

Long-Term Sustainability Outlook 2012

2012 Report on the Long-Term Sustainability of Public Finances in Switzerland



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Finance FDF

Imprint

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Diese Publikation ist auch in Deutsch erhältlich.
Cette publication existe également en français.
La presente pubblicazione è disponibile anche in lingua italiana.

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Berne, 2012

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Preface



With a debt ratio of less than 40%, Switzerland remains in very good shape by international standards. Thanks to a stable and forward-looking fiscal policy at all government levels, we can even look back on a decline in the debt ratio since the start of the 21st century. This is gratifying. We know how important healthy public finances are for investor confidence, and thus for an economy's successful development.

Despite this impressive track record, we cannot let ourselves be lulled into a false sense of security regarding the sustainability of our public finances. We have to be aware of the relatively short budget and financial plan time horizon. Implicit debts are not covered. However, public finances will certainly have to bear additional burdens as a result of the demographic trend. These implicit obligations of the Confederation, cantons and social security funds have to be taken into consideration in the sustainability analysis. That is the purpose of the report on the long-term sustainability of public finances in Switzerland, published for the second time since 2008.

This long-term sustainability report is based on certain assumptions regarding population development, growth, interest rates and inflation, and demonstrates the trend for receipts and expenditure if no measures are taken at a political level. The 50-year time horizon makes sense, as the financial repercussions of the baby-boom generation's forthcoming retirement will be reflected in public finances during this period. Particularly in the case of the social security and healthcare systems, the ageing of the population will generate expenditure growth that significantly outstrips the development of receipts. Consequently, the debt ratio would rise to over 130% of GDP by 2060. This should be avoided. The long-term sustainability report has the merit of indicating and also quantifying the demographic-dependent need for action. Corrective adjustments will have to be made in order to prevent the debt ratio from being higher in 2060 than in 2009. The political challenge is to take corresponding action as quickly as possible. The more time that passes before reform measures are taken, the wider the fiscal gap that needs to be closed will be.

Although this long-term sustainability report – like all studies with a long timeframe – is subject to uncertainties, it nevertheless calls upon political circles to start tackling the reforms needed to ensure the sustainability of public finances right away. We owe it to future generations.

A handwritten signature in black ink, reading 'E. Widmer-Schlumpf', written in a cursive style.

Eveline Widmer-Schlumpf
President of the Swiss Confederation

Executive Summary

This long-term sustainability report examines the implications of foreseeable demographic trends on Switzerland's public finances in the long term and the extent to which reforms are needed to prevent an increase in the debt ratio.

The age structure of Switzerland's population will change in the coming decades, with the baby-boom generation set to enter retirement in the next few years. Meanwhile, the birth rate has dropped dramatically and life expectancy continues to rise, pushing an ever greater wedge between the number of elderly people and the working-age population. Such demographic change also affects public finances, particularly in the area of healthcare and social expenditure.

These projections are based on the demographic scenarios published by the Federal Statistical Office, calculations from the Federal Social Insurance Office for old-age and disability insurance forecasts, and various healthcare scenarios.¹

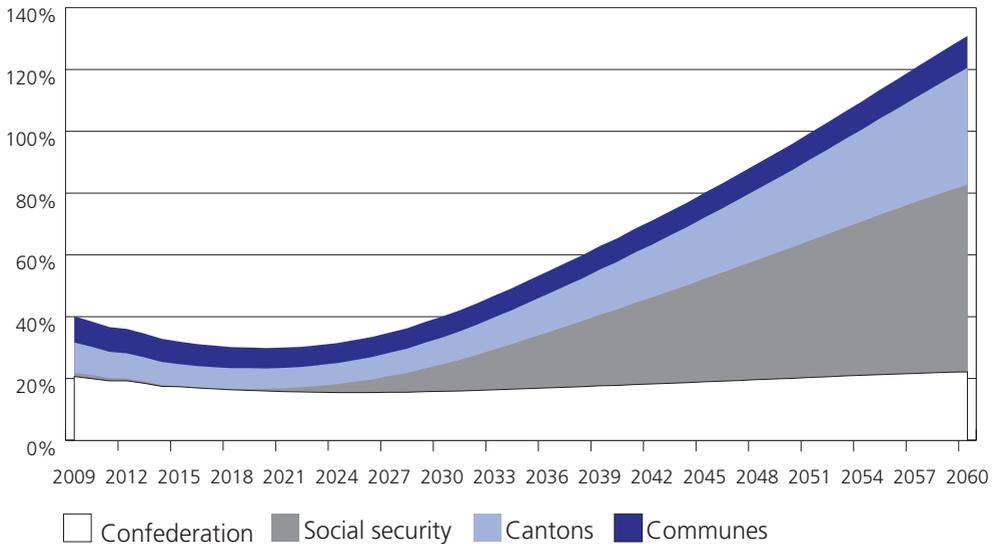
They reveal that public finances will face further demographic-dependent burdens in the decades up to 2060, the extent of which differs according to the assumptions made for net migration and economic growth. To illustrate the uncertainty surrounding the various assumptions, several different scenarios have been modelled with regard to economic growth, interest rates and migration.

In the baseline scenario, the demographic-dependent expenditure for the general government sector increases from 18.4% of GDP in 2009 to 22.3% in 2060. When the additional burden is distributed among the individual government levels, the bulk of the impact at the federal level is on the social security system (old-age insurance). Among the cantons, expenditure on health and long-term care are mainly responsible for the increase.

If no mitigating reforms are taken, the national debt will rise significantly by 2060 as a result of the demographic burden. Debt increases sharply in the baseline scenario across all government levels after 2020, and reaches 131% of GDP by 2060.

1 See legislature financial plan for 2013–15, Annex 7

Debt ratio – Baseline scenario



The fiscal gap shows the need for corrective adjustments in order to prevent the debt ratio from rising above the 2009 level in 2060. The fiscal gap for the whole general government sector comes to 1.8% of GDP. This means that annual savings or additional receipts of 1.8% of GDP would be required to prevent the debt ratio from rising by 2060. Based on current GDP, this corresponds to annual savings of some CHF 10 billion.

This fiscal gap is higher than reported in the last long-term sustainability outlook from 2008 (1.4%). It should be noted, however, that the 2008 report took a different time horizon, from 2005 to 2050. If the same period is used for the sake of comparison, the fiscal gap here is actually narrower (1.2%). This is essentially due to higher population growth and an improvement in the initial situation (surpluses in the baseline year and in the financial plan). The increasing debt dynamic, however, widens the fiscal gap again after 2050.

For social security, the fiscal gap in the baseline scenario comes to 1.1%. This accounts for the bulk of the entire fiscal gap; with respect to 2010, it corresponds to CHF 6 billion. The fiscal gap for the Confederation alone is 0.1%. If nominal debt is used instead of the debt ratio as a constant target for the fiscal gap – as required by the debt brake – the fiscal gap works out at 0.3%. The cantons show a fiscal gap of 0.5%, while the communes have no fiscal gap at all. Moreover, the need for corrective adjustments increases the longer the delay in implementing them. For example, if countermeasures were started in 2030 (instead of 2014), the fiscal gap would widen to 1.5% for social security funds and 0.8% for the cantons.

The results depend largely not only on the current initial situation but also on the assumptions for future economic growth and expected net migration up to 2060. If annual net migration turned out to be 15,000 higher on average than in the baseline scenario (27,000), the debt ratio in 2060 would be some 33 percentage points lower, and the fiscal gap would be 0.6 percentage points lower. There would still be a need for corrective action, however. If economic growth were 0.5 percentage points lower up to 2060, the debt ratio would rise by a further 47 percentage points and the fiscal gap by 0.6 percentage points. Alternative assumptions regarding interest rates have no overall effect on the fiscal gap.

Fiscal gaps for a constant debt ratio

2060						
	Fiscal gap (in % of GDP)	Sensitivity analyses (percentage point change)				
		Economic growth		Interest rate		Migration
		-0.5	+0.5	-0.5	+0.5	high
Confederation	0.1	+0.2	-0.2	-0.1	+0.1	-0.1
Social security	1.1	+0.4	-0.4	+0.1	-0.1	-0.3
Cantons	0.5	-0.1	+0.1	-0.0	+0.0	-0.1
Communes	0.0	-0.0	+0.0	-0.0	+0.0	-0.0
Total	1.8	+0.6	-0.6	-0.0	+0.0	-0.6

1 Introduction

Sustainable public finances are crucial for promoting strong and stable economic growth. Given the foreseeable demographic trends and the policy challenges they present, the long-term development of public finances needs to be analysed in detail.

Financial sustainability means that the government can meet its current and future financial obligations and ensure the same level of prosperity for future generations. Four-year budgets and financial plans cannot provide the depth and extent of information needed for the long term. This report serves to bridge this gap, adding a long-term perspective to existing financial reporting. Certain areas, particularly old-age insurance, already report elsewhere on their medium to long-term development.² This sustainability outlook, however, gives a general overview of the financial situation of all government levels (Confederation, cantons, communes and social security funds). This is the second such report to be published, following the FFA's first long-term sustainability outlook in 2008. It is planned that future reports will continue on a four-year basis.

The cantons have numerous different fiscal rules or institutional arrangements to prevent them from running up huge deficits. At the federal level, the debt brake ensures a structurally balanced budget in the medium term, also with a view to long-term fiscal sustainability. Adherence to the debt brake rule necessarily preserves budgetary balance in the medium term; in the long term, however, the debt brake may constrict certain expenditure areas in favour of others that are not controllable in the short term ("earmarked expenditure") but are subject to long-term demographic growth trends. To prevent such restrictions, reforms need to be implemented at an early stage for these expenditures. For the purpose of this study, it was assumed that fiscal rules are not adhered to. Otherwise, there would be no added value in conducting such an analysis, as the government debt could not a priori increase any more in the long term.

As a form of "current state analysis", an attempt is made to estimate the long-term implications of current policy ("assumption of no policy change") and identify any action that may be needed. The receipts and expenditure of the three government

2 Federal Social Insurance Office (2011)

levels and the social security system are thus projected with a time horizon up to 2060 on the basis of current prevailing laws and regulations. In this respect, this paper differs from a prognosis, as the laws and regulations will undoubtedly change during this period. There will also be unforeseen events or developments that are certain to affect public finances. Therefore, this sustainability outlook does not seek to predict the future, but rather to illustrate how the present framework conditions and trends will affect the future. The 2060 time horizon was chosen because the main implications of an ageing population should have been felt by then and also because this is the same time horizon used in the Federal Statistical Office's demographic scenarios and the EU's long-term sustainability outlook.

Projected receipts and expenditure are used to derive certain indicators of the sustainability of current fiscal policy. These include the development of debt ratios³ and of the fiscal gap, which shows the immediate and permanent change in the budget balance needed to ensure a certain debt target is not exceeded at the end of the given time horizon.

Using the same method as the EU, this report on the long-term sustainability of Switzerland's public finances analyses those areas of the public sector most affected by demographic change, in particular healthcare, social security, education and receipts.

Aside from demographics, there are other factors that affect public finances in the medium to long term, but they are not addressed in this report. These include, for example, climate change or energy supply, the economic and financial implications of which are difficult to estimate and trends cannot be clearly identified and extrapolated at this point in time.

The country's demographics are set to change as members of the baby-boom generation reach retirement age in the next 20 years. Meanwhile, the birth rate has dropped dramatically and life expectancy is continuing to rise, pushing an ever greater wedge between the number of elderly people and the working-age population. In particular, spending on social welfare and healthcare, which together account for almost

3 Debt-to-GDP ratio, i.e. debt as a percentage of GDP

16% of GDP at present, will grow considerably faster than the economy as a whole.

To draw up these projections, certain assumptions have to be made in terms of demographic development and the relevant macroeconomic variables. The assumptions made over the projection horizon on GDP and net migration have a substantial impact on the long-term development of public finances. Given the uncertainty in making such assumptions over an extended period of time, a number of sensitivity analyses are carried out to show the impact of alternative assumptions with regard to GDP growth, migration and interest rates.

The results of this sustainability outlook also form the basis for drawing up the scenarios in health-care.⁴ These go beyond the calculations made in this paper, discussing various projection scenarios and policy options.

Demographic change is something that also affects all other industrialised countries to a greater or lesser extent. To highlight the need for action in terms of fiscal policy, more

and more countries are drawing up long-term sustainability reports at regular intervals. In 2009, for example, the EU published a study of the implications of demographic change on its member states' budgets with a time horizon of 2060. The US, Germany and the UK also publish regular reports on the financial sustainability of their public finances.

This report is structured as follows. Chapter 2 presents the long-term trends of relevance to public finances. It also outlines the demographic scenarios from the Federal Statistical Office forming the basis for the projections and the assumptions on economic growth. Chapter 3 describes the methodology used with respect to the projections made and the indicators of financial sustainability. Chapter 4 shows the changes in public finances, and particularly demographic-dependent expenditure, up to 2060. The impact of a change to the basic hypotheses is illustrated through the use of sensitivity analyses. Chapter 5 gives a comparison with the previous long-term sustainability outlook from 2008. Finally, Chapter 6 compares the results for Switzerland with those of other countries.

4 See legislature financial plan for 2013–15, Annex 7

2 Long-term trends as a starting point

2.1 Demographics

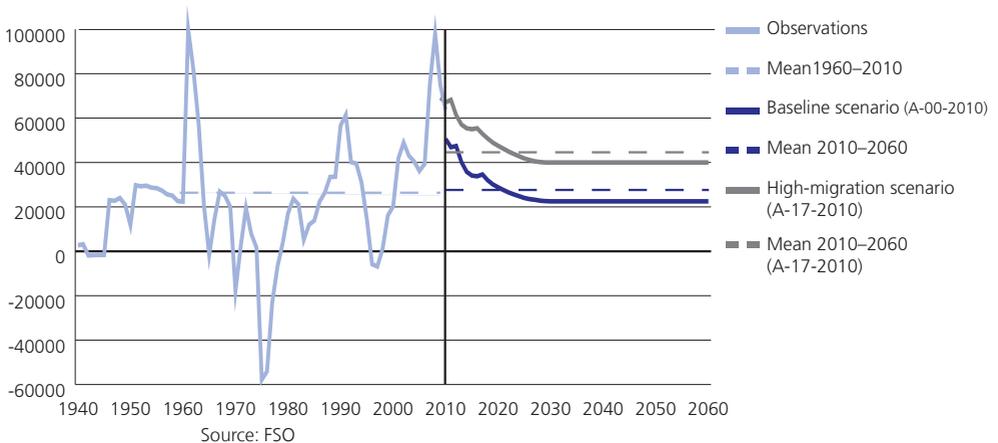
The 2010–2060 demographic scenarios from the Federal Statistical Office (FSO)⁵ serve as a basis for the projections in this report, particularly the baseline scenario (A-00-2010). This assumes an increase in Switzerland's population from 7.9 million in 2010 to 9 million in 2060, corresponding to mean annual growth of 0.3%. However, population growth slows down during the projection horizon and even stagnates between 2050 and 2060. An important factor in determining population growth – and one that is difficult to estimate – is future net migration (the number

of immigrants less the number of emigrants each year). In the FSO baseline scenario, net migration stabilises at 22,500 a year from 2030 on, which is approximately the average rate from the past 50 years. With higher net migration assumed until 2030, however, the average for the entire period comes in at around 27,000 per year.

In addition to the baseline scenario, another scenario with higher net migration is also studied within the scope of a sensitivity analysis (A-17-2010). Net migration stands at 40,000 in this scenario (see Figure 2.1).

5 FSO, Szenarien zur Bevölkerungsentwicklung der Schweiz 2010–2060, Neuchâtel, 2010

Figure 2.1: Net migration according to FSO demographic scenarios



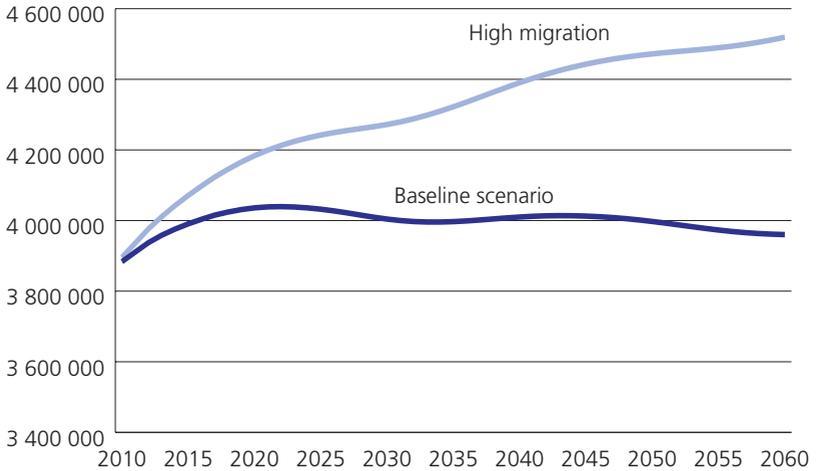
Aside from absolute population numbers, age structure also has particular implications for the economy and public finances. An ageing population increases the old-age dependency ratio, i.e. the number of elderly people relative to the working-age population. This trend poses a major challenge in fiscal policy, with higher expenditure on the non-working population and a corresponding reduction in the tax base. The change in age structure also affects healthcare costs and expenditure. In addition, the

population structure largely determines labour force projections, which are also drawn up by the FSO.⁶

Figure 2.2 shows the change in the size of the labour force in terms of full-time equivalents (FTEs). Here, under the baseline scenario, the labour force grows slightly until around 2020 and remains relatively constant after that. In contrast, the labour force would rise sharply until 2060 with the higher migration scenario used in the sensitivity analysis.

6 FSO (2010)

Figure 2.2: Labour force in full-time equivalents (FTEs)*



* Baseline: FSO A-00-2010; Sensitivity scenario with high migration: FSO A-17-2010

The population age structure also changes noticeably by 2060 (see Figure 2.3), with the working-age population dropping from 62.1% in 2010 to 53.3% in 2060. The proportion of the population above retirement age but under 80

increases from some 12% in 2010 to over 16% in 2060, while the proportion of those over 80 is almost two and a half times higher in 2060 than in 2010. Meanwhile, the proportion of those under 20 is slightly lower.

Figure 2.3: Change in population age structure – Percentage of total (baseline scenario)

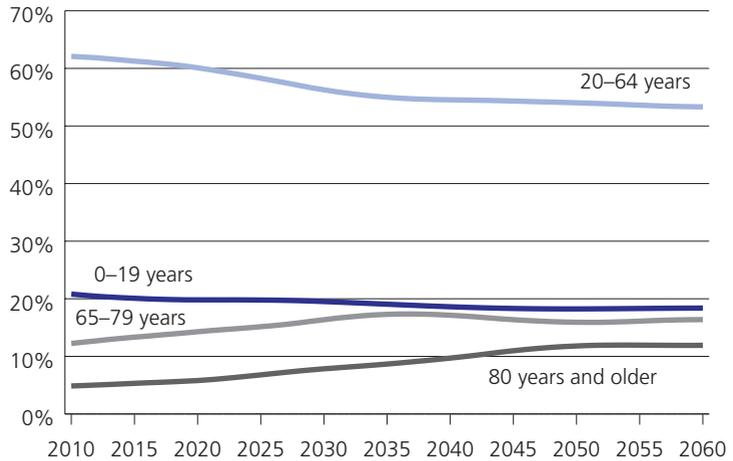
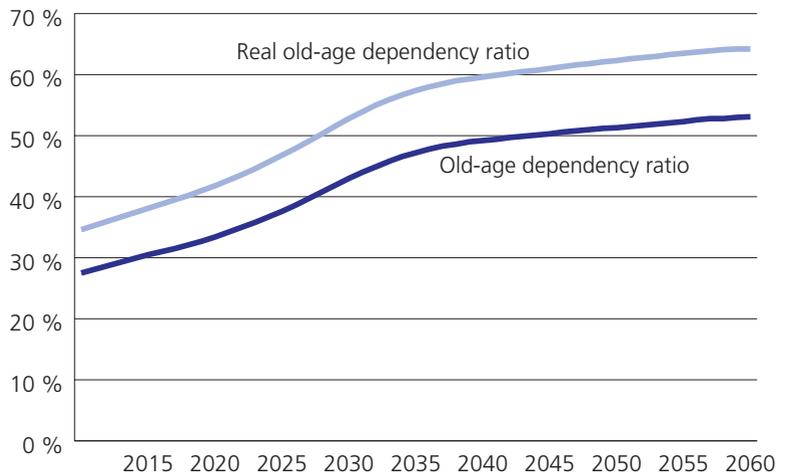


Figure 2.4: Old-age dependency ratios*



*Old-age dependency ratio: Number of people over 65 relative to the working-age population

Real old-age dependency ratio:
Number of people over 65 relative to the labour force (FTEs)

Whereas the current situation sees one person over 65 for 3.6 people in the working-age population (old-age dependency ratio of 27.5%), this ratio changes to more than one for two by 2060 (see Figure 2.4). The real or "effective" old-age dependency ratio is the number of pensioners relative to the number of people actually in employment, measured as full-time equivalents (FTE).

The size of the labour force is estimated by assuming labour force participation rates for each age group. The participation rate among 15–24 year olds is assumed to be slightly lower than today on account of higher enrolment rates in post-compulsory upper secondary education (basic vocational training and Academic Baccalaureate) and in third-level education. The participation rate for the over-55s is assumed to increase, however, with fewer

members of this cohort leaving the labour force for early retirement or other reasons. Although the legal retirement age does not rise, there is an increase in the actual average retirement age. This assumption seems plausible in light of the expected increasing scarcity of labour.

2.2 Economic growth

Certain assumptions on key macroeconomic variables have to be made in order to build expenditure and receipt projections, which also form the basis for calculating sustainability indicators (debt ratios, fiscal gap). The key figures given in the 2013-15 legislature financial plan are used for the budgetary and financial planning period.⁷ As the projection horizon covers a period of some 50 years, taking a more complex approach, e.g. computable general equilibrium modelling, to determine the relevant macroeconomic variables would not be very suitable for this report. Such an approach would require a lot more

7	2011	2012	2013	2014	2015
Real GDP	1,9%	0,9%	1,8%	2,0%	2,0%
Nominal GDP	2,5%	1,4%	2,8%	3,5%	3,5%
Interest rate (10 Y.)	1,5%	1,7%	2,5%	3,0%	3,5%

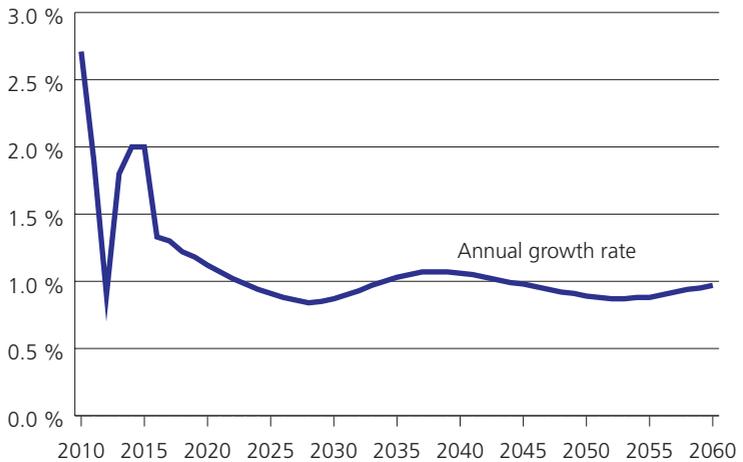
information and assumptions.⁸ Thus, in keeping with international practice, simple parameters have

been set for long-term economic growth (see Table 1). The following assumptions are made:

Table 1: Macroeconomic assumptions for the baseline scenario

Labour productivity growth:	1%
Real interest rate (long-term):	2%
Inflation:	1.5%
Nominal interest rate (real interest rate + inflation):	3.5%

Figure 2.5: Real GDP growth



The growth rate reflects economic cycles between 2010 and 2015 (based on the 2012 budget and 2013-15 financial plan).

Real GDP growth is generated by increases in the labour force (expressed as FTEs) and in productivity. Figure 2.5 clearly shows how

⁸ Such an approach, e.g. as used by Keuschnigg (2011), would be more suitable for modelling measures and reforms in social or taxation areas

the declining labour supply takes long-term economic growth in the baseline scenario to just below 1%, corresponding to the annual 1% increase in productivity. This assumption for productivity growth is more or less equivalent to the long-term average during the past few years and has substantial implications for the results. This is why sensitivity analyses are carried out with respect to productivity growth. In addition to these productivity scenarios and the higher migration scenario, sensitivity analyses are also carried out with respect to interest rates (see 3.3).

The 2% real (long-term) interest rate assumed is approximately the mean yield on 10-year federal bonds in the period from 1990 to 2010.

It is also assumed that real wages follow productivity trends, thereby ensuring distributive neutrality between capital and labour.

Annual inflation of 1.5% is assumed for the receipt and expenditure projections. This corresponds to the long-term average, although inflation has been lower in recent

years. As this assumption does not have a substantial impact on fiscal gaps or debt ratios⁹, separate scenarios are not calculated with respect to inflation. According to the assumption made, it also has no effect on long-term growth, which depends only on per-capita productivity. This assumption is a simplification, and studies indicate that the Confederation, for example, loses out in the case of inflation (Bruchez et al., 2006).

Labour productivity, the real interest rate and inflation are assumed to be constant over time, as there is little basis for determining how demographic change impacts on productivity and the real interest rate. Complicating matters further, interest rates are largely influenced by global factors, which cannot be taken into consideration or predicted here. Similarly, repercussions of the state budget on macroeconomic variables are not taken into account or have no impact on expected long-term growth. This report also disregards any implications of a declining labour force and thus a fall in labour supply on productivity and wage development.

9 Inflation is reflected in both expenditure and receipts. It has no impact on expenditure ratios.

2.3 Other trends

This paper seeks only to quantify the financial implications of demographic change and healthcare trends. Nevertheless, other trends may also have a profound impact on public finances, with regard to both expenditure and receipts. These may include, for example, the effects of climate change on overall economic

output and various expenditure areas or changes with regard to energy supply. With insufficient data available, however, it is very difficult to draw conclusions based on concrete figures. As a whole, the trends not addressed here could well have a negative impact on public finances in the long term, although positive repercussions (e.g. technological progress) cannot be ruled out.

3 Methodology

3.1 Definition of financial sustainability

The concept of sustainability in relation to long-term fiscal policy development first came up for discussion in economic policy in the early 1990s. Generally speaking, a fiscal policy is sustainable if the state's budget constraint is fulfilled over an extended time horizon. This means that future expenditure must be covered by future receipts without producing a sustained increase in the debt ratio. A stable debt ratio is thus used to assess the sustainability of public finances.

3.1.1 Debt ratio and fiscal gap

First the time horizon for the study has to be defined. If the chosen time horizon is too short, it will not adequately address the long-term dynamic; if it is too long or even indefinite, the study will be overly dependent on uncertain assumptions with regard to long-term trends. A time horizon of up to 2060 should be sufficient to capture the impact of demographic change. Another important reason for choosing 2060 is the availability of demographic

data for this period. Furthermore, this is in line with standard international practice, as the EU also uses this time horizon.¹⁰

In order to determine the stability of the debt ratio, two variables have to be compared: the initial value and the target value. Obviously, the ratio is stable if these two variables are the same. However, the initial value may not be a desirable target from a fiscal policy stance, e.g. if current debts are already considered too high. Unfortunately, economic theory cannot define a priori an optimum debt level, which is why financial sustainability generally has to be defined with respect to a certain target value. This target may seek to maintain the status quo (with no increase in the debt ratio in the given period), or it may be based on the requirements to meet certain long-term fiscal targets, e.g. the debt brake, or it may be a specific debt ratio.¹¹ Sustainability exists if the debt ratio at the end of the given horizon equals the target level.

Various approaches offer different perspectives of the shortfall between the debt ratio and the target. One of

¹⁰ European Commission (2009)

¹¹ For example, the EU's Stability and Growth Pact defines a target debt ratio of 60% of GDP

those commonly used is the “fiscal gap”, i.e. the extent to which public finances would need to be redressed, immediately and permanently, to achieve a certain debt ratio by the end of the period¹². The fiscal gap does not indicate whether the correction should be made in the form of receipts or expenditure. If, for example, the fiscal gap for a time horizon up to 2060 is 1% of GDP, the account balances for all three levels of government and the social security system would have to improve by some CHF 6 billion a year from now until 2060.

Note that the debt level may fluctuate substantially within the given period: surpluses tend to be built up and debts lowered at the start, while demographic-related deficits subsequently push debts up again.

The starting point in the baseline year also affects the results calculated. Public finances are affected by short-term economic cycles, and these should not be allowed to

unduly deploy an effect up to 2060. The baseline years¹³ are thus adjusted for short-term economic fluctuations. Correspondingly, the receipts from 2010 to 2015 are adjusted for cyclical fluctuations using the cyclical factor (output gap) also used for the debt brake. In the case of unemployment insurance, based on the financial planning data, structural expenditure for the same period is estimated on the basis of an unemployment rate of 3.4% (natural rate).

3.2 Projected expenditure and receipts

By isolating the individual task areas, any mitigating action that may be required can be confined to specific areas. For the most part, the projections are made in accordance with those of the EU.¹⁴ The results are therefore comparable. The calculations for the Confederation are based on the figures from the 2013-2015 legislature financial plan and data from the Federal Social Insurance Office (FSIO) for old-age

¹² The equation used for calculating the fiscal gap is given in the Annex

¹³ 2009 in general; for the Confederation, the figures from the legislature financial plan apply, i.e. up to 2015

¹⁴ European Commission (2009)

and disability insurance.¹⁵ Like the financial plan, this report on long-term sustainability also takes account of the sixth revision of disability insurance (6A and 6B). In particular, the financial statistics for 2009 were used as a basis. The most important assumptions made in the methodology are explained below.

3.2.1 Demographic-dependent expenditure

Detailed expenditure projections for all government levels including social security funds were made in those areas most affected by demographic change, i.e. old-age (AHV) and disability insurance (IV), health and long-term care, and education. Together, these account for some 33% of total expenditure for the Confederation, around 45% for the cantons and around 35% for the communes.

In the area of old-age and disability insurance, the projections for AHV and IV expenditure and receipts were made by the FSIO.

For old-age insurance, the FSIO calculates total annuities based on

the number of pensioners by age and gender according to the FSO's demographic scenarios, including Swiss and foreign beneficiaries as well as those living outside of the country. These annuities are indexed in accordance with the so called "mixed index", i.e. fully indexed for inflation but only half-indexed with respect to real wage growth. The average contributor rates (i.e. the number of people paying contributions relative to the total population) and average contributions are calculated by nationality, gender and age. The FSIO calculates the receipts of the AHV fund by adding these contributions to the other contributions, e.g. those of the Confederation, which comprise the portion of VAT receipts allocated to old-age insurance and the Confederation's contribution to old-age insurance expenditure (19.55%, less allowances for the helpless).

Disability insurance is funded by wage contributions as well as support from the Confederation. In the years prior to 2014, the Confederation's contribution accounts for 37.7% of disability insurance expenditure. From 2014 on, this

¹⁵ FSIO, "Finanzperspektiven der AHV 2011: Grundlagen, neue Hypothesen und Auswirkungen", Fact sheet of 4 May 2011

support is no longer based on disability insurance expenditure but on VAT receipts.¹⁶ However, as VAT receipts tend to increase more than disability insurance expenditure, the linkage to VAT receipts is adjusted by a “discounting factor”, thereby addressing the fact that the pension system no longer follows general wage trend but the mixed index. This new rule passed by parliament within the scope of the sixth revision to disability insurance was taken into consideration in the present study. The change in disability expenditure itself is determined by two factors: the adjustment of disability pensions to the mixed index (as with old-age pensions) and the change in the number of disability insurance beneficiaries. To project the number of pensions, the FSIO uses the most recent age and gender-specific probabilities of becoming disabled and of leaving the disability scheme. With the development of the age cohorts according to the FSO demographic scenario, the changes in the number of pensions are then calculated, based on the latest available numbers, using the projected admissions and departures.

For the AHV and IV supplementary benefits, it was assumed that these evolve at the same rate as expenditure on old-age and disability pensions themselves. This does not include old-age supplementary benefits for individuals in nursing homes funded by the cantons. It was assumed that these latter supplementary benefits grow in proportion to care expenditure; they are thus classified under public expenditure on long-term care.

The projections for healthcare are made in two stages. Based on healthcare expenditure for the baseline year 2009, expenditure is projected according to age cohort and gender. In accordance with international practice, projections for long-term care are made separately. In the second stage, projections are made for public healthcare expenditure, with expenditure for individual premium reductions also modelled here. The reference scenario used for healthcare is based on corresponding studies by the European Commission. As mentioned, life expectancy continues to rise up to 2060. The reference scenario assumes that half of the additional years gained can be

16 Adjusted for any changes to the tax rates and assessment basis

lived in good health. Aside from the effects of demographic change on healthcare expenditure, the projections also demonstrate the effects of important non-demographic cost drivers. It is also assumed that the increase in overall income causes a disproportionately high increase in healthcare expenditure through demand and supply-side effects.

For education expenditure, the number of schoolchildren and students was projected per age cohort. This is based on the FSO's education forecasts, which project current demographic trends for all levels of education up to 2020. These projections have been extrapolated to 2060, assuming the same proportion of schoolchildren and students per cohort. The FSO's "neutral" scenario forms the basis for the present baseline scenario in the area of third-level education. This FSO scenario is quite a cautious estimate, as the clear trend towards growing proportions of schoolchildren and students in third-level education continues for only around three years.

Again, this is based on the EU's methodology for education, so no projections have been made at preschool level. Research expenditure in the third-level area was not

projected with demographic data, but by assuming a constant proportion of GDP. The proportion of third-level expenditure used for research was taken from the assessment guidelines set out in the University Funding Act.

3.2.2 Demographic-independent expenditure

For expenditure that is independent of demographics (except for interest expenditure), a simplified assumption was made that this increases in line with nominal GDP, thereby maintaining a constant proportion of GDP over time. This assumption is taken in most studies of this type, given the difficulty in making any quantitative estimates regarding the impact of demographic change on such expenditure.

Expenditure and receipts for unemployment insurance are also extrapolated on the basis of the nominal GDP growth rate. It was assumed here that this form of social welfare balances itself out in the long run. Therefore, expenditure was adjusted for estimated cyclical effects as well as receipts. In particular, expenditure was estimated with a "natural" unemployment rate of 3.4%.

3.2.3 Receipts

The hypothesis is that the receipt ratio remains constant under the assumption of no policy change. Correspondingly, receipts increase in line with nominal GDP for the three government levels. These have been adjusted to prevent the cyclical position in the baseline year from influencing the results, i.e. so as not to extrapolate short-term economic weaknesses and the resulting deficit into the long term. All receipts were thus multiplied by the cyclical factor of the debt brake.

3.2.4 Interest-dependent expenditure and receipts

For expenditure on interest payable, a nominal long-term interest rate of 3.5% and a short-term rate of 2.5% are used in line with macroeconomic assumptions. Furthermore, it is assumed that 80% of debts arise from long-term liabilities and 20% from short-term liabilities. For the cantons' interest payments, an additional premium of 0.3 percentage points is assumed on the basis of past data. A premium of 1 percentage point is assumed for

the communes. In addition, it is assumed that there is a seven-year transition period between the last available data point for interest actually paid¹⁷ and the start of the assumption described above, during which time interest rates converge (in a straight line) from the actual to assumed rate. These seven years correspond to the average term of the Confederation's debts.

Aside from the interest rate, the level of debt is also of relevance for interest payments. In the case of social security funds, where the AHV compensation fund constitutes substantial assets, modelling is also carried out with regard to interest receivable (interest receipts).

3.3 Scenarios and sensitivity analyses

As stated in the introduction, the long-term sustainability outlook is not a forecast and should be viewed as extrapolations of trends. Such extrapolations identify a need for action which is based on current trends but may also be substantially heightened or lessened as a result of future events.

17 In general, this is 2009; in the case of the Confederation, data from the financial plan up to 2015 is used for interest payable

The influence of certain key factors is estimated by conducting sensitivity analyses. Such factors include productivity growth, interest rates and the hypothesis on net migration. Productivity growth and the interest rate were each varied by 0.5 percentage points above and

below the baseline scenario. The sensitivity analysis also looked at the alternative demographic scenario described in Chapter 2, which assumes a permanently higher level of net migration than in the baseline scenario.

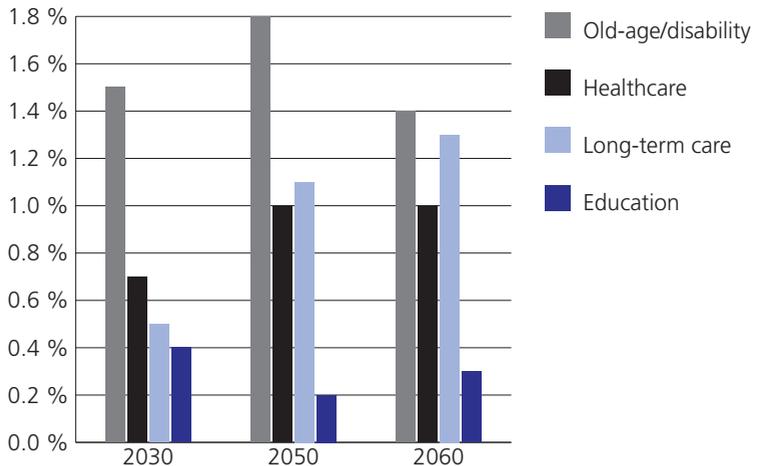
4 Results

4.1 Demographic-dependent expenditure

Figure 4.1 shows the change in demographic-dependent public expenditure in the areas of old-age and disability insurance, healthcare, long-term care and education. A disproportionately high increase in expenditure relative to GDP, i.e. a higher expenditure ratio, generally

means an increasing financial burden on public budgets. Old-age and disability insurance expenditure increases significantly relative to GDP between 2009 and 2050, and remains high up to 2060. There is also an increase in healthcare expenditure. Education expenditure remains virtually constant relative to GDP, despite a subdued development of the younger cohorts.

Figure 4.1: Change in expenditure with respect to 2009 (general government sector as a whole, in % of GDP)



In 2009, the demographic-dependent expenditure of the three government levels and social security

funds amounted to 18.4%. This is projected to rise to 22.3% by 2060 (see Table 4.1).

Table 4.1: Demographic-dependent expenditure

	2009 (% of GDP)	2060 (% of GDP)	Change 2009-60 (GDP % points)
Old-age/disability insurance	9.6	11.0	1.4
Healthcare	2.5	3.5	1.0
Long-term care	0.6	1.9	1.3
Education	5.7	6.0	0.3
Total	18.4	22.3	3.9

N.B.: Differences in the totals are due to rounding

In old-age and disability insurance, the increase in expenditure of 1.4 GDP percentage points is primarily due to old-age insurance expenditure. Based on current GDP, such an increase would correspond to over CHF 7 billion. Meanwhile, the expenditure ratio for disability insurance decreases by 0.6 percentage points. It should be noted here that pension benefits for both old-age and disability insurance decrease with respect to income growth. This is because pensions do not increase in relation to GDP but only in relation to inflation and half

of real wage growth (mixed index). This lowers the ratio for disability insurance and offsets part of the demographic-dependent increase in expenditure for old-age insurance. In the case of the cantons, some additional expenditure arises from the disproportionately high increase in supplementary benefits for old-age insurance, which increase partly in line with the rise in care expenses and partly in line with the rise in general old-age insurance expenditure (subsistence protection component).

A scenario with higher migration reduces the additional demand for funding up to 2060 (increase of 0.7 percentage points between 2009 and 2060). This should be viewed in context, however, as the additional contributors will eventually be entitled to a pension too; in some cases only after 2060. Thus, while the burden before 2060 is lower in this sensitivity analysis, it should be remembered that some of the burden has merely been postponed to subsequent years.

Rising costs in healthcare and long-term care result in additional burdens of 1 and 1.3 GDP percentage points respectively, affecting mainly the cantons. Although relatively small compared with old-age insurance, this area makes a sizable contribution to the overall increase in expenditure. A detailed description of the cost and expenditure drivers in this area can be found in the 2012 development scenarios for the healthcare system.¹⁸

Education expenditure does not fall overall despite the declining

proportion of younger cohorts; in fact, it increases by 0.3 GDP percentage points by 2060. This is because the legislature financial plan estimates high expenditure growth for the Confederation, mainly to meet the reference values specified by law. Expenditure also increases for the cantons and communes until around 2020, as the proportion of schoolchildren and students in upper secondary and third-level education increases according to FSO projections.¹⁹ After this, expenditure falls again in line with demographic change.

In viewing the results for the individual government levels in Table 4.2, it should be noted that the information does not include double entries, i.e. the Confederation's contributions to old-age insurance are not counted again for social security funds. Both the Confederation and its social security system as well as the cantons are affected by demographic change. The increase in demographic-dependent expenditure is relatively low in the communes.

¹⁸ See legislature financial plan for 2013–15, Annex 7

¹⁹ According to the FSO's education forecasts and despite using the "neutral" scenario, where this increase quickly abates

Table 4.2: Demographic-dependent expenditure by government level

	2009 (% of GDP)	2060 (% of GDP)	Change 2009-60 (GDP % points)
Confederation	3.6	4.6	1.1
Social security	6.3	7.2	0.9
Cantons	6.2	7.8	1.6
Communes	2.4	2.7	0.4
Total	18.4	22.3	3.9

N.B.: Differences in the totals are due to rounding off

A change in the assumptions underlying the baseline scenario can affect the results significantly. Table 4.3 shows alongside the baseline scenario the influence of alternative assumptions regarding labour productivity (economic growth), interest and migration. In general, it can be seen that overall productivity growth has a significant influence,

while the interest rate assumed is of less importance. An increase in overall productivity drives up the cost of care, resulting in higher expenditure for the cantons in the case of higher economic growth. In all scenarios – assuming no policy change, i.e. if no mitigating reforms are taken – an increase in public expenditure is to be expected.

Table 4.3: Demographic-dependent expenditure: Sensitivity analyses

	2009	2060						
	Ratio (% of GDP)	Ratio (% of GDP)	Change 2009-60	Sensitivity analyses (percentage point change)				
				Economic growth		Interest rate		Migration
				-0.5	+0.5	-0.5	+0.5	A-17-2010
Confederation	3.6	4.6	+1.1	+0.3	-0.3	+0.0	+0.0	-0.1
Social security	6.3	7.2	+0.9	+0.9	-0.8	+0.0	+0.0	-0.5
Cantons	6.2	7.8	+1.6	-0.1	+0.1	+0.0	+0.0	-0.1
Communes	2.4	2.7	+0.4	-0.0	+0.0	+0.0	+0.0	-0.0
Total	18.4	22.3	+3.9	+1.2	-1.0	+0.0	+0.0	-0.7

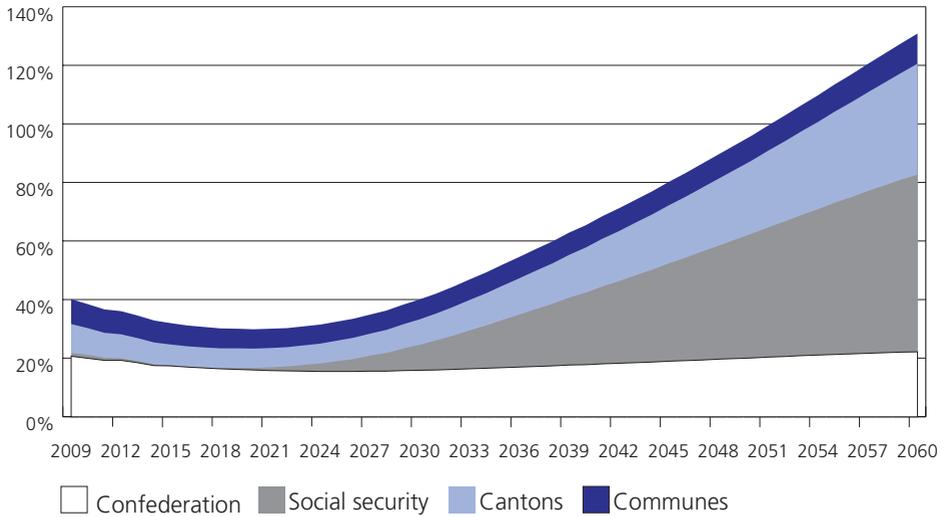
*In this and the following tables, the initial values in 2009 and the values for 2060 are shown according to the baseline scenario and the change with respect to 2009 in the baseline scenario. The sensitivity analyses are shown alongside this as deviations with respect to the baseline scenario, expressed as percentage points in each case.

4.2 Debt and the fiscal gap

As mentioned in the introduction, the financial sustainability of public finances can be determined from the way the debt ratio evolves. Temporary fluctuations in the debt ratio will always occur as a result of numerous influencing factors. However, a sustained rise in the debt ratio inevitably results in a situation of over-indebtedness.

In the baseline scenario, debt increases across all government levels to 131% of GDP. Therefore, unless remedial measures are taken, Switzerland's public finances are not sustainable (see Figure 4.2).

Figure 4.2: Debt ratios



At federal level, the rise in debt is due to the financial changes in the social security system. The cantons also show a clear trend of higher debt, mainly as a result of the dynamic regarding healthcare and long-term care.

Table 4.4: Debt ratios

	2009	2060						
	Ratio	Ratio		Sensitivity analyses (percentage point change)				
	(% of GDP)	(% of GDP)	Change 2009-60	Economic growth		Interest rate		Migration
				-0.5	+0.5	-0.5	+0.5	A-17-2010
Confederation	20.7	22.2	+1.5	+15.0	-11.6	-3.9	+4.8	-7.9
Social security	1.1	60.5	+59.5	+32.3	-25.3	-2.2	+1.4	-20.1
Cantons	9.9	37.9	+28.0	-0.5	+0.2	-4.0	+4.7	-5.1
Communes	8.5	10.3	+1.9	-0.1	+0.1	-2.1	+2.7	-0.3
Total	40.1	131.0	+90.9	+46.8	-36.5	-12.2	+13.5	-33.4

Like the expenditure dynamic, the increase in debt also depends largely on macroeconomic assumptions. In particular, the assumptions regarding labour productivity (growth) and migration have a major influence on the results. Clearly, a lasting increase in economic growth helps to lower the debt burden considerably. Nonetheless, all scenarios result in higher debt.

The increase in the debt ratios can also be shown indirectly by way of the fiscal gap (see 3.1.1). The fiscal gap shows the need for corrective adjustments in order to limit the debt ratio to a predefined level. The debt ratio from the 2009 baseline year is used here as the target level. It is assumed that remedial measures can be started in 2014.

The fiscal gap for the whole general government sector comes to 1.8% of GDP. This means that annual savings of 1.8% of GDP would be required in the budget to prevent the debt ratio from increasing up to 2060.²⁰ With respect to current GDP, this corresponds to annual savings of some CHF 10 billion.

Table 4.5 shows how the fiscal gap is apportioned to the individual government levels. For social security, the fiscal gap under the baseline scenario amounts to 1.1%.

This accounts for more than half of the entire fiscal gap; in 2010 terms, it corresponds to CHF 6 billion. For the Confederation without social security funds, the fiscal gap is 0.1%. This gap results from the Confederation's contributions to old-age insurance. The cantons have a fiscal gap of 0.5%, resulting mainly from higher healthcare expenditure. Healthcare expenditure leads to higher spending also for the communes, but it does not actually result in a fiscal gap thanks to sufficient surpluses.

²⁰ The fiscal gap gives no indication of how these savings should be made. Where spending cuts or tax hikes are made, the macroeconomic repercussions would also have to be taken into account, as different types of reform measures have different effects on productivity and thus also on public budgets. For example, if certain spending cuts or tax hikes had a negative effect on growth, the savings made would need to be more than 1.8%.

Table 4.5: Fiscal gaps (constant debt ratios)

	2060					
	Fiscal gap (% of GDP)	Sensitivity analyses (percentage point change)				
		Economic growth		Interest rate		Migration
		-0.5	+0.5	-0.5	+0.5	A-17-2010
Confederation	0.1	+0.2	-0.2	-0.1	+0.1	-0.1
Social security	1.1	+0.4	-0.4	+0.1	-0.1	-0.3
Cantons	0.5	-0.1	+0.1	-0.0	+0.0	-0.1
Communes	0.0	-0.0	+0.0	-0.0	+0.0	-0.0
Total	1.8	+0.6	-0.6	-0.0	+0.0	-0.6

N.B.: Differences in the totals are due to rounding

The sensitivity analyses show that the fiscal gap can fluctuate considerably according to the assumptions made regarding migration and economic growth. The productivity assumption has such a strong influence on the fiscal gap and the debt ratio because, first of all, receipts increase more with higher economic growth and, secondly, pensions are adapted over time to the mixed index. Thus, while inflation is fully taken into account, the beneficiaries of old-age and disability pensions participate in only half of the real wage growth, which corresponds to productivity growth under the present model. An

increase in care salaries in accordance with overall productivity drives up the costs, as few improvements in productivity can be achieved in this area. This leads to additional expenditure for the cantons in the case of higher economic growth.

In contrast, the interest rate has far less impact on the fiscal gap. When the interest rate goes up, expenditure on servicing debts also increases. However, there is a fall in the present value (i.e. the discounted value) of future primary deficits. On balance, these two effects practically offset each other. For social security funds,

low interest rates result in a higher fiscal gap, as the social security funds start with assets that generate lower returns.

The initial fiscal policy situation also affects the results. If, for example, a (structural) surplus that is CHF 500 million higher is assumed, the fiscal gap narrows by around 0.1 percentage points and the debt ratio in 2060 by some 4 percentage points.

The fiscal gaps shown here will occur if corrective measures are started in 2014. The more time that passes before such measures are taken, the wider the fiscal gap will be, i.e. delaying any reforms increases the volume of measures required. Table 4.6 shows that postponing budget corrections, e.g. to 2030, widens the fiscal gap for public finances from 1.8 to 2.6 percentage points.

Table 4.6: Delayed start in budgetary corrections

	Fiscal gap (GDP % points)			
	Starting in 2014	Starting in 2020	Starting in 2030	Starting in 2040
Confederation	0.1	0.1	0.2	0.2
Social security	1.1	1.3	1.5	1.7
Cantons	0.5	0.6	0.8	1.0
Communes	0.0	0.1	0.1	0.1
Total	1.8	2.1	2.6	2.9

N.B.: Differences in the totals are due to rounding

5 Comparison with the 2008 long-term sustainability outlook

When comparing these results with those from the previous report from 2008, it should be remembered that the projection horizon (2009-2060) is not the same as in the 2008 study (2005–2050). A direct comparison of debt ratios and fiscal gaps is thus meaningless. To enable a comparison, the results for the current data have been recalculated with a target year of 2050. Accordingly, the figures in Table 5.1 deviate from the results published elsewhere in this report.

Essentially, two factors account for the deviation between the present results and those from the 2008 report: 1) The starting point in terms of fiscal policy (2009 financial situation, or 2009–2015 in the case of the Confederation), including changes to the underlying legislation as reflected in the Confederation's financial plan, is better than assumed four years ago; 2) The demographic scenario (FSO, A-00-2010) assumes higher population growth than four years ago (FSO, A-00-2005), partly as a result of higher net migration. Together, these two factors are

largely responsible for the comparatively better expenditure and debt ratios. The increase in demographic-dependent expenditure from 2005²¹ to 2050 is 3.8 GDP percentage points in the current report (2012), down from 5 percentage points in the previous report. At 43 GDP percentage points, the increase in debt by 2050 is also considerably lower here than in the 2008 long-term sustainability outlook.

Extending the projection horizon by 10 years to 2060 increases the debt ratio noticeably, with the expenditure and debt dynamic picking up during this period, primarily as a result of rising interest expenditure.

The differences in social welfare result mainly from the higher population growth now assumed. Healthcare expenditure shows a different distribution between the cantons and communes. In education, the decline in the expenditure ratio between 2005 and 2009 – as shown in Table 5.1 – differs from the 2009–2060 results, where there is no noticeable decline overall by 2060.

21 For old-age insurance, health and long-term care, 2009 had to be taken as the baseline year due to insufficient revised data in the required categories for 2005

Table 5.1: Comparison between the 2008 and 2012 long-term sustainability outlooks

	2008 report	2012 report
1. Expenditure ratios (% of GDP)	2005–50 change	2005–50 change
Old-age insurance*	2.8%	1.8%
Healthcare*	1.4%	1.0%
Long-term care*	0.8%	1.1%
Education	-0.6%	-0.1%
Total	5.0%	3.8%
2. Debt ratios (% of GDP)	2005–50 change	2005–50 change
Confederation	1.6%	-8.0%
Social security	77.7%	37.9%
Cantons	20.4%	11.1%
Communes	-8.1%	-1.9%
Total	91.6%	43.5%
3. Fiscal gap (% of GDP)	2005–50	2005–50
Stabilisation of the debt ratio	1.4%	1.2%
4. Demographics	2050	2050
Population as per baseline scenario	8.1 million	9.0 million
Net migration (ø 09-50)	20,000	27,000

*) Baseline for 2012 report: 2009

Reflecting the more favourable initial situation and lower expenditure growth, the fiscal gap in the comparable period, at 1.2%, is also lower than the 1.4% reported four years ago. Compared with 2008, there is only a small fiscal gap, particularly for the Confederation (not including social security). This is

due mainly to a clear improvement in the financial situation by 2015. Higher transfers to old-age insurance are largely offset by initial budget surpluses and thus falling interest expenditure at an early stage. After 2050, however, the expenditure dynamic is reflected in higher debts, also for the Confederation.

The cantons and communes are affected primarily by healthcare expenditure. A higher cost dynamic²² here is offset to a certain extent by the more favourable demographic change than was assumed four years ago.

Within the scope of the new financial statistics system, hospitals no longer fall under the general government sector, as only the contributions to hospitals are posted as expenditure and not the hospitals' entire expenditure and receipts. This structural break does not have any significant influence on the government balances, or indeed on debt or the fiscal gap.

²² See legislature financial plan for 2013–15, Annex 7

6 International comparison

Demographic change is something that affects all industrialised countries to a greater or lesser extent. To capture systematically the long-term impact of these structural changes on state finances, a number of countries as well as international organisations have created a specific set of tools extending beyond medium-term financial planning. In the UK, for instance, HM Treasury published its annual “Long-term Public Finance Report” from 2002 to 2009. Building on this, the independent Office for Budget Responsibility (OBR) launched the “Fiscal sustainability report” in 2011, an annual analysis of the long-term sustainability of the UK public finances. This report also analyses the fiscal consequences of past government activity. In Germany, the Federal Ministry of Finance published its second report on the sustainability of public finances in 2008. The fiscal gap approach is used in both the OBR report and in Germany. In the US, the Congressional Budget Office has published since 2005 an annual “Long-Term Budget Outlook”, which projects the future development of public finances with respect to population change. The current edition, 2011, covers a time horizon up to 2035; in 2007, the horizon

went as far as 2080. For several years now, the European Commission has been studying the impact of demographic change on member countries’ budgets. The most recent publication on the subject is the “Ageing Report”. This examines the effects of demographic change on the economy and the public budget of the EU-27 member states up to the year 2060.

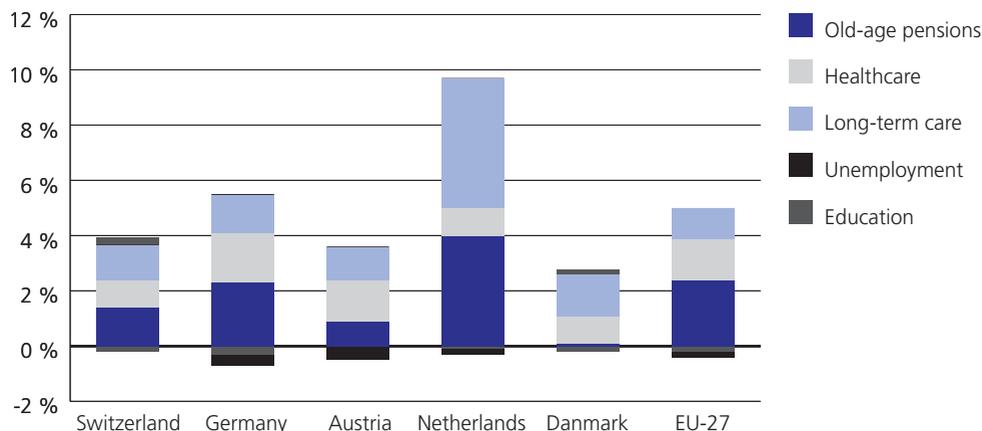
Demographic change in the EU over the next few decades is comparable with that in Switzerland, although birth rates vary quite substantially in certain countries. Potential growth for the EU as a whole is expected to fall sharply from 2.4% in 2007–2020 to 1.7% during 2021–2030 and then to 1.3% in 2041–2060, based on a 12.6% reduction in the labour force from 2020 to 2060. However, these growth rates are still considerably higher than assumed in this report for Switzerland. The European Commission estimates that, due to demographic change, the proportion of GDP spent on social welfare (including unemployment insurance), education, healthcare and long-term care will increase by some 4.7 GDP percentage points between 2007 and 2060 in the EU as a whole and by around 5.2 percentage points in

the eurozone. With an increase of 3.7 percentage points²³ in this respect, Switzerland lies below the EU average. To a certain extent, this is because Switzerland's mandatory health insurance is offered by private insurers only – unlike in other European countries – and so is not counted as the public sector.

The EU's projections, as in this report, were based on the assumption of no policy change. Figure 6.1 shows the expenditure increase in the areas of healthcare, long-term care, social welfare and education by 2060, measured in GDP percentage points for Switzerland and several EU countries.

Figure 6.1: International comparison: Increase in demographic-dependent expenditure**

Growth 2007* to 2060



* The baseline year for the EU's calculations is 2007; Switzerland's baseline year is 2009

** Not including interest expenditure

23 Including estimated changes in unemployment insurance expenditure for 2009-2015 (-0.15%)

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Annex: Calculation of the fiscal gap

The fiscal gap f for a debt target λ and a time horizon T is illustrated in the following equation:

$$f_{\lambda,T} = \frac{\left(1 - \frac{\lambda}{\varphi_T}\right) B_0 - \sum_{j=1}^T \left(\frac{B_j}{\varphi_j}\right)}{\sum_{j=1}^T \left(\frac{Y_j}{\varphi_j}\right)}$$

where B_0 denotes the initial nominal debt and Y_j is the annual nominal GDP. The fiscal gap is always expressed as a percentage of GDP.

In calculating the fiscal gap, a target debt ratio must first be defined. The ratio between the target and initial debt is λ . Thus, for example, if the current debt ratio equals the target debt ratio, then λ is also the ratio between terminal-year GDP and initial-year GDP. If debt is unchanged in nominal terms, then $\lambda = 1$. The time horizon is $T = 46$ years (2014-2060). The fiscal gap calculation takes account of the annual interest rate (cost of borrowing) by way of the discounting factor φ_j and of budget projections by way of the annual primary surplus PB_j .

