

Executive summary

- 1 In the *Fiscal sustainability report (FSR)* we look beyond the medium-term forecast horizon of our twice-yearly *Economic and fiscal outlooks* and ask whether the UK's public finances are likely to be sustainable over the longer term.
- 2 In doing so our approach is twofold:
 - first, we look at the fiscal impact of past government activity, as reflected in the assets and liabilities on the public sector's balance sheet; and
 - second, we look at the potential fiscal impact of future government activity, by making 50-year projections of all public spending, revenues and significant financial transactions, such as government loans to students.
- 3 These projections suggest that the public finances are likely to come under pressure over the longer term, primarily as a result of an ageing population. Under our definition of unchanged policy, the Government would end up having to spend more as a share of national income on age-related items such as pensions and health care. But the same demographic trends would leave government revenues roughly stable as a share of national income.
- 4 In the absence of offsetting tax increases or spending cuts this would widen budget deficits over time and eventually put public sector net debt on an unsustainable upward trajectory. It is likely that such a path would lead to lower long-term economic growth and higher interest rates, exacerbating the fiscal problem. The UK, it should be said, is far from unique in facing such pressures.
- 5 Separate from our central projections, we also update our work on non-demographic trends that are likely to reduce revenue from sources such as North Sea oil as a share of national income. Corporation tax and VAT receipts could also come under pressure from globalisation. So governments would be likely to need some replacement sources of revenue just to keep the tax burden constant, let alone to meet the costs of an ageing population.
- 6 Long-term projections such as these are highly uncertain and the results we present here should be seen as broad-brush illustrations rather than precise forecasts. We illustrate some of the uncertainties around them through sensitivity analyses – by varying key assumptions regarding demographic trends, whole

economy and health sector productivity growth, and the position of the public finances at the end of our medium-term forecast horizon.

- 7 It is important to emphasise that we focus here on the additional fiscal tightening that might be necessary beyond our medium-term forecast horizon. The report should not be taken to imply that the substantial fiscal consolidation already in the pipeline for the next five years should be made even bigger over that period.
- 8 But policymakers and would-be policymakers should certainly think carefully about the long-term consequences of any policies they introduce or propose in the short term. And they should give thought too to the policy choices that will confront them once the current crisis-driven consolidation is complete.

Public sector balance sheets

- 9 We assess the fiscal impact of past government activity by looking at measures of assets and liabilities in different presentations of the public sector balance sheet. We draw on National Accounts balance sheet measures and on the 2010-11 Whole of Government Accounts (WGA), which the Treasury is publishing alongside this report in unaudited summary form.
- 10 The current and previous governments have both set targets for the National Accounts measure of public sector net debt (PSND) – the difference between the public sector’s liabilities and its liquid financial assets. In March 2012, PSND stood at £1023 billion, 66.1 per cent of GDP or £38,960 per household. Public sector net worth (PSNW) is a broader measure, which also includes physical and illiquid financial assets. At the end of 2010, PSNW stood at minus £155 million, 0.0 per cent of GDP or minus £6 per household. The Treasury has never used PSNW as a target as reliable estimates of physical assets are hard to construct.
- 11 The medium-term outlook for PSND and PSNW has deteriorated since last year’s *FSR*. The expected peak in PSND has risen by 5.8 per cent of GDP to 76.3 per cent of GDP in 2014-15, while the expected trough in PSNW has fallen by 12.3 per cent of GDP to -21.1 per cent of GDP in 2014-15. The deterioration in PSNW is larger because of a difference in the way that liabilities are valued.
- 12 Commentators often criticise the use of PSND as an indicator of fiscal health (and the same criticisms would apply to PSNW) as it excludes future liabilities arising from past government action, for example payments to Private Finance Initiative (PFI) providers and the accrued rights to pension payments built up over the past by public sector workers.
- 13 More information on future and potential liabilities arising from past government action is available in the WGA. These are produced using commercial

accounting rules and they have somewhat broader coverage than PSND and PSNW, both in the accounts themselves and in the accompanying notes.

14 According to the unaudited WGA:

- the net present value of future **public service pension payments** arising from past employment was £960 billion or 63.8 per cent of GDP at the end of March 2011. This is £175 billion lower than was reported for the end of March 2010 in last year's *FSR*. The bulk of the difference – almost £126 billion – was due to the Government's decision in 2010 to uprate public sector pension payments by the CPI measure of inflation rather than the RPI. An increase in the real discount rate used to value the liability accounted for a further £69 billion of the decline. This illustrates the sensitivity of such net present value calculations to the choice of discount rate;
- the total capital liabilities in WGA arising from **Private Finance Initiative** contracts were around £32 billion, up from £28 billion at the end of March 2010. (Only £5 billion of these were on the public sector balance sheet in the National Accounts and therefore included in PSND and PSNW). If all investment undertaken through PFI had been undertaken through conventional debt finance, PSND would be around 2.1 per cent of GDP higher than currently measured – little changed from last year;
- there were £108 billion (7.2 per cent of GDP) in **provisions** at the end of March 2011 for future costs that are expected (but not certain) to arise, most significantly the hard to predict costs of nuclear decommissioning. Total provisions have risen by £6 billion since last year's WGA. This reflects the fact that roughly £24 billion of new provisions were added, £12 billion were used during the year (less than the £15 billion expected last year) and £6 billion were removed from future years as deemed unnecessary; and
- there were also £50 billion (3.3 per cent of GDP) of quantifiable **contingent liabilities** – costs that could arise in the future, but where the probability of them doing so is estimated as less than 50 percent. These previously included £165 billion for the Treasury's guarantee of the Bank of England's Special Liquidity Scheme. But the boundary of the WGA has been widened this year to include the Bank of England, so this liability has been consolidated out (and the scheme has also subsequently been closed). On a comparable basis, other contingent liabilities increased by £8 billion over the year to almost £50 billion at the end of March 2011, partly as a result of a £4 billion increase in tax payments being challenged in the courts. Contingent liabilities appear in the notes to the WGA, not its balance sheet.

15 Overall gross liabilities were £58 billion lower than in 2009-10 WGA at £2,422 billion on a comparable basis. This is largely the result of the £175 billion fall in

the estimated net public service pension liabilities, partly offset by a £126 billion increase in the liability for government borrowing and financing. This includes the borrowing needed to finance the 2010-11 net deficit of £106 billion.

- 16 Unlike PSND, the WGA balance sheet also includes the value of tangible and intangible fixed assets, estimated at £757 billion or 50.3 percent of GDP in March 2011. These have reduced by £8 billion since last year's WGA. The overall net liability in the WGA – total gross liabilities minus total gross assets – was £1,195 billion or 79.5 per cent of GDP at end-March 2011. This compares to PSND of £1,023 billion or 66.1 per cent of GDP at the same date and to a WGA net liability of £1,227 billion or 84.6 per cent of GDP at end March 2010.
- 17 There are significant limits to what public sector balance sheets alone can tell us about fiscal sustainability. For one thing, there is the sensitivity of balance sheet measures to the choice of – and movements in – the discount rate. We cannot easily quantify how much difference the choice of discount rates makes in aggregate, as the different accounts consolidated into the WGA use a variety of different discount rates according to their own accounting rules.
- 18 More fundamentally, balance sheet measures look only at past government activity. They do not include the present value of future spending that we know future governments will wish to undertake, for example on health, education and pension provision. And, just as importantly, they exclude the public sector's most valuable financial asset – its ability to levy future taxes. This means that we should not overstate the significance of the fact that PSND and the WGA balance sheet both show the public sector's liabilities outstripping its assets, or that our latest EFO forecast shows PSNW turning negative from 2010 onwards.

Long-term projections

- 19 We assess the potential fiscal impact of future government activity by making long-term projections of government revenue, spending and financial transactions on an assumption of 'unchanged policy', as best we can define it. In doing so we assume that spending and revenues initially evolve over the next five years as we forecast in our March 2012 EFO. This allows us to focus on long-term trends rather than making revisions to the medium-term forecast.

Demographic and economic assumptions

- 20 Demographic change is a key long-term pressure on the public finances. Like many developed nations, the UK is projected to have an 'ageing population' over the next few decades. This reflects increasing life expectancy, declining fertility, and the 'demographic bulge' created by the post-war 'baby boom'.

- 21 We base our analysis on projections of the UK population produced by the Office for National Statistics (ONS) every two years. This year's *FSR* incorporates a new set of 2010-based population projections. Compared to the 2008-based projections we used last year, they project somewhat greater inward migration, slightly lower life expectancy for today's elderly and slightly higher life expectancy for future newborns – together leading over time to a larger population.
- 22 Notwithstanding these changes, the overall nature of the demographic challenge has not changed significantly since last year's *FSR*. Under the ONS scenario that we use for our central projection, the proportion of the population aged 65 and above rises from 17 per cent in 2012 to roughly 26 per cent in 2061, and net inward migration flows average roughly half the rate seen in recent years. But to test the sensitivity of our results to these assumptions, we also examine various alternative scenarios with different estimates of ageing and migration flows.
- 23 As regards the economy, we assume in our central projection that whole economy productivity growth will average 2.2 per cent a year on an output per worker basis, in line with the average rate over the past 50 years. But we also run alternative scenarios with productivity growth averaging 1.7 and 2.7 percent. We assume CPI inflation of 2 per cent (in line with the Bank of England's target) and a long-term GDP deflator inflation rate of 2.5 per cent. Our long-term projection for nominal GDP growth is consequently unchanged from last year.

Defining 'unchanged' policy

- 24 Fiscal sustainability analysis is designed to identify whether and when changes in government policy may be necessary to move the public finances from an unsustainable to a sustainable path. To make this judgement, it is necessary to define what we mean by 'unchanged' policy in our long-term projections.
- 25 Government policy is rarely clearly defined over the long term. And, in many cases, simply assuming that a stated medium-term policy continues for 50 years would lead to an unrealistic outcome. Where policy is not clearly defined over the long term, the *Charter for Budget Responsibility* allows us to make appropriate assumptions. These are set out clearly in the report. Consistent with the *Charter*, we only include the impact of policy announcements in our central projections when they can be quantified with "reasonable accuracy".
- 26 In our central projections, we assume that beyond 2016-17 underlying spending on public services, such as health, rises in line with per capita GDP. But health care is relatively labour intensive, so we might expect productivity growth in the sector to lag the rest of economy even though wages have to keep up. This implies that if we were to define unchanged policy as keeping health sector

output growing at the same rate as the economy, governments would need to spend an increasing share of GDP. We illustrate the impact of this assumption.

Results of our projections

- 27 Having defined unchanged policy we apply our demographic and economic assumptions to project spending and revenue streams over the next fifty years.

Expenditure

- 28 Population ageing will put upward pressure on public spending. In our central projection, spending other than on debt interest rises from 35.6 per cent of GDP at the end of our medium-term forecast in 2016-17 to 40.8 per cent of GDP by 2061-62, an increase of 5.2 per cent of GDP or £80 billion in today's terms.
- 29 The main drivers are upward pressures on key items of age-related spending:
- **health spending** rises from 6.8 per cent of GDP in 2016-17 to 9.1 per cent of GDP in 2061-62, rising smoothly as the population ages. If health care spending per capita was to rise by 3.6 per cent a year in real terms, to reflect possible lower productivity growth as explained above, this could increase spending by a further 7.5 per cent of GDP by 2061-62;
 - **state pension costs** increase from 5.6 per cent of GDP to 8.3 per cent of GDP as the population structure ages and State Second Pension entitlements mature. We assume that the 'triple guarantee' means that the value of the Basic State Pension rises by earnings growth plus 0.26 percentage points a year. This alone increases its cost by 0.6 per cent of GDP by 2061-62; and
 - **social care costs** rise from 1.1 per cent of GDP in 2016-17 to 2 per cent of GDP in 2061-62. The broad trend is in line with projections on unchanged policy published by the Commission on the Funding of Care and Support in 2011, although the results are not directly comparable. We have not prejudged the Government's policy response to the report.
- 30 These increases are partially offset by a fall in **gross public service pension payments** from 2.2 per cent of GDP in 2016-17 to 1.3 per cent in 2061-62. This compares to a fall from 2.0 to 1.5 per cent of GDP in last year's FSR. The higher starting point largely reflects a lower medium-term GDP forecast, while the lower end point reflects the cuts in the public sector workforce implied by the additional public spending cuts announced by the Government last November, plus the latest public service pension reforms announced in the same month.

- 31 In this *FSR* we also assess the impact of all the reforms announced by the current Government on the **net cost of public service pension provision** (i.e. including contributions as well as payments). We estimate that the net cost will fall from 1.7 per cent of GDP in 2016-17 to 0.9 per cent in 2061-62, but that the cost in 2061-62 would be 0.6 per cent of GDP bigger without the reforms. The decision to uprate public service pensions by CPI rather than RPI explains 0.4 percentage points of the difference, with the increases to member contributions announced in the 2010 Spending Review and the November 2011 recommendations in *Good Pensions that Last* each contributing a further 0.1 percentage points.

Revenue

- 32 Demographic factors will have less impact on revenues than on spending. Non-interest revenues are projected to rise from 37.3 per cent of GDP at the end of our medium term forecast in 2016-17 to 38.2 per cent of GDP in 2061-62, an increase of 0.9 per cent of GDP or £14 billion in today's terms. The increase is little changed since last year, although this masks some changes in composition.
- 33 Long-term fiscal sustainability analyses tend to assume that revenues are constant as a share of GDP or (as in our central projection) that they move only in line with demographic changes. But we also include in this report a discussion of non-demographic factors that might affect the size of particular revenue streams over the long term. The key conclusions are:
- various non-demographic factors are likely to put downward pressure on oil and gas revenues and receipts from transport and environmental taxes and tobacco duties. Our latest projections suggest oil and gas revenues falling to around half the level we projected last year by 2040-41, but the reduction is small as a share of GDP - from 0.1 to 0.05 per cent. So our broad conclusion remains as last year: that these factors could reduce the revenue from these taxes by up to 2 per cent of GDP over the next 30 years;
 - global corporation tax rates have been on a declining trend as governments around the world compete to attract mobile profits and capital. If a similar pattern were to persist whilst the UK headline rate remained unchanged, the incentive to draw profits away from the UK would reduce corporation tax receipts over time. If UK rates were to move in line with a declining global average there would be a direct fall in UK corporation tax receipts. But lower corporation tax rates could increase the level of GDP by reducing the cost of capital; we have not included this effect in our modelling; and
 - another possible effect of globalisation has been to reduce the price of tradeable goods relative to other goods and services. Most tradeable goods are subject to the standard rate of VAT, so if international trade were to exert downward pressure on such prices, and households spent relatively

less money on such goods as a consequence, VAT receipts would fall modestly as a share of GDP.

- 34 Our analysis of corporation tax and VAT is highly stylised and we do not produce a central estimate of the likely impact on UK tax receipts in the future. But coupled with the analysis of other revenue streams, it does suggest that future governments are likely to need to find replacement streams of revenue merely to hold the tax burden constant, let alone to meet upward pressures on spending.

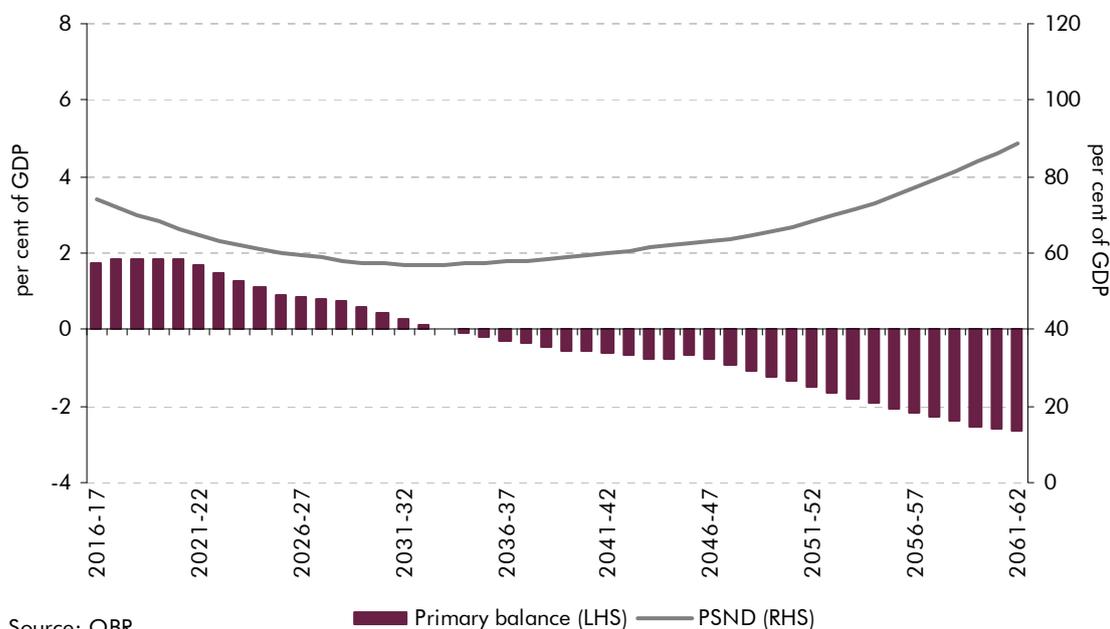
Financial transactions

- 35 In order to move from spending and revenue projections to an assessment of the outlook for public sector net debt, we need also to include the impact of public sector financial transactions. These affect net debt directly.
- 36 For the majority of financial transactions, we assume that the net effect is zero. One exception is the impact of the student financial support arrangements announced in December 2010. Student loans are projected to increase net debt by a maximum of 5.9 percent of GDP (£91 billion in today's terms) around the early 2030s, falling to 3.7 percent of GDP (£57 billion) by 2061-62 as the value of loan repayments rises relative to the value of new loans made. The profile for student loans is little changed since last year.

Projections of the primary balance and public sector net debt

- 37 Our central projections show public sector revenues increasing as a share of GDP beyond our medium-term forecast horizon, but not as quickly as public spending. As a result, the primary budget balance (the difference between non-interest revenues and spending) is projected to move from a surplus of 1.7 per cent of GDP in 2016-17 to a deficit of 2.6 per cent of GDP in 2061-62 – a deterioration of 4.3 percent of GDP or £65 billion in today's terms, slightly smaller than last year. This is shown in Chart 1.
- 38 Taking this and our projection of financial transactions into account, PSND is projected to fall from 74 per cent of GDP in 2016-17 to a trough of 57 per cent in the mid-2020s, before rising increasingly quickly to reach 89 per cent of GDP in 2061-62. The importance of demographic pressures in driving this increase is evident from that fact that if, instead, the primary balance remained constant beyond 2016-17 PSND would fall to zero by the late 2050s.

Chart 1: Central projection of the primary balance and PSND



- 39 Last year we showed a bigger prospective deterioration, with net debt moving from 69 per cent of GDP at the end of the *EFO* forecast to 107 per cent of GDP in 2060-61. The improvement in the outlook largely reflects the fact that we expect a bigger primary surplus at the end of the *EFO* forecast horizon this year than we did last year. The primary balance is forecast to be 1.7 per cent of GDP in 2016-17 compared with last year's forecast of 1.3 per cent of GDP in 2015-16. The deterioration in the primary balance projected over the subsequent 45 years is also 0.2 per cent of GDP smaller this year than last year.
- 40 The improvement is primarily because the Government has responded to a deterioration in the medium-term outlook for the underlying health of the public finances with additional projected cuts in spending that more than compensate and therefore deliver a stronger primary balance at the end of the *EFO* forecast horizon. You could see this as a contribution to the need for long-term fiscal adjustment we identified last year. But this also underlines how sensitive our projections are to the starting point at the end of the medium term forecast.
- 41 The effects of the ageing population are less likely to change from year to year, and policy adjustments to respond to it are likely to be long-term and incremental. Changes to the population projections since last year have a relatively small impact on our projections over time, eventually reducing pressure on the public finances somewhat.

- 42 Needless to say, there are huge uncertainties around any projections extending this far into the future. And it is therefore important to be aware how sensitive our central projections are to the assumptions that underlie them.
- 43 The eventual increase in PSND would be bigger than in our central projection if long-term interest rates turned out to be higher relative to long-term economic growth, if long-term productivity growth was weaker (as this pulls down receipts, but not those areas of spending linked to prices), or if the age structure of the population was to turn out older than in our central projection.
- 44 Higher net inward migration than in our central projection – closer to the levels we have seen in recent years, for example – would put downward pressure on borrowing and PSND, as net immigrants are more likely to be of working age than the population in general. This effect would reverse over a longer time horizon, when those immigrants who remain in the UK reach old age.
- 45 Under the scenario in which governments respond to relatively weak productivity growth in the health service by increasing underlying health spending per capita by 3.6 per cent a year in real terms, the upward debt trajectory would be much more steep. PSND would be in excess of 200 per cent of GDP by the late 2050s.

Economic feedbacks

- 46 Left unaddressed, persistent fiscal deficits could have a number of negative consequences for the economy, and therefore for fiscal sustainability, that are not captured by our central projections. If fiscal deficits reduce national saving, raise interest rates and ‘crowd out’ investment, this would lead to lower levels of output and a reduction in living standards. Higher levels of debt can also restrict policymakers’ ability to respond to future economic difficulties.
- 47 Persistent deficits should be distinguished from temporary deficits, which can help sustain economic activity when private sector demand is depressed. The short-run effects of current fiscal policy on the economy are captured in our medium-term forecasts. In the longer-term projections in this report, output is assumed to remain at its sustainable trend level from 2017-18 onwards.

Summary indicators of fiscal sustainability

- 48 Our central projections, and several of the variants we calculate, show that on current policy we would expect the budget deficit to widen sufficiently over the long-term to put public sector net debt on a continuously rising trajectory as a share of national income. This is clearly unsustainable.

- 49 Summary indicators of sustainability can be used to illustrate the scale of the challenge more rigorously and to quantify the tax increases and/or spending cuts necessary to return the public finances to different definitions of sustainability.
- 50 Most definitions of fiscal sustainability are built on the concept of solvency – the ability of the government to meet its future obligations. In formal terms the government’s ‘inter-temporal budget constraint’ requires it to raise enough revenue in future to cover all its non-interest spending and also to service and eventually pay off its outstanding debt over an infinite time horizon. Under our central projections, the government would need to increase taxes and/or cut spending permanently by around 2.6 per cent of GDP (£39 billion in today’s terms) from 2017-18 onwards to satisfy the inter-temporal budget constraint. This is a slightly smaller figure than we estimated last year.
- 51 The inter-temporal budget constraint has the attraction of theoretical rigour, but it also has several practical limitations. For this reason sustainability is more often quantified by asking how big a permanent spending cut or tax increase is necessary to move public sector net debt to a particular target level at a particular target date. This is referred to as the ‘fiscal gap’.
- 52 The current Government does not have a long-term target for the debt to GDP ratio. So, for illustration, we calculate the additional fiscal tightening necessary from 2017-18 to return PSND to its roughly pre-crisis level of 40 per cent of GDP in 2061-62, as well as that necessary to keep it at the level we expect at the end of our medium-term forecast, namely 75 per cent of GDP, again in 2061-62.
- 53 Under our central projections, the government would need to implement a permanent tax increase or spending cut of 1.1 per cent of GDP (£17 billion in today’s terms) in 2017-18 to get debt back to 40 per cent and 0.3 per cent of GDP (£5 billion in today’s terms) to have it at 75 per cent.
- 54 These calculations depend significantly on the health of the public finances at the end of our medium-term forecast. If the structural budget balance was 1 per cent of GDP weaker or stronger in 2016-17 than we forecast in the *EFO* (which would imply an underlying deficit that much greater throughout the projection horizon), then the necessary tightening would be bigger or smaller by the same amount.
- 55 The sensitivity factors that we identified in the previous section as posing upward or downward risks to our central projections for PSND similarly pose upward or downward risks to our estimates of fiscal gaps. The most dramatic would be the scenario of annual 3.6 per cent per capita real growth in health spending; this would increase the necessary permanent policy adjustment in 2017-18 to 4.4 per cent of GDP for the 40 per cent target or 3.6 per cent of GDP for the 75 per cent target.

- 56 Governments need not respond to fiscal pressures with a one-off permanent tightening. As an alternative to the tightening of 1.1 per cent of GDP in 2017-18 necessary to meet the 40 per cent target, governments could opt for a series of tax increases or spending cuts worth an additional 0.4 per cent of GDP each decade. A more gradual (but ultimately larger) adjustment would mean a smaller fall in the debt to GDP ratio in the early years before PSND stabilises around the target level.