

ILLUSTRATIVE LONG-TERM FISCAL PROJECTIONS

To safeguard long-term economic growth and ensure inter-generational fairness it is important that Budget decisions are consistent with long-term sustainability of the public finances. 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 2033-34, in line with the requirements of the *Code for fiscal stability*.¹ The key points are:

- as a result of recent increases in life expectancy, the population is now projected to age more rapidly than previously;
- the Government remains well-placed to deal with potential future spending pressures due to ageing and other factors;
- given the projected profile for tax revenue and transfers, current public consumption can grow at around assumed GDP growth after the medium term while meeting the Government's golden rule; and
- public sector net investment can grow more or less in line with the economy without jeopardising the sustainable investment rule.

This conclusion concurs with the findings of the 2003 *Long-term public finance report*,² which provides a more detailed examination of the long-term public finances. The report found that, on a range of assumptions and using a number of techniques, the UK's fiscal position is sustainable in the long term on the basis of current policies, and that the UK is in a strong position relative to many other developed countries to face the challenges ahead. However, the Government remains vigilant to future risks and is not complacent about the long-term challenges posed by an ageing population, and it will continue to update and report on its assessments of long-term fiscal sustainability.

INTRODUCTION

A.1 The Government's fiscal policy framework, as set out in 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

A.2 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 2003 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 two fiscal rules – the golden rule and the sustainable investment rule.³

¹ *Code for fiscal stability*, HM Treasury, March 1998.

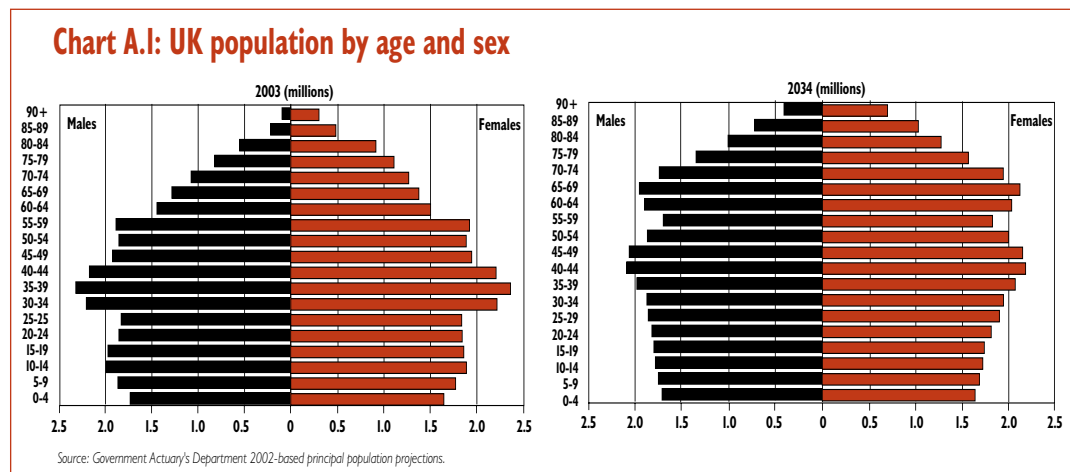
² 2003 *Long-term public finance report: fiscal sustainability with an ageing population*, HM Treasury, December 2003.

³ See Chapter 2 for more details.

A.3 To complement and enhance the illustrative projections, an updated and refined *Long-term public finance report* was published alongside the 2003 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 2003. The projections set out in this annex provide a further update, incorporating the Budget 2004 medium-term spending and revenue projections. The underlying assumptions and the methodology used remain broadly unchanged from previous years.

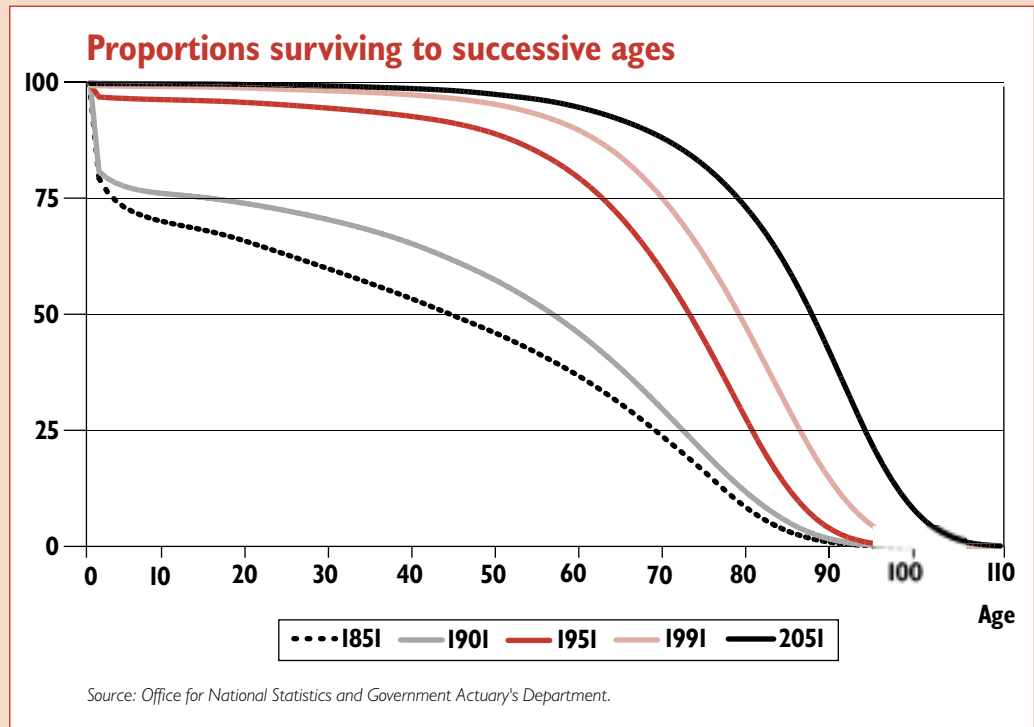
DEMOGRAPHIC TRENDS

A.4 Declining fertility rates and improvements in life expectancy over the past decades have led to a general ageing of the population in the UK, and throughout the EU and Organisation for Economic Cooperation and Development (OECD) countries. Since the 2003 Pre-Budget Report the Government Actuary's Department (GAD) has published its latest set of population projections for the UK, based on the Office for National Statistics' mid-year 2002 population estimates. The new projections show a marked increase in the number of older people in the future compared to previous projections, primarily as a result of an increase in the life expectancy assumption. A male born in 2027 is now expected to live to just over 80 years, four years more than one born in 2002 and an increase of 1½ years over previous projections. A female born in 2027 can expect to live to just under 85 years, over four years more than one born in 2002 and an increase of 1.3 years over previous projections. The fertility and migration assumptions have remained broadly unchanged, with the long-term fertility rate assumed to be 1.74 children per woman and long-term annual net migration assumed to be 103,000. As a result, the number of children and the size of the working-age population are similar to those in previous projections. Chart A.1 shows the population pyramids for 2003 and 2034. The new population projections make it even more important that current policy takes into account the long-term sustainability of the public finances.



Box A.1: Increases in life expectancy

The ageing of the population can be illustrated by what is referred to as the 'rectangularisation of the life curve'. The chart shows the proportion of an age cohort surviving to successive ages. Of the generation born in 1851, around half survived until 50 years, while a quarter survived until 70 years. Between 1901 and 1951, life expectancy rose markedly, with around half of a cohort born in 1951 expected to reach 73 years. To a large extent the increase in life expectancy is due to the near elimination of infant mortality.



With infant mortality now down to very low rates, future gains in life expectancy are expected to come from higher life expectancy in old age. The Government Actuary's Department projects that half of those born in 1991 will survive to 78 years, while half those born in 2051 will survive to 87 years. The maximum age that people are predicted to reach is also projected to rise.

METHODOLOGY AND ASSUMPTIONS

A.5 The methodology for producing the long-term fiscal projections presented in this annex determines the rate at which current public consumption 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.

A.6 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 2008-09, the end of the medium-term forecast period. Unless stated otherwise, the Government is assumed to leave these policies unchanged in 2009-10 and future years. The projections cannot, and do not, attempt to pre-empt future policy decisions.

Economic assumptions **A.7** Table A.1 sets out the economic assumptions that underlie the long-term fiscal projections after 2008-09, which are broadly unchanged from those used in Budget 2003. The greater degree of uncertainty involved in projecting long-term trends means that the assumptions used in this exercise are particularly cautious. Productivity is assumed to grow by 2 per cent a year between 2009-10 and 2013-14, and then by $1\frac{3}{4}$ per cent a year between 2014-15 and 2033-34, which is $\frac{1}{4}$ per cent lower than the neutral view of productivity growth. 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. However, the assumption of a slower rate of productivity growth in later years reflects this greater use of caution. The 2003 *Long-term public finance report* provides sensitivity analysis on the use of different productivity growth assumptions.

A.8 Employment assumptions are driven by demographic trends, as projected by GAD's 2002-based principal population projections. The overall employment rate is assumed to remain constant from 2008-09 onwards, so that changes in employment levels reflect changes in the working-age population. GAD's principal projection shows that the working-age population might increase from around $36\frac{1}{2}$ million in 2002 to around $39\frac{1}{2}$ million in 2020, before falling to just above 38 million by 2034. This includes the impact of the increase in the female state pension age from 60 years in 2010 to 65 years by 2020, which will increase the working-age population.

A.9 Given the assumed growth rates for productivity and employment, real GDP growth is derived from 2008-09 onwards, as shown in Table A.1. Nominal GDP growth depends on real GDP growth and the GDP deflator, which is assumed to increase at a rate of $2\frac{3}{4}$ per cent a year from 2008-09 onwards; the same as at the end of the medium-term horizon, as presented in Chapter C of the FSBR.

Table A.1: Real GDP growth and its components

Year	2009-10 to 2013-14	2014-15 to 2023-24	2024-25 to 2033-34
Productivity	2	$1\frac{3}{4}$	$1\frac{3}{4}$
Employment	$\frac{1}{2}$	$\frac{1}{4}$	$-\frac{1}{4}$
Real GDP	$2\frac{1}{2}$	2	$1\frac{1}{2}$

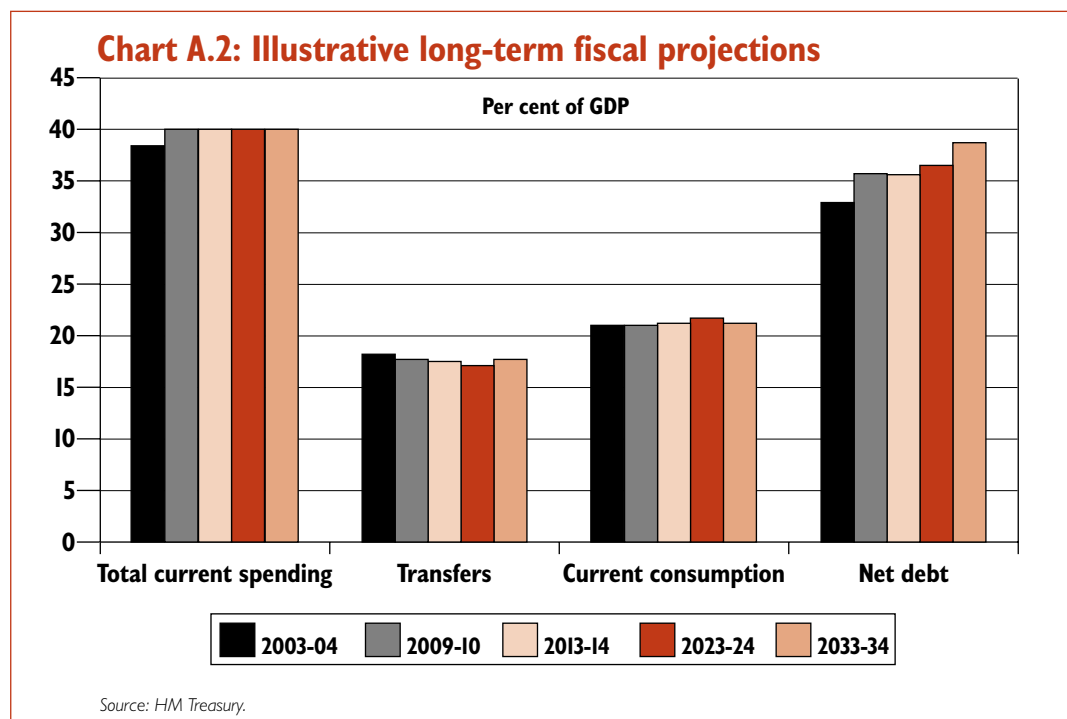
Taxation and spending assumptions **A.10** For the period up to and including 2008-09, the illustrative long-term fiscal projections are based on the forecasts and assumptions presented in Chapter C of the FSBR. Unless stated otherwise, policy settings in 2008-09 are then assumed to continue throughout 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 2008-09, offsetting possible changes in tax bases by changing policy in a revenue neutral way. This does not represent a particular view about the appropriate tax to GDP ratio in the future, but rather in the absence of any planned changes it is the most reasonable assumption for the purposes of these illustrative long-term fiscal projections. Tax revenues are also assumed to be equal to total current spending from 2009-10 onwards. This implies that the golden rule is met with the current budget in balance at all times.

A.11 Current public consumption is calculated as the difference between tax revenues and other current spending, which comprises transfers and capital consumption. Transfers mainly consist of social security spending, grants and debt interest payments. Social security spending includes the basic state pension and the long-term costs of the Pension Credit. The calculation of interest payments is based on assumptions about interest rates and the evolution of debt. As in the medium-term public finance projections, 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 illustrative long-term fiscal projections, the share of public sector net investment in GDP is re-set at 1.8 per cent beyond the medium term.

A.12 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. The profile shows that in the next 30 years the public sector capital stock will converge gradually towards the level of net debt. In the steady state (i.e. in the *very* long term) the entire stock of public debt will be backed by public sector capital.

ILLUSTRATIVE PROJECTIONS

A.13 Chart A.2 shows the projected evolution of total current spending, transfers, current consumption and net debt as a share of GDP between 2003-04 and 2033-34, given the stated assumptions. Total current spending is projected to increase between 2003-04 and 2008-09, and then stay stable. Transfers are projected to fall from just above 17½ per cent in 2008-09 to around 17 per cent by 2023-24 before gradually rising again, while current consumption is projected to be more or less the same as a share of GDP in 2033-34 as it was in 2008-09. Hence current consumption can grow at around the same annual rate as GDP, after the medium term, while still meeting the fiscal rules. Starting from just under 36½ per cent in 2008-09, net debt is projected to rise gradually, reaching 39.6 per cent by 2033-34, consistent with the sustainable investment rule. The projected changes in net debt emphasise the importance of ensuring sound public finances in the medium term to prepare for future developments.



A.14 The main reason for the projected increase in transfer spending as a share of GDP after 2023-24 is that state pension spending is now projected to rise by slightly more than previously as a consequence of the higher life expectancy assumption used in GAD's 2002-based population projections. The Department for Work and Pensions has published detailed updated projections and analysis of the revisions.⁴ The new pension projections will also be included in the next *Long-term public finance report*, due to be published at the time of the 2004 Pre-Budget Report. This projected increase in pension spending highlights the

⁴ The publication by the Department for Work and Pensions is available at <http://www.dwp.gov.uk/asd/asd4/expenditure.asp>.

challenges of an ageing population, and demonstrates how important it is that current and future policies take into account the long-term sustainability of the public finances.

A.15 The increase in life expectancy and consequent rise in the number of older people (and in particular the number of those 80 years and older, see Chart A.1) is also likely to lead to additional spending on health care in the long term. Furthermore, non-demographic factors such as technological progress could also lead to an increase in health spending pressures.

Box A.2: Future health spending trends

Projections of future health spending trends were published in the 2003 *Long-term public finance report*. Taking account only of demographic changes beyond 2007-08, the report finds that public health spending could rise from around 6½ per cent of GDP currently, to around 8½ per cent by the early 2020s and then just under 10 per cent by the early 2050s. This excludes private sector health spending which is currently around 1.2 per cent of GDP.

More detailed projections of possible future health spending trends have been published in the first Wanless Review of the trends and resource needs that could affect the health service in the UK over the next 20 years.^a The projections took into account both demographic and non-demographic trends, and modelled future health spending based on three different scenarios. These scenarios differed in terms of the efficient use of resources and responsiveness of the health service, and the level of public engagement in health issues. In the 'fully engaged' scenario, total health spending, which includes private health care, is projected to rise to 10.6 per cent of GDP by 2022-23, while spending would rise to 12½ per cent in the 'slow uptake' scenario. In February 2004, Derek Wanless presented the findings of his second review,^b which examined how the public health aspects of the 'fully engaged' scenario could be realised. This highlighted the importance of prevention and the cost effectiveness of action that can be taken to improve the health of the whole population and to reduce health inequalities.^c

^a *Securing our Future Health: Taking a Long-Term View*, Derek Wanless, 2002.

^b *Securing Good Health for the Whole Population*, Derek Wanless, 2004.

^c For more details on the key findings of the second Wanless Review see Chapter 6 of the EFSR.

Long-term public finance report

A.16 The illustrative long-term fiscal projections presented here yield similar conclusions to those presented in the 2003 *Long-term public finance report*, which uses a broader range of techniques to assess long-term sustainability, including fiscal gap modelling, bottom-up projections and generational accounting. The report demonstrates that the UK fiscal position is sustainable in the long term on the basis of current policies and that the UK is in a strong position relative to many other developed countries to face the challenges ahead. Furthermore, using a modelling approach refined since 2002, the report finds a relatively high degree of inter-generational fairness of current policies when compared to other developed countries.

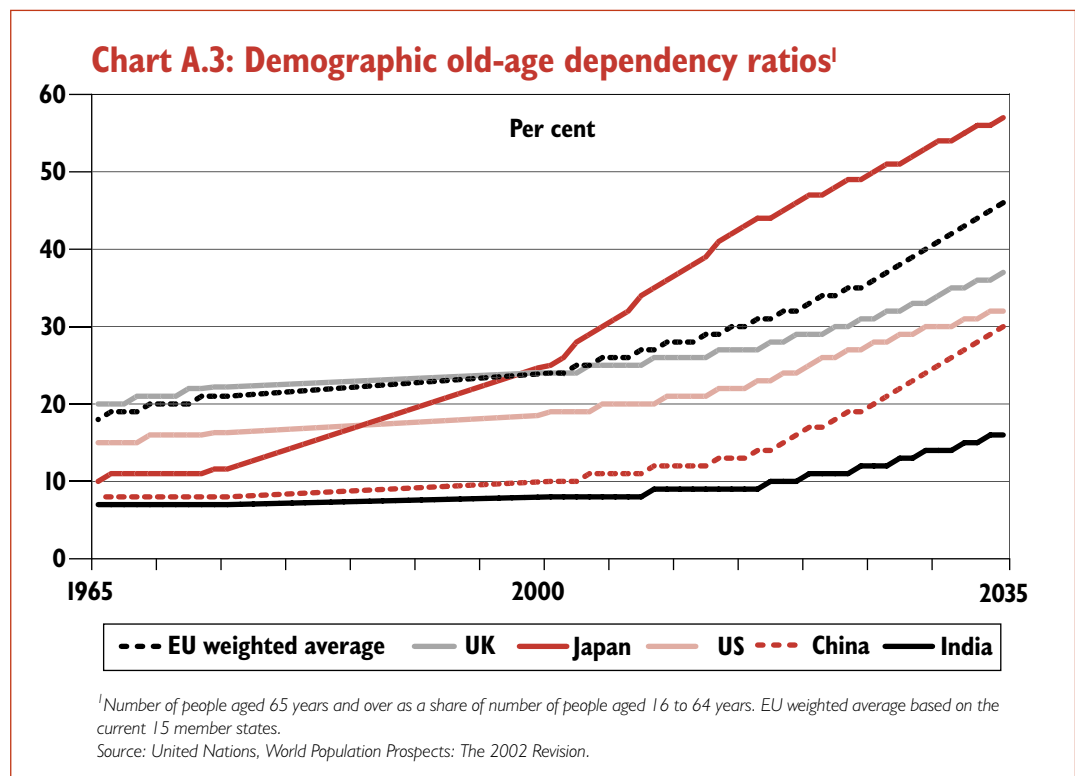
Sensitivity analysis

A.17 As with all economic projections, the results presented in this annex are dependent on the assumptions made. These include population projections, productivity and revenue assumptions, labour market participation rates and social security spending. It is important that projections are made under alternative assumptions, such as those listed above, to determine how sensitive the baseline projections are to changes in the assumptions. The 2003 *Long-term public finance report* illustrates the effect of different assumptions of fertility, longevity and migration on population estimates, and the implications for spending projections.

INTERNATIONAL COMPARISONS

Ageing is a global phenomenon

A.18 The UK is not the only country with an ageing population: ageing is a trend seen in most developed and some developing countries. In fact the populations of many developed countries are projected to age more rapidly than the UK's. Chart A.3 shows the historical and projected evolution of the demographic old-age dependency ratio between 1965 and 2035 in the EU, the UK, Japan and the US. In addition, Chart A.3 shows that the old-age dependency ratio is also projected to rise from a current low level over the coming decades in China and India, the two most populous countries in the world. These trends are predicted to continue beyond 2035, with the demographic old-age dependency ratio projected to reach over 70 per cent in Japan, over 50 per cent on average in the EU and 37 per cent in China, by 2050.



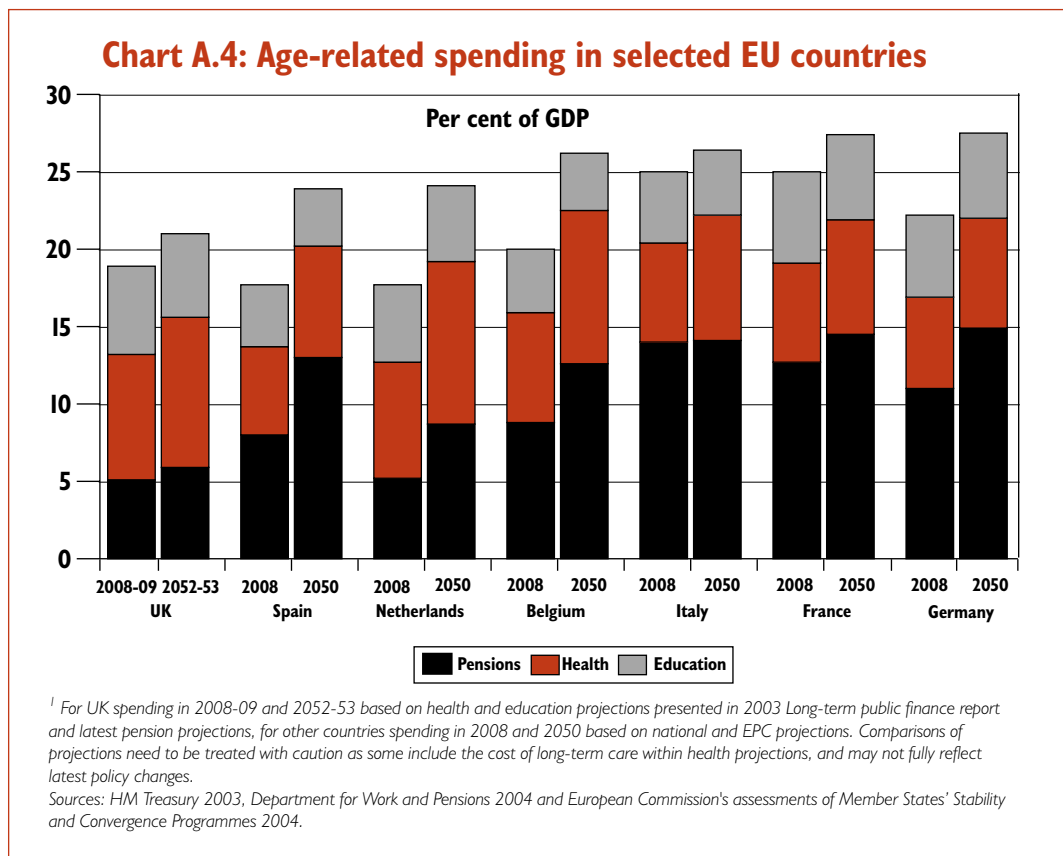
A.19 International comparisons also show that the UK's long-term fiscal position appears relatively strong compared with other developed countries, which face challenges from ageing populations, including the US and many EU countries. For example, a study by the Center for Strategic and International Studies and Watson Wyatt, a global consulting firm, concluded in 2003 that the UK public finances had a low degree of vulnerability with respect to rising old-age dependency costs.⁵

US A.20 The US is ageing slowly by comparison with other developed countries. Nonetheless fiscal imbalances are projected to arise in the US over the coming decades. The US Congressional Budget Office (CBO) regularly publishes long-term analysis covering a wide range of topics, including future social security and defence spending. The CBO projects that spending on social security will increase from 4.2 per cent of GDP in 2003 to 6.2 per cent by 2050, while spending on Medicare and Medicaid (the two principal public health care schemes) is projected (in the 'middle-cost scenario') to rise from just under four per cent of GDP in 2003 to nearly 11½ per cent by 2050, due to a combination of demographic and non-

⁵ The 2003 *Aging Vulnerability Index: An Assessment of the Capacity of Twelve Developed Countries to Meet the Aging Challenge*, Richard Jackson and Neil Howe, Center for Strategic and International Studies and Watson Wyatt Worldwide, 2003.

demographic factors.⁶ The CBO concludes that: “unless taxation reaches levels that are unprecedented in the United States, current spending policies will probably be financially unsustainable over the next 50 years.”⁷

EU A.21 Many European countries face significant challenges from ageing populations, with the UK ageing less rapidly than most others. In October 2003, the EU’s Economic Policy Committee (EPC) published detailed findings on the impact of ageing populations on the Member States’ public finances.⁸ It found that age-related spending, in particular on pensions, will rise substantially in many EU Member States over the coming decades if existing policies remain unchanged.⁹ The EPC also found that projected age-related spending increases are not necessarily highest in those countries with the most rapidly ageing populations. Existing policy settings play a potentially even greater role. The latest Stability and Convergence Programmes submitted by EU Member States to the European Commission confirm the EPC findings. Chart A.4 shows the projected development of age-related spending over the coming decades in the seven largest EU countries.¹⁰ It shows that age-related spending in the UK is projected to rise only moderately over the next five decades from a relatively low base, even when including the latest projections on state pension spending. This contrasts with substantial projected increases in some other countries. The UK’s position would be less favourable if the basic state pension were indexed to earnings rather than prices, as set out in Chapter 2.



⁶ *The Long-Term Budget Outlook*, Congressional Budget Office, December 2003.

⁷ *The Long-Term Budget Outlook*, Congressional Budget Office, December 2003, executive summary.

⁸ *The impact of ageing populations on public finances: overview of analysis carried out at EU level and proposals for a future work programme*, Economic Policy Committee, October 2003.

⁹ The CBO and EPC health projections are not directly comparable as the former include non-demographic drivers, whereas the latter are based on demographic changes only.

¹⁰ In terms of purchasing power parity adjusted GDP in 2003. See www.europa.eu.int.

A.22 In 2002, the Council of European Finance Ministers (ECOFIN) mandated the EPC to provide a new set of long-term fiscal projections by mid 2005. One of the key objectives of the exercise will be to incorporate recent policy developments in EU Member States and to use updated and refined assumptions and modelling techniques. The ten accession countries that will join the EU in May 2004 will also participate in this exercise. The need to develop and enhance the analysis of the long-term fiscal challenges in the EU is one that is strongly supported by the UK.¹¹

Japan A.23 Because the dependency ratio has already increased sharply in Japan, and is projected to reach very high levels, Japan is a particularly important country to study for the lesson it may demonstrate on the relationships between ageing, economic development and fiscal sustainability. Despite a rapidly ageing population, the OECD projects that state pension spending in Japan will rise only slightly over the coming five decades, from 7.9 per cent of GDP in 2000 to 8½ per cent by 2050. Furthermore, the OECD projections exclude the latest reform proposals, which aim to dampen future expenditure growth on pensions, for example by reducing generosity. Japanese law requires that reforms must be implemented if the quinquennial actuarial revaluation of the state pension scheme shows that it is on an unsustainable path. While these arrangements appear to be controlling public pension spending, overall age-related spending is nonetheless projected to rise markedly over the coming decades. For example, the Ministry of Health, Labour and Welfare, which manages social security spending, including health and pensions in Japan, estimates that the funds necessary to finance the current social security system will need to rise from 16 per cent of GDP in 2002 to nearly 25 per cent by 2025.¹²

CONCLUSIONS

A.24 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 2003 *Long-term public finance report*. Current public consumption can grow at around the same rate as that assumed for GDP, after the medium term, 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 remain 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 UK is also in a strong position to face future challenges relative to many other developed countries.

A.25 However, notwithstanding the use of prudent and cautious assumptions, a wide range of unforeseen developments 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* alongside the Pre-Budget 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.

¹¹ *The Stability and Growth Pact: A Discussion Paper*, HM Treasury, March 2004.

¹² *Assessing the long-term fiscal position of Japan*, International Monetary Fund, 2003, in: *Japan: Selected Issues*.

