	45.2	20.0
Participation rate (15-64)	70.3	70.0	70.6	70.8	70.7	70.9	71.7	71.5	71.6	1.3
- Older workers (55-64)	41.0	39.3	42.9	46.1	47.7	48.8	49.4	48.4	49.3	8.3
Unemployment rate (15-64)	8.4	10.7	7.0	6.2	6.2	6.2	6.2	6.2	6.2	-2.2
Real potential GDP (growth rate)	1.6	0.7	2.0	1.9	1.8	1.7	1.8	1.8	1.8	0.2

Expenditure projections										
Pensions	13.0	13.5	13.5	13.6	13.9	14.2	14.4	14.2	14.0	1.0
Benefit ratio	63.3	63.3	60.6	57.7	55.0	52.9	50.3	48.3	47.5	-15.8
Health care	8.1	8.2	8.4	8.6	8.7	8.9	9.2	9.3	9.4	1.2
Long-term care	1.4	1.5	1.5	1.6	1.6	1.8	2.0	2.2	2.2	0.8
Education	4.7	4.6	4.6	4.6	4.7	4.7	4.6	4.7	4.6	0.0
Unemployment benefits	1.2	1.2	1.1	0.9	0.9	0.9	0.9	0.9	0.9	-0.3
Total age-related expenditure	28.4	29.0	29.1	29.4	29.8	30.5	31.3	31.3	31.2	2.7

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-1.5	-2.7	-2.5						
Public debt	68.0	79.7	86.0	122.4	147.4	177.4	250.5	336.5	431.3

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	2.1	0.0	2.2	0.6	1.1	0.7	-0.2	-0.2
Crisis scenario: lost decade	3.0	0.0	3.0	1.2	1.1	0.8	-0.1	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	5.5	3.8	0.4	1.4	5.6	3.8	1.8	0.3	2.8
Crisis scenario: lost decade	6.6	3.9	0.4	2.3	6.6	3.9	2.7	0.4	3.3

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	5.6	0.6	-0.6	-0.5	-0.5	1.4	:
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.6	0.0	0.4	:	0.7
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.1	0.4	0.2	-0.6

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	4.0	5.8	2.5	-0.7

Tax burden	2008	Average 2000-07
	44.8	45.5

Source: Commission services.

11. ITALY

11.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Italy has a sustainability gap (S2) of 1.4% of GDP, which is significantly below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Italy should improve its structural primary balance in a durable manner by 1.4% of GDP. In principle, this adjustment could take place via an increase in revenues or cuts in expenditure. Alternatively, the social protection system would have to be reformed to decelerate the projected increase in age-related expenditure.

The Italian sustainability gap is mainly due to the required adjustment given the long-term cost of ageing (1.5% of GDP), which is below the EU average (3.3% of GDP). In contrast, the sustainability gap is mitigated by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is negative (-0.1% of GDP) clearly below the EU average (3.2% of GDP). The increase in the long-term cost of ageing is mainly driven by health-care and long-term care expenditure (increasing by respectively 1.0 p.p. and 1.2 p.p. in 2060 relative to 2010), while the ratio of pension expenditure to GDP is expected to fall by 0.4 p.p.

In the 2006 Sustainability Report, the S2 gap was 3.1% of GDP. The difference between that report and the current results (-1.7 p.p.) stems mainly from the improvement of the initial budgetary position (1.2 p.p.), while the component of the long-term cost of ageing has increased by 0.2 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 decreases the sustainability gap by 0.6 p.p.

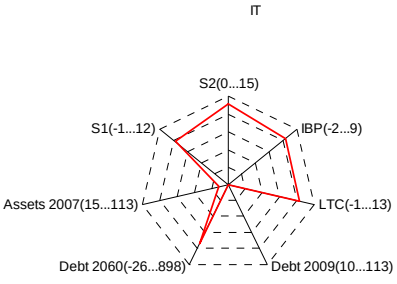
The Italian government debt in 2009, the base year of the analysis, stood at 113.0% of GDP and is forecast to increase to around 116% of GDP in 2010. The structural primary surplus is forecast to stay at the level of 2.0% both in 2009 and 2010. Italian debt is far above both the EU average and the 60% ceiling set by the Maastricht criteria which poses significant risks for the long-term sustainability of its public finances.

11.2. OVERALL ASSESSMENT

Italy appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is lower than the EU average. However pension expenditure as a share of GDP remains among the highest in the EU and the projections hinge upon the assumption that the adopted reforms are fully implemented. The budgetary position in 2009 would be sufficient to stabilise the current debt ratio but would not contribute to offsetting the projected long-term budgetary impact of ageing. Moreover, the current level of gross debt, which is above the Treaty reference value, adds to the sustainability risk.

Achieving high primary surpluses would therefore contribute to limiting the medium risk to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.11.1: **Determinants of fiscal sustainability (Italy)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.11.1: **Summary table (Italy)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	59.1	60.0	60.9	61.4	61.7	61.9	62.0	61.2	59.4	0.3
Working age population (15-64) % of total	66.0	65.6	64.5	63.9	63.3	61.6	57.0	55.1	55.1	-10.9
Old-age dependency ratio (65+/15-64)	30.2	31.0	33.6	35.5	38.0	42.4	54.1	59.2	59.3	29.2
Participation rate (15-64)	62.6	63.7	65.7	66.4	66.9	67.4	67.7	67.9	67.7	5.1
- Older workers (55-64)	34.7	39.2	48.7	54.0	58.8	62.3	61.9	62.8	63.1	28.4
Unemployment rate (15-64)	6.1	9.4	5.8	5.8	5.8	5.8	5.8	5.8	5.8	-0.3
Real potential GDP (growth rate)	0.9	0.5	2.1	1.9	1.7	1.4	1.0	1.3	1.4	0.5

Expenditure projections										
Pensions	14.0	14.0	14.0	14.1	14.3	14.8	15.6	14.7	13.6	-0.4
Benefit ratio	68.5	71.3	71.9	70.5	67.5	64.1	57.3	51.7	47.3	-21.2
Health care	5.9	5.9	6.1	6.2	6.4	6.5	6.9	7.0	6.9	1.1
Long-term care	1.7	1.7	1.8	1.8	1.9	2.0	2.3	2.8	3.0	1.3
Education	4.1	4.0	3.9	3.8	3.7	3.6	3.6	3.8	3.8	-0.3
Unemployment benefits	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Total age-related expenditure	26.0	26.0	26.0	26.3	26.6	27.3	28.7	28.6	27.6	1.6

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	1.7	2.0	2.0						
Public debt	105.8	113.0	116.1	109.9	109.0	112.2	136.6	173.1	205.9

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	1.6	0.0	1.6	-0.4	1.0	1.2	-0.2	-0.2
Crisis scenario: lost decade	1.8	0.0	1.7	-0.4	1.0	1.3	-0.1	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	1.9	-0.2	0.7	1.4	1.4	-0.1	1.5	0.1	3.4
Crisis scenario: lost decade	2.7	0.0	0.7	1.9	1.8	0.0	1.8	0.2	3.5

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	1.4	0.3	-0.4	-0.1	-0.1	3.4	:
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.4	0.0	0.3	:	0.5
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.4	0.8	0.3	-0.8

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	3.1	2.0	-1.2	0.2

Tax burden	2008	Average 2000-07
	43.1	41.8

Source: Commission services.

12. CYPRUS

12.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Cyprus has a sustainability gap (S2) of 8.8% of GDP, which is significantly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Cyprus should improve its structural primary balance in a durable manner by 8.8% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Additionally, the social protection system (in particular public pensions) would have to be reformed to decelerate the projected increase in age-related expenditure. ([34])

The Cypriot sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is slightly positive (0.5% of GDP), below the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (8.3% of GDP) is clearly above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 10.8 p.p. in 2060 relative to 2010).

In the 2006 Sustainability Report, the S2 gap was 8.5% of GDP. The difference between that report and the current results (0.3 p.p.) stems mainly from the deterioration of the initial budgetary position (0.4 p.p.), while the component of the long-term cost of ageing has actually decreased (-1.7 p.p.). The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 1.6 p.p.

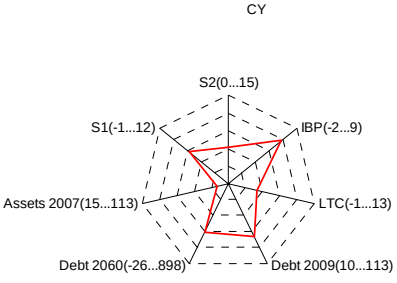
The Cypriot government debt in 2009, the base year of the analysis, stood at 47.5% of GDP and is forecast to increase to around 47% of GDP in 2010. The structural primary balance is forecast to decrease slightly from 0.2% in 2009 to 0.1% in 2010. Currently, Cypriot debt is both below the EU average and the 60% ceiling set by the Maastricht criteria.

12.2. OVERALL ASSESSMENT

Cyprus appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is well above the EU average, mainly as a result of a relatively high increase in pension expenditure as a share of GDP over the coming decades. The budgetary position in 2009 compounds slightly the budgetary impact of population ageing on the sustainability gap.

Improving primary surpluses over the medium term and especially a further reform of the pension system aimed at curbing the substantial increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.12.1: **Determinants of fiscal sustainability (Cyprus)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

([34]) In February 2009 the Cypriot government adopted a pension reform which places the burden on contribution increases but does not address the large increases in pension expenditures. The effects of the reform were not reflected in the 2009 Ageing report pension projections.

Table VII.12.1: **Summary table (Cyprus)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.3	0.5
Working age population (15-64) % of total	69.8	70.3	69.3	67.5	66.1	65.4	64.9	61.7	58.8	-10.9
Old-age dependency ratio (65+/15-64)	17.6	18.0	19.9	22.3	24.9	27.4	30.8	37.7	44.5	26.8
Participation rate (15-64)	72.9	74.6	76.9	78.5	78.6	78.4	78.0	78.0	78.0	5.1
- Older workers (55-64)	57.6	58.9	61.1	62.7	63.1	64.6	66.6	65.4	65.1	7.4
Unemployment rate (15-64)	4.0	5.9	3.4	3.4	3.4	3.4	3.4	3.4	3.4	-0.6
Real potential GDP (growth rate)	2.9	2.4	3.8	3.9	3.2	2.9	2.3	1.8	1.8	-1.1

Expenditure projections										
Pensions	6.3	6.9	7.8	8.9	9.8	10.8	12.8	15.5	17.7	11.4
Benefit ratio	53.7	57.6	59.1	60.0	58.2	57.4	59.2	58.4	56.5	2.9
Health care	2.7	2.8	2.8	2.9	2.9	3.0	3.1	3.2	3.3	0.6
Long-term care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Education	6.1	5.6	4.9	4.8	4.9	5.0	4.8	4.7	5.0	-1.2
Unemployment benefits	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	-0.1
Total age-related expenditure	15.4	15.5	15.8	16.8	17.9	19.1	21.0	23.7	26.2	10.8

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	2.9	0.2	0.1						
Public debt	49.1	47.5	47.9	42.6	51.6	67.8	119.2	204.4	335.5

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	10.7	0.0	10.7	10.8	0.6	0.0	-0.6	-0.5
Crisis scenario: lost decade	10.6	0.0	10.6	10.4	0.5	0.0	-0.4	-0.5

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	4.6	0.2	-0.3	4.7	8.8	0.5	8.3	0.4	8.9
Crisis scenario: lost decade	4.6	0.3	-0.3	4.6	8.7	0.5	8.2	0.4	8.4

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	8.8	0.4	-0.5	-0.1	0.6	4.7	:
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.2	-0.4	0.1	0.3	3.1	0.5
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.0	0.0	0.0	0.0

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	8.5	7.2	0.4	-1.7

Tax burden	2008	Average 2000-07
	39.4	33.1

Source: Commission services.

13. LATVIA

13.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Latvia has a sustainability gap (S2) of 9.9% of GDP, which is significantly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Latvia should improve its structural primary balance in a durable manner by 9.9% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Alternatively, the social protection system would have to be reformed to decelerate the projected increase in age-related expenditure.

The Latvian sustainability gap is mainly due to the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (8.9% of GDP), clearly above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (1.0% of GDP) is below the EU average (3.2% of GDP). The limited increase in the long-term cost of ageing is mainly driven by long-term care and health-care expenditure (increasing by 0.5 p.p. and 0.5 p.p. respectively in 2060 relative to 2010), while the ratio of pension expenditure to GDP remains at the current level.

In the 2006 Sustainability Report, the S2 gap was 0.8% of GDP. The difference between that report and the current results (9.1 p.p.) stems only from the deterioration of the initial budgetary position (9.5 p.p.), while the component of the long-term cost of ageing has actually decreased (-0.1 p.p.). The extension of the projection period from 2050 (in the 2006 report) to 2060 decreases the sustainability gap by -0.2 p.p.

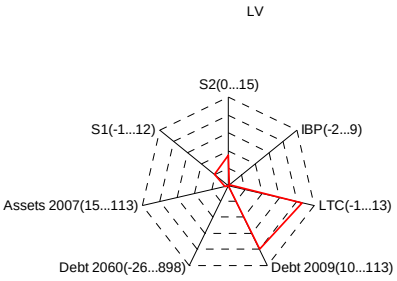
The Latvian government debt in 2009, the base year of the analysis, stood at 34.1% of GDP and is forecast to increase to around 50% of GDP in 2010. The structural primary balance is forecast to decrease slightly from -8.1% in 2009 to -9.2% in 2010. Currently, Latvian debt is both below the EU average and the 60% ceiling set by the Maastricht criteria, however the dramatic size of its structural primary deficit poses an additional risk to the sustainability of public finances.

13.2. OVERALL ASSESSMENT

Latvia appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is lower than the EU average, as a result of the pension reforms already enacted. However, the deterioration of the budgetary position significantly increases the risks to the sustainability of public finances.

Increasing the primary balances over the medium term would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.13.1: **Determinants of fiscal sustainability (Latvia)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.13.1: **Summary table (Latvia)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	2.3	2.2	2.2	2.2	2.1	2.0	1.9	1.8	1.7	-0.6
Working age population (15-64) % of total	68.9	69.0	67.6	66.1	65.0	64.2	62.4	57.8	53.3	-15.6
Old-age dependency ratio (65+/15-64)	24.8	25.2	26.2	28.1	31.1	34.6	40.7	51.2	64.5	39.7
Participation rate (15-64)	72.9	74.2	76.1	75.3	74.0	73.9	73.7	72.0	74.2	1.3
- Older workers (55-64)	60.4	59.3	60.0	58.5	56.2	58.6	58.8	54.4	58.1	-2.3
Unemployment rate (15-64)	6.0	16.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8	-1.2
Real potential GDP (growth rate)	5.3	-0.2	3.0	2.1	2.0	1.8	0.7	-0.1	1.1	-4.2

Expenditure projections										
Pensions	5.4	5.1	4.8	5.2	5.6	5.9	6.1	5.8	5.1	-0.4
Benefit ratio	24.0	25.7	25.3	25.2	24.3	23.4	21.3	16.1	12.6	-11.4
Health care	3.5	3.5	3.6	3.7	3.7	3.8	3.9	4.0	4.1	0.6
Long-term care	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.9	0.5
Education	3.7	3.1	2.8	3.0	3.2	3.2	2.9	3.1	3.3	-0.3
Unemployment benefits	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Total age-related expenditure	13.2	12.3	11.8	12.4	13.2	13.5	13.8	13.8	13.6	0.4

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-4.9	-8.1	-9.2						
Public debt	19.5	34.1	50.1	122.2	173.6	230.6	385.9	619.7	898.1

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	1.3	0.0	1.3	0.0	0.5	0.5	0.3	-0.2
Crisis scenario: lost decade	1.8	0.0	1.8	0.2	0.5	0.6	0.5	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	9.4	8.8	-0.2	0.9	9.9	8.9	1.0	0.9	2.2
Crisis scenario: lost decade	10.2	9.0	-0.2	1.4	10.6	9.0	1.6	1.0	2.5

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	9.9	0.2	-0.1	-0.1	-0.1	0.2	:
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.0	-0.4	0.0	0.2	2.5	0.7
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.1	0.6	0.1	-0.3

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	0.8	10.1	9.5	-0.1

Tax burden	2008	Average 2000-07
	29.6	29.4

Source: Commission services.

14. LITHUANIA

14.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Lithuania has a sustainability gap (S2) of 7.1% of GDP, which is above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Lithuania should improve its structural primary balance in a durable manner by 7.1% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Alternatively, the social protection system (in particular public pensions and health care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Lithuanian sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (3.9% of GDP), above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (3.2% of GDP) is at the EU average. The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 4.9 p.p. in 2060 relative to 2010), while health and long-term care expenditure also contribute to the long-term cost of ageing by growing 1.0 p.p. and 0.6 p.p.

In the 2006 Sustainability Report, the S2 gap was 1.8% of GDP. The difference between that report and the current results (5.9 p.p.) stems from the deterioration of the initial budgetary position (3.4 p.p.), while the component of the long-term cost of ageing has increased by 1.3 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.5 p.p.

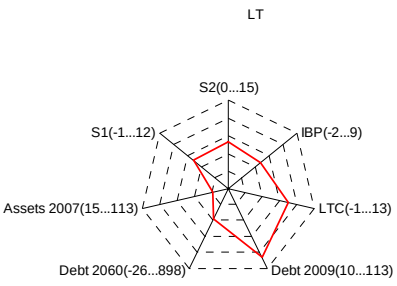
The Lithuanian government debt in 2009, the base year of the analysis, stood at 22.6% of GDP and is forecast to increase to around 32% of GDP in 2010. The structural primary balance is forecast to deteriorating from -3.1% in 2009 to -3.9% in 2010. Lithuanian debt is both below the EU average and the 60% ceiling set by the Maastricht criteria, however the widening of already large structural primary deficits may aggravate the sustainability gap of its public finances.

14.2. OVERALL ASSESSMENT

Lithuania appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is at the EU average, the rise is due mainly to pension expenditure. The budgetary position has worsened considerably in 2009 and compounds the budgetary impact of population ageing on the sustainability gap.

Improving the primary balance over the medium term and further reforms to the social security system would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.14.1: **Determinants of fiscal sustainability (Lithuania)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.14.1: **Summary table (Lithuania)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	3.4	3.3	3.3	3.2	3.2	3.1	2.9	2.7	2.5	-0.8
Working age population (15-64) % of total	68.5	69.2	69.1	67.6	65.7	63.8	61.5	58.1	52.9	-15.6
Old-age dependency ratio (65+/15-64)	22.7	23.2	24.0	26.0	29.7	34.7	42.8	51.1	65.7	42.9
Participation rate (15-64)	68.1	69.0	70.6	71.0	70.1	69.1	68.3	67.6	68.2	0.1
- Older workers (55-64)	55.5	58.5	59.9	59.4	56.3	56.0	56.9	54.8	54.1	-1.4
Unemployment rate (15-64)	4.3	15.9	3.5	3.5	3.5	3.5	3.5	3.5	3.5	-0.8
Real potential GDP (growth rate)	6.2	1.4	3.6	2.5	1.8	1.5	0.8	0.2	0.4	-5.7

Expenditure projections										
Pensions	6.8	6.5	6.5	6.9	7.6	8.2	9.1	10.4	11.4	4.6
Benefit ratio	33.1	33.5	33.2	32.7	32.2	31.6	30.3	29.0	27.7	-5.4
Health care	4.5	4.6	4.7	4.9	5.0	5.1	5.3	5.5	5.6	1.1
Long-term care	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.9	1.1	0.6
Education	4.0	3.5	2.9	2.8	2.9	3.0	2.9	2.8	3.1	-0.9
Unemployment benefits	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total age-related expenditure	15.8	15.1	14.8	15.1	16.0	16.9	18.1	19.6	21.2	5.4

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-4.5	-3.1	-3.9						
Public debt	15.6	22.6	31.9	61.8	83.9	113.9	204.3	341.2	545.9

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	6.0	0.0	6.0	4.9	1.0	0.6	-0.4	-0.2
Crisis scenario: lost decade	6.9	0.0	6.9	5.5	0.9	0.7	-0.2	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	5.4	3.7	-0.3	2.0	7.1	3.9	3.2	0.7	4.2
Crisis scenario: lost decade	6.1	3.9	-0.3	2.5	7.8	4.0	3.8	0.8	4.7

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	7.1	0.4	0.0	-0.2	0.2	-0.1	-0.4
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.5	0.0	0.3	1.6	0.7
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.1	0.2	0.1	-0.3

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	1.8	6.6	3.4	1.3

Tax burden	2008	Average 2000-07
	30.7	29.2

Source: Commission services.

15. LUXEMBOURG

15.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Luxembourg has a sustainability gap (S2) of 12.5% of GDP, which is clearly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Luxembourg should improve its structural primary balance in a durable manner by 12.5% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Additionally, the social protection system (in particular public pensions) would have to be reformed to decelerate the projected increase in age-related expenditure.

The sustainability gap in Luxembourg is mitigated by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is slightly negative (-0.4% of GDP), below the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (12.9% of GDP) is the highest in the EU. The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 7.4% p.p. in 2060 relative to 2010).

In the 2006 Sustainability Report, the S2 gap was 9.5% of GDP. The difference between that report and the current results (3.0 p.p.) stems mainly from the increase in the long-term cost of ageing (3.6 p.p.), while the initial budgetary position has actually improved by 0.4 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 1.1 p.p.

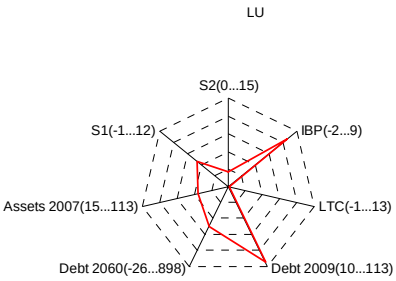
The Luxemburgish government debt in 2009, the base year of the analysis, stood at 16.0% of GDP and is forecast to decrease to around 16% of GDP in 2010. The structural primary balance is forecast to decrease from 1.2% in 2009 to 0.7% in 2010. The Luxemburgish debt is both below the EU average and the 60% ceiling set by the Maastricht criteria.

15.2. OVERALL ASSESSMENT

Luxembourg appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing in Luxembourg is among the highest in the EU, influenced notably by a very considerable projected increase in pension expenditure. The budgetary position in 2009, the low debt ratio, the significant assets accumulated in social security, and a structural primary surplus contribute to offsetting the projected long-term budgetary impact of ageing populations. However, this is not sufficient to cover the sizeable increase in age-related expenditure.

Achieving high primary surpluses over the medium term and implementing measures aimed at curbing the substantial increase in age-related expenditures would contribute to reducing the medium risk to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.15.1: **Determinants of fiscal sustainability (Luxembourg)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.15.1: **Summary table (Luxembourg)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.3
Working age population (15-64) % of total	67.6	67.8	67.6	66.9	65.4	63.5	61.1	60.8	60.3	-7.4
Old-age dependency ratio (65+/15-64)	20.7	21.1	22.3	24.2	27.1	30.8	36.3	37.8	39.1	18.3
Participation rate (15-64)	66.4	67.0	67.1	66.9	66.8	66.9	67.3	67.1	66.8	0.4
- Older workers (55-64)	33.0	36.4	39.0	40.6	40.9	40.4	41.9	42.3	41.3	8.4
Unemployment rate (15-64)	4.2	7.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	0.4
Real potential GDP (growth rate)	3.5	1.9	4.0	2.7	2.3	2.1	2.2	2.2	2.0	-1.5

Expenditure projections										
Pensions	8.7	8.6	8.9	9.9	12.1	14.2	18.4	22.1	23.9	15.2
Benefit ratio	45.8	41.4	38.0	37.0	39.1	39.3	41.1	42.9	44.1	-1.7
Health care	5.8	5.9	6.1	6.2	6.4	6.5	6.8	7.0	7.0	1.2
Long-term care	1.4	1.4	1.4	1.5	1.6	1.8	2.4	3.0	3.4	2.0
Education	3.8	3.6	3.2	3.1	3.1	3.2	3.3	3.3	3.3	-0.5
Unemployment benefits	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0
Total age-related expenditure	20.0	19.9	20.0	21.1	23.7	26.1	31.3	35.7	38.0	18.0

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	2.3	1.2	0.7						
Public debt	14.7	16.0	16.4	6.3	14.8	35.6	118.2	253.8	437.5

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	16.2	1.9	18.2	15.3	1.1	2.0	-0.3	-0.8
Crisis scenario: lost decade	16.4	1.9	18.3	14.9	1.0	2.4	0.0	-0.8

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	6.2	-0.6	-0.8	7.5	12.5	-0.4	12.9	0.5	13.6
Crisis scenario: lost decade	7.5	-0.6	-0.8	8.9	13.2	-0.4	13.5	0.6	13.4

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	12.5	0.6	-0.1	-0.2	-0.2	6.8	-2.4
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.6	0.0	0.4	:	0.1
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.3	0.7	0.4	-1.6

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	9.5	11.5	-1.6	3.6

Tax burden	2008	Average 2000-07
	38.6	38.8

Source: Commission services.

16. HUNGARY

16.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Hungary has a negative sustainability gap (S2) of -0.1% of GDP, which is clearly below the EU average (6.5% of GDP).

While the Hungarian overall sustainability gap is negative, the required adjustment given the long-term cost of ageing is positive (1.5% of GDP), which is below the EU average (3.3% of GDP). In contrast, the sustainability gap is mitigated by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is negative (-1.6% of GDP) clearly below the EU average (3.2% of GDP). The increase in the long-term cost of ageing is mainly driven by pension and health care expenditure (increasing by 2.6 p.p. and 1.3 p.p. respectively in 2060 relative to 2010), while the ratio of long-term care expenditure to GDP increases by 0.4 p.p.

In the 2006 Sustainability Report, the S2 gap was (9.8% of GDP). The difference between that report and the current results (-9.9 p.p.) stems both from the improvement of the initial budgetary position (6.2 p.p.) and the decrease in the long-term cost of ageing (4.0 p.p.) The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.3 p.p.

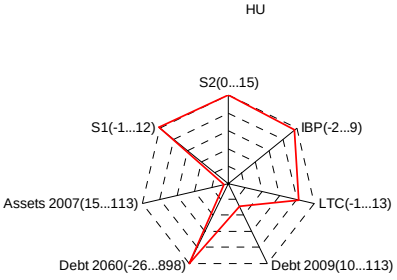
The Hungarian government debt in 2009, the base year of the analysis, stood at 80.8% of GDP and is forecast to increase to around 82% of GDP in 2010. The structural primary surplus is forecast to decrease from the level of 3.1% in 2009 to 2.9 in 2010. Hungarian debt is above both the EU average and the 60% ceiling set by the Maastricht criteria which poses significant risks for the long-term sustainability of its public finances.

16.2. OVERALL ASSESSMENT

Hungary appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is lower than the EU average. However pension expenditure as a share of GDP remains above the EU average. The budgetary position in 2009 would be sufficient to stabilise the current debt ratio but would not contribute to offsetting the projected long-term budgetary impact of ageing. Moreover, the current level of gross debt, which is above the Treaty reference value, adds to the sustainability risk.

Achieving high primary surpluses and further reforms to the social security system would therefore contribute to limiting the medium risk to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.16.1: **Determinants of fiscal sustainability (Hungary)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.16.1: **Summary table (Hungary)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	10.1	10.0	10.0	9.9	9.8	9.7	9.4	9.1	8.7	-1.3
Working age population (15-64) % of total	68.9	68.6	67.4	65.4	64.3	64.5	62.2	57.7	55.4	-13.5
Old-age dependency ratio (65+/15-64)	23.2	24.2	26.3	30.3	33.3	34.1	40.1	50.8	57.6	34.5
Participation rate (15-64)	61.7	63.4	65.4	66.6	66.8	65.9	64.3	64.9	65.0	3.2
- Older workers (55-64)	34.1	42.1	46.4	47.2	50.4	50.8	48.8	49.4	49.3	15.2
Unemployment rate (15-64)	7.4	11.2	7.0	6.2	6.2	6.2	6.2	6.2	6.2	-1.2
Real potential GDP (growth rate)	1.4	0.1	2.8	2.4	2.1	2.1	1.1	0.8	1.0	-0.3

Expenditure projections										
Pensions	10.9	11.3	10.9	11.0	10.9	11.0	12.2	13.2	13.8	3.0
Benefit ratio	38.9	42.3	41.6	41.3	40.1	38.8	37.7	36.6	35.8	-3.1
Health care	5.8	5.8	5.9	6.0	6.2	6.4	6.7	6.9	7.0	1.3
Long-term care	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.4
Education	4.4	4.1	3.8	3.8	3.8	3.7	3.7	3.8	4.0	-0.4
Unemployment benefits	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	-0.1
Total age-related expenditure	21.6	21.8	21.2	21.3	21.5	21.7	23.2	24.7	25.7	4.1

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-0.3	3.1	2.9						
Public debt	73.0	80.8	82.3	54.4	38.0	21.8	-5.2	-21.1	-26.3

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	3.3	0.7	4.0	2.6	1.3	0.4	-0.3	-0.2
Crisis scenario: lost decade	3.5	0.7	4.1	2.5	1.2	0.4	0.0	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	-1.1	-1.9	0.4	0.4	-0.1	-1.6	1.5	0.0	3.5
Crisis scenario: lost decade	0.3	-1.6	0.4	1.5	0.9	-1.4	2.3	0.1	3.6

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	-0.1	0.6	-0.2	-0.2	-0.1	1.4	0.2
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.3	-0.7	0.1	0.6	1.1	0.9
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.1	0.3	0.1	-0.2

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	9.8	-0.4	-6.2	-4.0

Tax burden	2008	Average 2000-07
	40.6	38.1

Source: Commission services.

17. MALTA

17.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Malta has a sustainability gap (S2) of 7.0% of GDP, which is above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Malta should improve its structural primary balance in a durable manner by 7.0% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Additionally, the social protection system (in particular public pensions, health care and long-term care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Maltese sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilize the debt ratio is positive (1.4% of GDP), below the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (5.7% of GDP) is clearly above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension and health-care expenditure (by 5.1 p.p. and 3.1 p.p. of GDP respectively in 2060 relative to 2010), while long-term care also contributes less but still significantly to the long-term cost of ageing increasing by 1.6 p.p. in 2060 relative to 2010.

In the 2006 Sustainability Report, the S2 gap was -0.3% of GDP. The difference between that report and the current results (7.3 p.p.) stems mainly from the increase in the long-term cost of ageing (4.6 p.p.), while the initial budgetary position has deteriorated less markedly (1.6 p.p.). The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 1.1 p.p.

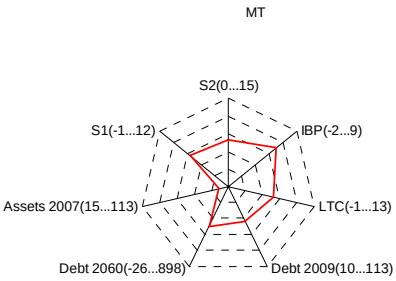
The Maltese government debt in 2009, the base year of the analysis, stood at 67.0% of GDP and is forecast to increase to around 68% of GDP in 2010. The structural primary balance is forecast to improve from -0.2% in 2009 to 0.7% in 2010. Currently, Maltese debt is below the EU average but above the 60% ceiling set by the Maastricht criteria.

17.2. OVERALL ASSESSMENT

Malta appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is well above the EU average, mainly as a result of a relatively high increase in pension and health-care expenditure as a share of GDP over the coming decades. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

High primary surpluses over the medium term and further reforms of the social security system aimed at curbing the substantial increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.17.1: **Determinants of fiscal sustainability (Malta)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.17.1: **Summary table (Malta)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0
Working age population (15-64) % of total	69.7	69.6	67.4	65.1	63.0	61.8	61.6	58.4	54.9	-14.8
Old-age dependency ratio (65+/15-64)	19.4	21.2	26.7	31.2	35.9	39.1	41.7	49.8	59.1	39.7
Participation rate (15-64)	59.5	59.4	61.2	63.0	64.1	65.1	64.4	64.4	64.4	4.9
- Older workers (55-64)	31.6	27.7	32.0	38.1	43.4	50.6	51.6	51.1	50.3	18.7
Unemployment rate (15-64)	6.4	7.7	6.2	6.2	6.2	6.2	6.2	6.2	6.2	-0.2
Real potential GDP (growth rate)	2.0	1.1	2.7	2.7	1.9	1.7	1.2	0.8	1.0	-1.0

Expenditure projections										
Pensions	7.2	8.3	9.1	9.3	9.1	9.3	10.5	12.0	13.4	6.2
Benefit ratio	42.3	42.5	42.3	39.8	37.0	37.4	39.9	41.0	40.0	-2.3
Health care	4.7	4.9	5.3	5.6	6.0	6.4	7.2	7.6	8.0	3.3
Long-term care	1.0	1.0	1.1	1.2	1.5	1.6	2.0	2.2	2.6	1.6
Education	5.0	4.6	4.2	4.0	3.9	3.9	3.7	3.7	4.0	-1.0
Unemployment benefits	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Total age-related expenditure	18.2	19.2	20.1	20.5	20.9	21.7	23.8	25.8	28.4	10.2

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-1.6	-0.2	0.7						
Public debt	64.1	67.0	68.9	85.3	97.1	114.0	173.7	277.3	432.5

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	9.2	0.0	9.2	5.1	3.1	1.6	-0.7	-0.1
Crisis scenario: lost decade	13.3	0.0	13.3	9.3	3.1	1.6	-0.7	-0.1

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	4.7	1.1	0.2	3.4	7.0	1.4	5.7	0.6	6.3
Crisis scenario: lost decade	8.8	1.3	0.2	7.4	11.2	1.5	9.7	1.0	7.3

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	7.0	0.5	-0.4	-0.2	0.5	1.8	-0.5
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.3	-0.7	-0.4	0.6	1.3	0.9
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.1	0.5	0.3	-1.0

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	-0.3	6.0	1.6	4.6

Tax burden	2008	Average 2000-07
	35.6	33.5

Source: Commission services.

18. THE NETHERLANDS

18.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Netherlands has a sustainability gap (S2) of 6.9% of GDP, which is slightly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Netherlands should improve its structural primary balance in a durable manner by 6.9% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Additionally, the social protection system (in particular public pensions and long-term care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Dutch sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (1.9% of GDP), below the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (5.0% of GDP) is clearly above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in long-term care and pension expenditure (by 4.6 p.p. and 4.8 p.p. respectively in 2060 relative to 2010), while health care also contributes less but still significantly to the long-term cost of ageing by increasing by 0.9 p.p.

In the 2006 Sustainability Report, the S2 gap was 1.3% of GDP. The difference between that report and the current results (5.6 p.p.) stems mainly from the deterioration of the initial budgetary position (5.0 p.p.), while the component of the long-term cost of ageing has increased less markedly (0.6 p.p.). The extension of the projection period from 2050 (in the 2006 report) to 2060 does not affect the sustainability gap.

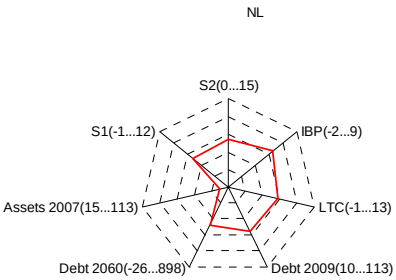
The Dutch government debt in 2009, the base year of the analysis, stood at 57.0% of GDP and is forecast to increase to around 63% of GDP in 2010. The structural primary balance is forecast to decrease slightly from 0.0% in 2009 to -1.6% in 2010. Currently, Dutch debt is both below the EU average and the 60% ceiling set by the Maastricht criteria, however the decrease of its structural primary balance may widen the sustainability gap of its public finances.

18.2. OVERALL ASSESSMENT

The Netherlands appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is well above the EU average, mainly as a result of a relatively high increase in pension and long-term care expenditure as a share of GDP over the coming decades. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

High primary surpluses over the medium term and a further reform of the social security system aimed at curbing the substantial increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.18.1: **Determinants of fiscal sustainability (The Netherlands)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.18.1: **Summary table (The Netherlands)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	16.4	16.5	16.7	16.9	17.1	17.2	17.2	16.9	16.6	0.2
Working age population (15-64) % of total	67.4	67.2	65.6	64.5	62.6	60.2	57.5	58.4	57.8	-9.7
Old-age dependency ratio (65+/15-64)	21.5	22.8	27.1	30.7	34.9	40.0	46.8	45.6	47.2	25.7
Participation rate (15-64)	78.7	78.8	79.4	79.5	79.5	79.7	81.0	80.4	80.2	1.6
- Older workers (55-64)	53.3	53.4	55.3	56.1	56.2	55.8	57.5	57.8	57.6	4.2
Unemployment rate (15-64)	3.2	6.2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	-0.2
Real potential GDP (growth rate)	1.7	0.9	1.7	1.5	1.3	1.2	1.5	1.5	1.3	-0.4

Expenditure projections										
Pensions	6.6	6.5	7.2	7.8	8.4	9.3	10.3	10.3	10.5	4.0
Benefit ratio	43.8	41.8	41.6	41.1	40.6	40.4	40.4	40.7	40.5	-3.2
Health care	4.8	4.9	5.1	5.3	5.4	5.6	5.8	5.9	5.8	1.0
Long-term care	3.4	3.5	3.8	4.1	4.6	5.4	6.8	7.7	8.1	4.7
Education	4.6	4.6	4.5	4.4	4.3	4.4	4.5	4.5	4.4	-0.2
Unemployment benefits	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-0.1
Total age-related expenditure	20.5	20.5	21.5	22.6	23.9	25.6	28.5	29.4	29.9	9.4

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	1.7	0.0	-1.6						
Public debt	58.2	57.0	63.1	75.5	93.9	121.0	202.2	312.1	450.3

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	6.7	2.7	9.4	4.0	0.9	4.6	-0.2	-1.4
Crisis scenario: lost decade	7.3	2.7	10.0	4.3	0.9	4.9	0.0	-1.4

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	5.2	1.6	0.0	3.7	6.9	1.9	5.0	0.6	6.5
Crisis scenario: lost decade	5.8	1.6	0.0	4.1	7.5	2.0	5.6	0.6	6.9

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	6.9	0.2	0.0	-0.2	-0.4	1.1	-0.3
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.4	0.0	0.3	:	0.7
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.3	-0.3	0.5	1.1	0.9	-3.3

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	1.3	7.0	5.0	0.6

Tax burden	2008	Average 2000-07
	39.8	39.3

Source: Commission services.

19. AUSTRIA

19.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure Austria has a sustainability gap (S2) of 4.7% of GDP, which is below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Austria should improve its structural primary balance in a durable manner by 4.7% of GDP. In principle, this adjustment could take place via an increase in revenues or cuts in expenditure. Alternatively the social protection system would have to be reformed to decelerate the planned increase in age-related expenditure.

The Austrian sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (1.6% of GDP), below the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (3.1% of GDP) is close to the EU average (3.2% of GDP). The long-term cost of ageing is driven by an increase in pension, health-care and long-term care expenditure (by 1.0 p.p., 1.4 p.p. and 1.2 p.p. respectively in 2060 relative to 2010),

In the 2006 Sustainability Report, the S2 gap was 0.3% of GDP. The difference between that report and the current results (4.4 p.p.) stems both from the deterioration of the initial budgetary position (2.5 p.p.) and the increase in the long-term cost of ageing (2.1 p.p.). The extension of the projection period from 2050 (in the 2006 report) decreases the sustainability gap by 0.1 p.p.

The Austrian government debt in 2009, the base year of the analysis, stood at 70.4% of GDP and is forecast to increase to around 75% of GDP in 2010. The structural primary balance is forecast to decrease from -0.2% in 2009 to -0.6% in 2010. Austrian debt is close to the EU average but clearly above the 60% ceiling set by the Maastricht criteria which may also pose risks for the long-term sustainability of its public finances.

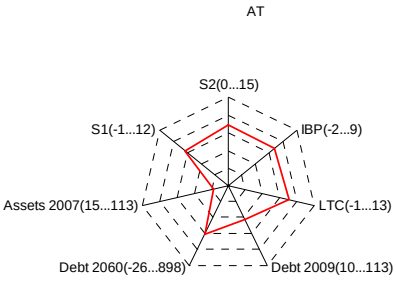
19.2. OVERALL ASSESSMENT

Austria appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing in Austria is close to the EU average. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap. Moreover, the current level of gross debt, which is above the Treaty reference value, adds to the sustainability risk.

In addition, there is a risk that current policy will not be applicable for the long term as a decrease in pensions' benefit ratio is forecast (from 55% in 2007 to 39% in 2060). This decreasing benefit ratio may put some pressure on Austrian public finances and may thus pose risks to the long-term sustainability of public finances.

Improving primary surpluses over the medium term and further reforms to the social security system aimed at curbing the increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.19.1: **Determinants of fiscal sustainability (Austria)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.19.1: **Summary table (Austria)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	8.3	8.4	8.6	8.7	8.9	9.0	9.1	9.1	9.0	0.7
Working age population (15-64) % of total	67.5	67.5	67.2	66.3	64.6	62.2	59.2	58.3	57.2	-10.3
Old-age dependency ratio (65+/15-64)	25.0	26.0	27.4	29.2	32.7	38.1	46.0	48.3	50.6	25.6
Participation rate (15-64)	74.8	75.3	75.8	75.9	75.7	76.4	77.9	77.5	77.6	2.8
- Older workers (55-64)	40.0	40.8	45.7	49.6	51.1	52.1	56.1	56.0	55.4	15.4
Unemployment rate (15-64)	4.4	7.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	-0.1
Real potential GDP (growth rate)	1.6	1.1	1.9	1.9	1.6	1.5	1.5	1.5	1.5	-0.1

Expenditure projections										
Pensions	12.8	12.7	12.8	13.0	13.4	13.8	13.9	14.0	13.6	0.9
Benefit ratio	54.9	54.2	53.0	51.8	50.6	49.4	46.3	42.7	38.5	-16.4
Health care	6.5	6.6	6.8	7.0	7.2	7.4	7.8	8.1	8.0	1.5
Long-term care	1.3	1.3	1.3	1.4	1.5	1.7	2.0	2.4	2.5	1.2
Education	4.8	4.5	4.3	4.1	4.1	4.2	4.2	4.2	4.3	-0.5
Unemployment benefits	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0
Total age-related expenditure	26.0	25.7	25.8	26.2	26.9	27.7	28.6	29.3	29.0	3.1

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	0.8	-0.2	-0.6						
Public debt	62.5	70.4	75.2	84.8	97.4	116.7	170.4	245.3	337.8

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	4.0	-0.7	3.3	1.0	1.4	1.2	-0.2	-0.6
Crisis scenario: lost decade	5.3	-0.7	4.6	2.1	1.4	1.3	-0.1	-0.6

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	3.8	1.5	0.2	2.2	4.7	1.6	3.1	0.3	4.5
Crisis scenario: lost decade	5.3	1.5	0.2	3.6	6.1	1.7	4.4	0.5	5.3

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	4.7	0.6	-0.8	-0.5	-0.5	4.4	:
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.6	0.0	0.4	:	0.8
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.2	0.1	0.3	-0.8

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	0.3	4.8	2.5	2.1

Tax burden	2008	Average 2000-07
	44.5	45.0

Source: Commission services.

20. POLAND

20.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected changes in age related expenditure Poland has a sustainability gap (S2) of 3.2% of GDP, which is significantly below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Poland should improve its structural primary balance in a durable manner by 3.2% of GDP. In principle, this adjustment could take place via an increase in revenues or cuts in expenditure.

The Polish sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (4.4% of GDP), above the EU average (3.3% of GDP). In contrast, the sustainability gap is mitigated by the required adjustment given the long-term cost of ageing is negative (-1.2% of GDP) and clearly below the EU average (3.2% of GDP). The negative long-term cost of ageing is mainly driven by a decrease in pension expenditure (by -2.1 p.p. in 2060 relative to 2010), while health care and long-term care contribute to the long-term cost of ageing positively (increasing by 0.8% and 0.7% of GDP respectively).

In the 2006 Sustainability Report, the S2 gap was -0.2% of GDP. The difference between that report and the current results (3.4 p.p.) stems from both the deterioration of the initial budgetary position (1.9 p.p.) and the increase in the long-term cost of ageing (1.5 p.p.). The extension of the projection period from 2050 (in the 2006 report) decreases the sustainability gap by 0.1 p.p.

The Polish government debt in 2009, the base year of the analysis, stood at 53.6% of GDP and is forecast to increase to around 60% of GDP in 2010. The structural primary balance is forecast to improve from -3.1% in 2009 to -2.8% in 2010. Polish debt is both below the EU average and the 60% ceiling set by the Maastricht criteria. However large continuing structural primary deficits may pose some risk for the long-term sustainability of public finances.

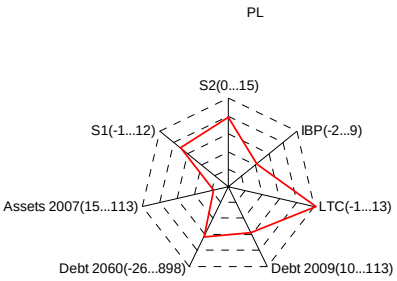
20.2. OVERALL ASSESSMENT

Poland appears to be at medium risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is among the lowest in the EU but the budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

In addition, there is a risk that current policy will not be applicable for the long terms as it involves a sharp decrease of the benefit ratio of pensions in Poland until 2060, which may pose risks to the long term sustainability of public finances.

Improving primary surpluses over the medium term would contribute to reducing the risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.20.1: **Determinants of fiscal sustainability (Poland)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.20.1: **Summary table (Poland)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	38.1	38.1	38.1	38.0	37.6	37.0	35.2	33.3	31.1	-7.0
Working age population (15-64) % of total	70.8	71.5	70.0	67.0	64.6	63.9	62.7	56.8	52.5	-18.3
Old-age dependency ratio (65+/15-64)	19.0	19.0	21.9	27.2	32.9	36.0	41.3	55.7	69.0	50.0
Participation rate (15-64)	63.3	64.0	65.1	66.1	67.6	67.6	65.4	65.5	66.3	3.0
- Older workers (55-64)	32.1	33.0	35.5	34.9	41.8	48.1	47.9	46.2	46.5	14.4
Unemployment rate (15-64)	9.6	12.1	5.9	5.9	5.9	5.9	5.9	5.9	5.9	-3.7
Real potential GDP (growth rate)	4.9	3.2	3.1	2.5	2.5	2.0	0.5	0.3	0.5	-4.4

Expenditure projections										
Pensions	11.6	10.8	9.6	9.7	9.7	9.4	9.2	9.1	8.8	-2.8
Benefit ratio	56.2	59.4	53.7	50.9	47.7	43.7	35.9	28.6	23.6	-32.6
Health care	4.0	4.1	4.3	4.4	4.5	4.6	4.8	4.9	5.0	1.0
Long-term care	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.9	1.1	0.7
Education	4.4	3.7	3.3	3.2	3.2	3.2	2.9	2.9	3.2	-1.2
Unemployment benefits	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.1
Total age-related expenditure	20.5	19.1	17.6	17.8	18.0	17.9	17.7	17.9	18.1	-2.4

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-3.1	-3.1	-2.8						
Public debt	47.2	53.6	59.7	80.4	93.6	108.9	155.7	225.5	318.4

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	-1.2	0.1	-1.1	-2.1	0.8	0.7	-0.6	-0.4
Crisis scenario: lost decade	-1.5	0.1	-1.4	-2.2	0.8	0.7	-0.7	-0.4

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	2.9	4.2	0.0	-1.2	3.2	4.4	-1.2	0.3	1.1
Crisis scenario: lost decade	2.9	4.2	0.0	-1.4	3.1	4.5	-1.4	0.3	0.9

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	3.2	0.4	-0.3	-0.1	0.0	0.5	0.4
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.2	-0.9	0.2	0.5	2.1	0.9
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.2	0.0	0.1	-0.4

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	-0.2	3.3	1.9	1.5

Tax burden	2008	Average 2000-07
	34.4	33.1

Source: Commission services.

21. PORTUGAL

21.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure Portugal has a sustainability gap (S2) of 5.5% of GDP, which is below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Portugal should improve its structural primary balance in a durable manner by 5.5% of GDP. In principle, this adjustment could take place via an increase in revenues or cuts in expenditure. Alternatively the social protection system would have to be reformed to decelerate the planned increase in age-related expenditure.

The Portuguese sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (3.7% of GDP), above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (1.9% of GDP) is below the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in public pension and health care expenditure (by 1.5 p.p. and 1.8 p.p. respectively in 2060 relative to 2010), while long-term care contributes to the long-term cost of ageing by a lesser amount (increasing by 0.1 p.p.).

In the 2006 Sustainability Report, the S2 gap was 10.5% of GDP. The difference between that report and the current results (4.9 p.p.) stems from the decrease in the long-term cost of ageing (-5.1 p.p.), at the same time, the initial budgetary position has remained stable. The extension of the projection period from 2050 (in the 2006 report) increases the sustainability gap by 0.1 p.p.

The Portuguese government debt in 2009, the base year of the analysis, stood at 75.4% of GDP and is forecast to increase to around 81% of GDP in 2010. The structural primary balance is forecasted to improve from -2.4% in 2009 to -1.8% in 2010. Portuguese debt is above both the EU average and the 60% ceiling set by the Maastricht criteria which may together with the ongoing structural primary deficits pose risks for the long-term sustainability of public finances.

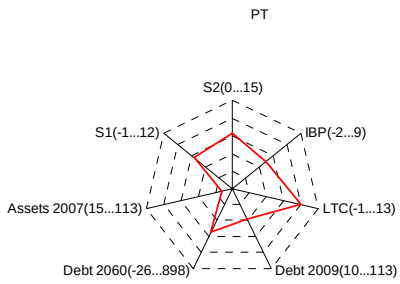
21.2. OVERALL ASSESSMENT

Portugal appears to be at medium risk with regard to the long-term sustainability of public finances. While the long-term budgetary impact of ageing is somewhat higher than on average in the EU, enacted pension reforms have helped to contain the projected increase in pension expenditure over the coming decades. The budgetary position in 2009 compounds the budgetary impact of population ageing. Moreover, the current level of gross debt is above the Treaty reference value.

In addition to overall figures, there is a risk that current policy will not be applicable for the long term as the benefit ratio of pensions is forecast to decrease. This might put some additional pressure on the long term sustainability of public finances.

Improving primary surpluses over the medium term and further reforms to the social security system aimed at curbing the increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.21.1: **Determinants of fiscal sustainability (Portugal)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.21.1: **Summary table (Portugal)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	10.6	10.7	10.9	11.1	11.2	11.3	11.5	11.4	11.3	0.7
Working age population (15-64) % of total	67.3	66.9	66.1	65.5	64.7	63.5	60.2	56.9	56.3	-10.9
Old-age dependency ratio (65+/15-64)	25.6	26.6	28.6	30.7	33.2	36.6	44.6	53.0	54.8	29.1
Participation rate (15-64)	74.1	75.2	76.1	76.1	76.3	76.4	76.4	76.6	76.3	2.2
- Older workers (55-64)	54.5	56.9	61.1	63.5	65.0	67.0	67.4	67.5	67.8	13.3
Unemployment rate (15-64)	8.1	9.8	6.9	6.2	6.2	6.2	6.2	6.2	6.2	-1.9
Real potential GDP (growth rate)	0.4	0.1	2.1	2.1	2.1	2.5	1.8	1.2	1.4	1.0

Expenditure projections										
Pensions	11.4	11.9	12.1	12.4	12.6	12.6	12.5	13.3	13.4	2.1
Benefit ratio	46.3	49.0	48.2	47.2	45.3	42.3	36.7	34.5	32.7	-13.6
Health care	7.2	7.3	7.5	7.6	7.8	8.0	8.5	8.9	9.1	1.9
Long-term care	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1
Education	4.6	4.5	4.4	4.3	4.2	4.1	4.0	4.2	4.3	-0.3
Unemployment benefits	1.2	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.8	-0.4
Total age-related expenditure	24.5	24.9	25.0	25.2	25.5	25.7	26.0	27.4	27.8	3.4

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-0.9	-2.4	-1.8						
Public debt	66.4	75.4	81.5	113.6	134.2	156.1	203.9	282.9	389.9

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	2.8	0.1	2.9	1.5	1.8	0.1	-0.4	-0.2
Crisis scenario: lost decade	4.2	0.1	4.3	2.6	1.7	0.1	-0.2	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	4.7	3.4	0.3	1.0	5.5	3.7	1.9	0.4	3.0
Crisis scenario: lost decade	5.9	3.6	0.3	2.1	6.8	3.8	3.1	0.5	4.2

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	5.5	0.7	-0.5	-0.2	-0.4	3.0	0.3
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.2	-0.7	0.0	0.5	:	0.8
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.0	0.1	0.0	-0.1

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	10.5	5.4	0.0	-5.1

Tax burden	2008	Average 2000-07
	37.8	36.0

Source: Commission services.

22. ROMANIA

22.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Romania has a sustainability gap (S2) of 9.1% of GDP, which is significantly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Romania should improve its structural primary balance in a durable manner by 9.1% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Alternatively, the social protection system (in particular public pensions and health care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Romanian sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (4.3% of GDP), above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (4.9% of GDP) is also above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 7.4 p.p. in 2060 relative to 2010), while health care also contributes to the long-term cost of ageing (increasing by 1.3 p.p.).

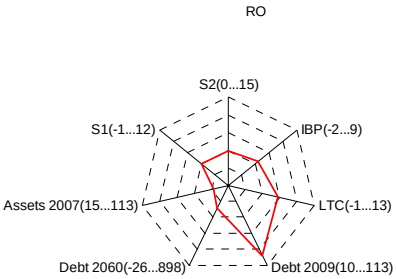
The Romanian government debt in 2009, the base year of the analysis, stood at 18.2% of GDP and is forecast to increase to around 23% of GDP in 2010. The structural primary balance is forecast to improve slightly from -3.7% in 2009 to -3.1% in 2010. Romanian debt is both below the EU average and the 60% ceiling set by the Maastricht criteria, however the continuing structural primary deficits may widen the sustainability gap of its public finances.

22.2. OVERALL ASSESSMENT

Romania appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is above the EU average according to the projections made in 2009. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

Improving the primary balance over the medium term and further reforms to the social security system would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.22.1: **Determinants of fiscal sustainability (Romania)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.22.1: **Summary table (Romania)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	21.6	21.3	21.1	20.8	20.5	20.0	19.2	18.1	16.9	-4.6
Working age population (15-64) % of total	69.8	70.0	69.4	67.9	66.7	66.8	62.6	57.3	53.6	-16.2
Old-age dependency ratio (65+/15-64)	21.3	21.3	22.5	25.7	29.1	30.3	40.7	54.0	65.3	44.0
Participation rate (15-64)	63.0	63.9	64.7	64.8	64.2	62.4	60.8	60.5	61.3	-1.7
- Older workers (55-64)	42.4	44.6	46.3	47.1	50.9	48.2	45.6	44.2	45.4	3.1
Unemployment rate (15-64)	6.4	7.7	6.0	6.0	6.0	6.0	6.0	6.0	6.0	-0.4
Real potential GDP (growth rate)	5.1	3.2	3.9	2.9	2.2	1.6	1.1	0.3	0.3	-4.7

Expenditure projections										
Pensions	6.6	8.4	8.5	8.8	9.4	10.4	12.6	14.8	15.8	9.2
Benefit ratio	29.4	40.0	41.4	42.2	42.5	42.5	39.0	36.6	36.6	7.2
Health care	3.5	3.6	3.7	3.8	3.9	4.1	4.4	4.7	4.9	1.4
Long-term care	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Education	2.8	2.5	2.4	2.3	2.3	2.2	2.1	2.2	2.3	-0.5
Unemployment benefits	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Total age-related expenditure	13.1	14.7	14.8	15.1	15.8	17.0	19.3	22.0	23.2	10.1

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-7.2	-3.7	-3.1						
Public debt	13.6	18.2	22.7	66.3	91.3	125.1	220.6	390.4	633.8

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	8.5	0.0	8.5	7.4	1.3	0.0	-0.2	-0.1
Crisis scenario: lost decade	9.6	0.0	9.6	8.5	1.3	0.0	-0.1	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	6.9	4.1	-0.4	3.2	9.1	4.3	4.9	0.8	5.4
Crisis scenario: lost decade	7.6	4.2	-0.4	3.8	9.9	4.3	5.6	0.9	6.0

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	9.1	0.5	0.0	-0.3	0.5	0.3	-0.7
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.0	-0.5	0.0	0.3	2.1	0.7
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.0	0.0	0.0	0.0

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	:	8.7	:	:

Tax burden	2008	Average 2000-07
	29.5	28.9

Source: Commission services.

23. SLOVENIA

23.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Slovenia has a sustainability gap (S2) of 12.2% of GDP, which is clearly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Slovenia should improve its structural primary balance in a durable manner by 12.2% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Additionally, the social protection system (in particular public pensions and health and long-term care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Slovenian sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (3.9% of GDP), above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (8.3% of GDP) is clearly above the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 8.5 p.p. in 2060 relative to 2010), while health care and long-term care also contribute less but still significantly to the long-term cost of ageing (both increasing by 1.7p.p.).

In the 2006 Sustainability Report, the S2 gap was 7.3% of GDP. The difference between that report and the current results (4.9 p.p.) stems mainly from the deterioration of the initial budgetary position (3.8 p.p.), while the component of the long-term cost of ageing has increased less markedly (0.6 p.p.). The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.6 p.p.

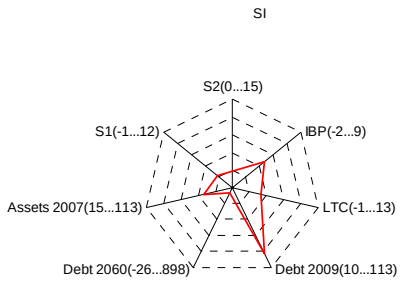
The Slovenian government debt in 2009, the base year of the analysis, stood at 29.3% of GDP and is forecast to increase to around 35% of GDP in 2010. The structural primary balance is forecast to decrease slightly from -3.3% in 2009 to -3.4% in 2010. Slovenian debt is both below the EU average and the 60% ceiling set by the Maastricht criteria, however the decrease of its structural primary balance may widen the sustainability gap of its public finances.

23.2. OVERALL ASSESSMENT

Slovenia appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is well above the EU average, mainly as a result of a relatively high increase in pension expenditure as a share of GDP over the coming decades. The budgetary position in 2009 compounds the budgetary impact of population ageing on the sustainability gap.

High primary surpluses over the medium term and a further pension reform aimed at curbing the substantial increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.23.1: **Determinants of fiscal sustainability (Slovenia)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.23.1: **Summary table (Slovenia)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	2.0	2.0	2.1	2.1	2.0	2.0	2.0	1.9	1.8	-0.2
Working age population (15-64) % of total	70.1	69.5	68.1	65.4	63.5	61.9	58.9	54.7	53.8	-16.4
Old-age dependency ratio (65+/15-64)	22.7	23.9	26.2	31.2	36.2	40.8	49.4	59.4	62.2	39.5
Participation rate (15-64)	71.4	71.8	72.5	73.4	72.6	71.7	70.8	71.6	71.9	0.6
- Older workers (55-64)	34.5	36.7	42.9	48.8	49.5	49.5	49.3	48.3	49.1	14.6
Unemployment rate (15-64)	4.9	7.4	4.7	4.7	4.7	4.7	4.7	4.7	4.7	-0.2
Real potential GDP (growth rate)	3.9	2.2	3.2	2.6	1.4	0.8	0.7	0.8	1.1	-2.8

Expenditure projections										
Pensions	9.9	10.1	10.6	11.1	12.0	13.3	16.1	18.2	18.6	8.8
Benefit ratio	40.9	40.7	39.9	39.0	38.2	38.1	38.4	38.6	38.6	-2.3
Health care	6.6	6.8	7.1	7.3	7.5	7.8	8.2	8.4	8.5	1.9
Long-term care	1.1	1.2	1.3	1.4	1.6	1.8	2.2	2.6	2.9	1.8
Education	5.1	4.8	4.8	4.9	5.0	5.0	5.0	5.3	5.6	0.4
Unemployment benefits	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Total age-related expenditure	22.9	23.1	24.0	24.9	26.2	28.0	31.7	34.8	35.8	12.8

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-1.3	-3.3	-3.4						
Public debt	22.8	29.3	34.9	74.0	108.6	158.8	311.1	540.2	831.6

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	12.5	0.1	12.7	8.5	1.7	1.7	0.7	-0.1
Crisis scenario: lost decade	15.8	0.1	15.9	11.7	1.6	1.8	0.8	-0.2

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	9.2	3.8	-0.3	5.7	12.2	3.9	8.3	1.1	8.4
Crisis scenario: lost decade	11.8	3.9	-0.3	8.2	15.1	4.0	11.1	1.4	10.5

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	12.2	0.1	-0.3	-0.5	-0.2	1.0	:
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.0	-0.6	-0.1	0.4	0.4	1.4
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.2	0.4	0.2	-1.1

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	7.3	11.6	3.8	0.6

Tax burden	2008	Average 2000-07
	38.0	38.4

Source: Commission services.

24. SLOVAKIA

24.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Slovakia has a sustainability gap (S2) of 7.4% of GDP, which is above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Slovakia should improve its structural primary balance in a durable manner by 7.4% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Alternatively, the social protection system (in particular public pensions and health care) would have to be reformed to decelerate the projected increase in age-related expenditure.

The Slovak sustainability gap is compounded by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (4.5% of GDP), above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (2.9% of GDP) is slightly below the EU average (3.2% of GDP). The long-term cost of ageing is mainly driven by an increase in pension expenditure (by 3.6 p.p. in 2060 relative to 2010), while health care also contributes to the long-term cost of ageing (increasing by 2.1 p.p.).

In the 2006 Sustainability Report, the S2 gap was 3.0% of GDP. The difference between that report and the current results (4.4 p.p.) stems from the deterioration of the initial budgetary position (3.7 p.p.), while the component of the long-term cost of ageing has increased less markedly (0.2 p.p.). The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.5 p.p.

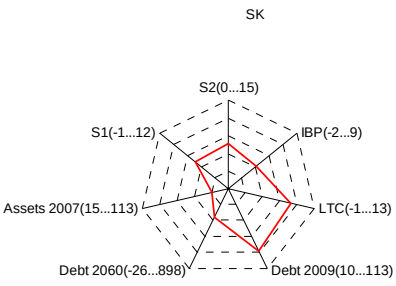
The Slovak government debt in 2009, the base year of the analysis, stood at 32.3% of GDP and is forecast to increase to around 36% of GDP in 2010. The structural primary balance is forecast to improve slightly from -3.7% in 2009 to -3.3% in 2010. Slovak debt is both below the EU average and the 60% ceiling set by the Maastricht criteria, however the continuing structural primary deficits may widen the sustainability gap of its public finances.

24.2. OVERALL ASSESSMENT

Slovakia appears to be at high risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing, which is slightly below the EU average, is mainly due to a relatively high increase in pension expenditure during the coming decades. The budgetary position in 2009 compounds the budgetary impact of population ageing.

Improving the primary balance over the medium term and further reforms to the social security system would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.24.1: **Determinants of fiscal sustainability (Slovakia)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.24.1: **Summary table (Slovakia)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	5.4	5.4	5.4	5.4	5.4	5.3	5.1	4.9	4.5	-0.8
Working age population (15-64) % of total	72.0	72.5	71.5	69.0	67.0	65.9	63.4	57.0	52.7	-19.3
Old-age dependency ratio (65+/15-64)	16.5	16.9	19.2	23.8	28.5	32.3	40.0	55.5	68.5	52.0
Participation rate (15-64)	68.8	70.3	71.8	72.9	73.4	72.8	70.5	70.4	71.2	2.4
- Older workers (55-64)	39.4	47.0	49.6	50.3	53.4	55.1	53.8	52.6	52.8	13.4
Unemployment rate (15-64)	11.1	12.1	8.6	6.2	6.2	6.2	6.2	6.2	6.2	-4.9
Real potential GDP (growth rate)	5.6	3.9	4.2	3.4	2.3	2.0	0.5	0.2	0.5	-5.1

Expenditure projections										
Pensions	6.8	6.6	6.3	6.3	6.9	7.3	8.3	9.4	10.2	3.4
Benefit ratio	45.2	45.8	44.5	43.3	42.2	41.0	37.9	34.9	33.1	-12.0
Health care	5.0	5.2	5.4	5.7	6.0	6.2	6.7	7.1	7.2	2.3
Long-term care	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.4
Education	3.1	2.8	2.4	2.2	2.2	2.2	2.1	2.1	2.3	-0.8
Unemployment benefits	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.1
Total age-related expenditure	15.2	14.9	14.5	14.5	15.4	16.1	17.5	19.2	20.4	5.2

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-3.5	-3.7	-3.3						
Public debt	27.6	32.2	36.3	64.9	87.0	115.5	207.5	354.6	561.2

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	5.5	0.0	5.5	3.6	2.1	0.4	-0.6	-0.4
Crisis scenario: lost decade	5.4	0.0	5.4	3.5	2.0	0.4	-0.5	-0.4

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	5.7	4.3	-0.3	1.6	7.4	4.5	2.9	0.7	4.0
Crisis scenario: lost decade	5.8	4.4	-0.3	1.7	7.4	4.6	2.8	0.7	3.9

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	7.4	0.4	-0.1	-0.1	0.3	0.4	-0.4
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.0	-0.7	-0.1	0.4	1.0	0.6
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.1	0.0	0.0	-0.2

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	3.0	6.9	3.7	0.2

Tax burden	2008	Average 2000-07
	29.4	32.1

Source: Commission services.

25. FINLAND

25.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Finland has a sustainability gap (S2) of 4.0% of GDP, which is significantly below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Finland should improve its structural primary balance in a durable manner by 4.0% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Alternatively, the social protection system would have to be reformed to decelerate the projected increase in age-related expenditure.

The Finnish sustainability gap is mainly due to the required adjustment given the long-term cost of ageing (4.5% of GDP), which is above the EU average (3.3% of GDP). In parallel, the sustainability gap is mitigated by the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is negative (-0.5% of GDP) clearly below the EU average (3.2% of GDP). The increase in the long-term cost of ageing is mainly driven by pension and long-term care expenditure (increasing by 2.6 p.p. and 2.5 p.p. respectively in 2060 relative to 2010), while the ratio of health care expenditure to GDP increases by 0.8 p.p.

In the 2006 Sustainability Report, the S2 gap was -0.9% of GDP. The difference between that report and the current results (4.9 p.p.) stems mainly from the deterioration of the initial budgetary position (4.6 p.p.), while the component of the long-term cost of ageing has increased by 0.1 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.2 p.p.

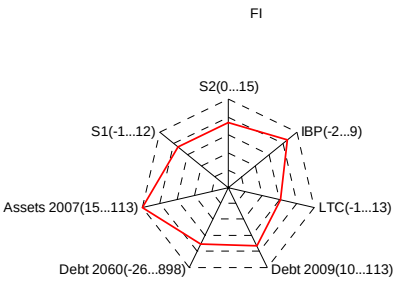
The Finnish government debt in 2009, the base year of the analysis, stood at 39.7% of GDP and is forecast to increase to around 46% of GDP in 2010. The structural primary balance is forecast to decrease slightly from 2.1% in 2009 to 0.8% in 2010. Finnish debt is both below the EU average and the 60% ceiling set by the Maastricht criteria.

25.2. OVERALL ASSESSMENT

Finland appears to be at low risk with regard to the long-term sustainability of public finances. While the long-term budgetary impact of ageing is higher than on average in the EU, the budgetary position in 2009 with a structural surplus together with large assets accumulated in the public pension system significantly offset the long-term budgetary impact of ageing.

Improving primary surpluses over the medium term and further reforms to the social security system aimed at curbing the increase in age-related expenditures would contribute to reducing risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.25.1: **Determinants of fiscal sustainability (Finland)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.25.1: **Summary table (Finland)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	5.3	5.3	5.4	5.5	5.5	5.6	5.5	5.4	5.4	0.1
Working age population (15-64) % of total	66.5	66.4	63.4	61.0	59.3	58.2	58.2	57.5	56.4	-10.0
Old-age dependency ratio (65+/15-64)	24.8	25.7	31.7	36.8	40.6	43.9	45.1	46.6	49.3	24.5
Participation rate (15-64)	75.8	75.3	77.0	78.4	78.5	78.6	78.8	79.1	79.1	3.3
- Older workers (55-64)	59.4	57.9	61.9	66.5	67.0	66.1	67.8	68.5	67.7	8.3
Unemployment rate (15-64)	6.9	9.3	5.8	5.8	5.8	5.8	5.8	5.8	5.8	-1.1
Real potential GDP (growth rate)	2.4	1.1	1.9	1.7	1.5	1.5	1.6	1.5	1.5	-0.9

Expenditure projections										
Pensions	10.0	10.7	11.8	12.6	13.4	13.9	13.6	13.3	13.4	3.3
Benefit ratio	49.1	51.2	52.0	52.1	52.0	51.7	50.2	48.3	46.9	-2.3
Health care	5.5	5.6	5.8	6.0	6.1	6.3	6.5	6.5	6.5	1.0
Long-term care	1.8	1.9	2.2	2.4	2.7	3.1	3.9	4.2	4.4	2.6
Education	5.7	5.4	5.3	5.2	5.3	5.4	5.4	5.3	5.4	-0.3
Unemployment benefits	1.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-0.2
Total age-related expenditure	24.2	24.7	26.0	27.2	28.5	29.7	30.4	30.2	30.5	6.3

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	4.3	2.1	0.8						
Public debt	33.4	39.7	45.7	35.5	44.4	61.3	111.1	172.6	248.7

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	5.4	0.5	5.9	2.6	0.8	2.5	0.0	-1.5
Crisis scenario: lost decade	5.7	0.5	6.1	2.8	0.8	2.6	0.0	-1.5

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	2.6	-0.8	-0.3	3.7	4.0	-0.5	4.5	0.3	5.5
Crisis scenario: lost decade	3.1	-0.8	-0.3	4.2	4.5	-0.4	4.9	0.3	5.8

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	4.0	0.6	-0.3	-0.2	-0.3	0.9	-0.2
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.3	-0.5	0.2	0.5	:	0.8
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.1	-0.1	0.2	0.9	0.4	-1.9

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	-0.9	3.8	4.6	0.1

Tax burden	2008	Average 2000-07
	42.8	44.5

Source: Commission services.

26. SWEDEN

26.1. OVERVIEW OF THE RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, Sweden has a sustainability gap (S2) of 1.4% of GDP, which is significantly below the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, Sweden should improve its structural primary balance in a durable manner by 1.4% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Alternatively, the social protection system would have to be reformed to decelerate the projected increase in age-related expenditure.

The Swedish sustainability gap is mainly due to required adjustment given the long-term cost of ageing (1.6% of GDP), which is below the EU average (3.3% of GDP). In parallel, the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (0.2% of GDP) and clearly below the EU average (3.2% of GDP). The increase in the long-term cost of ageing is mainly driven by long-term care expenditure (increasing by 2.2 p.p. in 2060 relative to 2010), while the ratio of health care expenditure to GDP increases by 0.7 p.p. At the same time, the GDP share of pension expenditure is expected to fall by 0.2 p.p.

In the 2006 Sustainability Report, the S2 gap was -1.1% of GDP. The difference between that report and the current results (2.9 p.p.) stems mainly from the deterioration of the initial budgetary position (3.3 p.p.), while the component of the long-term cost of ageing has decreased by 0.8 p.p. The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.5 p.p.

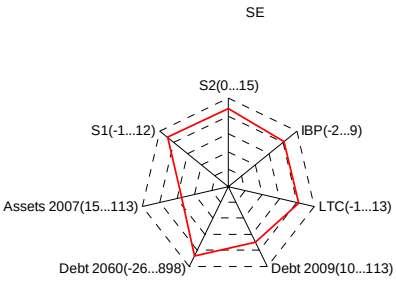
The Swedish government debt in 2009, the base year of the analysis, stood at 44.0% of GDP and is forecast to increase to around 48% of GDP in 2010. The structural primary balance is forecast to decrease from 0.9% in 2009 to -0.5% in 2010. Swedish debt is both below the EU average and the 60% ceiling set by the Maastricht criteria.

26.2. OVERALL ASSESSMENT

Sweden appears to be at low risk with regard to the long-term sustainability of public finances. The long-term budgetary impact of ageing is lower than the EU average. The budgetary position in 2009 with a primary surplus contributes to the reduction of gross debt and a considerable amount of public assets will help finance part of the increase in pension expenditure.

Maintaining sound government finances with continued surpluses would contribute to limiting risks to the long-term sustainability of public finances. Reforms should however be pursued in a manner that do not amplify the fallouts of the current economic and financial crisis.

Graph VII.26.1: **Determinants of fiscal sustainability (Sweden)**



Note on interpretation: See Graph VII.1.1 for Belgium.
Source: Commission services.

Table VII.26.1: **Summary table (Sweden)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	9.1	9.3	9.6	9.9	10.1	10.3	10.5	10.7	10.9	1.8
Working age population (15-64) % of total	65.6	65.3	63.1	61.8	60.9	60.2	59.5	59.0	56.9	-8.7
Old-age dependency ratio (65+/15-64)	26.4	27.8	31.5	33.7	35.5	37.4	40.8	41.9	46.7	20.3
Participation rate (15-64)	79.2	79.9	81.9	82.2	82.0	81.9	82.0	82.4	82.5	3.3
- Older workers (55-64)	73.2	73.1	75.0	75.5	75.9	75.5	76.0	77.1	76.6	3.4
Unemployment rate (15-64)	6.1	10.4	5.9	5.9	5.9	5.9	5.9	5.9	5.9	-0.2
Real potential GDP (growth rate)	2.6	0.4	2.2	1.9	1.9	1.7	1.9	1.7	1.7	-0.9

Expenditure projections										
Pensions	9.5	9.6	9.5	9.4	9.4	9.5	9.4	9.0	9.4	-0.1
Benefit ratio	49.3	48.1	44.7	41.0	38.6	36.6	33.5	31.4	30.1	-19.1
Health care	7.2	7.3	7.4	7.5	7.6	7.7	7.9	8.0	8.0	0.8
Long-term care	3.5	3.5	3.5	3.7	4.0	4.4	5.0	5.3	5.8	2.3
Education	6.0	5.8	5.5	5.5	5.6	5.7	5.7	5.6	5.8	-0.3
Unemployment benefits	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	-0.1
Total age-related expenditure	27.2	27.1	26.7	26.9	27.5	28.2	28.8	28.8	29.7	2.6

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	3.4	0.9	-0.5						
Public debt	38.0	44.0	47.2	31.4	29.9	32.2	45.7	64.0	93.1

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	2.4	0.3	2.7	-0.2	0.7	2.2	0.0	-0.8
Crisis scenario: lost decade	4.0	0.3	4.3	0.4	0.6	2.8	0.5	-0.8

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	0.5	-0.1	-0.3	0.8	1.8	0.2	1.6	0.1	3.1
Crisis scenario: lost decade	1.9	0.0	-0.3	2.1	3.4	0.2	3.1	0.2	4.4

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	1.8	0.3	-0.1	-0.2	-0.3	1.5	-0.1
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.1	-0.5	0.1	0.3	:	0.7
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.2	-0.2	0.4	0.8	0.6	-1.7

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	-1.1	1.4	3.3	-0.8

Tax burden	2008	Average 2000-07
	47.9	49.8

Source: Commission services.

27. UNITED KINGDOM

27.1. OVERVIEW OF RESULTS

The sustainability analysis shows that on the basis of the current budgetary position of 2009, based on the 2009 commissions services' spring forecast, and the projected increases in age related expenditure, the United Kingdom has a sustainability gap (S2) of 12.4% of GDP, which is clearly above the EU average (6.5% of GDP). This means that to put public finances on a sustainable path, the United Kingdom should improve its structural primary balance in a durable manner by 12.4% of GDP. In principle, this adjustment could take place via both an increase in revenues and cuts in expenditure. Alternatively, the social protection system would have to be reformed to decelerate the projected increase in age-related expenditure.

The sustainability gap in the United Kingdom is mainly due to the initial budgetary position, i.e. the required adjustment to stabilise the debt ratio is positive (8.8% of GDP), clearly above the EU average (3.3% of GDP). In parallel, the required adjustment given the long-term cost of ageing (3.6% of GDP) is above the EU average (3.2% of GDP). The increase in the long-term cost of ageing is mainly driven by pension and health-care expenditure (increasing by 2.5 p.p. and 1.8 p.p. respectively in 2060 relative to 2010).

In the 2006 Sustainability Report, the S2 gap was 4.9% of GDP. The difference between that report and the current results (7.5 p.p.) stems from the deterioration of the initial budgetary position (7.0 p.p.), while the component of the long-term cost of ageing has actually decreased (-0.5 p.p.). The extension of the projection period from 2050 (in the 2006 report) to 2060 increases the sustainability gap by 0.9 p.p.

The UK's government debt in 2009, the base year of the analysis, stood at 68.4% of GDP and is forecast to increase to around 82% of GDP in 2010. The structural primary balance is forecast to decrease slightly from -7.8% in 2009 to -9.2% in 2010. Currently, UK's debt is slightly below the EU average but above the 60% ceiling set by the Maastricht criteria, however the dramatic size of its structural primary deficit poses an additional risk to the sustainability of public finances.

27.2. OVERALL ASSESSMENT

The United Kingdom appears to be at high risk with regard to the long-term sustainability of public finances. Although the contribution of an ageing population is not amongst the most problematic, the UK's budgetary position poses severe risks to the sustainability of public finances.

Reducing the primary deficit, would contribute to reducing the high risks to the long-term sustainability of public finances.

Graph VII.27.1: **Determinants of fiscal sustainability (United Kingdom)**

Note on interpretation: See Graph VII.1.1 for Belgium.
Data on assets: not available
Source: Commission services.

Table VII.27.1: **Summary table (United Kingdom)**

Underlying assumptions	2007	2010	2015	2020	2025	2030	2040	2050	2060	Change 2007 - 2060
Population (millions)	60.9	62.0	63.8	65.7	67.5	69.2	72.0	74.5	76.7	15.8
Working age population (15-64) % of total	66.4	66.3	65.1	64.0	63.1	61.8	60.8	60.5	58.7	-7.7
Old-age dependency ratio (65+/15-64)	24.1	24.7	27.1	28.6	30.4	33.2	36.9	38.0	42.1	18.0
Participation rate (15-64)	75.6	75.7	76.9	77.2	77.0	77.5	78.5	78.6	78.7	3.1
- Older workers (55-64)	59.7	58.6	62.6	64.1	64.7	65.8	70.3	71.3	71.1	11.4
Unemployment rate (15-64)	5.3	9.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	0.1
Real potential GDP (growth rate)	2.0	0.9	2.4	2.0	2.0	2.1	2.1	1.9	1.8	-0.2

Expenditure projections										
Pensions	6.6	6.7	6.8	6.9	7.2	7.6	8.0	8.1	9.3	2.7
Benefit ratio	34.6	34.6	34.5	34.9	35.0	34.5	34.2	35.8	37.1	2.5
Health care	7.5	7.6	7.8	8.0	8.1	8.4	8.9	9.2	9.4	1.9
Long-term care	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.2	1.3	0.5
Education	3.8	3.8	3.7	3.8	3.8	3.9	3.8	3.7	3.8	-0.1
Unemployment benefits	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Total age-related expenditure	18.9	19.2	19.4	19.8	20.3	21.1	22.1	22.4	24.0	5.1

	2008	2009	2010	2020	2025	2030	2040	2050	2060
Structural primary balance	-3.3	-7.8	-9.2						
Public debt	52.0	68.4	81.7	159.8	212.7	271.3	406.1	559.9	759.2

Cost of ageing	Change in age-related expenditure 2010 - 2060 (% points)							
	Net age-related expenditure	Pension taxation	Gross age-related expenditure	Pensions	Health care	Long-term care	Unempl. and Education	Property income
Baseline scenario	4.8	0.0	4.8	2.5	1.8	0.5	0.0	-0.3
Crisis scenario: lost decade	5.7	0.0	5.7	3.2	1.7	0.5	0.2	-0.3

Sustainability Indicators	S1				S2				
(End year 2060)	S1	IBP	DR	LTC	S2	IBP	LTC	Cost of delay	RPB
Baseline scenario	10.8	8.6	0.2	2.0	12.4	8.8	3.6	0.7	4.5
Crisis scenario: lost decade	11.7	8.8	0.2	2.7	13.3	8.9	4.4	0.8	5.2

Sensitivity to changes in assumptions	S2	Difference from the baseline scenario (% points)					
	Baseline	Higher life expectancy	Higher labour productivity	Older workers	Total Employment	Zero migration	Interest rate
AWG scenarios	12.4	0.7	0.0	-0.1	0.0	3.1	-0.1
		Pure Ageing	Constant Health Status	Death-related Costs	Income Elasticity	EU12 Cost Convergence	Labour Intensity
Scenarios for health-care		0.2	-0.7	-0.4	0.5	:	0.6
		Pure Ageing	Constant Disability	Improved Disability	Decrease in Informal	Fast growth in unit costs	Slow growth in unit costs
Scenarios for long-term care		0.0	0.0	0.1	0.1	0.1	-0.4

Comparison with SR 2006	S2 2006	S2 2009	Difference due to	
			IBP	LTC
(End year 2050)	4.9	11.4	7.0	-0.5

Tax burden	2008	Average 2000-07
	38.5	37.5

Source: Commission services.

Chapter A.I

Deriving the sustainability indicators

1. DERIVING THE SUSTAINABILITY INDICATORS

0. Notations

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 $PB_t = PB_0 + \Delta PB_t$ relative to GDP. In addition change in structural primary balance equals a sum of a change in structural primary balance due to a change in age related expenditure and a change in property income $\Delta PB_t = \Delta PB(ageing)_t + \Delta PI_t$.

$\Delta PB(ageing)_t$ change in structural primary balance due to development in age related expenditure compared to the base year relative to GDP, i.e. $\Delta PB(ageing)_t$ does not reflect development in property income flows over the projection horizon.

PI_t property income relative to GDP.

ΔPI_t change in property income compared to the base year 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 growth rate/interest rate differential([35])

i. The inter-temporal 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.:

$$D_{t_0} - \sum_{t=t_0+1}^{\infty} \frac{PB_t}{(1+r)^{t-t_0}} = 0 \qquad (1)$$

This condition is referred to as the **inter-temporal budget constraint** or **the solvency condition.** Given an initial debt, an interest-growth differential assumption and a future path of the structural primary

([35]) It is also supposed to be strictly positive.

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. In order to decompose the change in the primary balance to two parts corresponding to population ageing and the change in property income received by the general government r, formula (2) substitutes ΔPB_t for $\Delta PB(ageing)_t + \Delta PI_t$.

$$S_2 = \underbrace{rD_{t_0} - PB_{t0} - r\sum_{t=t_0+1}^{\infty}\frac{\Delta PI_t}{(1+r)^{t-t_0}}}_{D} \underbrace{- r\sum_{t=t_0+1}^{\infty}\frac{\Delta PB(ageing)_t}{(1+r)^{t-t_0}}}_{E} \qquad (2)$$

S2 is a sum of two different terms. The first term (D) is a condition concerning the initial budgetary position and a present value of future income flows from property income: 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 adjusted by the present value of future property income flows. In that case, the level of debt would remain stable as a GDP. Indeed, debt relative to GDP increases by the difference between 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-stabilizing primary balance**.

The second term (E) is a condition concerning future developments in the property income adjusted 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 property income adjusted 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 2060 of 60% of GDP. The calculations below are valid for any date T in the future and for any level of debt D_T.

$$S_1 = \underbrace{rD_{t_0} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{T}\frac{\Delta PI_i}{(1+r)^{i-t_0}}}{\sum_{i=t_0+1}^{T}\frac{1}{(1+r)^{i-t_0}}}}_{A} + \underbrace{\frac{r(D_{t_0} - D_T)}{(1+r)^{T-t_0}-1}}_{B} \underbrace{- \frac{\sum_{i=t_0+1}^{T}\frac{\Delta PB(ageing)_i}{(1+r)^{i-t_0}}}{\sum_{i=t_0+1}^{T}\frac{1}{(1+r)^{i-t_0}}}}_{C} \qquad (3)$$

As for S2, the S1 indicator is a sum of several terms. 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 2060. 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 due to age related expenditure. 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 2060, 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 $A = rD_{t_0} - PB_{t_0} = D$; $B \xrightarrow{T \to \infty} 0$; $C \xrightarrow{T \to \infty} r \sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}} = E$

$$S_1(T, D_T) \xrightarrow{T \to \infty} S_2 \quad (4)$$

In practice, given the not so distant requirement (2060) and the low differential between interest and growth rates, S1 and S2 are different.

Table 1 sums up the calculations of S1 and S2.

Table 1. comparison of S1 and S2

	Current budgetary position and the present value of future property income flows		Debt requirement in 2060		Long-term changes in the primary balance due to change in age related expenditure
S1 =	$A = rD_{t_0} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{T} \frac{\Delta PI_i}{(1+r)^{i-t_0}}}{\sum_{i=t_0+1}^{T} \frac{1}{(1+r)^{i-t_0}}}$	+	$B = \frac{r(D_{t_0} - D_T)}{(1+r)^T - 1}$	+	$C = -\frac{\sum_{i=t_0+1}^{T} \frac{\Delta PB(ageing)_i}{(1+r)^{i-t_0}}}{\sum_{i=t_0+1}^{T} \frac{1}{(1+r)^{i-t_0}}}$
S2 =	$D = rD_{t_0} - PB_{t_0} - r \sum_{t=t_0+1}^{\infty} \frac{\Delta PI_t}{(1+r)^{t-t_0}}$	+	0	+	$E = -r \sum_{t=t_0+1}^{\infty} \frac{\Delta PB(ageing)_t}{(1+r)^{t-t_0}}$ $= \alpha C + (1-\alpha)(-\Delta PB(ageing)_{2060}) \quad (5)$

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% point of GDP, for a country with an initial adjusted gross debt level of 100%([36]).

- 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 2060 in the case of S1 and over 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 2060 than it is on average over the period 2010-

([36]) If the difference between the interest rate and growth rate is 1.5%.

2060: the impact of changes in primary balances is then larger in S2 than in S1([37]). 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 2060 than on average over the period up to 2060**.

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 gap are also sensitive to changes in the current structural primary balance, which are more common.

2. Deriving the S1 and S2 indicator under the assumption of time-varying growth rat/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 EU25 countries and equal to 3% while GDP growth projections are country-specific.

Lets introduce $\alpha_{i;j} = (1+r_i)(1+r_{i+1})...(1+r_j)$ 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 inter-temporal budgetary constraint is: $D_{t_0} = \sum_{i=t_0+1}^{\infty}\frac{PB_i}{\alpha_{t_0+1,i}}$

([37]) Formally (E) can be written as a weighted average of (C) and the change in primary balance in 2060 (see annex).

The S2 indicator is: $S_2 = \frac{D_{t_0}}{\sum_{i=t_0+1}^{\infty} \frac{1}{\alpha_{t_0+1,i}}} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{\infty} \frac{\Delta PB_i}{\alpha_{t_0+1,i}}}{\sum_{i=t_0+1}^{\infty} \frac{1}{\alpha_{t_0+1,i}}}$ (2bis)

In the case where the interest rate/growth rate differential and the structural primary balance are constant after a certain date (here 2060):

$$S_2 = \underbrace{\frac{D_{t_0}}{\sum_{i=t_0+1}^{2050} \frac{1}{\alpha_{t_0+1,i}} + \frac{1}{r_{2050}\alpha_{t_0+1,2050}}} - \frac{\sum_{i=t_0+1}^{2050} \frac{\Delta PI_i}{\alpha_{t_0+1,i}} + \frac{\Delta PI_\infty}{r_\infty \alpha_{t_0+1,2050}}}{\sum_{i=t_0+1}^{2050} \frac{1}{\alpha_{t_0+1,i}} + \frac{1}{r_\infty \alpha_{t_0+1,2050}}} - PB_{t_0}}_{D} \quad \text{(2ter)}$$

$$\underbrace{- \frac{\sum_{i=t_0+1}^{2050} \frac{\Delta PB(ageing)_i}{\alpha_{t_0+1,i}} + \frac{\Delta PB(ageing)_\infty}{r_\infty \alpha_{t_0+1,2050}}}{\sum_{i=t_0+1}^{2050} \frac{1}{\alpha_{t_0+1,i}} + \frac{1}{r_\infty \alpha_{t_0+1,2050}}}}_{E}$$

S1 is such that $D_T = D_{t_0}\alpha_{t_0+1;T} - \sum_{i=t_0+1}^{T}(PB_i + S_1)\alpha_{i+1;T}$

$$S_1 = \frac{D_{t_0}\alpha_{t_0+1;T} - D_T}{\sum_{i=t_0+1}^{T}\alpha_{i+1;T}} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{T}\Delta PI_i\alpha_{i+1;T}}{\sum_{i=t_0+1}^{T}\alpha_{i+1;T}} - \frac{\sum_{i=t_0+1}^{T}\Delta PB(ageing)_i\alpha_{i+1;T}}{\sum_{i=t_0+1}^{T}\alpha_{i+1;T}} =$$

$$\underbrace{\frac{D_{t_0}(\alpha_{t_0+1;T} - 1)}{\sum_{i=t_0+1}^{T}\alpha_{i+1;T}} - \frac{\sum_{i=t_0+1}^{T}\Delta PI_i\alpha_{i+1;T}}{\sum_{i=t_0+1}^{T}\alpha_{i+1;T}} - PB_{t_0}}_{A} + \underbrace{\frac{D_{t_0} - D_T}{\sum_{i=t_0+1}^{T}\alpha_{i+1;T}}}_{B} \underbrace{- \frac{\sum_{i=t_0+1}^{T}\Delta PB(ageing)_i\alpha_{i+1;T}}{\sum_{i=t_0+1}^{T}\alpha_{i+1;T}}}_{C} \quad \text{(3bis)}$$

Box 1. 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.

$$D_{t_0} - \sum_{i=t_0+1}^{\infty} PB_i (1+r)^{-(i-t_0)} = 0 \qquad (1)$$

Equation 2

The S2 indicator is the change in the structural primary balance compared with 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, $\sum_{t=t_0+1}^{\infty} \frac{1}{(1+r)^{t-t_0}} = \frac{1}{r}$.

$$D_{t_0} = \frac{S_2}{r} + \sum_{t=t_0+1}^{\infty} \frac{PB_t}{(1+r)^{t-t_0}} = \frac{S_2}{r} + \frac{PB_{t0}}{r} + \sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}}$$

$$S_2 = rD_{t_0} - PB_{t0} - r \sum_{t=t_0+1}^{\infty} \frac{\Delta PB_t}{(1+r)^{t-t_0}} \qquad (2).$$

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 $D_t = D_T$

$$S_1 = \frac{D_{t_0} (1+r)^{T-t_0} - D_T}{\sum_{i=t_0+1}^{T} (1+r)^{T-i}} - PB_{t_0} - \frac{\sum_{i=t_0+1}^{T} \Delta PB_i (1+r)^{T-i}}{\sum_{i=t_0+1}^{T} (1+r)^{T-i}}$$

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 the S2 indicators. It further assumed a constant interest rate-growth rate differential. The cost 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, $D_{t_0} = \sum_{t=t_0+1}^{\infty} \frac{PB_t + S_2}{\alpha_{t_0+1;t}}$

If the adjustment is postponed in 5 years then, $D_{t_0} = \sum_{t=t_0+1}^{\infty} \frac{PB_t}{\alpha_{t_0+1;t}} + \sum_{t=t_0+1+delay}^{\infty} \frac{S_2^{'}}{\alpha_{t_0+1;t}}$

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

Section II.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 they: (i) have the same starting point, i.e. the structural primary balance of general government; (ii) 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 equivalently 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, health-care, 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-stabilizing 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-stabilizing 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 is.

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 2060, 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 necessary 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) measure compared with the 'flow' measure (sustainability indicators).

Chapter A.II

Revenue projections

1. REVENUE PROJECTIONS

1.1.1. Taxation of pensions

In assessing the sustainability gap(s), most government revenues are assumed to stay constant as a share of GDP. Two components of revenues are explicitly modelled however. These are property income and direct tax revenues from pensions in Member States where this is possible.

An ageing population is likely to affect the tax revenues received by government as pension income is not distributed and therefore taxed in the same way as other income and as it may not be taxed in the same way either. Across the Member States there is a range of tax arrangements for pensions, and a number of countries are in a transition period where the tax treatment of pension funds in changing.

For public schemes, an ageing population can have an ambivalent effect on the receipts from tax revenues. On the one hand, the government receives tax from pensions drawn. On the other hand, pensions received are usually lower than wages (leading to a benefit ratio of less then 1), meaning that pensions will be taxed at lower marginal – and average – rates of tax in progressive systems. The change in both these components is considered.

For countries with a significant private system, tax revenues are affected both in terms of their size and their timing. Over their working life, individuals first become net contributors to a private pension system while they later become net receivers of pension income. In terms of the tax incidence of the part of their income that is saved in the form of the pension, a typical EET system ([38]) effectively leads to a deferral of the payment of tax from the time when individuals earn their income to the time when the consumed it. In addition, the overall tax paid in an EET system may be lower as pension contributions grow (which may occur as individuals anticipate having to save more to ensure that their now longer retirement years are adequately funded), as the marginal tax they are exempt from in the years they contribute is higher than rate they pay when they draw their pensions. Moreover, there may also be an overall fall in revenue if private pension saving crowds out other saving, which is normally undertaken out of taxed income.

Given the differences between the pension and tax systems in the Member States, the data available and the countervailing effects of ageing on the pension system, the projections in this report model the evolution of the tax received from pensions using a simple model that can accommodate a range of differences. The model is based on the average personal income tax rate on pensions observed in recent years, the elasticity of income tax and the evolution of the average (public and private) pensions taken from the Ageing Report. The average tax rate is modelled to evolve according to:

$$\log\left(\frac{T_t}{P_t}\right) = \log\left(\frac{T_0}{P_0}\right)\left(1 + (\varepsilon - 1)\frac{\log\left(\frac{P_t}{W_t}\right) - \log\left(\frac{P_0}{W_0}\right)}{\log\left(\frac{P_0}{W_0}\right)}\right)$$

where T is the average income tax paid by pensioners, P the average pension, W the average wage in the economy and ε the elasticity of personal income tax.

The average income tax paid by pensioners is set to zero for countries where pensions are not (or are only minimally) taxed. The average pension used may be public, private or both, depending on the system in place in a given Member State and on the data available. Data on private pension projections and on their tax treatment are not available in all countries that have a significant private component to their pension system.

For countries where a significant change in the pension or tax system is envisaged, there is no explicit modelling of tax revenues from pensions. This is the case, for example, for Hungary where a new pension formula and a new system of pension taxation will be introduced in 2013.

The model generates constant revenues from pensions if there is no expected change in the benefit ratio. This is also the case for countries

([38]) An EET system is one where contributions to the pension fund out of wages are exempt from income tax, capital gains by the fund are exempt from tax, but pensions drawn are taxed as income. Such a system operates in many EU countries for example in Germany (Riester plan).

with flat tax system (ε=1) ([39]). The model only forecasts significant changes in revenues from pension taxation for Member States where the benefit ratio $\left(\frac{P}{W}\right)$ is expected to change significantly and the personal income tax system is reasonably progressive (ε is greater than 1).

The analysis is not undertaken for Germany, Estonia, Greece, Cyprus, Slovenia and the United Kingdom, and only the public pensions are modelled in Belgium, the Czech Republic and Romania. For most remaining countries, the effects are small (within 0.7% of GDP), with the exception of Denmark, Luxembourg and the Netherlands which are expecting to see an increase in tax revenues of 1.2, 1.9 and 2.7% of GDP respectively, between 2010 and 2060. Austria is the only country for which a decrease in tax revenues is anticipated.

1.1.2. Property income

Property income is the income received by the owner of an asset (whether financial or physical) in return for providing funds for other agents. Governments will typically both make and receive such payments. They pay interest on their debt and receive rent for the assets they own. Government receipts from other sources are, broadly speaking, a function of the tax bases and the rates chosen by the government. Property income differs in that it is determined by the market rather than policy. For this reason, in assessing the sustainability gaps, property income received by governments is explicitly modelled in a way that is different to other receipts, albeit using simplified assumptions.

Property income received by the Member States is mainly composed of interest received from deposits, bonds and loans; dividends received from shares and withdrawals from the income of quasi-corporations; and rents on land and subsoil assets. Projecting these forward in a detailed way requires forecasting the return on these assets, their future value and the purchases and sales of these assets.

In order to model the progression of property income, it is assumed that there is no stock-flow adjustment, meaning that government debt is only driven by the general government balance and there is no net sale or purchase of financial assets in the future. Rather than staying constant as a share of GDP, the default position is therefore for these assets stay constant in nominal terms rather than as a share of GDP. The implication is that where the government receives property income, this income is used to reimburse debt through its contribution to the general government balance, rather than to purchase other assets. When short-term assets (such as bonds) mature, they are therefore implicitly assumed to be replaced with other bonds of the same nominal value.

The stock of assets which generate income for Member States' governments is not always known. By making the no stock-flow adjustment assumption, the evolution of property income can be modelled just using assumptions about the rate of return on assets in the future relative to now. In modelling the rate of return, a distinction is made between income received from bonds, equity and rents.

For bonds, the rate of return of 5% is applied from 2012 on; before, the yield of a 10-year government bond is used. As data on the return from equities are only available on distributed returns, so that the value reported in national accounts in the starting year may only be a fraction of the overall return on equity; the remaining fraction would be representing a valuation effect. As a simplifying assumption, the dividend-to-GDP ratio is assumed to be constant over time, thereby assuming continuing valuation effects. For rent from land and subsoil assets, it is assumed that the ratio of rents-to-GDP will remain constant over time, except in the cases of Denmark and the Netherlands, where the (substantial) stock of subsoil assets is assumed to be exhausted by 2050 and the level of rent to GDP is modelled to return into line with the average of other Member States.

Given these assumptions, the projected path of property income over time only depends on the stock of bonds held at the start of the projection period given the level of income received from property. The higher are bond holdings, the steeper the decline in property income over time.

Table A.2.1 shows the evolution of property income used in the estimation of the sustainability

([39]) For example Estonia has an estimated elasticity of 1.1 owing to the flat income tax system.

Table A.II.1.1: **Property income (% of GDP)**

	2007	2010	2020	2030	2040	2050	2060	change 2010-60
BE	0.62	0.59	0.55	0.51	0.48	0.45	0.44	-0.15
BG	1.49	1.42	1.32	1.25	1.21	1.19	1.17	-0.25
CZ	0.83	0.74	0.63	0.55	0.50	0.46	0.44	-0.30
DK	1.74	1.61	1.39	1.10	0.89	0.71	0.64	-0.97
DE	0.74	0.71	0.66	0.60	0.56	0.52	0.50	-0.21
EE	1.53	1.43	1.24	1.17	1.14	1.12	1.10	-0.33
IE	1.06	1.02	0.97	0.93	0.90	0.89	0.88	-0.15
EL	0.92	0.87	0.79	0.73	0.70	0.67	0.65	-0.22
ES	1.02	0.95	0.83	0.73	0.67	0.64	0.61	-0.35
FR	0.78	0.75	0.71	0.66	0.62	0.60	0.58	-0.18
IT	0.61	0.59	0.54	0.50	0.47	0.45	0.44	-0.15
CY	0.72	0.62	0.42	0.28	0.21	0.16	0.14	-0.48
LV	0.70	0.64	0.56	0.52	0.50	0.49	0.48	-0.17
LT	0.57	0.51	0.42	0.37	0.34	0.32	0.31	-0.19
LU	1.64	1.46	1.13	0.95	0.83	0.75	0.69	-0.76
HU	0.91	0.88	0.77	0.74	0.72	0.71	0.70	-0.18
MT	1.35	1.33	1.28	1.25	1.23	1.21	1.20	-0.13
NL	2.58	2.44	2.13	1.79	1.48	1.21	1.16	-1.29
AT	1.47	1.38	1.22	1.05	0.93	0.84	0.78	-0.59
PL	1.31	1.19	0.98	0.89	0.84	0.81	0.79	-0.40
PT	0.73	0.70	0.64	0.57	0.52	0.49	0.47	-0.23
RO	0.95	0.91	0.81	0.79	0.77	0.77	0.76	-0.15
SI	0.72	0.68	0.62	0.58	0.56	0.54	0.53	-0.15
SK	1.52	1.40	1.22	1.13	1.09	1.06	1.04	-0.36
FI	4.43	4.15	3.76	3.34	3.04	2.83	2.68	-1.46
SE	2.50	2.36	2.16	1.92	1.76	1.65	1.57	-0.79
UK	0.72	0.67	0.55	0.48	0.43	0.40	0.37	-0.29

Source: Commission service

gaps. It shows that this income is expected to fall over time for all Member States, with the most significant falls being for Denmark, the Netherlands and Finland. In the Finish case, this is driven by the high level of bond holdings by the government, which contribute about half of the country's significant receipts from property.