

# ILLUSTRATIVE LONG-TERM FISCAL PROJECTIONS

The budgetary decisions of the Government should be compatible with sustainable public finances over the long term and impact fairly between generations. The illustrative long-term fiscal projections presented in this annex provide an assessment of the long-term sustainability of the Government's fiscal policies over the period up to 2033, in line with the requirements of the *Code for fiscal stability*. The key findings are:

- given the projected profile for tax revenue and transfers, current consumption can grow slightly faster than assumed GDP growth in the long run while meeting the Government's golden rule;
- public sector net investment can grow close to the economy's growth rate over the projection period without jeopardising the sustainable investment rule. The net debt to GDP ratio is projected to remain below 40 per cent by the end of the projection period; and
- the Government is well placed to deal with potential future spending pressures, for example due to an ageing population.

This conclusion concurs with the findings of the *Long-term public finance report*, published alongside the 2002 Pre-Budget Report. The *Long-term public finance report* examined a number of long-term challenges to the public finances, and used a range of techniques to assess long-term sustainability. The report found that based on current policies, the fiscal position is sustainable in the long term, there is a high degree of inter-generational fairness, and the UK's fiscal position is relatively strong compared to other countries facing similar challenges from ageing populations.

## INTRODUCTION

**A1** The Government's fiscal policy framework, guided by the *Code for fiscal stability*, is designed to ensure transparent, long-term decision-making. Fiscal policy is set to ensure sustainable public finances, with consideration to the short, medium and long term. Long-term fiscal sustainability helps to promote long-term economic growth by ensuring that financial burdens are not shifted to future generations.

### Illustrative long-term fiscal projections

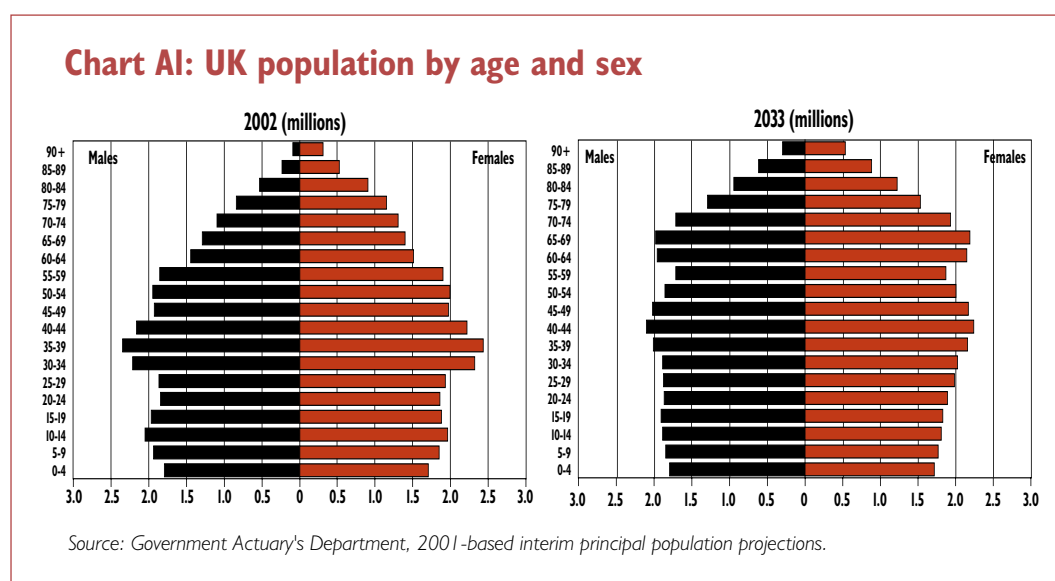
**A2** To assess the sustainability and inter-generational impact of fiscal policy, the Code requires the Government to publish illustrative long-term fiscal projections covering a period of at least 10 years. In practice, a 30-year horizon has been adopted. The projections published in Budgets between 1999 and 2002 showed that the UK's long-term fiscal position was relatively favourable and that, as a result, current consumption could grow at a faster rate than projected economic growth without jeopardising the fiscal rules.

**A3** To enhance analysis of long-term fiscal sustainability, a new *Long-term public finance report*<sup>1</sup> was published for the first time alongside the 2002 Pre-Budget Report. The report examined a number of long-term challenges to the public finances and updated the illustrative long-term projections provided in Budget 2002. The projections set out in this annex provide a further update, incorporating the Budget 2003 medium-term spending and revenue forecasts. The underlying assumptions and the methodology used remain broadly unchanged from previous years.

<sup>1</sup> *Long-term public finance report: an analysis of fiscal sustainability*, HM Treasury, November 2002.

## DEMOGRAPHIC TRENDS

**A4** In common with other European Union (EU) and Organisation for Economic Cooperation and Development (OECD) countries, the UK's population is projected to age more rapidly over the coming decades than in the recent past<sup>2</sup>. In November 2002, the Government Actuary's Department (GAD) published its latest set of population projections for the UK. The projections, which incorporated the results of the 2001 census, show that life expectancy at birth is expected to rise from 75.8 years in 2002 to 79.5 years in 2033 for males, and from 80.3 years to 83.7 years for females. The median age is projected to rise to nearly 43 years in 2033 – around five years higher than in 2002. Chart A1 shows the UK's age pyramid in 2002 and at the end of the projection period presented in this annex, 2033.



**A5** The UK's population is ageing less rapidly than that in most other EU countries. The latest United Nations projections, published in early March, show that the UK's old-age dependency ratio (the number of people aged 65 and over as a percentage of those aged 15 to 64) could rise from 24 per cent in 2000 to 37 per cent in 2035, compared with a rise from 24 per cent to 45 per cent in the EU as a whole. However, there is no room for complacency. While the UK faces a smaller demographic challenge than many other European countries, and the impact of an ageing population on the public finances is expected to be manageable, demographic developments will continue to have implications for government spending and revenue, underlining the importance of a sound long-term strategy for the public finances.

## METHODOLOGY AND ASSUMPTIONS

**A6** The methodology for producing the long-term fiscal projections presented in this annex determines the rate at which current consumption (current spending on items such as health and education) can grow while the Government meets its fiscal rules. This is achieved by projecting the evolution of tax receipts, transfer payments (such as pensions) and capital consumption (depreciation) over the coming decades. Subtracting transfers and capital consumption from tax revenues provides a measure of the financial resources available for current public consumption. This methodology is unchanged since Budget 1999 and was described in detail in Budget 2000<sup>3</sup>.

<sup>2</sup> The *Long-term public finance report* contains an in-depth discussion of long-term challenges, including demographic changes.

<sup>3</sup> See Box A1 of Budget 2000 (page 129).

**A7** The projections are based on prudent and cautious economic assumptions and on existing policies. They are based on the fiscal forecasts and assumptions presented in Chapter C of the Financial Statement and Budget Report (FSBR), up to and including 2007-08, the end of the medium-term forecast period. Unless stated otherwise, the Government is assumed to leave these policies unchanged in 2008-09 and future years. The projections cannot, and do not, attempt to pre-empt future policy decisions.

**Economic assumptions**

**A8** Table A1 sets out the economic assumptions that underlie the long-term fiscal projections after 2007-08<sup>4</sup>. The greater degree of uncertainty involved in projecting long-term trends means that the assumptions used in this exercise are particularly cautious. Hence, productivity is assumed to grow by 2 per cent a year between 2008-09 and 2012-13, and then by 1<sup>3</sup>/<sub>4</sub> per cent a year between 2013-14 and 2032-33. While there is no indication that productivity growth will slow in the long run, and the Government is pursuing policies to improve the UK's productivity performance, the slower rate of productivity growth assumed over the later projection years reflects this greater use of caution.

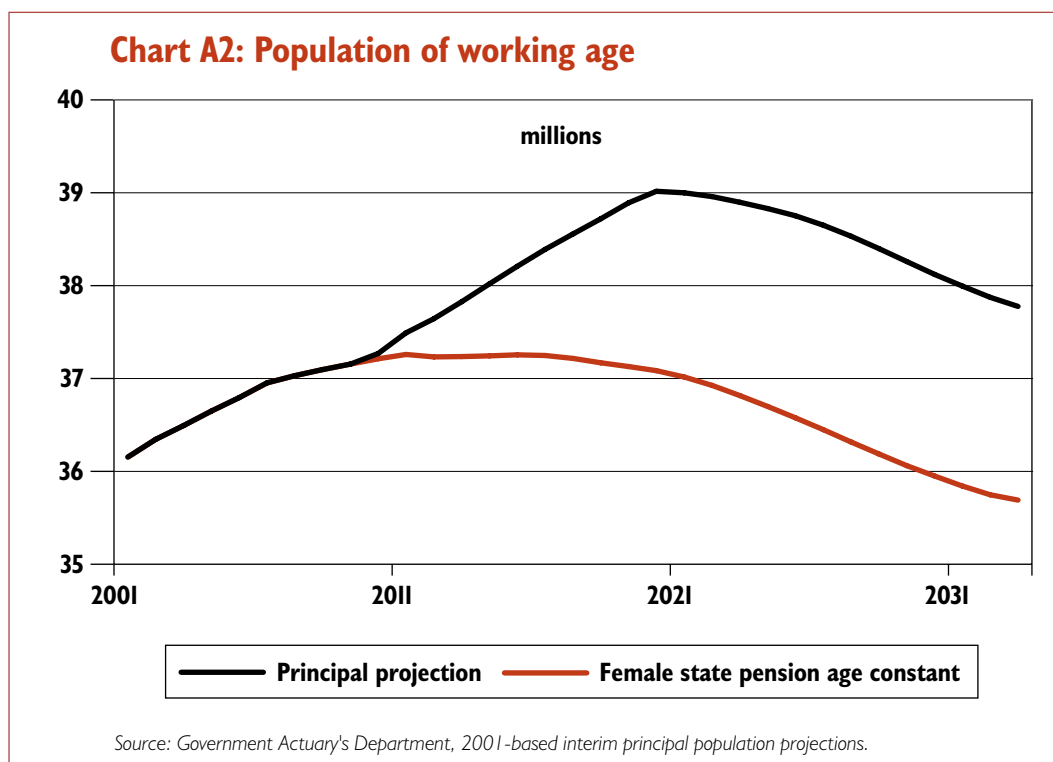
**Table A1: Real GDP growth and its components in the baseline scenario**

Year	2008-09 to 2012-13	2013-14 to 2022-23	2023-24 to 2032-33
Productivity	2	1 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>
Employment	<sup>1</sup> / <sub>4</sub>	<sup>1</sup> / <sub>4</sub>	- <sup>1</sup> / <sub>4</sub>
Real GDP	2 <sup>1</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>

**A9** The employment assumptions are driven by demographic trends, as projected by GAD's 2001-based interim principal population projections. The overall employment rate is assumed to remain constant from 2007-08 onwards, so that changes in employment levels reflect changes in the working-age population<sup>5</sup>. Chart A2 illustrates GAD's principal projections, which suggest that the working-age population might increase from just over 36 million in 2001 to around 39 million in 2020, before falling to below 38 million by 2033. The rise between 2010 and 2020 is due to the increase in the female state pension age from 60 years in 2010 to 65 years by 2020. Chart A2 also shows how the working-age population might evolve were the female state pension age to remain constant at 60. In this scenario, the population of working age might remain relatively stable at around 37 million between 2013 and 2021, before falling to below 36 million by 2031.

<sup>4</sup>For the period up to and including 2007-08, the projections presented in Chapter C of the FSBR are used.

<sup>5</sup>All males between 16 and 65 years and all females between 16 and 60 years, rising to 65 years by 2020. This assumption does not take into account the effect of the increase of the state pension age for females between 2010 to 2020, due to uncertainty on how the employment rate would be affected. See, for example, page 31 of the *Long-term public finance report*, November 2002.



**A10** Given the assumed growth rates for productivity and employment described above, Gross Domestic Product (GDP) growth is derived from 2008-09 onwards.

#### Taxation and spending assumptions

**A11** As described above, for the period up to and including 2007-08 the illustrative long-term fiscal projections are based on the forecasts and assumptions presented in Chapter C of the FSBR. Unless stated otherwise, policy settings in 2007-08 are then assumed to continue throughout the rest of the projection period. From 2008-09, total tax revenues therefore grow in line with GDP, so that the Government is assumed to raise the same amount of revenue as a proportion of GDP as in 2007-08, offsetting possible changes in tax bases by changing policy in a revenue neutral way. Tax revenues are also assumed to be equal to total current spending from 2008-09 onwards. This implies that the golden rule is met with the current budget in balance at all times.

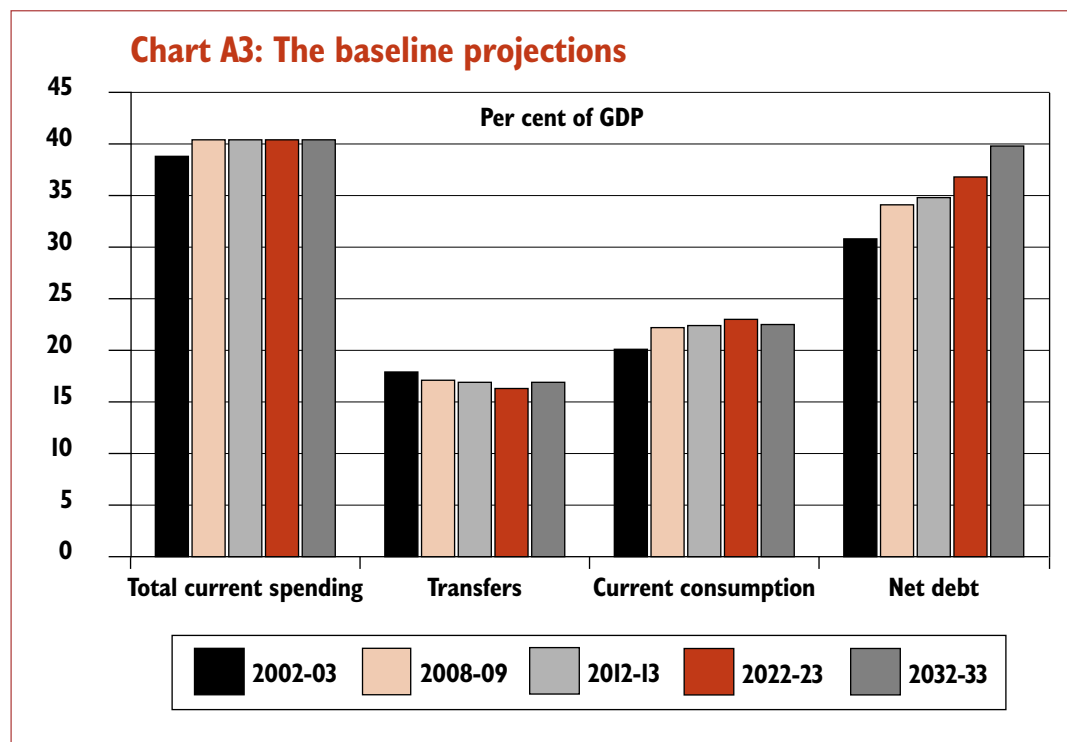
**A12** Current public consumption is calculated as the difference between tax revenues and other current spending which comprises transfers and capital consumption. Transfers include items such as social security transfers and interest payments. Social security transfers include the basic state pension and the long-term costs of the Pension Credit<sup>6</sup>. The calculation of interest payments is based on assumptions about interest rates and the level of investment. As in the medium-term forecast, interest rates are based on market expectations and the existing spread of financial assets to which those rates apply. Under the assumption that the current budget is in balance, the growth of public sector net debt reflects growth in public sector net investment. As in previous long-term fiscal projections, the share of public sector net investment in GDP is assumed to be re-set at 1.8 per cent until the end of the projection period.

**A13** The forward profile for investment shows additions to the capital stock, and is used to calculate capital consumption. Consumption of both the existing stock of assets and these new additions is then calculated on the assumption that future public-sector asset lives are broadly similar to those evident in the past.

<sup>6</sup> Calculated in conjunction with the Department for Work and Pensions. The social security transfer projections are based on the latest demographic projections by GAD.

## THE BASELINE PROJECTIONS

**AI4** Chart A3 shows the projected evolution of total current spending, transfers, current consumption and net debt between 2002-03 and 2032-33, given the baseline assumptions. As a percentage of GDP, total current spending is projected to increase between 2002-03 and 2007-08, mainly reflecting the outcome of the 2002 Spending Review. Transfers as a share of GDP are projected to fall slightly from 2002-03 to 2032-33. Net debt is predicted to rise gradually over the projection period, rising towards 40 per cent of GDP by 2032-33, consistent with the sustainable investment rule. Current consumption is projected to rise from 20.1 per cent of GDP in 2002-03 to 23.0 per cent in 2022-23, before falling marginally to 22.5 per cent by 2032-33. Despite this, current consumption as a percentage of GDP in 2032-33 will be higher than in 2002-03. This relative expansion reflects the fact that current consumption can grow at a marginally faster average annual rate than real GDP while still meeting the fiscal rules.



**AI5** The projected changes in net debt emphasise the importance of ensuring sound public finances in the short term to prepare for future developments. On current projections, net debt will rise gradually to reach 39.8 per cent of GDP in 2032-33 given the baseline growth and investment assumptions.

### Long-term public finance report

**AI6** The illustrative long-term fiscal projections presented here yield similar conclusions to those presented in the Government's *Long-term public finance report*, which used a broader range of techniques to assess long-term sustainability, including fiscal gap modelling, bottom-up projections and generational accounting techniques<sup>7</sup>. Using each technique, the report demonstrated that the fiscal position is sustainable in the long term, on the basis of current policies and on a range of plausible assumptions. The report also found a high degree of inter-generational fairness in current policies, in that current financial burdens are not being shifted unfairly to future generations, nor is an excessive level of assets being accumulated for future generations.

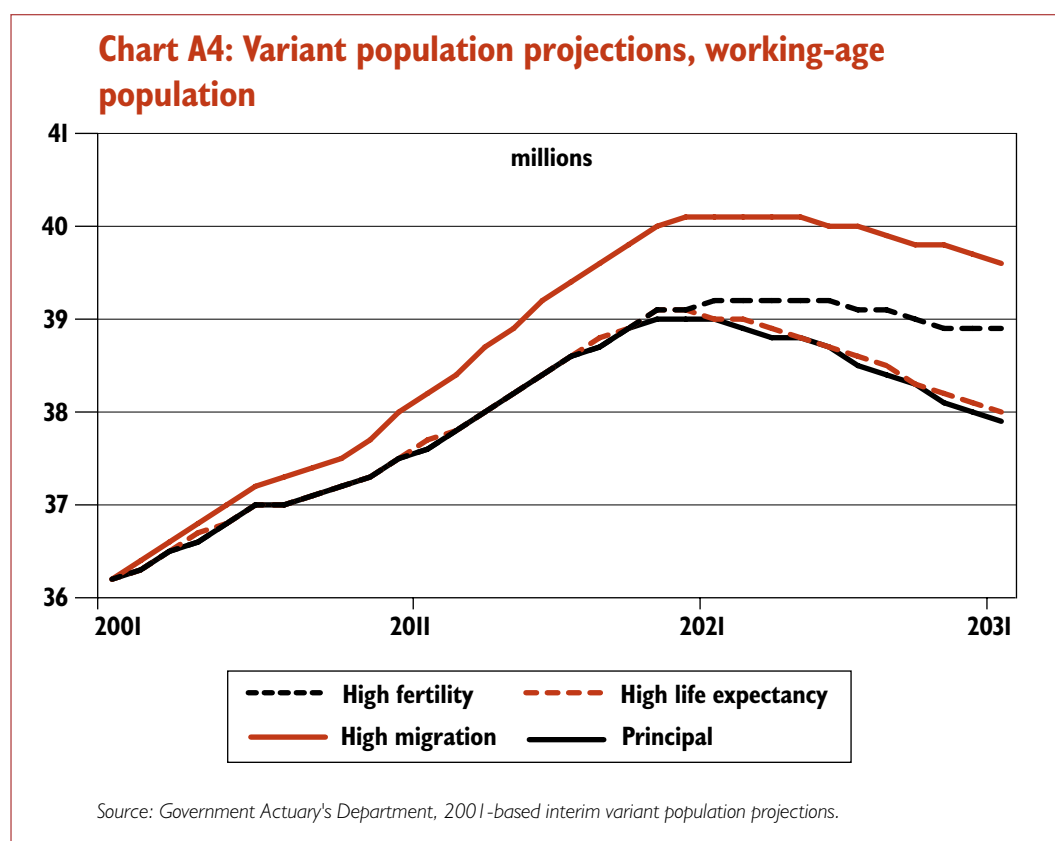
<sup>7</sup>Chapter 4 of the *Long-term public finance report* describes these different methodologies in more detail.

**AI7** The report also examined various international studies of fiscal sustainability<sup>8</sup>. International comparisons show that the UK's fiscal position is relatively strong compared with other developed countries facing similar challenges from ageing populations. The UK also has a substantially higher degree of inter-generational fairness than many other developed countries.

## ALTERNATIVE SCENARIOS

**AI8** This section analyses the sensitivity of the projections to GAD's different population variants<sup>9</sup>. The variants considered here include high fertility, high net migration and high life expectancy. Each generates slight differences in population growth over the projection period, with the high life expectancy variant leading to somewhat less rapid growth than either the high fertility or high migration cases.

**AI9** The composition of the population – in particular the population of working age – also differs significantly in each of the three variant scenarios. This is illustrated in Chart A4. Assumed higher net migration makes an immediate, positive impact on the working-age population, and this effect continues, and becomes more pronounced, throughout the projection period. The impact of higher fertility on the working-age population is not realised until around 2020, given the time it takes for additional newborns to reach working age. Higher life expectancy has little effect on the working-age population, as this generally affects those above working age.



<sup>8</sup> See Chapter 6 of the *Long-term public finance report*.

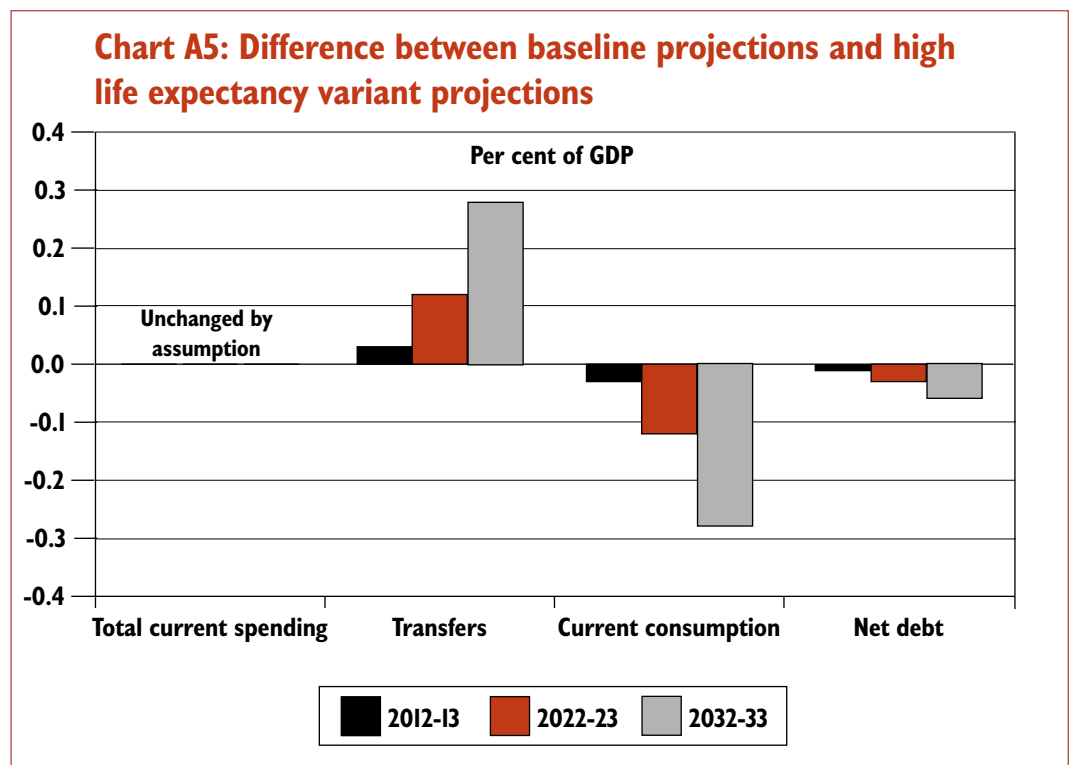
<sup>9</sup> Alternative scenarios presented in previous Budgets have studied the effects of assuming stronger economic growth and higher public sector net investment, a higher labour market participation rate, lower social transfers, and higher productivity growth.

**A20** Using the methodology developed for the baseline scenario, projected GDP growth is affected by the impact on the working-age population of the variant scenarios. Table A2 summarises the GDP growth assumptions under the three population variants. All other assumptions are unchanged. However, the social security projections are modified to take account of the different population structures in the three variants. The methodology implies that migrants are assumed to have the same labour market characteristics as the resident population.

**Table A2: Real GDP growth in the variant scenarios**

Year	2008-09 to 2012-13	2013-14 to 2022-23	2023-24 to 2032-33
Principal	2¼	2	1½
High fertility	2¼	2	1¾
High migration	2½	2¼	1¾
High life expectancy	2¼	2	1½

**A21** The alternative projections suggest that higher fertility and net migration could generate slightly greater financial resources for current consumption. By contrast, higher life expectancy could reduce the amount available for current consumption on account of higher pension and other social security spending on the elderly as a share of GDP. Instead of rising by 2.4 percentage points between 2002-03 and 2032-33, the share of current consumption in GDP with higher life expectancy could rise by 2.1 percentage points. Chart A5 shows the differences between the baseline projections and the high life expectancy variant projections.



**A22** The alternative scenarios also show that the Government's public finances are robust to changes in the population assumptions. The net debt to GDP ratio is projected to be marginally lower in the three alternative variants than in the baseline projections, reflecting slightly faster GDP growth.

## CONCLUSIONS

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**A23** The fiscal projections presented in this annex show that the UK's public finances are broadly sustainable over the long term, confirming the detailed findings presented in the November 2002 *Long-term public finance report*. Current consumption can grow slightly faster than assumed real GDP in the baseline case, ensuring that resources are available to meet potential future spending pressures. The golden rule and the sustainable investment rule are both met throughout the projection period, with net debt projected to be below 40 per cent of GDP in the long run. Public sector net investment can grow more or less in line with the economy without jeopardising the sustainable investment rule. The three alternative scenarios, each based on variant population projections, confirm the findings of the baseline case.

**A24** However, notwithstanding the use of prudent and cautious assumptions, a wide range of unforeseen developments and spending pressures could arise over the projection period. The Government will therefore continue to update and report on its assessments of long-term fiscal sustainability, both through regular publication of the *Long-term public finance report* and through the illustrative long-term fiscal projections presented with each Budget, so as to ensure that all fiscal policy decisions are set within a sustainable long-term framework.