2016 Report on the Long-Term Sustainability of Public Finances in Switzerland

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Preface

Switzerland weathered the financial and debt crisis well. On the one hand, this resilience can be explained by its competitive, broadly diversified and internationally well-integrated economy. On the other, Switzerland benefits from a highly adaptable labour market, autonomous monetary policy and forward-looking fiscal policy.

Where its public finances are concerned, Switzerland holds up well in an international comparison, with a debt ratio of well below 40%. In contrast to the majority of advanced economies, Switzerland managed to reduce its debt ratio further in the aftermath of the financial and debt crisis, not least thanks to stable economic growth and an effective debt brake mechanism. Robust government finances increase a country's ability to withstand crises, and are important to the confidence of investors and therefore to the ability of an economy to flourish.

With respect to the sustainability of the public finances, however, Switzerland must not let its relatively advantageous situation lull policy-makers into a sense of false security. An increasingly ageing population will put a significant burden on the public finances over the next 30 years. An indication of the extent of this future burden is provided by this report on the long-term sustainability of public finances, which is now being published for the third time, after earlier versions in 2008 and 2012.

This report should not be viewed as set of forecasts, but purely as a set of «if X, then Y» statements, and contains uncertainties. It is based on

certain assumptions regarding population development and economic growth, and highlights how the receipts and expenditure of the public finances will develop up to 2045 in the absence of any corrective measures being taken by the political establishment. However, this long-term outlook does already take into account the Federal Council›s 2020 retirement provision reform proposal.

If Switzerland›s economy, demographic structure and net immigration rate do indeed develop in line with the scenarios assumed in this study, the general government expenditure ratio, i.e. the ratio of general government expenditure to GDP, will rise from today's 32% to 36% by 2045. The implementation of the 2020 retirement provision reform would greatly relieve the burden on the Confederation and the social security funds, even if further measures will be required even after 2030. The foreseeable upward pressure on spending on healthcare and long-term care will make reforms inevitable, particularly on the part of the cantons and the communes, although the development of healthcare costs is not driven by an ageing population alone. A sufficiently high labour influx from abroad would ultimately help to alleviate demographic pressure on the public finances.

If the financing of Switzerland›s social security mechanisms is secured in a timely way, these burdens will become manageable. Indeed, this long-term report shows that the disposable income of the working-age population is set to rise further thanks to continued economic growth, despite the higher expenditure.

Ueli Maurer, Federal Councillor and Head of the Federal Department of Finance

Summary

Background

Over the next few decades, the continued ageing of the Swiss population will be an inexorable phenomenon. This report on the long-term sustainability of Switzerland's public finances highlights the magnitude of the additional burden that will fall on the public finances as a result of demographic development, and flags up the longer-term need for politico-economic action if the sustainability of the public finances is to be ensured. Furthermore, this report shows how the average disposable income of Swiss residents will develop if the age-related additional expenditure of the state is financed with additional taxes and contributions to the extent that the sustainability of the public finances can be ensured.

Assumptions

The projections in this report are based on a continuation of the legal status quo and the assumptions of the Confederation's legislature financial plan. In a deviation from the legislature financial plan, however, the report takes into account the Federal Council's 2020 retirement provision reform proposal, rather than the Council of States' equivalent. As the report is based on projections of long-term development, it inevitably involves uncertainties. The results of this report should therefore be interpreted as "if X, then Y" hypotheses. If Switzerland's demographic structure and economy were to develop as assumed in this report, this would mean an additional burden for the public finances as a result of increased expenditure for old-age and survivors' insurance and healthcare. The report draws on the demographic scenarios of the Federal Statistical Office (FSO) and the calculations of the Federal Social Insurance Office (FSIO) for old-age and survivors' insurance and disability insurance. Other areas of the report draw on the projections of the Federal Finance Administration (FFA).

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1 The report uses a sustainability concept that corresponds to the international standard as applied by the OECD, the IMF and the European Commission. According to this concept, public finances are sustainable if government debt as a proportion of GDP (debt ratio) can be stabilised at a sufficiently low level. The Confederation's debt brake mechanism is more restrictive. This targets the stabilisation of federal debt in francs, i.e. in nominal terms. If this objective is met, the debt ratio is reduced continuously.

The baby-boom generation is set to enter retirement in the next few years. Meanwhile, the birth rate has dropped dramatically since the 1970s and life expectancy is continuing to rise, pushing a greater wedge between the number of elderly people and the working-age population. This ratio is also dependent on Switzerland's net migration rate, as the majority of immigrants are of a working age. According to the baseline scenario of the Federal Statistical Office (A-00-2015), for example, the proportion of people over 80 is set to rise from 5% to 10% of the population during the projection timeframe (2013 to 2045). The old-age dependency ratio, which measures the number of people over 65 relative to the working-age population, is set to rise by 20 percentage points, or from 28% to 48%, over the same period. This change in the demographic structure will also feed through into the public finances, particularly in the areas of healthcare and social spending. However, there is significant uncertainty over the precise level of immigration, which is a phenomenon that can slow the ageing of a population and therefore alleviate the negative impact on the public finances. In the FSO's baseline scenario, the labour force participa-tion rate remains unchanged at around 84%.

This report shows that economic growth and migration are significant variables when it comes to the extent of the additional burden on the public finances caused by demo-graphic developments. To illustrate the uncertainty surrounding the projections, several different scenarios have been modelled with regard to the trend of economic growth and migration. In addition to the development of immigration and the working-age population, assumptions regarding annual productivity improvements are key to the development of economic growth. For the baseline scenario, it is assumed that labour productivity up to 2045 will develop much as it has in the past. Between 1992 and 2014, annual productivity gains in Switzerland amounted to 1.2% on average. In order to take account of uncertainty with respect to the productivity assumptions adopted, scenarios have also been calculated involving a sceptical assumption of productivity growth (0.9%) and an optimistic assumption of productivity growth (1.5%). In addition, a scenario with a higher level of net migration than in the baseline scenario has been calculated. In the

baseline scenario, the annual net immigration rate declines continuously from 80,000 persons in 2015 to 60,000 by 2030, levelling off at around 30,000 persons by 2040. Average annual net migration also falls in the migration scenario, but here it is assumed to be 20,000 persons higher by 2030 and 10,000 higher by 2040 relative to the baseline scenario. Economic growth amounts to an average of 1.6% up to 2030 in the baseline scenario, declining thereafter to 1.4%.

Development of the general government expenditure ratio

In the baseline scenario, the general government expenditure ratio, i.e. the ratio of overall government expenditure to GDP, rises from just under 32% in the baseline year to almost 34% in 2030 and to 36% in 2045 (see Figure S1).[2] In the 1990s, the general government expenditure ratio increased sharply due to a phase of stagnation in the Swiss economy. Thereafter it hovered around the 34% mark. Between 2005 and 2008 the general government expenditure ratio declined sharply, which can be attributed to strong economic growth and a revision of the financial statistics.[3]

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2 The general government expenditure ratio is shown as the ratio of public expenditure (including social security funds) relative to cyclically adjusted nominal GDP.

3 The revision of financial statistics caused the general government expenditure ratio to fall by approximately 2%.

Figure S1:   *Development of general government expenditure in the past and in the baseline scenario (in % of GDP)*
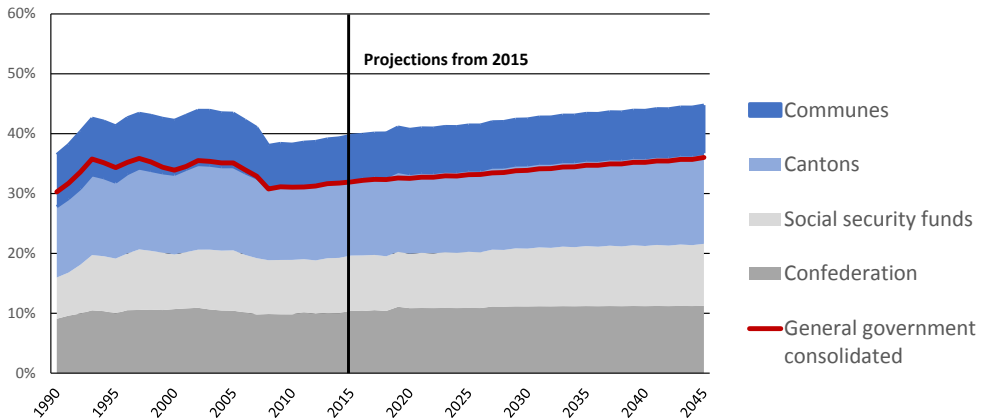
The projected increase in the general government expenditure ratio in the baseline scenario is attributable above all to demographic-dependent expenditure, which encompasses old-age and survivors' insurance/disability insurance (AHV/IV), healthcare, long-term care (from the age of 65) and education. Between 2013 and 2045, the level of expenditure dependent on demographic development rises from around 17.3% to 20.8% of GDP (see Table S1). Almost half of the rise, or 45%, is attributable to the increase in expenditure for healthcare and long-term care. Around 36% of the additional burden on the public finances is accounted for by additional AHV/IV expenditure. The remaining rise is incurred in the education sphere. As a result, government expenditure rises more sharply in the first 15 years of the projection period up to 2030 than it does between 2030 and 2045, specifically by 2.0% of GDP as opposed to 1.5% of GDP. The greater rise in expenditure by 2030 as a proportion of GDP is attributable to the education area, where spending after 2030 no longer outstrips GDP growth. This is partly explained by the fact that the number of students in secondary and tertiary education ceases to rise after 2040.

Development of the demo-graphic-dependent expenditure ratios of the individual levels of government

Cantonal expenditure increases by 0.8% of GDP by 2030, and by 1.4% of GDP by 2045. The development of expenditure up to 2030 is driven almost equally by the healthcare, long-term care and education areas. After 2030, the rise in expenditure is attributable to the development of long-term care and healthcare. The sharp rise in the proportion of the population over the age of 80

between 2013 and 2045, namely from 7% to 10%, results in additional cost pressures in long-term care in particular. Compared with the cantonal budgets, the budgets of the communes face much less additional expenditure (+0.4% of GDP by 2045). Up to 2030, the momentum of expenditure growth at commune level is driven primarily by the education area (+0.2% of GDP). The long-term care area also plays a role, albeit less pronounced (+0.1% of GDP). After 2030, the increase in the communes' expenditure is attributable exclusively to long-term care.

Table S1:   Demographic-dependent expenditure by government level (in % of GDP)

	2013	2030			2045			
	Ratio (in % GDP)	Ratio (in % GDP)	Sensitivity analyses		Ratio (in % GDP)	Sensitivity analyses		
			Productivity	Migration		Productivity		Migration
			-0.3	+0.3	A-06-2015		-0.3	+0.3	A-06-2015
Confederation	3.9	4.7	+0.0	-0.0	-0.1	4.9	+0.1	-0.1	-0.1
Social security funds	5.4	5.5	0.1	-0.1	-0.2	6.1	+0.2	-0.2	-0.4
Cantons	5.9	6.7	-0.1	+0.1	-0.1	7.3	-0.1	+0.1	-0.2
Communes	2.2	2.5	-0.0	+0.0	-0.0	2.6	-0.0	+0.0	-0.0
Total	17.3	19.3	+0.0	-0.1	-0.4	20.8	+0.2	-0.2	-0.7

At national level, the social security funds (AHV/IV) are less affected than the Confederation by the additional burden of an ageing population. Expenditure rises by 0.7% of GDP (AHV/IV) and 1.0% of GDP (Confederation) by 2045, respectively. The additional expenditure for the social security funds is exclusively attributable to the development of old-age and survivors' insurance. The growth in the social security funds' expenditure is curbed by the measures relating to benefits in the Federal Council's 2020 retirement provision reform proposal, such as the increase in the retirement age for women, and the development of disability insurance expenditure. As a proportion of GDP, disability insurance expenditure actually declines by 0.4% by 2045. This is explained by the fact that the number of recipients of a disability pension is not expected to grow as fast as the working-age population, while as an additional factor disability pensions are coupled to the so-called "mixed index" used to determine changes in AHV/IV benefits. The majority of the additional expenditure for the Confederation is explained by AHV financing (+0.6% of GDP). A

minority of the increase is attributable to expenditure for individual premium reductions and education (+0.1% and +0.2% of GDP, respectively).

The AHV supplementary financing envisaged as part of the Federal Council's 2020 retirement provision reform proposal has a noticeable impact on the federal finances up to 2030. While the VAT increase of 1.5 percentage points in favour of the AHV results in additional receipts, these are handed over to the AHV as restricted funds, and are therefore also recognised as government expenditure. Government expenditure rises by 0.8% of GDP by 2030. After 2030, the momentum of federal expenditure growth declines (+0.2% of GDP). Positive developments for the public finances include the fact that education expenditure ceases to outstrip GDP growth, and that the one-off special effect of the AHV supplementary financing disappears.

Moreover, the results in table S1 show that higher (or lower) economic growth (higher/lower productivity advances and/or

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4   Lower migration would lead to a bigger increase in general government and social security expenditure as a proportion of GDP, in a way that is more or less symmetrical to the scenario involving higher migration.

higher/lower migration than in the baseline scenario) leads to a reduction (increase) in the additional burden for the Confederation and AHV/IV. This is attributable to the fact that AHV/IV pensions rise less than wages, which increase in step with productivity. In the event of higher migration, the working-age population and the employment rate rise more strongly, which in turn slows the increase in the old-age dependency ratio.

In the case of the cantons and the communes, the indicated direction in the sensitivity analyses for productivity is the inverse of that in the case of the Confederation and the social security funds. According to these calculations, higher growth in productivity goes hand in hand with higher wage growth. As a result, greater productivity increases lead to additional pressure on healthcare expenditure, whereby the burden on the finances of the cantons and communes increases slightly. In other words, the stronger growth in per capita income associated with higher productivity advances leads to additional demand for healthcare services. In the healthcare area too, higher productivity advances result in a slight increase in cantonal and communal expenditure. In the migration scenario, the stronger

economic growth is triggered by higher net immigration and higher employment, not by higher salaries. Accordingly, no additional cost pressure arises in the healthcare area, and the adjustment burden for the cantons and communes works out lower. By contrast, cost pressures can be expected to rise significantly in all areas of the public finances if immigration and employment were to work out lower than in the baseline scenario.

Development of the fiscal gap and disposable income

The result of the rise in demographic-dependent expenditure is that taxes or social security contributions will have to be raised (or savings made) in order to finance this development. If no steps were taken to restore the financial equilibrium between receipts and expenditure, government indebtedness would rise from 35% of GDP to around 59% of GDP between 2013 and 2045. A conventional measure for highlighting the need for corrective adjustments from a fiscal policy standpoint is the fiscal gap. This measure, which is factored into the long-term sustainability calculations, measures the degree to which permanent savings, contribution increases or tax rises will be necessary from 2020 onwards in

order for the debt ratio to be stabilised at the level of the baseline year by 2045. The fiscal gap amounts to 0.9% of GDP. Breaking this down by level of government reveals that demographic change is a threat to the finances of the cantons and communes in particular. The cantons and communes have a fiscal gap of 1.1% and 0.5% of GDP, respectively. This is attributable to the fact that these levels of government are responsible for the areas of health-care and long-term care, which develop relatively dynamically. From this perspective, the financial situation of old-age and survivors' insurance and disability insurance can be described as sustainable (no fiscal gap) in view of the 1.5 percentage point rise in VAT envisaged by the Federal Council as part of the 2020 retirement provision reform, the corresponding measures on the benefits side and positive developments in the area of disability. However, the repercussions of the AHV apportionment system turn negative once again from 2030 onwards, thereby flagging up a further need for corrective action. By contrast, the calculations of the FSIO envisage the IV debt to the AHV fund

being paid off by 2028. The healthy starting point of the public finances, which can be attributed to the stabilisation programme put in place in the legislature financial plan, the slowing momentum of education expenditure growth and the reduced pressure on expenditure from the AHV side thanks to the Federal Council's reform measures all contribute to enabling the sustain-ability of the public finances to be secured by 2045. Without the envisaged AHV supplementary financing through an increase in VAT, the situation for the public finances would be significantly worse. The fiscal gap of the general government sector would amount to 1.6% of GDP.

If the stabilisation of the debt ratio at its current level were to be financed through an increase in general government receipts alone, the per capita disposable income of the Swiss people would increase further on an inflation-adjusted basis, thanks to the assumed annual productivity advances of 1.2%.[5] The projected annual rise between 2013 and 2045, namely 0.6%, works out even higher than for the period 1990-2013

5   As occupational benefits are not addressed as part of this report, Pillar 2 salary contributions are not factored in to calculations.

(0.4%), although this can be attributed to the prolonged period of stagnation in the first half of the 1990s.

Conclusion

Demographic developments will weigh heavily on the Swiss public finances over the next 30 years. If demographics, immigration and the economy develop in line with the assumed scenarios, the general government expenditure ratio will rise from its current level of 32% to 36% by 2045. If the 2020 retirement provision reform is implemented as envisaged by the Federal Council, the Confederation will face less of a need for action than the cantons and the communes. However, further reforms of the AHV system will have to be agreed in the 2030s if the sustainability of this social security

fund is to be ensured. The urgent need for action on the part of the cantons and communes is attributable to persistently high pressure on expenditure in the areas of health-care and long-term care, which will make further reforms unavoidable.

The magnitude of the demographic-dependent additional burden will depend heavily on economic growth. In the long term, economic growth can be achieved only through higher productivity and/or higher net immigration. The projections therefore react sensitively to different assumptions in respect of productivity development and migration. If the economy grows at the rate assumed, disposable household income will continue to rise, despite the demographic-dependent additional burden, and more or less to the same extent as over the last 25 years.

1 Introduction

Over the next few decades, the continued ageing of the Swiss population will be an inexorable phenomenon. This report on the long-term sustainability of public finances in Switzerland highlights the magnitude of the additional burden demographic change will put on the public finances, and flags up the longer-term politico-economic action that will be required if the sustainability of the public finances is to be ensured. Financial sustainability for the general government essentially means being able to guarantee the financing of both existing and future liabilities.

Budgets and financial plans are not sufficient on their own for a comprehensive, long-term-oriented view of demographic-dependent additional expenditure burdens. These fiscal policy planning instruments cover a time horizon of four years. The medium-term outlook focuses on illustrating the fiscal priorities of the Confederation, and involves an observation period that runs to 2024. This report closes the existing gap by supplementing the financial reporting and the medium-term outlook with a long-term view. Certain areas, particularly AHV, already report elsewhere on their

medium- to long-term development.[6] However, the report on the long-term sustainability of public finances provides an overview of the financial position of all government units (Confederation, cantons, communes and social security funds). Following earlier versions in 2008 and 2012, this is now the third report on the long-term sustainability of the public finances by the Federal Finance Administration. This four-year cycle ensures that the latest assumptions regarding migration, ageing and economic development feed through into the projections, and that changed political parameters are likewise taken into account. The key results of this longer-term outlook are also set out in the legislature financial plan.

However, this long-term sustainability outlook does not claim to paint a picture of how the future will look; instead it shows how demographic development will have an impact on the public finances in the longer term under the given parameters ("no policy change" assumption). It takes into account the existing legal status quo, the assumptions of the Confederation's legislature financial plan and the Federal Council's 2020 retirement

6   See Federal Social Insurance Office (2014)

provision reform proposal. The time horizon of 2045 was chosen on the one hand because the key repercussions of an ageing society are likely to have fed through into the public finances by then, and on the other because the demographic scenarios calculated by the Federal Statistical Office (FSO) are based on the same time horizon.[7]

The long-term outlook serves as a rough point of orientation, and highlights how sensitively the public finances react to changes in key drivers. For these projections, certain assumptions have to be made in terms of demographic development and the macroeconomic variables. The assumptions made over the projection horizon on productivity and migration have a substantial impact on the long-term development of public finances.

On the basis of expenditure and receipt projections for the three levels of government and the social security funds, a number of different fiscal policy ratios are illustrated. These include the development of the general government expenditure ratio, which expresses total general government expenditure as a propor-

tion of GDP, the debt ratio, i.e. the proportion of public debt relative to GDP, and the fiscal gap. The fiscal gap shows the action that would be required for the debt ratio to be stabilised at the same level as the baseline year at the end of the projection period. In addition, the report looks at the question of how the disposable income of Swiss households would develop as a whole if a constant debt ratio were to be financed by an increase in general government receipts alone.

At cantonal level there are multiple institutional restrictions, such as fiscal rules and mandatory cantonal referenda, which are designed to avoid disproportionate expenditure growth and high deficits. At federal level, the debt brake mechanism ensures the balancing of the budget in the medium term and provides a framework for policy-makers. The Confederation's debt brake mechanism is more restrictive than the sustainability concept applied here, which follows the international standard of the OECD, IMF and European Commission and considers the public finances to be sustainable if national debt as a proportion of GDP can be stabilised at a sufficiently

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7   See Federal Statistical Office (2015)

low level. By contrast, the debt brake has the effect of stabilising the Confederation's debt level in Swiss francs, i.e. in nominal terms. If this objective is met, the debt ratio falls continuously. For the purpose of this study, it was assumed that fiscal rules are not binding. 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.

The focus of the report lies on those areas of state activity that will be significantly influenced by demographic development. The baby-boom generation will enter retirement in the next few years. Meanwhile, the birth rate has dropped dramatically since the 1970s and life expectancy is continuing to rise, pushing a greater wedge between the number of elderly people and the working-age population. In particular, expenditure on AHV/IV, healthcare and long-term care, which together account for almost 12% of GDP at present, will grow considerably faster than the economy as a whole.

Aside from demographics, there are other developments that affect public finances in the medium to long term, but they are not addressed in this report. These include in particular climate change, the economic and financial implications of which are difficult to estimate.

This report is structured as follows. Chapter 2 presents the long-term trends of relevance to public finances. It also gives a brief illustration in particular of the demographic scenarios from the FSO 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 fiscal indicators. In addition, the alternative scenarios are briefly highlighted. Chapter 4 shows how the public finances – and in particular demographic-dependent expenditure – develop over the medium term (up to 2030) and long term (up to 2045). The impact of a change in the underlying hypotheses regarding productivity and migration is illustrated in sensitivity analyses. Chapter 5 explores the specific area of healthcare and long-term care. The strong dependency on demographic developments, a high degree of uncertainty with respect to cost drivers and the dynamism of expenditure form the particular focus here. In addition to a discussion on the cost drivers in healthcare, the results of various scenarios are presented. Chapter 6 gives a brief

qualitative comparison with the previous long-term sustainability outlook from 2012. Chapter 7 compares the results arrived at with the projections of the European Union.

2 Demographic and economic development

This chapter highlights projected demographic developments, explains the key underlying macroeconomic assumptions, and contains an excursus on the potential repercussions of climate change for the public finances.

2.1 Demographics

The demographic scenarios of the FSO for the period 2015 to 2045[8], particularly the baseline scenario (A-00-2015), provide the foundation for the projections of this report. The baseline scenario assumes that Switzerland's economic situation will remain robust and that demand for labour will therefore remain high. Furthermore, it is assumed that the economies of other European countries will improve, and that immigration flows into Switzerland will accordingly be less pronounced in a few years' time.

The baseline scenario assumes an increase in Switzerland's population from 8.3 million in 2015 to almost 10.2 million in 2045, corresponding to mean annual growth of 0.7%. However, population growth slows down during the projection horizon. While in the first few years (up to

2020) mean population growth is expected to be at least 1%, from 2039 onwards it is assumed to be just 0.3% or less. An important factor in determining population growth – but one that is difficult to estimate – is future net migration (the number of immigrants less the number of emigrants each year). In the baseline scenario of the FSO, net migration is projected to be 80,000 persons for 2015 and 70,000 for 2016. From 2017 until the end of the following decade, net migration is projected to be 60,000 a year. Thereafter, net migration declines steadily, until it reaches the level of 30,000 from 2014 onwards. In the long term, therefore, immigration experiences a decline, which according to the demographic scenarios of the FSO is explained by the decline in the working-age population in European countries, which is in turn attributable to the low birth rate at present.

In view of the great uncertainty surrounding migration development projections, a sensitivity analysis has been conducted involving a scenario with a higher net migration rate (A-06-2015). In this FSO scenario, net migration amounts to 90,000

8   See FSO (2015)

persons in 2015, and is still at an annual level of 40,000 persons at the end of the observation period, i.e. in 2045. On average, the annual net migration rate in this scenario outstrips that of the baseline scenario by some 20,000 persons up to 2030, and by 10,000 from 2040 onwards. Accordingly, the working-age population rises around 1% as an annual average up to 2030, compared with 0.7% in the FSO's baseline scenario. Compared with the baseline scenario, the higher migration scenario projects stronger and more persistent economic growth for Switzerland, which likewise results in a higher demand for labour and therefore a higher migration rate. Figure 1 shows net migration for the years 1970 to 2014 along with the underlying net migration rates for the baseline scenario and scenario A-06-2015 (high migration) for the period 2015 to 2045.

Figure 1:   *Net migration 1970–2045*
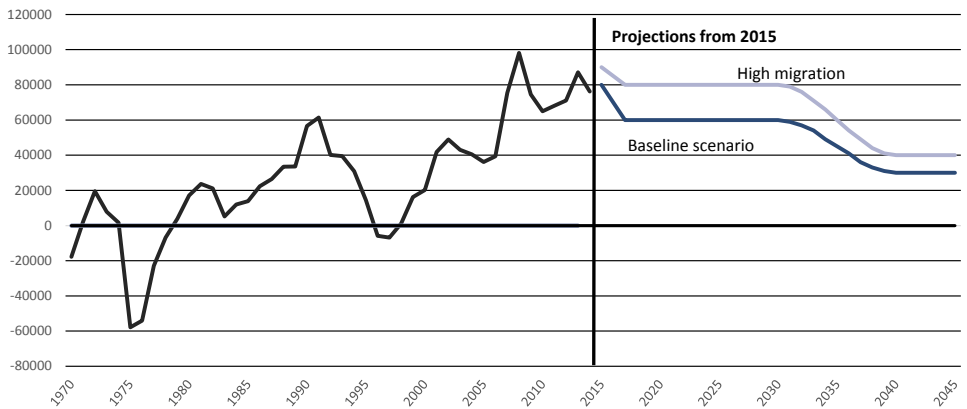
The change in the demographic structure has particular implications for the economy and public finances. For example, the FSO's baseline scenario assumes a rise in average life expectancy for men at birth from 81.2 years in 2015 to 86.2 years in 2045, with life expectancy for women rising from 85.1 to 89.4 years. 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 terms of fiscal policy, as it means higher expenditure for the non-working population. The shift in the age structure also leads to a change in expenditure in the area of healthcare and long-term care.

Figure 2 shows the change in the size of the labour force in terms of full-time equivalents (FTEs). It highlights developments since 1995, in which a rise in the working-age population from 3.4 million to just under 4 million is evident, as well as developments going forward in accordance with the FSO's population scenarios. It is assumed that the working-age population will rise to more than 4.6 million by around 2040 and remain more or less constant thereafter. In the FSO's baseline scenario, the labour force participation rate remains virtually unchanged at 84%. In the higher migration scenario factored into the sensitivity analysis, the labour force participation rate also remains virtually unchanged, but there is a significant rise in the working-age population to just under 5 million by 2045.

Figure 2:   *Labour force in full-time equivalents (FTEs)* 1995–2013 including both baseline and high migration scenarios*
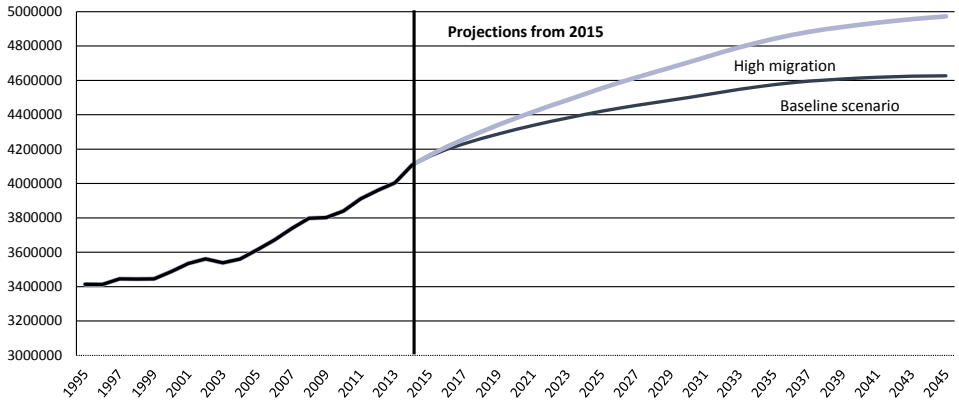
*   Baseline: FSO A-00-2015; sensitivity scenario with high migration: FSO A-06-2015

The population age structure changes noticeably up to 2045 (see Figure 3). As a proportion of the total population, the working-age population declines from an almost constant 62% in 1990–2015 to 55% by 2045. The proportion of the population above retirement age but under 80 increases from some 13% in 2015 to just over 16% in 2045, while the proportion of those over 80, namely 10%, is almost two and a half times higher in 2045 than in 1990. Meanwhile, the proportion of those under 20 is slightly lower.

Figure 3:   Change in population age structure – percentage of total (baseline scenario)
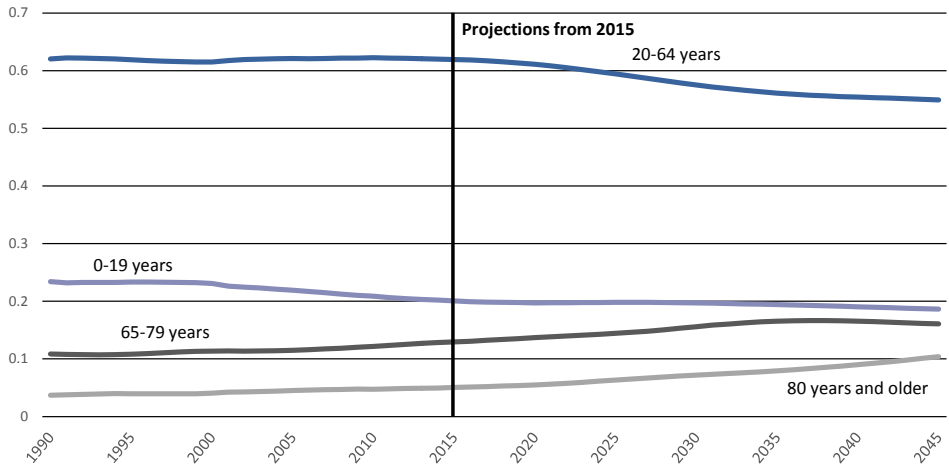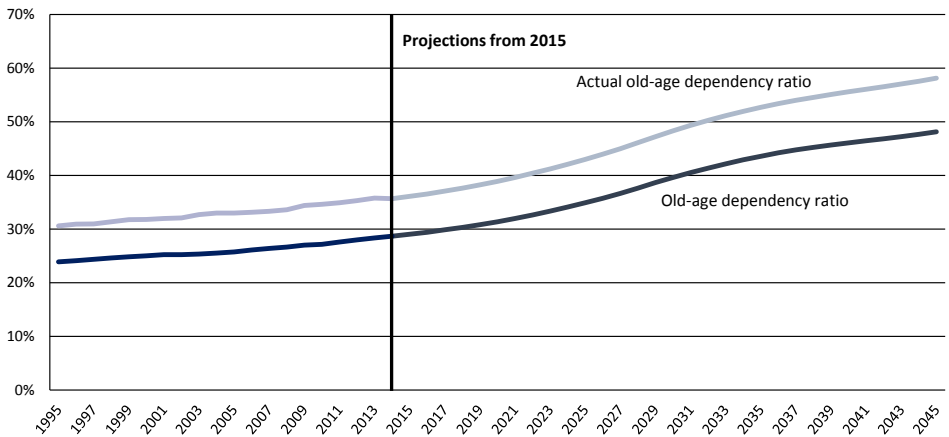

Figure 4:   Old-age dependency ratios*

*   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 in 1995 there were a good four persons of working age for each person over the age of 65 (old-age dependency ratio 23.9%), by 2015 this had fallen to 3.4 persons (old-age dependency ratio 29.1%). This ratio declines to just under two persons (old-age dependency ratio 48.1%) by 2045 (see Figure 4). The actual 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 (FTEs). At the end of the projection period, this is accordingly some 10 percentage points higher.

2.2   Economic growth

To generate expenditure and receipt projections, certain assumptions have to be made with respect to key macroeconomic variables. The key figures set by the Federal Council in the 2016-2019 legislature financial plan are used for the budget and financial plan period.[9]

Taking a more complex approach, e.g. computable general equilibrium modelling, to determine the relevant macroeconomic variables, does not appear to be very suitable for this report. Such an approach would require a lot more information and assumptions. Thus, in keeping with international practice, simple parameters have been set for long-term economic growth. These are summarised in Table 1.

Table 1:   *Macroeconomic assumptions in the baseline scenario*

Labour productivity growth:	1.2%
Real interest rate (long term):	1.5%
Inflation:	1.0%
Nominal interest rate (real interest rate + inflation):	2.5%

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	2015	2016	2017	2018	2019
Real GDP	0.9%	1.5%	2.0%	1.7%	1.7%
Nominal GDP	-0.2%	1.1%	2.6%	2.5%	2.7%
CPI	-1.1%	0.1%	0.6%	0.8%	1.0%
Long-term interest rates (10y)	0.0%	0.2%	0.9%	2.0%	3.0%

Figure 5:   Real GDP growth and productivity growth 1990–2045
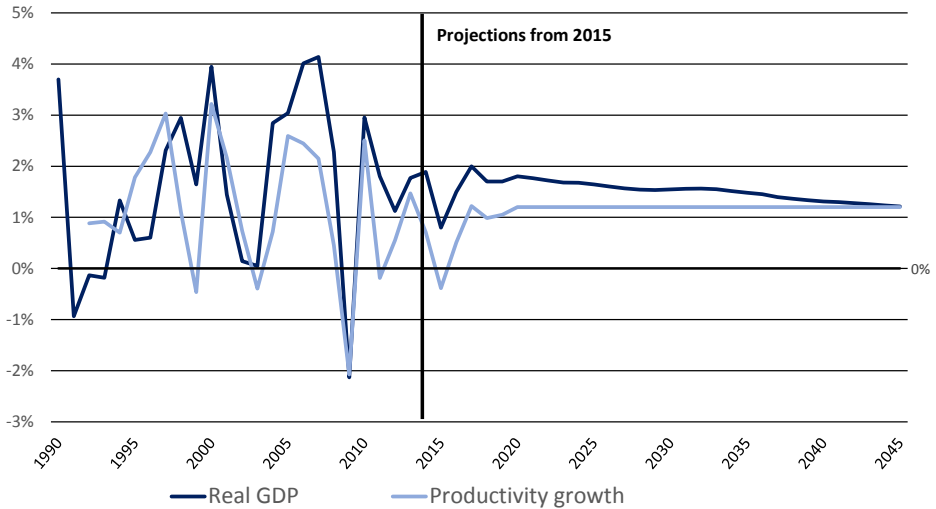
Real GDP growth is generated by increases in the labour force (expressed as FTEs) and in productivity. Average economic growth in the baseline scenario up to 2030 amounts to 1.6%, falling to 1.4% after 2030. Figure 5 shows how the declining labour supply takes long-term economic growth in the baseline scenario close to the annual 1.2% increase in productivity. For the baseline scenario, it is assumed that labour productivity up to 2045 will develop much as it has in the past.

Between 1992 and 2014, average annual productivity growth in Switzerland amounted to 1.2%. In order to factor in the uncertainty that surrounds such assumptions, scenarios have been drawn up involving pessimistic (0.9%) and optimistic (1.5%) assumptions of future productivity advances.

The assumption of 1.5% for the real long-term interest rate appears plausible in view of both the recent development of ten-year Confedera-

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10 An overview of analyses of the development of labour productivity in Switzerland can be found in sources such as Colombier (2014) and issue 1-2/2016 of "Die Volkswirtschaft" published by the State Secretariat for Economic Affairs.

tion bonds (1995-2015: average nominal yield 2.5%) and recent reports commissioned by the Federal Social Insurance Office (FSIO) and the Federal Department of the Environment, Transport, Energy and Communications (DETEC). In order to reflect the current low interest rate environment, it has additionally been assumed that the interest rate of 1.5% will not be achieved until 2020. In other words, a transitional period is hypothesised.

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

Annual inflation of 1% is assumed for the receipt and expenditure projections. As this assumption does not have a substantial impact on fiscal gaps or expenditure ratios, separate scenarios are not calculated.

Labour productivity, real interest rates and inflation are determined exogenously. 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 the implications of a declining labour force and thus a fall in labour supply on productivity and wage development.

2.3   Other trends

This paper seeks only to quantify the financial implications of demographic change and healthcare trends. However, there are other trends that can have an impact on the public finances, such as the consequences of climate change. Due to a lack of data, it is very difficult to make figure-based statements on the repercussions of developments in these areas for macroeconomic production and the different expenditure areas. However, considerations of a qualitative nature can be formulated (see box).

Box: Climate change

Climate change implies not only a rise in temperature, but also an increase in the frequency of extreme weather events. Estimates exist concerning the impact of climate change on the Swiss economy.[11] However, they are shrouded in uncertainty. Moreover, the impact for the public finances has not yet been evaluated for Switzerland.[12] Nevertheless, an impact can be expected via the following channels:

• Prevention of climate change
– Public sector expenditure to examine the phenomenon of climate change
– Public sector expenditure to reduce greenhouse gas emissions
– Purchase of foreign certificates to achieve the objectives concerning CO_2 emissions

• Damage remediation and adaptation
– Public sector expenditure to protect villages, infrastructures, ecosystems, etc. against the growing dangers caused by climate change
– Repair of the damage that could not be avoided (e.g. reconstruction of transport infrastructure destroyed by a landslide)

• International commitment
  Contributions to international climate funds and assistance for countries affected by climate change (including the hosting of climate refugees)

• Impact on receipts
– Reducing greenhouse gas emissions implies a reduction in the consumption of fossil fuels; this leads to a decline in mineral oil tax receipts
– Insofar as it hampers GDP growth, for example via a reduction in exports to countries impoverished by climate change, climate change will adversely affect the tax base and thus public sector revenue
– Insofar as climate change brings about innovations in the area of green technologies, this economic sector's growth could partly offset the decline in tax receipts

Climate change will thus have a negative impact on public finances by tending to increase expenditure and reduce receipts. If this expenditure is preventive in nature, it will make it possible to avoid even greater expenditure.

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11 See for example DETEC (2007) and OcCC (2007). A new study on the economic costs of climate change is currently being drawn up by the Swiss Federal Institute of Technology Lausanne (EPFL).

12 In contrast, Infras and Ecologic (2009) are examining the impact for Germany's public finances.

3   Methodology

3.1   Indicators

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. In addition, it is highlighted how the disposable income per capita of the Swiss population develops on average if demographic-dependent additional expenditure of the state is financed by additional taxes and contributions in such a way that the sustainability of the public finances can be assured.

3.1.1.   Expenditure ratio and general government expenditure ratio

The expenditure of the Confedera-tion, cantons, communes and social security funds, which is directly affected by demographic develop-ments in areas such as AHV/IV and healthcare, will increase in the future as a result of the ageing of the Swiss population (see section Fehler! Verweisquelle konnte nicht gefunden werden.). In order to be able to assess the additional burden on the economy, this demographic-de-pendent expenditure is expressed as a proportion of national income (GDP). An increase in the expenditure ratio indicates what percentage of its annual income Switzerland would have to spend in order to finance the demographic-dependent additional burden. The general government expenditure ratio expresses overall government spending as a propor-tion of GDP.[13]

3.1.2.   Fiscal gap

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

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13 General government expenditure includes transfers, e.g. social security benefits, which are not taken into account in GDP. A general government expenditure ratio of 100% of GDP therefore does not mean that the state is spending 100% of GDP (see Colombier, 2005).

already considered too high. Because economic theory cannot define a priori an optimum debt level, financial sustainability generally has to be defined with respect to a certain target value. This target value may seek to maintain the status quo (with no increase in the debt ratio in the given period), or it may be a specific debt ratio.[14,15] 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 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 period. The fiscal gap does not indicate whether the correction should be made in the form or receipts or expenditure.[16] If, for example, the fiscal gap for a time

horizon up to 2045 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 2045.

Note that the debt level may fluctuate substantially within the given period: surpluses tend to be built up and debt lowered at the start, while demographic-related deficits subsequently push debt 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 2045. The baseline years[17] are thus adjusted for short-term economic fluctuations. Correspondingly, the receipts from 2014 to 2019 are adjusted for cyclical fluctuations using the cyclical factor (output gap) also used for the

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

15 It is also conceivable for the target value to be defined on the basis of fiscal policy rules such as the debt brake. In this case, the target would be a stabilisation of nominal debt. However, the crucial and typically applied criterion for the sustainability of the public finances is the stabilisation of the debt ratio.

16 The equation used for calculating the fiscal gap is given in Annex 1.

17 2013 in general; for the Confederation, the figures from the legislature financial plan 2017–19 apply.

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 3.2% (so-called natural rate).

3.1.3. Disposable income

In order to show how the state's demographic-dependent additional expenditure has an impact on the financial situation on the population, the development of GDP per capita, i.e. the average income of each Swiss resident, is displayed after deduction of taxes, social security contributions and compulsory health insurance premiums.[18] Where future development is concerned, it is assumed that general government receipts will have to be increased – in response to the demographic-dependent additional costs of retirement provision, healthcare, long-term care and education – in such a way that the state can stabilise the debt ratio at the level of the baseline year of 2013, i.e. at 35% of GDP. This scenario assumes that the public finances are financially sustainable,

which means that there is no fiscal gap. Disposable per capita income defined in this way is inflation-adjusted. If inflation-adjusted disposable income per capita rises in the future, this means the prosperity of the individual continues to rise, despite demographic-dependent additional expenditure.

3.2. Projected expenditure and receipt

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.[19] The results are therefore comparable. The calculations for the Confederation are based on the figures from the 2017–2019 legislature financial plan and data from the FSIO for old-age and survivors' insurance and disability insurance. This report on long-term sustainability also takes account of the implementation of the 2020 retirement provision in accordance with the Federal Council's proposals. The legislature financial plan by contrast is based on

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18 As occupational benefits are not addressed as part of this report, pillar 2 salary contributions are not factored into calculations.

19 See European Commission (2016)

the version drawn up by the Council of States. In particular, the financial statistics for 2013 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 and survivors' insurance (AHV), disability insurance (IV), healthcare and long-term care, and education. Together, these account for some 39% of total expenditure for the Confederation, around 47% for the cantons and around 31% for the communes.

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

For old-age and survivors' 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 and survivors' insurance and the Confederation's contribution to AHV expenditure.

Where the long-term outlook for old-age and survivors' insurance is concerned, the repercussions of the 2020 retirement provision reform have been taken into consideration. The basis here is the AHV reform proposed by the Federal Council in the context of the 2020 retirement provision reform initiative. This envisages VAT being increased by 1 percentage point in 2019 and a further 0.5 percentage points in 2027, with the proceeds being allocated to AHV in both cases. The Confederation's AHV contribution will be reduced from 19.55% to 18%. Moreover, the existing percentage point of VAT that is

earmarked for demographic-related change is to be allocated 100% to AHV rather than 83%, as has been the case up until now. To ensure the sustainability of the AHV system, the Federal Council is also proposing an intervention mechanism that is designed to ensure the AHV compensation fund does not fall below 70% of one year's annual expenditure.[20] The benefits side comprises the following measures:

– Increase in the reference age for women from 64 to 65 years.
– Restriction of the claim to a pension for widows and reduction in widows' pensions
– Equal treatment of self-employed persons and employees.
– Flexible design of retirement between 60 to 70, with the corresponding increases and reductions, as well as facilitation of flexible early drawing of a pension in the case of longer contribution periods and low incomes. In the case of the extension of working life beyond the reference age, additional AHV contributions can be paid up to the maximum pension amount.

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. Effective since 2014, this support is no longer based on disability insurance expenditure, but rather on the development of VAT receipts.[21] 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 the 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.

For the AHV and IV supplementary benefits, it is assumed that these evolve at the same rate as AHV and IV expenditure. This does not include AHV supplementary benefits for individuals in nursing homes funded by the cantons. It is assumed that these supplementary benefits grow

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20 As the AHV intervention mechanism is designed to secure the sustainability of the AHV on an a priori basis, this is not factored into the present calculations on the sustainability of the AHV system (see in this respect the comments on the debt brake in Chapter 1).

21 Adjusted for changes to the tax rates and assessment basis

in proportion to care expenditure; they are thus classified under public expenditure on long-term care.

In the area of **healthcare** the projections involve two stages, whereby these are based on an internationally recognised methodology. In a first step, overall healthcare expenditure is extrapolated from the baseline year of 2013 up to 2045 in keeping with assumed population development, broken down by age cohort, gender and healthcare services. Based on the projected overall healthcare expenditure, a second step then involves making projections for public expenditure on health, whereby expenditure on individual premium reductions and AHV supplementary benefits, which are assigned to social welfare in the public finances, are likewise factored into the calculations. In keeping with OECD and European Commission studies, a distinction is made between the area of healthcare expenditure excluding long-term care, and the area of long-term care itself (from the age of 65), as the development of expenditure in these areas is influenced by the cost drivers that apply in healthcare to different degrees.

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 2024. These projections have been extrapolated to 2045, assuming the same proportion of schoolchildren and students per cohort.

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 is 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. Here, it is assumed that the structural unemployment rate remains stable at 3.2%, so that unemployment insurance remains balanced over the long term.

3.2.3. Receipts

It is generally assumed that the receipt ratio remains constant under the general assumption of no policy change. Correspondingly, receipts increase in line with nominal GDP for the three levels of government. However, there are two deviations from this rule in this report. Firstly, federal AHV contributions rise in line with AHV expenditure. Secondly, the AHV supplementary financing as envisaged by Federal Council, involving a 1.5 percentage point increase in VAT, has been factored into the calculations.

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 in accordance with the debt brake.

3.2.4. Interest-dependent expenditure and receipts

For expenditure on interest payable, a nominal long-term interest rate of 2.5% and a short-term rate of 1.5% are used. Furthermore, it is assumed that 80% of debt arises from long-term liabilities and 20% from short-term liabilities. For the cantons' interest payments, an interest premium of 0.3 percentage points is assumed on the basis of past data. An interest premium of 1 percentage point is assumed for the communes. In addition, it is assumed – in view of the current low interest rate environment – that interest rates will not return to their "natural" level until 2020 onwards.[22]

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22 With interest rates at their "natural" level, the economy is in equilibrium and the level of prices stable. For the purposes of this study, the equilibrium rate of inflation is assumed to lie at 1%.

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   Alternative scenarios

The impact of key determining factors is estimated by using alternative scenarios. Firstly, the 1.2% growth in labour productivity in the baseline scenario is varied by +/-0.3 percentage points. This takes account of the fact that the future growth of labour productivity will depend on a number of factors that are difficult to predict, such as productivity boosts, innovation and structural change. Secondly, a scenario involving a higher net migration rate has been drawn up. This alternative scenario of the FSO (A-06-15) implies that the working-age population will grow more strongly (by an annual average of 1% up to 2030, relative to 0.7% in the baseline scenario). Where healthcare is concerned, the strong dependency on ageing, persistently high cost dynamism and the greater degree of uncertainty require separate scenario treatment for this special area (see section 5.1)

4   Results

4.1.   Development of the general government expenditure ratio

The development of the total expenditure of the Confederation, cantons, communes and social security funds up to 2045 as per the projections is shown below. For such a long projection period, a reference value is needed to gain a better estimate of the extent of expenditure development. Accordingly, all results are expressed as a proportion of cyclically adjusted national income (GDP). The expenditure of the Swiss state as a proportion of GDP is therefore likewise illustrated. A disproportionately high increase in expenditure relative to GDP means an increasing financial burden on public finances.

The general government expenditure ratio, which measures total general government expenditure as a proportion of nominal GDP, rises over the projection period from just under 32% in the baseline year to almost 34% in 2030 and 36% in 2045 (see Figure 6). The transfers between the different levels of government are netted off in the overall view, which is why the general government expenditure ratio works out less than the sum of the expenditure ratios of all levels of government. For example, the federal AHV contribution as a receipt on the social security side is offset by social security expenditure in the general government expenditure ratio calculations. By contrast, when calculating the expenditure ratios for the individual levels of government, the transfers between the different levels of government are doubly listed. In the mid-1990s, the general government expenditure ratio amounted to some 35% due to the phase of stagnation being experienced by the Swiss economy. This ratio has fallen since 2005, primarily as a result of strong economic growth and a revision of the financial statistics.

Figure 6:   *Development of general government expenditure in the past and in the baseline scenario (in % of GDP)*
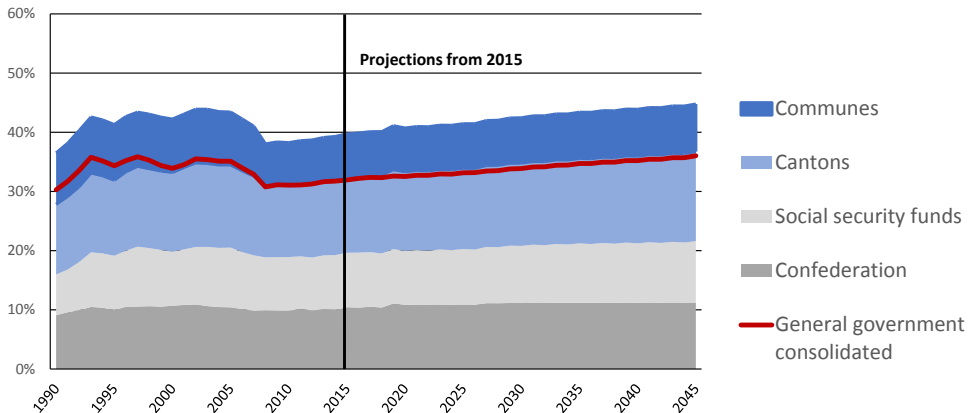
As a proportion of GDP, it is the expenditure of the cantons that rises most strongly. Cantonal expenditure increases by 2.4% of GDP over the projection period. In the case of the social security funds, expenditure rises by 1.2% of GDP, whereas the rise for the Confederation and the communes amounts to 0.9% of GDP in each case. The rise in the general government expenditure ratio is attributable primarily to developments in demographic-dependent expenditure; 3.5% of the 4.1% rise in this ratio over the projection period is attributable to demographic-dependent expenditure. The remaining rise in the general government expenditure ratio is attributable to the increase in interest expenditure.[23]

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23 For a detailed overview of expenditure by government level, see Annex 2, Table A1.

4.2. Demographic-dependent expenditure trend

4.2.1. Expenditure by function

Demographic-dependent expenditure is projected for the three levels of government – Confederation, cantons, communes – and for the social security funds (whereby the transfer payments from other levels of government are not included). A functional distinction is made between the areas of old-age and survivors' insurance/disability insurance, healthcare, long-term care and education. Figure 7 shows the change in demographic-dependent expenditure in these areas for the years 2030 and 2045 relative to the baseline year of 2013. According to the projections, demographic-dependent expenditure rises more sharply than national income in all areas in the baseline scenario. Just over a third (or some 37%) of the additional burden for the public finances is attributable to expenditure on old-age and survivors' insurance/disability insurance. Almost half of the rise in expenditure (45%) is accounted for by healthcare and long-term care, whereby expenditure rises rather more for the latter than the former. Education accounts for the remaining rise in expenditure.

Figure 7: Demographic-dependent expenditure by function (in % of GDP)
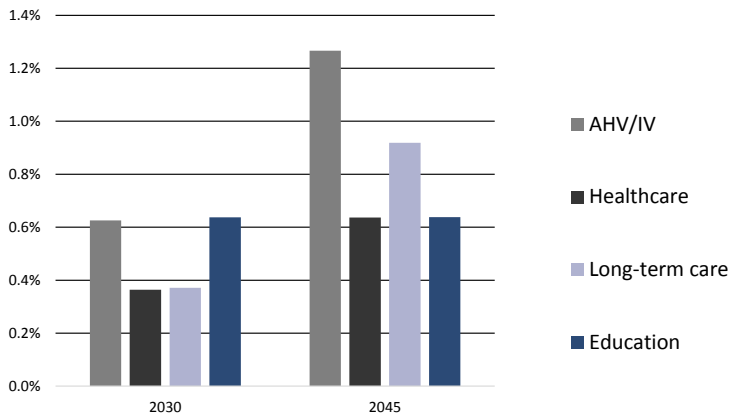
Table 2 shows demographic-dependent expenditure as a percentage of GDP for the years 2013, 2030 and 2045. Total demographic-dependent expenditure rises from 17.3% of GDP in 2013 to 19.3% of GDP in 2030, and to 20.8% of GDP in 2045. At today's prices, this additional government expenditure would amount to CHF 22 billion. The stronger rise in demographic-dependent expenditure up to 2030 (0.5% of GDP more than after 2030) is attributable to the fact that education expenditure remains stable after 2030.

The greatest rises in expenditure in Table 2 are those relating to old-age and survivors' insurance/disability insurance and long-term care. Above all, this is explained by the fact that the proportion of people aged 65 and over rises from 17% to 26% over the projection timeframe. In the case of old-age and survivors' insurance/disability insurance, which comprises AHV and IV expenditure, the rise in expenditure amounts to 1.3% of GDP. This rise is wholly attributable to AHV. Whereas AHV expenditure rises by 1.7% as a proportion of GDP, IV expenditure actually declines by some 0.4% of GDP. The decline in IV expenditure is

explained by the fact that the number of IV pensioners does not rise faster than the working-age population, while GDP rises more strongly than the working-age population as a result of hypoth-esised productivity advances. Moreover, IV pensions are updated only on the basis of the mixed index.[24]

Table 2:   *Demographic-dependent expenditure by function (in % of GDP)*

	2013	2030		2045	
	Ratio	**Ratio**	**Difference 2013–30**	**Ratio**	**Difference 2013–45**
AHV/IV	8.9	9.5	0.6	10.1	1.3
Healthcare	2.4	2.8	0.4	3.0	0.7
Long-term care	0.8	1.2	0.4	1.7	0.9
Education	5.3	5.9	0.6	5.9	0.6
Total	17.3	19.3	2.0	20.8	3.5

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24 Like AHV pensions, IV pensions are increased every two years in line with the arithmetic mean development of the Swiss Wage Index and the National Consumer Price Index.

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Expenditure on long-term care increases by 0.9% of GDP over the projection period. Indeed, as a proportion of GDP, expenditure on long-term care virtually doubles. In addition to the decline in fertility rates since the end of the 1960s, the increase in average life expectancy over the projection period – from today's 83 years to 88 years – results in an increase in the proportion of the population over 80 from 5% to 10%. This rise is particularly pronounced in the years from 2030 onwards, which is why the expenditure burden in the area of long-term care rises more strongly after 2030. In addition to the ageing of the population, long-term care expenditure is driven by wage development in particular. It is assumed that wages in the long-term care area grow in line with overall economic wage development, and therefore in line with productivity advances. As it is further assumed that no productivity advances are achievable in the field of labour-intensive care, wage increases lead to additional pressure on expenditure in the long-term care area (see section 5.1).

A significant rise in expenditure is also evident in healthcare (+0.7% of GDP). This is first and foremost explained by the income effect in healthcare. It is assumed that the increase in national income has a disproportionate effect on healthcare expenditure (income elasticity of 1.1). The assumed correlation between GDP and healthcare expenditure should on the one hand factor in demand-side cost drivers such as the increasing medical needs of the population, and on the other supply-side cost drivers such as advances in medical technology.[25]

Education expenditure increases by around 0.6% of GDP between 2013 and 2030, but remains constant as a proportion of GDP in the following years up to 2045. This trend is explained primarily by the declining numbers of pupils at primary school level from 2035 onwards. As a result, total pupil and student numbers are no longer on the rise after 2040.

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25 For a detailed explanation of the income effect and the "Baumol" effect, see section 5.1.

4.2.2 Expenditure by government level

In a next step, the demographic-dependent expenditure is broken down by government level (see Table 3). This shows that the cantons bear the greatest burden of demographic-dependent expenditure when expressed as a proportion of GDP (+1.4%). The pressure on cantonal expenditure up to 2030 is divided almost equally between healthcare, long-term care and education. After 2030, it is primarily long-term care and (to a rather lesser extent) healthcare that are responsible for the rise in expenditure. In the long-term care area, expenditure as a proportion of GDP rises almost twice as strongly after 2030 as it does prior to 2030 (just under 0.4% of GDP vs. 0.2% of GDP).

Table 3: Demographic-dependent expenditure by government level (in % of GDP)

	2013	2030				2045			
	Ratio (in % GDP)	Ratio (in % GDP)	Sensitivity analyses			Ratio (in % GDP)	Sensitivity analyses		
			Productivity		Migration		Productivity		Migration
			-0.3	+0.3	A-06-2015		-0.3	+0.3	A-06-2015
Confederation	3.9	4.7	+0.0	-0.0	-0.1	4.9	+0.1	-0.1	-0.1
Social security funds	5.4	5.5	0.1	-0.1	-0.2	6.1	+0.2	-0.2	-0.4
Cantons	5.9	6.7	-0.1	+0.1	-0.1	7.3	-0.1	+0.1	-0.2
Communes	2.2	2.5	-0.0	+0.0	-0.0	2.6	-0.0	+0.0	-0.0
Total	17.3	19.3	+0.0	-0.1	-0.4	20.8	+0.2	-0.2	-0.7

After the cantons, it is the Confederation that exhibits the greatest rise in demographic-dependent expenditure (+1.0% of GDP). Here, the rise in expenditure is greater before 2030 than it is after 2030 (0.8% vs. 0.2%). Up until 2030, increases in federal expenditure will be driven predominantly by AHV/IV, and to a lesser extent by education and healthcare. After 2030, the rise in expenditure is divided almost equally between AHV/IV and healthcare. AHV/IV expenditure accounts for 0.5% of the additional expenditure burden for the Confederation up to 2030, and for 0.1% thereafter.[26] The considerable rise in AHV/IV expenditure up to 2030 is attributable to the fact that the planned supplementary financing, namely 1.5 percentage points of VAT in accordance with the 2020 retirement provision reform, is to be recognised as federal expenditure. With the discontinuation of the 0.4 percentage points of VAT for IV

at the end of 2017 and the additional 0.17 percentage points from the 1 percentage point of VAT earmarked for demographic change, the result is a net increase of around 1.27 percentage points of VAT.[27] Expressed as a proportion of GDP, this equates to an increase of 0.5%. The envisaged reduction in the federal AHV contribution, bringing it from 19.55% to 18% in 2019 in accordance with the Federal Council's proposal, will relieve the burden on federal expenditure only slightly, namely by some 0.1% of GDP.

The demographic-dependent expenditure of the social security funds rises by 0.7% of GDP by 2045. This rise is wholly attributable to AHV expenditure, which rises by 0.9% of GDP. By contrast, the IV expenditure of the social security funds declines by 0.2% of GDP. In contrast to the situation that applies with the

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26 The Confederation's AHV/IV contributions and the supplementary AHV financing via VAT is recognised as federal expenditure from an accounting perspective. As the expenditure set out in Table 3 contains no transfer payments from other levels of government, the expenditure of the social security funds has been offset against the federal AHV/IV contributions and the receipts from the supplementary VAT financing.

27 Under the existing mechanism, the 1 percentage point of VAT levied to cover the costs of demographic change since 1999 has been allocated 83% to AHV and 17% to the federal coffers. According to the Federal Council's 2020 retirement provision reform proposal, the income from the 1 percentage point of VAT earmarked for demographic change is to be fully credited to AHV from 2019 (see section 3.2.1).

Confederation, the AHV burden for the social security funds rises above all after 2030. Whereas AHV expenditure rises by just 0.2% of GDP by 2030, it rises by 0.7% of GDP in the 15 years that follow. The higher level of federal transfers as a result of the supplementary VAT financing for AHV significantly curbs the rise in social security expenditure up to 2030. In addition, the measures on the benefits side envisaged by the Federal Council as part of the 2020 retirement provision reform – the increase in the retirement age for women and the adjustments to widows' pensions – hold back expenditure growth up to 2030. After 2030, the rise in AHV expenditure is more pronounced than it is prior to 2030. Firstly, federal AHV transfers no longer rise. Secondly, the next few years will gradually see the baby-boom generation start to retire, and the burden of this phenomenon on the AHV system will be fully felt only from 2030 onwards. Thirdly, according to the FSO, the net migration rate declines after 2030 from 60,000 to 30,000 persons within the space of ten years. As a result, there is a decline in new additions to the working-age population after 2030, and its proportion of the population as a whole therefore declines too. The declining proportion of the working-age population also leads to a deterioration in the financial situation of the AHV.

Of the different levels of government, it is the communes that face the lowest additional expenditure (+0.4% of GDP). Up to 2030, the rise in expenditure at commune level is driven primarily by education (+0.2% of GDP). Here, education expenditure rises above all due to primary and secondary school developments. Education expenditure peaks at the beginning of the 2030s. Thereafter, it remains constant as a proportion of GDP. Aside from education, the expenditure of the communes is significantly affected by long-term care. Whereas this plays rather a subordinated role up to 2030, it becomes the sole driver of costs for the communes after 2030 (+0.1% of GDP both before and after 2030).

4.2.3. Repercussions of productivity advances and migration

It is clear that productivity and migration assumptions have significant repercussions for the projections. If a higher (lower) level of productivity is assumed than in the baseline scenario, the expenditure burden falls (rises) for the Confederation and the social security funds (see Table 3). This is attributable to the

fact that, due to their coupling to the mixed index, AHV/IV pensions rise less strongly than wages, which develop in step with productivity advances. In the case of the cantons and the communes, the indicated direction in the sensitivity analyses for productivity is the inverse of that in the case of the Confederation and the social security funds. The slight increase in the financial burden of the cantons and the communes in the event of higher productivity can be explained by cost pressure in healthcare and developments in education. According to the calculations of this report, higher growth in productivity goes hand in hand with higher wage growth. As a result of the hypothesised income effect, higher per capita income results in a disproportionate increase in demand for healthcare services.

Higher migration has the effect of reducing the expenditure burden across all government levels. In an almost symmetrical way, lower migration would lead to a greater increase in government expenditure. The change in demographic-dependent expenditure makes it clear that the migration assumptions in the baseline scenario have a far from negligible impact on the projections. The considerable impact of migration manifests itself by virtue of the fact that, in the event of higher migration, the annual growth in the working-age population is higher than in the baseline scenario (0.6% vs. 0.4%) due to the high proportion of immigrants who are below the age of 35. As a result, the old-age dependency ratio declines, while the receipts situation of the social security funds simultaneously improves. Healthcare and long-term care expenditure, which are the responsibility of the cantons, do not rise in line with the growth in the working-age population due to the predominantly young (and therefore relatively healthy) immigrant community. By contrast, lower migration would lead to an exacerbation of the financial situation of the cantons, which already face a significant burden. Unlike higher productivity, higher migration does not lead to a rise in the costs of long-term care and healthcare for the cantons and the communes. This is explained by the fact that while the higher net migration rate leads to growth in the working-age population and therefore a rise in national income, it does not lead to a rise in per capita income, which is decisive for additional demand for healthcare services and wage development in long-term care.

4.2.4. Conclusion

To conclude, it may be said that demographic-dependent expenditure will increase strongly over the next 30 years. There is a need for corrective adjustment above all in the case of the cantons and the communes, which are responsible for long-term care and healthcare. The Federal Council's 2020 retirement provision reform proposal will ensure the financing of the AHV system up to 2030. Further AHV reforms will be necessary for the period after 2030, however.

4.3. Debt ratio and fiscal gap

Given the assumptions made, namely "no policy change" and implementation of the 2020 retirement provision reform, demographic-dependent expenditure increases significantly in the projection timeframe (see section 4.1). If an increase in the debt ratio is to be prevented, the increased expenditure will have to be financed through higher taxes or social security contributions, or through savings measures. In the absence of these budget-equalising measures, the debt ratio of the general government sector would rise from

35% to 59% over the projection timeframe. As Figure 8 makes clear, the debt ratios for the various levels of government develop in very different ways. Whereas the debt ratios of the Confederation and social security funds decline over the projection period, and social security funds even accumulate assets, a strong rise in debt is apparent for the cantons and the communes. This rise in debt is explained by the fact that the cantons and the communes are almost entirely responsible for the two areas of expenditure that develop with particular dynamism – long-term care and healthcare. The significant decline in the debt ratios of the Confederation and the social security funds over the projection period is due on the one hand to the 2020 retirement provision reform and on the other to the decline in IV expenditure. In the case of the Confederation, the solid financial position at the start of the projection period is another contributory factor. However, the AHV and IV funds move in opposite directions from the end of the 2020s onwards. The assets of the AHV fund start to decline continuously, whereas the assets of the IV fund rise continuously.

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Figure 8:   Debt ratio by government level (in % of GDP)
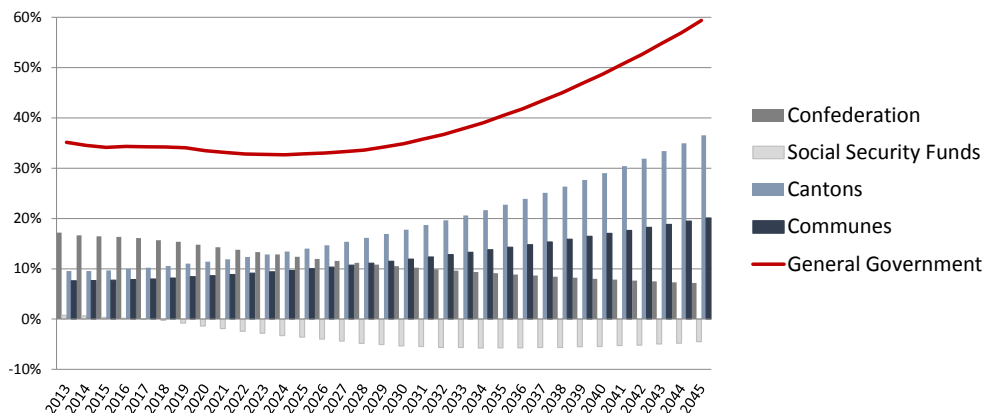
Table 4:   Debt ratio by government level (in % of GDP)

	2013	2030				2045			
	Ratio	**Ratio**	**Sensitivity analyses** (change in % points)			**Ratio**	**Sensitivity analyses** (change in % points)		
	(in % GDP)	(in % GDP)	Productivity -0.3	+0.3	Migration A-06-2015	(in % GDP)	Productivity -0.3	+0.3	Migration A-06-2015
Confederation	17.2	10.5	+0.7	-0.6	-0.9	7.2	+2.1	-1.7	-2.7
Social security funds	0.7	-5.3	+0.5	-0.5	-1.1	-4.5	+2.6	-2.5	-5.4
Cantons	9.6	17.8	-0.4	+0.4	-0.5	36.5	-0.0	+0.2	-2.9
Communes	7.6	11.9	-0.2	+0.2	-0.2	20.1	-0.0	+0.0	-0.6
Total	35.1	34.9	+0.6	-0.6	-2.6	59.4	+4.6	-3.9	-11.5

The sensitivity analyses show that a change in productivity advances and migration have clear repercussions for the increase in the debt ratio (see Table 4). This in turn allows us to establish that the development of the debt ratios reflects the development of demographic-dependent expenditure (see section 4.2, Table 3). However, the debt ratios react even more sensitively to changes in productivity and migration assumptions. Given the status quo in all other areas, the state would have to take on additional debt if it had to finance additional expenditure as a proportion of GDP, e.g. if net immigration were to prove lower. This would have the effect of increasing the general government's interest burden, which has a considerable impact on indebtedness as a result of the compound interest effect.

The fiscal gap calculated in this long-term sustainability outlook amounts to 0.9% of GDP for the years 2020 to 2045 (see Table 5). This means that from 2020, 0.9% of GDP would have to be saved in the budget every year (or raised from elsewhere) in order to stabilise the debt ratio at the 2013 level. The fiscal gaps for the cantons and communes amount to 1.1% and 0.5% of GDP, respectively, revealing that the sustainability of cantonal and communal finances is in jeopardy. By contrast, the Confederation and the social security funds have negative fiscal gaps. The social security funds are deemed to be sustainable if the two separate elements (AHV and IV) are viewed as sustainable as a whole. As already mentioned, the strong position of the social security funds is attributable not just to measures under the 2020 retirement provision reform, but also to the decline in disability expenditure and the associated significant capital accumulation of the IV fund. However, it should not be forgotten that further measures will be necessary in the AHV sphere after 2030 in order to secure sustainability of the AHV finances. Like the debt ratio, the fiscal gap reacts more strongly to a change in net immigration than it does to a change in the rate of productivity growth.

Table 5:   *Fiscal gaps (in % of GDP)*

| | **Fiscal gap** | **Sensitivity analyses** (change) | | Migration |
| | | Productivity | | Migration |
		-0.3	+0.3	A-06-2015
Confederation	-0.4	+0.1	-0.1	-0.1
Social security funds	-0.2	+0.1	-0.1	-0.2
Cantons	1.1	-0.0	+0.0	-0.1
Communes	0.5	-0.0	+0.0	-0.0
Total	0.9	+0.1	-0.1	-0.5

Annual consolidation requirement 2020–2045

4.4. Disposable income in the event of closure of the fiscal gap

The disposable income per capita of the Swiss population is used to show how strong the additional burden is felt on average by Swiss residents if the debt ratio of the general government is stabilised at its current level, with the additional demo-graphic-dependent expenditure financed through higher taxes and social security contributions. For the purposes of this report, disposable per capita income is displayed as the inflation-adjusted average income per capita after deduction of taxes, social security contributions and compulsory health insurance premiums (see section 3.1.3).

As a result of the assumed annual productivity advances of 1.2% on average, disposable per capita income rises further. Indeed, the projected annual rise between 2013 and 2045 (0.6%) is actually higher than for the period 1990 to 2013 (0.4%). This is attributable to Switzerland's weak growth during the long period of stagnation in the first half of the 1990s. Between 1996 and 2013, disposable income rose by 1.0% as an annual average.

Figure 9:   *Disposable income per capita, 1990–2013 and baseline scenario (at 2013 prices)*
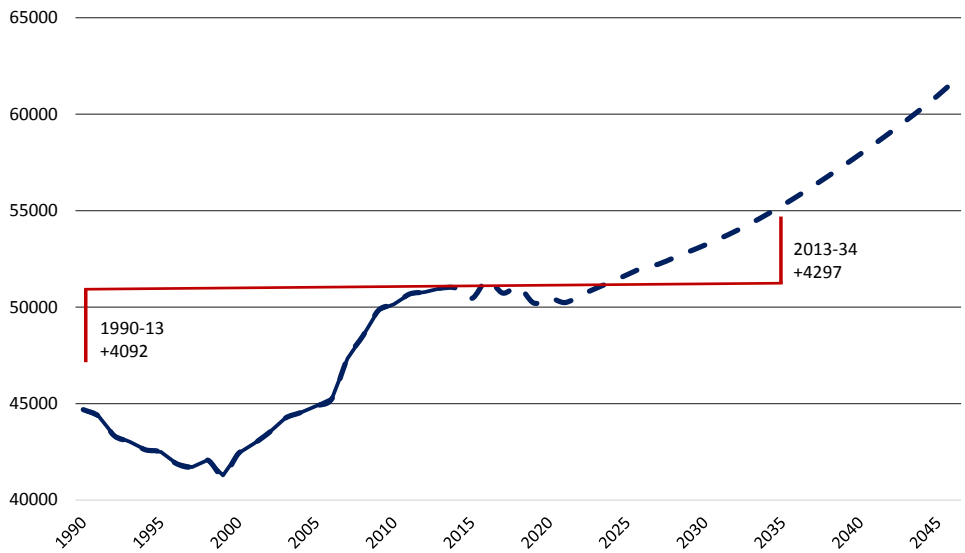
Figure 9 makes it clear that, according to the baseline scenario, disposable per capita income rises by CHF 4,297 between 2013 and 2034. In other words, average disposable per capita income will not grow more slowly than in the past (CHF 4,092 between 1990 and 2013) despite the additional burden of demographic development. Disposable per capita income rises from almost CHF 51,000 to just over CHF 61,000 by 2045. However, it should be borne in mind that this projection assumes that non-demographic general government expenditure only rises in line with GDP. This assumption was not true in the past. Also not factored into the projections are cyclical movements in disposable income such as those evident for the period 1990 to 2013. As can be gleaned from Figure 9, these can have a strong impact on the development of disposable income.

Figure 10:   *Disposable income per capita in various scenarios, 2013–2045 (at 2013 prices)*
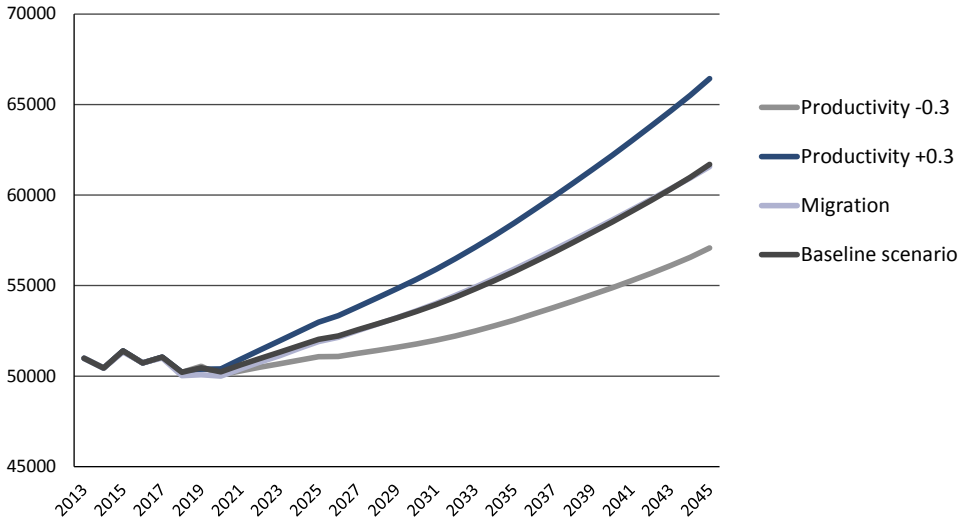
Disposable per capita income reacts strongly to a change in productivity growth, but virtually not at all to a change in net immigration (see Figure 10). For example, higher productivity growth means that higher value creation is achieved per capita, which causes average income to rise more strongly up to 2045 than in the baseline scenario: disposable per capita income rises to CHF 66,000 rather than CHF 61,000. The opposite is true in the event of lower productivity growth. Here, disposable capita income works out at CHF 57,000 rather than CHF 61,000 under the baseline scenario. Although higher net migration means a greater pool of available labour and therefore also higher value creation, the extra value added has to be divided between people. Accordingly, income per capita and general government receipts per capita change only modestly vis-à-vis the baseline scenario in our calcula-

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tions. Furthermore, in the migration scenario there is an annual increase (relative to the baseline scenario) of 3,700 persons in the immigration age brackets that are largely excluded from the working population, namely the under 19-year-olds and the over 65-year-olds, so that per capita income actually works out slightly lower. On the other hand, this is offset by the fact that per capita income in the migration scenario is not weighed down by a negative fiscal gap, in contrast to the baseline scenario. Disposable per capita income is therefore virtually unchanged in the migration scenario.

In summary, it may be concluded that the Swiss population will experience a significant increase in its prosperity, despite the growing financial burden of demographic developments. Greater productivity advances would facilitate greater prosperity and weaken the negative financial impact of an ageing population.

5   In focus: healthcare and long-term care

Healthcare expenditure will be heavily influenced by demographic factors. Given the ageing of the Swiss population that is foreseeable from today's standpoint, the healthcare system will come under increasing pressure over the next few decades. Moreover, healthcare expenditure affects all three levels of government, as well as compulsory health insurance premiums. Developments in this area will also be affected by a large number of players, as well as by complex interrelationships. Where non-demographic factors are concerned too, there is great uncertainty in the healthcare area over the channels of influence for the development of expenditure.

5.1.   Cost drivers and scenarios in healthcare

In addition to the immediate repercussions of demographic change for healthcare expenditure, the aim is to highlight those effects that can have an expenditure impact as a result of a change in the health situation (morbidity) of an ageing population. Here, the question arises as to whether the morbidity of the population changes in keeping with increasing life expectancy. As there are no clear empirical findings to draw on in this respect, scenarios

and hypotheses involving different assumptions regarding the change in morbidity are put forward, which are explained in more detail below.

Aside from the effects of demographic change, the projections should also demonstrate the effects of important non-demographic cost drivers.

The first non-demographic factor to be taken into consideration is the empirically observable relationship between national income development and healthcare expenditure growth. In the past, the latter grew disproportionately to national income. This relationship covers both supply-side and demand-side effects, such as the degree to which the population uses healthcare services and advances in medical technology.

The second factor concerns productivity development in healthcare. This is difficult to measure empirically, and may indeed differ from area to area. For example, productivity advances in labour-intensive long-term care may be minimal, whereas in the more capital-intensive and technology-intensive hospital sector, productivity gains could reasonably be expected. Lower productivity growth relative to the overall economy results in cost

pressure if healthcare wages keep step with wage growth in the remainder of the economy in the longer term. Given a relatively inelastic demand for healthcare services, healthcare prices accordingly rise more strongly than in the remaining economy. In the jargon of healthcare economics, this price effect is known as the "Baumol Effect". Significant importance is attached to this effect in the case of long-term care in particular.

In keeping with OECD and European Commission studies in this area, a distinction is made between the areas of healthcare expenditure excluding long-term care on the one hand, and long-term care itself (from the age of 65) on the other, as the various cost drivers that apply in healthcare are felt to a different extent in these areas.

For the aforementioned cost drivers, the following assumptions and scenarios have been arrived at for the projections of healthcare expenditure excluding long-term care, with a view to taking account of the uncertainty of the significance of these cost drivers.

- **Reference scenario**: with respect to the change in morbidity for the healthcare area, it is assumed that

half of the extra years gained by the individual are spent in a good state of health. In addition, the increase in national income has a disproportionately high impact on the increase in healthcare expenditure through demand and supply-side effects. An income elasticity of 1.1 is assumed. The Baumol effect is not factored into considerations. Population growth is extrapolated in accordance with scenario A-00-2015 of the Federal Statistical Office.

- In the **pure ageing** scenario, it is assumed instead that the population spends its additional years of life in a poor state of health (extension of morbidity).

- In the **healthy ageing** scenario, the population spends the extra years of life gained in good health (relative decrease in morbidity).

- **Migration scenario**: in contrast to the reference scenario, the migration scenario is based on population scenario A-06-2015, which anticipates higher net immigration than scenario A-00-2015. Due to the sharper increase in the working-age population, economic growth is stronger than in the reference scenario.

- **Baumol scenario**: unlike in the reference scenario, it is assumed that the Baumol effect manifests itself. Empirical estimates for Switzerland suggest that this effect only has a partial impact on healthcare (see Colombier, 2013). It is therefore assumed in the Baumol scenario that productivity advances in healthcare (excluding the long-term care area) are some 40% lower than in the economy as a whole.

- **Cost pressure scenario**: in this scenario, is it assumed that non-demographic cost determinants – such as advances in medical technology, an increase in doctor densities as a result of the incentives that exist in the healthcare system, and the increasing degree to which the population draws on healthcare services – trigger significantly stronger expenditure growth than in the reference scenario. This in turn translates into expenditure rising more strongly in the event of rising income. Based on the corresponding European Commission scenario, income inelasticity of 1.4 is assumed (see European Commission, 2015, p. 126).

In the area of long-term care, the same scenarios were constructed, with the exception of the Baumol and cost pressure scenarios. Just like healthcare excluding long-term care, the same assumption is made with respect to demographic development and morbidity, i.e. the need of the population for care. In addition, it is assumed in the equivalent scenarios for long-term care that no productivity gains are achievable and that the Baumol effect therefore manifests itself completely. By contrast, the income effect does not play a role, as the need for care is neither voluntary nor income-dependent.

5.2. Results

5.2.1. Total health expenditure

The projections for healthcare expenditure reveal that the development pattern of the past will continue. According to the reference scenario, expenditure will rise from 10.8% of GDP in 2013 to 14.0% of GDP in 2045 (see Figure 11). For the years 1995 to 2013, health expenditure rose from 8.7% of GDP to 10.8% of GDP (whereby GDP is cyclically adjusted). A distinction can be made between two different phases over this timeframe: Between 1995 and 2004, the healthcare

sector underwent a significant expansion. Expenditure on healthcare rose by 1.7% of GDP. Thereafter the proportion of GDP accounted for by healthcare expenditure actually declines, and not until 2012 does it rise back above the level it reached back in 2004. This development is attributable primarily to the fact that nominal economic growth between 2005 and 2013 (+3.0%) proved significantly higher than the average for the period 1995 to 2004 (+2.2%). At the same time, the average annual increase in healthcare expenditure slowed slightly from 4.0% to 3.5%. The latter develop-

ment is attributable to the fact that the momentum of expenditure growth for outpatient and inpatient healthcare services (excluding the long-term care area) slowed significantly, namely from 4.1% to 3.4%. By contrast, annual growth in expenditure on long-term care remained more or less unchanged at around 4.7%. Accordingly, the proportion of expenditure on long-term care as a total of healthcare expenditure increased from 13% to 15% between 2005 and 2013, whereas it rose just one percentage point between 1995 and 2004.
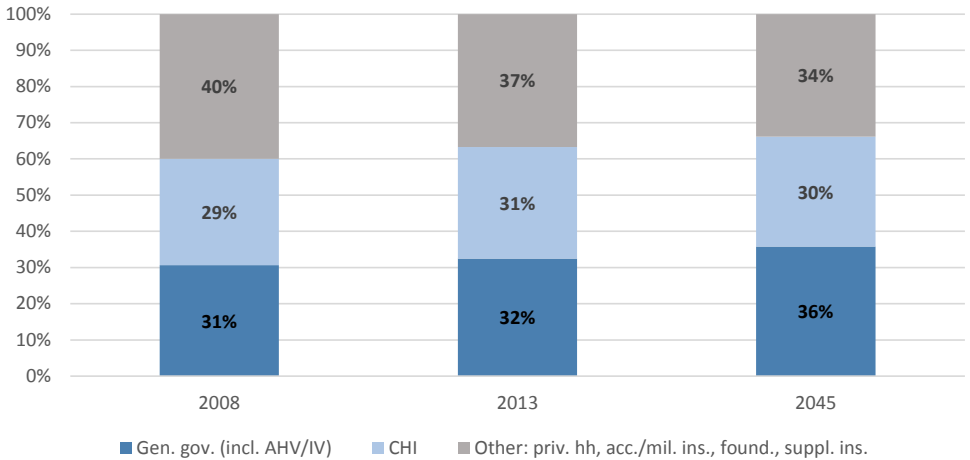
Figure 11:   *Healthcare expenditure by area from 1995 to 2013 and in the reference scenario (in % of GDP)*
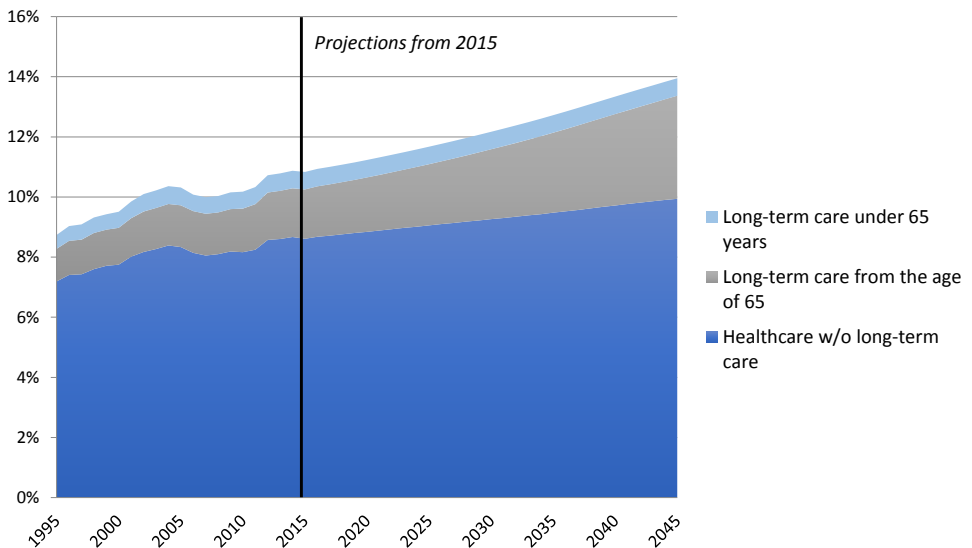
According to the reference scenario, the trend towards significantly higher expenditure growth for long-term care (from 65 years of age) than for healthcare excluding long-term care will continue in the future. Measured as a percentage of GDP, expenditure on long-term care (from the age of 65) more than doubles (rising from 1.6% to 3.4% of GDP), while healthcare expenditure rises from 8.5% to 9.9%. Two factors play a role here. On the one hand, the ageing of the population feeds through much more strongly in long-term care (75% of the rise in expenditure) than in the remaining healthcare area (60% of the rise in expenditure). On the other, expenditure on long-term care rises by 2.2% annually as a result of the non-demographic driver known as the Baumol effect, whereas expenditure on healthcare as a result of non-demographic cost determinants rises by only 1.9% or so.

Uncertainties concerning the future development of healthcare expenditure, particularly the effects of non-demographic cost drivers in the area of healthcare excluding long-term care and the development of morbidity, are reflected in a variation in the rise in expenditure of just over 2% of GDP between the various scenarios. In the most optimistic scenario, healthy ageing, healthcare expenditure is assumed to rise to only 13.1% of GDP by 2045, rather than the 14.0% hypothesised in the reference scenario. In the most pessimistic scenario, the Baumol scenario for healthcare (excluding long-term care) together with the reference scenario for long-term care, healthcare expenditure is assumed to rise to 15.2% of GDP by 2045.

Figure 12:   *Breakdown of expenditure by financing entity in 2008, 2013 and 2045 in the*
                 reference scenario (in %) [28]

The breakdown of healthcare expenditure by financing entity, namely general government, compulsory health insurance (CHI) and other in Figure 12, shows that the proportion of expenditure accounted for by compulsory health insurance premiums and the general government increased between

28 The year 2008 is used as the starting point for this chart, as it was at this point that a revision of the financial statistics caused a structural break in general government expenditure figures. Since 2008, the accounts of public hospitals have no longer been integrated into the national accounts of the cantons. Furthermore, the division of responsibilities between the Confederation and the cantons were changed in line following the introduction of the new system of fiscal equalization and division of tasks between the Confederation and the cantons in 2008. This has repercussions for AHV supplementary benefits in particular.

2008 and 2013.[29] Above all, this was attributable to healthcare reforms, namely the new hospital financing system ("Swiss DRG") and the new financing of long-term care, which were introduced in 2012 and 2011, respectively. According to the projections, general government healthcare expenditure also rises disproportionately to CHI expenditure. This is explained primarily by the fact that the proportion of expenditure accounted for by long-term care (from the age of 65) is significantly higher for the state in the baseline year 2013 (23%) than it is in the case of CHI (9%) and healthcare overall (15%). Below, we look at the projections for general government expenditure and CHI in more detail.

5.2.2. Public healthcare expenditure

Public healthcare expenditure encompasses all contributions made by the Confederation, cantons, communes and social security funds to the financing of the Swiss healthcare system. For each of the three levels of government, the expenditure figure in question is that contained under the "Health" section of the national financial statistics (FFA, 2015). These also include national transfers to private households designed to finance healthcare benefits, such as individual premium reductions and cantonal AHV supplementary benefits. In the case of the social security funds, the expenditure included in the calculations is that listed under the general government sector in the national accounts, as well as the general government's own contributions. The scope is therefore essentially restricted to AHV and IV.[30] Just like overall expenditure, public healthcare expenditure is broken down into the areas of healthcare excluding long-term care, and long-term care from the age of 65. More details on these areas are provided in sections 5.2.2.1 and 5.2.2.2. As IV expenditure impacts on the financing of long-term care below the age of 65, IV contributions to healthcare are

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29 For a detailed overview of expenditure development in the baseline scenario by healthcare area and financing entity, see Annex 3, Table A2.

30 Unlike the terminology of the Health Insurance Act, HInsA, (Art. 1 of the HInsA), individual premium reductions do not come under social security funds in accordance with the national accounts. Consequently, individual premium reductions are not subsumed into social security funds in this report.

extrapolated on the basis of projected IV expenditure development. Other public sector contributions to healthcare, such as preventive measures and administration, are extrapolated in line with GDP.

An overview of the breakdown of general government healthcare expenditure is provided in Figure 13.

Figure 13: *Breakdown of healthcare expenditure by function in 2013 and 2045 in the reference scenario (in %)*
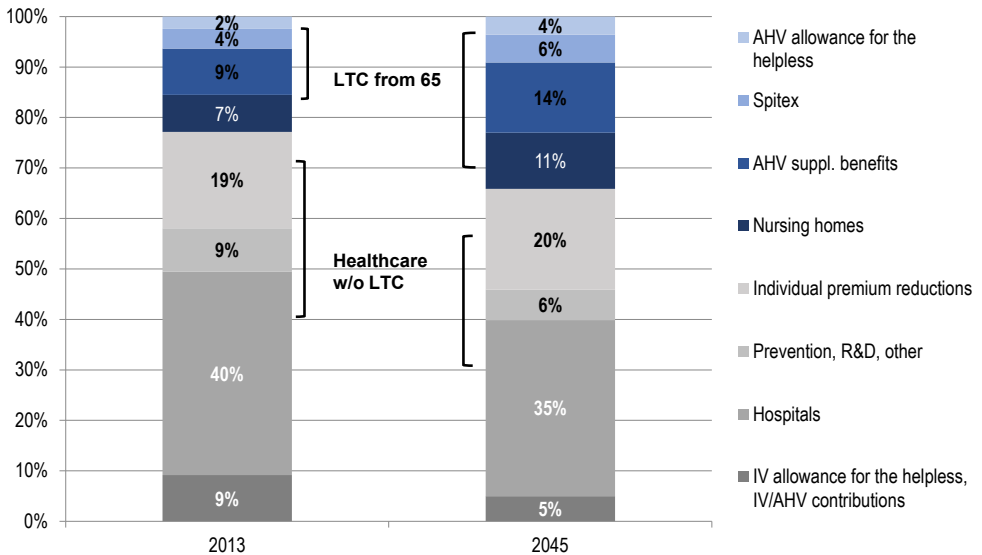
The public sector allocates the greatest proportion of healthcare expenditure to hospitals (40%), followed by individual premium reductions (19%), AHV supplementary benefits for long-term care (9%), nursing homes (7%), and the

relatively small share accounted for by Spitex (4%). The remaining contributions come from the social security funds and encompass the AHV allowance for the helpless (2%) and IV expenditure (IV allowance for the helpless, IV contributions, AHV

contributions) on healthcare (9%). A striking point to note according to the reference scenario is that in 2045 the public sector will have to spend a far greater proportion of its budget on long-term care from the age of 65. Instead of the current 23%, this area will account for 34% in 2045 according to projections.

Expenditure on long-term care rises by a good 4% annually on average (inflation-adjusted basis), whereas healthcare expenditure rises by only around 2.2% annually. Almost 90% of this difference can be explained by the differing impact of demographic developments in these two areas. Accordingly, the proportion of expenditure accounted for by healthcare excluding long-term care is lower in 2045, having declined from 66% to 66.1%. IV expenditure on healthcare falls from 9% to 5%.

According to the reference scenario, general government expenditure rises over the projection timeframe continuously, going from 3.5% of GDP to 4.2% of GDP in 2030, and up to 5.0% of GDP by 2045 (see Table 6). The lion's share of general government expenditure here is borne by the cantons, namely 68%. For example, a good two thirds of the increase in public healthcare spending up to 2045, or 1.1% of GDP, is shouldered by the cantons. Where the cantons are concerned, the proportions accounted for by hospitals (2013 share: 58%), AHV supplementary benefits (14%), individual premium reductions (12%) and nursing homes (5%) are of significance.

Table 6: *Public healthcare expenditure by government level in the reference scenario for 2013, 2030 and 2045 (in % of GDP)*

	2013	2030		2045	
	Ratio	Ratio	Difference 2013–2030	Ratio	Difference 2013–2045
Total healthcare	10.8	12.2	+1.4	14.0	+3.2
Gen. gov. (incl. soc. sec. inst.)*	3.5	4.2	+0.7	5.0	+1.5
Confederation	0.4	0.5	+0.1	0.5	+0.1
Cantons	2.4	2.9	+0.5	3.5	+1.1
Communes	0.3	0.4	+0.1	0.5	+0.2
Social security funds*	0.4	0.3	-0.0	0.4	+0.0
AHV helplessness alw.	0.1	0.1	+0.0	0.2	+0.1
IV helplessness alw./IV/AHV contrib.	0.3	0.2	-0.1	0.2	-0.1

* Social security funds include AHV contributions and AHV helplessness allowances, IV contributions and IV helplessness allowances

The remainder of healthcare expenditure is currently borne more or less equally by the Confederation, the communes and the social security funds. Following the cantons, the greatest increase in expenditure is exhibited by the communes, whose share in this area almost doubles by 2045 (rising from 0.3% to 0.5% of GDP). The strong increase in expenditure at commune level can be explained by the fact that more than half of healthcare expenditure is allocated to long-term care from the age of 65. At federal level, the increase as a proportion of GDP is equivalent to around a quarter, which is attributable to individual premium reductions. The expenditure of the social security funds remains stable as a proportion of GDP, as the increase in the AHV helplessness allowance is offset by the reduction in IV expenditure (long-term care below the age of 65).

Table 7 and Figure 14 show how public expenditure develops if the assumptions regarding net immigration (migration scenario), the development of morbidity (pure ageing and healthy ageing scenarios), the Baumol effect (Baumol scenario) and income effect (cost pressure scenario) are changed. The sensitivity analyses should give an impression of the uncertainty of the expenditure projections.

Table 7:   Public healthcare expenditure in various scenarios (in % of GDP)

Scenario	2013	2045	Difference vs. baseline
Baseline	3.5	5.0	
Migration	3.5	4.9	-0.1
Pure Ageing	3.5	5.4	0.4
Healthy Ageing	3.5	4.6	-0.4
Baumol	3.5	5.3	0.3
Cost pressure	3.5	5.2	0.2

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Figure 14: Public healthcare expenditure in various scenarios (in % of GDP)
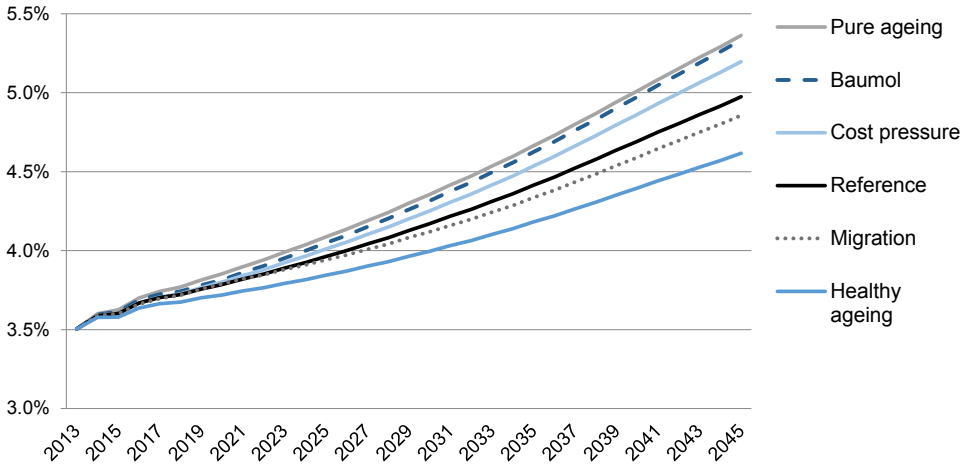
The greatest influence on the development of public healthcare expenditure is a change in the hypothesis regarding the relationship between the increasing life expectancy of the population and its state of health. If it is assumed that, although the population will be older in the future than it is today, it will be neither healthier nor less in need of care ("pure ageing" scenario), expenditure expressed as a percentage of GDP rises by almost a third relative to the reference scenario (+0.4% of GDP). By contrast, if the population lives out its additional years of life in good health and does not require care during these years ("healthy ageing"

scenario), the increase in expenditure is around a third lower than in the reference scenario (-0.4% of GDP). A higher net migration rate than in the reference scenario (migration scenario) has a slightly cost-restraining effect. Immigrants are predominantly of a working age, which has the effect of slowing the ageing of the population. Finally, general government expenditure as a proportion of GDP increases noticeably – by 20% and a good 10%, respectively – vis-à-vis the reference scenario if, for the healthcare excluding long-term care area, a partial Baumol effect is assumed (Baumol scenario) or greater cost pressure is assumed

from non-demographic cost drivers (cost pressure scenario) such as medical advances in terms of technology. It should be emphasised that the additional increase in expenditure in the Baumol and cost pressures scenarios relative to the reference scenario is exclusively incurred in the area of healthcare excluding long-term care.[31] Accordingly, expenditure on healthcare excluding long-term care rises most significantly in these two scenarios.

5.2.2.1. Healthcare excluding long-term care

Public healthcare expenditure excluding long-term care has been captured by taking the expenditure items listed in the "Health" section of the public financial statistics with the exception of the items "Convalescent and nursing home services" and "Outpatient care" (FFA, 2015). In addition, individual premium reduction (IPR) expenditure, which is included under the function "Social welfare" in the financial statistics, has also been taken into account. The inclusion of IPR is justified on the basis that this expenditure is heavily influenced by healthcare expenditure, particularly the area of health-

care excluding long-term care. For the sake of simplicity, IPR expenditure has been subsumed into national healthcare expenditure. Under this approach, the healthcare expenditure of the public sector now comprises three items: hospitals, IPR expenditure and other healthcare expenditure including preventive healthcare.

Public expenditure on hospitals is linked to the development of overall hospital expenditure, while other healthcare expenditure is linked to the development of nominal GDP. The development of IPR expenditure is dependent on the development of compulsory health insurance expenditure. For the sake of simplicity, it is assumed that the cantonal share of IPR expenditure, which currently lies at around 42%, amounts to 50% over the long term. In other words, the Confederation and cantons are each assumed to be financing half of IPR expenditure. This assumption has been made because the cantons have a greater degree of discretion when it comes to setting conditions for the granting of IPR benefits, which makes it difficult to arrive at a reliable forecast regarding the development of the cantonal share.

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31 In the area of long-term care from the age of 65, the baseline scenario underpins these two scenarios in both cases (see section 5.1).

Table 8:   *Expenditure on healthcare excluding long-term care in the reference scenario (in % of GDP)*

	2013	2030		2045	
	Ratio	**Ratio**	**Difference 2013–2030**	**Ratio**	**Difference 2013–2045**
Healthcare (w/o long-term care)	8.6	9.3	+0.7	9.9	+1.3
General government	2.4	2.8	+0.4	3.0	+0.7
Confederation	0.4	0.5	+0.1	0.5	+0.1
Cantons	1.9	2.1	+0.3	2.4	+0.5
Communes	0.1	0.1	+0.0	0.1	+0.01

Table 8 provides information on the development of public expenditure on healthcare excluding non-term care from 2013 to 2045 in the reference scenario. This expenditure increases steadily from 2.4% of GDP to 2.8% of GDP by 2030, and finally to 3.0% of GDP by 2045. A good 60% of this rise in expenditure is attributable to the ageing of the population. The remainder of the increase can be explained by non-demographic cost drivers such as advances in medical technology and the rise in demand for medical services by the population in keeping with rising incomes. One factor holding back the rise in expenditure in the reference scenario is the assumed partial improvement in people's state of health as life expectancy increases.

As expected, the rise is highest for cantonal expenditure in this area, namely +0.5% of GDP. This increase is attributable to the increase in hospital expenditure on the one hand (60%) and the rise in individual premium reduction expenditure on the other (40%). By contrast, the increase in the expenditure of the Confederation and the communes, something already touched on in the previous section, is relatively small. The expenditure of the communes rises slightly as a result of an increase in hospital expenditure.

The uncertainty of the expenditure projections manifests itself in the differing results of the other scenarios. In the most pessimistic scenario, the Baumol scenario, public expenditure rises by 40%, or 0.3% of GDP, more strongly than in the reference scenario. By contrast, a good state of health on the part of population has the effect of holding back expenditure increases. In the most optimistic scenario, healthy ageing, the rise in state expenditure is almost a third less (or 0.2% of GDP lower) than in the reference scenario.

5.2.2.2. Long-term care from the age of 65

According to the financial statistics, public expenditure in the area of long-term care from the age of 65 comprises the proportion of expenditure of the cantons and communes allocated to convalescent and nursing home services, as well as outpatient care (Spitex), where this care is provided to people over the age of 65 (FFA, 2015). Here, it is assumed that the proportion of public expenditure accounted for by people aged 65 or more corresponds to their share of overall care. According to our estimates, this group currently accounts for some 90% of expenditure on overall long-term care. In addition, public expenditure on long-term care includes the cantons' AHV supplementary benefits, which are subsumed under the "Social security" function in the financial statistics, and AHV helpless allowances.

Table 9:   *Expenditure on long-term care from the age of 65 in the reference scenario (in % of GDP)*

	2013	2030		2045	
	Ratio	Ratio	Difference 2013–30	Ratio	Difference 2013–45
Long-term care from 65	1.6	2.3	+0.7	3.4	+1.8
General government	0.8	1.2	+0.4	1.7	+0.9
Cantons	0.5	0.8	+0.2	1.1	+0.6
Communes	0.2	0.3	+0.1	0.4	+0.2
AHV helpless allowances	0.1	0.1	+0.0	0.2	+0.1

In can be seen in Table 9 that general government expenditure as a proportion of GDP increases by half by 2030, and actually doubles by 2045. It therefore develops in step with overall expenditure on long-term care from the age of 65. The uncertainty of the projections is expressed in the fact that the increase in public expenditure on long-term care in the most pessimistic "pure ageing" scenario up to 2045 is as much as 0.2% of GDP higher than in the reference scenario, while in the most optimistic "healthy ageing" scenario it is 0.2% of GDP lower.

In the long-term care area, the ageing of the population makes a much greater contribution to the rise in expenditure than it does in healthcare excluding long-term care (see section 5.2.2.1). Indeed, some three quarters of the increase in expenditure of 0.9% of GDP is attributable to demographic development. The remaining rise is attributable to the Baumol effect, whereby the partial reduction in the need for care of the ageing population assumed in the reference scenario has a restraining effect on expenditure. Both in the area of healthcare and in the area of long-term care from the age of 65, the cantons currently bear the greatest share of public expenditure on care, namely 70%. Accordingly, some two thirds of the increase in public expenditure, or 0.6% of GDP, is felt at cantonal level. Around two thirds of the rise of cantonal expenditure is in turn attributable to the increase in AHV supplementary benefits. The increase in expenditure on nursing homes accounts for just under 0.2% of GDP, whereas the equivalent for Spitex care services is just under 0.1% of GDP. The expenditure of the communes actually doubles as a percentage of GDP, going from 0.2% to 0.4%. Three quarters of this increase is accounted for by the development of expenditure on nursing homes, while a quarter relates to Spitex expenditure. From a low starting level of 0.1% of GDP, AHV helplessness allowance expenditure doubles by 2045.

5.2.3. Compulsory health insurance

For the purposes of the projections, compulsory health insurance (CHI) expenditure in the areas of healthcare excluding long-term care and long-term care from the age of 65 is broken down into outpatient and inpatient services. The categorisation of expenditure for the reference year has been undertaken in keeping with CHI statistics. In order to avoid the

problem of duplicating general government expenditure, CHI expenditure in this study is presented after deduction of individual premium reduction (IPR) expenditure. In addition, the cost contributions of private households (deductible, excess) has been deducted. In other words, net CHI expenditure has been extrapolated. CHI expenditure is extrapolated using projected expenditure development for healthcare excluding long-term care and long-term care from the age of 65. Accordingly, the differing expenditure developments in healthcare excluding long-term care and in long-term care from the age of 65 feed through into the CHI projections.

Table 10 makes it clear that CHI expenditure as a proportion of GDP develops at a disproportionately low rate relative to overall expenditure up to 2045 (+24% vs. +29%), and much less strongly than public expenditure (+42%). The latter is attributable to the fact that the proportion of dynamically developing long-term care expenditure is much lower for CHI (9%) than it is for the general government (23%) in the reference year 2013.

Table 10:   CHI vs. total and general government expenditure on healthcare (in % of GDP)[a]

|	2013	2030		2045	
	Ratio	Ratio	Difference 2013–2030	Ratio	Difference 2013–2045
Total healthcare	10.8	12.2	+1.4	14.0	+3.2
Gen. gov. (incl. social security funds)	3.5	4.2	+0.7	5.0	+1.5
Compulsory health insurance	**3.3**	**3.7**	**+0.4**	**4.1**	**+0.8**
Healthcare w/o long-term care	8.6	9.3	+0.7	9.9	+1.3
Gen. gov. (incl. social security funds)	2.4	2.7	+0.4	3.0	+0.6
Compulsory health insurance	**2.9**	**3.1**	**+0.2**	**3.4**	**+0.5**
Long-term care from 65	1.6	2.3	+0.7	3.4	+1.8
Gen. gov. (incl. social security funds)	0.8	1.2	+0.4	1.7	+0.9
Compulsory health insurance	**0.3**	**0.4**	**+0.1**	**0.6**	**+0.3**

a   As this report follows the financial statistics view, compulsory health insurance is not part of social security funds in this report (see also footnote 30).

Two thirds of the rise in expenditure in 2045, or +0.6% of GDP, is attributable to the area of healthcare excluding long-term care. The dynamism of long-term care expenditure likewise feeds through into CHI expenditure development. Care expenditure doubles as a proportion of GDP, going from 0.3% in the reference year to 0.6% in 2045.

Due to the high proportion of expenditure on healthcare excluding long-term care, CHI expenditure reacts very sensitively to changes in assumptions regarding the Baumol effect and other non-demographic cost drivers such as advances in medical technology (see Figure 15). The assumption of a partial Baumol effect (Baumol scenario) and the assumption of higher cost pressure for non-demographic cost drivers (cost pressure scenario) in healthcare excluding long-term care lead to a significantly stronger rise in expenditure in each case relative to the reference scenario. In both scenarios, the increase is some 61%, or 0.5% of GDP, higher.

Figure 15:   CHI expenditure in various scenarios (in % of GDP)
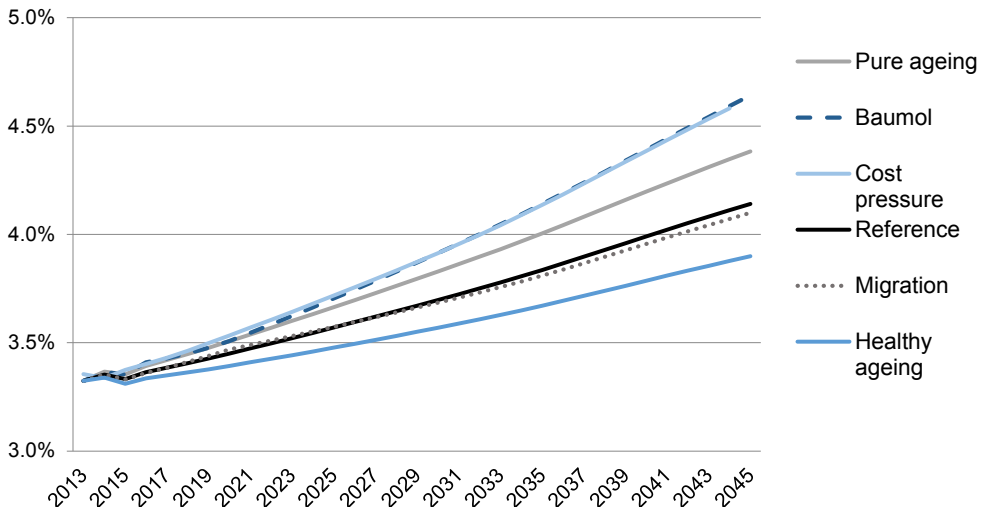
The impact on expenditure develop-
ment is slightly less pronounced if
more pessimistic assumptions are
made with respect to the develop-
ment of the population's state of
health and need for care (pure
ageing scenario, +0.3% of GDP).
Conversely, more a favourable
development in the population's
state of health and need for care
against a backdrop of increasing life
expectancy (healthy ageing scenario)
has a significant cost-restraining
impact. Here, expenditure rises
around a third, or 0.3% of GDP, less
than in the reference scenario. A
higher net immigration rate (migra-
tion scenario) likewise has a slight
cost-restraining effect, whereby the
rise in expenditure is 0.1% of GDP
less than in the reference scenario.

6 Comparison with the 2012 long-term sustainability report

A comparison with the long-term outlook report of 2012 could only ever be partially valid, as this opted for a different and significantly longer projection timeframe, namely the period 2009 to 2060. Moreover, that report's assessment of future economic growth (1.1% vs. 1.5% real growth p.a.) proved significantly more pessimistic than the current long-term outlook, due to its assumption of lower productivity gains and lower net immigration.

Nonetheless, the picture it paints of the development of demographic-dependent expenditure is similar. As in the last long-term outlook of 2012, the strongest rise in expenditure in this outlook remains in the area of AHV and long-term care, followed by healthcare and education. However, the receipts side of the public finances, particularly in the case of the Confederation and social security funds, turns out better in the current outlook as a result of the envisaged 2020 retirement provision reform and higher average economic growth. Moreover, the time horizon has been scaled back significantly by 20 years. As a result, the fiscal gap in the current long-term outlook works out 0.9% of GDP lower than in the last long-term outlook (0.9% vs. 1.8%). This is attributable to the significantly improved state of the public finances of the Confederation and social security funds, which is in turn attributable to the 2020 retirement provision reform and the very favourable development in IV expenditure. By contrast, the public finances of the cantons and the communes come under even greater pressure than in the 2012 long-term outlook, primarily as a result of the inexorable rise in cost pressure in the area of healthcare. Without the receipts-side measures of the 2020 retirement provision reform, the fiscal gap would rise massively to 1.6% of GDP. This would make the fiscal gap in the current long-term outlook just 0.2% of GDP lower than in the 2012 outlook, which did not factor any AHV reform into calculations.

7 International comparison

All industrialised countries are affected by demographic change insofar as they are all experiencing an ageing of their respective populations, albeit to different degrees. Reports are regularly drawn up by the European Commission and other countries with a view to quantifying the repercussions of demographic change for the public finances in the future.[32] For the purposes of comparing demographic-dependent expenditure, the Ageing Report of the European Commission is of particular interest. The latest edition of the Ageing Report investigates the impact of demographic development on the public finances of the 28 countries of the EU between 2013 and 2060.[33]

Generally speaking, demographic development for the foreseeable future in the EU can be compared with that of Switzerland, as both have a significantly ageing population structure. In the baseline year of 2013, the proportion of people over 65 relative to the working-age population amounts to 30% on average in the EU and 28.5% in Switzerland. According to the demographic scenarios, by 2045 the average EU old-age dependency ratio is assumed to be 53%, versus 48% in Switzerland. However, there are differences with respect to projected population developments in individual EU countries. For 50% of EU countries (including Germany), it is assumed that the population in 2060 will be smaller than in 2013, whereas it is assumed that the population will rise in the remaining countries.

Potential economic growth in the EU as a whole is assumed to be relatively stable in the long term, and is very much compatible with the developments assumed in these projections. Estimated economic growth in the EU amounts to 1.4% for the projection timeframe up to 2045, whereas in Switzerland annual

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32 The best-known sustainability reports include the "Fiscal Sustainability Report" of the European Commission (European Commission, 2016), the Long-Term Budget Outlook of the US Congress (Congressional Budget Office, 2015), the "Fiscal sustainability report" of the UK Treasury (Office for Budget Responsibility, 2015) and the "Bericht zur Tragfähigkeit der öffentlichen Finanzen" (Report on the Sustainability of the Public Finances) of Germany's Federal Ministry of Finance (Federal Ministry of Finance, 2016). These reports are published regularly.

33 See European Commission (2015).

average growth is expected to come in at 1.5%.

According to the European Commission, the demographic-dependent share of general government expenditure in the EU as a proportion of GDP is set to increase by 1.4% (whereby this comprises the areas of retirement benefits, healthcare, long-term care, education and unemployment insurance). However, there are differences between individual member countries. For the eurozone, the corresponding increase is expected to be 2.8% of GDP. With an increase of 3.5% of GDP, Switzerland is higher than the EU average.

The increase in expenditure for the EU as a whole is driven primarily by the areas of healthcare and long-term care, which together rise by 1.7% of GDP. This expenditure growth is more or less comparable with Switzerland, where the equivalent rise is 1.6% of GDP.[34] With respect to expenditure on retirement benefits, there is a significant variation between EU member countries. This variation is

attributable to the different ways in which retirement provision systems are designed, as well as the different levels of benefits targeted by the various retirement systems. The rise in expenditure in Switzerland exceeds the EU average, and is driven by the rising cost of the AHV system. Whereas in Switzerland there has still been no questioning of the retirement age of 65, many EU countries have resolved to introduce a higher retirement age threshold of 67 in the longer term (Germany, France, Netherlands, Spain). A number of countries, including Italy and Denmark (since 2006), are coupling the retirement age to life expectancy. According to projections, this will result in a retirement age of 69 in 2050.[35]

On average, expenditure development on education and unemployment insurance in the EU is slightly negative. The fact that education expenditure is declining as a proportion of GDP is attributable to the decline in the number of people aged under 25 relative to the overall population. The decline in unemployment expenditure is the result of the

34 In contrast to other European countries, compulsory health insurance is offered by private insurers, and is therefore not assigned to the general government sector.
35 See European Commission and OECD (2014)

assumption of a declining unemploy-ment rate in the medium to long term. As a consequence of the financial and debt crisis, the baseline year for the EU area has a very high unemployment rate when viewed in historical terms. Moreover, in the EU's Ageing Report, the ageing of the population is factored into the calculation of the unemployment rate.[36] Where Switzerland is con-cerned, unemployment benefit payments are projected to grow in line with GDP. The structural unemployment rate of 3.2% is used as the projected unemployment rate.

The following chart illustrates the increase in expenditure in the areas of retirement benefits, healthcare, long-term care, education and unemployment insurance in GDP percentage points for Switzerland and selected EU member states up to 2045.

Figure 16:   *Change in demographic-dependent expenditure in Switzerland and selected EU countries between 2013 and 2045 (in % of GDP)*

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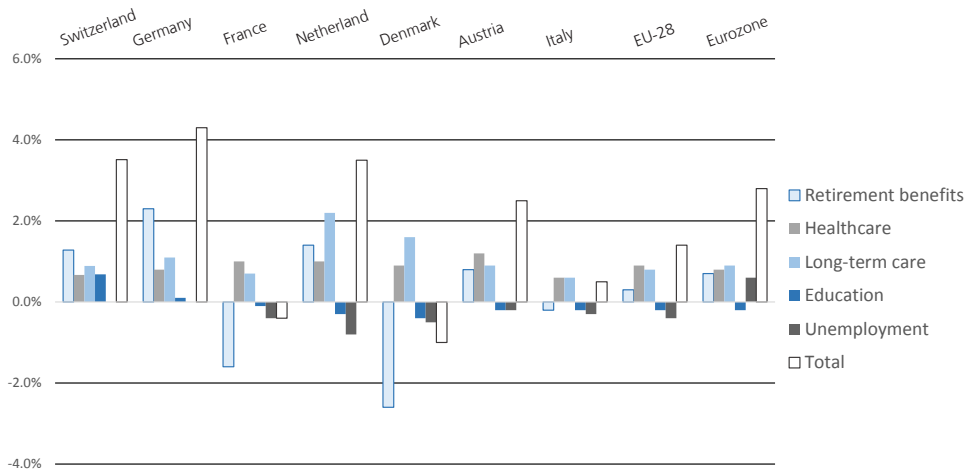
36 While the unemployment rate remains constant over the projection period for each age cohort, the composition of the age cohorts undergoes some adjustment as a result of demographic change.

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Appendix

1 Calculation of the fiscal gap

The fiscal gap f for a target λ, a time horizon T and a consolidation start after p years is illustrated in the following equation:

$$
f_{\lambda,T} = \frac{B_p - \dfrac{\lambda}{\varphi_{T-p}} B_0 - \displaystyle\sum_{j=1}^{T-p}\left(\dfrac{B_j}{\varphi_j}\right)}{\displaystyle\sum_{j=1}^{T-p}\left(\dfrac{Y_j}{\varphi_j}\right)}
$$

where B_0 denotes the initial nominal debt in 2013, B_p the nominal debt at the time of the envisaged consolidation start, e.g. the year 2020 with p=7, Y_j the annual nominal BIP. The time horizon is T = 32 years (2013–2045). 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 remains unchanged in nominal terms, then λ = 1. The fiscal gap calculation takes account of the annual interest rate (i_j) (cost of borrowing) by way of the discounting factor ϕ_j $(=1+i_j)$ and of budget projections by way of the annual primary surplus PB_j.

2   Table annex

Table A1:   *Expenditure by government level (in % of GDP)*

	2013		2030				2045			
	Ratio	Ratio	Sensitivity analyses (change)			Ratio	Sensitivity analyses (change)			
			Productivity		Migration A-06-2015	(in % GDP)	Productivity		Migration A-06-2015	
			-0.3	+0.3			-0.3	+0.3		
Confederation	10.1	11.1	+0.1	-0.1	-0.1	11.2	+0.1	-0.1	-0.2	
Social security funds	9.1	9.7	+0.1	-0.2	-0.3	10.4	+0.3	-0.3	-0.6	
Cantons	12.8	14.0	-0.1	+0.1	-0.1	15.1	-0.04	+0.08	-0.2	
Communes	7.1	7.7	-0.0	+0.0	-0.0	8.0	-0.02	+0.02	-0.0	
Total	31.7	33.9	+0.1	-0.1	-0.4	36.0	+0.3	-0.3	-0.9	

Table A2:   Expenditure on healthcare in the reference scenario by area and financing entity

Level	2013	2030			2045		
			change			change	
	in GDP-%	in GDP-%	in GDP-%	in %	in GDP-%	in GDP-%	in %
Total healthcare	10.8	12.2	+1.4	+13	14.0	+3.2	+29
Healthcare w/o long-term care	8.6	9.3	+0.7	+8	9.9	+1.3	+16
Long-term care (from 65)	1.6	2.3	+0.7	+46	3.4	+1.8	+114
Gen. gov. (incl. soc. sec. funds)	3.5	4.1	+0.6	+18	5.0	+1.5	+42
Confederation	0.4	0.5	+0.1	+21	0.5	+0.1	+35
Cantons	2.4	2.9	+0.5	+22	3.5	+1.1	+47
Communes	0.3	0.4	+0.1	+28	0.5	+0.2	+70
AHV-IV	0.4	0.3	-0.0	-6	0.4	+0.0	+6
Healthcare w/o long-term care	2.4	2.8	+0.4	+16	3.0	+0.7	+28
Confederation	0.4	0.5	+0.1	+21	0.5	+0.1	+35
Cantons	1.9	2.1	+0.3	+15	2.4	+0.5	+27
Communes	0.1	0.1	+0.0	+3	0.1	+0.0	+7
Long-term care (from 65)	0.8	1.2	+0.4	+46	1.7	+0.9	+114
Confederation	–	–	–	–	–	–	–
Cantons	0.5	0.8	+0.2	+47	1.1	+0.6	+116
Communes	0.2	0.3	+0.1	+45	0.4	+0.2	+112
AHV helpness allowances	0.1	0.1	+0.0	+43	0.2	+0.1	+111
Compulsory health insurance	3.3	3.7	+0.4	+13	4.2	+0.9	+27
Healthcare w/o long-term care	2.9	3.2	+0.3	+10	3.5	+0.6	+21
Long-term care (from 65)	0.3	0.4	+0.1	+45	0.6	+0.3	+113
Remaining expenditure*	4.0	4.3	+0.3	+7	4.8	+0.8	+19

*   Remaining expenditure includes the expenditure of private households, compulsory accident insurance, as well as supplementary insurance and private foundations