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* (*EFOs*) 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. The fiscal challenge posed by an ageing population is one the UK shares with many developed nations.

5 Separate from our central projections, this year we update our assessment of the long-term decline in North Sea oil revenues as a share of national income over the coming decades and present new analysis of trends in older people's participation in the labour market.

6 Long-term projections such as these are highly uncertain and the results we present here should be seen as illustrative broad-brush projections 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 necessarily be made even bigger over that period.

8 That said, 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 on different presentations of the public sector balance sheet. In this report, we draw on National Accounts balance sheet measures and on the 2011-12 Whole of Government Accounts (WGA).

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 2013, PSND was £1,181 billion, 75.1 per cent of GDP or £44,810 per household. Public sector net worth (PSNW) is a broader measure, which also includes physical and illiquid financial assets. PSNW fell sharply from 2008 onwards and the latest available outturn data at the end of 2011 gave a value for PSNW of minus £197 billion, which was minus 12.8 per cent of GDP. No government has used PSNW as a target, in part because 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 medium-term peak in PSND has risen by 9.3 per cent of GDP to 85.6 per cent of GDP, with that peak coming two years later in 2016-17. The expected trough in PSNW has fallen by 6.0 per cent of GDP to minus 27.1 per cent of GDP in 2016-17.

12 One of the criticisms often made of PSND as an indicator of fiscal health is that it does not account for future liabilities arising from past government action, for example contracted payments to Private Finance Initiative (PFI) providers and the accrued rights to pension payments built up over the past by public sector workers. The same criticism would apply to PSNW.

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 2011-12 WGA:

- the net present value of future **public service pension payments** arising from past employment was £1,008 billion or 65.6 per cent of GDP at the end of March 2012. This is £47 billion higher than a year earlier, primarily reflecting the pension rights accrued as a result of the latest year's employment. But the figure remains lower than the £1,135 billion reported for March 2010, reflecting the Government's decision in 2010 to uprate public sector pension payments by CPI inflation rather than RPI inflation (which tends to be higher). We discussed this change in last year's report;
- the total capital liabilities in WGA arising from **Private Finance Initiative** contracts were £36 billion, up from £32 billion a year earlier. 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 £113 billion (7.4 per cent of GDP) in **provisions** at the end of March 2012 for future costs that are expected (but not certain) to arise, most significantly the hard to predict costs of nuclear decommissioning. Total provisions have increased by £6 billion since last year's WGA, mainly those related to nuclear decommissioning and clinical negligence. Around £12 billion of provisions were actually used in 2011-12, which was in line with the expectation set out in the previous year's WGA; and
- there were £101 billion (6.6 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 at less than 50 per cent. This figure has more than doubled from £50 billion last year, largely reflecting two factors: first, an increase in the perceived probability that the UK could be called upon to contribute capital to the European Investment Bank, which makes long-term infrastructure loans to EU countries; and second, an increase in the potential loss of revenues that could result as North Sea oil companies set off the costs of oil field decommissioning against their tax bills.

15 Overall gross liabilities in the WGA increased by £195 billion over the year to £2,615 billion at the end of March 2012. The main factors behind this increase are the net deficit recorded during the year as expenditure exceeded revenues, plus the accumulation of additional public service pension liabilities related to staff in employment during 2011-12.

16 The WGA show the government's net deficit rising from £94 billion in 2010-11 to £185 billion in 2011-12, which is in marked contrast to the fall in the current

budget deficit from £101 billion to £90 billion shown in the National Accounts. This is because the WGA estimate of expenditure was reduced by £126 billion in 2010-11 to reflect the present value of the savings that would result from the government's decision to uprate public service pension payments by CPI.

17 Unlike PSND, the WGA balance sheet also includes the value of tangible and intangible fixed assets, which are estimated at £754 billion or 49.1 per cent of GDP in March 2012. These have increased by £28 billion since last year's WGA. The overall net liability in the WGA was £1,347 billion or 87.7 per cent of GDP at end-March 2012. This compares with PSND of £1,106 billion or 72.0 per cent of GDP at the same date and to a WGA net liability of £1,186 billion or 78.8 per cent of GDP a year earlier at end-March 2011.

18 In this year's report, we have also summarised a number of recent policy announcements relating to guarantees and possible contingent liabilities. These include a number of policies that are already in-train, including NewBuy, UK Infrastructure Guarantees and the National Loan Guarantee Scheme, and those still being worked up, including Help-to-Buy: Mortgage guarantee and aspects of the Business Bank.

19 While the precise accounting treatment of these various measures will not be known until future years' WGA are published, it is possible to think through some of the broad implications for fiscal sustainability now. Most importantly, while each measure in isolation could well be considered a remote contingent liability, the probabilities of the various liabilities crystallising are likely to be correlated. In particular, the probability that the various parties to which the Government is exposed will default would increase in the event of a further economic downturn. The more serious the downturn, the greater the likelihood of a larger proportion of contingent liabilities crystallising to the detriment of fiscal sustainability.

20 There are significant limits to what public sector balance sheets alone can tell us about fiscal sustainability. In particular, balance sheet measures look only at the impact of 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. This is usually the case.

Long-term projections

21 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 2013 *EFO*. This allows us to focus on long-term trends rather than making revisions to the medium-term forecast.

Demographic and economic assumptions

22 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, with the ratio of elderly to those of working age rising over time. This reflects increasing life expectancy, declining fertility, and the retirement of the large age cohorts born during the post-war 'baby boom'.

23 We base our analysis on projections of the UK population produced by the Office for National Statistics (ONS) every two years. As in last year's *FSR*, we use the 2010-based population projections and the ONS's 'low migration' variant where net inward migration is assumed at 140,000 a year. We test the sensitivity of our results to a number of different demographic assumptions.

24 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 long-run average rate. We test this assumption with alternative scenarios where productivity growth averages 1.7 per cent or 2.7 per cent. We assume CPI inflation of 2.0 per cent (in line with the Bank of England's inflation target) and a long-term GDP deflator inflation rate of 2.2 per cent. The latter assumption is lower than last year, following the reassessment we made in our December 2012 *EFO*. As such, our projections are based on a lower rate of nominal GDP growth than in last year's *FSR*.

25 Since our December 2012 *EFO*, our medium-term forecasts have included greater persistence in the degree of spare capacity in the economy, represented by a substantial negative output gap at the end of the forecast. This implies scope for above-trend growth beyond our medium-term forecast period that would support the public finances. We have therefore introduced such a period at the beginning of our long-term projections, to ensure those projections do not permanently lock in that portion of borrowing in 2017-18 that is considered cyclical in our medium-term forecasts.

Defining 'unchanged' policy

26 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.

27 Government policy is rarely clearly defined over the long term. In many cases, simply assuming that a stated medium-term policy continues for 50 years would lead to an unrealistic projection. 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*".

28 In our central projections, our assumption for unchanged policy is that beyond 2017-18 underlying spending on public services, such as health, rises in line with per capita GDP. We assume that most tax thresholds and benefits are uprated in line with earnings rather than inflation beyond the medium term, which provides a more neutral baseline for long-term projections. An inflation-based assumption would, other things equal, imply an ever-rising ratio of tax to national income and an ever-falling ratio of benefits to earnings in the rest of the economy.

Results of our projections

29 Having defined unchanged policy, we apply our demographic and economic assumptions to produce projections of the public finances over the next 50 years.

Expenditure

30 Population ageing will put upward pressure on public spending. Our central projection shows spending other than on debt interest falling from 36.7 per cent of GDP at the end of our medium-term forecast in 2017-18 to 36.1 per cent of GDP in 2020-21 as the output gap closes. It then rises to 40.6 per cent of GDP by 2062-63 as demographic trends lift spending on health, pensions and long-term care, an increase of 4.0 per cent of GDP or £61 billion in today's terms from the end of our medium-term forecast.

31 The main drivers are upward pressures on key items of age-related spending:

- **health spending** rises from 7.0 per cent of GDP in 2017-18 to 8.8 per cent of GDP in 2062-63, rising smoothly as the population ages. This is a slightly smaller rise than we projected last year, in part due to the additional overall spending cuts the Government has pencilled in for 2017-18 (which are included in our medium-term forecast) and in part due to the above-trend GDP growth we assume as the output gap closes after 2017-18;

- **state pension costs** increase from 5.8 per cent of GDP to 8.4 per cent of GDP as the population ages. The projected increase is slightly lower than last year's projection, in part due to the introduction of the Single Tier pension, which reduces spending in 2062-63 by 0.7 per cent. We assume pensions are uprated in line with the 'triple lock' beyond the medium-term

horizon. If we instead assumed pensions were uprated in line with earnings, spending would be 0.9 per cent of GDP lower in 2062-63; and

- **long-term social care costs** rise from 1.3 per cent of GDP in 2017-18 to 2.4 per cent of GDP in 2062-63, reflecting the ageing of the population and the Government's announcement of a lifetime cap on certain long-term care expenses incurred by individuals, following the Dilnot Review. This policy reform raises spending by 0.3 per cent of GDP by 2062-63.

Revenue

32 Demographic factors will have less impact on revenues than on spending. Non-interest revenues are projected to rise from 37.6 per cent of GDP in 2017-18 to 38.1 per cent of GDP in 2020-21 (reflecting the assumed period of above-trend growth) and are relatively flat through the remainder of the projection, rising to 38.8 per cent of GDP in 2062-63. The aggregate projection is not significantly different from last year's report, but the composition has changed. Income tax and corporation tax are lower, in part reflecting policy announcements and changes to our medium-term forecast, while capital taxes are higher, largely due to the period of above-trend growth as the output gap is assumed to close.

33 We have updated our assessment of long-term trends in North Sea revenues, an area where our medium-term forecasts have been subject to large revisions due to volatility of oil prices, production and related costs. Revenues from the UK oil and gas sector fell from 0.7 per cent of GDP in 2011-12 to 0.4 per cent in 2012-13 and are forecast to reach 0.2 per cent of GDP by 2017-18. Our central long-term projection shows revenues falling to 0.03 per cent of GDP over the subsequent two decades. Sensitivity analysis suggests that this broad conclusion holds across a variety of reasonable assumptions for the sector.

34 We have also taken a closer look at the implications for personal taxes of the rising participation of older people in the labour market, which shows the positive overall impact a continuation of recent trends would be likely to have on GDP and tax receipts. Greater labour market participation by older people is, however, likely to reduce the ratio of personal taxes to national income, but for the relatively benign reason that national income is likely to be boosted proportionately more than tax receipts, thereby lowering the ratio while both rise in absolute terms.

35 In previous years' reports, we have looked at pressures on a number of revenue streams, including the effects of globalisation on corporation tax and VAT, fuel efficiency on transport taxes and trends in smoking on tobacco duties. These factors, and the decline in North Sea revenues illustrated in this report, suggest that governments will, over time, need to find new sources of revenue to maintain the overall ratio of revenue to national income.

Financial transactions

36 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, without affecting accrued spending or borrowing.

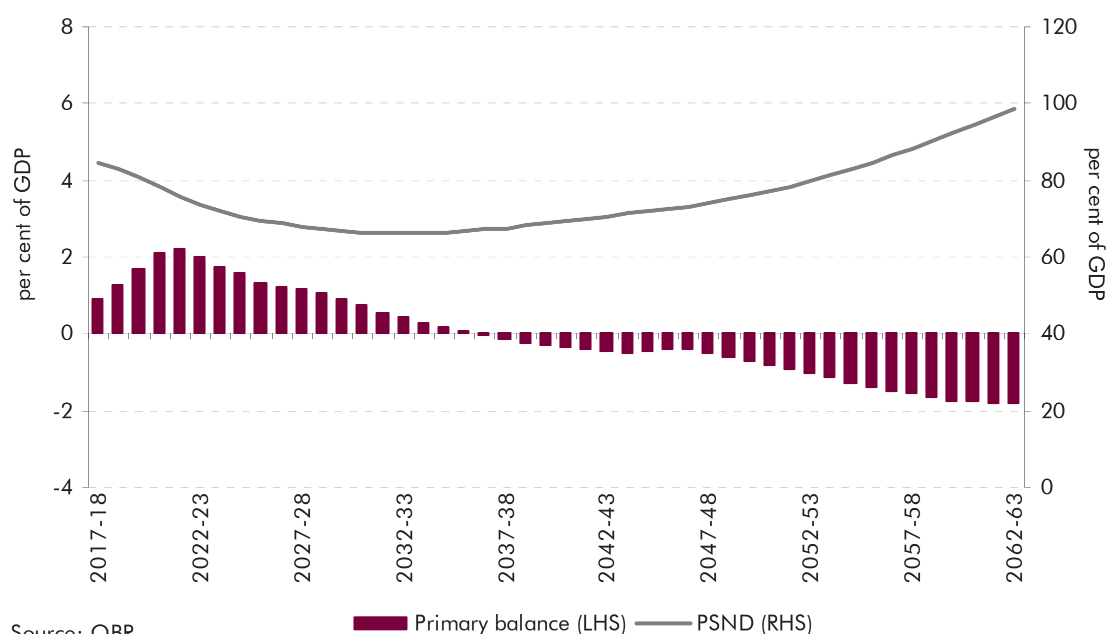
37 For the majority of financial transactions, we assume that the net effect is zero. An important exception is the impact of student loans, where the impact on net debt of the student loan portfolio is projected to peak at 6.7 per cent of GDP (£103 billion in today's terms) around the early 2030s before falling back to 5.0 per cent of GDP by 2062-63. The peak is slightly higher than the 6.1 per cent of GDP in last year's FSR, reflecting the downward revision to nominal GDP.

Projections of the primary balance and public sector net debt

38 Our central projections show public sector revenues rising as a share of national income over the long term, but by less than the expected increase in public spending. As a result, the primary budget balance (the difference between non-interest revenues and spending that is the key to the public sector's debt dynamics) is projected to move from a surplus of 0.9 per cent of GDP in 2017-18 to a deficit of 1.8 per cent of GDP by 2062-63, a deterioration of 2.7 per cent of GDP. The change from the underlying balance in 2020-21, when the output gap has closed, is greater at 4.2 per cent of GDP. This compares to an increase of 4.3 per cent of GDP over the projection period in last year's report.

39 Taking this and our projection of financial transactions into account, PSND is projected to fall from 85 per cent of GDP in 2017-18 to 66 per cent of GDP in the early 2030s before rising again to 99 per cent of GDP by the end of our long-term projection. Beyond this point, debt would remain on a rising path.

Chart 1: Central projection of the primary balance and PSND



Source: OBR

40 Since we have used the same population projections for this year's report, the changes to the primary balance and net debt projections result largely from non-demographic factors related to our medium-term forecast, the period of above-trend growth as the output gap closes and the effects of policy announcements. Higher net debt at the end of the medium-term forecast raises the debt projection. Above-trend growth from 2018-19 to 2020-21 offsets part of this increase. The remaining increase is largely offset by the positive impact of spending cuts in 2017-18 that were announced by the Government in Autumn Statement 2012 and the Single Tier pension reform. As a result, by 2062-63 PSND is higher by only around 8 per cent of GDP relative to last year's report.

41 Needless to say, there are huge uncertainties around any projections that extend this far into the future. Small changes to underlying assumptions can have large effects on the projections once they have been cumulated across many decades. We therefore test these sensitivities using a number of different scenarios.

42 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 economic growth, if long-term productivity growth was weaker, if the age structure of the population was older or if net inward migration, which is concentrated among people of working age, was lower than in our central projection.

43 Given the importance of health spending in the demographic challenge to fiscal sustainability, the rate of productivity growth in the sector is also an important

assumption. If productivity growth was weaker in the health sector than in the rest of the economy, and the pace of health spending growth was to be increased to compensate, then health spending would rise by a further 1.9 per cent of GDP by 2062-63 in our illustrative scenario. This would see PSND rise substantially faster, reaching 211 per cent of GDP by 2062-63.

44 We have looked more closely at the evidence on the economic and fiscal implications of inward migration, to test the assumptions that underpin our central projections. While most recent evidence for the UK is supportive of the view that net inward migration has had a positive fiscal impact, this is largely due to the concentration of inward migration among people of working age, which is captured in our demographic projections. There is no strong evidence to suggest that inward migration has a positive or negative impact on overall productivity growth, suggesting our central assumptions are reasonable.

Summary indicators of fiscal sustainability

45 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 would clearly be unsustainable.

46 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.

47 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 1.9 per cent of GDP (£29 billion in today's terms) from 2018-19 onwards to satisfy the inter-temporal budget constraint. This is down from 2.6 per cent of GDP in last year's FSR, reflecting a number of offsetting factors, the largest of which stems from the additional spending cuts the Government has pencilled in for 2017-18, the final year of our medium-term forecast.

48 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 would be 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'.

49 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 2018-19 to return PSND to 20, 40 or 60 per cent of GDP at the end of our projection horizon in 2062-63.

50 Under our central projections, the government would need to implement a permanent tax increase or spending cut of 0.8 per cent of GDP (£13 billion in today's terms) in 2018-19 to get debt back to 60 per cent, 1.2 per cent of GDP (£19 billion in today's terms) to get it back to 40 per cent and 1.7 per cent of GDP (£26 billion in today's terms) to reduce it to 20 per cent of GDP. In last year's report, the fiscal gap to returning debt to 40 per cent of GDP was 1.1 per cent of GDP. The gap in this year's report is slightly larger than last year, reflecting the slightly higher debt ratio projected for 2062-63.

51 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 2017-18 than we forecast in the *EFO*, the necessary tightening would be bigger or smaller by the same amount.

52 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 weaker productivity in the health sector pushing up spending per person. In the scenario we illustrate, this would increase the necessary permanent policy adjustment in 2018-19 to between 3.2 per cent and 4.0 per cent of GDP depending on the target debt level.

53 Governments need not respond to fiscal pressures with a one-off permanent tightening, of course. As an alternative to the tightening of 1.2 per cent of GDP in 2018-19 necessary to meet the 40 per cent target, governments could opt for a series of tax increases or spending cuts worth an additional 0.5 per cent of GDP each decade. A more gradual adjustment would mean a smaller fall in the debt to GDP ratio in the early years before PSND stabilises around the target level.