The IFS Green Budget

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Preface

Welcome to the Institute for Fiscal Studies' 2010 Green Budget. In the following pages, we discuss some of the many issues confronting Alistair Darling as he prepares his third Budget – and which would confront George Osborne or Vince Cable if either were to find himself in Mr Darling's shoes after this year's general election. Needless to say, the challenges are formidable: notably, how to repair the damage to the UK's public finances from the financial crisis without imperilling economic recovery.

For the first time this year, we are delighted to be producing the Green Budget in collaboration with Barclays Wealth and Barclays Capital. Michael Dicks, Managing Director and Chief Economist at Barclays Wealth, and Simon Hayes, Director and Chief UK Economist at Barclays Capital, have contributed chapters on the outlook for the economy, the risks of a sterling crisis and the impact of the financial crisis on the UK's productive potential. We are very grateful for their involvement and support.

We are also grateful to the Economic and Social Research Council for the support that it provides for our ongoing research work via the Centre for the Microeconomic Analysis of Public Policy at IFS. This underpins all our analysis in this volume.

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As with all IFS publications, the views expressed in it are those of the named authors of the particular chapters and not of the institute – which has no corporate views – or of the funders of the research.

Robert Chote

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- The overall impact varies from one crisis to another depending, among other things, upon: how the economy was performing pre-crisis; how severely the economy first contracted when the crisis struck; the level of pre-crisis 'imbalances' (such as the current account balance); whether or not the currency also came under severe pressure; and how other countries were faring when the crisis struck.

- Judged against these yardsticks, the UK currently looks very poorly placed. Most likely it will therefore suffer a further, and marked, deterioration in its productive capacity, and one that leaves the total decline in potential GDP greater than the 5% that the Treasury has assumed when making its projections. Our central estimate is for a 7½% fall; under a more pessimistic scenario, it could be 10%.

- More worryingly still, the growth rate of potential GDP will probably also be significantly reduced. Rather than the 2¾% per annum that the Pre-Budget Report suggests as a central estimate, it is more likely that potential GDP growth will run at something close to 1¾% per annum.

- The labour market is likely to be severely affected too, with the non-accelerating wage rate of unemployment (or 'natural' rate of unemployment) set to rise markedly – perhaps by 3 percentage points, to around the 9% mark at end-2015.

- The precise impact will depend upon how fast fiscal policy is tightened, and the policies used to achieve this tightening. A government that tightens fiscal policy aggressively, and relies more upon spending cuts than tax hikes to do so, is likely to experience a lower rise in the NAWRU, other things being equal.

- All in all, it would now appear that the output gap is rather smaller than many analysts imagine (at less than 4% of potential national income) – and that the structural cost of the crisis will therefore be greater than generally envisaged.

Chapter 2
Fiscal tightening: why and how?

- The December 2009 Pre-Budget Report estimates that the recession and financial crisis have punched a permanent hole worth 5.2% of national income (or £73 billion in 2009–10 terms) in the public finances. This is large, but smaller than the 6.4% of national income (or £90 billion) that the Treasury thought in the April 2009 Budget. In the absence of policy action, public sector debt would be set to rise unsustainably.

- Estimates produced by Barclays suggest that the Treasury may be optimistic about the extent to which the economy will recover from the crisis. The central Barclays scenario would imply a further £25 billion damage done to the public finances, while a 'pessimistic' scenario would imply a further £50 billion.

- Over the next eight years, the government intends to implement a fiscal tightening worth 5.5% of national income (£77 billion). If delivered, this would more than offset the permanent increase in borrowing that the Treasury believes has been caused by the crisis and would bring debt back onto a sustainable path.

- The government intends to implement just over 60% of the tightening between 2010–11 and 2014–15, achieving two-thirds through spending cuts and one-third through tax increases. (The biggest losers from the tax rises will be individuals with incomes over £100,000 a year, many of whom will face marginal income tax rates of 50% or 60%. The number of people facing these rates is set to rise significantly.)

- The remaining 40% of the tightening is to come from further increases in tax or deeper cuts to current spending after 2014–15. Continuing two-thirds spending cuts and one-third tax rises would take spending to 39.9% of national income, slightly higher than in 2003–04, and tax revenues to 38.8%, the level in 2007–08.

- If the interest rate on government debt rises to be in line with growth in the economy (an increase of almost 1 percentage point), then keeping borrowing constant beyond 2017–18 would be sufficient to see debt returning back below 40% of national income in 2032–33. But new measures would need to be implemented to mitigate the costs of an ageing population, and any further significant rises in interest rates would push this date back significantly.

- The Conservatives want to ensure that non-investment spending is no higher than tax revenues at the end of the forecast horizon (adjusting for the strength of the economy). This would likely require borrowing to be 1.1% of national income (or £15 billion in 2009–10 terms) lower in 2015–16 than Labour's plans. While this might help reduce the risk of rising interest rates, doing the same total tightening more quickly would do little to alter the forecast path of debt. If the quicker tightening were implemented two-thirds through spending cuts and one-third through tax rises, it would require a further £11 billion cut to public spending and a £5 billion rise in taxes in 2015–16. Under Labour's plans, the pain from these changes would be deferred until 2017–18.

Chapter 3
Fiscal stimulus and the consumer

- The recession has been associated with a substantial fall in household spending and a rapid rise in the saving rate. Partly as a consequence, the government implemented a fiscal stimulus, including a temporary cut in the main rate of VAT from 17.5% to 15% and a car scrappage scheme.

- The VAT cut has ended and the car scrappage scheme expires in February 2010. The return of VAT to 17.5% will increase prices by about 1% on average. This is likely to mean consumption is about 1% lower than it would have been had the rate remained at 15%, reversing the 1% consumption increase brought about by the temporary cut. The immediate impact on purchases may be a more than 1% fall, as consumers may have brought forward purchases at the end of 2009 that they were planning to make later to take advantage of the lower VAT rate, with a consequent reduction of purchases in 2010.

- If the government wishes to raise more revenue in the future by increasing the VAT rate further, and if the downturn proves more prolonged than anticipated, then pre-

announced increases in the rate could help stimulate consumption ahead of the increases. Relative to increases in income tax, higher VAT may be an economically efficient way to raise revenue. But some may think it inequitable towards those with savings.

- The car scrappage scheme allows for up to 400,000 old vehicles to be scrapped and replaced by a new one, with a £2,000 incentive split between government and manufacturers. The scheme has been associated with a large short-term increase in car registrations compared with their 2008 levels. The largest impact may well be to encourage people to replace old cars with new rather than second-hand vehicles.

- Economic theory and studies of previous schemes suggest that there is likely to be a substantial and enduring 'payback' effect after the scheme ends. Sales will be reduced relative to a no-subsidy baseline as people have brought forward their purchases.

- The environmental benefits of the scrappage scheme are likely to be very small. Households are choosing relatively clean new cars, but may well drive them more than they drove their old vehicles.

Chapter 4
The economic outlook

- The recent performance of the UK economy has been rather alarming. The UK has suffered the largest shortfall in activity relative to its pre-crisis trend of any G7 economy, and has been the slowest of the G20 economies to emerge from recession. At the same time, however, inflation has been stronger than expected.

- A lower pound and reluctance to pass on the temporary cut in the main rate of VAT may account for some of the surprising strength of inflation, but the combination of unexpectedly weak activity and unexpectedly strong inflation suggests a big fall in the UK's capacity to supply goods and services. In addition to reducing the UK economy's productive potential, we believe the financial crisis has also reduced its trend rate of growth.

- If this is true, the economy may not be able to return to the growth rates of close to 3% per annum that it enjoyed between the mid-1990s and 2007 without quite quickly running into the inflation buffers. In our central scenario, we expect GDP growth to average just under 2% per annum between 2010 and 2014 – similar to the average independent forecast, but more subdued than the Treasury's.

- The consumer is likely to bear much of the burden of adjustment, reflecting higher unemployment, more subdued real wages, a rising tax burden and increased debt-service costs. We do not expect the strong housing market recovery seen through the middle of last year to be sustained. Capital expenditure is also likely to be muted, held back by tight credit availability but also reflecting subdued consumer demand and a rather lacklustre improvement in export sales.

- We see the risks around this forecast as evenly balanced, and consider two alternative scenarios to our central case. In an optimistic scenario, to which we attach a 25% probability, the decline in potential GDP is close to the 5% assumed by the Treasury, although we continue to doubt the Treasury's assumption that potential growth is as high as 2¾%. In a pessimistic (indeed, dire) scenario – to which we also assign a 25% probability – the deterioration in potential GDP would be close to 10%,

and the potential growth rate might drop nearer to 1½% per annum. This would be especially testing for the authorities, not just in terms of public finances but because it would also necessitate major structural reforms.

Chapter 5
The public finances and sterling

- Currency crises often go hand in hand with fiscal crises, and international investors have become concerned about the UK's public sector debt dynamics.

- In 2008–09, sterling registered an even larger depreciation against the US dollar than in its 1967 devaluation, the 1976 IMF crisis and its 1992 exit from the European Exchange Rate Mechanism. In trade-weighted terms, the decline was the biggest since figures were first calculated in the early 1980s. This large depreciation was driven partly by concerns about the sustainability of the public finances.

- Despite the large projected rise in the government debt stock, the cost of borrowing remains low, assisted by quantitative easing. The latter is likely to be temporary, however, and the cost of the debt burden is set to increase.

- Our central expectation is that debt costs will not become unmanageable and we expect the UK's credit standing to remain strong, notwithstanding the prospective rise in the share of tax revenue that the UK government will have to devote to debt servicing.

- Even so, sustainability cannot be taken for granted: there are plausible scenarios in which the UK's debt sustainability measures stray uncomfortably close to concerning levels. To minimise the risks of a further disruptive fall in sterling, it is crucial that the authorities do all they can to reassure financial markets that both fiscal and monetary probity will be maintained.

Chapter 6
Green Budget public finance forecasts

- Smaller-than-expected falls in tax revenues and lower spending growth over the year to date suggest that the government will need to borrow £10.4 billion, or 0.7% of national income, less in 2009–10 than it forecast in the 2009 Pre-Budget Report.

- But our relative optimism diminishes thereafter. If the economy were to evolve broadly as the Treasury predicted in the PBR, we forecast that borrowing would be just 0.3% of national income (or £4 billion in today's terms) lower than the PBR 2009 forecast in 2014–15.This narrowing gap reflects the fact that we would expect weaker growth in tax revenues for a given economic outlook than the Treasury.

- We forecast that the current budget deficit would fall from 8.8% of national income in 2010–11 to 2.9% of national income in 2014–15 under this scenario. Of this 5.9% of national income reduction in the current budget deficit, 4.4 percentage points would come from a fall in current spending as a share of national income and 1.5 percentage points from an increase in the tax burden. With slightly lower borrowing over the next five years, we forecast that public sector net debt would peak at a slightly lower level (76.0% of national income) than the Treasury forecast.

- But if the economy were to evolve along the Barclays central scenario, we forecast that the current budget deficit would be 2.5% of national income larger in 2014–15

than in our baseline scenario. Even under their 'optimistic' scenario for the macroeconomy, our fiscal forecasts suggest borrowing would persist at a higher level than forecast by the Treasury. Meanwhile, under the Barclays 'pessimistic' scenario for the macroeconomy, most of the borrowing expected this year would be permanent.

• There is already a sizeable tightening of 1.6% of national income between 2009–10 and 2010–11 from the unwinding of the fiscal stimulus package. We suggest that no further significant tightening is implemented in 2010–11, given the likely fragility of the nascent recovery and the fact that monetary policy remains very loose.

• The government plans a 4.1% of national income (£57 billion) fiscal tightening between 2010–11 and 2015–16. By increasing this to 5% of national income (or an additional £13 billion), our baseline forecast would show the structural current budget deficit eliminated by 2015–16. Aiming to complete the repair job within one five-year Parliament would be more credible than the government's eight-year plan. It would also likely comply with the Conservatives' stated target for borrowing.

• It is very uncertain what policy settings would deliver the levels of borrowing that the government or the Conservatives want to achieve over the next few years. Both parties' plans might be more credible and sensible if they amounted to a challenging but achievable plan for tightening over the next five years, including an explanation of how they might need to change if the economy, the underlying health of the public finances or investor sentiment departed significantly from current expectations.

Chapter 7
Options for fiscal tightening: tax increases and benefit cuts

• This chapter presents options, rather than advocating any of them. Which, if any, to pursue would depend on a government's distributional goals and wider priorities.

• From the big three taxes, 1% of national income (£15.4 billion in 2011–12 terms) could be raised by:
  – a 3 percentage point rise in the basic and higher rates of tax (to 23% and 43%);
  – a 3 percentage point rise in employee and self-employment National Insurance (NI) rates; or
  – a 3.5 percentage point rise in the standard rate of value added tax (VAT) (to 21%).

• These changes would weaken work incentives and hit the rich harder than the poor. The main differences are that the VAT rise would be less progressive than the others (as it would affect poor, non-income-tax-paying households) and that the retired and savers would not be affected by a rise in NI (which only taxes earnings).

• But significant amounts of revenue could also be raised from reforms that would simultaneously remove undesirable distortions in the tax system, such as:
  – charging the full rate of VAT on goods with a zero or reduced rate;
  – a comprehensive carbon tax;
  – increasing NI rates for the self-employed;
  – charging NI on employers' contributions to pension funds;
  – increasing the rate of small companies' corporation tax;
  – increasing the rate and cutting the allowance for capital gains tax.

- If cuts are desired in social security spending, then freezing the value of benefits and tax credits shares the pain over a large number of households. Freezing all benefits in April 2011 for one year would save £4.1 billion a year. A freeze over the next Parliament would save £24.6 billion a year by the fifth year (1.3% of national income in 2014–15), but would increase income inequality and measures of relative poverty.

- Removing benefits from better-off households would be less regressive, but would increase the scope of means-testing. Options include:
  – means-testing child benefit and the family element of the child tax credit (around £6.5 billion);
  – scrapping winter fuel payments and free TV licences and compensating pensioners on the pension credit (£1.4 billion);
  – abolishing carer's allowance (£0.5 billion);
  – time-limiting contributory incapacity benefit (IB) and employment and support allowance (ESA) (up to £2 billion).

- Fewer families could be means-tested by means-testing more aggressively, reversing the direction of reforms since 1999. This could cut £2 billion a year from benefits and tax credits for working-age households, and a similar amount from households with adults aged 60 or over. The impact on incentives would be mixed, but the losers will overwhelmingly be in the poorest half of the income distribution.

Chapter 8
Public services: deep cuts coming

- The December 2009 Pre-Budget Report pencilled in a real freeze in total public spending over the four years from 2011–12 to 2014–15. But spending on debt interest, social security and other 'annually managed expenditure' is likely to grow in real terms. Keeping to these overall spending plans would therefore require deep cuts in 'departmental expenditure limits' (DELs) – Whitehall spending on public services and administration (although the government could also cut welfare bills).

- In the absence of new measures to reduce spending on benefits and tax credits, we estimate that spending on public services and administration would have to be cut in real terms by 3.0% a year on average in 2011–12 and 2012–13 and by 2.7% a year on average in 2013–14 and 2014–15. This would be a cumulative cut of 10.9% after four years, or £42.0 billion by 2014–15 (in 2009–10 prices). This would reverse almost all of the increase in DELs as a share of national income seen since Labour took office. If we include the 0.5% cut in DELs confirmed for 2010–11, the total real cut over the next five-year parliament would be 11.4% or £43.8 billion.

- On a historically comparable definition of public service spending, we estimate that the four years from 2011–12 would be the tightest for spending on public services since April 1976 to March 1980 and that the five years 2010–11 to 2014–15 would be the first five consecutive years of real cuts since data began in 1948–49.

- The government has promised to 'protect' spending on priority areas, including health, schools and overseas aid, in the years 2011–12 and 2012–13. The commitment to freeze NHS spending in real terms in 2011–12 and 2012–13 would still imply the tightest two-year squeeze for the health service in the last 60 years.

- Protecting large areas of spending from cuts means that the pain will be even more severe for the remaining areas of departmental spending. These other areas –

including defence, higher education, transport and housing – would likely see their budgets cut by 12.9% on average over the two years or by £25.8 billion by 2012–13.

- Beyond 2012–13, the government has not promised to protect any area of spending except overseas aid. Were it to continue 'protecting' all its priority areas for a further two years, other budgets would have to be cut by a total of 23.8% (or £47.4 billion) by 2014–15 (including the £25.8 billion that would be required by 2012–13).

- The Conservative Party has promised to protect overseas aid (like Labour) and to increase NHS spending in real terms. Under Labour's plans for spending overall, this would imply £45.7 billion in cuts in unprotected areas by 2014–15. As the Conservatives propose to protect fewer services than Labour, the percentage cut required across other departments is substantially smaller, at 18.3%. However, if the Conservatives' plan to protect aid and the NHS were combined with the more ambitious tightening plan implied by their proposed fiscal targets, then the cuts in their unprotected areas could be more like 22.8% or £57.1 billion by 2014–15.

Chapter 9
Public sector pay and pensions

- Public sector pay cost £174 billion of public spending in 2008. The pay bill rose steadily as a share of national income from 2000 to 2005, partly because of increased employment and partly because of pay increases that were, on average, faster than those seen in the private sector. The pay bill has been cut modestly since then as a share of national income (although not yet in real terms). The fiscal retrenchment planned by the Treasury will soon require a tighter squeeze.

- Overall, pay levels in the public sector are probably not significantly out of line with those of similar workers in the private sector, once you take into account factors such as their age, education and qualifications. However, there are areas of divergence. In particular, there are gaps in favour of public sector workers in regions outside London and the South-East, which remains an area for reform in the long run.

- There is evidence that public sector workers have fared better than their private sector counterparts in the recession. A couple of years of pay freezes or other restraint could save significant money in the short run and, in current labour market conditions, would be unlikely to create recruitment problems. But, given the tendency for public sector workers to 'catch up' following periods of pay restraint, further cuts in the public sector workforce are more likely to deliver the lasting reductions in public spending as a share of national income sought by the Treasury.

- In the long run, a big anomaly remains the pension provision enjoyed by public sector workers. With salaries broadly in line with their private counterparts, the large pension advantage they enjoy translates into a total package that is substantially more generous. The only way to access this money in the short run would be to levy additional pension contributions on public sector workers.

Chapter 10
Support for research and innovation

- In the December 2009 Pre-Budget Report (PBR), the government announced its intention to introduce a 'patent box' – a new policy aimed at encouraging innovation in the UK by taxing income from patents granted after April 2013 at a reduced 10% rate of corporation tax.

- The proposed patent box would do little to address the market failures that typically justify government intervention in innovation markets. It is expensive even on the government's own costing (£1.3 billion a year), the bulk of the gains will accrue to a few large companies, and the money would be better spent supporting innovation by maintaining spending on the science base or other infrastructure investments.

- Spending cuts of £600 million have already been announced from the higher education and science and research budgets. This is likely to be followed by further cuts in these areas, as the government attempts to cut spending on public services.

- The PBR also announced minor reforms to the research and development tax credits to allow small and medium-sized companies to benefit from the scheme without the need to own the intellectual property resulting from the research. This is welcome.

Chapter 11
Reforming UK fiscal institutions

- Voters and investors need to be reassured that this or a future government will repair the damage to the public finances that has been created by the financial crisis. This creates a powerful case for institutional reform to increase people's confidence in official forecasts of the public finances.

- The Fiscal Responsibility Bill, which – once on the statute book – would place the government under a self-imposed legal obligation to deliver particular fiscal targets, is unlikely to achieve this. The government's existing Code for Fiscal Stability was enshrined in legislation in 1998, but this did not prevent the fiscal rules set out under it from losing their credibility once the then Chancellor Gordon Brown was widely thought to have 'moved the goalposts' to avoid a formal breach.

- The National Audit Office has a limited and inappropriate role in the current fiscal forecasting process, being required to audit a small number of assumptions chosen by the Treasury. The NAO could be given more power and an extended role, but it does not possess the expertise or resources to challenge the Treasury on a level playing field. It could be given those resources and expertise, but this would leave it with a combination of important responsibilities that would best be separated.

- Creating an independent Office for Budget Responsibility to produce or oversee official fiscal forecasts is a good idea, but such a body would require careful design. The key challenge is to provide independent and believable forecasts based on the information available, without losing the benefits of integrating fiscal forecasting and policy design. Taking fiscal forecasting out of the Treasury would threaten this synergy, while replicating the existing operation in the OBR would be expensive.

- The most promising route might be to have an independent Budget Responsibility Committee oversee, challenge and sign off forecasts by officials in the Treasury.

1. The UK's productive capacity: surveying the damage

Michael Dicks (Barclays Wealth)

Summary

- Typically, past financial crises have had a marked impact on the level of potential GDP, with the effects building up gradually over a four- to five-year period.

- The overall impact varies from one crisis to another depending, among other things, upon: how the economy was performing pre-crisis; how severely the economy first contracted when the crisis struck; the level of pre-crisis 'imbalances' (such as the current account balance); whether or not the currency also came under severe pressure; and how other countries were faring when the crisis struck.

- Judged against these yardsticks, the UK currently looks very poorly placed. Most likely it will therefore suffer a further, and marked, deterioration in its productive capacity, and one that leaves the total decline in potential GDP greater than the 5% that the Treasury has assumed when making its projections. Our central estimate is for a 7½% fall; under a more pessimistic scenario, it could be 10%.

- More worryingly still, the growth rate of potential GDP will probably also be significantly reduced. Rather than the 2¾% per annum that the Pre-Budget Report suggests as a central estimate, it is more likely that potential GDP growth will run at something close to 1¾% per annum.

- The labour market is likely to be severely affected too, with the non-accelerating wage rate of unemployment (or 'natural' rate of unemployment) set to rise markedly – perhaps by 3 percentage points, to around the 9% mark at end-2015.

- The precise impact will depend upon how fast fiscal policy is tightened, and the policies used to achieve this tightening. A government that tightens fiscal policy aggressively, and relies more upon spending cuts than tax hikes to do so, is likely to experience a lower rise in the NAWRU, other things being equal.

- All in all, it would now appear that the output gap is rather smaller than many analysts imagine (at less than 4% of potential national income) – and that the structural cost of the crisis will therefore be greater than generally envisaged.

1.1 Introduction

Recessions inflict two sorts of economic costs. First, there are 'cyclical' (or 'short-term') costs, such as the rise in unemployment that always goes hand in hand with a marked drop in aggregate demand (i.e. actual GDP). This might well prove to be short-lived if the shortfall in demand can be eradicated fairly quickly. Second, there are 'structural' (or 'long-term') costs. These may take the form of a one-off fall in the level of potential GDP or of a reduction in its growth rate. Even worse, they may take *both* forms.

'Potential GDP' is defined here to mean the level of output that the economy can produce if there is full utilisation of both capital and labour. In other words, it is that level of output that could be produced if all fixed capital – such as plant and machinery – is used effectively, and if unemployment is at its 'natural' rate, i.e. the level consistent with a stable rate of change of wages. (Economists sometimes refer to this rate of unemployment as being the non-accelerating wage rate of unemployment, or NAWRU for short.) Another term for potential GDP, which perhaps better describes its meaning, is 'aggregate supply' – in other words, the total capacity of the economy to supply goods and services in a sustainable (non-inflationary) way.

A central bank that seeks to keep inflation low and stable (such as the Bank of England) will try to keep aggregate demand in line with aggregate supply. If a recession reduces aggregate supply, it follows that the central bank will have to aim for a lower path of aggregate demand looking forward than would otherwise have been the case. This means that a recession that has little or no impact on potential GDP is much less costly overall than one that significantly reduces either its level or its growth rate (or both).

We illustrate the case in which the recession leaves potential GDP unaffected in Figure 1.1. The actual level of GDP falls temporarily below potential as the recession bites (moving from the height of the boom at point A to the depth of the recession at point B), with unemployment rising temporarily above the natural rate. Over the subsequent upswing, activity increases rather faster than potential as the so-called 'output gap' – the difference between actual and potential GDP as a percentage of the latter – is closed, with the economy moving from point B to point C. Unemployment drops back to the natural rate, leaving the economy suffering little, if any, in the way of long-term (structural) costs.

Contrast this with the situation in which the recession reduces the *level* of potential GDP. Figure 1.2 shows a fairly extreme case, in which the decline is so great that actual and potential GDP move down by almost the same amount. In such a situation, the long-term (structural) fall in GDP is more or less equivalent to the depth of the recession. In practice, the relationship between the fall in aggregate demand and the damage done to aggregate supply varies enormously, depending among other things on the causes of the slowdown and the response to it. Much of this chapter is devoted to attempting to

Figure 1.1. A stylised recession with no long-run structural costs
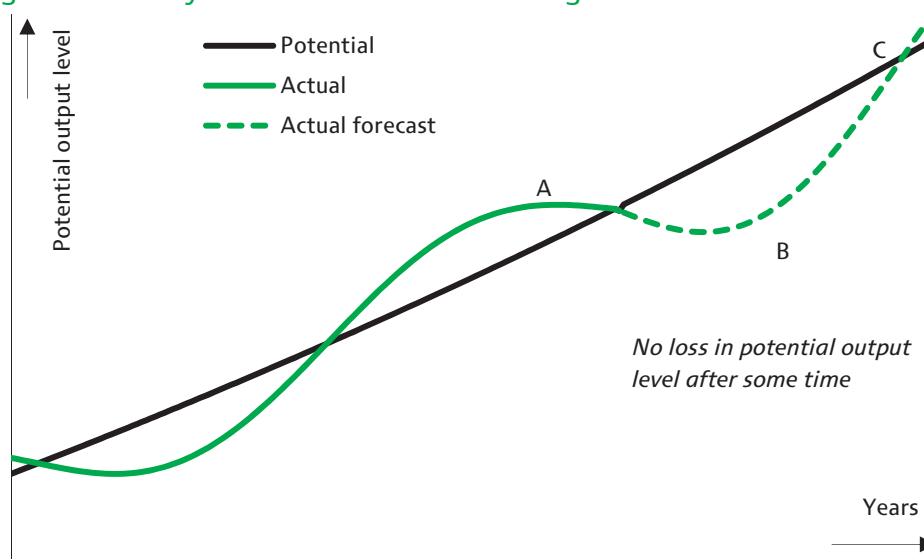
Figure 1.2. A stylised recession with constant long-run structural costs
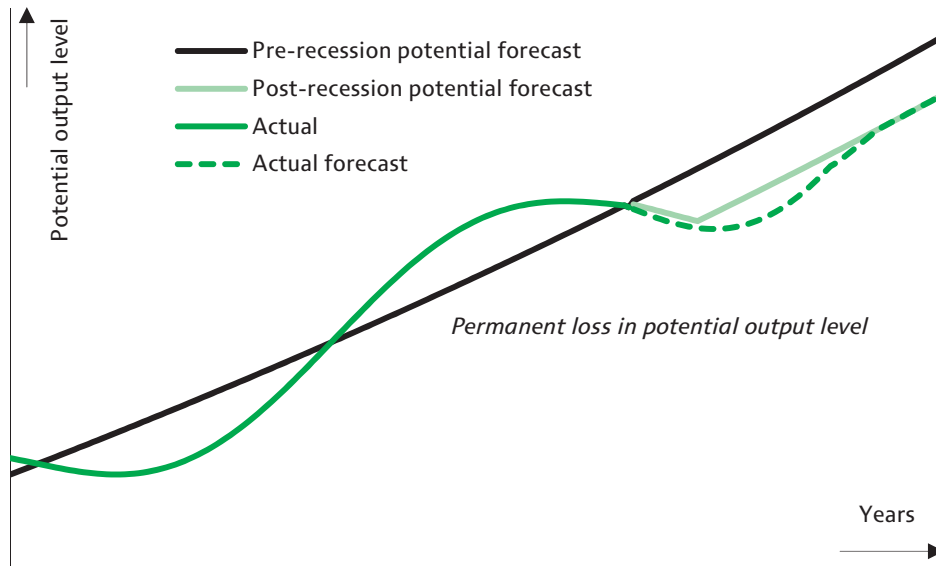
discover whether the current (deep) crisis-induced recession may entail a 'big' or a 'small' fall in potential GDP.

Worst of all possible outcomes, illustrated in Figure 1.3, is the situation where the recession reduces both the level of potential GDP *and* its growth rate. Under this scenario, the recession not only creates a permanent gap between the path of potential output expected prior to the recession and that expected after it, but this gap continues to widen year after year. To eradicate this effect, the authorities would need to make structural, or microeconomic, reforms, in order to raise the economy's potential growth rate. These might, for example, include labour market measures designed to lower the NAWRU. Or they might include policy changes designed to improve the functioning of product markets, such as measures designed to promote greater competition.

The different economic costs implied by these three scenarios are reflected in their implications for the government's finances. Under the first scenario, the recession temporarily subdues tax revenues and increases government spending on such things as

Figure 1.3. A stylised recession with increasing long-run structural costs
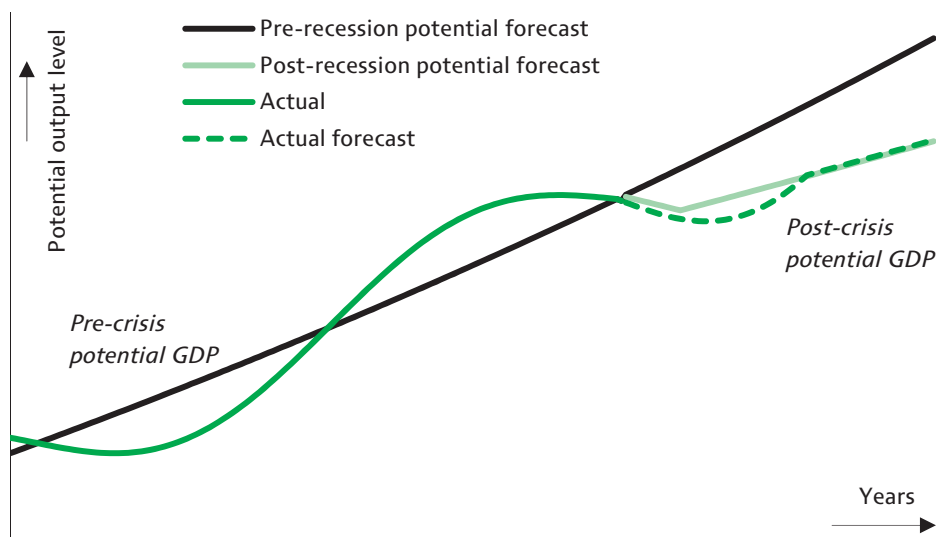
unemployment benefits, thereby temporarily increasing government borrowing and producing a one-off addition to government debt (which will need to be financed going forwards). Under the second scenario, the permanent (but constant) loss of potential GDP relative to the pre-recession path implies a permanent loss of tax revenues and a permanent increase in welfare costs. This in turn implies a permanent, but stable, addition to government borrowing – an increase in the so-called 'structural' budget deficit – and ongoing additions to government debt. The third scenario implies an increase in the structural budget deficit that itself increases in size over time, thereby generating larger and larger additions to the stock of government debt if left unaddressed.

When it comes to deciding how to repair the fiscal damage associated with the recession, all this goes to show just how important it is to understand the cyclical and structural components. The rest of this chapter attempts to do just that, in two ways.

- **First, we look at recent research by the OECD and by the IMF to see how the level of potential GDP might be affected.** The OECD study uses its own estimates of potential GDP to gauge how past financial crises have affected economies' structural performance in terms of the fall in the level of potential GDP. We extend that work by considering a much longer run of UK data than the OECD employed. We find that severe crises, such as that which the UK is currently suffering, tend to reduce the level of potential GDP by around 7½%, with most of the decline being felt by the fifth year (first part of Section 1.2). Recent IMF research attempts to gauge the fall in the level of potential GDP in 88 past financial crises, but also tries to identify which factors influence whether a particular country suffers by more or less than the average. It finds a long-run average cost of about 10% of potential GDP. On the basis of the IMF work, we construct a scorecard to assess how well the UK will fare this time round. The answer, unfortunately, is 'not well'. If the IMF model of what determines the scale of damage done by crises is correct, then it looks as if the UK ought to do worse, not better, than average (second part of Section 1.2).

- **Second, we assess whether the growth rate of potential GDP might be affected, in addition to its level.** To do this, we consider some recent OECD research into what drives NAWRUs – extending the OECD analysis to explain better past shifts in the UK's natural rate of unemployment. Using this model, we illustrate how much increased tax rates and higher long-term bond yields might raise the structural level of unemployment, and illustrate the sensitivity of our forecast to assumptions about these two variables. This suggests that the long-term implications of recession for the public finances will depend, quite sensitively, on how the authorities set tax rates in response to the need to reduce the budget deficit, and on how markets react. If the government does not tighten policy sufficiently quickly or aggressively to allay investors' fears, the resulting increase in market interest rates may increase, and appreciably so, the long-term costs to the economy (and thereby to public finances). By way of illustration, in the extreme situation in which no public spending cuts are made, and the authorities rely solely on tax hikes to eradicate the structural budget deficit, and in which the real long-term interest rate rises to where it was in the mid-1980s (at about 7%) – instead of remaining at the near-2% level where it stands today – the natural rate of unemployment would be about 1½ percentage points higher (Section 1.3).

These two analyses lead us to take a more pessimistic view than the Treasury of the impact that the current crisis will have on potential GDP (Section 1.4). The Treasury's

latest public finance forecasts are based on the assumption that the crisis will reduce the level of potential GDP from previously expected levels by around 5% over the three years from mid–2007 to mid–2010, but that it will leave the growth rate of potential GDP unaffected thereafter at 2¾% per year (although the Treasury assumes that it will be only 2½% for the purposes of forecasting the public finances).[1] We estimate not only that the fall in the level of potential GDP will be larger than the Treasury expects, at around 7½% over five years, but also that, thereafter, potential GDP will grow by only about 1¾% per year. The implications of these scenarios for the public finances are discussed in Chapter 2.

1.2 Financial crises and the level of potential GDP

The level of potential GDP cannot be observed directly in data. Rather, it has to be inferred, typically through one of two techniques. First, potential GDP can be estimated from a 'production function', which seeks to explain how factor inputs are combined to generate value added (or 'output'). Second, potential GDP can be estimated by using statistical techniques (such as filters) to draw a trend through actual GDP.

The OECD approach

The OECD has been carrying out such exercises for decades, generally preferring the first of these approaches as it entails putting structure into the model, i.e. combining economic theory with empirical data. Thus, this approach involves considering what factors may affect the quantity of inputs of labour and capital that firms choose to use. It also requires consideration of what might determine the efficiency with which these inputs are combined: so-called 'total factor productivity' (TFP). Box 1.1 provides more details.

In recent OECD research, Furceri and Mourougane (2009) use the organisation's potential GDP estimates, based on production functions, to gauge how financial crises have typically affected potential output.[2] Their sample covers 30 countries for which potential GDP estimates are available since 1960. They calculate the long-term impact of the financial crises, identified by Laevan and Valencia (2008),[3] on potential GDP and also trace out the profile of how the destruction typically takes place.

Furceri and Mourougane (2009) find that the overall decline in the level of potential GDP from financial crises is quite large – with an average deterioration, for all the crises that they consider, at 2.4%, as shown in Figure 1.4. For a severe crisis – defined in the same manner as employed by Reinhart and Rogoff (2009)[4] – they find the total effect amounts to 3.8% (Figure 1.5). We say the effect is 'quite large' as it implies about one year's lost output growth for a typical developed economy crisis. This rises to about one-and-a-half years' lost output growth for a severe crisis.

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[1] Page 143 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://hm-treasury.gov.uk/d/pbr09_annexa.pdf.

[2] D. Furceri and A. Mourougane, 'The effect of financial crises on potential output: new empirical evidence from OECD countries', OECD Economics Department Working Paper 699, May 2009, http://oberon.sourceoecd.org/vl=2631349/cl=20/nw=1/rpsv/cgi-bin/wppdf?file=5ksj3lqk2h40.pdf.

[3] L. Laevan and P. Valencia, 'Systemic banking crises: a new database', IMF Working Paper 08/224, 2008, http://www.imf.org/external/pubs/ft/wp/2008/wp08224.pdf.

[4] C. Reinhart and K. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*, Princeton University Press, Princeton, NJ, 2009. The severe crises are defined as those that hit Spain in 1977, Norway in 1987, Finland in 1991, Sweden in 1991 and Japan in 1992.

Box 1.1. Estimating the impact of financial crises on potential GDP

To produce estimates of potential GDP, it is first necessary to quantify the inputs to the production process, i.e. the amounts of 'labour' and 'capital' available at the whole economy level. To quantify the total amount of labour input, one needs an assessment of:

i)   population trends;

ii)   the proportion of people of working age actually in, or actively seeking, paid work (the so-called 'labour force');

iii) the normal hours of work of those in employment; and

iv) the natural rate of unemployment (the NAWRU) if we presume that gaps between actual and natural rates of unemployment influence the rate of changes of workers' average earnings, or wages.

In practice, this means that some smoothing of actual data is required to produce potential GDP estimates. For example, normal hours are usually estimated from a smoothed version of actual hours, and 'trend' participation rates from a smoothed version of actual ones.

As regards capital, most studies of potential GDP assume that all capital is fully utilised, although a few people have questioned such an assumption.[a] Thus, the capital available to produce potential GDP is usually assumed to be equal to the Office for National Statistics (ONS)'s estimate of the capital stock. Looking ahead, this stock is presumed to depreciate gradually, while being supplemented by new (gross) fixed investment. In some cases, however, the services that flow from the stock of capital may vary through time, depending upon such things as scrapping rates, as well as depreciation. The efficiency of capital will depend in part on its vintage, rather as the services that flow from a bottle of wine vary according to its vintage, the conditions in which it has been stored and so on.

Whatever the precise means of gauging capital services and labour inputs, these are usually combined in the form of a simple production function, such as the so-called 'Cobb–Douglas' production function of the form:

$$Y = (TFP \times EMP \times HOURS)^{\alpha} (K)^{1-\alpha} \qquad (1)$$

where Y is total output (real GDP), TFP is total factor productivity, EMP is total employment, $HOURS$ is hours worked per worker and K is the capital stock. The parameter α is the weight placed on labour versus capital, usually taken as the average of the wage share in GDP over the full sample period (i.e. a long period of time, so as to abstract from the business cycle). Defining the labour force (LF) as the sum of employment and unemployment, the labour force participation rate ($LFPR$) as the ratio of the labour force to the population of working age ($POWA$), and the unemployment rate (UR) as the ratio of the number of unemployed to the labour force allows (1) to be rewritten as:

$$Y = (TFP \times POWA \times LFPR \times (1-UR) \times HOURS)^{\alpha} (K)^{1-\alpha}. \qquad (2)$$

In order to generate estimates of potential GDP using (2), we need only substitute in 'trend' versions of all the right-hand-side variables, with the exception of K (which is assumed always to be fully utilised). Filtered (i.e. smoothed) versions of TFP, $POWA$ and $HOURS$ are usually used to create these 'trend' versions, with a 'T' suffix added to their names for clarity. To move from the actual unemployment rate to its structural brethren, a filter can also be applied, although the OECD usually tries to do better than that, by

checking whether its NAWRU estimates are actually useful, in the sense that the gaps between the actual and the structural level of unemployment actually help explain, statistically speaking, changes in the rate of growth of wages. This it can do by estimating a wage equation of the form:

$$\Delta w_t = \alpha_1 + \beta_1 \Delta w_{t-1} + \ldots + \beta_m \Delta w_{t-m} + \gamma_1 (UR_{t-1} - NAWRU_{t-1}) + \rho_1 Z_{t-1} \qquad (3)$$

where Δ refers to the one-period rate of change of a variable, w refers to wages and Z refers to any other variable deemed to be important. (Z would generally, for example, include prices if the dependent variable is in nominal wages and might also include tax variables, or gauges of income and wages policies.)

To start with, the NAWRU estimates in (3) might be inferred by filtering the actual series. Having done this once, the optimal degree of smoothing can then be gauged on the basis of seeing how well the resultant unemployment 'gap' variable (i.e. UR – NAWRU) does in helping to explain, in statistical terms, developments in wages. For example, trying out a smoother NAWRU estimate will either make the resultant gap better at explaining past wage developments, or it will make it worse. If the former, then it should replace the original NAWRU estimate, and the exercise be repeated, with another, still smoother, version of the filtered unemployment rate used as an estimate of the NAWRU.

Substituting trend variables into (3) allows one to ascertain the level of potential GDP (*YPO*), i.e. the aggregate supply potential of the economy:

$$YPOT = (TFPT \times POWAT \times LFPRT \times (1-NAWRU) \times HOURST)^{\alpha} (K)^{1-\alpha} \qquad (4)$$

and the output gap (*OG*) can be defined as the difference between actual and potential GDP as a percentage of the latter:

$$OG = 100 \times (Y - YPOT) / YPOT. \qquad (5)$$

As a check on the accuracy of the potential GDP estimates, one can also consider the usefulness of the resultant output gap estimates in a price equation of similar form to (3), but in which prices take the place of wages, the lagged value of *OG* takes the place of the (lagged) unemployment gap and *Z* includes firms' costs, such as unit labour costs and imported materials costs. Thus the new model is for the mark-up of prices over costs, with the assumption being that pressure of demand variables helps determine such a mark-up. Again, one can consider varying the various smoothing parameter values and choosing those that maximise the ability of the resultant output gap estimates to explain past variation in the data.

What this amounts to, in practice, is using the following equation to determine the growth rate of potential GDP:

$$\Delta\log(YPOT) = \alpha \times [\Delta\log(TFPT) + \Delta\log(POWAT) + \Delta\log(LFPRT) + \Delta\log(1-NAWRU)$$
$$+ \Delta\log(HOURST)] + (1-\alpha) \times \Delta\log(K) \qquad (6)$$

where the Δ term again refers to the one-period (say annual) rate of change of a variable. Thus, the left-hand side of (6) is equal to the annual growth rate of potential GDP, with the right-hand-side terms providing a means of calculating contributions from the six variables that help determine it.

Having constructed estimates of productive potential, Furceri and Mourougane (2009)[b] use them to estimate how financial crises affect their levels and growth rates. They do this by estimating univariate autoregressions of the form:

$$\Delta\log(YPOT)_{i,t} = \alpha_i + \beta_1 \Delta\log(YPOT)_{i,t-1} + \ldots + \beta_4 \Delta\log(YPOT)_{i,t-4} + \delta_0 D_{i,t} + \ldots + \delta_4 D_{i,t-4}$$

where $\Delta\log(YPOT)_{i,t}$ is the annual growth rate of potential GDP (of country i at time t, taken from equations similar to (6) above) and $D_{i,t}$ is a 'dummy variable' that takes the value 1 when a financial crisis strikes country i and 0 at all other times.[c] The lag lengths on both the $YPOT$ and D variables were chosen using standard statistical tests, so as to ensure a good fit of the data set examined.[d]

From such a model, we can derive so-called impulse response functions for each country, to see how potential GDP evolves once a financial crisis hits – with the estimated parameter δ_0 providing a best guess of the typical first-period decline in the growth rate of potential GDP, the typical second-period decline being equal to δ_1, etc. Of course, this means that the overall impact on potential GDP growth is equal to δ_0 by the end of the first period, but that it rises to $[\delta_0 + (\delta_1 + \beta_1\times\delta_0)]$ by the end of the second period. From such a model, it is also possible to trace out the impacts of a crisis on the level of potential GDP. Note that, in the case in which an economy's potential growth rate is constant pre-crisis, the structure of the model means that the long-run impact on potential GDP growth of a crisis will be forced to be zero because all the $D_{i,t}$ terms are zero post-crisis. (For country i, potential GDP growth will be equal to $[\alpha_i / (\beta_1+\beta_2+\beta_3+\beta_4)]$.)

a. See, for example, J. Fernald, 'A quarterly, utilization-adjusted series on total factor productivity', and the references therein, available at http://www.frbsf.org/economics/economists/jfernald.html.
b. D. Furceri and A. Mourougane, 'The effect of financial crises on potential output: new empirical evidence from OECD countries', OECD Economics Department Working Paper 699, May 2009, http://oberon.sourceoecd.org/vl=2631349/cl=20/nw=1/rpsv/cgi-bin/wppdf?file=5ksj3lqk2h40.pdf.
c. The definition of financial crisis is taken from L. Laevan and P. Valencia, 'Systemic banking crises: a new database', IMF Working Paper 08/224, 2008, http://www.imf.org/external/pubs/ft/wp/2008/wp08224.pdf, who define a systemic crisis as occurring when 'a country's corporate and financial sectors experience a large number of defaults and financial institutions and corporations face great difficulties repaying contracts on time. As a result, non-performing loans increase sharply and all or most of the aggregate banking system capital is exhausted'. To make this definition practicable, they combine quantitative data on arrears, defaults, etc. but also make some qualitative judgements.
d. Note that, as their sample ended in 2007, they did *not* include any dummies for the most recent financial crisis, as they did not want to bias their results, given that we do not yet know how the current financial crisis will play out.

Figure 1.4. OECD estimates of the effects of a typical financial crisis
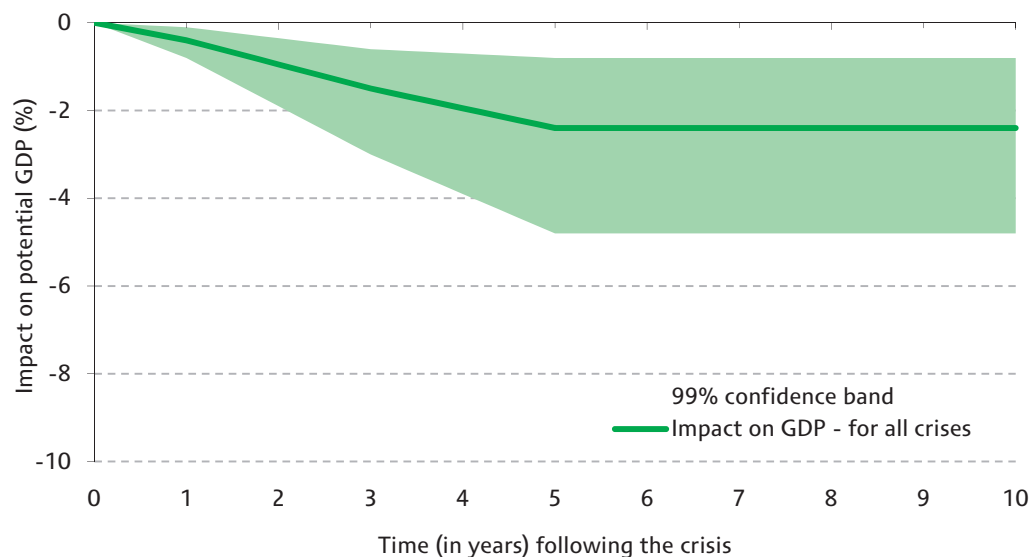
Source: D. Furceri and A. Mourougane, 'The effect of financial crises on potential output: new empirical evidence from OECD countries', OECD Economics Department Working Paper 699, May 2009, http://oberon.sourceoecd.org/vl=2631349/cl=20/nw=1/rpsv/cgi-bin/wppdf?file=5ksj3lqk2h40.pdf.

Figure 1.5. OECD estimates of the effects of a severe financial crisis
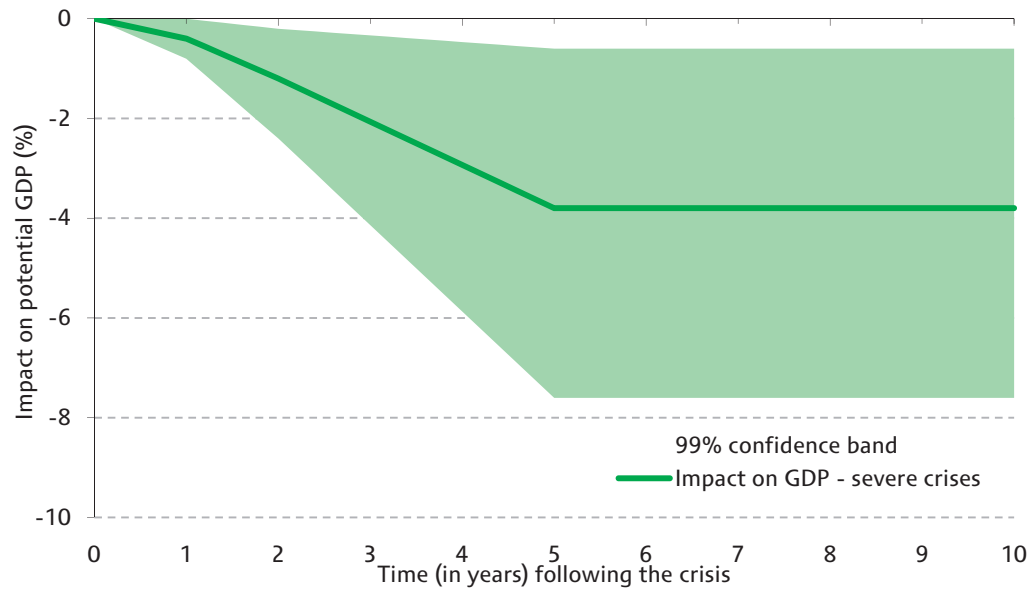
Source: As for Figure 1.4.

There is, however, wide variation in individual countries' experiences. Accordingly, it is not surprising to find that the 99% confidence intervals are wide – from just under 1% to just under 5% for the average crisis and from just under 1% to over 7% for a severe one. Figures 1.4 and 1.5 illustrate, showing both the two model's 'best guess' of the impacts of a crisis (the green lines) and the confidence intervals around them (the light green shaded regions).

The OECD researchers also find that the impact of a crisis typically takes quite some time to work its way through – with the maximum damage to the level of potential GDP occurring after about five years. Accordingly, it would be premature to think that the recent financial crisis's impact on the UK's productive potential has been fully felt. It could well be 2012 or 2013 before potential GDP stops being affected by it.

Figure 1.6. Barclays estimates of the effects of a severe financial crisis on UK potential GDP
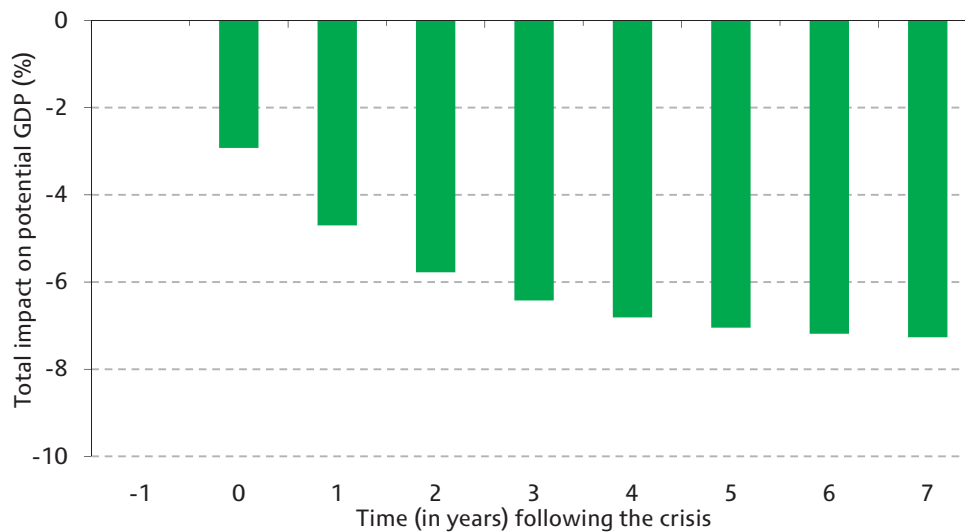
As a check on these results, we have extended the sample of UK GDP data used by the OECD researchers right back to 1870, using non-structural techniques (such as filtering the actual GDP data to produce an estimate of potential GDP) and adopting the dates of financial crises identified by Reinhart and Rogoff (2009) prior to 1970.[5] Our results are even more worrying than those of Furceri and Mourougane, for they suggest that the average first-year impact of a financial crisis on the UK's potential GDP growth rate has been around 3 percentage points, with a full, long-run impact on the level of potential of around 7½% (with most of the decline being felt by the fifth year). Figure 1.6 illustrates.

Of course, one possible explanation for this finding is that the deterioration in potential GDP from financial crises is getting smaller over time – say, because we respond better, and/or faster, than we used to once crises strike. (On the surface, this might explain why the UK long run of data suggests a bigger impact than did the panel data, cross-country study.) In fact, however, the impacts of crises pre-1970 on our long run of UK data appear to have been smaller, generally speaking, than those post-1969, not bigger. More generally, in the 1970s-to-2006 UK data set, the impact of crises appears to be rather bigger than the OECD found for its cross-country data set. So it would seem the main lesson to be learnt from these data is that the UK is typically worse affected by its financial crises than other countries are.

There are several reasons to take these new, UK, results with a large pinch of salt. For a start, they are based on a *very small* sample of additional crises, compared with what the OECD study used. Second, they are not very robust – varying, for example, according to the precise sample period covered and the way that potential GDP is gauged. Third, as GDP and inflation volatility both fell markedly during the 20th century, it may be that the model is attributing some of the natural variation in the GDP data during the earlier periods to financial crises, as opposed to other factors. (In other words, there may be an omitted variable problem.) Nevertheless, the results are a cause for concern. The UK may be more prone to financial cycles than other economies on average. And it may be that such crises typically have a greater impact on potential GDP in the UK than elsewhere.

The IMF approach

A second recent study into the long-term costs of the crisis has been carried out by the IMF, using data relating to 88 banking crises and covering a wider group of countries than the OECD study.[6] The major methodological difference between the two studies was that the IMF study used the seven-year pre-crisis trend growth rate of actual GDP as a proxy for the potential GDP growth rate, rather than estimating a production function. Bearing in mind that the OECD researchers found that switching to a trend-fitting technique to proxy potential GDP made little difference to their results, there seems little to choose between them on methodological grounds. The IMF analysis may therefore offer a better guide to the cost of a financial crisis on potential GDP simply by virtue of its larger sample.

The IMF study's findings were rather more pessimistic than the OECD's:

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[5] Using a Hodrick–Prescott filter seems a reasonable way to proceed, as Furceri and Mourougane found that using a Hodrick–Prescott filter, with a smoothing parameter of 6.25, to proxy potential GDP gave similar results to when they adopted a production function approach. We also tried simple averaging of pre-crisis actual growth as a proxy for potential GDP growth, with similar results.

[6] R. Balakrishnan, P. Brooks, D. Leigh, I. Tytell and A. Abiad, 'What's the damage? Medium-term output dynamics after financial crises', chapter 4 of IMF, *World Economic Outlook: Sustaining the Recovery*, October 2009, http://www.imf.org/external/pubs/ft/weo/2009/02/pdf/c4.pdf.

Figure 1.7. IMF estimates of the effects of a typical financial crisis on potential GDP
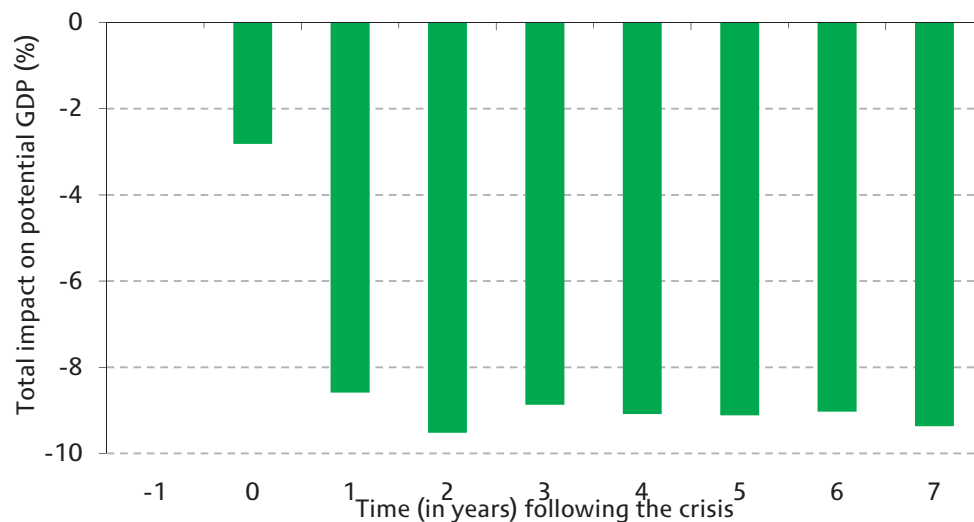
Note: Estimates based on a sample of 88 financial crises.
Source: R. Balakrishnan, P. Brooks, D. Leigh, I. Tytell and A. Abiad, 'What's the damage? Medium-term output dynamics after financial crises', chapter 4 of IMF, *World Economic Outlook: Sustaining the Recovery*, October 2009, http://www.imf.org/external/pubs/ft/weo/2009/02/pdf/c4.pdf.

• **The deterioration in the level of potential GDP of a financial crisis is, on average, around the 10% mark.** Like the OECD study, the IMF researchers found that the impact took four to five years to reach its maximum, as illustrated in Figure 1.7. And the typical pattern is for the loss to remain at about 10% for the fifth, sixth and seventh years after the crisis struck. So, for a typical developed economy, with a potential growth rate of around the 2½%-a-year mark, the cost of a banking crisis is about four years' lost growth in output.

• **The impact on potential GDP varies, depending upon both the demand and supply structures of an economy.** As with the OECD study, the IMF researchers found there to be considerable variation across the sample regarding the scale of the fall in potential GDP that occurs following a financial crisis. In order better to understand why, they therefore tried seeing which drivers of potential GDP growth (in terms of labour, capital and TFP) and which elements of aggregate demand appeared to be impacted most, if at all. These splits allow not just a better narrative to be told regarding how crises affect an economy, but permit one to take a first step in determining whether, in a particular instance, an economy is likely to be affected more or less than a typical economy would be. If, for example, it is mainly capital and investment which get hit by a financial crisis, this provides a strong hint that capital-intensive, investment-heavy economies will witness their potential GDP depressed by more than 10% on average by financial crises.

What sources of supply are most affected?

The IMF researchers calculated output decompositions based on a production function analysis, similar to that laid out earlier in Box 1.1. In other words, they took advantage of the fact that changes in per capita GDP can be split (exactly) into changes in four components: the employment rate, the labour force participation rate, the capital–labour

Figure 1.8. IMF estimates of factors responsible for effects on potential GDP
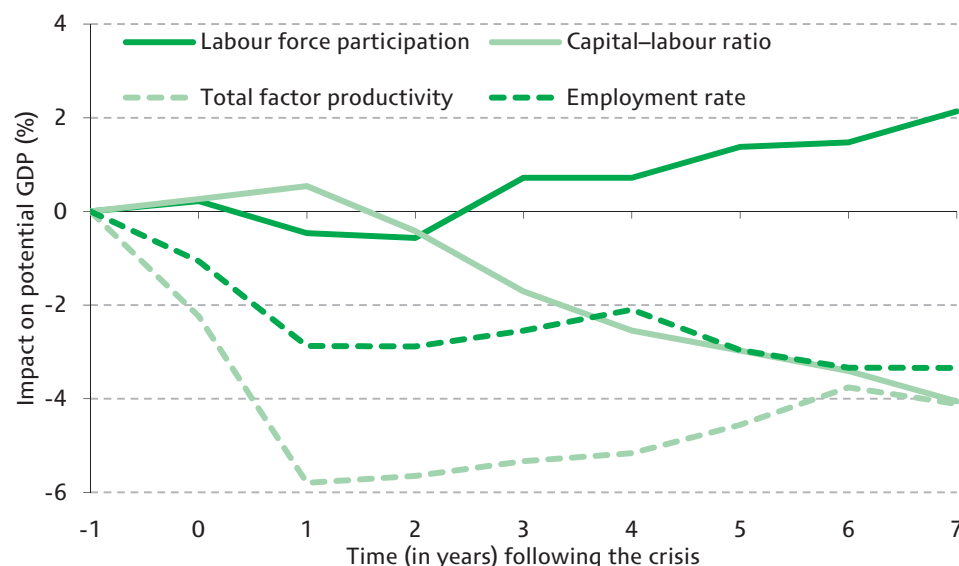
Note: As for Figure 1.7.
Source: As for Figure 1.7.

ratio and TFP, as illustrated by equation (6) in Box 1.1 (but having first divided by population and subsuming changes in normal hours into the TFP contribution).

Of these four factors, it turns out that labour force participation typically rises a little after a financial crisis – helping to *boost* potential GDP – as a bigger fraction of the workforce start looking for work compared with pre-crisis; one of the few financial 'benefits' to flow from a crisis.[7] The other three factors, by contrast, all work to depress potential GDP, with each accounting for close to one-third of the ultimate overall decline in aggregate supply. Figure 1.8 illustrates.

As regards the dynamics of the destructive forces at work, the initial deterioration comes predominantly from a reduction of TFP, and, to a slightly lesser extent, a drop in the employment rate. In time, however, the capital–labour ratio also grinds lower, while TFP actually stages a slight pick-up. Most of the decline in employment comes through within the first year after the crisis starts. It then 'goes sideways', as it were, with the effect on the level of potential broadly constant thereafter.

How do the various demand components react?

Carrying out a similar decomposition of the demand components of GDP, the IMF researchers find that the really big damage usually comes via a collapse in fixed investment. On average, gross fixed capital formation declines by about one-third in the year after the crisis breaks. Six years on, the volume of investment is typically still around 30% below the level implied by the pre-crisis trend, as illustrated in Figure 1.9.

Household consumption also suffers post-crisis, but here the effect slowly accumulates over time – at an average rate of close to 2% per annum. Thus, after seven years, the

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[7] Of course, the reason for the rise in participation may be that people feel less well off as a result of the crisis – and choose to work longer and retire later. So, 'benefits' is perhaps not the right word.

Figure 1.9. IMF estimates of the effects of a typical financial crisis on consumption and investment
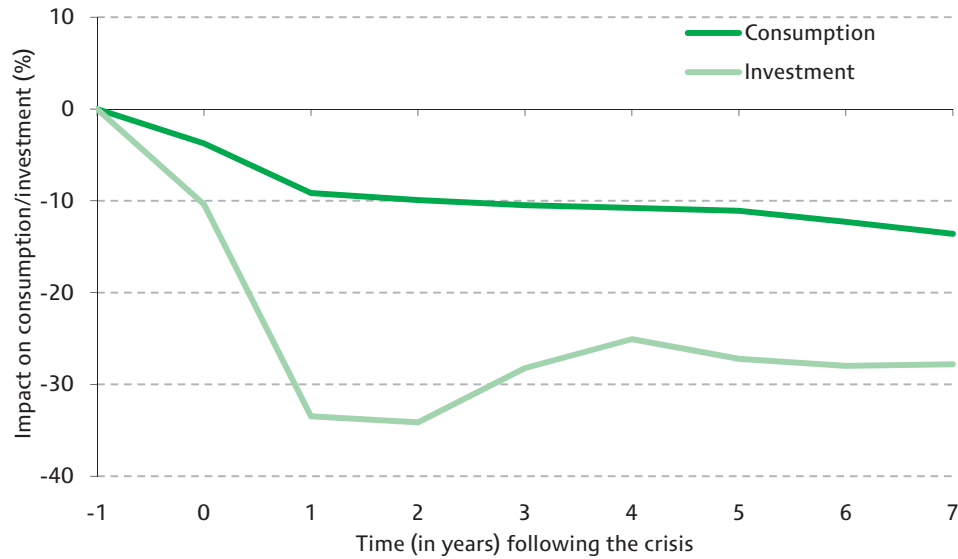
Note: As for Figure 1.7.
Source: As for Figure 1.7.

volume of consumer spending is nearly 15% below where it would have been had there been no crisis and the pre-crisis trend been sustained. Again, Figure 1.9 illustrates.

Finally, it is interesting to note that net trade usually ends up *adding* to the level of potential GDP after a banking/financial crisis. Much of this is due to the fact that imports slump – dropping at a rate of close to 4% per annum over the next seven years. Exports, by contrast, only fall moderately – by close to 1% per annum on average over the seven years following the crisis, as shown in Figure 1.10. One reason for this differential is that

Figure 1.10. IMF estimates of the effects of a typical financial crisis on export volumes and on import volumes

Note: As for Figure 1.7.
Source: As for Figure 1.7.

a country's currency usually depreciates when it goes into a crisis, or soon after it has done so.

This might seem like one silver lining when clouds are filling the sky. After all, sterling has declined in value dramatically over the past 12 months or so (see Chapter 5 for a discussion). So, surely its depreciation will persist and, in time, benefit the UK's net trade performance? Unfortunately, given that the current financial crisis has been more or less global in nature, this avenue may not prove to be as beneficial for the UK on this occasion as the IMF's figures suggest typically happens. For not every country can end up importing a lot less while only exporting a little less. And many other countries are likely to find that their currencies come under (downward) pressure too. (The dollar is one case in point, with the pound having risen by 20% against it since March 2009. In 2010, it may well be the turn of the euro and/or the yen and/or the Swiss franc to depreciate versus sterling.) At best, countries suffering more severe downturns might enjoy a depreciation of their currencies relative to those less severely affected. Or, to put it another way, in our modal forecast, we expect trade-weighted sterling to appreciate during 2010 and 2011, offsetting some of the benefits to UK exporters of last year's depreciation.[8]

Which factors affect the scale of the deterioration in potential GDP?

Having recognised that an estimate of an average crisis on the average country's potential GDP is not necessarily especially helpful in predicting the impact in a specific case – because there is wide variation, both from country to country and from crisis to crisis, in the scale of the damage done – the IMF researchers also attempt to explain this variation, statistically speaking, by seeking factors that are related to the scale of the output losses.

Their analysis reveals that there are a number of variables which appear to matter, although in some cases the robustness of the findings is questionable. Those that describe the pre-crisis state of the economy appeared especially important. But a number of other factors were also found to be significant, with the full list comprising:

- **Output levels versus potential.** If the actual level of GDP is below its potential (or trend) level as the crisis breaks, the costs appear to be greater, in terms of the long-term fall in potential GDP. Note that this is in stark contrast to the cyclical costs of a crisis. (After all, when a boom has been allowed to develop, and GDP permitted to rise above potential, extra costs are borne post-crisis during the bust, as actual GDP usually falls further below potential the greater that GDP was permitted to be above potential pre-recession.) One reason for the pre-crisis level of output being important could be that, in an economy with GDP below its potential level, demand may be more vulnerable to a further negative shock. Firms may already be trimming investment or earning below-average profits growth. And households may be raising their saving rates.

- **Growth at the start of the crisis.** If the economy contracts during the first year of the crisis, that appears more likely to signal long-term costs than when growth is maintained in the first year. Note that the IMF study uses annual data, and so cannot be more specific concerning whether or not intra-year patterns also matter. For example, a one-year decline in GDP usually goes hand in hand with 'recession' (with 'recession' used in the sense of two successive quarters of decline). But it need not necessarily do so. So, when the IMF (annual) data show that a crisis and a contraction

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[8] For more on this, and on the other drivers of UK growth, see Chapter 4.

happen at the same time, it is actually possible for the financial crisis to be occurring before, after or at the same time as the economy actually starts to contract in a quarter-on-quarter sense. Again, this finding may well illustrate the importance of vulnerability pre-crisis.

- **Investment shares of GDP.** Given that investment accounts for such a large share of the decline in demand following a financial crisis, it comes as little surprise to learn that economies in which the investment share is high pre-crisis tend to suffer most when a crisis strikes. Interestingly, it does not seem to matter whether the investment has been financed via foreign or domestic savings. That rather suggests that the more investment has taken place, the more likely it is that some of it was poorly allocated and the less likely it is that it will return profits to the investor. Instead, some write-down of the economic value of the capital stock is likely to be required.[9]

- **Macroeconomic imbalances.** The IMF finds some, but less than fully convincing, evidence that imbalances matter. But there is some support for the notion that countries in which inflation has been rising, the current account deficit is large and the fiscal accounts have been deteriorating all suffer bigger losses to their long-term GDP performance than those for whom there are smaller or no imbalances. Also relevant is how much room the monetary authorities have, if any, to cut interest rates to help bolster demand. Less output is lost if rates start out 'high' and inflation is on target.

- **The level of financial development.** Here the IMF used the ratio of bank credit to GDP as a proxy for measuring financial development, finding that countries with a high dependence on credit often suffer more long-term damage than those with less dependence. Of course, this might also be indicative of whether an asset price bubble has occurred, as a high ratio of credit to GDP correlates with elevated ratios of house prices to household incomes.

- **Openness and external conditions.** The IMF found that countries with deeper financial integration are less prone to losing sources of foreign financing after a crisis, and so are better able to weather the storm. However, those that have recently suffered a currency crisis (perhaps simultaneously with some other form of financial crisis) tend to suffer a greater long-term decline in potential GDP. And likewise for those that suffer a banking crisis when external demand is simultaneously weakening – presumably as the potential benefit of a depreciating currency is less than usual if overseas demand is soft.

- **Structural policy factors.** Here the researchers failed to obtain very convincing evidence. But those countries with higher pre-crisis levels of employment protection appear to suffer bigger long-term falls in employment rather than smaller ones. Presumably this is because the costs of postponing redundancies are ultimately higher in such countries.

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[9] Such findings are consistent with the so-called Austrian school of economics, which viewed the business cycle as driven by overinvestment – a 'glut' of supply sometimes occurring which necessitated a slowdown in order to restore equilibrium between savings and investment. Friedrich Hayek's 1931 book *Prices and Production* is the classic text.

What does this all mean for the UK, going ahead?

Bringing all this research together, the UK does not look likely to perform especially well relative to the average post-crisis experience. We have devised a scorecard based on the seven factors (and 11 separate variables that cover them) that the IMF study finds to be associated with potential GDP losses. It shows the UK as scoring slightly worse than average for the group as a whole, i.e. implying a bigger output loss than average. This is shown in Table 1.1. This suggests that, if the average deterioration in potential GDP in the current crisis turns out to be 10% – as the IMF study suggests might be likely – then it would be reasonable to expect the UK to suffer a slightly greater decline than this.[10]

Table 1.1. A scorecard for the UK

| Variable	Importance	Score
Pre-crisis output	2	0
First-year GDP growth	3	−3
Investment share	3	−3
Current account	1	0
Inflation	1	+1
Fiscal deficit	1	0
Monetary conditions	2	+2
Credit/GDP	2	−2
Currency crisis	2	−2
Financial openness	1	+1
External shock	2	−2
Total		**−8**

Notes: For full details, see R. Balakrishnan, P. Brooks, D. Leigh, I. Tytell and A. Abiad, 'What's the damage? Medium-term output dynamics after financial crises', chapter 4 of IMF, *World Economic Outlook: Sustaining the Recovery*, October 2009, http://www.imf.org/external/pubs/ft/weo/2009/02/pdf/c4.pdf. We use a scale of 1 to 3 to determine importance, based on the statistical significance and coefficients obtained in the IMF study. We score the UK by comparing its performance in each regard to other OECD countries, with a range of scores chosen to lie between −1 ('bad') and +1 ('good'), and these scores are then weighted using the 'importance' numbers. So, an overall negative score implies a greater output loss than the average country following a typical crisis.

All of this seems like an especially gloomy place to end up – reckoning on a more than double-digit decline in potential output being possible, and extended over the next four or five years: i.e. the next full business cycle, assuming no 'double-dip' scenario. Both our own extension to the OECD work and the IMF study come up with the same conclusion – that the decline in potential output is likely to be somewhat greater than assumed by the Treasury in last year's Budget and Pre-Budget Report (PBR). Indeed, the true effects may be more than double what HMT suggests.

Before making a final decision as regards precisely what estimate of the damage done to the level of potential GDP growth we should use, it is worth mentioning one other approach to gauging the impact, as carried out by Ray Barrell of the National Institute of Economic and Social Research (NIESR).[11] This involves using a more general form of

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[10] We would very much like to thank Ravi Balakrishnan, Petya Koeva Brooks and Daniel Leigh – three of the authors of the IMF study – for making available both the data set and the models used by the IMF. This permitted us to check that the models that they have developed do indeed suggest the UK would have been expected to experience a bigger-than-average output loss from the recent crisis. In other words, their findings are in accordance with our simple scorecard.

[11] See R. Barrell, 'Long-term scarring from the financial crisis', *National Institute Economic Review*, 210, October 2009.

production function than the Cobb–Douglas one, known as the constant elasticity of substitution (CES) form. This elasticity measures the responsiveness of firms' input mixes to changes in their relative price. A Cobb–Douglas production function assumes an elasticity of unity. A CES form allows for the possibility that it is smaller than that, which most data suggest is a more realistic model to use. (A value of one-half may be more appropriate than one of unity.[12])

Using a sample of 12 euro-area countries, the NIESR study finds that the higher the elasticity of substitution, the greater the output loss associated with a financial crisis (and an associated rise in the user cost of capital).[13] The rough rule of thumb seems to be that a country with an elasticity of substitution of around one-half might expect to see an impact on potential GDP of about two-thirds that of one with an elasticity of unity. However, the estimates are sensitive to how one defines the user cost of capital – a weighted average of the (after-tax) cost of borrowing from retained earnings, bank borrowing and accessing capital markets. In particular, these will depend, sensitively, on the assumed 'risk-free' real interest rate, which is usually proxied using the real yield on long-term government bonds (say, that on 10-year gilts). The fact that these yields have backed up markedly of late, taking them already to NIESR's end-2011 forecast value, illustrates the problem – and suggests that NIESR's assessment (like that of the Treasury) that the financial crisis will reduce potential GDP by around 5% is likely to be an underestimate.

Taking this altogether, for the purposes of our own forecasts in Chapter 4, and for the scenarios for the public finances described in Chapter 6, we have decided to assume a slightly less devastating impact in our central scenario than the IMF research suggested, to take account of the possibility that the true elasticity of substitution may well be under unity. So we phase in a decline of 7.5% over the next five years. In our 'optimistic' scenario, we stick with the Treasury's assessment of a 5% decline. In our 'pessimistic' scenario, we go with a larger deterioration of 10%.

1.3 How fast will potential GDP grow beyond the crisis?

In addition to considering the damage done to the level of potential GDP by financial crises, the IMF analysts allowed for the possibility that crises might also affect the long-run potential *growth* rate – the type of situation illustrated earlier in Figure 1.3. In fact, they found little evidence that economies generally suffer a deterioration in their trend rate of growth. Or, to be precise, the average impact they estimated was fairly small – at 0.2 percentage points – and not significantly different from zero in statistical terms. As with the estimated deterioration in the level of aggregate supply, however, the variation across the sample was high. For example, slightly more than one-fifth of the crisis-affected countries suffered losses in their medium-term growth rates of 2 percentage points or more. So, it is certainly feasible that some developed economies, such as the UK

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[12] See, for example, J. Rotemberg and M. Woodford, 'The cyclical behaviour of prices and costs', in J. Taylor and M. Woodford (eds), *Handbook of Macroeconomics*, volume 1B, Elsevier, Amsterdam, 1999.

[13] The basic idea here is that in the extreme case, where no substitution between factors of production is feasible, then output would be unaffected by a rise in capital costs, which would instead be absorbed into profits.

– which would normally be expected to have potential growth rates in the 1½% to 3% range – might nevertheless be significantly impacted.

We next consider whether the IMF's finding that the growth rate of potential GDP is typically unaffected by financial crises is likely to be true of the UK currently. We begin by updating the same sort of approach used by David Miles and his former colleagues at Morgan Stanley in recent editions of the IFS Green Budget, decomposing shifts in potential GDP into contributions from labour, capital and the efficiency with which these are combined (TFP). And we also split the contribution from labour into its major components, i.e. those from population, labour participation, employment and hours worked.[14] We then move on to consider structural models of the NAWRU, finding that some of these are sensitive to variables such as the long-term interest rate and tax wedges – which may continue shifting in such a way as to lower potential growth for years to come, and perhaps even permanently. As in Morgan Stanley's estimates in last year's Green Budget,[15] our best guess for the UK's potential growth rate is rather lower than the Treasury's is, even looking four or five years down the road – to a period after all the 'levels' impacts of the financial crisis are likely to have worked their way through.

The contribution of labour inputs

Table 1.2 shows contributions for each of the labour variables to potential GDP growth. We have used a Hodrick–Prescott (HP) filter to smooth the past path of the various contributions in order to generate estimates of the underlying trends. As in earlier analyses, we assume that population growth will slow slightly in the years ahead – reflecting, amongst other things, the impact of reduced migration. Our projections are fairly similar to those made recently by the OECD.[16] Like the OECD, we also expect the contribution from participation to be close to zero. The same is true of the average working week, which leaves only the natural rate of unemployment (or NAWRU) to consider as a driver of the labour contribution to GDP.

The OECD estimates that the UK NAWRU will grind higher, from its pre-crisis rate of just under 5½% to just over 6% by 2011. This would be consistent with the employment contribution to potential growth slipping by a little over ½ percentage point per annum over the next several years compared with its pre-crisis impact. Unlike most of the other contributors to potential GDP, there is quite a big literature on drivers of the natural rate – going back to the work of Layard, Nickell and Jackman (1991).[17] Our own research into this area has suggested that an eclectic 'shocks' and 'structural' model helps explain a lot of the combined cross-country and time variation in structural levels of unemployment.[18]

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[14] Note that the employment contribution can be thought of as the inverse of the NAWRU component. In other words, if the natural rate of unemployment rises, then the ratio of people looking for work falls – i.e. the employment rate drops.

[15] D. Miles with M. Baker, 'The economic outlook', in R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget: January 2009*, http://www.ifs.org.uk/budgets/gb2009/09chap4.pdf.

[16] See, in particular, 'Beyond the crisis: medium-term challenges relating to potential output, unemployment and fiscal positions', chapter 4 of OECD, *Economic Outlook*, no. 85, June 2009, http://www.oecd.org/dataoecd/36/35/43117806.pdf.

[17] R. Layard, S. Nickell and R. Jackman, *Unemployment: Macroeconomic Performance and the Labour Market*, Oxford University Press, Oxford, 1991.

[18] See M. Dicks and P. Papadavid, *The Causes of Unemployment*, Lehman Brothers Structural Economics Research Paper no. 5, 2002.

Table 1.2. The contribution of labour inputs to UK potential GDP growth (percentage points)

Factors:	Participation rate	Population	Employment (NAWRU)	Hours worked	Total
1972–2008	0.0	0.4	–0.1	–0.2	0.1
1996–2008	0.0	0.4	0.1	–0.2	0.3
2001–2008	0.0	0.5	–0.1	–0.2	0.2
2001	0.1	0.5	0.3	–0.4	0.4
2002	0.1	0.4	0.2	–0.4	0.3
2003	0.1	0.5	0.1	–0.3	0.3
2004	0.1	0.5	0.0	–0.2	0.4
2005	0.1	0.6	–0.1	–0.2	0.4
2006	0.0	0.6	–0.2	–0.2	0.2
2007	0.0	0.6	–0.4	–0.2	0.1
2008	0.0	0.6	–0.5	–0.2	–0.1
Forecasts					
2009	0.0	0.5	–0.6	–0.3	–0.3
2010	–0.1	0.5	–0.6	–0.3	–0.5
2011	–0.1	0.5	–0.3	–0.3	–0.2
2012	–0.1	0.4	–0.2	–0.2	–0.1
2013	–0.1	0.4	–0.2	–0.1	0.0
2014	–0.1	0.3	–0.1	–0.1	0.0
2015	–0.1	0.2	0.0	–0.1	0.1

Note: The trend rates of the underlying components from the production function are calculated using an HP filter, which aims to decompose output into a permanent ('trend') component and a cyclical factor.
Source: Barclays Wealth Research estimates.

More recent research into drivers of the NAWRU, carried out by researchers at the OECD and also based on panel data, has re-examined this issue, and come to a similar conclusion.[19] It argues that much of the rise and fall in natural rates for developed countries comes about as a result of shifts in five main indicators:

- **Tax wedges** – defined as the amount of extra tax that a firm has to pay in order for an employee to have an additional £1 in spending power, and thus comprising taxes he/she will have to pay (e.g. income tax, employee National Insurance contributions, VAT) as well as taxes formally incident on the firm (e.g. employer National Insurance). The higher the wedge the higher the NAWRU, or natural rate of unemployment, other things being equal.

- **Benefit replacement ratios** – defined as the typical level of unemployment benefits that someone who loses their job receives as a proportion of their former salary. Again, both theory and empirical evidence suggest a positive relationship, with a more generous benefit system usually resulting in a higher NAWRU.

- **Union density** – measured by the proportion of workers covered by union agreements, or sometimes by the proportion of workers who are actually members of

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[19] See C. Gianella, I. Koske, E. Rusticelli and O. Chatal, 'What drives the NAIRU? Evidence from a panel of OECD countries', OECD Economics Department, Working Paper 649, April 2009, http://www.olis.oecd.org/olis/2008doc.nsf/LinkTo/NT00005F8A/$FILE/JT03262428.PDF.

unions. (Sometimes, as in the case of France, the two can differ quite substantially.) The more powerful unions are, other things being equal, the higher the natural rate of unemployment.

- **Product market regulation** – measured from indices of regulatory impediments to product market competition in seven non-manufacturing industries. The basic idea here is that the less competition there is in a market, the easier it is for firms to raise prices, and therefore the easier it is for them to pay more for workers' services, and thus the higher the natural rate of unemployment.

- **The long-term real interest rate** – defined as the 10-year government bond yield minus the one-year inflation rate. Here the evidence is especially compelling that higher real interest rates typically go hand in hand with higher structural levels of unemployment.

Importantly, of these various drivers, it is the real interest rate, the tax wedge and the level of product market regulation that turn out to be the most important, quantitatively speaking. For the UK over the next business cycle, two of these may well depend quite sensitively on how fiscal policy evolves. For example, big hikes in tax rates on earnings or on consumer spending could raise the natural rate significantly. But so might a failure to tighten fiscal policy, if rising budget deficits and/or public debt raise the long-term interest rate significantly.

The OECD's general cross-country specification does not fit the UK especially well. So we have estimated an error-correction form of the NAWRU model using UK data. We find that both the real interest rate and the tax wedge play a big part in driving long-run shifts in the NAWRU, with coefficients on each of close to one-half.[20] (So, for example, a permanent rise in the long-term interest rate of 1 percentage point would, if our model is correct, ultimately add ½ percentage point to the natural rate.) A smaller role was discovered for union density, which obtained a coefficient of about one-eighth.

Around this long-run model, we discovered that changes in product market regulation appeared to help drive short-lived (i.e. temporary) changes in the NAWRU, as did shifts in real interest rates and the tax wedge.[21] The low coefficient on the error-correction term implied very slow dynamics following shocks to the various drivers of the NAWRU: for example, following a permanent shift in real interest rates, it takes a good six years before two-thirds of the long-run impact has taken place.

In order to test whether the rate of increase in the UK NAWRU predicted by the OECD is a reasonable assessment, we first used the new model to produce a forecast assuming that fiscal tightening takes the form laid out in the December 2009 PBR; that union density drifts higher; and that real interest rates trend gently higher, with the 10-year nominal gilt yield reaching 5.5% at end-2011, 6.0% by end-2012 and drifts higher thereafter. (Inflation is predicted to average close to 2% over the next five years.) In this scenario, the NAWRU moves up more sharply than in the OECD medium-term scenario – rising to

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[20] We would very much like to thank Jørgen Elmeskov, Andrew Dean and the authors of the OECD Working Paper for making the data available to us in order to help us to do this.

[21] The basic specification of the model is:

$$\Delta NAWRU_t = \alpha_0 + \alpha_1 \Delta RLR_t + \alpha_2 \Delta WEDGE_t + \alpha_3 \Delta_3 PMR_t - \alpha_4 \Delta ECT_{t-4}$$

where RLR is the real interest rate, $WEDGE$ the tax wedge, PMR an index of product market regulation and ECT is an error-correction term (i.e. the residuals obtained by regressing NAWRU against RLR, $WEDGE$ and union density). Further details are available from the author on request.

about 9% by the end of the projection (i.e. at end-2015), and rising at an average annual rate of close to ½ percentage point per annum.[22]

Next, we considered a case in which the gilt yield surges upwards, as might happen if a government tried to avoid fiscal tightening – in any substantive form – or even if markets deemed that it might fail in its endeavours and took fright. To scale how much yields might rise, we use a gilt model in which both the structural budget deficit and the public debt to GDP ratio affect bond yields, and in multiplicative fashion – i.e. with the two interacting so that, in a situation where the deficit and debt burdens are both rising together, the impact on yields can be very large, and fast-acting. (For more details on this specification, see Box 1.2.) For example, in an extreme situation in which the structural

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Box 1.2. The impact of public finances on gilt yields

Most economists recognise that the state of public finances affects borrowing costs for governments. But quantifying the impact is difficult. Indeed, it is hard finding a consensus even regarding what functional form to assume. For example, it could be the case that in extreme circumstances – such as when a country has an extremely high level of public debt, or when a crisis is brewing – the relationship between long-term government bond yields and budget deficits and debt may be non-linear.[a]

To illustrate the problem, consider first a simple regression of the slope of the yield curve (*YCSLOPE*, defined as the difference between 10-year gilt yields and short-term (LIBOR) interest rates) against inflation expectations (*INFEXP*, proxied using a trend estimate of actual inflation), a gauge of the business cycle (*CYCLE*, based on actual GDP growth), the budget deficit to GDP ratio (*DEFICIT*) and the government debt to GDP ratio (*DEBT*), using data since the early 1970s. The results we obtain are:

$$YCSLOPE = -5.97 + 0.04 \times INFEXP + 0.45 \times CYCLE + 0.33 \times DEFICIT + 0.08 \times DEBT$$
$$(-7.2) \quad (1.6) \quad\quad (3.4) \quad\quad\quad (6.3) \quad\quad\quad (4.8)$$

where t-values are shown in parentheses.

On the face of it, this model does a fairly reasonable job, with only the inflation expectations term failing to pass a test for statistical significance with flying colours, and being rather less powerful than one might expect. The public finance terms are worryingly large. A sustained 5 percentage point rise in the budget deficit, for example, would add more than 1.5 percentage points (150bp) to the 10-year gilt yield. A rise in the debt-to-GDP ratio from 55% of GDP to 75% would have a similar impact, implying an overall hit of more than 3 percentage points (300bp) to yields from the sort of deterioration that is currently taking place in the UK's public finances.

Checking whether the debt and deficit terms interact, we find it is not difficult to come up with a non-linear specification where coefficients have the expected signs. One such model takes the form:

$$YCSLOPE = -0.05 + 0.03 \times INFEXP + 0.49 \times CYCLE + 0.32 \times DEFICIT + 0.07 \times DEBT + 0.34 \times DD$$
$$(-5.0) \quad (0.8) \quad\quad (2.8) \quad\quad\quad (1.6) \quad\quad\quad (3.1) \quad\quad (1.5)$$

where t-values are again shown in parentheses and *DD* is the deficit to GDP ratio *times* debt to GDP. Here the simulation properties of the model are even scarier than the previous ones. For the same rise in the deficit and debt ratios, the equation suggests that 10-year gilt yields ought to rise more than 4 percentage points (400bp).

a. See, for example, R. Faini, 'Fiscal policy and interest rates in Europe', *Economic Policy*, 21, 443–489, 2006.

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[22] Note that it starts out the projection at about 7%, i.e. well above what the OECD assumes it to be.

deficit stays in double digits all this year and in both 2011 and 2012, and (net) public debt soars to around 85% of GDP by end-2011, the model suggests that (nominal) 10-year gilt yields could easily reach double digits by the end of this period – a rate last seen in the early 1990s. Such an outlook would presumably also raise long-term inflation expectations somewhat. Nevertheless, the real (expected) long-term interest rate would still rise appreciably – perhaps to 6% or 7%.

In this sort of scenario, our UK NAWRU model suggests that the natural rate of unemployment would rise somewhat more aggressively than in our central scenario, adding about 1 percentage point to the structural unemployment rate each year, i.e. rising about twice as fast as in our central-case scenario. Under these circumstances, the gradual turnaround in the contributions that labour variables are projected to make to trend GDP growth over the next few years, shown in Table 1.2, might never materialise. Or, to put it another way, were a lack of fiscal effort to lead to a major sell-off in the bond market, the deterioration in potential GDP growth stemming from a rising NAWRU might well be quite a bit more painful than in our central scenario.

The contribution of capital inputs and TFP

Next we consider the contributions of capital and TFP to potential GDP growth, shown in Table 1.3. Here we have modestly trimmed the estimates in last year's Green Budget. There are two reasons why. First, we needed to lower the estimates to take into account recent data. In particular, GDP declined much more sharply than expected in late 2008 and 2009, while employment and the capital stock did not. (Indeed, employment has held up much better than expected, even after taking into account what has happened to demand and to unit labour costs. Or, to put it another way, firms appear to have hoarded labour rather more than usual in such circumstances, with the result that productivity performance has been dire.[23]) Looking ahead, there may well be some payback for this surprisingly poor productivity performance, in the form of unusually weak employment demand, for a given level of product demand and a given level of wages. But some – probably a minority – of the 'surprise', represented by the residuals on our employment model, may well feed into the trend estimates of TFP, and thus into future potential GDP growth.

The second reason for trimming the potential GDP growth projections reflects the likelihood that the greater-than-expected decline in GDP will lead not only to temporarily higher-than-previously-assumed rates of scrappage of physical capital but also to a reassessment of its marginal product. In other words, more of the capital stock will need to be written off – now that it is clear not only that increments to it failed to deliver the sort of rate of return (or profits) that investors expected when they made the investment, but that, in many cases, investors ended up incurring losses.[24] And the willingness to invest, for a given level of demand and cost of capital, may well have fallen permanently too, to reflect the (now perhaps more realistic) assessment of the likely future rate of return on such an investment. Of course, on top of that, if the credit supply curve has permanently shifted to the right – which it probably has thanks to the financial sector recognising that its 'old' business model was optimistic concerning the rate of return it

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[23] For further details, see Chapter 4.

[24] Of course, some of the physical capital will still retain some market value, but probably rather less than assumed by the ONS's statisticians. (They generally assume straight-line depreciation in the value of 'old' capital, with the rate of depreciation assumed depending only on the normal life of the asset.)

Table 1.3. The contribution of labour, capital and total factor productivity to UK potential GDP growth (percentage points)

Factors:	Capital deepening	TFP growth	Total contribution from labour variables and population (from Table 1.2)	Overall potential GDP growth from sum of filtered contributions	Actual or forecast GDP growth
1972–2008	0.9	1.3	0.1	2.2	2.2
1996–2008	1.0	1.2	0.3	2.5	2.2
2001–2008	0.8	1.0	0.2	2.0	1.5
2001	1.4	1.3	0.4	3.1	2.5
2002	1.1	1.2	0.3	2.6	2.1
2003	0.9	1.2	0.3	2.4	2.8
2004	0.8	1.1	0.4	2.3	3.0
2005	0.8	1.1	0.4	2.2	2.2
2006	0.8	1.0	0.2	1.9	2.9
2007	0.9	0.8	0.1	1.8	2.6
2008	0.5	0.7	–0.1	1.1	0.5
Forecasts					
2009	–0.2	0.7	–0.3	0.1	–4.7
2010	–0.3	0.8	–0.5	0.0	1.8
2011	0.1	0.8	–0.2	0.7	2.3
2012	0.3	0.9	–0.1	1.2	1.4
2013	0.5	1.0	0.0	1.5	1.5
2014	0.6	1.0	0.0	1.7	1.7
2015	0.7	1.0	0.1	1.8	1.8

Note: The trend rates of the underlying components from the production function are calculated using an HP filter, which aims to decompose output into a permanent ('trend') component and a cyclical factor.
Source: Barclays Wealth Research estimates.

would achieve – then this too would act to curb the rate of investment for non-financial companies.

Quantifying such an analysis, and especially quantifying what might be temporary as opposed to permanent effects, is very difficult. Hence, we have relied, as formerly, on trend-fitting, in which the filters use statistical rules as opposed to behavioural or theoretical parameters to achieve such a partition. As a result, our numbers are fairly similar to those used previously, but subject to a wide margin of error. As a check on our TFP estimates, it is interesting to note that the 1.0% per annum rate of increase in total factor productivity that we pencil in from 2013 onwards is spot on the UK's long-term average, as gauged over the period 1890 to 2006.[25]

Taking all the contributions to potential GDP growth into account, it looks likely that the sustainable growth rate of the UK economy will eventually stabilise at around 1¾% per

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[25] For details, see table 2 of G. Cette, Y. Kocoglu and J. Mairesse, 'Productivity growth and levels in France, Japan, the United Kingdom and the United States in the twentieth century', NBER Working Paper 15577, December 2009.

annum – very similar to what both the OECD and IMF estimate.[26] In the absence of the crisis, we might have expected a rate of 2¼%.[27] So, our estimate of the likely growth rate of potential GDP is significantly lower than the 2¾% expected by the Treasury and the 2½% rate that it assumes in its public finance forecasts.

By 2015, we estimate that potential output will be 9% of GDP (£132 billion in today's money) lower than it would have been in the absence of the crisis (see Figure 1.11). This is 8% of GDP (£119 billion) below what the Treasury expects and 13% of GDP

Figure 1.11. Barclays versus Treasury estimates of the level of potential GDP, pre- and post-crisis
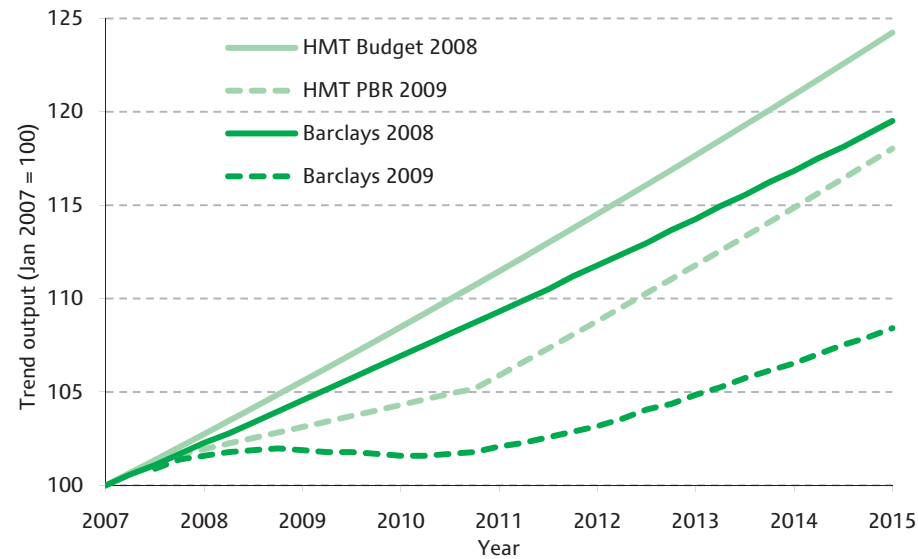
Figure 1.12. Barclays versus Treasury estimates of the growth rate of potential GDP

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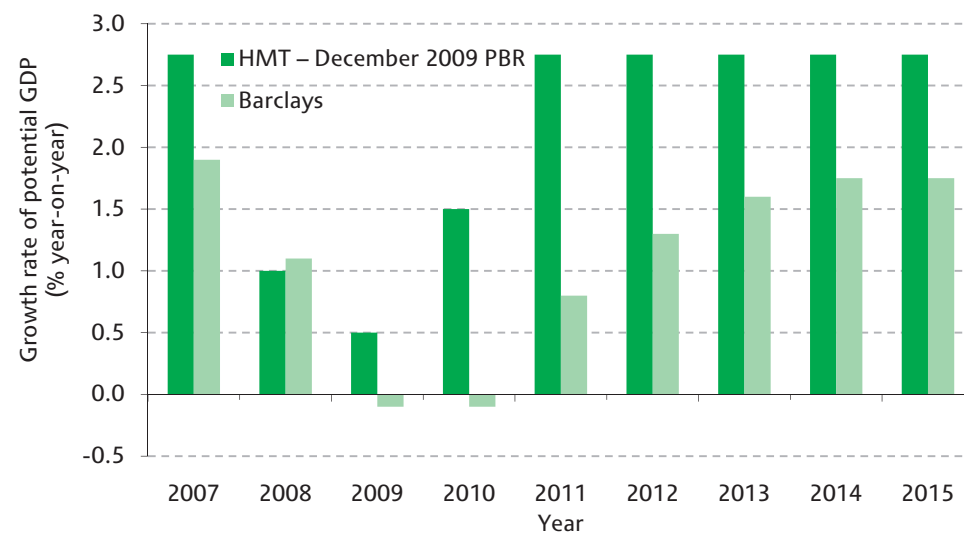
[26] For details of the former, see OECD, *Economic Outlook*, no. 86, November 2009. For details of the latter, see annex 4 of the UK's 2009 Article IV Consultation, *IMF Country Report*, no. 09/212, July 2009.

[27] Interestingly, a pre-crisis estimate from the OECD was very close to this figure, at 2.4% over the period 2009 to 2013, gauged in 2007. For details, see OECD, *Economic Outlook*, no. 81, June 2007.

(£184 billion) lower than the Treasury was projecting prior to the crisis. The difference between our and the Treasury's estimates of potential GDP growth imply that the gap will grow by around 1% of GDP (£14 billion) a year. Figure 1.12 shows our latest estimates of the growth in productive potential for each year from 2007 to 2015 alongside the growth in potential implicit in the December 2009 PBR forecast.

As for the output gap, we gauge it to be around 3½% of GDP currently, or about 3 percentage points smaller than the Treasury estimated it to be in the PBR.

1.4 Conclusion

Historical and international experience suggests that the current financial crisis is likely to reduce significantly the *level* of productive potential of the economy over the next few years – with an impact typically in the 5–10% range. We suspect that the effect will turn out to be around the mid-point of this range, whereas the December 2009 PBR goes with an estimate at the optimistic end of it.

History suggests that severe financial crises may also sometimes affect the long-term *growth rate* of potential output. We project, over and above the deterioration in the level of aggregate supply, an additional lasting reduction in the long-term growth rate of potential output, of around half a percentage point per annum, even though past experience suggests that this is by no means an inevitable outcome. Accordingly, we are much more circumspect concerning this estimate.

The Treasury's most recent forecasts assume that the crisis will reduce the level of potential output by 5% over three years (compared with the levels expected in the absence of a crisis), but that the long-term trend growth rate of potential GDP will remain unaffected at 2¾% (with 2½% assumed for the purposes of its public finance forecasts). Our best estimate is more pessimistic, being that the level of potential GDP will be reduced by 7½% over three years and that thereafter it will grow by only 1¾% per year. The latter estimate is very close to the OECD's estimate of the UK's rate of potential GDP growth.

2. Fiscal tightening: why and how?

Robert Chote, Rowena Crawford, Carl Emmerson and Gemma Tetlow (IFS)

Summary

- The December 2009 Pre-Budget Report estimates that the recession and financial crisis have punched a permanent hole worth 5.2% of national income (or £73 billion in 2009–10 terms) in the public finances. This is large, but smaller than the 6.4% of national income (or £90 billion) that the Treasury thought in the April 2009 Budget. In the absence of policy action, public sector debt would be set to rise unsustainably.

- Estimates produced by Barclays suggest that the Treasury may be optimistic about the extent to which the economy will recover from the crisis. The central Barclays scenario would imply a further £25 billion damage done to the public finances, while a 'pessimistic' scenario would imply a further £50 billion.

- Over the next eight years, the government intends to implement a fiscal tightening worth 5.5% of national income (£77 billion). If delivered, this would more than offset the permanent increase in borrowing that the Treasury believes has been caused by the crisis and would bring debt back onto a sustainable path.

- The government intends to implement just over 60% of the tightening between 2010–11 and 2014–15, achieving two-thirds through spending cuts and one-third through tax increases. (The biggest losers from the tax rises will be individuals with incomes over £100,000 a year, many of whom will face marginal income tax rates of 50% or 60%. The number of people facing these rates is set to rise significantly.)

- The remaining 40% of the tightening is to come from further increases in tax or deeper cuts to current spending after 2014–15. Continuing two-thirds spending cuts and one-third tax rises would take spending to 39.9% of national income, slightly higher than in 2003–04, and tax revenues to 38.8%, the level in 2007–08.

- If the interest rate on government debt rises to be in line with growth in the economy (an increase of almost 1 percentage point), then keeping borrowing constant beyond 2017–18 would be sufficient to see debt returning back below 40% of national income in 2032–33. But new measures would need to be implemented to mitigate the costs of an ageing population, and any further significant rises in interest rates would push this date back significantly.

- The Conservatives want to ensure that non-investment spending is no higher than tax revenues at the end of the forecast horizon (adjusting for the strength of the economy). This would likely require borrowing to be 1.1% of national income (or £15 billion in 2009–10 terms) lower in 2015–16 than Labour's plans. While this might help reduce the risk of rising interest rates, doing the same total tightening more quickly would do little to alter the forecast path of debt. If the quicker tightening were implemented two-thirds through spending cuts and one-third through tax rises, it would require a further £11 billion cut to public spending and a £5 billion rise in taxes in 2015–16. Under Labour's plans, the pain from these changes would be deferred until 2017–18.

2.1 Introduction

In the April 2009 Budget and the December 2009 Pre-Budget Report (PBR), Chancellor Alistair Darling accepted that the financial crisis would lead not only to a temporary recession in the UK, but also to a permanent loss of wealth and productive potential in the economy. The PBR forecasts imply that the government would as a result be left having to borrow an additional 5.2% of national income (or £73 billion in 2009–10 terms) a year indefinitely in the absence of policy measures.

The policy measures set out in PBR 2008, Budget 2009 and PBR 2009 actually further increased public sector borrowing in 2008–09 and 2009–10 in a deliberate attempt to boost spending in the economy and help limit the depth of the recession at a time when monetary policy was constrained. But from 2010–11 onwards, the measures will steadily reduce borrowing by cutting public spending and increasing taxes. The planned fiscal tightening would more than offset the additional 'structural' borrowing by 2017–18.

This chapter examines the impact of the financial crisis and the recession on the public finances, as well as the measures that the government has introduced and possible alternatives to them. Section 2.2 discusses what effect the financial crisis and recession have had on government borrowing and debt by excluding from the Treasury's forecasts the direct impact on government revenues and spending of policy measures taken over the last 18 months. Then Section 2.3 discusses what effect the policy responses that have been announced have had on the outlook for borrowing and debt. Section 2.4 considers the relative merits of alternative timescales for the fiscal tightening and sets out the possible impact on revenues, spending, borrowing and debt of one scenario for a quicker fiscal consolidation that would comply with the Conservative Party's proposed fiscal targets. Section 2.5 concludes.

2.2 Effect of the financial crisis and recession on the public finances

The cost of the crunch: Pre-Budget Report 2009

Judging from the differences between the forecasts made by the Treasury in Budget 2008 (before the worst of the impact of the financial crisis hit the public finances) and the December 2009 PBR (the latest official forecasts), we can think of the effect of the financial crisis and recession on the public finances as having three components.

First, the Treasury estimates that the UK economy's productive potential will, by the third quarter of 2010, have fallen 5% below the levels it forecast prior to the crisis and that this loss of potential will be permanent thereafter. Of this reduction, 4.5 percentage points come from a fall in output per worker and the remaining 0.5 percentage point comes from a fall in the size of the labour force arising from lower net inwards migration. This will permanently cost the Exchequer around 3.5% of national income (or £49 billion in 2009–10 terms) a year in lost revenues and higher spending. The Treasury does not, however, think that the financial crisis and recession have had any effect on the growth rate of potential output beyond the third quarter of 2010. It still forecasts that the UK economy can sustain growth averaging 2¾% a year after economy-wide inflation, although it continues to use the lower estimate of 2½% a year for the purposes of its public finance forecasts.

Second, there is a further permanent loss to the Exchequer of about 1.7% of national income (or £24 billion in 2009–10 terms). This predominantly reflects changes in price levels, which feed through into lower future revenues and higher future spending in relation to nominal national income. The December 2009 PBR forecasts assume that stock prices, house prices and economy-wide prices (as implied by the GDP deflator) will remain permanently lower than had been forecast in Budget 2008.

Lower-than-anticipated asset prices feed through into weaker public finances as revenue from stamp duties, capital gains tax and inheritance tax are affected. However, changes in the price level can also affect the outlook for spending. One particular reason why these lower-than-anticipated price levels feed through into a permanent weakening of the public finances (in the absence of policy action) relates to the way in which the Treasury forecasts public spending. The Treasury's 'no policy change' forecasting assumption for spending beyond the end of the current Spending Review period is to assume some particular real-terms growth rate (that is, over-and-above growth in the GDP deflator). Because of lower-than-expected inflation through to 2010–11, the Treasury's cash departmental spending plans for 2010–11 (set in the October 2007 Comprehensive Spending Review (CSR)) have turned out to be more generous in real terms than initially anticipated (see Table 8.1 in Chapter 8 for more details). In the absence of any 'discretionary policy action', this higher level of real-terms spending in 2010–11 (the base year) would have fed through into higher real-terms spending for evermore. Thus lower-than-anticipated inflation feeds through into a permanent increase in public spending.

The combined effect of these first two factors is that the government's structural (i.e. 'recovery-resistant') borrowing would be expected to be 5.2% of national income (or £73 billion in 2009–10 terms) higher for evermore as a result of the financial crisis, in the absence of offsetting policy action.

Third, the Treasury estimates that activity in the UK economy is currently operating 6.5% below what is now thought to be its sustainable level – in other words, that productive assets (labour and capital) are underutilised at the moment. This temporarily depresses tax revenues and increases demands on spending. In 2009–10, the Treasury estimates that this 'cyclical' component of borrowing will amount to 3.6% of national income (or £51 billion). Some additional cyclical borrowing is expected to persist until the economy returns to its sustainable level, sometime after 2014–15 in the Treasury's view.

These effects on borrowing (in the absence of the discretionary policy action announced since Budget 2008) are shown in Figure 2.1. The darkest green blocks show the level of borrowing forecast for each year in Budget 2008. The mid-green blocks show the additional borrowing that the Treasury estimates has resulted from the financial crisis and which cannot be explained by the usual impact of temporary weakness in the economy. Finally, the pale green blocks show the estimated additional temporary borrowing incurred while the economy is expected to be operating below its sustainable level.

What is clear from Figure 2.1 is that, had the government announced no new tax increases or spending cuts since Budget 2008, public sector borrowing would have been forecast to remain permanently at 6.4% of national income (or about £90 billion a year in 2009–10 terms) even after the economy had recovered from recession. This compares with the government's plans before the financial crisis, which implied that borrowing would stabilise at about 1.2% of national income (or £17 billion in 2009–10 terms).

Figure 2.1. Disease – Pre-Budget Report 2009 borrowing forecasts ignoring post-crisis discretionary policy changes
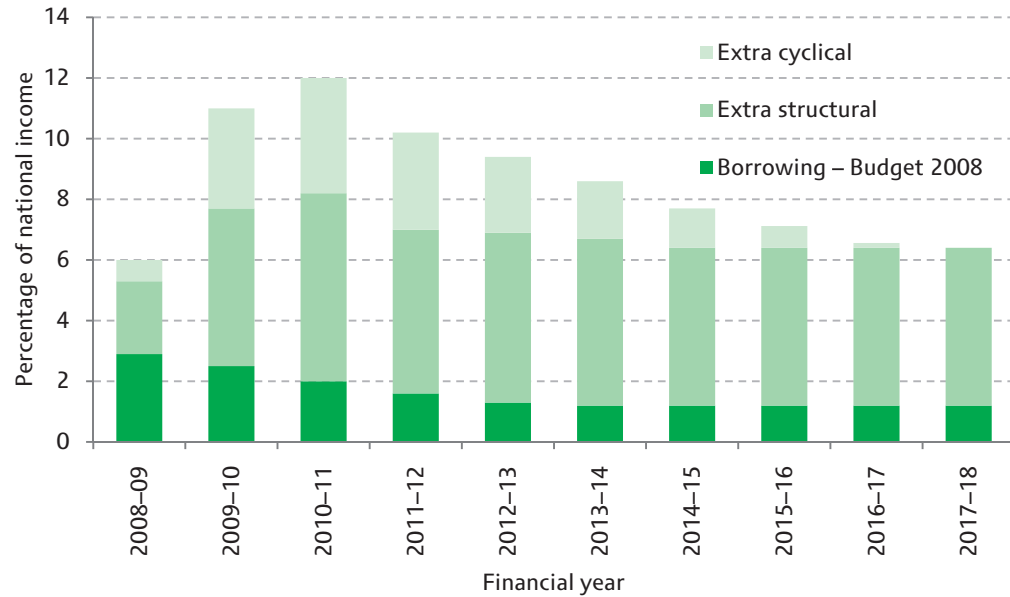
Notes: For the purpose of this figure, we have assumed that the economy returns to its trend level of activity (i.e. the output gap equals zero) in 2016–17. The Treasury does not publish its estimate of the output gap beyond 2014–15 (see chart A3 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm).
Sources: Authors' calculations using HM Treasury, *Budget 2008*, *Pre-Budget Report 2008*, *Budget 2009* and *Pre-Budget Report 2009*, all available at http://www.hm-treasury.gov.uk/.

Figure 2.2. Debt forecasts – without policy action since Budget 2008
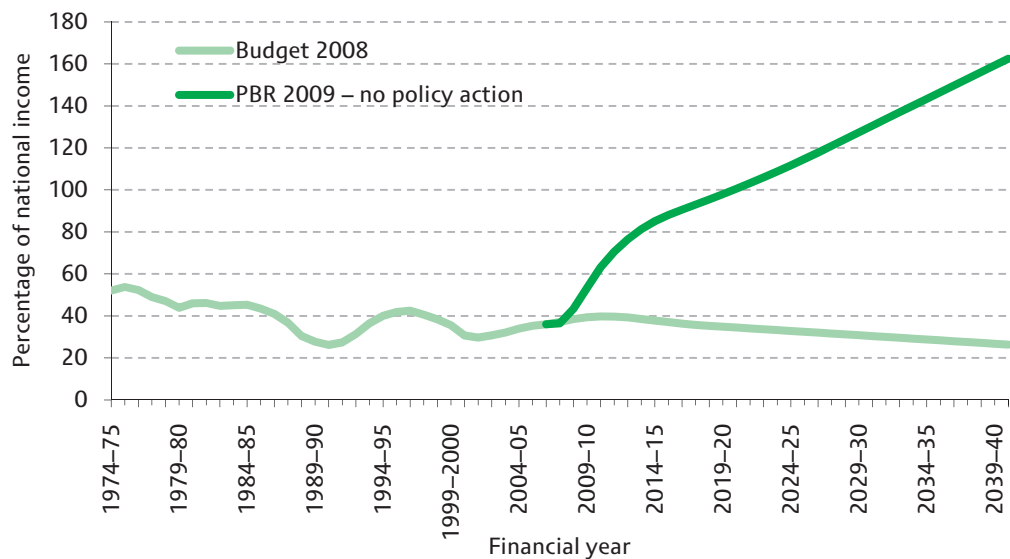
Notes: Forecasts for debt levels assume that non-debt interest spending and revenues remain constant as a share of national income from 2017–18 onwards, while inflation is assumed to run at 2¾% a year and real growth in national income at 2½% a year. Average nominal interest rates are assumed to rise from 4.4% (the level forecast in the December 2009 PBR for the end of the Treasury's forecast horizon, 2014–15) to equal nominal GDP growth between 2017–18 and 2027–28. From 2027–28 onwards, nominal interest rates are assumed to equal nominal GDP growth. This implies that total net debt interest payments decline/rise as a share of national income as net debt falls/rises, which in turn implies a strengthening/weakening of the current budget over time. The 'no policy action' scenario assumes that no discretionary policy announcements were made in any Budget or PBR after Budget 2008.
Sources: Historical data are from HM Treasury, *Public Sector Finances Databank*, 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls. Forecasts are authors' calculations using figures from HM Treasury, *Budget 2008*, *Pre-Budget Report 2008*, *Budget 2009* and *Pre-Budget Report 2009*, all available at http://www.hm-treasury.gov.uk/.

A permanent increase in the structural deficit of this size would have moved the public finances onto an unsustainable path, with debt and debt interest payments rising remorselessly as shares of national income over the next 50 years. The implications for debt are shown in Figure 2.2, which presents forecasts for the debt level based on the borrowing plans from Budget 2008 and the borrowing plans implied by the December 2009 PBR in the absence of any policy changes over the last 18 months. Debt would have been left heading towards 200% of national income by the middle of the century.

The permanent fiscal cost of the crisis: changes to the Treasury assessment

Assessing how much of the current huge budget deficit is structural and permanent, as distinct from cyclical and temporary, is not straightforward and the Treasury's views have changed significantly over the past year.

The November 2008 PBR – published relatively soon after the collapse of Lehman Brothers and the intensification of problems in the financial sector – initially estimated that the permanent effect of the crisis on government borrowing would be to increase the structural deficit by 3.2% of national income (or about £45 billion in 2009–10 terms). But by the time of the Budget in April 2009, the Treasury had revised up this estimate to 6.4% of national income (or £90 billion) instead. This reflected an increase in the Treasury's assessment of the permanent loss of productive capacity in the UK economy (from 4% to 5%), further falls in the price of assets between November 2008 and April 2009 (which reduced future expected revenues) and a projected lower level of economy-wide inflation in 2009–10 and 2010–11 (which boosted real-terms plans for central government spending on public services in 2010–11 that had been set in cash terms). As described above, since 2010–11 serves as the baseline for future Treasury plans for real-terms spending, by default this increase in 2010–11 real-terms spending causes a permanent weakening of future public finances.

As we have seen, the estimate in the December 2009 PBR is somewhat smaller, at 5.2% of national income (or £73 billion). The reason for this more optimistic outlook is that the Treasury now expects a greater part of the borrowing in 2009–10 to be temporary than it had thought in Budget 2009. Since Budget 2009, economic growth has turned out to be even lower than the Treasury had forecast; for the purposes of its public finance forecasts, the Treasury is now assuming that the economy will contract by 4¾% in 2009–10, rather than the 2¾% it assumed in Budget 2009. (This is highlighted by the change in the Treasury's estimates of the output gap between Budget 2009 and PBR 2009 that is shown in Figure 2.3.) However, even though the economy has performed more poorly than it had expected, the Treasury is not anticipating substantially higher levels of borrowing. So, while the Treasury revised up its estimate of the overall deficit from 12.4% of national income in Budget 2009 to 12.6% in PBR 2009, it was able to cut its estimate of the structural deficit from 9.8% to 9.0% of national income.

In addition to the Treasury's assessment that weaker economic performance in 2009–10 represented a greater cyclical – rather than permanent – downturn in the economy, the estimated structural budget deficit was also helped by two other factors. First, growth in the stock market between April 2009 (when the Budget was published) and December 2009 (when the PBR was published) far exceeded the assumption in Budget 2009, which was for it to grow in line with money GDP. These higher asset prices boosted forecasts for tax revenues from stamp duty on share transactions, capital gains tax and inheritance tax

Figure 2.3. Out-turns and forecasts for the level of economic output relative to potential assumed in Budget 2008: a permanent loss of potential output and worsening short-term outlook
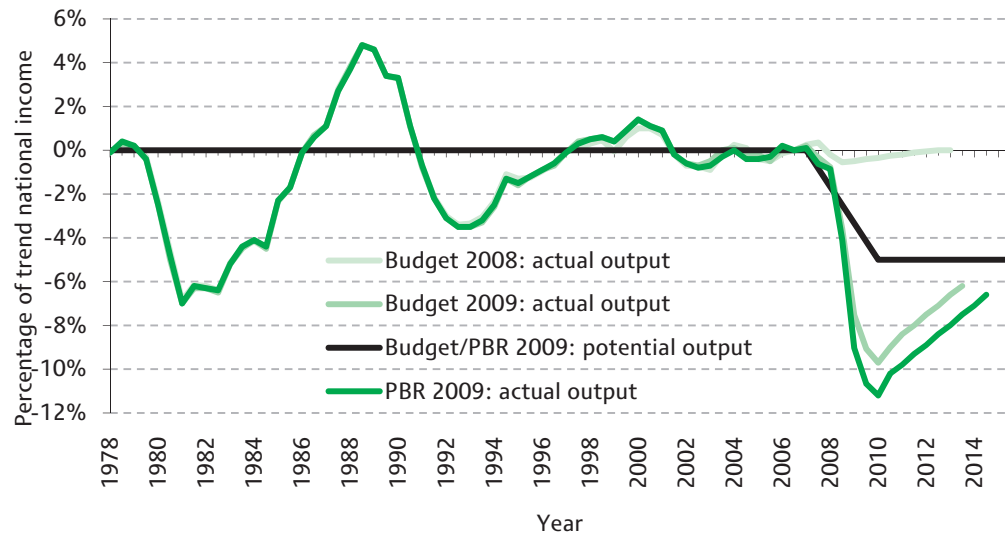
Note: The output gap is the difference between actual national income and potential national income measured as a percentage of the latter, with a negative output gap indicating that the economy is operating below trend.

Sources: Authors' calculations and HM Treasury, *Budget 2008*, *Budget 2009* and *Pre-Budget Report 2009*, all available at http://www.hm-treasury.gov.uk/.

between the April 2009 Budget and the December 2009 PBR. Second, economy-wide inflation in 2009–10 and 2010–11 is now not expected to be as low as was forecast at the time of the April 2009 Budget. This reduces the extent to which the cash spending plans for 2010–11 are, in real terms, more generous than when they were set in the 2007 CSR.

The permanent fiscal cost of the crisis: alternative scenarios

The extent to which borrowing can be expected to fall from its current high level will depend in part on two factors: first, the extent to which the financial crisis and associated recession have led to a permanent reduction in the *level* of productive capacity of the UK economy; and second, the extent to which *growth* in productive capacity has been affected. We now turn to consider each briefly in turn.

Different permanent loss of output

As described above, the Treasury estimated in the April 2009 Budget that the productive capacity of the UK economy had been reduced by 5% as a result of the financial crisis. It did not revise this figure in the December 2009 PBR, despite the weaker-than-previously-expected performance of the UK economy in 2009. The analysis by Michael Dicks of Barclays Wealth presented in Chapter 1 suggests that, while it is plausible that a reduction in productive capacity of around 5% will have occurred, a more central estimate might be 7.5% and a 'pessimistic' scenario in which productive capacity has been reduced by as much as 10% is perhaps as plausible on the downside as the Treasury's judgement is on the upside.

An illustrative example of how such declines in productive capacity might have affected the Treasury's forecast path of total borrowing in the absence of policy measures since Budget 2008 is shown in Figure 2.4. The PBR bars are the same as in Figure 2.1 – i.e. what

the Treasury is now forecasting for total borrowing in each year, excluding the estimated direct impact on borrowing of all of the measures announced since Budget 2008. This shows borrowing falling from 12.0% of national income in 2010–11 to 6.4% of national income in 2017–18, at which point it would stop falling. The 7.5% decline in potential national income bars instead illustrate a scenario where the fall in productive capacity was in line with the central estimate presented in Chapter 1 (i.e. a 7.5% rather than 5% fall in productive capacity). We take the Treasury's estimate that a 1% loss in productive potential would increase borrowing by, on average, an estimated 0.7% of national income.[1]

The exact path of borrowing under this scenario would depend on when lower trend capacity translated into lower economic growth – for the purposes of this illustration, we simply assume that the Treasury's near-term economic forecasts prove accurate until the amount of (now lower) spare capacity is fully exhausted. Under this scenario, borrowing would fall to 8.2% of national income in 2014–15 and then stabilise at this level. In other words, under this scenario it appears that the financial crisis and recession have permanently increased structural borrowing by 7.0% of national income (or about £99 billion in 2009–10 terms), rather than the 5.2% (or £73 billion) under the Treasury's assumptions. If this alternative estimate proved to be correct, there would need to be a combination of further tax rises and deeper spending cuts amounting to 1¾% of national income in order to bring borrowing down to the levels envisaged in the PBR. This is equivalent to £25 billion a year in today's terms.

Figure 2.4. Bigger decline in potential output would lead to high borrowing being more persistent
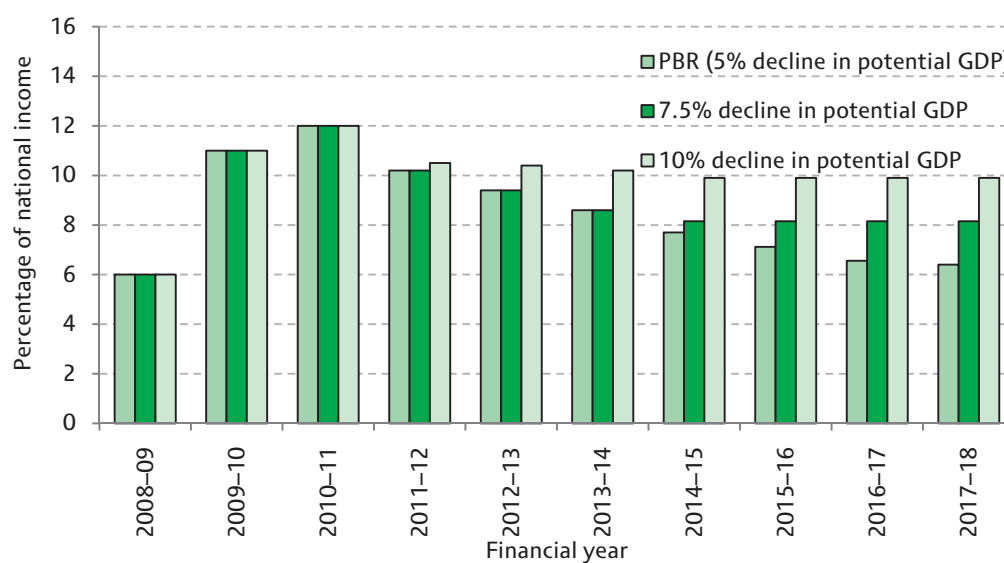
Notes: Strictly speaking, a 7.5% decline in potential GDP would not lead to output being 2.5% lower than a 5% fall in trend GDP – rather, it would be 2.6% lower (= 2.5/0.95). The equivalent applies to the 10% fall in trend GDP.
Sources: Authors' calculations using HM Treasury, *Budget 2008*, *Pre-Budget Report 2008*, *Budget 2009* and *Pre-Budget Report 2009*, all available at http://www.hm-treasury.gov.uk/.

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[1] Source: HM Treasury, *Public Finances and the Cycle,* Treasury Economic Working Paper 5, November 2008, http://www.hm-treasury.gov.uk/prebud_pbr08_publicfinances.htm.

Under the 'pessimistic' scenario, in which productive capacity has been reduced by 10% (again we assume that the Treasury's near-term forecasts for growth still prove accurate), borrowing would only fall to 9.9% of national income in 2014–15 and would persist at this level thereafter. In other words, under this scenario the financial crisis and recession are estimated to have increased structural borrowing by 8.7% of national income (or £123 billion in 2009–10 terms), rather than the 5.2% (or £73 billion) estimated under the Treasury's 2009 PBR assumptions. If this 'pessimistic' scenario turns out to be true, a combination of further tax rises and deeper spending cuts amounting to £50 billion a year in today's terms would be required – if borrowing were to be reduced as Mr Darling envisages.

Impact of financial crisis and recession on trend growth

It is also possible that the financial crisis has affected not just the level of productive capacity in the economy but also its trend growth rate. As mentioned above, the Treasury believes that this is not the case – in its public finance forecasts, the Treasury has retained its previous assumption that the UK economy can sustain growth averaging 2½% a year after economy-wide inflation. A lower (higher) estimate of trend growth would increase (reduce) the structural budget deficit by an increasing amount each year going forwards. Again, in Chapter 1, the analysis by Michael Dicks suggests a less rosy outlook than the Treasury's, with a central estimate that trend growth will be reduced to just 1¾% a year going forwards. This is ¾ percentage point lower than the figure used by the Treasury for its public finance forecasts and the difference in productive capacity between the two scenarios would thus increase by ¾% of national income every year (i.e. ¾% of national income after the first year, 1½% of national income after the second year, 2¼% after the third year and so on).[2] Such a gap therefore implies that the amount available to be spent publicly and privately would be reduced by a growing amount over time. One way in which to avoid this translating into a growing structural budget deficit would be to keep public spending constant as a share of national income. This would imply that, after economy-wide inflation, public spending could grow at just 1¾% rather than the 2½% a year that the growth assumption the Treasury currently uses for forecasting the public finances would allow.

2.3 The fiscal policy response

Plans from Pre-Budget Report 2009

In response to the problems outlined in Section 2.2, the government has announced a series of discretionary policy changes over the last 18 months. These have aimed to: (i) provide a short-term fiscal stimulus, to help mitigate the depth and length of the recession; and (ii) thereafter permanently lower spending and increase taxes to reduce borrowing in the medium term. The combined effect of the structural deterioration in the public finances and the policy changes announced since March 2008 is that the Treasury now expects borrowing to stabilise at 1.0% of national income from 2017–18 onwards, a slightly smaller deficit than implied for the same year by the forecasts in Budget 2008.

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[2] This example ignores the impact of compounding and therefore understates the impact of a reduction in growth.

Figure 2.5. Cure – reduction in borrowing from discretionary policy changes announced since Budget 2008
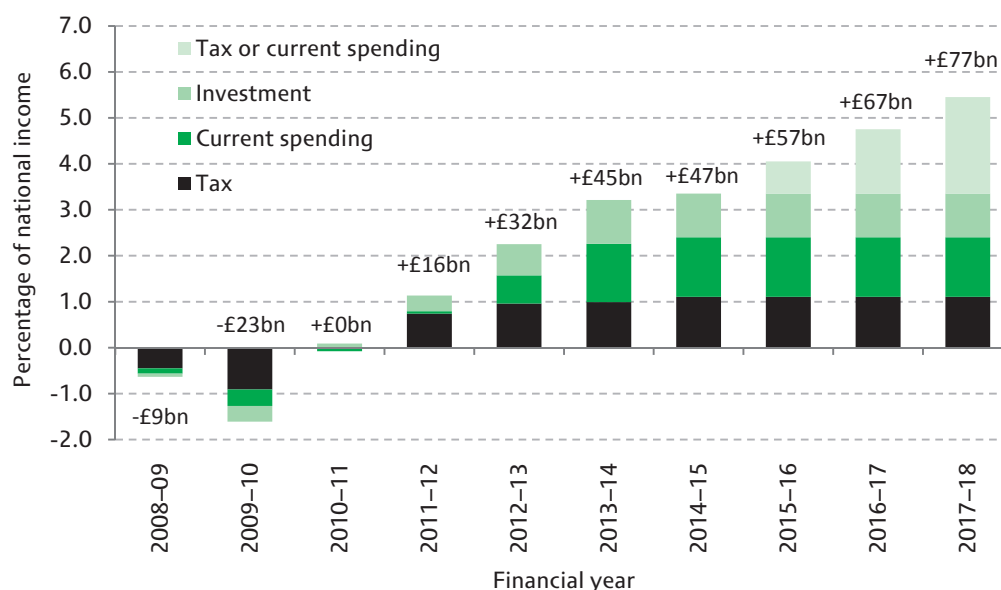
Notes: Bars represent the planned fiscal tightening (reduction in government borrowing), decomposed into tax increases and spending cuts. £ billion figures show the net exchequer gain each year from the planned fiscal consolidation, in 2009–10 terms.
Sources: Authors' calculations using HM Treasury, *Pre-Budget Report 2008*, *Budget 2009* and *Pre-Budget Report 2009*, all available at http://www.hm-treasury.gov.uk/.

As Figure 2.5 shows, the net effect of policy announcements since Budget 2008 has been to increase government borrowing in 2008–09 and 2009–10. This has been as a result of some tax giveaways (such as the 13-month reduction in the main rate of VAT from 17½% to 15%, the impact of which is discussed in Chapter 3) and some spending giveaways (such as the higher benefit payments to pensioners and families with children in early 2009 and the higher winter fuel payments to those aged 60 and over in winter 2009–10).

In 2010–11, the net effect of new policy announcements has been marginally to reduce borrowing, predominantly as a result of having brought forward some investment spending from 2010–11 into 2008–09 and 2009–10. Thereafter, new policy announcements are expected to reduce borrowing by an increasing amount each year until 2017–18. By 2017–18, borrowing is expected to be 5.5% of national income lower as a result of discretionary policy changes than it would have been if the government had taken no action over the last 18 months. These policy changes are slightly larger than the additional structural borrowing created by the crisis, hence the slightly more ambitious target for borrowing in 2017–18 than was implied by the forecasts in Budget 2008.

The figures for borrowing forecast in Budget 2008, and the latest 2009 PBR forecasts both including and excluding the estimated direct impact of policy measures implemented since Budget 2008 (and presented in Figure 2.5), are shown in Figure 2.6. Borrowing is now forecast by the Treasury to peak at 12.6% of national income in 2009–10, with most of the rise being explained by the direct impact of the financial crisis and associated recession, but some reflecting the cost of the fiscal stimulus package that has been implemented in response to the crisis. Going forward, the tax increases and, in particular, the cuts to previously planned spending levels are projected to reduce and, eventually, slightly more than cancel out the increase in borrowing arising directly from the crisis, although this is not projected to occur until eight years' time, in 2017–18.

Figure 2.6. Borrowing forecasts – with and without policy action since Budget 2008
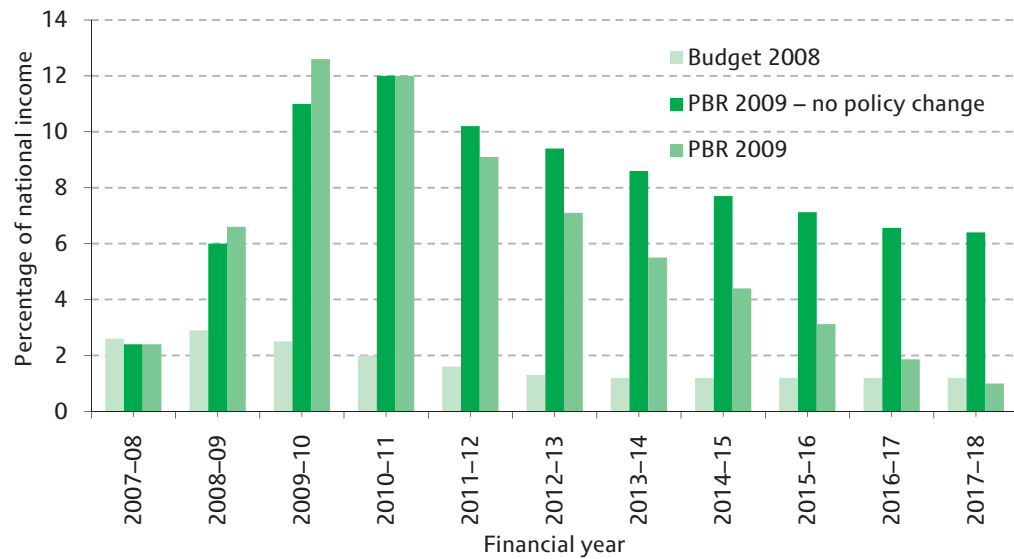
Notes: As for Figure 2.1.
Sources: As for Figure 2.1.

The implications for public sector net debt are shown in Figure 2.7. This shows the same debt profiles as in Figure 2.2, plus a forecast for the path of debt once we include the policy action that the government has set out through to 2017–18, and assuming that thereafter the primary balance (that is, total government revenues less non-debt-interest spending) remains constant. Under these assumptions, Figure 2.7 shows that the government's policy action over the last 18 months has been sufficient to return debt to a downward path beyond 2014–15, though debt is not forecast to return below 40% of

Figure 2.7. Debt forecasts – with and without policy action since Budget 2008
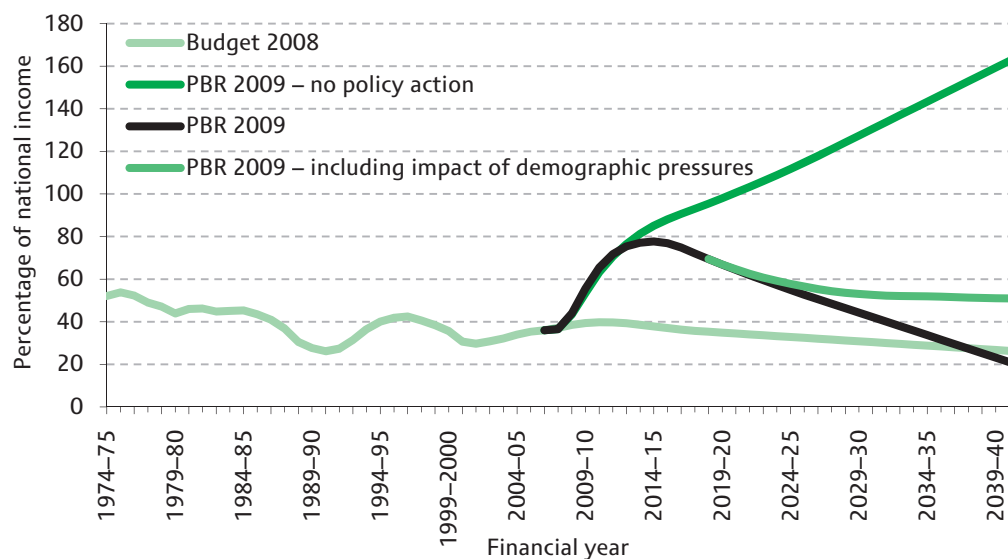
Notes: As for Figure 2.2. The forecast including the impact of demographic pressures assumes that the primary balance changes from year to year, beyond 2017–18, in the way estimated by HM Treasury in the 2008 *Long-Term Public Finance Report*.
Sources: As for Figure 2.2. Impact of long-term demographic pressures on the primary balance taken from chart 4.5 of HM Treasury, *Long-Term Public Finance Report*, March 2008, http://www.hm-treasury.gov.uk/bud_bud08_longterm.htm.

national income until 2032–33. In its latest *Long-Term Public Finance Report*, published alongside the December 2009 PBR, the Treasury published the findings of its equivalent analysis, under a range of different assumptions about the difference between interest rates and growth in national income (the greater the latter relative to the former, the easier it is for debt to fall quickly). These scenarios ranged from debt returning to below 40% of national income in the early 2030s to it not returning to this level until the early 2040s.[3]

Maintaining the same primary balance in the longer term as the government hopes to achieve in 2017–18 – as we have assumed in the 'PBR 2009' line in Figure 2.7 – would require a further fiscal tightening in the future to offset the impact of demographic changes on the public finances. These pressures were outlined in the Treasury's 2008 *Long-Term Public Finance Report* (but, unhelpfully, easily comparable figures were not reproduced in the Treasury's 2009 report). So Figure 2.7 also shows a forecast for debt levels under the assumption that the primary balance deteriorates after 2017–18 in the way outlined in the 2008 *Long-Term Public Finance Report*. If no further policies were implemented to deal with this potential upward pressure on borrowing, debt could remain at around 50% of national income through to the middle of the century, rather than continuing to fall further.

The government has announced how it intends to bring about just over 60% of the total fiscal tightening; as Figure 2.5 showed, 60% of the tightening will be in place by 2014–15 and is made up of already announced tax rises and cuts to previous plans for current and investment spending. As Figure 2.8 shows, details of the remainder – due to come into force between 2015–16 and 2017–18 – are sketchier. All we know about this additional tightening is that it comprises some combination of tax increases and cuts to current spending; in other words, it is not proposed to be achieved through further cuts to investment spending.

Figure 2.8. Composition of the cure by 2017–18, from Pre-Budget Report 2009
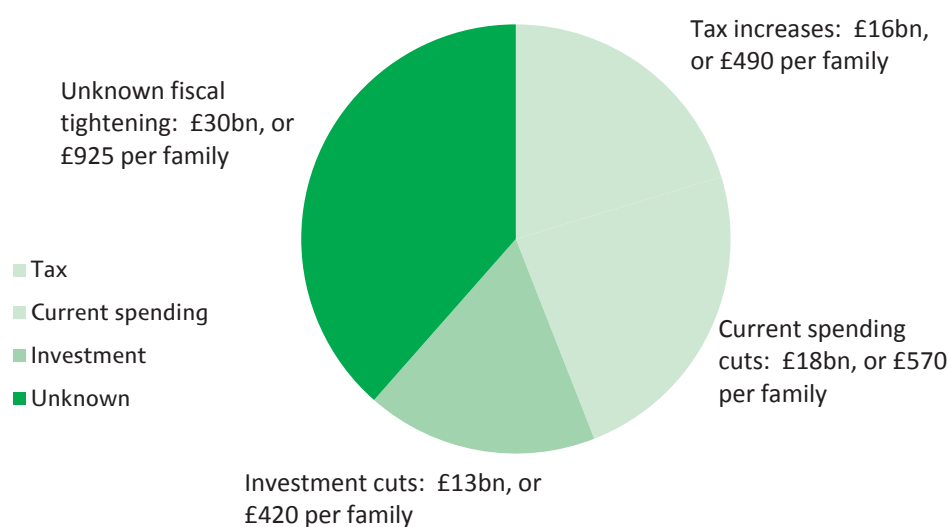
Sources: Authors' calculations using HM Treasury, *Pre-Budget Report 2008*, *Budget 2009* and *Pre-Budget Report 2009*, all available at http://www.hm-treasury.gov.uk/; based on 32.0 million families in the UK.

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[3] See chart 6.A of HM Treasury, *Long-Term Public Finance Report*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_longtermfinances.htm.

Of the proposed tightening up to 2014–15, 33% is planned to come from tax increases, 39% from cuts to current spending plans and the remaining 28% from cuts to investment spending (so overall it is one-third tax increases and two-thirds spending cuts). Note, however, that this is not set in stone as the spending projections have yet to be confirmed as definitive plans (let alone delivered). The impact on individual incomes of the tax-raising measures that have been announced so far are discussed in Box 2.1, while the implications for public service spending of the December 2009 PBR plans for total spending up to 2014–15 are discussed in Chapter 8. The increase in public sector net debt and the planned cuts to investment spending mean that the net worth of the public sector – i.e. the value of all its assets (physical and financial) less the value of all its debts – is forecast to fall sharply. This is discussed in more detail in Box 2.2.

Box 2.1. Fiscal impact of personal tax and benefit reforms since 2007–08
James Browne and David Phillips (IFS)

A number of reforms to personal taxes and benefits have been announced or implemented since the start of the recession in 2008 to help repair the public finances. In terms of revenue raised, the most significant changes taking effect since 2007–08 are:

- from April 2010, a 50p rate of income tax on income above £150,000 (affecting the highest-income 1% of individuals) and withdrawal of the personal allowance (PA) from incomes above £100,000, which will introduce an effective marginal income tax rate of 60% on income between £100,000 and the level at which the PA is exhausted, which will be £113,000 in 2010–11 (affecting the highest-income 2% of individuals);

- from April 2011, restriction of tax relief on their pension contributions for anyone who saves in a pension whose gross income is above £130,000 and whose income plus any employer pension contributions is assessed to be over £150,000;

- from April 2011, a 1p rise in employee and employer rates of National Insurance (NI), with an increase in the point at which NI is paid benefiting lower earners; this will leave those on above-average earnings paying more NI and – if employers decide to cut wages in response to the increase in employer NI – receiving lower wages;

- above-inflation increases in fuel duties each April to 2013 affecting motorists.

The Treasury forecasted in Budget 2009 and PBR 2009 that the combined effect of the income tax increases (including the pension changes) will be to raise £7.4 billion, the NI increases are estimated to raise £6.9 billion and the increases in fuel duties £2.8 billion a year. Other changes – forecast to have smaller overall effects – include increases in alcohol duties, real cuts in the income tax higher-rate threshold (HRT) and increases to child benefit.

The estimated distributional impact of all the reforms implemented since 2007–08 is shown in Figure 2.9. Households containing individuals with annual incomes below £100,000 are ranked from the lowest to the highest income and split into 10 equally-sized groups; the omitted households are shown separately in the extreme right-hand bar. On average, each income decile group loses, with losses as a share of income increasing with income. For the richest decile, the average loss equates to almost 2% of net income, but this is dwarfed by the 13% average loss among those households containing individuals whose income is at least £100,000, which (unlike other households) are directly affected by the main income tax increases.

Figure 2.9. Distributional impact of reforms 2007–08 to 2012–13
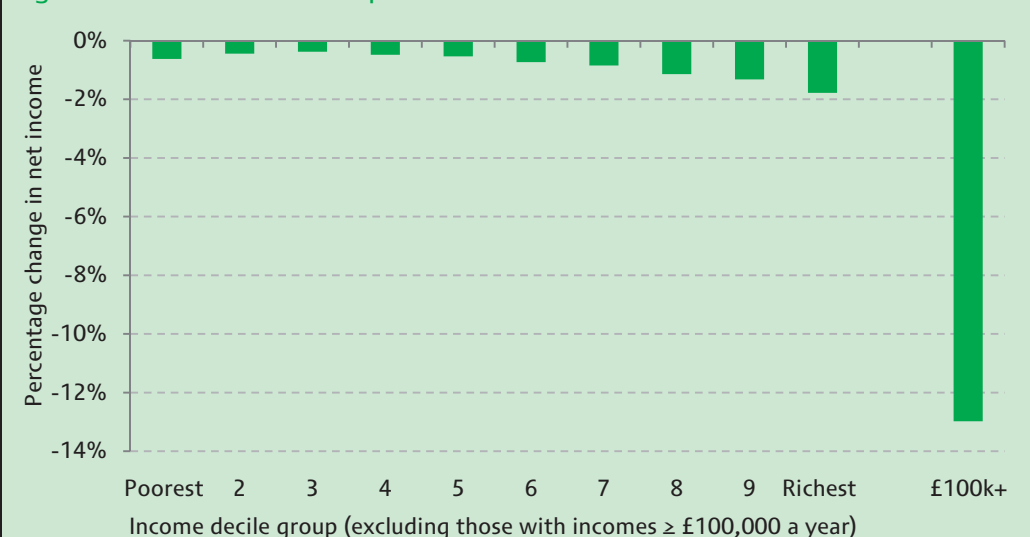
Notes: Income is net of taxes and benefits but is measured before housing costs, and is adjusted for household size using the McClements equivalence scale. Changes to the direct tax and benefit system (including employer National Insurance), along with the announced increases in fuel and alcohol duties, are included in the analysis, and no behavioural response is assumed. The Family Resources Survey (FRS) under-records both the numbers and incomes of those earning at least £100,000. For this reason, an adjustment is made to gross and net income at the top of the income distribution using the Survey of Personal Incomes (SPI). The graph shows the average change in net income due to announced tax and benefit changes separately for households containing an individual earning at least £100,000 and for other households. Income deciles are defined over those households without an individual earning at least £100,000.
Source: Authors' calculations using the FRS, the SPI and the IFS tax and benefit microsimulation model, TAXBEN.

Initially, the main income tax changes will only affect the 2% of individuals with the highest incomes. However, as the new tax thresholds at £100,000 and £150,000 are (under current policy) set to be held fixed in cash terms, while nominal incomes are likely to grow, over time a greater proportion of the population will face higher marginal income tax rates. The Treasury has also announced that the value of the higher-rate threshold – the point at which the 40% rate of income tax becomes payable – will increase by less than the rate of inflation in 2011–12 and 2012–13.

Table 2.1 shows the number of people we estimate will face each of the higher marginal tax rates in the years 2011–12 to 2015–16, assuming that the taxable incomes of higher-income individuals grow in line with nominal national income as forecast in PBR 2009 to 2014–15 and 5% nominal income growth in 2015–16. This suggests the number of individuals facing the new 50% rate of income tax will rise by 50% from 360,000 in 2011–12 to 540,000 in 2015–16. The number forecast to face the new effective 60% marginal rate of income tax increases by 73% from 150,000 in 2011–12 to 260,000 in 2015–16. The number of individuals facing a 40% marginal rate of income tax (in other words, the number of individuals with income between the HRT and £100k or between £113k and £150k) is forecast to increase from 3,490,000 individuals in 2011–12 to 4,600,000 in 2015–16, which is an increase of nearly one-third or, alternatively, over 1 million individuals.

Table 2.1. Projected number of individuals facing higher marginal income tax rates

Income:	HRT–£100k	£100k–PA exhausted	PA exhausted–£150k	£150k+
Marginal tax rate:	*40%*	*60%*	*40%*	*50%*
2011–12	3,250,000	150,000	240,000	360,000
2012–13	3,770,000	170,000	250,000	410,000
2013–14	3,970,000	200,000	280,000	450,000
2014–15	4,160,000	230,000	310,000	500,000
2015–16	4,260,000	260,000	340,000	540,000

Notes: Calculations assume incomes grow in line with nominal national income as forecast in the December 2009 PBR to 2014–15 and 5% nominal income growth in 2015–16.
Source: Authors' calculations using the private communication from Treasury for 2011–12.

Box 2.2. Public sector net worth

Public sector net debt is defined as the total amount of outstanding public sector debt net of any short-term financial assets that the public sector holds. This means that it does not take into account the value of any long-term financial assets held by the public sector, nor the value of the physical assets that the public sector holds. These are, however, captured in the Treasury's measure of 'public sector net worth'. This is the estimated total value of all public sector assets (both financial and physical) less the estimated value of all of its debts. Increases to the forecast level of debt, combined with cuts to the planned level of investment spending, will lead to lower projected levels of public sector net worth. As shown in Figure 2.10, between 1997 and 2001 the government sharply increased public sector net worth as it reduced debt and increased investment spending. However, even prior to the worst of the financial crisis, in Budget 2008, the Treasury's plans implied a decline in public sector net worth. The latest forecasts, from the December 2009 PBR, suggest that it will actually turn negative in 2012–13 and then continue to decline through to the end of the forecast horizon in 2014–15. This is despite the fact that the government has been critical of the low level of public sector net worth that it inherited, noting in November 1999 of its Budget 1999 projections that 'The prudence of the Government's medium-term plans was also reflected in *public sector net worth* which was forecast to rise slightly following years of marked decline'.[a]

Figure 2.10. Diminishing estimates of public sector net worth
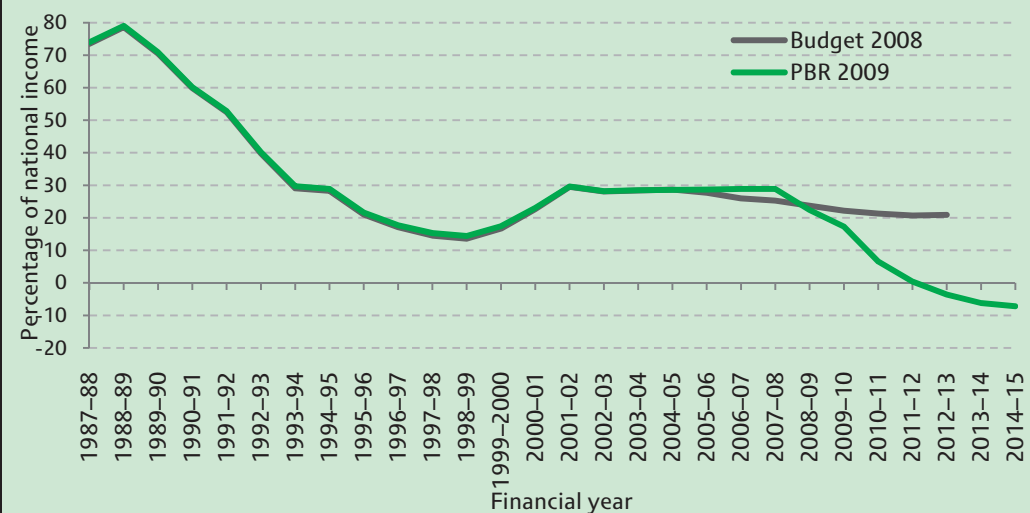
Sources: HM Treasury, *Budget 2008* and *Pre-Budget Report 2009*.

a. Page 3 of HM Treasury, *Analysing UK Fiscal Policy*, November 1999, http://www.hm-treasury.gov.uk/analysing_uk_fiscal_policy.htm.

Under the government's current plans, a greater proportion of the fiscal tightening up to 2014–15 is to be delivered by cuts to spending rather than increases in taxes. Figure 2.11, which presents forecasts for spending and revenues as a share of national income both with and without policy action, suggests why the government may have chosen such a mix. In the absence of policy action, spending would have been expected to rise to 48.0% of national income in 2010–11 and fall back only slightly – to 44.4% of national income – by 2014–15, which would have been 3.3 percentage points above the 41.1% of national income that was spent in 2007–08 before the financial crisis. Conversely, in the absence of policy action, revenues would have been forecast to fall to 36.0% of national income in 2010–11 before returning to 36.6% by 2014–15, which is just 2.1 percentage points below their level in 2007–08. In other words, given the way spending plans are set, revenues as a share of national income would have been expected to return closer to their pre-crisis levels than spending in the absence of policy measures. As a result, the government needed to announce more action to reduce spending than it did to increase taxes if the objective was to return the state back to its pre-crisis size. Of course, the desired level of future taxation and spending is a political decision and they need not return to pre-crisis levels; the government could have chosen a different mix of tax and spending policy action if it had wanted. When the Chancellor was questioned by the Treasury Select Committee as to why he had chosen spending to take two-thirds of the strain and taxes one-third, he answered: 'I thought it was the right balance. We do need to get spending down but, remember, I happen to think that a lot of public spending is quite important for supporting the economy'.[4]

Figure 2.11. Why is more of the policy action happening on spending?
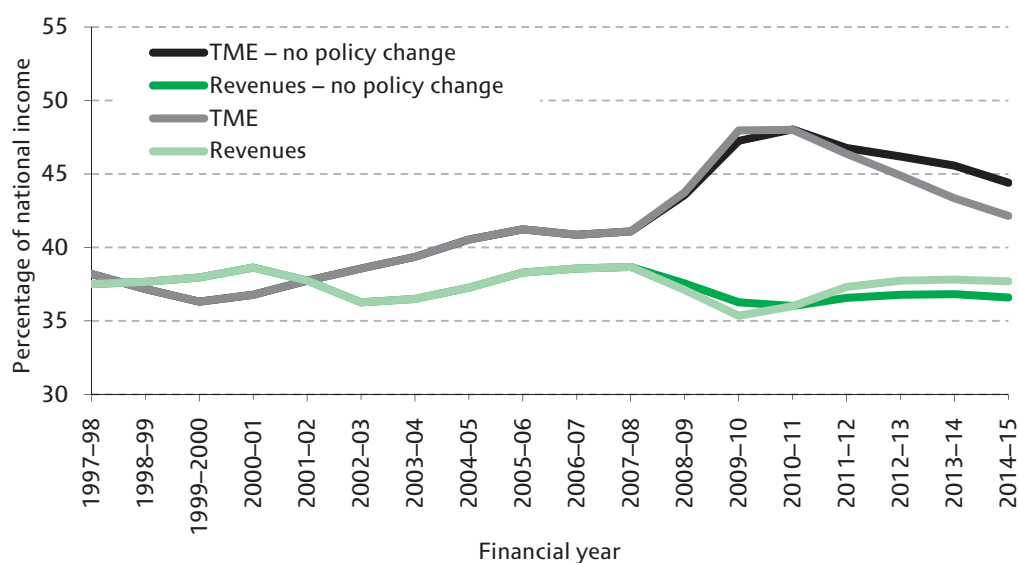
Sources: Out-turn figures from HM Treasury, *Public Sector Finances Databank*, 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls. Forecasts are authors' calculations using HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

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[4] Oral evidence to the Treasury Select Committee, 16 December 2009, Q262, http://www.publications.parliament.uk/pa/cm200910/cmselect/cmtreasy/uc180-iii/uc18002.htm.

Changes to the composition of the fiscal tightening since Pre-Budget Report 2008

Over the last 18 months, the government has changed both the size and the composition of its planned fiscal tightening. Figure 2.12 shows the planned composition of the completed fiscal tightening in 2017–18 as set out in PBR 2008, Budget 2009 and PBR 2009. It shows:

- the size of the planned tightening increasing between PBR 2008 and Budget 2009, before being reduced somewhat in PBR 2009;

- the composition of the planned tightening (or at least the earlier part, for which we have more detail) shifting away from spending cuts and towards tax increases, although the former remain more important by a ratio of two-to-one;

- the greater reliance on tax increases being used to loosen the proposed squeeze on current spending, rather than to loosen the squeeze on capital spending, even though the latter is being hit disproportionately hard.

Figure 2.12. Composition of planned policy tightening in 2017–18
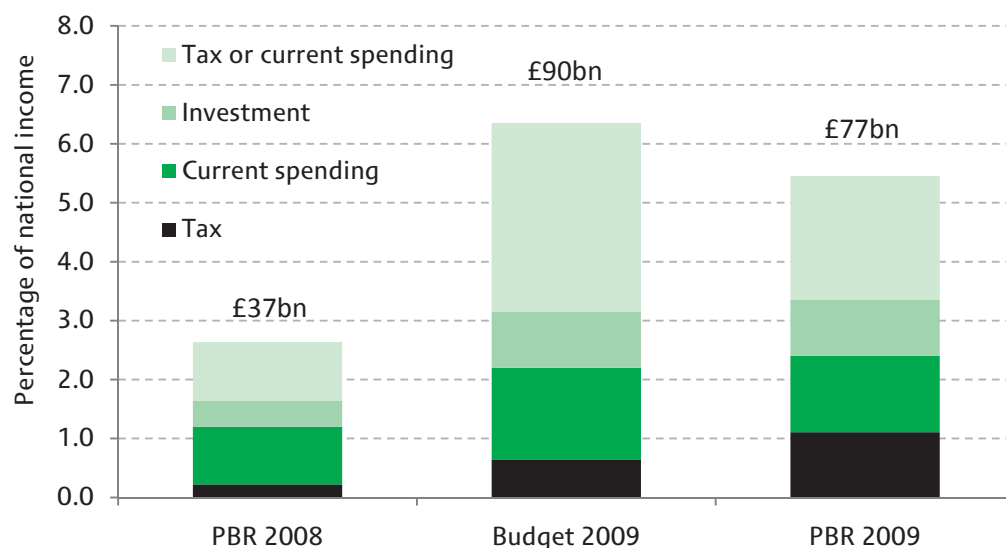
Notes: Bars represent the planned fiscal tightening (reduction in government borrowing), decomposed into tax increases and spending cuts. £ billion figures show the net exchequer gain in each case from the planned fiscal consolidation, in 2009–10 terms.
Sources: Authors' calculations using HM Treasury, *Pre-Budget Report 2008*, *Budget 2009* and *Pre-Budget Report 2009*, all available at http://www.hm-treasury.gov.uk/.

Delivering the additional fiscal tightening from 2015–16 onwards

As Figure 2.5 showed, the December 2009 PBR pencilled in plans for a further fiscal tightening amounting to 2.1% of national income (or about £30 billion in 2009–10 terms) to be implemented from 2015–16 to 2017–18. Chapter 7 discusses in detail some specific tax increases and cuts to spending on benefits and tax credits that could help a future government to achieve a cut in borrowing of this size. Here we consider three broad options for the composition of the additional tightening:

Figure 2.13. Spending and revenues under alternative scenarios for the division of the unannounced pain
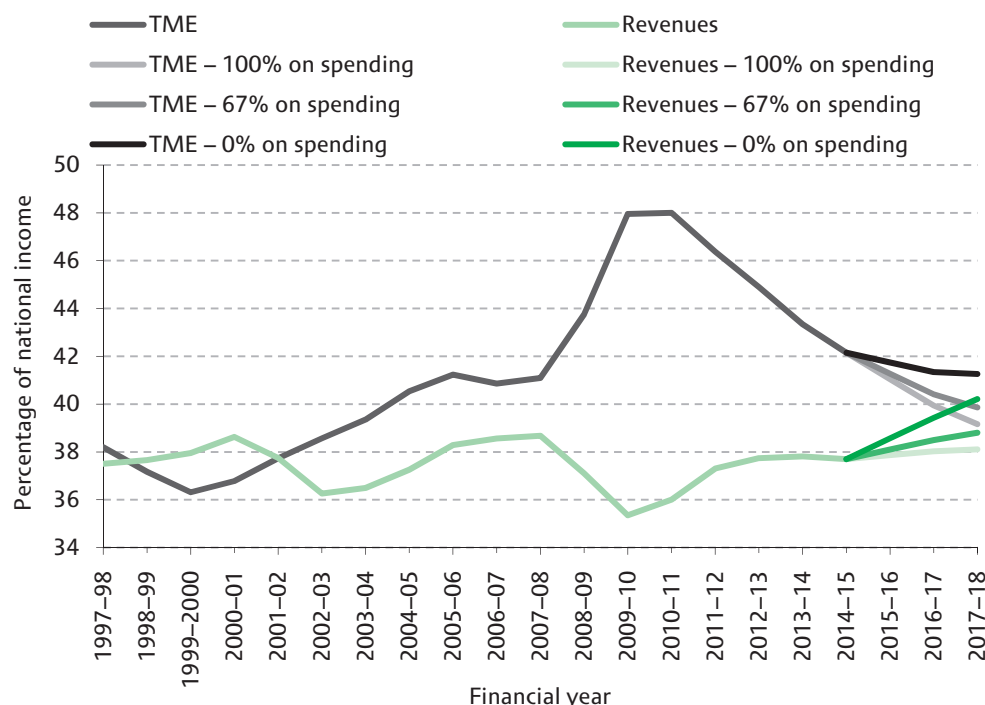
Sources: Out-turn figures from HM Treasury, *Public Sector Finances Databank*, 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls. Forecasts are authors' calculations using HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

- delivering the whole additional tightening through cuts to spending, while leaving tax policy unchanged; the implications of this for spending and revenues as a share of national income are shown by the light grey and light green lines in Figure 2.13;

- delivering the entire additional fiscal tightening through increases in taxation; this scenario is illustrated by the black and dark green lines in Figure 2.13;

- maintaining the same split between taxation and spending for the unannounced tightening as for the announced tightening (i.e. one-third tax increases and two-thirds spending cuts). The mid-grey and mid-green lines in Figure 2.13 show what would happen to spending and taxation as shares of national income under this scenario.

Delivering the whole additional tightening through spending cuts would see spending fall to 39.2% of national income (slightly below the level seen in 2003–04), while tax revenues would stabilise at 38.1% of national income (around the level seen in 2005–06 and slightly below the level in 2007–08, immediately before the financial crisis). Delivering the whole additional tightening through tax rises would require a tax increase amounting to 2.1% of national income, or about £30 billion in 2009–10 terms, by 2017–18. This would be equivalent to, for example, about a 6½ percentage point increase in the main rate of VAT (of course, in practice, it is not likely that a single rate such as this would be used in isolation to raise such a large amount of revenue). This would result in spending levels of 41.3% of national income, with the tax burden at 40.2%. This would be about the level of spending we had in 2007–08, but a tax burden higher than anything we

have seen since 1988–89. This would, however, leave us with levels of tax and spending very similar to the medium-term position envisaged by Budget 2008.

The third scenario (i.e. delivering two-thirds of the additional tightening through spending cuts) would imply a £10 billion tax increase (equivalent to about a 2 percentage point permanent increase in the main rate of VAT) and a deeper £20 billion spending cut, in 2009–10 terms, to be fully in place by 2017–18. This would take spending to 39.9% of national income and tax revenues to 38.8% – the level of tax burden we had in 2007–08 (immediately pre-crisis) and a slightly higher level of spending than we had in 2003–04.

2.4 Alternative timescales for the fiscal tightening

Section 2.3 set out the government's current plan for reducing structural borrowing to 1.0% of national income by 2017–18, through a combination of spending cuts and tax increases. However, there have been various arguments put forward for accelerating or delaying the fiscal tightening. We consider these arguments in this section.

The argument against accelerating fiscal tightening: safeguarding recovery

The main argument against accelerating the tightening is that to do more on top of the withdrawal of the stimulus already planned risks imperilling the recovery. This might then increase the amount that the government has to borrow in the short term and – if it leads to any permanent loss of productive potential – in the long term too.

Some economists point to the experience of 1937, when a premature policy tightening is blamed for derailing the US economy's recovery from the Great Depression. Professor Christina Romer, head of President Barack Obama's Council of Economic Advisers, estimates that the ending of a bonus for First World War veterans in 1936 and the introduction of social security taxes in 1937 cut the budget deficit by 2.5% of national income but helped push the US back into recession.[5] Could the same happen here?

A recent survey of 12 previous large fiscal tightenings, six from the UK and six from other countries, by Policy Exchange suggests that they did not damage future economic growth.[6] However, it is worth bearing in mind that the cases were in countries and time periods when interest rates were initially high and thus there was scope to loosen monetary policy – through lower interest rates – whilst tightening fiscal policy.

The impact of discretionary policy measures announced in PBR 2008, Budget 2009 and PBR 2009 averages an additional 0.9% of national income a year over the next eight years. But, contrary to ministerial claims that the government is maintaining its fiscal support for the economy next year, this discretionary action is front-loaded, with a tightening of 1.6% of national income next year, largely because of the withdrawal of the temporary stimulus in place in 2009–10 (Figure 2.14). However, the net stimulus provided to the economy by changes in government borrowing varies from year to year not only as a result of discretionary announcements but also as a result of the 'automatic

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[5] See, for example, 'Christina Romer on the lessons of 1937', *The Economist*, 18 June 2009, http://www.economist.com/businessfinance/displaystory.cfm?story_id=13856176.

[6] A. Lilico, E. Holmes and H. Sameen, *Controlling Spending and Government Deficits*, Policy Exchange, London, 2009, http://www.policyexchange.org.uk/images/publications/pdfs/Controlling_Public_Spending_-_Nov_09.pdf.

stabilisers' built into the tax and spending system. That is, when the economy is performing badly, government borrowing (even on unchanged policies) will tend to increase as individuals pay less tax but demands on government spending (through, for example, more people claiming unemployment benefits) increase. Thus an alternative metric by which to judge the withdrawal of spending power in 2010–11 is to look at the total change in borrowing (rather than just that brought about through policy change, such as the ending of the fiscal stimulus package). This shows a less dramatic fiscal contraction between this year and next (Figure 2.14). The Treasury expects the reduction in total borrowing to be just 0.6% of national income, rising to a much bigger 2.9% of national income between 2010–11 and 2011–12. This reflects the fact that both the underlying structural deficit and the cyclical deficit are forecast to continue rising next year even as the economy begins to recover. This should help cushion the impact on economic activity in 2010–11 of the withdrawal of the fiscal stimulus package.

Figure 2.14. Additional fiscal tightening and change in total borrowing
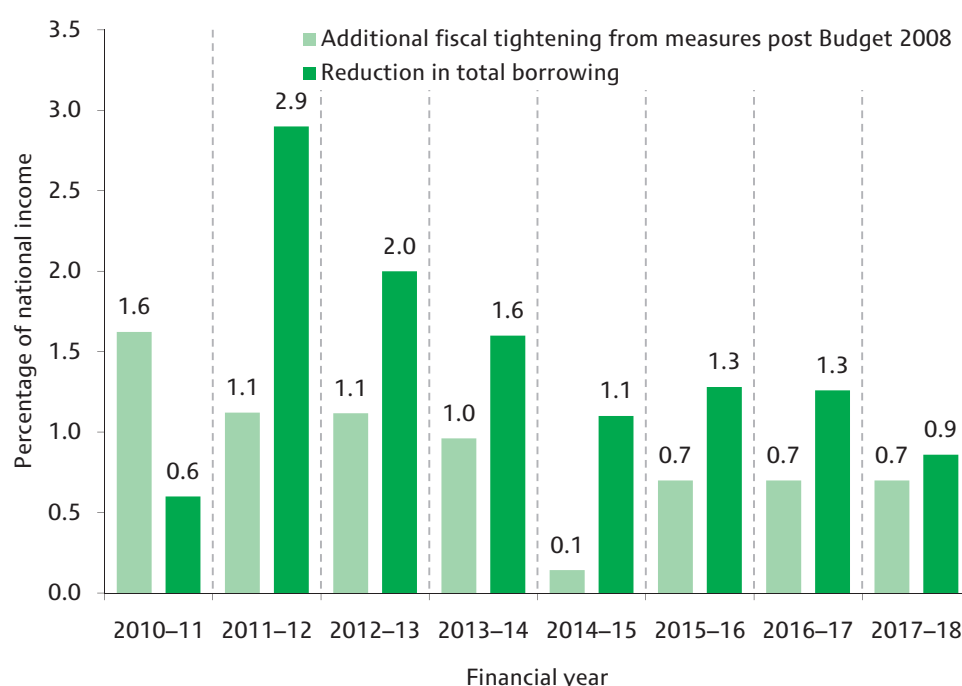
Sources: Forecasts for public sector net borrowing in 2010–11 to 2014–15 are from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm. Figures for PSNB from 2015–16 onwards are authors' calculations based on the fiscal stance outlined in PBR 2009 for the years to 2017–18. 'Additional fiscal tightening from measures post Budget 2008' is the change from year to year in the size of the 'cure' implemented since Budget 2008 shown in Figure 2.5.

Out of the 19 countries in the G20 (the other member being the European Union), the UK and Argentina are the only two not planning to implement a discretionary fiscal stimulus in calendar year 2010, as shown in Table 2.2. However, even without any discretionary fiscal stimulus, the UK's level of borrowing in 2010 and the increase in its borrowing between 2007 (i.e. pre-crisis) and 2010 are both forecast to be the highest as a share of national income in the G20.

Looking further forward, between 2010 and 2014 the UK is forecast to have the largest reduction in borrowing in the G20. But despite this, over the whole period from 2007 to 2014 the increase in borrowing in the UK is forecast to be exceeded only by those in Russia and Japan, and in 2014 only Japan is forecast to have a higher level of borrowing.

Table 2.2. Borrowing and debt as a share of national income in the UK compared with the other 18 countries in the G20

Fiscal measure	UK rank	Notes
Discretionary fiscal stimulus		
2009	Equal 10th largest	(UK's 1.6% of GDP slightly less than the 2.0% of GDP G20 average)
2010	Equal smallest	(Argentina is only other G20 country not to have announced one; average G20 stimulus is 1.6% of GDP)
Borrowing		
2007 level (pre-crisis)	5th highest	
2010 level	1st highest	
2014 level	2nd highest	(only Japan higher)
Increase, 2007 to 2010	1st largest	
Reduction, 2010 to 2014	1st largest	
Increase, 2007 to 2014	3rd largest	(only Japan and Russia larger)
Debt		
2007 level (pre-crisis)	10th highest	
2010 level	7th highest	
2014 level	4th highest	(only Japan, Italy and US higher)
Increase, 2007 to 2010	2nd largest	(only Japan larger)
Increase, 2010 to 2014	2nd largest	(only Japan larger)
Increase, 2007 to 2014	2nd largest	(only Japan larger)

Note: The G20 comprises 19 individual countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, South Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom and United States) and the European Union.
Source: Annex tables 1 and 2 on pages 35 and 36 of International Monetary Fund, *The State of Public Finances Cross-Country Fiscal Monitor: November 2009*, 3 November 2009, International Monetary Fund, Washington, DC, http://www.imf.org/external/pubs/ft/spn/2009/spn0925.pdf.

This relatively high level of borrowing leads to the forecast level of public sector debt in the UK increasing faster over the period from 2007 to 2014 than in any other G20 countries with the exception, again, of Japan. As a result, while the UK had the tenth highest debt out of the 19 countries in the G20 in 2007, by 2014 it is forecast to have the fourth highest (behind Japan, Italy and the United States).

Fiscal policy is, of course, not the only tool available to stimulate economic activity. Monetary policy can also perform this role, and prior to the crisis both the Labour government and the Conservative Party agreed that monetary policy rather than discretionary fiscal policy should be the main instrument used.[7] At the moment, monetary conditions look very loose: the Bank of England base rate is at a historic low of 0.5%, by the end of February 2010 £200 billion of 'quantitative easing' will be in place and the

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[7] For example, see the speech 'A new economic consensus?' by the Conservatives' then Shadow Chancellor Michael Howard on 11 March 2002 to the Institute for Public Policy Research (IPPR), which states: 'What I have sought to describe is the emergence of a consensus on monetary policy and how to achieve its objectives which has evolved over the last decade. The essential features were put in place by Norman Lamont and Kenneth Clarke. Gordon Brown has adapted them and taken a very considerable further step in charging the monetary policy committee of the Bank of England with the task of setting the interest rate' (http://www.totalpolitics.com/speeches/speech.php?id=81).

exchange rate fell by almost 30% over the 12 months to March 2009 (see Figure 5.1 in Chapter 5). So it is questionable how much scope there is for monetary policy to stimulate the economy further, and therefore whether monetary policy could offset the impact of tighter fiscal policy on overall spending in the economy. However, market expectations are that interest rates will rise in future,[8] suggesting there could be scope for such a rise to be delayed to accommodate a more rapid fiscal tightening than currently envisaged by the Treasury. However, in a recent speech to the Work Foundation, the Secretary of State for Business, Innovation and Skills, Lord Mandelson, argued that, while credible plans to reduce the deficit faster would deliver interest rates that were lower than they otherwise would have been, 'low interest rates in themselves are no guarantee of economic growth, as the Japanese experience shows'.[9]

Analysts at Goldman Sachs have, however, argued that any direct depressing impact of fiscal tightening could be offset if it prompts further depreciation of the pound.[10] To the extent that it does, further discretionary action from the Bank of England might not be necessary.

The argument for accelerating fiscal tightening: the threat of higher government borrowing costs

The main argument in favour of a faster fiscal tightening is the risk that investors will demand higher interest rates to lend to the government, out of fear that it will resort to inflation or (*in extremis*) default to reduce the debt burden.

The current increases in public sector borrowing and debt come at a time when it is relatively cheap for the UK government to borrow. Figure 2.15 shows that the average nominal interest rate on the outstanding stock of public sector net debt has fallen from over 10% in the early 1980s to a little over 4% today. The figure also shows that since the turn of the century, the average real interest rate (calculated using estimated economy-wide inflation) has been running consistently at levels not seen since the late 1980s.

The Treasury assumed in the December 2009 PBR that the average nominal interest rate on the government's debt would remain near current levels (of about 4½%) over the next five years, even though the stock of debt is forecast roughly to double over that period. This means that interest on public sector net debt is also forecast almost to double – from around 1.9% of national income or £27 billion in today's terms to 3.3% or £46 billion in today's terms – but even this would only be slightly above the level Labour inherited in 1997 (Figure 2.16).

The relationship between the stock of government debt and the interest rates at which the government can borrow is not as straightforward as one might imagine. Despite the projected rise in debt, there are good reasons to expect that the government's borrowing costs will remain relatively low.

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[8] Paragraph 2.70 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

[9] 'Going for growth: building Britain's future economy', 6 January 2010, http://www.theworkfoundation.com/Assets/Docs/Peter%20Mandelson%20speech%206%201%2010.doc.

[10] Ben Broadbent and Adrian Paul of Goldman Sachs have argued that a more aggressive fiscal tightening may well not depress the pace of economic recovery, because the direct withdrawal of spending power through lower public spending and higher taxes would probably be offset by the impact of a weaker exchange rate. (Source: 'Fiscal consolidation and the exchange rate', *UK Economics Analyst*, Goldman Sachs, 4 September 2009.)

Figure 2.15. Average interest rate on outstanding government debt
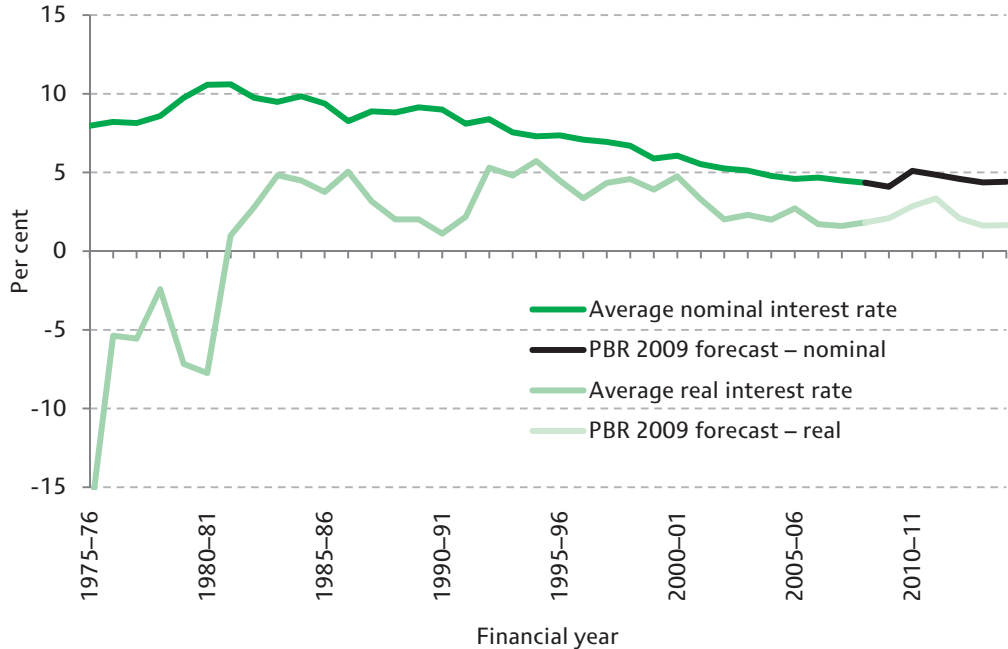
Notes: The average effective nominal interest rate is calculated as cash net debt interest paid as a percentage of the cash value of the stock of net debt at the end of the previous financial year. The average effective real interest rate is calculated using the average effective nominal interest rate and GDP deflators.
Sources: Historical data from Office for National Statistics, *Public Sector Finances: November 2009*, http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=805. Forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm. GDP deflators from HM Treasury, http://www.hm-treasury.gov.uk/d/gdp_deflators.xls, 4 January 2010.

Figure 2.16. Public sector debt interest
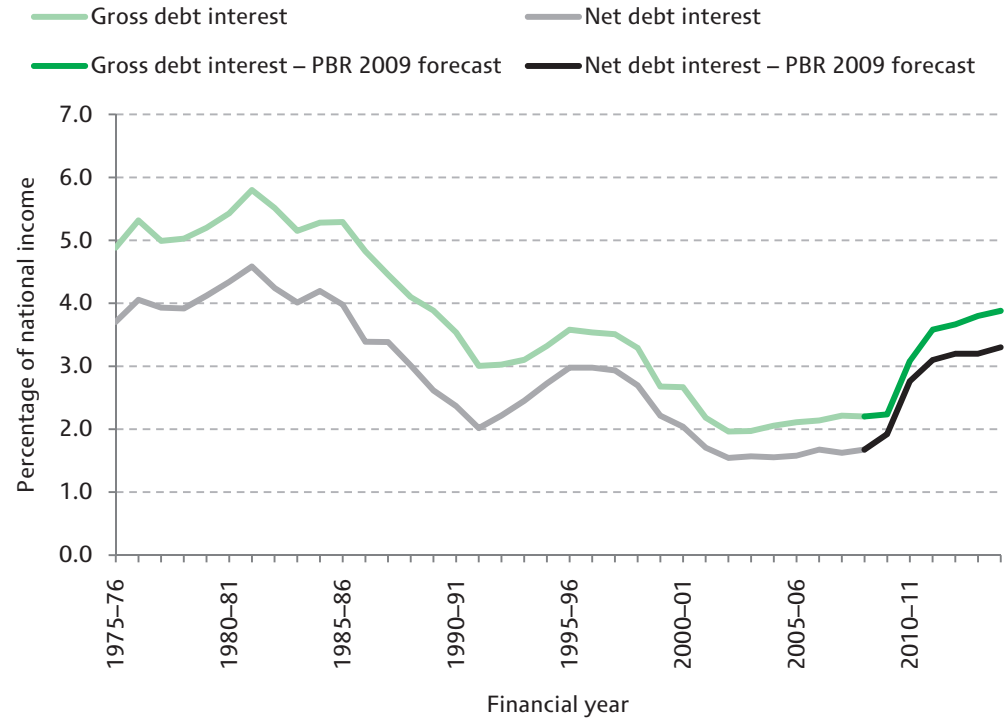
Notes and Sources: See next page.

Recent analysis by the International Monetary Fund suggests that there is some evidence of a positive relationship between debt and deficit levels and borrowing costs.[11] It concludes that it is the fiscal balance, rather than debt levels, that is most strongly related to increases in interest rates. In particular, the IMF estimates that a 1 percentage point increase in the fiscal deficit increases bond yields by about 0.2 percentage point, and that the effect can be worse than this in countries about which there is concern over the long-term sustainability of their public finances (such as those with rapid population ageing). However, the IMF also notes that interest rates tend to deteriorate more, for a given increase in the fiscal deficit, in countries with high initial debt levels. Although the UK in 2007 was relatively 'mid table' in terms of its level of debt compared with the other 18 countries in the G20, we are expected to experience the second largest increase in debt over the period from 2007 to 2014 (with only Japan forecast to have a larger increase in its debt; see Table 2.2). Consequently, our borrowing costs may become more sensitive to the size of the fiscal deficit as our debt level rises. It is also the case that alternative estimates produce somewhat larger effects: see, for example, Box 1.2 in Chapter 1.

Though the evidence is mixed, there is clearly a danger that investors will demand higher interest rates to lend to the government. This would increase the burden of its interest payments. If this higher debt burden were financed from additional borrowing, there would be further upward pressure on debt, which would further worsen investor sentiment and threaten a vicious spiral. Alternatively, the government would have to increase the size of the fiscal tightening to keep debt on the previously desired path – implying the need for more tax increases or spending cuts.

Judging how far borrowing costs could rise and what the implications for future deficit and debt levels would be is very difficult. However, four illustrative scenarios for the paths of debt and of debt interest payments through to 2040 are shown in Figures 2.17 and 2.18, respectively:

i.   Assuming that average borrowing costs are as forecast by the Treasury in the medium term, then rising gradually over a 10-year period to be equal to nominal GDP growth from 2027–28 onwards. This is the scenario also shown in Figure 2.7 and is our baseline scenario.

ii.   Assuming that borrowing costs fall to 1 percentage point below our baseline scenario between 2010–11 and 2020–21 and then remain at this lower level thereafter. This might be considered quite an optimistic scenario relative to our central scenario, given that borrowing costs for Germany are currently 0.63 percentage points below those for the UK.

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[11] Appendix to International Monetary Fund, *The State of Public Finances Cross-Country Fiscal Monitor: November 2009*, 3 November 2009, International Monetary Fund, Washington, DC, http://www.imf.org/external/pubs/ft/spn/2009/spn0925.pdf.

iii. Assuming that borrowing costs rise 1 percentage point above our baseline scenario between 2010–11 and 2020–21 and then remain at this higher level thereafter. Interest rates charged to Ireland are currently almost 1 percentage point higher than the UK's interest rates.

iv. Assuming that borrowing costs rise 2 percentage points above our baseline scenario between 2010–11 and 2020–21 and then remain at this higher level thereafter. This might be considered quite a pessimistic scenario relative to our central scenario, given that borrowing costs for Greece are currently only about 1¾ percentage points higher than the UK's interest rates.

Figure 2.17. Debt forecasts – under alternative scenarios for future borrowing costs
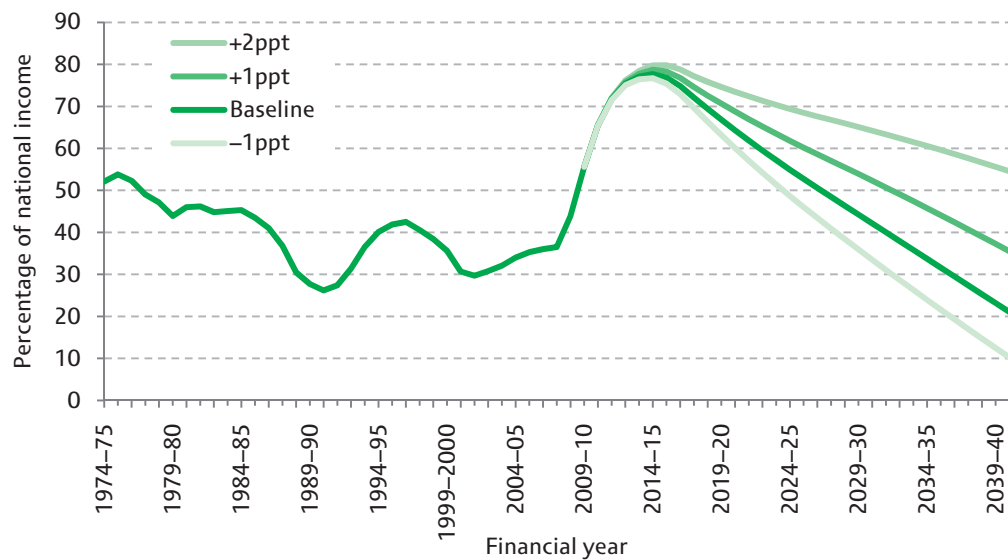
Notes: As for Figure 2.2. The 'baseline' scenario is the same as the 'PBR 2009' figures shown in Figure 2.7. The scenarios for higher or lower borrowing costs assume that average debt servicing costs increase or decrease by the amount shown from 2020–21 onwards, with the increase/decrease phasing in over the period 2010–11 to 2020–21.
Sources: As for Figure 2.2.

Figure 2.18. Forecasts for debt interest spending – under alternative scenarios for future borrowing costs
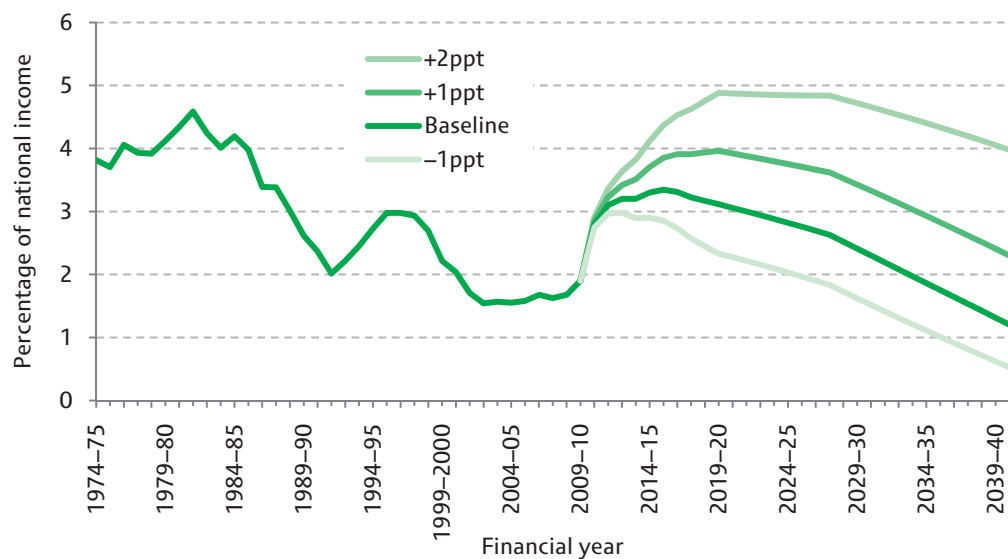
Notes: As for Figure 2.17.   Sources: As for Figure 2.2.

Lower borrowing costs would result in debt levels falling more quickly than under our baseline scenario, with debt falling back below 40% of national income in the late 2020s and debt servicing costs being about 0.8% of national income lower in 2020–21 than under the baseline case. Higher borrowing costs would see debt falling less quickly and a greater share of national income being devoted to debt service. However, even a 2 percentage point rise in interest rates above nominal GDP growth in the longer term would not – assuming the primary balance remains at the level suggested by PBR 2009 for 2017–18 thereafter – lead to an unsustainable path for debt. Of course, as mentioned above, maintaining the same level of primary balance in future years may become more difficult as demographic changes in the UK are expected to result in an increasing demand for public spending, particularly on items such as pensions and the NHS.[12]

Higher borrowing costs would, however, mean that a greater proportion of national income would have to be devoted to servicing the outstanding debt. As Figure 2.18 shows, debt servicing costs are forecast to peak at about 3.3% of national income under the PBR 2009 plans, if debt servicing costs rise slightly over the medium term to be equal to nominal GDP growth and then stabilise at that level. However, if average interest rates were to rise by 1 percentage point, spending on debt servicing would peak at 4.0% of national income in 2019–20, about 0.9% of national income higher than under the baseline scenario in that year. This would be the highest level of spending on debt interest payments since 1985–86.

An alternative tightening scenario: the Conservative target

The Conservatives have suggested that they would seek to achieve two targets for fiscal policy, which would require implementing a fiscal tightening more quickly than the government's current plans suggest. These targets are:

- for the cyclically adjusted current budget to be in balance (that is, after adjusting for temporary weakness in the economy, non-investment spending should be no greater than total revenues) at the end of the forecast horizon; and

- to have debt falling as a share of national income at the end of the forecast horizon.

The plans set out in PBR 2009 would comply with these targets if one adopted a forecasting horizon that ended no earlier than 2017–18. However, this would be two years longer than the forecasting horizon typically used by the Treasury. Therefore, complying with the Conservatives' fiscal targets would not necessarily require a larger fiscal tightening in the end, but may well require that this fiscal tightening is implemented more quickly. In the remainder of this section, we consider the potential impact on borrowing, debt, spending and revenues of meeting the Conservative Party's fiscal targets over a forecasting horizon of the length currently used by the Treasury.

We assume here that the Conservatives are working on the basis of a forecast horizon extending to 2015–16 – in other words, a six-year consolidation period.[13] Our calculations suggest that achieving their first (current budget balance) target would mean that their second (debt) target was also automatically met unless they had radically different plans for public sector net investment from those outlined in PBR 2009.

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[12] Further detail on the long-term pressures on spending and revenues that face the UK public finances was outlined in HM Treasury, *Long-Term Public Finance Report*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_longtermfinances.htm.

[13] Based on the practice adopted in recent Budgets and PBRs, the forecast horizon, which ended in 2014–15 in PBR 2009, would be extended to 2015–16 in PBR 2010.

The plans set out in PBR 2009 show the current budget returning to a small surplus in 2017–18. However, under current policy, there is still forecast to be a cyclically adjusted current budget deficit of 1.1% of national income in 2015–16. Thus to achieve balance in this year would require an additional fiscal tightening of this amount (equivalent to £15 billion in 2009–10 terms) to be implemented by 2015–16. So relative to the government's current plans, the Conservatives would have to have a combination of higher taxes or lower spending worth £15 billion in 2015–16, whereas under Labour the pain of these measures would be deferred for two more years.

The Conservative Party's plans only include a target for the cyclically adjusted current budget in the final year. To model meaningfully the effects of adhering to the target – on spending, revenues and borrowing – over the medium term requires us to make some assumptions about the path of progress towards the final target. We therefore assume:

- **2011–12 to 2012–13:** Total borrowing is halved from its 2009–10 level (of 12.6% of national income) by 2012–13. This requires an additional fiscal tightening (relative to PBR 2009 plans) of 0.8% of national income in 2012–13. We assume that half of this is implemented in 2011–12 and the remainder in 2012–13.

- **2013–14 to 2015–16:** To get the cyclically adjusted current budget to balance in 2015–16 requires a cut in structural borrowing between 2012–13 and 2015–16 of 2.4% of national income (or 0.3% of national income more than PBR 2009 plans suggest). We assume that this reduction in structural borrowing happens uniformly over the three years – with structural borrowing being 0.8% of national income lower in 2013–14 than it is in 2012–13, 1.6% lower by 2014–15 and 2.4% lower by 2015–16. By 2015–16, borrowing under this scenario would 1.1% of national income (or £15 billion in 2009–10 terms) lower than under the PBR 2009 forecasts.

Figure 2.19. Structural borrowing – PBR forecast and an illustrative six-year consolidation plan
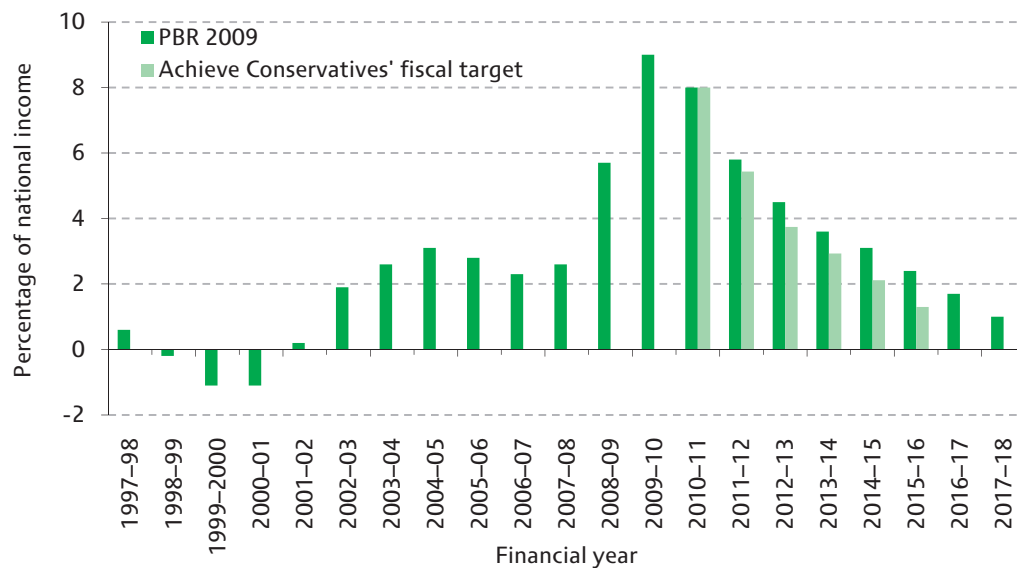
Note: The Conservatives have not set out their intentions for borrowing beyond the end of their forecast horizon; we have not, therefore, shown forecasts for borrowing under the alternative scenario in 2016–17 and 2017–18.
Sources: Out-turn figures from HM Treasury, *Public Sector Finances Databank*, 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls. Forecasts are authors' calculations using HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

Relative to the government's plans, we assume that the Conservatives would keep to the PBR 2009 investment plans and that all of the lower borrowing would be from a tightening on the current budget – that is, from new tax rises or cuts to non-investment spending. Figure 2.19 shows figures for structural borrowing based on PBR 2009 (dark green bars) and under the alternative, faster fiscal tightening set out above (light green bars). Under the alternative fiscal tightening, not only is the overall tightening done sooner but it is also the case that the additional tightening relative to Labour's plans is also relatively front-loaded.

The faster, six-year consolidation plan set out above is specifically designed to halve the headline deficit in three years rather than in four years. To do this would require borrowing to be reduced from 12.6% of national income in 2009–10 to 6.3% of national income in 2012–13. This is shown in Figure 2.20, which shows figures for total borrowing as a share of national income under both scenarios. In a reply to a question from the Conservative Shadow Chancellor, George Osborne, at Treasury questions in the House of Commons, Mr Darling said:

> First, we have set out a plan to cut borrowing by half over a four-year period. I understand the hon. Gentleman's view, which is shared by some others as well, that we could go further and faster. However, I believe that attempting to do what we are doing in a period one year shorter than that would result in taking £26 billion more out of our economy. That would be damaging to our economy and very damaging to our future prospects, which is why I do not think that his policy on this matter is right.[14]

In fact, the direct cost of halving the deficit one year sooner – i.e. by 2012–13 rather than by 2013–14 – is not £26 billion. Under current plans, the Treasury is forecasting that it will more than halve the deficit by 2013–14, with borrowing falling to 5.5% of national income in that year (rather than the required 6.3%). Mr Darling's £26 billion is the cost in 2012–13 terms of achieving this same 5.5% borrowing one year earlier, which would require borrowing to be 1.6% of national income lower than that projected by the PBR. (This implies not only achieving the discretionary tightening planned by Labour in three years rather than four, but also achieving through discretionary tightening the cyclical improvement that would be expected without policy action between 2012–13 and 2013–14.) However, as mentioned above, exactly to halve the deficit in three years would require borrowing to be only 0.8% of national income lower in 2012–13 than is forecast by the Treasury. This is £11 billion in today's terms and £13 billion in 2012–13 terms.

Figure 2.21 shows the outlook for debt taking into account the direct impact of following the six-year fiscal consolidation plan outlined above. The trajectory for debt is little altered from what is implied by the PBR 2009 plans, which is not surprising given that the cumulative reduction in borrowing under this scenario is relatively small compared with the entire stock of outstanding debt. Of course, implementing such policy action could reduce the risk of interest rates charged on UK government debt rising significantly.

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[14] *Hansard*, 15 December 2009, column 784,
http://www.publications.parliament.uk/pa/cm200910/cmhansrd/cm091215/debtext/91215-0001.htm.

Assuming no difference in future interest rates results from the faster fiscal tightening, our calculations suggest that implementing this six-year plan would be sufficient to result in debt peaking one year earlier than the PBR plans suggest (in 2013–14 rather than 2014–15). This profile for debt would comply with the Conservative Party's proposed rule for debt – that is, that the level as a share of national income should be falling at the end of the forecast horizon – assuming the forecast horizon ends no earlier than 2014–15.

Figure 2.20. Total borrowing – PBR forecast and an illustrative six-year consolidation plan
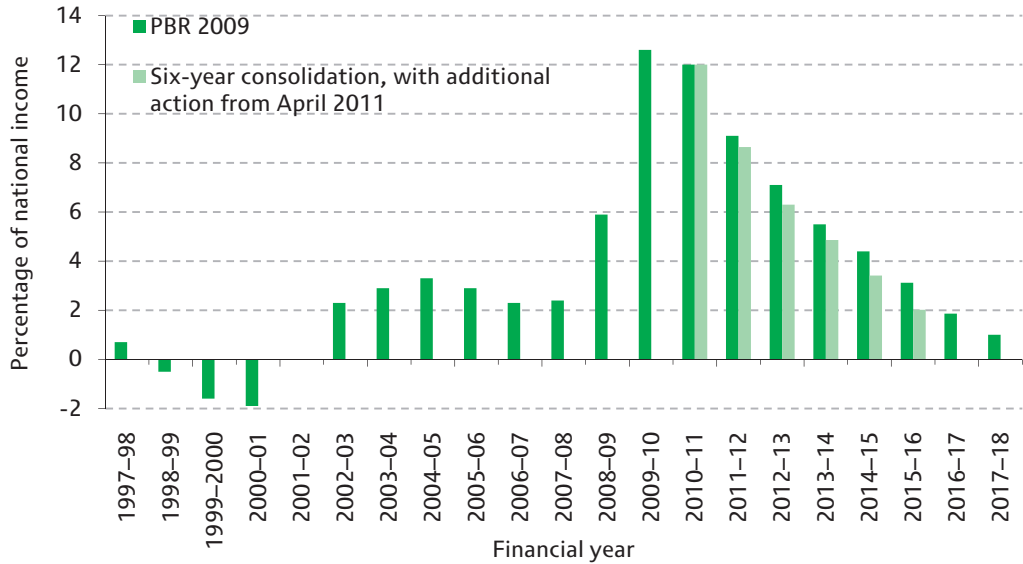
Note: As for Figure 2.19.
Sources: As for Figure 2.19.

Figure 2.21. Debt forecasts – PBR forecast and an illustrative six-year fiscal consolidation
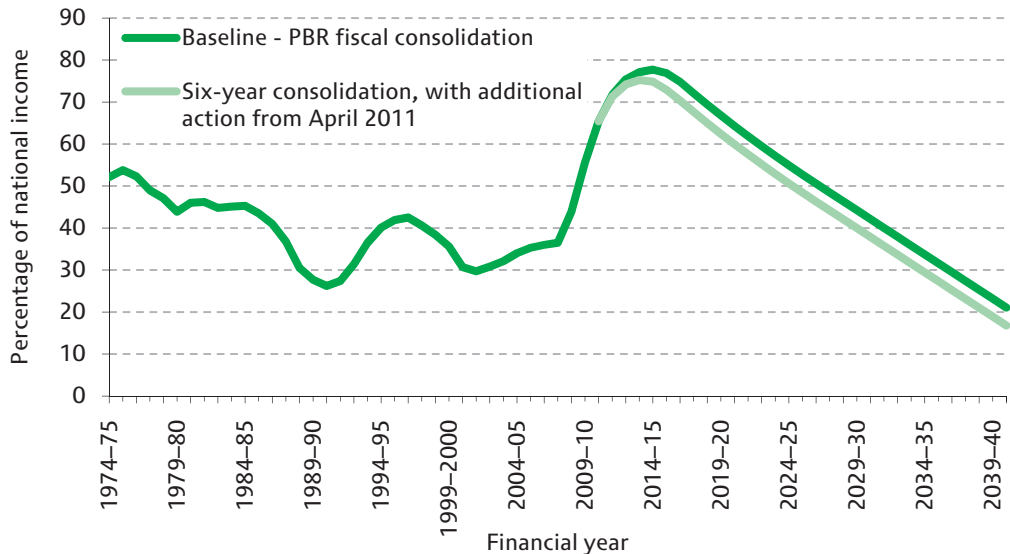
Notes: As for Figure 2.2. The 'six-year fiscal consolidation' assumes that borrowing follows the path outlined in Figure 2.20; in 2017–18, we assume the primary balance reaches the level forecast in PBR 2009 and remains at this level thereafter. From 2017–18 onwards, although the primary balance is the same under both the scenarios illustrated, borrowing is slightly lower under the six-year consolidation, as cumulative borrowing up to this point is lower and hence the cost of servicing the outstanding stock of debt is also marginally reduced.
Sources: As for Figure 2.2.

Figure 2.22. Spending and revenues – PBR forecast and an illustrative six-year consolidation plan with two-thirds of additional squeeze coming on spending
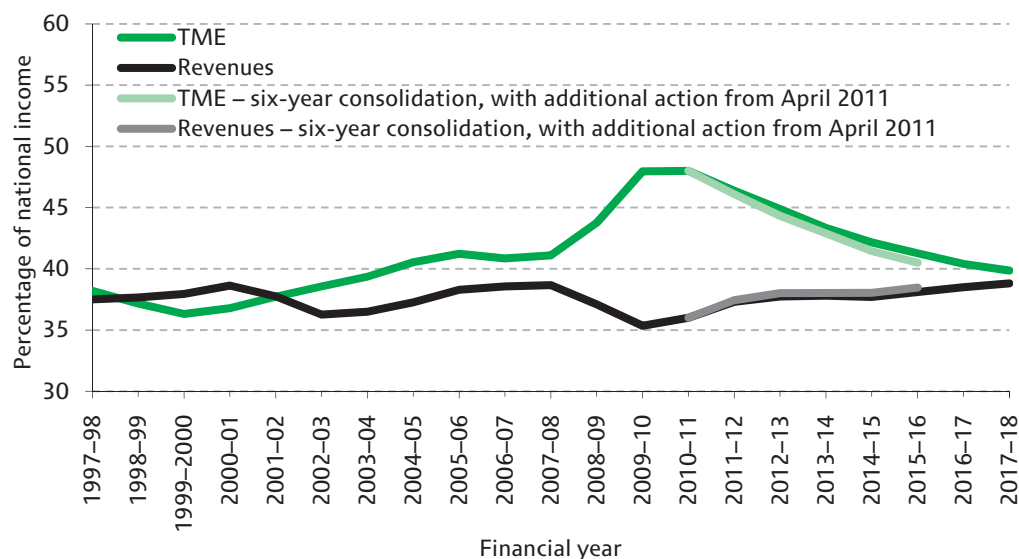
Sources: Out-turn figures from HM Treasury, *Public Sector Finances Databank*, 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls. Forecasts are authors' calculations using HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

If we assume that the additional fiscal tightening required to follow the six-year consolidation plan is delivered through the same distribution of tax increases and spending cuts as the government's currently announced plans (i.e. as Section 2.3 set out, one-third from tax increases and two-thirds from spending cuts), Figure 2.22 shows the implications for the levels of spending and revenues under our alternative scenario. Also shown are the paths for revenues and spending assuming the PBR 2009 consolidation path is followed, with two-thirds of the as-yet-unannounced fiscal tightening delivered through spending cuts and one-third through tax increases.

Delivering the additional tightening by 2015–16 through one-third tax increases and two-thirds spending cuts would result in spending falling to 40.5% of national income (the level last seen in 2004–05) and the tax burden rising to 38.5% by 2015–16 (the level it was at in 2006–07), compared with 41.3% and 38.1% respectively under the scenario based on the PBR 2009 fiscal consolidation. So, by 2015–16, the total 1.1% of national income (£15 billion in 2009–10 terms) reduction in borrowing, relative to Labour's plans, would be brought about through a 0.4% of national income additional increase in taxes (£5 billion) and deeper cuts to public spending amounting to 0.8% of national income (£11 billion). Under Labour's plans, the pain from these changes would be deferred until 2017–18.

The implications of the PBR planned tightening and our alternative scenario of a six-year consolidation plan for spending on public services between 2011–12 and 2014–15 are explored in more detail in Sections 8.4 and 8.5 in Chapter 8.

2.5 Conclusion

The December 2009 Pre-Budget Report estimates that the recession and associated financial crisis have punched a permanent hole worth 5.2% of national income (or £73 billion in 2009–10 terms) in the public finances. This is large, but is smaller than the 6.4% of national income (or £90 billion) that the Treasury thought at the time of the April 2009 Budget. In the absence of policy action, a sustained increase in annual borrowing of these levels would have left public sector debt on an unsustainable path.

Estimates produced by Barclays suggest that the Treasury may be optimistic about the extent to which national income will recover from the crisis. The central Barclays scenario would imply a further £25 billion damage done to the public finances, while a 'pessimistic' scenario would imply a further £50 billion, relative to the Treasury's assessment.

In response to the crisis, the government has implemented a short-term fiscal stimulus package to help limit the length and depth of the recession. In the medium term, it intends to implement a fiscal tightening that will reach 5.5% of national income (£77 billion) by 2017–18. If delivered, this would more than cancel out the permanent increase in borrowing that the Treasury believes has been caused by the crisis and would be sufficient to bring debt back onto a sustainable path.

The government intends to implement just over 60% of the tightening between 2010–11 and 2014–15, achieving roughly two-thirds through cuts to spending and one-third through the increases in tax that have already been announced. The biggest losers from the tax rises are those individuals with very high incomes, in excess of £100,000 a year. The remaining 40% of fiscal tightening is to come from further increases in tax or deeper cuts to current spending after 2014–15. Continuing the policy of two-thirds spending cuts and one-third tax rises would, in 2017–18, take spending to 39.9% of national income, which would be slightly higher than the level in 2003–04, and tax revenues to 38.8%, which was the level in 2007–08.

If the interest rate on government debt rises to be in line with growth in the economy, then keeping borrowing constant beyond 2017–18 would be sufficient to see debt return back below 40% of national income in 2032–33. But new measures would need to be implemented to mitigate the costs of an ageing population, and any further significant rises in interest rates would push this date back significantly and would also substantially increase the proportion of national income that would have to be devoted to servicing the outstanding debt stock.

The Conservatives' proposed fiscal rules – in particular, the target that, after adjusting for temporary weakness in the economy, non-investment spending will be no greater than total revenues by the last year of the forecast horizon – would require borrowing to be 1.1% of national income (or £15 billion in 2009–10 terms) lower in 2015–16 than under Labour's plans. While this might help reduce the risk of rising interest rates, the direct impact of doing the same tightening sooner (rather than doing a larger tightening overall) would do little to alter the path of debt going forwards. If the quicker tightening were implemented through two-thirds spending cuts and one-third tax rises, then it would require a further £11 billion cut to public spending and a £5 billion rise in taxes in 2015–16. Under Labour's plans, the pain from these changes would be deferred until 2017–18.

3. Fiscal stimulus and the consumer

Thomas F. Crossley, Andrew Leicester and Peter Levell (IFS)[1]

Summary

- The recession has been associated with a substantial fall in household spending and a rapid rise in the saving rate. Partly as a consequence, the government implemented a fiscal stimulus, including a temporary cut in the main rate of VAT from 17.5% to 15% and a car scrappage scheme.

- The VAT cut has ended and the car scrappage scheme expires in February 2010. The return of VAT to 17.5% will increase prices by about 1% on average. This is likely to mean consumption is about 1% lower than it would have been had the rate remained at 15%, reversing the 1% consumption increase brought about by the temporary cut. The immediate impact on purchases may be a more than 1% fall, as consumers may have brought forward purchases at the end of 2009 that they were planning to make later to take advantage of the lower VAT rate, with a consequent reduction of purchases in 2010.

- If the government wishes to raise more revenue in the future by increasing the VAT rate further, and if the downturn proves more prolonged than anticipated, then pre-announced increases in the rate could help stimulate consumption ahead of the increases. Relative to increases in income tax, higher VAT may be an economically efficient way to raise revenue. But some may think it inequitable towards those with savings.

- The car scrappage scheme allows for up to 400,000 old vehicles to be scrapped and replaced by a new one, with a £2,000 incentive split between government and manufacturers. The scheme has been associated with a large short-term increase in car registrations compared with their 2008 levels. The largest impact may well be to encourage people to replace old cars with new rather than second-hand vehicles.

- Economic theory and studies of previous schemes suggest that there is likely to be a substantial and enduring 'payback' effect after the scheme ends. Sales will be reduced relative to a no-subsidy baseline as people have brought forward their purchases.

- The environmental benefits of the scrappage scheme are likely to be very small. Households are choosing relatively clean new cars, but may well drive them more than they drove their old vehicles.

3.1 Introduction

The current recession is the largest to have hit the UK in decades: GDP peaked in the first quarter of 2008 and has since shrunk by around 6% – a considerably greater decline than in any UK recession over the last 40 years. Real household spending peaked somewhat later than GDP (the third quarter of 2008) and has fallen somewhat less (about 4.3%

according to the latest data). Although it is not yet clear that spending has reached its trough, the fall to date is large relative to the recessions of the early 1970s and the early 1990s but not as big as in the 1979 to 1981 recession. These features are shown in Figure 3.1 and Table 3.1.

Since the peak of household spending in the third quarter of 2008, total household resources[2] have actually risen by almost 4%. Taken together, the fall in spending and rise in household resources mean a rapid increase in the household saving rate from –0.7% to +8.6% by the third quarter of 2009. This is a large change but by no means

Figure 3.1. Real GDP and household consumption expenditure, 2005Q1–2009Q3 (2008Q1 = 100)
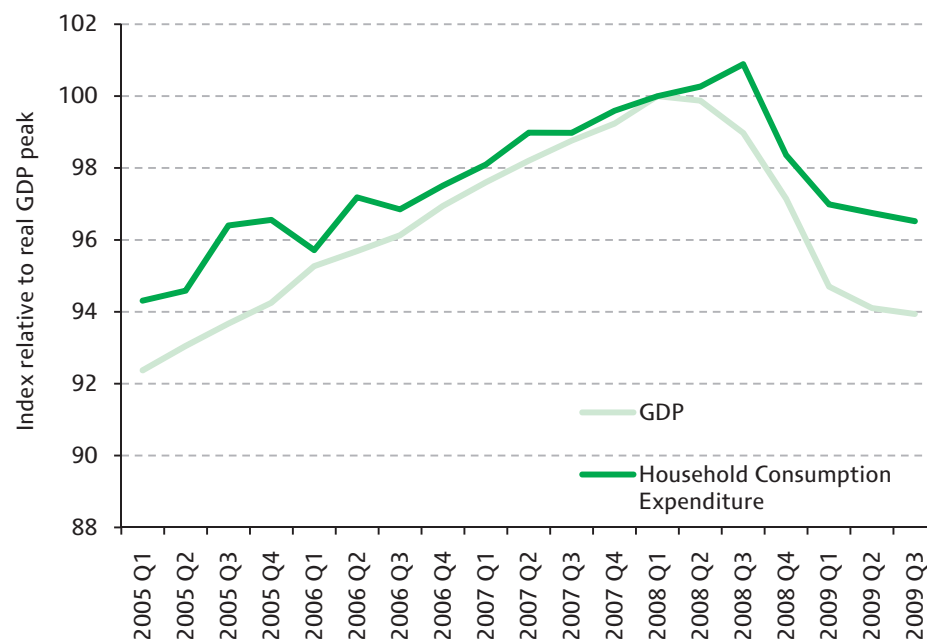
Source: ONS.

Table 3.1. Changes in real household spending and real GDP in previous recessions

Recession period (peak–trough of real GDP)	Change in real GDP	High–low period of real household spending during recession	Change in real household spending	Change in real household resources
1973Q1–1974Q1	–3.7%	1973Q2–1973Q3	–1.3%	–1.6%
1979Q3–1981Q1	–3.7%	1980Q1–1980Q4	–6.0%	–1.2%
1990Q2–1992Q2	–2.5%	1990Q2–1992Q1	–1.8%	+3.8%
2008Q1–2009Q3[a]	–6.1%	2008Q3–2009Q3[a]	–4.3%	+3.7%

a. 2009Q3 is not necessarily the trough of the current recession but at the time of writing it is the latest quarter for which we have data.
Note: Changes in household spending and resources are shown over the period representing the high and low point for real household spending during the GDP recession (column 1).
Source: ONS.

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[2] Household resources are defined as the sum of households' gross disposable incomes and net flows into employee pension funds from employers.

Figure 3.2. Saving rate, 1970Q1–2009Q3
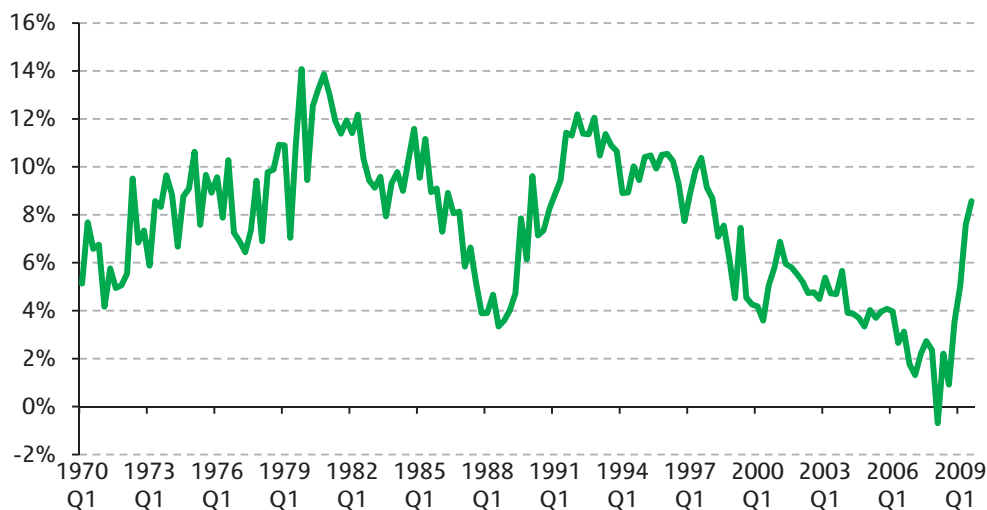
Source: ONS.

unprecedented. There was a similarly rapid rise in the saving rate in the early 1990s (see Figure 3.2) – although in the current episode the saving rate may not yet have peaked.

Over the last year, the government has taken several measures to stimulate consumption and so boost aggregate demand. The two most noteworthy policies aimed at achieving this were a temporary cut to the main rate of VAT of 2.5 percentage points, from 17.5% to 15% (at an estimated cost of £12.4 billion), and a vehicle scrappage scheme which provided a discount of £2,000 on new vehicle purchases for drivers who scrapped old cars or vans (at a cost of £0.4 billion). Both of these policies have now, or will soon, come to an end: the VAT cut ran from 1 December 2008 to 31 December 2009, and the scrappage scheme is scheduled to expire at the end of February 2010 (or sooner, if the budget is exhausted).

This chapter will look at the details and effects of both of these schemes in turn, and will look ahead to the potential impact as these consumer stimulus measures are unwound. We start in Section 3.2 by looking at the return of the main rate of VAT to 17.5%, and then in Section 3.3 we look at the car scrappage scheme. Section 3.4 concludes.

3.2 VAT changes

In the November 2008 Pre-Budget Report (PBR), the government announced a temporary reduction in the main rate of VAT from 17.5% to 15%, taking effect on 1 December 2008 and lasting until 31 December 2009. This was a sizeable stimulus, with an estimated cost of £12.4 billion or approximately 2% of revenues.[3]

In this section, we talk about the impact of these changes on household consumption, spending and purchases. These are distinct concepts. *Consumption* refers to the quantity of goods or services actually utilised over some period – for example, the number of litres of wine someone drinks each week. *Purchases* refer to the actual quantity of goods consumers buy, such as the number of litres of wine someone buys each week. By

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[3] HM Treasury, *Pre-Budget Report 2008*, November 2008, http://www.hm-treasury.gov.uk/d/pbr08_completereport_1721.pdf.

spending we mean gross nominal spending – the amount of money consumers spend over some period, including taxes. If a consumer bought an extra bottle of wine this week to be consumed at a later date, then purchases and spending would have increased but consumption would not have.

When the government introduced the VAT cut, it was hoping to help firms by stimulating purchases through lower post-tax prices. The policy could therefore still be considered a success even if total spending had remained unchanged because, with lower prices, purchases would have increased.

To the extent that the cut was passed on to consumers, it temporarily reduced the price of standard-rate goods and services. A price change of this kind affects demand through three different channels:

- First, there is an 'income effect'. The VAT cut in effect makes consumers wealthier: by lowering consumer prices, it allows consumers to purchase the same quantity of goods for a lower level of spending. Consumers may choose to save some of the resulting surplus, but they are likely to spend at least some of it on new purchases as well.

- Second, there is a 'substitution effect'. The temporary cut gives consumers an incentive to bring forward consumption from the future, when the cut expires, to the present, when prices are lower. The VAT cut operates in exactly same way as a fall in interest rates, by effectively reducing the return on saving. There is less benefit to accumulating savings now if you will face higher prices when you come to spend those savings in the future, so rational consumers will choose to consume more today. To put it another way, by choosing to shift consumption to periods when relative prices are lower, consumers are able to increase their lifetime consumption.

- Finally, a temporary reduction in prices also stimulates purchases through an 'arbitrage effect'. Consumers will have an incentive to bring forward purchases of non-perishable goods to be stored and consumed later. For instance, a household that normally consumes five bottles of wine per month may decide to purchase and store an additional 15 bottles at the low price and then consume them over the next three months when prices are higher. In this case, consumers are not reallocating their consumption, but they are reallocating their spending and purchases to the low-price period. Arbitrage effects are likely to be particularly important towards the end of the low-price period both because of physical storage costs and uncertainty; we return to this point later when discussing the likely effects of the return of the main VAT rate to 17.5%.

In the case of the temporary VAT cut, we would expect the income effect to have been small (except for consumers who were credit constrained or myopic – see below). This is because the 13-month boost to real incomes resulting from the VAT cut only represents a very small difference to the consumer's total real lifetime income. Indeed, if consumers expected the extra government outlay involved in financing the policy to result in higher taxes in the future, the income effect could, on average, have been zero. However, the cut could still have provided a significant boost to consumption, spending and purchases through the substitution and arbitrage effects.

The effect of VAT returning to 17.5%

In the Green Budget 2009, we looked at how the temporary VAT cut might be expected to affect demand.[4] Now, as the VAT cut has expired, we will consider the impact of the return to the higher rate of VAT.

Many commentators criticised the cut when it came into effect, arguing that a change of 2.5 percentage points was too small to affect retail prices much and so would not be particularly salient to consumers.[5] Presumably, these commentators would also argue there is little effect of the rate reverting to 17.5%. We, however, argued that there were good reasons to expect the VAT cut to be an effective stimulus, and thus expect its withdrawal to have had adverse consequences for purchases and consumption.

Impact on prices

The 2.5 percentage point increase in VAT on 1 January 2010 would not have increased the overall price level by 2.5% for several reasons. The first is simple arithmetic. The VAT rate is expressed as a proportion of the price before tax. This means that a good with a pre-tax price of £100 saw its post-tax price increase from £115 to £117.50, or 2.17%.

Second, not all goods face the full rate of VAT – the cut only affected goods subject to the standard rate, not zero-rated, exempt or reduced-rated items. About 51% of pre-VAT household spending is on goods that are taxed at the standard rate.[6]

Finally, it is difficult to gauge the impact of VAT changes on consumer prices, as part of the incidence of the increase in tax will fall on producers and retailers rather than consumers. Based on a review of past research, Blundell (2009) estimated that about 75% of last year's reduction in VAT would be passed on to consumers.[7] An analysis of recent price data reported in Chirakilja et al. (2010) is consistent with this estimate.[8] This need not imply that the rate of pass-through of the VAT increase to consumers will be exactly the same – firms may be more or less likely to pass on increases in taxes than they are to pass on tax cuts, for instance. Nevertheless, pass-through of 75% seems a reasonable estimate.

Taken together, this implies the increase in the price level we would expect from the VAT increase is almost 1% (roughly 51% of 75% of 2.17%).

Impact on consumption, spending and purchases

We can use our estimate of the effect of the VAT increase on prices to try to predict the size of the various effects on consumption, spending and purchases that we discussed earlier in the section.

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[4] T. Crossley, D. Phillips and M. Wakefield, 'Value added tax' in R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget: January 2009*, IFS, London, January 2009, http://www.ifs.org.uk/budgets/gb2009/09chap10.pdf.

[5] For example, A. Spilimbergo, S. Symansky, O. Blanchard and C. Cottarelli, *Fiscal Policy for the Crisis*, IMF Staff Position Note SPN/08/01, 2008, http://www.imf.org/external/pubs/ft/spn/2008/spn0801.pdf.

[6] T. Crossley, H. Low and M. Wakefield, 'The economics of a temporary VAT cut', *Fiscal Studies*, 2009, 30, 3–16.

[7] R. Blundell, 'Assessing the temporary VAT cut policy in the UK', *Fiscal Studies*, 2009, 30, 31–38.

[8] J. Chirakilja, T. Crossley, M. Lührman and C. O'Dea, *The Stimulus Effect of the 2008 UK Temporary VAT Cut*, 2010.

Income effect

As with the temporary cut in the main VAT rate, any income effect from the rise is likely to have been small. In the case of the cut, this was because (for forward-looking consumers not facing credit constraints) the increase in the real value of lifetime income was small, and because forward-looking consumers may have expected offsetting future tax increases. For the VAT rise, the reasoning is slightly different. The VAT cut was largely unanticipated, announced just one week before it came into effect. The timing of the VAT increase, on the other hand, was well known as it was announced along with the temporary reduction in the November 2008 PBR. We would therefore expect forward-looking consumers, aiming to smooth consumption over their lifetime, to have adjusted their consumption before the pre-announced tax change took effect. For these consumers, the only relevant response would have been due to the substitution and arbitrage effects (see below), but the tax rise itself would not be associated with any additional income effect.

For consumers who do face credit constraints, the situation is different. These are consumers who wish to consume more now, but who are unable to borrow the funds that would enable them to do so. These consumers would have experienced a pure income effect (and no substitution effect) from the fall in the real value of their expenditure associated with the tax increase. While the temporary VAT cut was in effect, they would not have been able to increase their spending, and their spending would also be unchanged after the VAT increase. A 1% increase in the price level therefore results in a 1% fall in consumption and purchases for these consumers.

A third possible group of consumers are those who are not forward looking (they are myopic). These consumers just spend their current incomes (or perhaps a fixed fraction of their current incomes) in each period. The various tax changes would not have affected the level of these consumers' spending either, but will have meant they could purchase a smaller quantity of goods once VAT rates rose, equal to the change in prices.

The total income effect of the VAT increase on consumption and purchases is therefore a permanent reduction of $p \times 1\%$ relative to a situation where VAT had stayed at a rate of 15%, where p is the proportion of consumers who are credit constrained or myopic (or both). The income effect on spending is zero, as the change in quantity is exactly offset by the 1% change in price.

Substitution effect

For those who are credit constrained or myopic, the intertemporal substitution effect of the VAT increase on consumption would have been zero. These consumers are unable or unwilling to vary their consumption to take advantage of any changes in relative prices across time, and so they will not have brought consumption forward to the period of the VAT cut.

The consumption choices of forward-looking consumers who are not credit constrained, on the other hand, would have been influenced by the substitution effect. What can we say about the magnitude of this effect? Economists refer to the magnitude of this substitution effect on consumption as the *elasticity of intertemporal* substitution (EIS). A recent survey of the empirical literature suggested that a 1% increase in prices this year relative to next would result in a change in consumption of between 0.5% and 1% (an EIS

between 0.5 and 1).[9] In the case of VAT, the upper end of this range may be appropriate. A large proportion of goods affected by the VAT cut ('standard-rated' items) were luxuries, for which it is easier to shift consumption over time. Consequently, the fall in consumption of these goods owing to the VAT increase is likely to be larger. We therefore make the assumption that the EIS for standard-rated goods and services is 1.

The substitution effect would have stimulated consumption during the VAT cut. An average price rise of around 1% relative to the period of the VAT cut implies there would have been a fall in consumption (and of purchases) of 1% once VAT was increased due to the end of this effect. As this applies only to consumers who do not face credit constraints and who are forward looking, the total impact of the substitution effect on consumption and purchases is $(1-p) \times 1\%$. Once again, due to the price changes, gross consumer spending remains unchanged.

Therefore the combined impact of the income and substitution effects is a 1% $(= p \times 1\% + (1-p) \times 1\%)$ reduction in consumption and purchases after the VAT cut expired, with no change in total spending. Both groups of consumers (forward-looking, unconstrained consumers and myopic or constrained consumers) reduce consumption by the same amount, but for different reasons.

Arbitrage effect

Finally there is the arbitrage effect. This is an effect on spending and purchases (but not on consumption) which works in addition to the substitution effect for non-perishable goods.[10] It is possible to alter the timing of purchases of non-perishable goods without altering the timing of their consumption: goods such as wine can be purchased, then stored and consumed at a later date.

Naturally, there would have been no arbitrage effect for constrained or myopic consumers. For other consumers, the arbitrage effect would have been most acute just before the rate rise in January. This is because stocking up on non-perishable goods incurs costs. These include the physical costs of storage, which are smaller the shorter the storage period, as well as forgoing the 'option value' of waiting before making a purchase decision: uncertainty about the future means that it may not be sensible to stock up on something in July when circumstances six months later are unclear, but the costs of stocking up in December are smaller when the outlook a month hence is much more certain. Given the scale of the recession, and the turmoil in financial markets, these uncertainties were likely to have been a particularly important consideration.

As for the magnitude of this effect, it is difficult to judge what this may be at present. The relatively modest intertemporal price change and the high uncertainty during the recession suggest the effect might be quite modest. We do not yet have retail sales data for December 2009, so we are unable to gauge empirically any impact of the pending VAT increase on sales of non-perishables. Anecdotal reports and evidence on 'footfall'

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[9] O. Attanasio and M. Wakefield, *The Effects on Consumption and Saving of Taxing Asset Returns*, prepared for the Report of a Commission on Reforming the Tax System for the 21st Century chaired by Sir James Mirrlees, Institute for Fiscal Studies, 2008, http://www.ifs.org.uk/mirrleesreview/reports/consumption.pdf.

[10] Non-perishables are goods that can be stored for a long period. Durable goods are goods that can be used (consumed) more than once. Durables are typically non-perishable, but not vice versa: wine, for example, is a non-perishable good that is also non-durable.

(numbers of shoppers) do, however, suggest some improvement over a year earlier in sales,[11] which may imply a drop in spending on these items after the VAT rate rose.

Overall, our estimate of the effect of the VAT cut's expiration on purchases is therefore a fall in the growth rate of more than 1 percentage point. The growth of spending should also fall, though by less than purchases (because prices are rising). Finally, we estimate that consumption will grow by 1 percentage point less than it did while the VAT cut was still in effect.

Future VAT increases

There has been some speculation that VAT rates will increase beyond 17.5% going forward as part of any strategy to raise additional revenue and thereby reduce government borrowing. This subsection considers the key issues surrounding a further increase in VAT as a means to raising more revenue.

Effect on consumption, spending and purchases

Once again, the time profile of consumption responses will depend on the extent to which future VAT increases are anticipated. Consumers may react if they expect VAT to rise in the future, even in advance of any particular policy announcement.

By contrast, an immediate and unanticipated increase in the rate of VAT will have no intertemporal substitution effect on consumption, as consumers have no opportunity to bring forward purchases. This also applies to the arbitrage effect for non-perishable purchases. This means that the only impact of the change on consumption will be an income effect. Consumers will see the purchasing power of their income and savings fall and will reduce their consumption.

As before, for credit-constrained and myopic consumers, this will simply result in a reduction in the quantity of goods purchased equal to the percentage increase in prices. For unconstrained and forward-looking consumers, the income effect, which we argued was likely to be small for a temporary tax cut, may be much larger if the tax increase is perceived to be permanent. A 1% increase in prices now and forever implies a 1% reduction in the real value of the consumer's total lifetime wealth (including assets, future earnings and the consumer's investments in his or her own 'human capital' – education and skills). How this will affect consumption depends on what we assume about the nature of consumer preferences. Assuming, as seems reasonable, that households take the same percentage cut in all periods, this implies that consumption will fall by 1% today and in all future periods (meaning total spending will remain the same).

If the increase is pre-announced, or otherwise anticipated, then the income effect will commence from the date that the anticipation forms. The anticipated VAT rise leads to consumers reappraising the value of their future incomes and current savings, inducing forward-looking consumers to cut back on consumption even before the tax change comes into effect, with the aim of spreading the cut in purchasing power and smoothing their consumption over time. In addition, there will be substitution and arbitrage effects, which will tend to increase spending ahead of the tax increase. Thus in the period between the tax change being announced and it being enacted, the income effect should act to reduce spending, while substitution and arbitrage effects should act to increase

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[11] See, for example, 'Post-Christmas sales wow shoppers', 29 December 2009, http://news.bbc.co.uk/1/hi/business/8433633.stm.

spending. It is not obvious a priori which of these effects will dominate, and so it is difficult to predict the overall effect on spending in the period between announcement and implementation. After the change has come into effect, however, the consequence of all these effects taken together will be to reduce consumption, spending and purchases relative to what they would have been without the increase. In the long run, the income effect is likely to be far more important than the substitution effect as consumers will only have a short time period in which to bring forward purchases, whereas higher taxes will have a permanent downward effect on the real value of consumers' income and wealth.

Obviously, we cannot predict the magnitude of these effects on spending and consumption unless we know the size of the VAT change, the goods to which it will apply and the extent to which it will be passed on to consumers. The rate of pass-through for the temporary VAT cut was estimated to be around 75%, but for a permanent change we would expect it to be higher. Firms face costs when they raise prices (known to economists as 'menu costs'), which may mean they are reluctant to change prices if they know that the change will be reversed in a year's time. Conversely, they may be more willing to raise prices if they know the change to be permanent.

VAT increases as a stimulus

One of the advantages of a rise in VAT over an income tax increase is that if it is pre-announced, then purchases in the period before it comes into effect will be stimulated by substitution and arbitrage effects. The negative income effect (which may or may not outweigh the substitution effect overall) would apply whether income tax or VAT were increased. A plan to increase VAT could therefore provide some demand stimulus in the short term while at the same time reassuring bondholders that the government will reduce the deficit.

Distributional consequences

Some have objected to a further VAT increase as a means to raise revenue on the grounds that it is regressive, having a relatively greater effect on the poor than on the rich. Indeed, it has been reported that Gordon Brown rejected a VAT increase in the December 2009 PBR for precisely this reason.[12]

In the Green Budget 2009, we argued that the VAT in its current form is actually slightly progressive (so that the temporary cut was slightly regressive).[13] Of course, if the government is considering a number of options to raise revenue, the issue may not be whether VAT increases are progressive or regressive at all, but whether they are more or less progressive than alternative instruments. However, the government has a range of instruments by which it can guarantee the overall progressivity of the tax and benefit system. It is only sensible to consider the overall progressivity of packages of changes.

There is, however, a particular issue that arises in terms of the distributional impact of VAT increases.

Income taxes tax people as they earn money through their labour, investments and so on. Consumption taxes – such as VAT – reduce the real value of consumer spending. This

[12] 'Gordon Brown blocked Alistair Darling's plan to increase VAT', *Guardian*, 10 December 2009, http://www.guardian.co.uk/politics/2009/dec/10/brown-darling-vat-increase-plan.

[13] T. Crossley, D. Phillips and M. Wakefield, 'Value added tax' in R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget: January 2009*, IFS, London, January 2009, http://www.ifs.org.uk/budgets/gb2009/09chap10.pdf.

means that if a government with a tax system based wholly on income taxes were to suddenly shift to an entirely consumption-based system, there would be new double taxation of all savers. Consumers would have already been taxed (presumably) on their income before they decided to save or spend it, and those who saved would now face the prospect of being taxed again at the point when they eventually decide to spend their savings.

This is potentially economically efficient in the sense that the tax change can raise additional revenue while leaving marginal incentives to save and to work no worse than before (provided consumers do not anticipate that the government will decide to do something similar again in the future). The new consumption tax is a tax on savings that consumers have already accumulated, meaning that changes in current behaviour will not affect their liability for it. A similar argument applies to a VAT increase. If the tax change is unexpected, the government will in effect be taxing the real value of savings, which consumers have already built up. In a sense, it represents a retrospective tax on saving, which would not arise if income taxes were raised instead (as this would leave the value of consumers' current savings intact).

However, such changes may well be seen as unfair, particularly since they entail a degree of intergenerational redistribution.[14] Older workers are likely to have more savings than younger workers and so would be hit harder by a decision to increase consumption taxes.

Conclusion

The VAT cut, as we argued in last year's Green Budget, was likely to have been an effective stimulus. For this reason, we believe that the return of VAT to 17.5% will in turn have a negative impact on the growth of purchases (which we believe will be more than 1 percentage point) and on spending. We estimate that the growth of consumption will fall by around 1 percentage point.

Future increases in VAT may increase or decrease spending in the period between a change being announced and coming into effect (because substitution and arbitrage effects work in the opposite direction to the income effect). Relative to alternative tax increases – such as a rise in income tax or National Insurance – future VAT rises would boost spending between the announcement and implementation date. Once any VAT increase is fully introduced, however, it will unambiguously reduce consumption relative to the path of consumption in the absence of a tax increase. VAT increases may be an economically efficient way to raise revenue, although they impose a double taxation on those who have accumulated savings and this may be viewed as inequitable.

3.3 Car scrappage

In May 2009, the government launched the UK Scrappage Incentive Scheme. Under the scheme, owners of cars that are at least 10 years old or light vans at least 8 years old can receive a government subsidy of £1,000 plus a further £1,000 discount from manufacturers if they purchase a new vehicle and scrap their old one. Initially, £300 million was allocated to the scheme (allowing for the purchase of 300,000 new

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[14] For further discussion of this issue, see L. Kaplow, 'Capital levies and transition to a consumption tax', in A. Auerbach and D. Shaviro (eds), *Institutional Foundations of Public Finance: Economic and Legal Perspectives*, Harvard University Press, Cambridge, MA, 2008.

vehicles), which was scheduled to end in October 2009 or when all the funds had been used up. In September 2009, the scheme was extended by an additional £100 million and until the end of February 2010, such that if the fund is fully exhausted, 400,000 old cars will have been scrapped and replaced by new ones under the scheme.

The scheme is relatively simple in its operation. Cars first registered in the UK on or before 29 February 2000 and light vans (under 3.5 tonnes) before 28 February 2002 are eligible. The vehicle needs to have been owned for at least a year and have a valid MOT certificate and tax disc, preventing unroadworthy vehicles that would not have been driven being scrapped. Households are allowed to scrap more than one car, but can only claim one subsidy per new car purchased (so cannot claim a £4,000 discount on one new car for scrapping two old cars). The new vehicle must have been registered on or after the date of the start of the scheme, 18 May 2009, cannot have been previously registered to a different owner and must be registered to the same owner as the scrapped vehicle.

Figure 3.3. Monthly new car registrations – change on previous year

Source: Department for Transport,
http://www.dft.gov.uk/pgr/statistics/datatablespublications/vehicles/vehreg.xls.
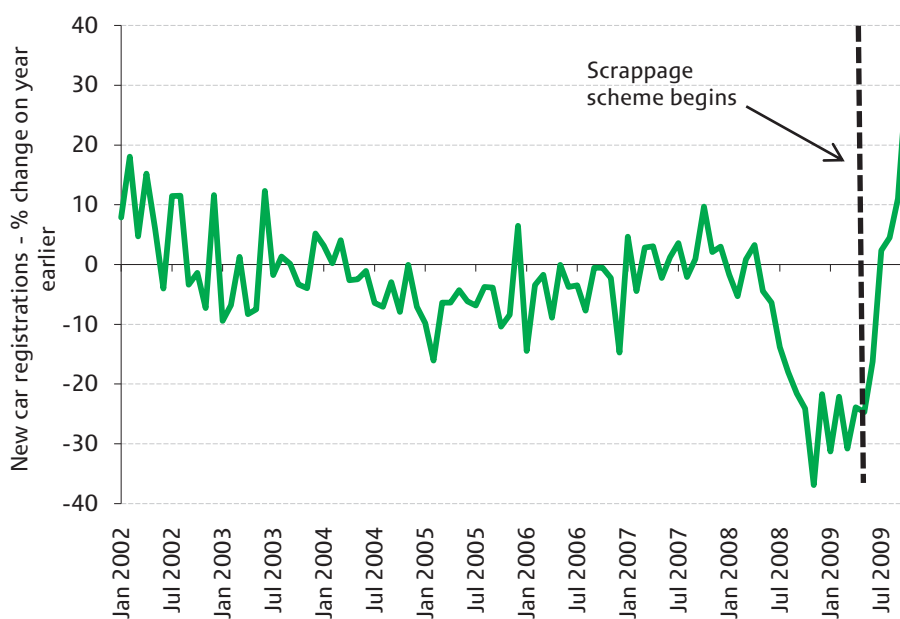
The scrappage scheme seems to have had a noticeable effect on car registrations. As of 20 December, the Department for Business, Innovation and Skills reported that 304,598 orders had been made under the scheme, meaning that just over three-quarters of the total allocation had been used.[15] Data from the Department for Transport (DfT) show that car registrations have risen markedly since the scheme was implemented (see Figure 3.3)[16] and the Society of Motor Manufacturers and Traders (SMMT) reports that around one-fifth of new car registrations in November 2009 were made under the scheme.[17] In April 2009, the last full month before the scheme, car registrations were 23.9% lower than in April 2008, but by October 2009 registrations were 30.5% higher than in October 2008. Note, though, that this rebound partly reflects the very low base of car registrations

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[15] http://www.berr.gov.uk/whatwedo/sectors/automotive/scrappage/page51068.html.

[16] http://www.dft.gov.uk/pgr/statistics/datatablespublications/vehicles/vehreg.xls.

[17] http://www.smmt.co.uk/articles/article.cfm?articleid=20909.

in 2008 – registrations in October 2009 were 166,457, still 1% down on registrations in October 2007. By contrast, registrations of motorcycles, which were not subject to the scheme and whose registrations were also substantially lower than a year earlier in the first part of 2009, did not increase after the scheme was introduced.

In this section, we offer some thoughts on the scrappage scheme. We first look at the size of the scheme, and then consider the effects of scrappage schemes on different economic agents and markets, providing evidence on the short- and long-run effects from previous schemes, the extent to which additional VAT receipts from new car sales make the scheme self-financing, and the environmental impact of the scheme.

How large is the UK scheme?

A total of £400 million has been made available by the government for the scrappage scheme in 2009–10. To put this into some fiscal context, measures announced between and including PBR 2008 and PBR 2009 amounted to a total fiscal stimulus of around 1.6% of GDP, just under £23 billion, for 2009–10. Thus the scrappage scheme represents a small (less than 2% of the total), yet clearly targeted, part of the overall stimulus.

Another way to think about the scheme is in terms of its impact on car prices and the number of cars affected. The scheme is worth £2,000 off the VAT-inclusive price of a new car. The SMMT suggests that the average new car price is about £9,000 excluding VAT, so the subsidy is worth around 20% of the average price of a new car. A total of 400,000 new cars or light goods vehicles (LGVs) could be bought under the scheme. Figure 3.4 shows annual number of new car and LGV registrations between 1980 and 2008. Prior to the current recession, annual registrations were typically 2.5 million or more, so the scheme could account for around one-sixth of pre-crisis registration levels.

Estimates from Experian suggest that there are around 7.1 million eligible vehicles (that meet both the age and ownership criteria).[18] If the fund is fully exhausted, then 5% of the

Figure 3.4. Annual new car and light goods vehicles registrations
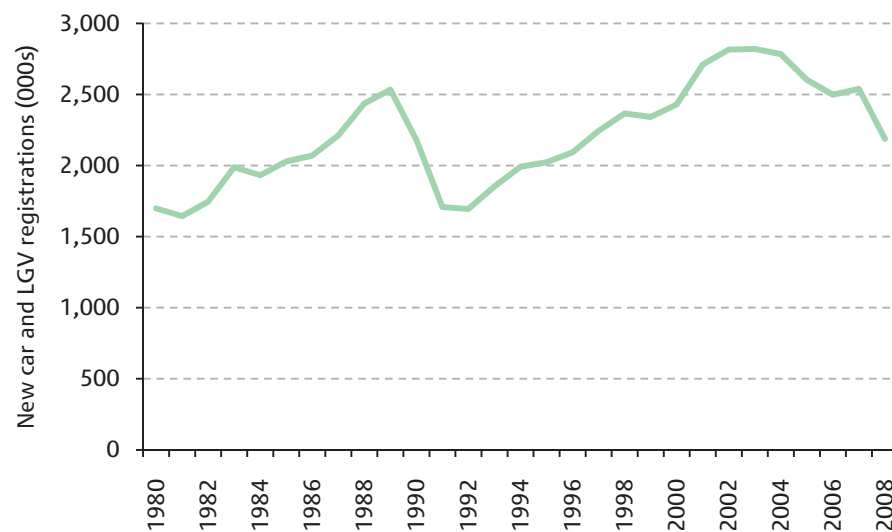
Source: Department for Transport, *Vehicle Licensing Statistics 2008: Data Tables*, http://www.dft.gov.uk/excel/173025/221412/221552/228038/458107/datatables2008.xls.

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[18] http://www.experianautomotive.co.uk/Latest-News/2009/April/UK_Scrappage_Scheme.aspx.

total stock of eligible cars will be replaced. Various studies,[19] and our own estimates from the British National Travel Survey (NTS), suggest that the normal, no-subsidy probability of scrapping a car that is at least 10 years old is in the order of 15–25% in a year. Thus it is highly likely that a lot of the cars that are scrapped under the scheme would have been scrapped without the subsidy. The main impact of the policy may therefore be to encourage people to replace a scrapped car with a new vehicle rather than a second-hand vehicle. A study by Leibling (2008)[20] suggests that most old cars in the UK are replaced by a slightly younger car rather than a new car. Experian data suggest that used car sales in the third quarter of 2009 were lower than those a year earlier,[21] which, coupled with the evidence on new car registrations, suggests a substitution from used to new cars resulting from the scheme. We return to this issue in the next subsection.

The UK government was not the only government to introduce such a scheme during the current recession.[22] OECD (2009) estimates of the average subsidy levels in different countries suggest the UK scheme was in the middle of the league table of generosity, at around $1,500 per car, though this only considers the £1,000 government subsidy and not the additional £1,000 discount required from the manufacturer. Most schemes were worth around $1,000–$2,000 per car, with the US and German schemes offering the most generous subsidies. The German scheme was also very generous in terms of the number of cars covered, with up to 2 million subsidies available.

In summary, relative to the size of the overall fiscal stimulus package and the number of cars sold prior to the crisis, the car scrappage policy is not particularly large, though comparable in terms of generosity to those offered in many other countries. It is, however, very precisely focused on a particular industry and it appears to have had quite substantial short-term effects on new car sales. We turn now to thinking about the effects of scrappage schemes more generally.

The effects of scrappage schemes

The scrappage policy is clearly aimed at increasing new car sales during the recession and supporting the car industry. Given the international nature of car production, the fact that similar schemes have been introduced all over the world means that the effects on the car industry are larger than they would have been had the UK introduced a scheme unilaterally – manufacturers of cars that are made fully or partly in the UK but sold overseas will potentially benefit from international scrappage schemes, just as foreign manufacturers will potentially benefit from the UK scheme if their cars are sold here. The fact that the scheme requires scrapping of an old vehicle as well as purchase of a new one suggests some environmental intention behind it in addition to the aim of supporting the car industry. In this subsection, we assess the potential effects of the scheme, and its

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[19] For example: J. Adda and R. Cooper, 'Balladurette and Juppette: a discrete analysis of scrapping subsidies', *Journal of Political Economy*, 2000, 108, 778–806; D. Leibling, *Car Ownership in Great Britain*, RAC Foundation, London, 2008, http://www.racfoundation.org/default.aspx?code=11996.

[20] D. Leibling, *Car Ownership in Great Britain*, RAC Foundation, London, 2008, http://www.racfoundation.org/default.aspx?code=11996.

[21] http://www.experianautomotive.co.uk/Latest-News/2009/December/Used_car_sales_figures_Q3_2009.aspx.

[22] For a summary of international schemes, see OECD, *The Automobile Industry in and beyond the Crisis*, 2009, http://www.oecd.org/dataoecd/57/61/44089863.pdf. A summary of past schemes is given in European Conference of Ministers of Transport, *Cleaner Cars: Fleet Renewal and Scrappage Schemes*, OECD, Paris, 1999.

withdrawal at the end of February 2010, on consumer behaviour in the car and other markets. Box 3.1 considers the environmental impact of the scrappage policy.

What is the economic rationale for a car scrappage scheme? The key justification may be that the scale of the recession, and the turmoil in financial markets, increased credit constraints for consumers, limiting their ability to borrow to finance consumption and providing scope for the government to use subsidies instead. Further, the considerable uncertainty generated by the recession creates an 'option value' to consumers to wait and see, rather than making large purchases now. Both these factors would push expenditure below levels expected even given the size of the downturn and would provide incentives for fiscal support for consumers. Whilst these reasons justify general support for consumers – such as the temporary cut in the main VAT rate – there may be reasons to think that particular support for car purchases is warranted: cars are amongst the most expensive purchases most consumers make, and such large, only partially-reversible purchases may be especially sensitive to credit constraints and uncertainty. Interestingly, similar temporary support was given for house purchases – the other large, expensive purchase most consumers make – through the stamp duty holiday. The IMF (2008) also argues that subsidies for particular purchases may be more successful in stimulating short-run demand than the equivalent amount spent on general reductions in consumption taxes because the price change will be much larger on the product affected and thus more salient to consumers.[23]

For the policy to be effective, the subsidy must be greater in value than the resale or scrap price of eligible cars. However, as car values depreciate quickly, it is unlikely that many eligible cars would fetch more than £2,000 in the second-hand or scrap market.

It is too early to give a confident assessment of the impact of the UK scrappage scheme because it is still ongoing and assessing the long-run effects will require several years of post-scheme data. Later, we will consider evidence on the effects of schemes that took place in the 1990s that will clearly be relevant to the current scheme. For now, we discuss the potential effects of the current scheme during and after its operation in terms of the impact on different groups of economic agents and the possible long-term effect on purchase behaviour.

Owners of an eligible vehicle who were planning to scrap it and buy a new car anyway receive a straight £2,000 transfer from the government and car manufacturer. There is no effect on their decision to purchase, though they may use the transfer to purchase a more expensive car than they planned without the scheme or to fund additional saving or expenditure. The more of these 'infra-marginal' sales there are, the less impact on car purchases will be generated by the scheme. As discussed earlier, however, there is evidence that most old cars are replaced by second-hand rather than new cars, and the second-hand car market is very large: the SMMT estimates there were around 7.16 million used car sales in the UK in 2008, compared with around 2.13 million new car sales.[24] Thus we would expect a large amount of substitution from used to new cars during the life of the scheme, which appears to have happened.

A crucial effect of the scheme will be on those who were planning to buy a car in the future but who now decide to purchase during the subsidy period instead. This

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[23] A. Spilimbergo, S. Symansky, O. Blanchard and C. Cottarelli, *Fiscal Policy for the Crisis*, IMF Staff Position Note SPN/08/01, 2008, http://www.imf.org/external/pubs/ft/spn/2008/spn0801.pdf.

[24] See pages 12 and 21 of Society of Motor Manufacturers and Traders, *Motor Industry Facts 2009*, http://lib.smmt.co.uk/articles/sharedfolder/Publications/Motor%20Industry%20Facts09%20-%20Final.pdf.

intertemporal shift – the substitution effect discussed in Section 3.2 – is one of the key objectives of the policy, increasing demand for new cars at a time when demand was particularly weak. However, purchases brought forward are clearly purchases lost in the future, leading to a 'payback' effect when the scheme ends.[25] This would mean sales lower than in the no-subsidy counterfactual, both in the new and second-hand car markets if some people who were planning to buy a second-hand car in the future decide to buy a new car today instead. One key question is the extent to which the scheme generates any new sales at all as opposed to merely shifting sales across time, and we examine evidence on the size of the 'payback' effect from previous schemes below.

The scheme will also have wider implications. It may change the prices of new and used cars relative to those that would have been in place without the subsidy. By generating a temporary increase in demand for new cars, the policy may increase prices of new cars for those who are not eligible for the subsidy (such as owners of cars less than 10 years old) during the life of the scheme, but lead to lower prices afterwards – following any payback effects. Some ineligible consumers may therefore prefer to *delay* purchase of a new car because of these price effects or buy a second-hand car instead. The impact on the price of second-hand cars is hard to predict, since both supply and demand are likely to fall, but, given the number of used car transactions, the wider effects on the market are clearly important. Perhaps the strongest impact will be on new young drivers looking to buy an old car as their first vehicle – presumably, this group would represent a large part of the demand for the very old, cheap vehicles that are now not being offered for sale but being scrapped instead.

There are also effects on the wider patterns of economic activity. Losers from the scheme (at least in the short term) are likely to be those services related to the used car industry such as spare parts merchants and perhaps garages. To the extent that other spending is shifted around (such as people choosing to buy a car during the subsidy period rather than a holiday or other large durable), there may be an effect on prices in other markets. Relative to the direct impact on the car markets, however, these are probably quite second-order.

There have been some suggestions that the VAT receipts generated by sales of new cars could make the scrappage scheme effectively 'self-financing'.[26] There are a number of reasons why this is unlikely to be the case:

- In the absence of the scheme, some of the new car sales would have occurred anyway, so the VAT revenues are not new.

- The scheme will shift some new car sales forward, which would have generated VAT receipts in the future. So the scheme not only shifts sales over time, but also shifts revenues, rather than creating new revenues.

- The new spending on cars may in part crowd out spending on other goods subject to VAT. VAT receipts are therefore shifted across types of spending but are not increased overall.

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[25] Note that this need not mean total observed sales fall after the policy ends. If there is strong recovery that drives a general increase in demand, it is possible that the car sales path after the scheme will not exhibit any downward trend, but this would not be evidence that there was no payback effect.

[26] See, for example, the Society of Motor Manufacturers and Traders, *The UK Scrappage Incentive Scheme: The Facts*, 2009, http://www.smmt.co.uk/articles/article.cfm?articleid=20676.

The only new revenues are those coming from expenditures that would not have happened anyway (now or in the future) and that are not the result of substitution across VATable spending groups.[27] It is therefore highly unlikely that the subsidy is self-financing.

Overall, the likely impact will be a substantial short-term spike in new car sales during the subsidy period representing a substitution from used car purchases, future car purchases and possibly other expenditures, followed by a considerable payback effect after the scheme ends reducing sales relative to a no-subsidy baseline in both the new and used car markets. The SMMT, for example, forecasts that new car sales will be less than 1.8 million in 2010 compared with 2.0 million in 2009, a fall of more than 10% that it attributes largely to the end of the scrappage scheme.[28] This would be consistent with evidence on the effects of previous international scrappage schemes, to which we now turn.

Evidence from previous schemes

Several studies have looked at French scrappage schemes in place in 1994 and 1995 that subsidised replacement of an old car with a new car. The 1994 subsidy, focused on cars at least 10 years old, was worth about 6% of the price of a new car at the time, and the 1995 subsidy was slightly more generous and available to those driving cars at least 8 years old. Adda and Cooper (2000) estimate that the subsidies increased the probability of scrapping a car at the threshold age for an 'average' household by around 5%, and that total sales increased by around 8% during the subsidy periods compared with a no-subsidy baseline case.[29] Yamamoto et al. (2004) estimate that the French schemes increased the probability of replacement of eligible vehicles by around 20% and reduced the life on the road of these cars by an average of more than three years.[30] The long-run payback effects, however, are substantial and enduring. Adda and Cooper estimate that relative to baseline levels, sales were reduced for around 15 years after the schemes ended, with a particularly pronounced drop immediately after their expiry. They also find that the schemes were not even close to being self-financing.

Licandro and Sampayo (2006)[31] examine a Spanish subsidy scheme, 'Plan Prever', that began in 1997 and offered a €480 reduction in the registration tax for people scrapping a car more than 10 years old and, within six months, replacing it with a new one. Unlike other schemes, this scheme was designed as a permanent policy, so there were no particular incentives to shift forward a replacement of an old car but distortions in the choice between new and second-hand replacements remain. Licandro and Sampayo estimate the long-run increase in demand for new cars as a result of the policy to be small, around 1% or so.

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[27] Note that second-hand cars sold through dealers attract VAT through the 'margin scheme' in which VAT is paid only on the dealer's profit from the sale. To the extent that new cars are more expensive than used cars, there may be more VAT generated from the sale of a new car, but this may crowd out other VATable spending.

[28] See the full press release available from http://www.smmt.co.uk/articles/article.cfm?articleid=21056.

[29] J. Adda and R. Cooper, 'Balladurette and Juppette: a discrete analysis of scrapping subsidies', *Journal of Political Economy*, 2000, 108, 778–806.

[30] T. Yamamoto, J-L. Madre and R. Kitamura, 'An analysis of the effects of the French vehicle inspection program and grant for scrappage on household vehicle transaction', *Transportation Research Part B*, 2004, 38, 905–926.

[31] O. Licandro and R. Sampayo, 'The effects of replacement schemes on car sales: the Spanish case', *Investigaciones Económicas*, 2006, 30, 239–282.

OECD (2009) looks at sales during and after previous schemes in France and the US and argues that evidence on the scale of the payback effects is mixed:[32] for example, a scheme in the US in 2005 in which car manufacturers offered cars for sale to the general public at prices previously reserved for their employees saw a large decline in sales after it ended, but a brief policy enacted shortly after 9/11 was not associated with any obvious payback after it expired.

Box 3.1. The environmental impact of scrappage schemes

Unlike recent schemes in France, Japan and the United States, the UK scheme contained no explicit environmental incentives such as limits on the CO_2 emissions of new cars purchased. This was strongly criticised by some commentators,[a] and the government estimated the likely environmental effects of the scheme as 'neutral or modestly positive'.[b] Given that a system for vehicle excise duty (VED) payments that varies according to CO_2 emissions already exists, it may have been relatively straightforward to include such direct incentives as part of the scheme, though it would have made it less attractive to some motorists to the extent that the range of eligible vehicles would have been constrained.

There may be some environmental benefits from replacing older, often less efficient and more polluting vehicles with newer, less polluting vehicles, not just in terms of emissions but also potentially from lower accident costs as newer cars tend to have more safety features.

There are both fixed emissions costs of motoring – coming from vehicle production and disposal – and variable costs from vehicle use. The SMMT estimates that around 85% of a car's lifetime emissions come from its use,[c] though clearly the scrappage scheme will encourage some owners to scrap usable cars earlier than they would otherwise have done, increasing the relative importance of the fixed emissions component.

The reduction in emissions from vehicle use depends on several factors, notably the emissions of the car that is scrapped compared with those of the newly-purchased replacement. The latest evidence suggests that the replacement cars emit on average 132g of CO_2 per kilometre driven, compared with 182g for the scrapped cars.[d] The emissions of cars bought under the scheme appear to be around 16g CO_2/km less than the emissions of all new cars bought, though we would not necessarily expect people participating in the scheme to be 'typical' of the average person buying a new car and thus cannot conclude from this that people taking advantage of the scheme are buying cleaner cars than they otherwise would have done.

The total amount of emissions reduction from vehicle use depends not only on the emissions of the new and old cars, but also on how much they are driven and how long the old car would have remained on the road in the absence of the scrappage policy. Although newer cars emit less CO_2 per kilometre, drivers may use their new cars more and drive further, offsetting (and potentially eliminating) any emissions gain. An approximate estimate of the total emissions reduction for a particular vehicle is therefore given by the formula:

$$\Delta CO_2 = [(E_{old} \times VKM_{old}) - (E_{new} \times VKM_{new})] \times L$$

where E is the car's emissions per kilometre driven, VKM is the annual distance driven and L is the remaining lifetime on the road of the scrapped vehicle. Using estimates of each of these parameters and multiplying by the number of cars scrapped under the

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[32] OECD, *The Automobile Industry in and beyond the Crisis*, 2009, http://www.oecd.org/dataoecd/57/61/44089863.pdf.

scheme gives us a rough estimate of the possible environmental benefit in terms of carbon emissions from vehicle use.

We assume L to be 3, based on an estimate of a typical scrappage rate for old cars of around 20%, which would mean around a 50:50 chance of a car being scrapped after three years. This matches with Yamamoto et al. (2004), who suggested the French schemes of the 1990s took cars off the road about 3.3 years earlier than would have been the case without them.[e]

We take our estimate of E_{old} and E_{new} to be 182g and 132g, in line with the latest estimates given above. The distances are estimated using data from the NTS 2002–04. We model distance driven as a function of the characteristics of the driver and the age and type of the car and estimate that drivers of cars over 10 years old drive on average 10,600km/year and those driving new cars drive around 2,500km/year further.[f] Thus we take VKM_{old} to be 10,600 and VKM_{new} to be 13,100.

Together, these estimates suggest a 'typical' scrappage under the scheme saves about 600kg of CO_2 in total. If the entire fund is exhausted, the total saving from 400,000 scrappages will be around 240,000 tonnes. To put this into context, total CO_2 emissions from cars in 2007 were around 86.5 million tonnes,[g] which suggests a total saving from the scheme equivalent to around 0.25% of annual car emissions, ignoring the potential fixed emissions costs from vehicle production. Even if we assume no effect on distance (setting VKM_{old} and VKM_{new} at 10,600), the saving is only 636,000 tonnes. The Budget assessment that the environmental benefits would be at best modest looks fair, though other gains from noise and accidents are not taken into account by these estimates.

There may be other more subtle environmental implications of the policy in terms of the extent to which new emissions-reducing technologies may be diffused through the stock of vehicles. Schemes that have been initiated just after a new technology has been developed – such as the use of diesel engines for private cars in the 1990s – have sometimes been credited with speeding up the diffusion of the technology.[h] However, by persistently reducing the age distribution of the vehicle stock, scrappage schemes could delay the diffusion of new technologies that are still in development, such as hybrid vehicles, though this will depend on precisely when such technologies start to become widespread. Thus scrappage schemes – not just for cars but also for items such as boilers – may be particularly environmentally beneficial just after the development of new technologies that significantly improve the environmental performance of new models.

a. See, for example, press releases from Friends of the Earth (http://www.foe.co.uk/resource/press_releases/car_scrappage_22042009.html) and the RAC Foundation (http://www.racfoundation.org/default.aspx?code=12502).
b. Paragraph 7.43 of HM Treasury, *Budget 2009: Building Britain's Future*, April 2009, http://www.hm-treasury.gov.uk/bud_bud09_repindex.htm.
c. Page 14 of Society of Motor Manufacturers and Traders, *Tenth Annual Sustainability Report*, 2009, http://www.smmt.co.uk/downloads/Tenth-Sustainability-Report.pdf.
d. Society of Motor Manufacturers and Traders, *Scrappage Scheme Data Analysis*, 10 November 2009, http://www.smmt.co.uk/articles/article.cfm?articleid=20705.
e. T. Yamamoto, J-L. Madre and R. Kitamura, 'An analysis of the effects of the French vehicle inspection program and grant for scrappage on household vehicle transaction', *Transportation Research Part B*, 2004, 38, 905–926.
f. This is probably an overestimate of the increase in distance driven when purchasing a new car, since households with a strong unobserved taste for driving that is not reflected in their observed characteristics are likely both to own younger cars and to drive greater distances.
g. DEFRA, http://www.defra.gov.uk/evidence/statistics/environment/globatmos/download/xls/gatb05.xls.
h. E. J. Miravete and M. J. Moral, 'Qualitative effects of cash-for-clunkers programs', mimeo, 2009, http://www.eugeniomiravete.com/papers/EJM-MJM-Clunkers.pdf.

Conclusion

The car scrappage scheme is a relatively small but focused part of the overall fiscal stimulus and appears to have had some substantial short-run impact on the sales of new cars, which had fallen dramatically during the recession. The scheme's effects are not just confined to the car industry: it may have wider general implications for different economic agents and will have long-term effects even after the policy expires at the end of February 2010. The balance of evidence from previous schemes suggests that the 'payback' effect – reduced sales of new (and used) cars after the scheme ends – is likely to be quite large and enduring. The overall ability to generate new expenditures over the long term may be small, but the short-term goal of shifting purchases forward to help cushion the car industry from the worst of the recession may well be successful. However, increases in VED that are planned over the next year, coupled with the payback effect from the end of the scrappage policy, could have a significant effect on sales in 2010. The lack of any explicit incentives to buy low-emissions vehicles built into the scheme, together with the tendency for owners of new cars to drive more, means that the environmental gains from the scheme are likely to be very modest at best.

3.4 Conclusion

Given the scale of the economic downturn, short-term fiscal stimulus policies to support household demand were desirable. This chapter has considered two such policies – a temporary cut in the main VAT rate and a car scrappage scheme – that have recently expired or will imminently do so.

The policies are very different in scale. The VAT cut affected a very large share of total spending, in particular for luxuries and durable items, and was estimated at announcement to cost £12.4 billion. In contrast, the scrappage scheme was a small policy targeted on a single sector and cost just £0.4 billion. However, they operate in similar ways, giving consumers incentives to bring forward spending to take advantage of temporarily lower prices.

Since the recession has proved more enduring than initially forecast, the danger as these policies unwind is of a substantial payback effect. Analysis in Green Budget last year and further work since then was considerably more optimistic than that of many other commentators about the potential for the VAT cut to stimulate demand. However, the converse of this is that we anticipate a negative effect from the return of VAT to 17.5%, which may slow any nascent economic recovery. Similarly, the scrappage scheme appears to have had a considerable effect on new car sales, which may be particularly driven by substitution from used to new cars amongst those choosing to take advantage of it. It may also be partly due to purchases being brought forward, meaning that a downturn in sales after the scheme ends is likely. Balancing the need to continue to support consumers through the recovery with the aim to reduce the budget deficit will be a key task for whoever forms the government after the general election.

4. The economic outlook

Michael Dicks (Barclays Wealth) and Simon Hayes (Barclays Capital)

Summary

- The recent performance of the UK economy has been rather alarming. The UK has suffered the largest shortfall in activity relative to its pre-crisis trend of any G7 economy, and has been the slowest of the G20 economies to emerge from recession. At the same time, however, inflation has been stronger than expected.

- A lower pound and reluctance to pass on the temporary cut in the main rate of VAT may account for some of the surprising strength of inflation, but the combination of unexpectedly weak activity and unexpectedly strong inflation suggests a big fall in the UK's capacity to supply goods and services. In addition to reducing the UK economy's productive potential, we believe the financial crisis has also reduced its trend rate of growth.

- If this is true, the economy may not be able to return to the growth rates of close to 3% per annum that it enjoyed between the mid-1990s and 2007 without quite quickly running into the inflation buffers. In our central scenario, we expect GDP growth to average just under 2% per annum between 2010 and 2014 – similar to the average independent forecast, but more subdued than the Treasury's.

- The consumer is likely to bear much of the burden of adjustment, reflecting higher unemployment, more subdued real wages, a rising tax burden and increased debt-service costs. We do not expect the strong housing market recovery seen through the middle of last year to be sustained. Capital expenditure is also likely to be muted, held back by tight credit availability but also reflecting subdued consumer demand and a rather lacklustre improvement in export sales.

- We see the risks around this forecast as evenly balanced, and consider two alternative scenarios to our central case. In an optimistic scenario, to which we attach a 25% probability, the decline in potential GDP is close to the 5% assumed by the Treasury, although we continue to doubt the Treasury's assumption that potential growth is as high as 2¾%. In a pessimistic (indeed, dire) scenario – to which we also assign a 25% probability – the deterioration in potential GDP would be close to 10%, and the potential growth rate might drop nearer to 1½% per annum. This would be especially testing for the authorities, not just in terms of public finances but because it would also necessitate major structural reforms.

4.1 Introduction

A year ago, most economists – whether in the public or private sector – recognised that the global economy was in recession, and one that would entail outright contractions of national income and rises in unemployment in most countries. Few, however, got the scale of the deterioration anything close to right. The consensus at the start of 2009 was that the G7 group of nations would suffer a drop in real GDP in 2009 of about 1¾%. In fact, it now looks as if the decline will have been almost exactly double that amount.

Figure 4.1. 'Lost output' is greater in the UK than in other G7 countries
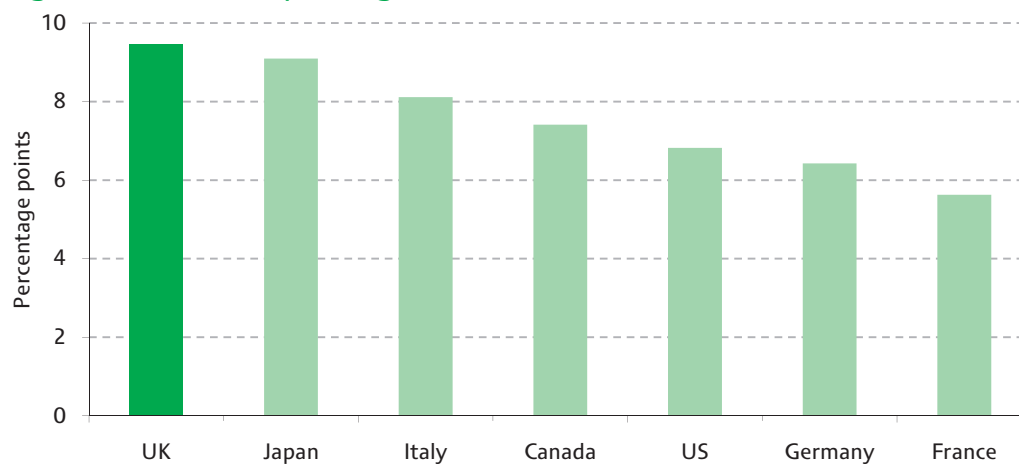
Notes: Lost output is gauged by comparing actual GDP growth rates in 2008 and 2009 with the trend growth rate over the previous seven years, with the total lost output being the sum of the two years' shortfalls.
Sources: Datastream and Barclays Economics Research.

We see a similar pattern for the UK. At end-2008, the average independent forecast was for GDP to fall by 1½% in 2009.[1] Preliminary estimates, published by the Office for National Statistics on 26 January 2010, suggest that the decline was in fact 4.9%. So, real GDP is now estimated to have fallen by a total of 6.1% between the first quarter of 2008 and the third quarter of 2009, albeit with growth resuming in the fourth quarter of 2009.

At first blush, it might seem that the story is one of all countries sliding into recession together as the financial crisis bit, and then together gradually bottoming out and finding their feet again. The reality is rather more subtle than that, however. In particular, there are two features of the UK's growth and inflation performance that warrant investigation:

- **The UK has fared worse than most other advanced economies, in terms of the decline in aggregate demand (GDP).** The recession is estimated to have lasted six quarters – longer than in any other G20 country. Lost output, gauged by comparing actual GDP performance in 2008 and 2009 with the previous trend rate of growth, has been slightly greater for the UK than for any other G7 country, as shown in Figure 4.1. And for a group of 30 OECD countries for which data are available, the UK ranks about two thirds down the league table: it is 19th in terms of the scale of lost output.

- **Weaker-than-expected GDP has not been accompanied by weaker-than-expected inflation.** Had aggregate demand simply ended up being disappointingly low, then prices ought to have ended up lower than expected too. But that is not what has happened. In December 2008, the average forecast for inflation during 2009 was 1.2% on the targeted (CPI) measure and 0.9% for 'underlying' retail price inflation (the RPI excluding mortgage interest payments).[2] Official figures published on 19 January 2010 show out-turns of 2.2% and 2.0% respectively.

In Sections 4.2 and 4.3, we attempt to work out why the decline in activity has been so large, and what might account for the stickiness of UK inflation. We then, in Section 4.4, survey the outlook for demand and, in Section 4.5, lay out our central scenario for GDP

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[1] Macroeconomic Prospects Team, *Forecasts for the UK Economy: A Comparison of Independent Forecasts*, HM Treasury, December 2008, http://www.hm-treasury.gov.uk/d/200812forcomp.pdf.

[2] See *Consensus Forecasts*, published by Consensus Economics Inc, 8 December 2008.

and inflation – i.e. what we deem to be the single most likely outcome, based on the assumption that the fiscal policy laid out in the December 2009 Pre-Budget Report is adhered to. Section 4.5 also provides two alternative scenarios – one relatively optimistic and one pessimistic.

4.2 Demand: why such a sharp contraction?

The academic literature on financial crises suggests that a deeper contraction in demand should be expected if an economy has the following characteristics:[3]

- **Asset prices well above 'fair value' pre-recession.**[4] House prices are especially important if they either affect consumer demand or reflect another factor that does so.[5] But other asset prices may end up in bubble territory, with associated impacts on confidence and behaviour. Generally speaking, a 'big' bubble bursting has a greater impact than a 'small' one doing so.

- **Credit has a major role in enabling agents to affect demand.** Households may desire to purchase a house, or firms to invest in their businesses, but they will often need to borrow to do so. The easier it is to access credit pre-crisis, the bigger the likely drop in demand once credit supply dries up.

- **A vulnerable financial sector.** The scale of the required adjustment to a firm's business model post-crisis – and hence the scale of retrenchment of credit supply to repair balance sheets – depends on a whole host of factors. If financial institutions are highly leveraged, have a heavy reliance on wholesale capital markets for funding and/or hold a lot of securities whose values become impaired or that are difficult to value, credit supply to the economy is likely to be cut back more aggressively.

- **Openness to trade.** One surprise in the recent financial crisis was the way that sources of even very basic credit products, such as trade financing, dried up entirely for a while. As a result, countries with a heavy reliance on trade were harder hit than those more reliant on domestic sources of demand.

- **Heavy reliance on manufacturing.** As credit tends to be a more important determinant of spending on durable and 'big-ticket' items (such as cars), a leftward shift of the credit supply curve – i.e. a shock that restricts the amount of loans on offer – will depress demand more substantially for such products, and countries that specialise in production of such goods will find that the market for their products shrinks sharply. Germany and Japan are two prime examples.

Of course, the financial crisis was not the only force driving the recession. Accordingly, there are other factors that affect how well, or how poorly, individual economies did late in 2008 and early in 2009, and which are also affecting their recovery profiles. For example, the speed and scale of policy responses matters in helping to bolster demand.

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[3] See, for example, C. Reinhart and K. Rogoff, 'The aftermath of financial crises', *American Economic Review*, 2009, 99, 466–472.

[4] By 'fair value', we mean the level that is warranted by economic fundamentals.

[5] It is not necessary for them to drive consumption/saving decisions per se (say, via a so-called 'wealth effect'). It may be, for example, that they act as a good proxy for shifting perceptions of permanent income, or growth thereof.

Nevertheless, this list does provide quite a good starting point for telling the story as to why the UK did worse than most. That is because: first, it had experienced a big asset price boom (notably in housing); second, it had witnessed a big (rightward) shift in the supply of credit; third, it has a financial sector that was vulnerable to the processes unleashed by bubbles bursting; and fourth, it is fairly open to trade. The last factor in the list – reliance on manufacturing – turned out to be the one factor that helped the UK relative to many other countries. With such a small manufacturing base, relative to other components of GDP, it suffered less than, say, Germany. On the other hand, its heavy dependence on financial services provided more than enough pain to offset the impact.

A quick run through the UK 'big hit' story …

In order to illustrate the point, we compare the GDP loss relative to trend with the change in the house-price-to-rent ratio (as a proxy for the size of the housing market bubble) for 15 industrial countries in Figure 4.2.[6] This shows quite a high correspondence between a run-up in the house-price-to-rent ratio and lost output. The UK experienced the third largest house price rise on this measure and suffered the fifth largest output loss. Clearly, there is by no means a perfect fit. But high and rising house prices relative to rents do seem to matter for subsequent GDP performance. More formally, we can test the statistical significance of the house price 'bubble' variable in explaining the cross-country variation in lost output. It passes the test with flying colours (with a t-value of 4.0).[7]

Figure 4.2. Using pre-crisis house price bubbles to predict cross-country variation in the scale of future demand and output losses
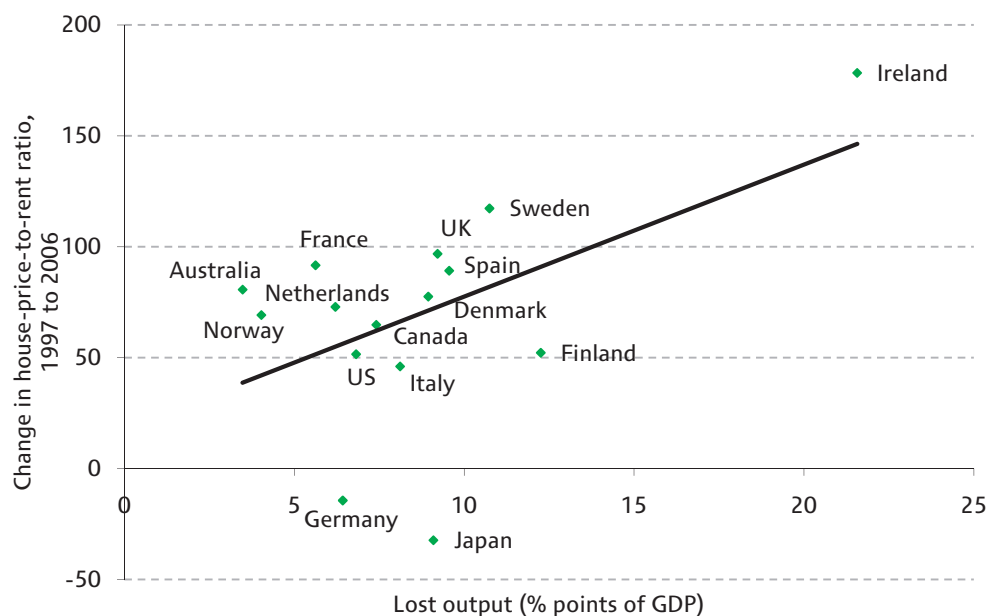
Sources: OECD and Barclays Economics Research.

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[6] For those interested in the methodology used to gauge 'fair value' for house prices, see N. Girouard, M. Kennedy, P. van den Noord and C. André, 'Recent house price developments: the role of fundamentals', OECD Economics Department, Working Paper 475, January 2006, http://www.olis.oecd.org/olis/2006doc.nsf/LinkTo/NT00000DAE/$FILE/JT00197301.PDF. We use updates of their analysis, so as to include data close to the onset of the crisis in 2007, as provided in box 2.1 of chapter 2 of the October 2007 edition of the IMF's *World Economic Outlook*.

[7] Admittedly, one of the reasons for the strong results is Ireland's big housing boom and massive lost output post-crisis. Even if Ireland is dropped from the sample, however, the house price 'bubble' term obtains a large enough t-value for it to contribute to lowering the standard error of the equation.

Figure 4.3. Using ease of access to credit and trade to predict cross-country variation in the scale of future demand and output losses
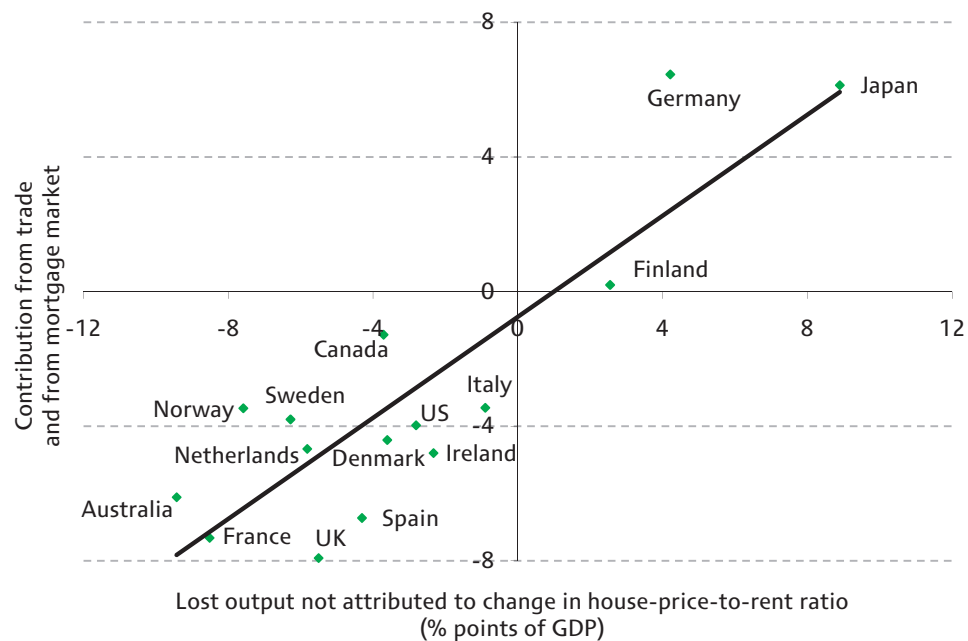
Sources: OECD and Barclays Economics Research.

Next, consider what happens if we take the gaps between the actual and fitted values from this regression – what house prices *cannot* explain in terms of the cross-country variation in lost output during the recent recession – and see if the other factors that we mentioned earlier, such as exposure to trade or characteristics of the mortgage market and financial systems, help explain the remaining discrepancies. Figure 4.3 shows the results obtained if we use a weighted average of the share of GDP accounted for by trade, a gauge of the ease with which households can access housing-related finance and a measure of house prices relative to incomes.[8]

So, Figure 4.2 shows that countries where bubbles were biggest pre-crisis have typically suffered bigger declines in demand during the subsequent busts, *ceteris paribus*. And Figure 4.3 shows that countries more reliant on global trade and where mortgage debt was more prevalent (and, it also turns out, capital gearing and loan-to-income ratios higher) also tended to suffer bigger dents to demand. In other words, countries in which households were more prone to take on debt have tended to suffer the biggest declines in economic activity thus far – supporting the notion that this recession is more a story of balance-sheet adjustment than the more common post-Second-World-War story of policymakers needing to rein in excess demand relative to supply and so subdue inflation.

Having established that the UK was particularly susceptible to the economic and financial shocks that have hit over the past two years, we need to consider how the economy's future activity path might be affected by these events. Central to this assessment is a judgement about whether the fall in activity represents primarily a shock to aggregate

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[8] The mortgage access index covers such things as average loan-to-value ratios available for first-time buyers, how easy it is for households to withdraw equity, typical refinancing fees and measures of development of secondary markets for loans. The recent run-up in house prices relative to incomes is a gauge both of the demand for new lending and of the amount of equity that people might consider wanting to extract. For further details, see chapter 3 of the April 2008 edition of the IMF's *World Economic Outlook*, and the references therein.

demand, which might be easily reversed by expansionary demand management policies, or whether the economy's capacity to produce has also been damaged. So, this brings us to the issue of the economy's recent inflation performance.

4.3 The growth–inflation trade-off: why so bad?

When growth turns out lower than expected (or GDP drops more than predicted), inflation pressures usually turn out to be less than forecast (or the rate of deflation greater). In 2009, the UK – like the rest of the G7 countries – recorded a much worse growth performance than anyone expected. For, rather than contracting by 1½%, which was the average prediction at end-2008 of more than 40 professional economics teams,[9] the UK economy is currently estimated to have recorded a 4.9% decline. This 'gap' of around 3 percentage points, although huge, only put the UK about mid-table in terms of (negative) 'surprises' compared with other G7 economies. In Japan, for example, the consensus predicted a drop in GDP of less than 1%, when in fact it now looks to have experienced a contraction of more than 5%, and perhaps even 6%.[10]

Turning to inflation surprises – gauged in exactly the same fashion, i.e. as actual out-turns for 2009 minus the forecasts made at the end of 2008 for 2009 – a year ago the UK was expected to run a (targeted CPI) inflation rate of just over 1% on average through the course of 2009. In fact, we now know that the full-year average was 2.2%. So, inflation has surprised on the upside by about 1 percentage point, despite the huge shortfall in demand. This stands in stark contrast to experiences of other G7 countries – all of which have witnessed lower-than-expected inflation going hand in hand with lower-than-expected demand (Figure 4.4).

Figure 4.4. Growth and inflation surprises in 2009
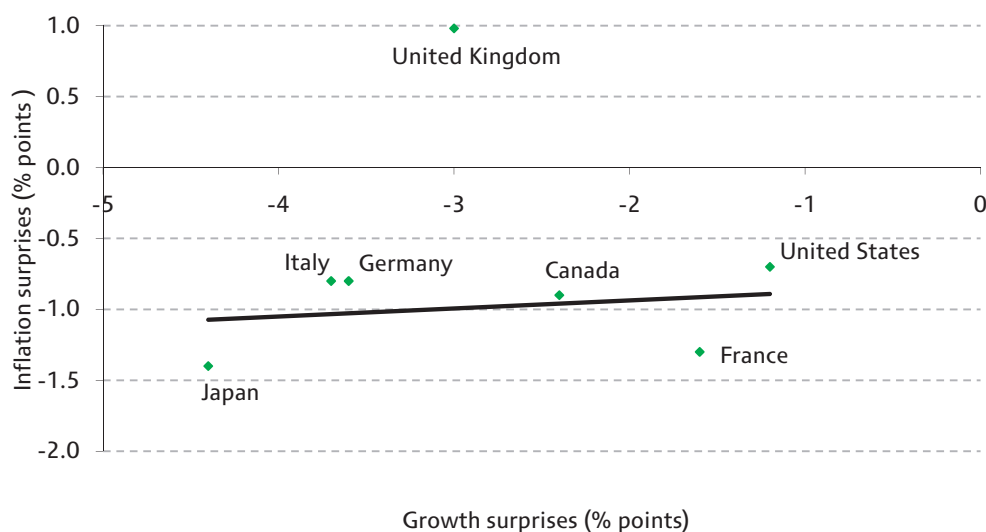
Note: Surprises are defined as latest forecasts for 2009 (taken from *Consensus Forecasts*, published by Consensus Economics Inc.) or actual out-turns, if available, minus forecasts made a year earlier.
Sources: Consensus Economics Inc. and Barclays Economics Research.

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[9] There are two sources for these forecasts: *Consensus Forecasts*, published by Consensus Economics Inc.; and HM Treasury, *Forecasts for the UK Economy*, available at http://www.hm-treasury.gov.uk/forecasts. Interestingly, the most gloomy of all those surveyed in December 2008 had predictions of close to –2½%. So even the most pessimistic of these economic forecasters were, with the benefit of hindsight, too optimistic.

[10] See *Consensus Forecasts*, published by Consensus Economics Inc., 11 January 2010.

Might sterling be the culprit?

Sterling's decline looks like an obvious explanation for the UK's unusual inflation surprise. But, actually, it did not really cause such a large surprise last year. At end-2008, the pound was predicted to be worth about 1.5 dollars and 1.2 euros by end-2009 by the same group of professional economists asked to supply their best guesses of growth and inflation. In fact, it ended the year at close to 1.6 and 1.1 respectively – or close to 6% stronger than expected versus the dollar but nearly 7% weaker than expected versus the euro. The fact that the euro area now accounts for more than half of UK trade means that, in trade-weighted terms, the pound has ended up only a shade weaker than expected – and certainly not by enough to justify a near +1ppt inflation surprise.

The pricing block of our UK macro model also casts doubt on the notion that weaker sterling accounts for the inflation surprise. Take, for example, the equation that seeks to explain import prices. From late 2007 and right through 2008, import prices rose at a more subdued rate than the model suggested would happen (Figure 4.5). So there is no real evidence here to indicate why the UK's inflation performance has been so poor in 2009.

Figure 4.5. Import price pressures turning out lower than expected
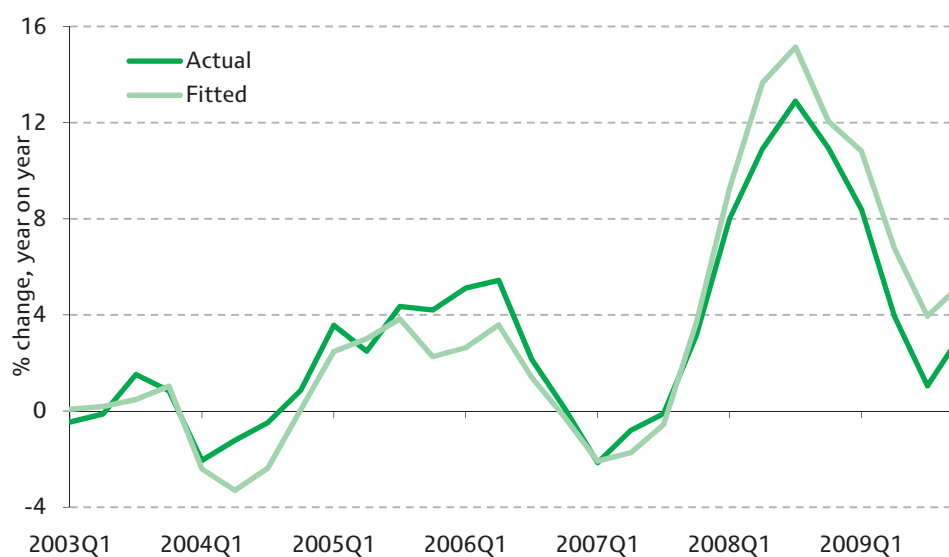
Sources: Office for National Statistics and Barclays Economics Research.

What about the VAT cut?

Another possibility is that analysts overestimated the extent to which the cut in VAT would be passed through to final prices. We do not know for sure how big analysts thought this effect would be. If one looks at consensus forecasts for inflation in 2009 around the time that the change was announced, however, it was certainly the case that the consensus was taking a big knife to its numbers. In November, for example, the general expectation was that CPI inflation would average 2.5% in 2009. By December, this forecast had been slashed to 1.2%. And it slipped further, to 1.0% by January, where it remained anchored for a number of months.

Some of these inflation forecast reductions were clearly because economists were forced to slash their predictions for economic activity (not just in the UK but globally). But it may well be that they assumed a bigger VAT effect than in fact materialised. Some support for

this idea has been published by the Bank of England in its latest *Inflation Report*, which points out that, whereas in February of last year it had gauged a full pass-through effect of 1.5 percentage points on inflation, the ONS has since estimated that 'the combined impact of the VAT cut and the increase in excise duties implemented at the same time was to reduce CPI inflation by around 0.5 percentage points'[11] and that the VAT effect alone was 0.7 percentage points. Reading between the lines, this seems like a strong hint that a fairly substantial proportion of the UK's inflation surprise was because people assumed a bigger impact on prices from the temporary VAT cut than actually materialised.

Supplying an explanation?

If the fall in sterling and limited pass-through of the cut in VAT offer only partial explanations for the inflation surprise, the implication is that the underlying growth–inflation trade-off may have taken a turn for the worse. In our view, the big issue here has to be unit labour costs, i.e. wages adjusted for productivity. The situation for firms during the recession was made especially difficult, from a unit-labour-costs point of view, by their decision to cut employment much less sharply than output (see Figure 4.6) – no doubt reflecting the fact that many underestimated the scale of the decline in demand that was coming, much like the professional economists did. This relatively limited response can be thought of as a form of labour hoarding: the residuals on our employment models suggest that firms are currently employing about 1% more people than they might naturally be expected to, given the level of demand and their costs.

A fall in productivity would matter little if it were offset by a commensurate decrease in the cost of labour. However, that has not materialised. As a consequence, the mirror of the drop in productivity is a surge in unit labour costs, or wages per worker relative to their output (Figure 4.7). With the wage bill comprising close to two-thirds of firms' overall costs, the near-6% rise in unit labour costs will exert huge pressure on them to raise their prices. This rise in what might be called firms' 'core' costs is probably the main reason why UK firms have ended up raising prices last year more than economists expected.

Figure 4.6. Output and employment
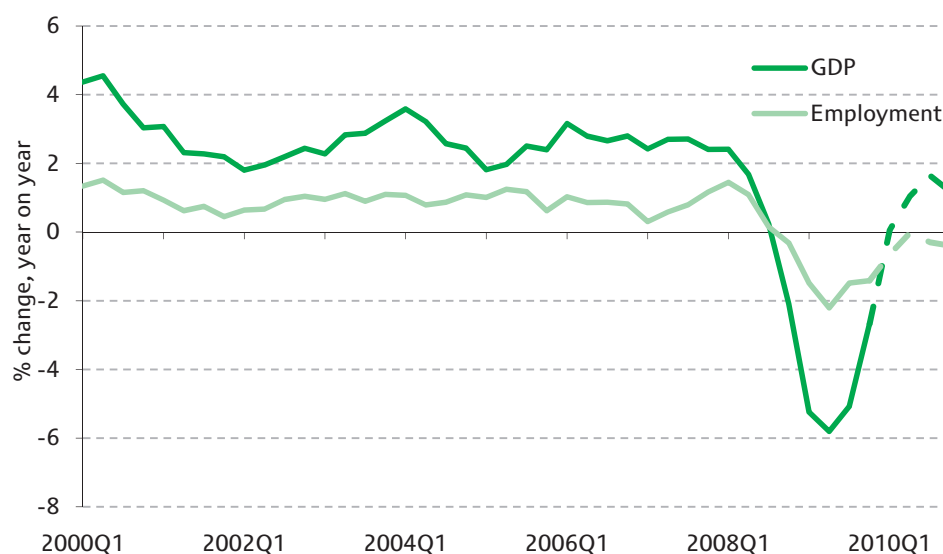
Sources: Office for National Statistics and Barclays Economics Research.

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[11] See page 33 of Bank of England, *Inflation Report*, November 2009, http://www.bankofengland.co.uk/publications/inflationreport/ir09nov.pdf.

Figure 4.7. Productivity and unit labour costs

Source: Office for National Statistics.

The deterioration in profitability from labour hoarding could resolve itself in a number of ways. Demand could pick up strongly, and it may be that firms are banking on this happening. Wage growth could weaken further. Or firms may decide to cut their losses and lay workers off, prompting a further rise in unemployment. The puzzle is that, at present, there is no evidence that any of these is happening. In spite of some rather lacklustre activity indicators and a stabilisation in pay growth, the recent data have shown unemployment to be stable, if not declining. As we discuss in Section 4.4, this is a key issue for the path of household income and therefore consumer demand.

The stickiness of inflation in the face of weaker-than-expected activity implies that the economy's supply capacity has been severely hit. In Chapter 1, we presented evidence that leads us to expect not only that the level of aggregate supply is likely to have fallen, but also that the rate of growth of supply is likely to be lower in the future than it has been in the past. As a result, we expect the economy to grow by just under 2% per annum, on average, during the period 2010 to 2014, i.e. significantly more weakly than the Treasury's PBR forecast. We now consider how this weakness in activity is likely to show up in the components of aggregate demand.

4.4 The outlook for demand

For consumers, the effects of the financial crisis have arguably been most visible in the drying-up of mortgage credit and the consequent collapse in the housing market. The downward shifts in loan-to-value ratios and loan-to-income multiples for first-time buyers after the bubble burst, and the massive rise in lending spreads shown in Figure 4.8, are testament to the severe tightening in credit supply. With most business models in the financial sector now having undergone a fairly fundamental shift (back towards the sort of forms more common before the bubble), we expect credit supply to recover, albeit gradually. But what really matters is demand itself.

Figure 4.8. Lending spreads (mortgage rate and LIBOR)
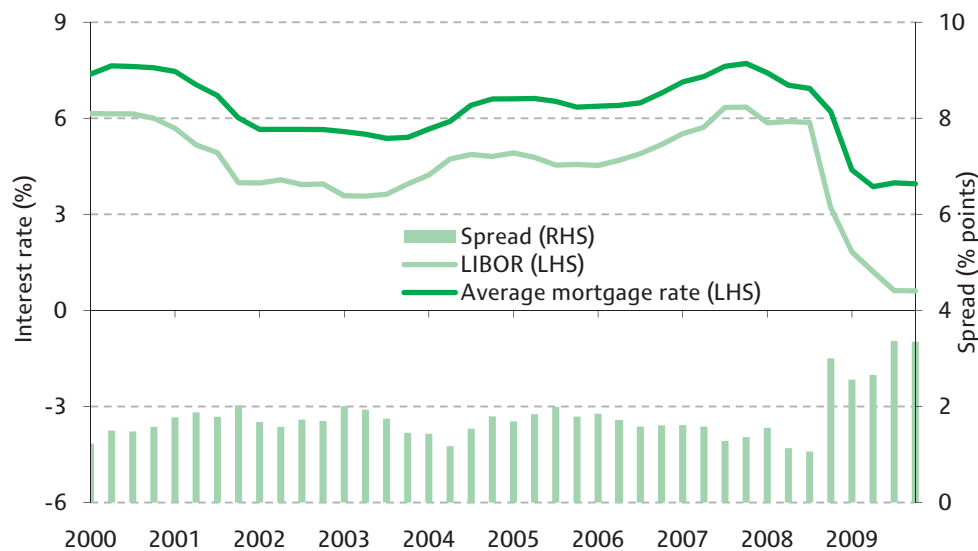
Source: Bank of England.

Housing demand is driven partly by the so-called 'user cost of housing',[12] which comprises: the opportunity cost of not investing money spent on housing elsewhere (or debt-service burden if the purchase is financed via a mortgage); maintenance costs involved with house purchase (including depreciation of the building, insurance etc.); property taxes (including stamp duty and council tax); and, often most important of all, the capital gains or losses that the purchaser expects. Regarding the last factor, it appears that potential buyers tend to extrapolate recent house price changes when trying to assess future prospects for gains or losses on their potential purchases.[13] A key issue, therefore, is whether the housing market is going to remain in the doldrums, or stage a sustained recovery.

In many countries, it certainly seems that the process of house prices returning close to economic fundamentals has now largely run its course. (In the United States, for example, our models show house prices a little below fair value.) But in the UK, a similar analysis suggests that, during 2009, house prices started to recover *before* they had fallen back to fair value. So we have to ask ourselves: might this be a false dawn?

Might UK house prices flop back again?

Most shifts in the demand for housing seem to translate into changes in house prices rather than triggering an increase in the supply of housing.[14] Our model of house prices (like many others) makes this assumption and, as Figure 4.9 shows, it does a pretty good job in tracking movements in real UK house prices *ex post*.[15] Every now and again,

[12] See, for example, A. Castle and P. Newland, *Shifting down a Gear*, Lehman Brothers Economics Research Report, November 2007.

[13] A good demonstration of this is K. Case and R. Shiller, 'The behaviour of home buyers in boom and post boom markets', *New England Economic Review*, Federal Reserve Bank of Boston, November 1988.

[14] Of course, this varies from country to country. In a place such as the UK, or even more so Hong Kong, the supply of new housing is especially inelastic. It is rather more sensitive to changes in price in countries where the density of population is lower, such as France or much of the US.

[15] Or, to put it more formally, such models generally have a fairly low standard error. Our UK specification, the dependent variable for which is quarter-on-quarter changes in real house prices, has a standard error of the equation of 2¼%.

Figure 4.9. Actual and fitted values for real UK house prices
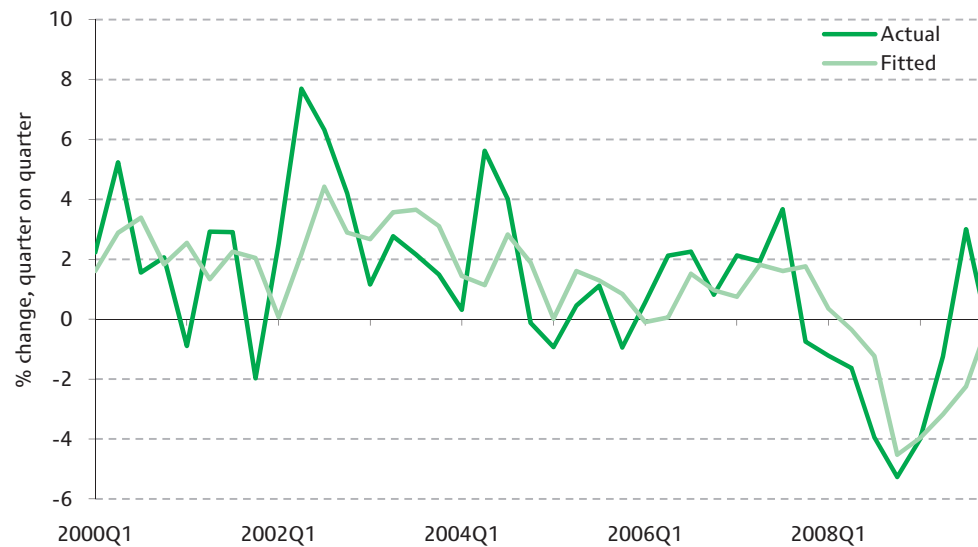
Notes: We use the Communities and Local Government measure of house prices as the dependent variable, with it being deflated using the CPI. For full details of the model specification, please contact the authors.
Sources: Department of Communities and Local Government, Office for National Statistics and Barclays Economics Research.

however, actual values depart from their predicted values by an appreciable amount – requiring us to assess whether the model is still a good representation of reality or, by contrast, 'breaking down' (and thus inadequate for the purposes of forecasting). In the second quarter of 2009, for example, real house prices rose about 2 percentage points faster than the model suggested that they ought. And in the third quarter, they did so by more than 5 percentage points. Thus we need to consider possible explanations.

One possibility is that the financial crisis is permanently shifting investors' attitudes, making property seem more attractive than formerly. (For example, it may be that, as investors have seen some financial investments that they deemed 'safe' suffer much greater declines in value during the crisis than they ever thought possible, they are now looking to place more of their assets in 'bricks and mortar'. Moreover, cash is offering very low yields.) Our own surveys of several thousand high-net-worth investors do indicate a gradual shift in attitudes towards property as an investment class, with UK-based investors expecting to raise the share of their portfolios devoted to both residential and commercial property by about 3 percentage points over the next two years.[16] However, this is fairly small beer when set against the 28% share that property already accounts for in their portfolios. More importantly, the increase in planned demand for property from domestic investors is no greater in the UK than that planned elsewhere in the world. And our house price models for other countries have *not* all suddenly shown big residuals: it seems to be a UK-only phenomenon.

A second possibility is that the fall in sterling has spurred foreign buyers to enter the market. This notion is supported by the fact that the top end of the London market has

[16] For full details, see volume 10 of *Barclays Wealth Insights Reports*, 'Prospects for property: on solid foundations?', December 2009.

shown a stronger turnaround than elsewhere.[17] Prices outside London have not yet really 'bounced back' in the way that the top end has. Rather, they appear to have found a floor, along which they may well now be bouncing. Looking ahead, the fundamental drivers of housing demand – in particular, incomes and interest rates, to which we turn next – do not look set to sustain additions to demand of any substance.

There is thus likely to be a limit to the extent to which these forces can continue to support the market, unless other economic fundamentals – such as rising household incomes – kick in. This, together with the fact that the outlook for interest rates is heavily skewed to the upside, suggests that the strong momentum in house prices seen through the middle of last year is unlikely to last. Instead, we expect house prices to soon start to stagnate, if not begin to fall back again.

Household incomes and interest rates

If we are right about credit and house prices not entering another boom period, then non-credit, non-housing factors will determine the path of consumer spending. The most important is households' real disposable income.

The main drivers of households' pre-tax incomes are employment and wages. Our model for private sector employment suggests that, at the end of the third quarter of 2009, firms held employment around 1% higher relative to what they would normally do in such circumstances, as shown in Figure 4.10 – what might be called 'labour hoarding'.

Looking ahead, the model actually projects a mini 'double-dip' in employment during 2010 and 2011. The reason for this is that although wages have been a little more responsive than usual in this downturn (requiring fewer job losses), the collapse in demand has translated into a big drop in productivity, and a resultant surge in unit labour costs. The model predicts that this will be unwound by further job cuts, as well as by further downward pressure on pay. Of course, an alternative scenario would be one in

Figure 4.10. Actual and fitted values for employment
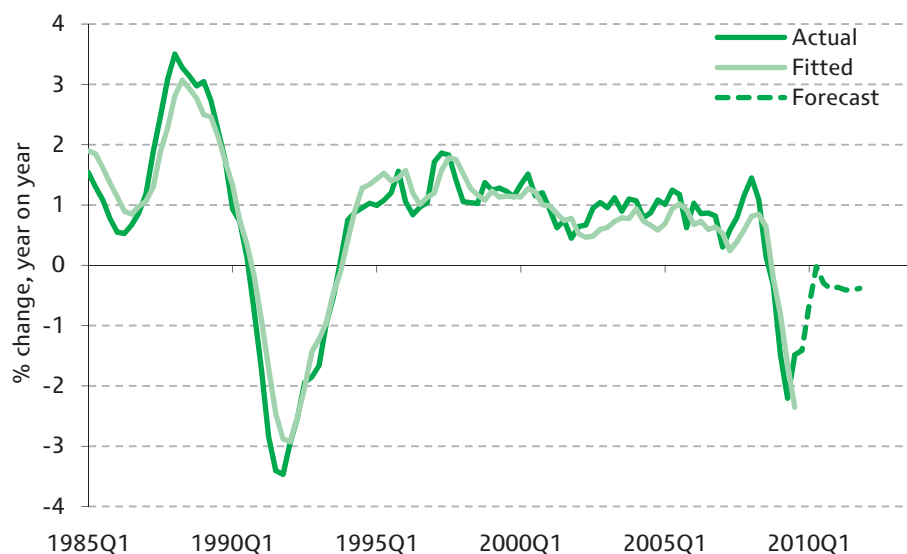
Sources: Office for National Statistics and Barclays Economics Research.

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[17] See, for example, Savills Research, *Residential Property Focus*, November 2009. It reports rises in what it terms the prime central and south-west London markets of 8% and 15% respectively during the second and third quarters of last year.

Figure 4.11. Actual and fitted values for real wages
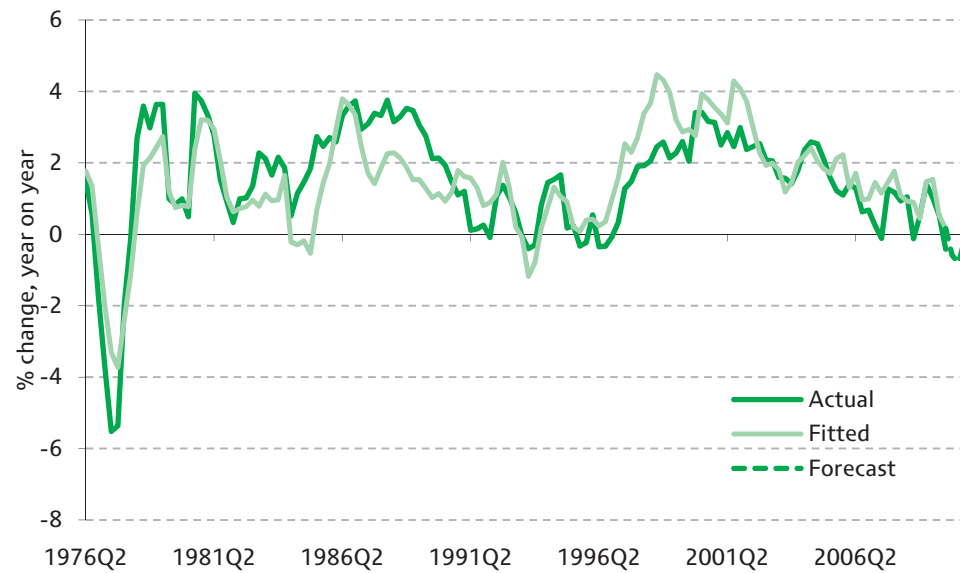
Note: Real wages are defined here using the *actual*, as opposed to *expected*, changes in prices (subtracted from the rate of change of nominal average earnings).
Sources: Office for National Statistics and Barclays Economics Research.

which employment continues to hold up more than the model predicts it will, but pay comes in a lot lower (as an offset). That combination would, however, entail much the same profile for aggregate household incomes.

Average earnings – i.e. nominal wages paid per worker – are the second key determinant of households' incomes. As Figure 4.11 demonstrates, the gradual slowdown in recent years in the rate of increase of real wages – i.e. the nominal rate of change of average earnings (excluding bonuses) minus the actual 12-month rate of change of consumer prices – has been almost spot on what our model predicted, reflecting the normal impact on pay bargaining that follows a rise in unemployment. We expect real wages to decelerate during much, if not all, of 2010. Indeed, the risks to our forecast of a near-½% decline in real wages in 2010 look skewed to the downside. Only in 2011 does it look reasonable to expect real wages to start eking out small increases again.

So, expect only soggy consumption at best?

Although models of consumer demand generally do a good job in tracking the data, there are exceptions, when out-turns differ significantly from the model predictions. The past year has been one such period (Figure 4.12), with the drop in spending during the fourth quarter of 2008 and the first half of 2009 *much* bigger than seemed likely, given the usual drivers of consumer spending (such as incomes, interest rates and wealth). This pattern is evident right across the developed world. In retrospect, it does not seem so surprising that people decided to hold back from spending, and instead increased their precautionary saving, as they watched the financial system imploding and policymakers struggling to find solutions. Under these circumstances, measures of risk appetite – usually used to gauge the willingness of investors to move into 'riskier' asset classes – seem to be able to help explain (statistically speaking) households' unusual 'extra' saving as the crisis struck and then deepened in intensity.[18]

[18] For more on how this could be done, see M. Dicks, 'Some thoughts regarding current financial market conditions and their implications, if any, for policymakers', paper presented to the ECB Watchers' Conference, September 2007, http://www.ifk-cfs.de/index.php?id=1230&L=0.

Figure 4.12. Actual and fitted values for real consumers' expenditure
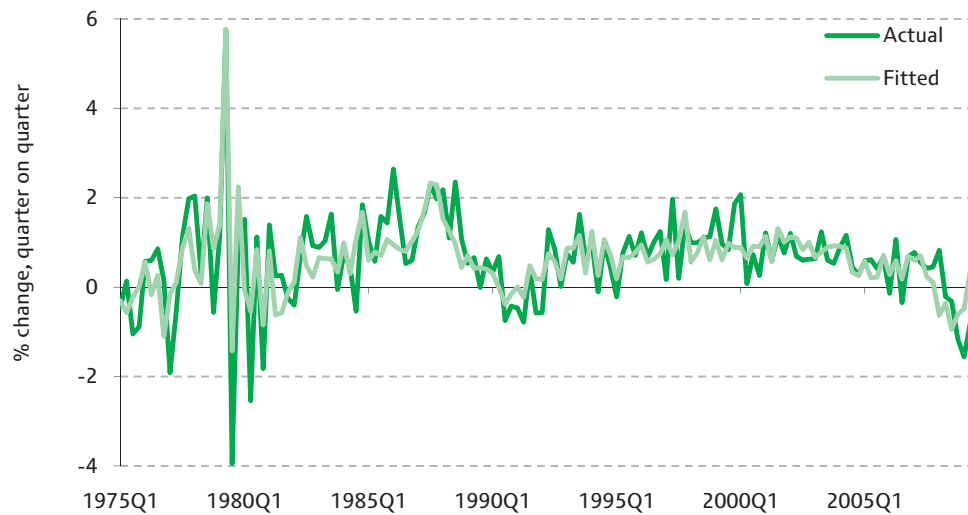
Sources: Office for National Statistics and Barclays Economics Research.

Where the UK story appears a little different, however, is in the pattern that has emerged during the course of 2009. As market participants began to believe that policymakers would avoid a 'Great Depression Mark II', so risk appetite began to recover. And so, it appears, households' animal spirits revived a little too and households in the United States, continental Europe and Japan went back to more 'normal' patterns of behaviour. In the UK, by contrast, even in the third quarter of 2009 it would seem that households were saving an extra 1% or so of their incomes, compared with what our models suggested was reasonable to expect (Figure 4.13).

Figure 4.13. Using explicit measures of risk appetite to explain UK consumers' exceptionally high saving in 2008 and 2009
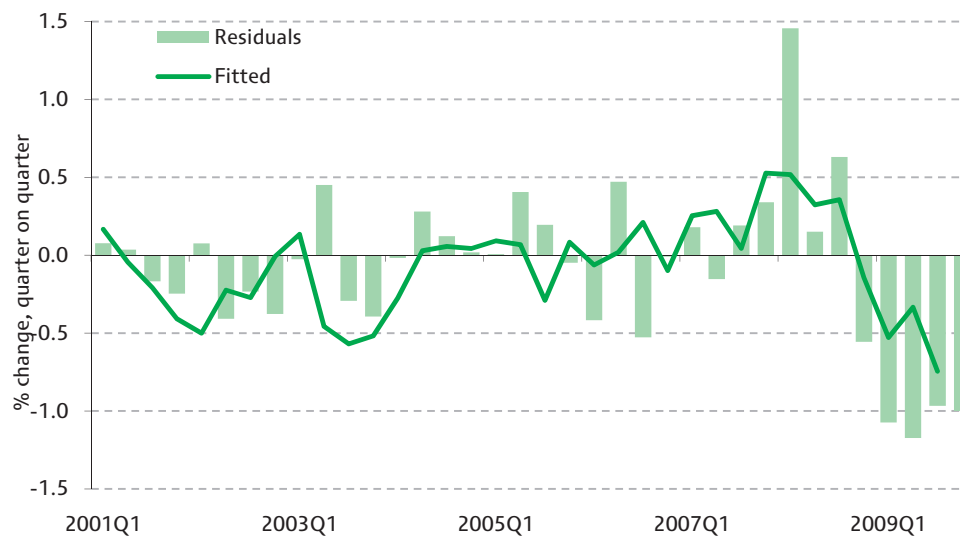
Note: The residuals are the differences between actual quarterly changes in consumers' expenditure and the predicted values from our macro model. (So, when the bars are negative, consumers saved more of their incomes than our model predicted they would.) The fitted line shows the line of best fit obtained when using our Risk Appetite Index and changes in it to help explain, statistically speaking, the residuals.
Source: Barclays Economics Research.

What this means, going ahead, is that there is greater-than-usual uncertainty concerning the outlook for consumer spending. If we trust our models entirely, letting the fairly miserable profiles for income, wealth and interest rates translate into a projection for consumer spending assuming 'normal' animal spirits, and no 'excess saving', the profile for consumption is for it to expand by about 1% in volume terms in 2010, before embarking on a 'crawl' higher – to average about 1¾% per annum during 2011 and 2012.

This is rather weaker than the Treasury's forecasts in the December 2009 PBR, of at least 2¾% growth in household consumption in both 2011 and 2012.

If households were to decide that 'more-than-normal' saving continued to be warranted, then further falls in spending during 2010 and/or 2011 would be a real possibility – and any meaningful expansion in consumer spending might well be put off to 2012. On the other hand, if the UK 'catches up' with what seems to be happening elsewhere, and animal spirits revive more in line with how they have done in economies such as the US, then there is a chance that the saving ratio drops back more smartly than our models predict it will, and consumption records stronger rates of expansion earlier in the recovery – perhaps even as much as 2% this year and 3% next. This would be rather closer to the Treasury's forecast profile contained in the PBR.

Companies and export markets: a ray of sunshine?

Although much of the focus during the credit crunch has been on consumer (in particular, mortgage) debt, firms also rely heavily on credit to help them grow. And the drop in the provision of bank loans to companies has gone hand in hand with a devastating drop in fixed investment (Figure 4.14). So, the corporate, and especially the investment, story is crucial regarding the path for aggregate demand during the pick-up – i.e. helping to determine whether it is V-shaped, W-shaped or perhaps even 'square root-shaped' (i.e. $\sqrt{\ }$). Investment is also one of the key determinants of the scale of the damage done to aggregate supply. A failure to get firms investing again, or an only feeble acceleration, would risk a much bigger long-term, structural, cost to the economy.

Figure 4.14. Real credit to businesses and fixed investment
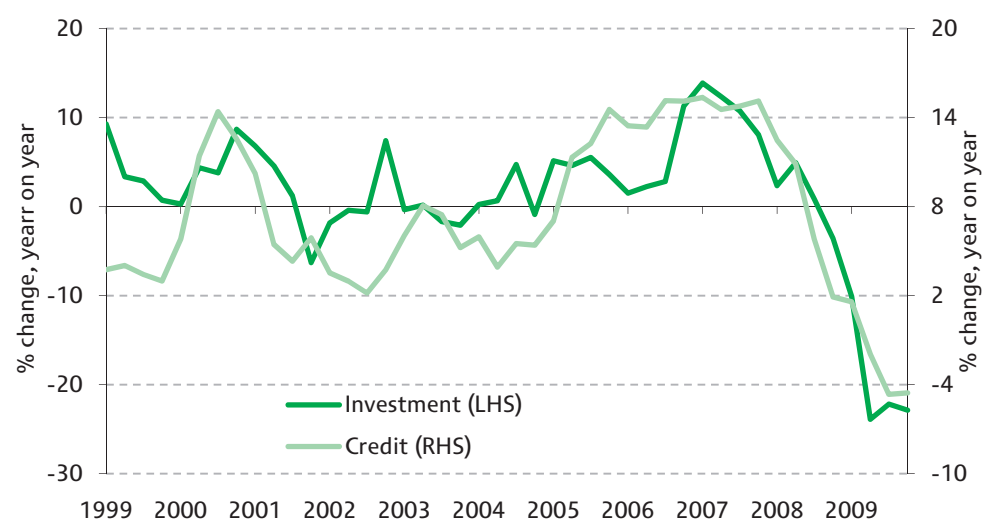
Note: The measure of credit used here is M4 lending to the non-financial sector.
Sources: Office for National Statistics and Bank of England.

Some sort of revival in fixed capital formation ought to happen soon, provided that firms have the confidence to expand and provided that banks, or capital markets, are willing to lend to them. The corporate revival may come about via a pick-up in exports, helped by sterling's depreciation. Here, however, the drop in the currency does not appear to have fed through to an improvement in the UK's competitiveness as fast as normally happens. One reason why is that exporters appear to have chosen not to pass on all of the benefits to their overseas customers, whereas those importing goods have more than passed on the rise in the sterling cost of imports to UK consumers.

Recent CBI research helps explain why this might be happening. For its survey data suggest that some firms – especially smaller ones – are credit constrained, and have had to boost margins given the absence of other funds to help support them through a very difficult period.[19] Only once, back in the mid-1970s, have firms responded so negatively concerning their recourse to credit (Figure 4.15).

Figure 4.15. Credit/finance constraints in UK manufacturing
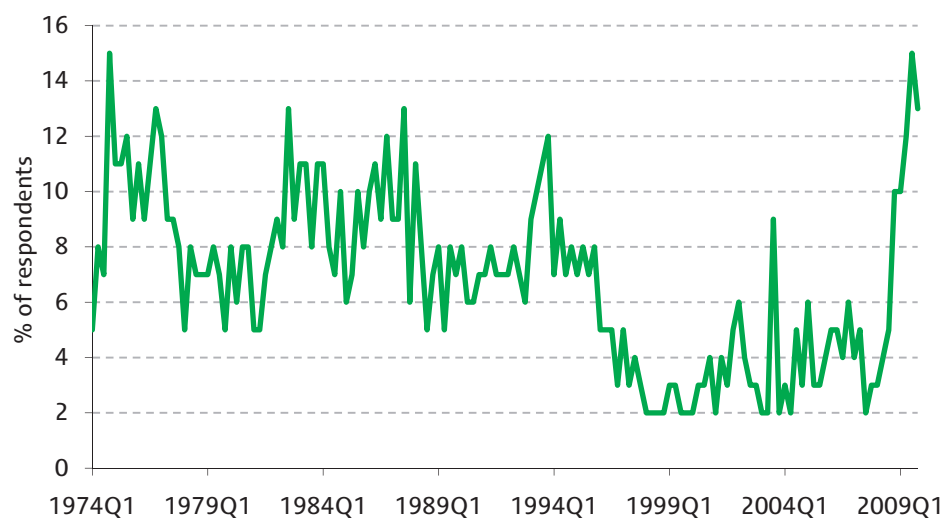
Notes: The survey data show the percentage of respondents who report being constrained in their access to credit. The survey is of small and medium-sized enterprises.
Source: Confederation of British Industry, SME Trends Survey, July 2009.

Looking ahead, we suspect that, as credit conditions gradually return to normal, firms will revert to more typical price-setting. So, competitiveness should gradually improve too. Even taking into account the shift in pricing behaviour, it is clear that exporters are not doing as well as they might normally be expected to do in circumstances such as those prevailing today. Figure 4.16 illustrates, showing how, for the best part of three years, the volume of exports has been falling shy of what a typical macro model suggests.

These sorts of models are somewhat simplistic, weighting together other countries' imports to produce a proxy for overseas demand and allowing shifts in the real effective exchange rate to influence market share. There is a host of other potential explanations for the UK's poor performance of late, beyond simple data problems (such as the fact that preliminary estimates often get revised out of all recognition). One may be that the relative quality of the goods and services offered for export by UK firms is in decline.

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[19] They may too have had to bite into working capital to help get them through especially tough markets, having lacked the usual recourse to loans in 2008 and 2009. We are grateful to Ian McCafferty for this argument, and for providing us with supporting evidence.

Figure 4.16. Exports off a cliff, but coming back
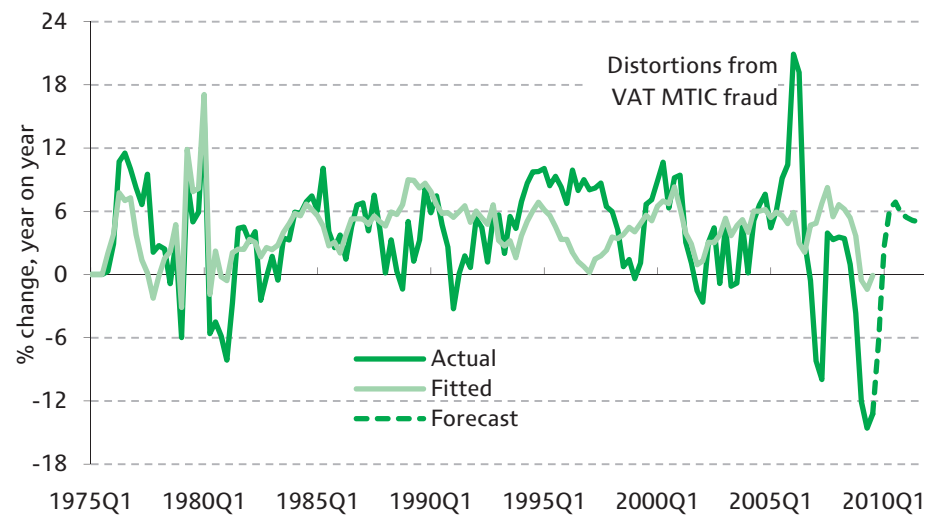
Sources: Office for National Statistics and Barclays Economics Research.

Another is that the sorts of exports that the UK produces just happen to be the 'wrong' sorts of goods and services, for which the elasticity of demand is low in countries where demand is rising. A third potential explanation is a more deep-rooted version of the CBI story, with exporters perhaps less able to fund themselves and find the right sort of workers, at the right sort of prices, to compete successfully in world markets. As a result, they may be losing market share over and above what the typical macro model suggests ought to be happening.

Whatever the source of the UK's worse-than-expected export performance, we assume that export growth will gradually return to the sorts of rates predicted by our models. Accordingly, exports are one of the main drivers of the admittedly fairly feeble recovery that we are predicting for the period running from 2010 to 2015, with near-5% volume increases pencilled in to our central scenario each year. Although there are clearly downward risks to this projection, given that recent disappointments might be the beginning of a trend, it is also worth pointing out that the financial crisis appears to have crushed global trade far more sharply than in past downturns. So, there is a reasonable chance that it will also bounce back more firmly than most people are forecasting. Certainly, the Netherlands Bureau for Economic Policy Analysis's monthly trade data suggest that global trade volumes are staging a stellar come-back, with the annualised rate of increase of trade volumes having risen at two-and-a-half times the pre-crisis trend rate since May 2009 (Figure 4.17).

When it comes to fixed investment, making forecasts is even more difficult than usual, thanks to an astonishing crash in fixed capital formation last year, not just in absolute terms but relative to what a typical econometric model would suggest (Figure 4.18). Most such models include an 'accelerator' mechanism, whereby the rate of change of investment is highly dependent on that for domestic consumption. (Or, put more simply, firms will only invest if there is perceived to be a rising demand for their products.) On top of that, they generally include a term in the amount of spare capacity currently available. And they usually permit a role for the cost of capital, i.e. interest rates.

Figure 4.17. Global trade
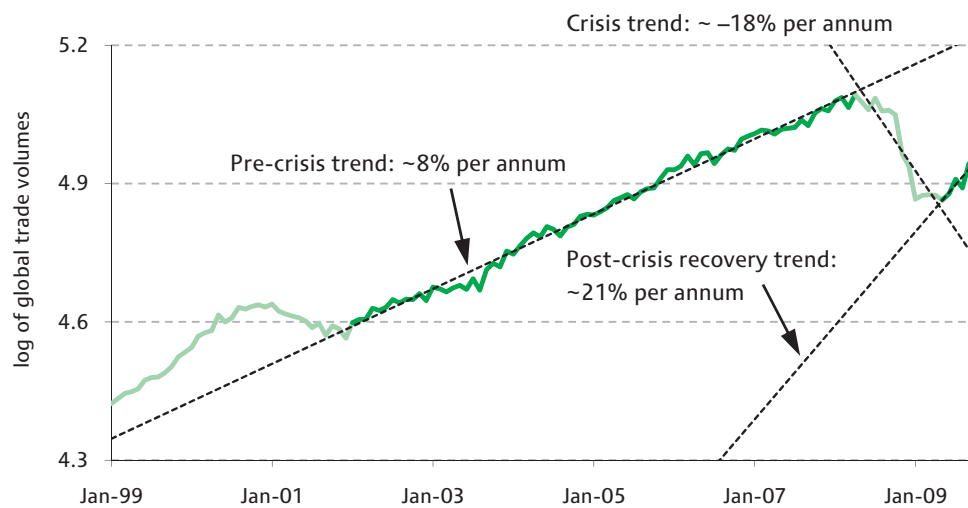
Notes: These data run up until end-November 2009. And the trough of the global trade series appears to have been in May. Hence the post-crisis trend is based on a log-linear trend drawn through just six data points.
Sources: Netherlands Bureau for Economic Policy Analysis and Barclays Economics Research.

Figure 4.18. Business fixed investment
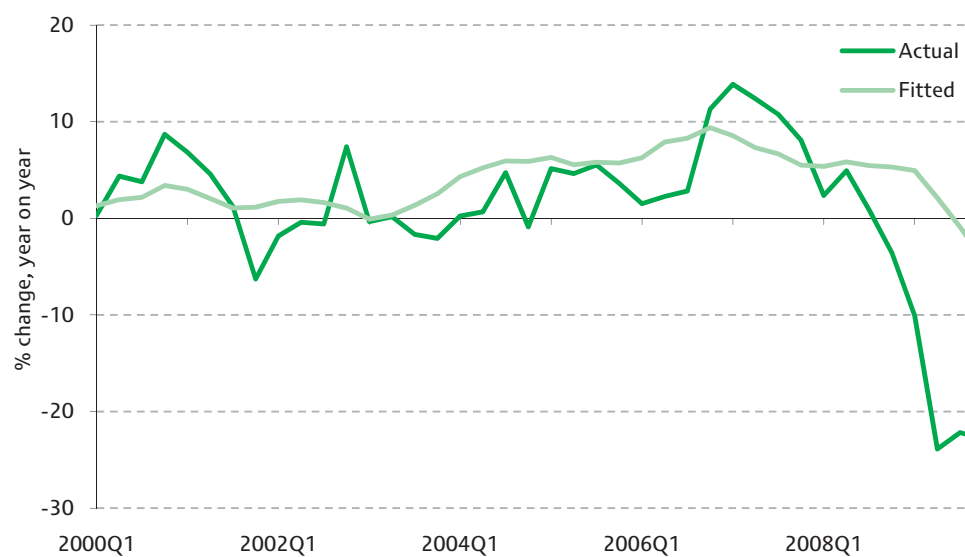
Sources: Office for National Statistics and Barclays Economics Research.

What these equations fail to incorporate – ours included – is a specific gauge of the ease with which credit can be accessed as well as a 'risk appetite/animal spirits' indicator such as the one we used to help rescue the consumption function. Almost for sure, a big part of the investment crunch story is a credit crunch one. So, the good news, looking ahead, is that, provided that the financial sector really is now on the mend in a sustainable fashion, investment ought to come back, and start soon on some sort of recovery.

Having said that, following such a deep recession – and especially one that has been 'short and sharp' – many firms are likely to have some spare capacity at hand, which can be redeployed as demand recovers. (We may be gloomy – at least relative to the Treasury – about the hit to aggregate supply, but we do still believe that the output gap is quite large, at perhaps 3½% of potential GDP.) Of course, there is also the issue of whether or not the currently unused plant, machinery and buildings are of the right type and in the right

place. (If, for example, the currently unused capacity is in the financial sector, but the improved demand is for, say, cars, the resulting 'mismatch' means that investment will be necessary sooner than it would otherwise be.)

All this means that the relatively gloomy picture that we have drawn for the UK's potential GDP, or aggregate supply, in Chapter 1 – in which we assumed that a lot of fixed capital is written off rather more quickly than was expected when the investments were first made – has a 'silver lining'. If there is less spare capacity in the economy than the Treasury is assuming, then at least growth might resume more quickly than it would otherwise do.[20] In other words, in an upswing, investment may pick up more quickly than generally expected, albeit still at sluggish rates of around 3% in 2010 and 6% in 2011. Thereafter, we suspect that the limited momentum behind consumer and export demand will result in investment volumes rising at only about a 2½% per annum annualised rate, consistent with the economy's sluggish trend growth rate.

In making this projection, we assume that access to credit gradually improves, so that firms are not constrained from expanding their businesses by financial limitations, or by needing to fund investment from retained profits or running down inventories. We also assume that the rise in long-term government yields (and hence swap rates) is fairly limited, thus leading to only a moderate rise in corporate borrowing costs (or 'the cost of capital'). Given the parlous state of public finances, however, there must be a risk that this is an overly optimistic assumption. (For further details, see Box 1.2 in Chapter 1.)

Looking ahead, we expect the recovery in demand, both at home and overseas, to lead to less employment growth than usual. (We see existing workers having to work harder, and/or longer, to meet raised demand, rather than firms immediately starting to boost employment.) This will help lower the pressure of high, and rising, unit labour costs. Accordingly, we suspect that our employment model will go back to tracking events more closely than it has done during 2009. And the wage and price equations should continue to exhibit the fairly impressive performance that they registered last year. Following a rise in consumer price inflation to around 3½% at the start of 2010, brought about by the temporary cut to the main rate of VAT coming to an end – and which should add something close to 1% to the price level (as detailed in Chapter 3), the targeted rate of inflation will probably be back close to 2% in the summer and perhaps a little under 1% during 2011.

Looking further out, price pressures are likely to remain fairly muted, with the CPI running close to the 2% target a few years down the line. This would be consistent with the Monetary Policy Committee gradually exiting its quantitative easing (QE) programme, and with the MPC beginning to raise official rates, tentatively, during the second half of 2010. We expect official rates to be getting close to a neutral level, of around 5%, by late 2013 or early 2014.

Government demand

Although the focus of the fiscal policy debate has been on how the public finance adjustment is likely to weaken demand, government spending is set to support growth in the first half of 2010, albeit only modestly. The degree to which it detracts from growth thereafter seems likely to depend on the outcome of the general election, as the

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[20] Of course, the silver lining is illusory. We would be better off if capital did not need to be written off in the first place, and we could use it instead to help raise living standards.

opposition Conservative Party has made a commitment to reduce the public deficit more quickly than the current government's plans. With the election expected in May, this issue is unlikely to be germane for the growth outlook until the second half of 2010 at the earliest. Nevertheless, regardless of the election outcome, the hole left by government demand is likely to be significant. Over the past 10 years, government consumption has contributed on average 0.5 percentage points to annual GDP growth. Even on the Treasury forecasts, this is set to drop to –0.5 percentage points in two years' time. This 1 percentage point cut in demand is a key reason to expect growth over the next few years to be lacklustre.

4.5 Forecast scenarios

The central scenario

The combination of pain for the consumer and for government, along with a non-financial corporate sector that is returning to profitability and reorienting towards external markets, suggests a rather more subdued increase in GDP than the Treasury pencilled into its December 2009 PBR. Taking the five years from 2010 to 2014 together, the PBR

Table 4.1. Barclays 'central case' scenario

% changes year on year, except where noted	2008	2009	2010	2011	2012	2013	2014	2015
Aggregate demand								
Real GDP	0.5	–4.9	1.8	2.3	1.4	1.5	1.7	1.8
Personal consumption	0.9	–3.2	1.1	2.1	1.3	1.9	1.7	1.8
Fixed investment	1.0	–13.2	2.8	5.9	4.1	2.1	2.0	1.7
Govt consumption	2.6	2.0	0.3	–0.8	–0.3	0.6	0.7	0.8
Exports	1.1	–11.0	5.6	5.3	4.7	4.6	4.3	4.2
Imports	–0.5	–12.5	7.2	4.5	4.2	4.9	3.6	3.4
Inflation drivers								
Unemployment rate (%)	5.9	7.8	8.3	8.8	9.2	9.6	9.8	9.8
Employment	0.6	–1.6	–0.2	–0.2	–0.2	–0.2	0.1	0.3
Unit wage costs	4.0	5.2	0.0	1.4	3.4	3.7	3.2	2.6
Wages	3.7	2.2	2.2	3.9	5.1	5.3	4.8	4.1
Productivity	–0.3	–2.9	2.2	2.4	1.7	1.6	1.6	1.5
Consumer prices (CPI)	3.6	2.1	2.1	1.5	2.0	2.0	2.0	2.0
Consumer prices (RPI)	4.0	–0.6	2.6	2.3	2.9	2.8	2.8	2.7
Financial markets								
Official rates (%)	2.0	0.5	0.8	2.3	3.5	4.5	5.8	6.5
10-year bond yields (%)	4.1	3.7	4.8	5.5	6.0	6.4	6.7	6.9
Aggregate supply								
Potential GDP	1.1	–0.1	–0.1	0.8	1.4	1.6	1.7	1.8
Output gap (% of GDP)	1.5	–3.5	–1.6	–0.2	–0.1	0.0	0.0	0.0
Capital services	1.6	–0.8	–0.9	0.3	1.2	1.8	2.1	2.4
Labour	–0.2	–0.4	–0.6	–0.1	0.1	0.1	0.1	0.2
TFP	0.8	0.5	0.6	0.8	1.0	1.0	1.0	0.9

Note: Financial market variables are end-of-period values. All data and forecasts are for calendar years.
Source: Barclays Economics Research.

assumed that the volume of GDP would rise at an average annualised rate of 3%, with a cumulative increase in total output of some 16%. Our own central scenario, by contrast, looks for an average annual growth rate of just under 2% per annum, leaving our 2015 GDP projection nearly 7% below the Treasury's forecast. Table 4.1 provides further details of our projections.

Lest this seem an extraordinarily pessimistic position to adopt, it is worth pointing out that our projection is actually very close to what the average of professional forecasters expects, according to a recent survey.[21] The general expectation is for GDP to rise at a little below 2% per annum rate between 2010 and 2014, resulting in an overall expansion over this period that is just ½ of a percentage point more than we have pencilled in, but 6¼ percentage points less than the PBR predicted.[22]

Two alternative scenarios

Given the sheer scale of the surprises that have taken place in recent years, it is especially important to remain humble about one's ability to predict future macroeconomic developments. The confidence levels attached to any forecast should be thought of as low. And confidence intervals, around one's modal forecast, should be wide.

One way of illustrating how things might develop differently from our central scenario is to use stochastic simulations to help quantify the uncertainty involved. Basically, this amounts to sampling past residuals from the various equations in our models as a way of gauging our ignorance of the true drivers of the various processes at work. (A 'poor' model, with 'big' residuals, will therefore naturally provide a forecast around which the fan chart showing probabilities of different outcomes will have wide bands. A 'good' one, with 'small' residuals, will, by contrast, have narrow bands.)

The only problem with this process is that the recent performance of models has deteriorated relative to their long-run record in tracking events. So, stochastic simulations based on a fairly long run of residuals will probably understate the true uncertainty involved in forecasting at a time like this. We prefer to illustrate the wide range of possible outcomes by constructing, on the basis of deterministic simulations, two alternative scenarios to our central one, each of which we feel has a roughly 25% probability of becoming the eventual outcome.

In our 'optimistic' scenario, developments turn out a lot closer to the Treasury projections contained in the December 2009 PBR. In particular, we would emphasise:

- **The long-term damage to the economy's potential is much less.** Our central scenario assumes that productive potential falls by 7½% over five years and that potential GDP grows at 1¾% a year thereafter (see Chapter 1). In the December 2009 PBR, the Treasury assumed (as it did in the previous Budget) a 5% hit to potential GDP over three years, with trend growth unaffected at 2¾% a year. Our optimistic scenario is closer to the Treasury's, with the same fall in the level of potential GDP, although even in this scenario we only assume a trend growth rate of 2¼% (compared with the 2½% assumed by HMT for public finance forecasts).

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[21] For details of these long-run forecasts, see *Consensus Forecasts Global Outlook: 2009–2019*, published by Consensus Forecasts Inc., October 2009.

[22] Interestingly, since October, the consensus has lowered its short-term GDP forecast a little. So the gap between our own numbers and the consensus's long-term forecasts is probably, in reality, even smaller than these figures suggest.

- **Actual GDP manages a bit more of a surge.** There is a little more spare capacity in the economy in our optimistic scenario than in our central one, which leaves more room for strong GDP growth during the recovery phase – say, a year or so of 3%+ real GDP expansion. Growth may also turn out stronger than in our central scenario if the three years during which exports have turned out softer than our models predicted do not mark a permanent deterioration in the UK's relative performance but instead hold out the prospect of a rebound as UK exporters try harder to compete.

- **Inflation not very different.** Given that we assume that the Bank of England's MPC, on average, does its job well, we would not expect inflation to be very different in a 'good' scenario compared with our main, 'central', one, especially a year or two down the line. We expect inflation to average close to 2%, except in a world in which the inflation target gets changed or in which the Bank loses its independence, neither of which we judge to be at all likely.

Table 4.2 illustrates in more detail how things might evolve in such a scenario.

Table 4.2. Barclays 'optimistic' scenario

% changes year on year, except where noted	2008	2009	2010	2011	2012	2013	2014	2015
Aggregate demand								
Real GDP	0.5	–4.9	2.2	3.0	2.4	2.2	2.3	2.2
Personal consumption	0.9	–3.2	2.1	3.5	3.2	3.3	2.9	2.7
Fixed investment	1.0	–13.2	2.6	6.0	5.3	3.2	2.5	2.2
Govt consumption	2.6	2.0	0.3	–0.8	–0.3	0.6	0.7	0.8
Exports	1.1	–11.0	5.6	5.4	4.9	4.6	4.3	4.1
Imports	–0.5	–12.5	8.0	5.6	5.8	6.0	4.4	3.9
Inflation drivers								
Unemployment rate (%)	5.9	7.8	8.3	8.6	9.0	9.2	9.3	9.3
Employment	0.6	–1.6	–0.1	0.0	0.0	0.1	0.3	0.4
Unit wage costs	4.0	5.2	–0.4	1.0	2.9	3.8	3.7	3.4
Wages	3.7	2.2	2.2	4.0	5.4	6.0	5.8	5.2
Productivity	–0.3	–2.9	2.6	3.0	2.4	2.1	2.0	1.8
Consumer prices (CPI)	3.6	2.1	1.9	1.1	1.7	2.0	2.0	2.0
Consumer prices (RPI)	4.0	–0.6	2.4	1.9	2.7	2.8	2.8	2.8
Financial markets								
Official rates (%)	2.0	0.5	0.8	2.3	3.5	4.5	5.8	6.5
10-year bond yields (%)	4.1	3.6	4.8	5.4	6.0	6.3	6.7	6.9

Note: Financial market variables are end-of-period values. All data and forecasts are for calendar years.
Source: Barclays Economics Research.

Last of all, we consider a 'pessimistic' scenario that is even worse than our central case – in fact, one that is truly dire. In this scenario, in which again we assume no fiscal effort over and above what the authorities have already announced, it would be very hard to imagine that the UK's credit rating does not get downgraded – and probably several times – by the ratings agencies. This would be a 'vicious cycle' scenario in which the economy fails ever to get decent growth going. Table 4.3 provides an overview. A few key elements of the story are worth highlighting:

- **A huge fall in potential output.** In this scenario, we assume that the IMF's average crisis effect is what ends up hitting the UK, i.e. one severe enough to reduce the level of potential GDP by 10%. On top of that, we also assume that potential GDP growth gets depressed by the dislocation and resource misallocation that has been evident for some time. Accordingly, there is little room for the economy to grow without quickly generating upward pressure on prices. Major structural reforms are needed to turn things around, perhaps even at the cost of a second downturn in activity, as so commonly happens in the first year of IMF programmes.

- **Not much of a recovery in actual GDP at all.** Even if a double-dip is avoided, the short-term path for GDP is rather more painful than in the other scenarios. As a result, unemployment rises for several more years, reaching double digits as a percentage of the labour force. Consumers cut back their spending further, perhaps pushing the household saving ratio up into double digits and keeping it there for a while.

- **Inflation on target.** Again we assume that the Bank of England is able to do its job and keep inflation close to 2%. However, with the economy doing so poorly, the chances of it sliding back into recession, perhaps requiring another big dose of QE, could not be ruled out. The UK might only avoid sustained deflation thanks to severe downward pressure on sterling, which would push up import costs.

Table 4.3. Barclays 'pessimistic' scenario

% changes year on year, except where noted	2008	2009	2010	2011	2012	2013	2014	2015
Aggregate demand								
Real GDP	0.5	−4.9	1.2	1.5	1.0	1.2	1.8	1.7
Personal consumption	0.9	−3.2	−0.1	0.5	0.6	1.3	1.9	1.6
Fixed investment	1.0	−13.2	2.9	5.4	3.2	1.8	1.8	1.8
Govt consumption	2.6	2.0	0.3	−0.8	−0.3	0.6	0.7	0.8
Exports	1.1	−11.0	5.5	5.2	4.7	4.5	4.4	4.2
Imports	−0.5	−12.5	6.2	3.3	3.7	4.5	3.8	3.2
Inflation drivers								
Unemployment rate (%)	5.9	7.8	8.4	8.9	9.5	9.9	10.1	10.1
Employment	0.6	−1.6	−0.3	−0.3	−0.4	−0.3	0.1	0.3
Unit wage costs	4.0	5.2	0.5	1.9	3.2	3.2	2.4	2.1
Wages	3.7	2.2	2.2	3.7	4.7	4.7	4.2	3.6
Productivity	−0.3	−2.9	1.7	1.8	1.4	1.5	1.7	1.4
Consumer prices (CPI)	3.6	2.1	2.3	1.8	2.1	2.0	2.0	2.0
Consumer prices (RPI)	4.0	−0.6	2.8	2.6	3.0	2.8	2.8	2.8
Financial markets								
Official rates (%)	2.0	0.5	0.8	2.3	3.5	4.5	5.8	6.5
10-year bond yields (%)	4.1	3.7	4.8	5.6	6.1	6.4	6.7	6.8

Note: Financial market variables are end-of-period values. All data and forecasts are for calendar years.
Source: Barclays Economics Research.

4.6 Conclusion

All in all, the prospects for a strong recovery look to be rather poor. More likely, we suspect, the UK will manage to achieve a fairly feeble pick-up in activity, continuing to underperform most other advanced economies.

5. The public finances and sterling

Simon Hayes (Barclays Capital)[1]

Summary

- Currency crises often go hand in hand with fiscal crises, and international investors have become concerned about the UK's public sector debt dynamics.

- In 2008–09, sterling registered an even larger depreciation against the US dollar than in its 1967 devaluation, the 1976 IMF crisis and its 1992 exit from the European Exchange Rate Mechanism. In trade-weighted terms, the decline was the biggest since figures were first calculated in the early 1980s. This large depreciation was driven partly by concerns about the sustainability of the public finances.

- Despite the large projected rise in the government debt stock, the cost of borrowing remains low, assisted by quantitative easing. The latter is likely to be temporary, however, and the cost of the debt burden is set to increase.

- Our central expectation is that debt costs will not become unmanageable and we expect the UK's credit standing to remain strong, notwithstanding the prospective rise in the share of tax revenue that the UK government will have to devote to debt servicing.

- Even so, sustainability cannot be taken for granted: there are plausible scenarios in which the UK's debt sustainability measures stray uncomfortably close to concerning levels. To minimise the risks of a further disruptive fall in sterling, it is crucial that the authorities do all they can to reassure financial markets that both fiscal and monetary probity will be maintained.

5.1 Introduction

Currency crises and fiscal crises often go hand in hand. Probably the most common question asked by investors, especially overseas investors, is whether the UK's public finances are sustainable and, by extension, whether there is a risk of a sharp drop in sterling. In this chapter, we examine the interaction between the public finances and the currency, and assess the risk that a negative debt dynamic could lead to a precipitous fall in the value of the pound.

It is obvious why overseas investors would worry about a sharp drop in sterling – the value of their investments would fall when measured in their own currency. But how concerned should UK citizens be about a weaker pound? On one level, sharp currency falls can be seen as 'helpful' – indeed, the Governor of the Bank of England has described the recent fall in sterling as just that.[2] This is based on the view that sterling had previously been overvalued, leading to an imbalance in UK economic growth with

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[1] This chapter draws on analysis, comments and suggestions from my colleagues Moyeen Islam and Paul Robinson.

[2] http://www.journallive.co.uk/north-east-news/todays-news/2009/09/24/governor-mervyn-king-backs-north-s-export-potential-61634-24767811/3/.

domestic demand being 'too strong' and external demand 'too weak'. The fall in sterling would help to correct this imbalance.

However, a sharp fall in sterling is not without its costs. Most immediately, import prices are likely to rise, and for economies such as the UK that have high levels of import penetration this means that real household incomes are likely to be squeezed. Also, to the extent that currency volatility adds to uncertainty about the future value of the currency, overseas investors are likely to demand a higher return on their UK investments. The UK's long-term recourse to overseas borrowing (the UK has run a current account deficit almost continuously since the mid-1980s) suggests the costs are likely to be non-negligible.

In Section 5.2, we set out the main insights from academic studies of currency crises, and ask whether a sterling crisis could be said already to have occurred. In Section 5.3, we consider the risks of a further currency fall, which we believe are intimately tied to the perceived sustainability of government debt. Section 5.4 concludes.

5.2 The origins of currency crises

The academic literature on currency crises has identified three broad types. So-called 'first-generation' models viewed currency crises as the inevitable consequence of incompatible monetary and fiscal policies. Suppose, for example, that a country's fiscal position had deteriorated to the extent that the central bank found itself printing money to finance the public deficit while at the same time attempting to defend a fixed exchange rate. As the central bank expanded credit, this would put downward pressure on domestic bond yields and prompt investors to switch into foreign bonds, depleting the central bank's foreign exchange reserves. With a finite stock of reserves, this situation cannot be sustained indefinitely and the currency peg would come under pressure.

First-generation models have provided two key insights. First, the exhaustion of reserves is likely to happen suddenly, not gradually, as financial markets anticipate the collapse of the currency peg. In other words, when the inconsistency of policy becomes apparent, the currency is subject to a speculative attack. Second, it is *expected future* public deficits that matter rather than past deficits. As a result, expectations that, for example, the government might have to step in to ensure the solvency of private agents – such as banks – can provoke a currency crisis even if the government is not initially running a budget deficit. By the same token, expectations that the government will act to reduce the deficit can forestall a crisis even if the starting position for the public finances is poor.

First-generation models describe accidents waiting to happen. By contrast, second-generation models depict crises that are self-fulfilling, the result of the economy lurching from a 'good' equilibrium to a 'bad' equilibrium. Suppose that a country is maintaining a fixed exchange rate and has a large amount of foreign currency borrowing. So long as foreign investors see little chance that the country will abandon the peg, it will face low borrowing costs. However, if investors begin to fear a devaluation, they will increase the risk premium on the country's debt and its borrowing costs will rise. Higher borrowing costs reduce output growth in the economy, increasing pressure on the authorities to allow the currency to depreciate. At some point, the pressure may become too great to resist and the peg is abandoned, validating investors' expectations. These models highlight the importance of market sentiment in driving currency movements relative to economic fundamentals.

Third-generation models emphasise the role of the financial sector in causing currency crises. These models focus on the risks inherent in a banking system that has both maturity and currency mismatches. In effect, bank runs can take on an international dimension if a loss of confidence causes foreign investors to withdraw funds and the currency suffers the consequences.

A couple of lessons from this literature are particularly pertinent to the UK at present:

- First, large and widening public deficits and high public exposure to a distressed financial system are likely to be a major source of concern for investors. Monetary policy is also important, and the UK's foray into uncharted quantitative easing (QE) territory has also made some investors wary, and helps explain why sterling has been in the spotlight.

- Second, communication with financial markets about fiscal consolidation plans matters if the authorities are to minimise the risk of a shift in expectations and a lurch into a bad equilibrium.

Models of currency crises normally involve fixed exchange rate regimes, so they might not appear immediately relevant to countries such as the UK with a floating exchange rate. However, we would consider any steep and sudden fall in the currency as potentially worthy of the 'crisis' label, the fundamental point being that a sizeable currency depreciation was needed to bring a halt to unsustainable economic dynamics. Clearly, foreign investors would incur losses in domestic currency terms on their holdings of sterling assets whatever the precise mechanisms of the depreciation.

The absence of a fixed exchange rate regime for sterling, however, probably makes the third-generation crisis models less pertinent. A fixed exchange rate can provide the foundation for an excessive build-up of currency mismatches between borrowing and lending, either within the banking system or in the economy more broadly. This has become a source of concern in a number of Eastern European economies, for example, that have pegged their currencies to the euro as part of a convergence drive, prompting their resident firms and households to borrow in euros despite their income being in the domestic currency. Such mismatches are not a major feature of the UK economy.

The sterling crisis of 2008–09?

In the empirical academic literature, it has become the accepted custom to define a currency crisis as a year-on-year fall of 25% or more against the US dollar. Using this criterion, there has only been one sterling crisis in the past 50 years and that occurred between March 2008 and March 2009 when the value of the pound fell by nearly 30% against the US dollar (Figure 5.1). On a trade-weighted basis, which brings into play how the pound has fared against the euro (and its predecessors), sterling was down by 22% year-on-year in December 2008, easily the sharpest fall since these data began in the early 1980s. By way of contrast, the UK's high-profile departure from the European Exchange Rate Mechanism (ERM) in 1992 involved a 23% devaluation against the dollar in the year to August 1993 and a 15% devaluation on a trade-weighted basis in the year to February 1993. From this perspective, the debate about whether a sterling crisis is looming appears somewhat belated: the sterling crisis has already happened.

Economists have generally shied away from labelling the recent fall in the pound a currency crisis. However, a closer investigation of the features of past sterling crises provides no compelling reason to distinguish between these events and the recent drop.

Figure 5.1. Sterling exchange rates
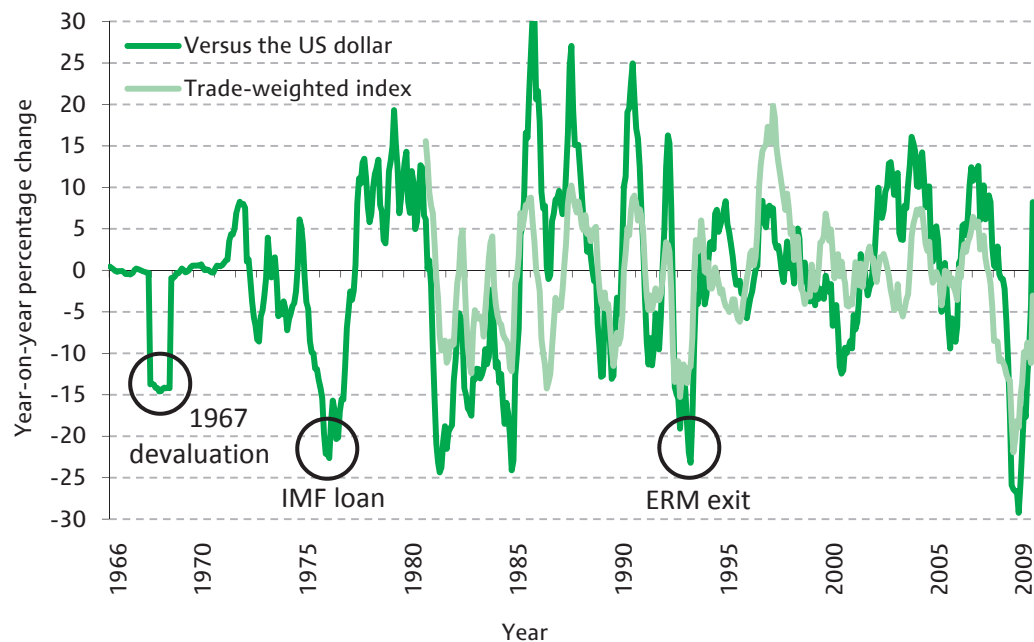
Sources: Haver Analytics and Barclays Capital.

Three episodes over the past 50 years are generally referred to as sterling crises – the devaluation of 1967, the 1976 IMF crisis and the 1992 ERM crisis. In 1967 and 1992, the UK was operating a fixed or quasi-fixed exchange rate regime and so devaluation came as a discrete event, the culmination of pressure that had been building in the wider economy for some time. It seems highly likely that, had sterling been fixed prior to the current episode, a discrete depreciation would have occurred and the 'crisis' label would already have been applied.

Events in 1976 arguably have a closer parallel to the present situation. Sterling was floating and so there was no step depreciation, although the pound fell by 23% over the year to June 1976 against the US dollar. The crisis-defining event instead was the UK's unprecedented application for an IMF loan in September 1976 – although it might also be argued that the fact that inflation had risen to nearly 27% in 1975 gave the 1976 episode an extra edge.[3]

The current situation has not had a single defining event. Also, it could be observed that many currencies have seen sharp falls against the US dollar recently – the Australian and New Zealand dollars, the Brazilian real, the South African rand, the Mexican peso, the Norwegian krone and the Swedish krona all dropped by more than 25%. However, this largely reflected a global liquidity panic, which caused investors to flood into US dollars, whereas the weakness in sterling pre-dated the most acute global liquidity concerns and has persisted even as those concerns have abated. Also, these countries did not have the concomitant public finance and banking sector crises that have hit the UK.

All three previous sterling crises were accompanied by concerns about the public finances. However, the peaks in the public deficit of 4% (1967–68), 7% (1975–76) and 7.7% (1993–94) of national income fell far short of the present situation in which the

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[3] The sharp declines in the sterling–US-dollar exchange rate in 1981 and 1985 were the result of dollar strength, as US monetary policy was tightened sharply under Paul Volcker, rather than sterling weakness.

peak deficit is likely to be around 13%. From this perspective, the fall in sterling during 2008 and the early part of 2009 was as much a crisis as any of these other dismal landmarks in the UK's economic history.

5.3 The risks of another sterling crisis

The important question now is not whether there has been a crisis but how likely it is that sterling drops significantly further. In this section, we assess how close the public finances are to the sustainability threshold and consider the factors that are likely to influence market perceptions of the UK's debt dynamics.

For many UK citizens, it would seem unthinkable that the UK government would renege on its borrowing, and history is on the side of this viewpoint: the UK has not defaulted on its debt since the 14th century. An outright default is not, however, the only recourse open to troubled sovereign borrowers. Rescheduling agreements may be sought before the point of default is reached. Moreover, a government may seek to reduce the real value of its debt by generating high rates of inflation (Henry VIII oversaw a large-scale debasement of the currency, effectively defaulting on the Crown's domestic debts)[4] – although the UK's inflation targeting regime, together with the fact that around a quarter of UK government debt is inflation-linked, means that this is not so obvious a route for the UK at the present time.

However, given the current stressed state of the economy, it can at least be argued that the risks of a fiscal crisis are heightened. An IMF study of debt sustainability,[5] written long before the current crisis, identified a number of features of an economy that, in the experience of IMF staff, should trigger warning lights about the fiscal outlook. These included reliance by the government on efficiency savings, windfall taxes, asset sales and fiscal responsibility laws to project an improvement in the fiscal position. The UK government has made reference to all of these measures when outlining plans for reducing the deficit, so it is little wonder that some investors remain sceptical and have stressed the need for the government to be more specific about its intentions.

UK government debt sustainability

Although the recent crisis episode makes it easy to raise vague concerns about the risks to the UK's debt situation, it is worth trying to establish more formally how close the fiscal position is to the sustainability threshold. Such a task is far from easy, but a first-pass assessment is, we think, illuminating.

If, in the medium term, the government runs a primary balance (i.e. total public spending excluding debt interest payments is equal to total public sector receipts), the public debt ratio will be stable or falling if the real interest rate on government debt is equal to or less than the economy's trend rate of growth. On current market yields, we estimate that the weighted average real cost of government debt is very low – around 0.9%. This, however, is depressed somewhat by the very accommodative stance of monetary policy at present; we estimate that it will rise to around 1½% in two years' time as the Bank of England moves to a more 'normal' policy setting.

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[4] C. M. Reinhart and K. S. Rogoff, *This Time is Different*, Princeton University Press, Princeton, NJ, 2009.

[5] 'Assessing sustainability', IMF, 28 May 2002, http://imf.org/external/np/pdr/sus/2002/eng/052802.htm.

Figure 5.2. Primary budget balance
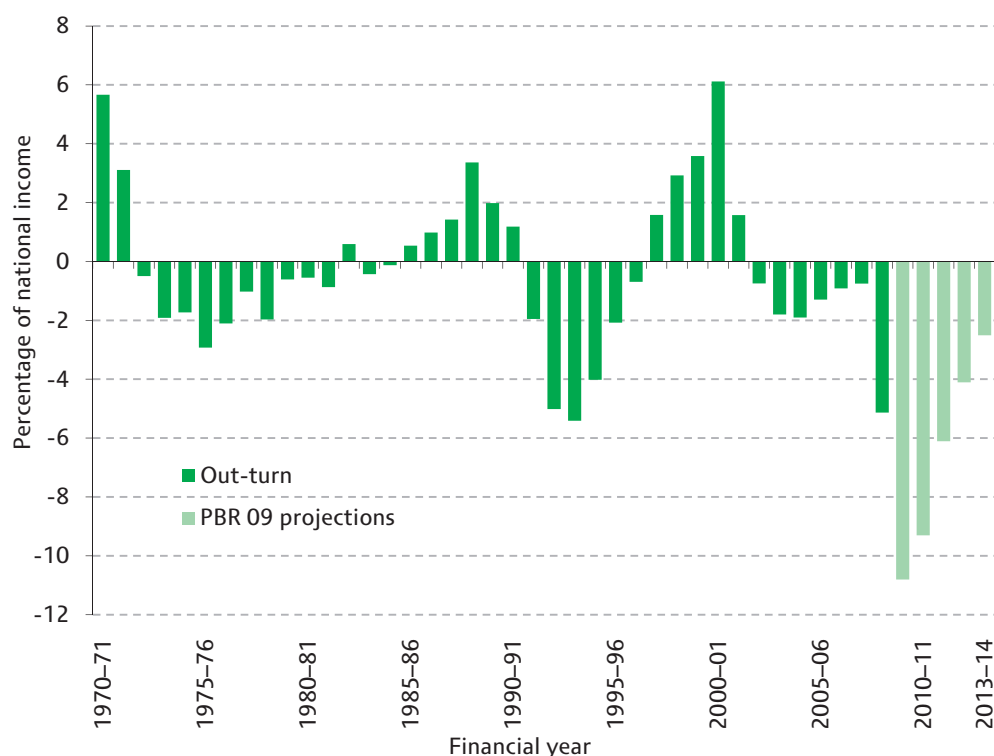
Sources: Haver Analytics, HM Treasury and Barclays Capital.

The UK's long-run trend rate of growth is generally thought to be around 2½%, a level that provides plenty of headroom relative to our expectation for the real cost of debt. However, in Chapter 4, we present evidence that trend growth over the next several years is likely to be lower than the historical average. Our central view is that it will be around 2%, but it could be as low as 1¾%. If the latter were the case, the UK would be left uncomfortably close to the sustainability threshold. Certainly, there are plausible scenarios in which questions could be raised about the stability of the public debt stock.

On our central view, however, the gap between trend growth and the real cost of government borrowing means that the government could run a primary deficit of around 1% of national income and still satisfy the solvency condition. The UK's starting position is not good, with the Treasury projecting a primary deficit of nearly 11% of national income in the current fiscal year (Figure 5.2). However, on average since 1970, the UK has run a primary deficit of just 0.3% of national income. Moreover, from 1997 to 2001, there was a primary surplus averaging more than 3% of national income on the back of some fairly dramatic fiscal tightening, indicating that a much tighter fiscal stance is certainly feasible.

The starting position matters, however, because even with fairly aggressive fiscal tightening, the UK is unlikely to achieve a primary balance for several years at least, with the Treasury forecasting a primary deficit of 1.1% of national income even in 2014–15. This re-emphasises the value of a credible plan to bring spending closer in line with revenues in the medium term if financial markets are to remain persuaded of the government's fiscal probity.

Another way of gauging debt sustainability is to see how the government's debt interest payments compare with total current receipts and expenditures. The ratio of interest

Figure 5.3. Central government debt servicing costs
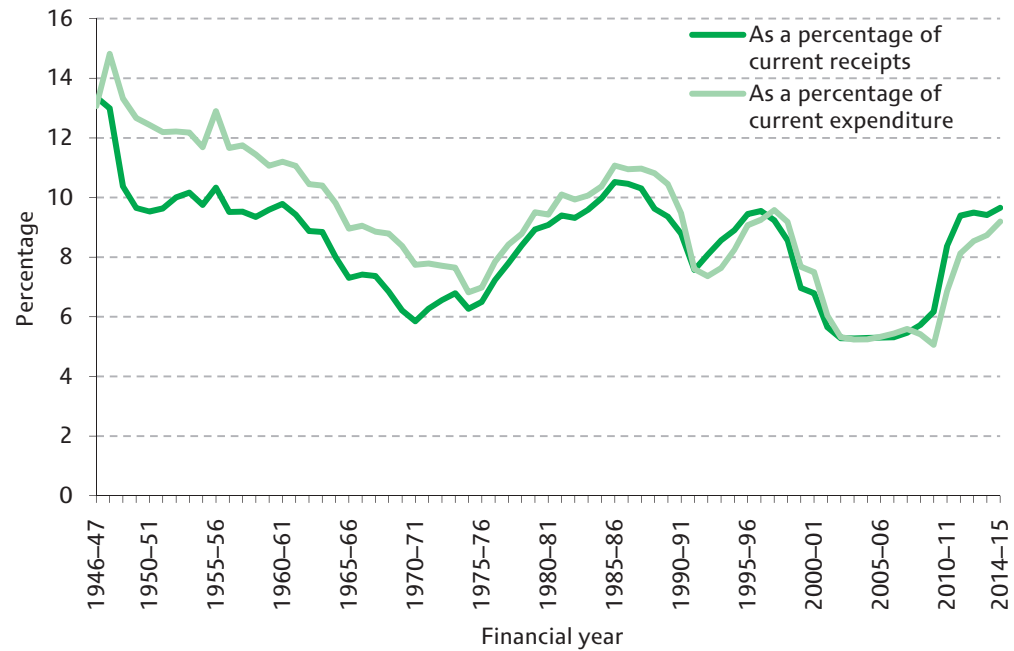
Sources: HM Treasury and Barclays Capital.

payments to receipts is often used as an 'affordability' measure by ratings agencies, for example. For a triple-A rated sovereign, a ratio above 10% is commonly taken as an 'amber warning light' of potential problems. By contrast, comparing debt interest payments with government expenditure gives an idea of the opportunity cost, in terms of forgone public services, of the debt burden. Beyond some level, it may become politically unpalatable to devote such a large fraction of expenditure to debt repayments.

Figure 5.3 plots these two ratios over the post-war period. What is striking first of all is how low the two had been in recent years, at little more than 5%. This reflects the fact that prior to the crisis, the UK had reduced its public debt and interest rates had also been historically low. The economy therefore began from a position in which the 'affordability' and 'acceptability' of debt interest were not in question.

Figure 5.3 also shows estimates of how these ratios would rise if the public finances follow the path set out in the December 2009 Pre-Budget Report (PBR). Both are projected to increase sharply, with the ratio of interest payments to current receipts projected to rise to 9.7% in 2014–15. Even on the Treasury forecasts, therefore, these measures are bordering on concerning levels.

So long as debt costs stay low, it is highly unlikely that the UK will face a financing crisis. On the other hand, given the heavy gilt issuance programme, if gilt yields were to rise sharply this would quickly show up in higher government debt financing costs. One particular source of market concern is the effect of the Bank of England's intervention in the gilts market under its quantitative easing policy.

Quantitative easing and the demand for gilts

The Bank of England's asset purchase programme has seen it buy around £200 billion of gilts since March 2009, similar to the amount of gilts issued by the UK Debt Management Office (DMO) over the same period. In other words, despite the large scale of government borrowing last year, the net supply of gilts to the private sector over this period was zero.

Figure 5.4. Net issuance of gilts
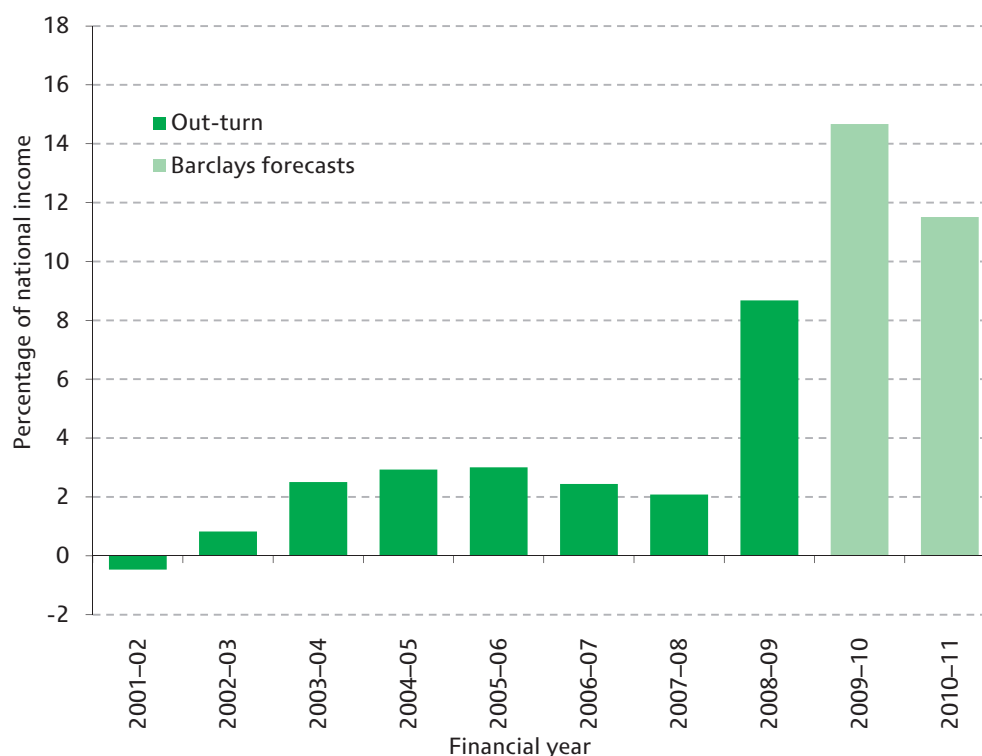
Sources: DMO and Barclays Capital.

This is set to change dramatically this year. QE purchases may have already halted – at the very least, they are unlikely to proceed at anything like the pace seen in 2009. Moreover, at some point this year, the Bank of England may look to reverse its purchases and sell gilts to private investors alongside the DMO's primary issuance programme. For example, if the Bank of England were to sell, say, £50 billion of its gilt holdings in 2010–11, together with the DMO's issuance plans this would mean net supply to the private sector of around £260 billion. At more than 18% of national income, not only would this be a huge turnaround from the zero net supply in the current year, but we would also note that prior to 2008–09 net issuance had never risen above 3% of national income – see Figure 5.4. It is unsurprising, therefore, that some commentators have questioned the market's ability to absorb such a quantity of debt, and have pointed to a heightened risk of uncovered auctions and a spike in yields.

The Treasury, however, is confident that there will be sufficient demand for gilts and that selling such large quantities will not be a problem. Senior Treasury official Dave Ramsden has described the 'structural' demand for gilts from asset managers as 'strong', and argued that new liquidity regulations that would require banks to hold more government bonds will help to absorb the additional supply. He concluded that 'there is good demand out there and that demand will continue'.[6]

It is important to bear in mind, however, that the ultimate sustainability of the government's debt position depends on medium-term financing costs, not the costs in any one year. So long as any disruption to the market from QE sales is temporary, its

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[6] Uncorrected transcript of oral evidence, taken before the House of Commons Treasury Committee, 16 December 2009, http://www.publications.parliament.uk/pa/cm200910/cmselect/cmtreasy/uc180-iii/uc18002.htm.

Figure 5.5. Sectoral holdings of gilts
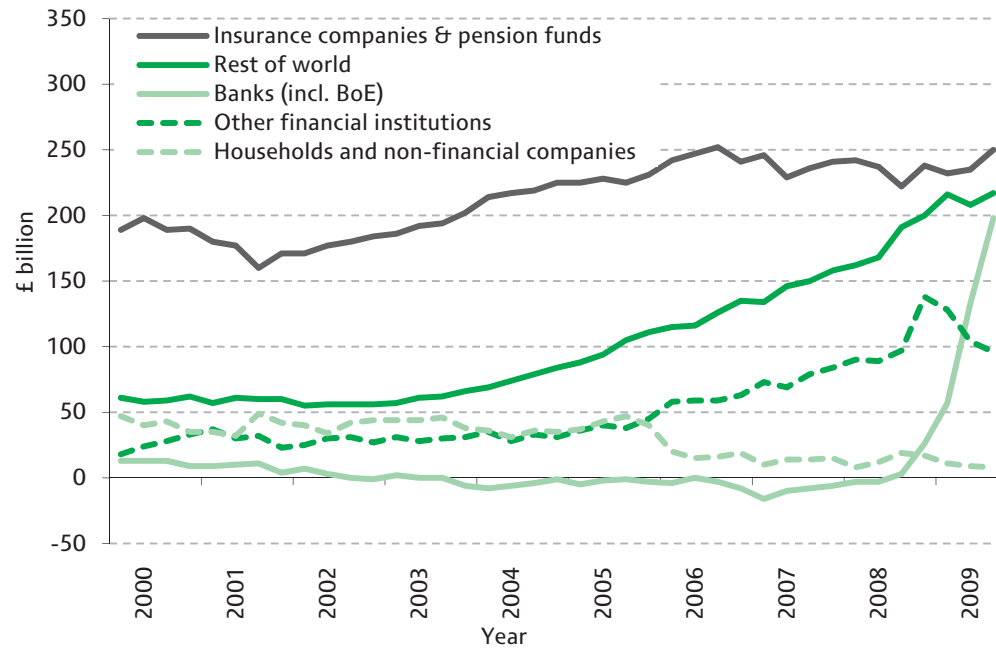
Sources: Haver Analytics and Barclays Capital.

effect on the sustainability of the public debt position is likely to be small. Indeed, the Bank of England has argued that any temporary rise in debt costs incurred during QE sales needs to be set against the artificially low yields at which the DMO has been able to issue during the QE purchase phase.[7] More important is the question of whether the large rise in the supply of gilts over the next few years is likely to lead to a sustained rise in gilt yields.

Any rise in yields that might be prompted by this turnaround in effective gilt supply could be mitigated if a new source of demand for gilts were to emerge. Figure 5.5 shows how sectoral holdings of gilts have evolved over time. The Bank of England's purchases under its QE programme are clearly evident. Aside from these, the most striking trend has been the rise in overseas gilt ownership, which has risen from around £60 billion in 2000–03 to nearly £220 billion in 2009 Q2. This has left overseas investors holding only slightly less than domestic institutional investors.

However, the rise in overseas gilt holdings coincides with a period in which the holdings of sterling reserves by foreign central banks were also rising. According to the IMF, global reserves in sterling rose from $34.1 billion in 1998 to $184 billion in 2009 Q2, with the share of sterling in global reserves increasing from around 2% to more than 4%. This suggests that much of this demand reflects asset allocation decisions by reserve managers at central banks rather than a surge in overseas institutional interest in sterling government bonds. In our view, this reallocation has largely run its course and so although we would expect overseas buying of gilts to continue, we see no reason to expect a step-up in foreign demand to substitute for gilt purchases by the Bank of England.

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[7] 'Quantitative easing: an interim report', speech by Charles Bean, Bank of England Deputy Governor, 13 October 2009 (www.bankofengland.co.uk/publications/speeches/2009/speech405.pdf).

Several commentators have suggested that the extra supply of gilts will be absorbed by banks as a result of the new regulatory liquidity regime. The Financial Services Authority (FSA) is in the process of implementing new regulations relating to banks' holdings of liquid assets. The regulations are based on stress scenarios in which firms experience significant outflows across several sources of liquidity (e.g. wholesale and retail deposits), which are then required to be met only by liquidating high-quality government bonds (i.e. without recourse to emergency central bank funding). Monetary Policy Committee (MPC) member David Miles has suggested that banks' need to hold more gilts may be one way in which 'QE can naturally roll-off'.[8]

We would be cautious, however, in assuming that the new liquidity regulations will produce a large boost to gilt demand. There is no clarity yet about how large banks' government bond-holdings are going to be, since the liquidity requirements are tailor-made and the details are yet to be finalised. When the new regime was announced, the FSA gave a tentative estimate that banks' holdings of government bonds would need to rise by £110 billion. If this were all gilts, the change would clearly be material. However, banks' holdings of bonds have to match the currency denomination of their liabilities and less than half of UK banks' liabilities are in sterling. Although the new liquidity regime might account for some of the additional gilt supply, it is likely to be only a fraction of the solution to the problem.

A third potential source of higher demand for gilts comes from domestic residents. There is a widespread belief that households in particular have saved too little in recent years and become excessively exposed to housing. The financial crisis may therefore act as a 'wake-up call' to consumers to save more and allocate more of their savings to financial assets. Household savings have increased sharply: the saving ratio rose from –0.7% in 2008 Q1 to 8.6% in 2009 Q3. However, households' accumulation of financial assets has remained weak, whereas purchases of housing assets have remained fairly robust. In fact, households' direct holdings of gilts have been declining for most of the last five years and there has been no sign from the recent data that demand has picked up.

Domestic institutional investors – insurance companies and pension funds – have been the traditional mainstay of the gilt market, accounting for around half of all gilt holdings. In broad-brush terms, there are two developments that might drive stronger demand for gilts from these investors: a rise in household saving through these vehicles; and a portfolio reallocation by institutional investors towards gilts and away from other assets. As we have just noted, the rise in household saving has not so far shown up in stronger financial asset accumulation. Also, we see no reason to expect a secular reallocation towards gilts. Rather, we would expect the demand for gilts to increase only if yields rise, which then begs the question of how much of a rise in yields the market is likely to demand to absorb the extra supply.

When we have examined the recent experiences of other European countries that have seen a surge in debt issuance, we have not found the effect on yields to be worryingly large – on average, we found that a 10 percentage point rise in a country's ratio of public debt to national income was associated with a rise in funding costs of just 0.16 percentage points.[9]

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[8] 'Money, banks and quantitative easing', David Miles, Bank of England, 14 September 2009, http://www.bankofengland.co.uk/publications/speeches/2009/speech404.pdf.

[9] L. Boone, *The Effect of Rising Public Indebtedness on Spreads*, Barclays Capital, 16 December 2008.

The UK's sovereign credit rating

Another concern that has been raised is that the bond rating agencies might downgrade UK government debt from its current triple-A rating. A sovereign downgrade would be likely to increase debt costs as some asset managers are restricted in the amounts of funds they are allowed to allocate to investments rated below triple-A. A downgrade would mean the UK would lose access to this source of funds.

On 21 May 2009, Standard & Poors revised the outlook on the UK sovereign rating to 'negative' from 'stable' on the view that the public debt ratio may approach 100% and not show any appreciable decline in the medium term. This was the first time since the UK was initially rated by S&P in 1975 that the outlook has been anything other than 'stable'. The other major rating agencies, Moody's and Fitch, have also highlighted the formidable fiscal challenges the government faces, although they have retained a 'stable' outlook on the UK's triple-A rating.

As discussed in Chapter 1, Barclays' forecasts for the macroeconomy are more downbeat than those of the Treasury, and in Chapter 6 we report that in our central case we see the public debt ratio rising to 85.5% in 2014–15, appreciably higher than the 77.7% in the PBR. Even so, we do not expect the UK to lose its triple-A rating. There are a number of reasons for this:

- Credit ratings are relative measures, and several other large, developed countries (not least the US) have seen their public finances deteriorate. The relative deterioration in the UK's position has been rather less than the deterioration in absolute terms.

- Although the main political parties may disagree on the precise form and timing of fiscal consolidation, the need for consolidation is widely accepted by politicians, and seems to be widely appreciated by the general public.

- Even on our 'pessimistic' economic scenario, we project the public debt ratio to fall short of 100% (see Chapter 6), the level cited by S&P.

- Pessimism about the public finance outlook arguably reached its nadir in the first half of 2009 and has since improved somewhat. The financial and property sectors have generated more revenue than had been expected, and the degree of banking sector support has turned out to be rather less than thought at the time, with Lloyds Banking Group deciding not to take advantage of the government's Asset Protection Scheme and Royal Bank of Scotland reducing its participation relative to the initial plans. Unemployment has risen appreciably less than had been feared.

In our view, the one recent fly in the ointment with regard to the UK's credit rating was the PBR itself, in which the government raised its projections for tax revenue, partly reflecting new tax measures, but allocated the funds to additional spending rather than to reducing the deficit. The rating agencies are unlikely to have found this reassuring.

With regard to debt costs, our bottom line is that gilt yields are likely to rise – for example, we see the 10-year gilt yield increasing from its current level of around 4% to around 5% over the next year or two (although longer-term borrowing costs are likely to rise by less) – and this will add to the government's debt servicing costs. However, the increase should not be sufficient to tip the public finances into a self-generating debt spiral, and we expect that the UK will survive with its triple-A credit rating intact.

5.4 Conclusion

The history of currency crises suggests that investors are right to scrutinise the UK. The deterioration in the public finances, the problems in the banking system and the adoption of 'unconventional' monetary policy are all good reasons to ask questions about the soundness of the pound. However, sterling has already fallen a long way and our analysis suggests that, although debt costs are set to rise, the sustainability of the public debt position is not immediately under threat.

There are two main caveats to this benign assessment. First, the authorities need to be wary of financial market dynamics. Adverse shifts in market sentiment can lead to self-fulfilling crises, almost regardless of the state of the underlying fundamentals. The UK authorities need to ensure that investors have no reason to reappraise their view of the UK's creditworthiness.

Both fiscal policy and monetary policy matter here. Regarding fiscal policy, it is difficult to overstate the importance of clear and credible plans for fiscal consolidation. The markets are likely to be expecting concrete details to be announced after the general election, whoever forms the government. On monetary policy, expectations around QE and the inflation target need to be managed carefully. It is all too easy for investors to put unconventional monetary operations together with high and rising public debt levels and conclude that the government might seek to inflate the value of debt away. Strict adherence to an unchanged inflation target is paramount to maintaining the integrity of the currency.

The second caveat is that uncertainty about the growth outlook following the severe recessionary shock means the sustainability of the public finances still cannot be taken for granted. We are assuming that the economy puts in a sustained recovery over the next few years – the Treasury is forecasting an even stronger rebound. If this fails to materialise, however, additional stress will be put on the public finances and the currency could suffer once more.

6. Green Budget public finance forecasts

Robert Chote, Rowena Crawford, Carl Emmerson and Gemma Tetlow (IFS)

Summary

- Smaller-than-expected falls in tax revenues and lower spending growth over the year to date suggest that the government will need to borrow £10.4 billion, or 0.7% of national income, less in 2009–10 than it forecast in the 2009 Pre-Budget Report.

- But our relative optimism diminishes thereafter. If the economy were to evolve broadly as the Treasury predicted in the PBR, we forecast that borrowing would be just 0.3% of national income (or £4 billion in today's terms) lower than the PBR 2009 forecast in 2014–15.This narrowing gap reflects the fact that we would expect weaker growth in tax revenues for a given economic outlook than the Treasury.

- We forecast that the current budget deficit would fall from 8.8% of national income in 2010–11 to 2.9% of national income in 2014–15 under this scenario. Of this 5.9% of national income reduction in the current budget deficit, 4.4 percentage points would come from a fall in current spending as a share of national income and 1.5 percentage points from an increase in the tax burden. With slightly lower borrowing over the next five years, we forecast that public sector net debt would peak at a slightly lower level (76.0% of national income) than the Treasury forecast.

- But if the economy were to evolve along the Barclays central scenario, we forecast that the current budget deficit would be 2.5% of national income larger in 2014–15 than in our baseline scenario. Even under their 'optimistic' scenario for the macroeconomy, our fiscal forecasts suggest borrowing would persist at a higher level than forecast by the Treasury. Meanwhile, under the Barclays 'pessimistic' scenario for the macroeconomy, most of the borrowing expected this year would be permanent.

- There is already a sizeable tightening of 1.6% of national income between 2009–10 and 2010–11 from the unwinding of the fiscal stimulus package. We suggest that no further significant tightening is implemented in 2010–11, given the likely fragility of the nascent recovery and the fact that monetary policy remains very loose.

- The government plans a 4.1% of national income (£57 billion) fiscal tightening between 2010–11 and 2015–16. By increasing this to 5% of national income (or an additional £13 billion), our baseline forecast would show the structural current budget deficit eliminated by 2015–16. Aiming to complete the repair job within one five-year Parliament would be more credible than the government's eight-year plan. It would also likely comply with the Conservatives' stated target for borrowing.

- It is very uncertain what policy settings would deliver the levels of borrowing that the government or the Conservatives want to achieve over the next few years. Both parties' plans might be more credible and sensible if they amounted to a challenging but achievable plan for tightening over the next five years, including an explanation of how they might need to change if the economy, the underlying health of the public finances or investor sentiment departed significantly from current expectations.

6.1 Introduction

This chapter presents the IFS Green Budget public finance forecasts and discusses them in the context of the government's new Fiscal Consolidation Plan, aimed at ensuring the public finances return to a sustainable position over the next five years. Section 6.2 presents the 2010 Green Budget forecasts for 2009–10 and 2010–11, using as a baseline the assumption that the economy evolves largely as the Treasury predicted in the December 2009 Pre-Budget Report (PBR), but where, as we shall see, tax revenues are slightly stronger than the PBR suggested. Section 6.3 looks at the medium-term prospects for the public finances (up to 2014–15), largely based on the same underlying economic assumptions. Section 6.4 compares our baseline forecasts with forecasts based on the alternative macroeconomic assumptions outlined by Barclays in Chapter 4. Finally, Section 6.5 concludes with what these projections imply for the 2010 Budget judgement.

6.2 Short-term projections

In 2008–09, receipts came in £13.1 billion lower than the Treasury had forecast in its PBR in November 2008 and about £6.5 billion lower than we forecast in the January 2009 IFS Green Budget, as shown in Table 6.1. The out-turn for total spending was £5.3 billion lower than forecast by both the Treasury and us, the result of current spending being £4.2 billion lower and investment spending being £1.1 billion lower than forecast (in both cases). This lower-than-expected spending slightly offsets the shortfall of receipts relative to both the Treasury's PBR forecast and our Green Budget forecast. However, the out-turn for the current budget deficit was still £8.9 billion larger than the Treasury's PBR 2008 forecast and £2.3 billion larger than our January 2008 Green Budget forecast. This resulted in borrowing being £7.9 billion higher than the Treasury forecast and £1.2 billion higher than we forecast.

Table 6.1. Comparison of forecasts for government borrowing, 2008–09

£ billion	HM Treasury PBR forecast, November 2008	IFS Green Budget forecast, January 2009	Estimate, PBR, December 2009
Current receipts	545.5	538.9	532.4
Current expenditure[a]	586.7	586.7	582.5
Surplus on current budget	–41.2	–47.8	–50.1
Net investment	36.5	36.5	35.4
Total managed expenditure	623.2	623.2	617.9
Public sector net borrowing	77.6	84.3	85.5

a. In line with the National Accounts, depreciation has been included as current expenditure.
Notes: Figures for net investment and net borrowing in 2008–09 from PBR 2009 are shown net of the impact of various capital transactions between the nationalised banks and other parts of the public sector (which amounted to £9.9 billion in 2008–09). Furthermore, the figure for net borrowing excludes the income received by the public sector from private sector banks as a result of public sector interventions in the financial sector (amounting to £0.8 billion in 2008–09) – see table B18 of PBR 2009. These measures of public sector net investment (PSNI) and public sector net borrowing (PSNB) are shown here as they are the most comparable metrics to those forecast in PBR 2008 and the 2009 Green Budget.
Sources: Out-turn figures for 2008–09 from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm. Forecasts from HM Treasury, *Pre-Budget Report 2008*, November 2008, http://www.hm-treasury.gov.uk/prebud_pbr08_index.htm, and table 6.2 of R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget: January 2009*, IFS Commentary 107, http://www.ifs.org.uk/publications/4417.

For more details on the components of these forecasts and out-turns, see Appendix A.

Borrowing in 2009–10

Table 6.2 provides an overview of the December 2009 PBR and the February 2010 Green Budget baseline projections for receipts, spending and borrowing in the current financial year. The 2010 Green Budget baseline forecast for 2009–10 is that receipts will be £7.2 billion higher and current spending £3.2 billion lower than PBR 2009 expected. Therefore our baseline forecast is that the current budget deficit in 2009–10 will be £10.4 billion lower than forecast in the December 2009 PBR, i.e. that the current budget deficit will be £117.7 billion rather than the £128.1 billion forecast by the Treasury.

Table 6.2. Comparison of forecasts for government borrowing, 2009–10

£ billion	PBR, December 2009	Green Budget, February 2010	Differences
Current receipts	498.1	505.2	+7.2
Current expenditure[a]	626.2	623.0	–3.2
Surplus on current budget	–128.1	–117.7	+10.4
Net investment	49.5	49.5	0.0
Total managed expenditure	675.7	672.5	–3.2
Public sector net borrowing	177.6	167.2	–10.4

a. In line with the National Accounts, depreciation has been included as current expenditure.
Source: PBR forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm.

We assume the public sector net investment in 2009–10 is the same as forecast in the PBR. As a result, the smaller current budget deficit translates directly to a forecast for a lower level of headline borrowing: we forecast that public sector net borrowing in 2009–10 will be £167.2 billion, which is £10.4 billion below the £177.6 billion forecast in the PBR. Consequently, we expect net gilt issuance this year to be £10.4 billion lower than forecast by the Treasury in PBR 2009, at £214.7 billion rather than at £225.1 billion.[1]

Receipts and spending in 2009–10

Between the April 2009 Budget and the December 2009 PBR, the Treasury revised up its forecast for receipts in 2009–10 by £2.1 billion. The most significant changes were upwards revisions to receipts of value added tax (VAT) of £3.5 billion, stamp duties of £2.5 billion and a fall in forecast receipts of National Insurance contributions (NICs) of £2.9 billion. Total managed expenditure (TME) was revised upwards by £4.3 billion, within which there was a £5.7 billion upwards revision to public sector net investment. The latter was in large part brought about by £3.0 billion of grants from central government to public sector banks (which score as public sector spending under the Treasury's new measures of the fiscal aggregates 'excluding financial interventions', which treat the nationalised banks as if they were still in the private sector). With the forecast for spending increasing by more than the forecast for receipts, the forecast level of borrowing was also revised upwards. However, this revision, of just £2.2 billion from

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[1] Net gilt issuance is higher than public sector net borrowing for various reasons, including the impact of net lending to the private sector and the financing of the Asset Purchase Facility. The relationship between PSNB and gilt issuance is outlined in detail in tables B21 and B22 of the 2009 PBR. We assume here that a £10.4 billion increase in PSNB also leads to a £10.4 billion increase in gilt issuance.

Table 6.3. Comparison of Green Budget and HM Treasury forecasts for government borrowing, 2009–10 and 2010–11

£ billion	2009–10		2010–11	
	PBR Dec. 2009	*Green Budget Feb. 2010*	*PBR Dec. 2009*	*Green Budget Feb. 2010*
Income tax (net of tax credits)	134.2	137.5	138.2	143.4
National Insurance contributions (NICs)[a]	94.8	95.9	98.1	97.0
Value added tax (VAT)	67.2	70.0	74.2	81.6
Corporation tax (net of tax credits)	33.4	33.1	40.1	34.4
Petroleum revenue tax	1.2	1.2	1.6	1.6
Fuel duties	26.4	26.4	28.0	28.1
Capital gains tax	2.5	2.5	2.6	2.6
Inheritance tax	2.2	2.2	2.3	2.3
Stamp duties	7.4	7.4	9.3	10.1
Tobacco duties	8.8	8.8	8.9	8.9
Spirits duties	2.6	2.6	2.6	2.6
Wine duties	2.9	2.9	3.0	3.0
Beer and cider duties	3.5	3.5	3.5	3.5
Betting and gaming duties	1.4	1.4	1.4	1.4
Air passenger duty	1.9	1.9	2.3	2.3
Insurance premium tax	2.3	2.3	2.3	2.3
Landfill tax	0.9	0.9	1.2	1.2
Climate change levy	0.7	0.7	0.7	0.7
Aggregates levy	0.3	0.3	0.3	0.3
Customs duties and levies	2.6	2.6	2.5	2.5
Total HM Revenue and Customs	**397.0**	**404.1**	**423.1**	**429.8**
Vehicle excise duties	5.7	5.7	6.1	6.1
Business rates	23.7	23.7	24.6	24.6
Council tax[b]	24.8	24.8	25.8	25.8
Other taxes and royalties[c]	16.4	16.4	19.2	19.2
Net taxes and NI contributions[d]	**467.6**	**474.7**	**498.8**	**505.5**
Accruals adjustments on taxes	1.3	1.3	1.7	1.7
Less Own resources contribution to EU budget	−3.7	−3.7	−4.6	−4.6
Less PC corporation tax payments	−0.2	−0.2	−0.2	−0.2
Tax credits adjustment[e]	0.7	0.7	0.8	0.8
Interest and dividends	4.4	4.4	4.7	4.7
Other receipts[f]	28.1	28.1	29.2	29.2
Current receipts	**498.1**	**505.2**	**530.3**	**537.1**

a. 2009–10 includes revenues from the bank payroll tax.

b. PBR figures are based on stylised assumptions rather than government forecasts, as council tax increases are determined annually by local authorities, not by the government.

c. Includes VAT refunds and money paid into the National Lottery Distribution Fund.

d. Includes VAT and the traditional 'own resources' contributions to the EU budget.

e. Tax credits that are scored as negative tax in the calculation of 'net taxes and NI contributions' but expenditure in the National Accounts.

f. Includes gross operating surplus and rent; net of oil royalties and business rates payments by local authorities.

Sources: PBR forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm; this table is similar to table B10 on page 181. Authors' calculations.

£175.4 billion to £177.6 billion, would be considered very small in a normal economic environment, let alone in one as volatile as it is presently.

The 2010 Green Budget forecast for receipts in 2009–10 is £7.2 billion higher than the Treasury's 2009 PBR projection. Table 6.3 shows the forecast for receipts in 2009–10 (and also that for 2010–11) broken down into the constituent taxes. For most taxes, we expect revenues in 2009–10 to be in line with the Treasury's PBR forecast.

In 2009–10, there are three significant exceptions to this: income tax, VAT and NICs. In all of these cases, we forecast higher revenues than the 2009 PBR. (In the case of corporation tax, we forecast that receipts will be £0.3 billion lower than the PBR.)

The IFS Green Budget baseline forecast is that income tax revenues in 2009–10 will be £3.3 billion higher than the Treasury forecast. Our relative optimism is based on the fact that over the first nine months of this financial year, these receipts do not appear to have fallen quite as sharply as forecast by the PBR for the year as a whole (although it is difficult to get a complete picture as the monthly data include receipts of capital gains tax, which are, unsurprisingly, expected to fall very sharply). In our income tax forecast, we also make an allowance for the bank payroll tax depressing income tax receipts in the remaining months of the year. However, we still forecast that overall income tax receipts will be slightly higher than forecast in the PBR.

Considerable uncertainties regarding income tax receipts this year remain, much of which should be resolved when receipts in January are known. This is because January is the month in which PAYE income tax on financial sector bonuses is typically paid and also because the deadline for self-assessment income tax payments for 2008–09 was 31 January. The former is likely to boost receipts relative to January 2009 (notwithstanding the impact of the bank payroll tax mentioned above), as many financial sector firms have been more profitable in 2009 than they were in 2008 when the financial crisis struck. However, self-assessment income tax payments are likely to depress receipts due to the impact of the recession in 2008–09 compared with 2007–08. (Details of receipts in January are scheduled to be published by the ONS on 18 February 2010.)

The Treasury forecasts that VAT receipts will be £67.2 billion in 2009–10. A simple extrapolation of the trends over the first nine months of this financial year would suggest that these receipts are on course to be just £65.8 billion. However, this fails to take into account the 13-month cut in the main rate of VAT from 17½% to 15% that ran from 1 December 2008 to 31 December 2009. Not only will this have depressed receipts in the first nine months of 2009–10 but it will also have lowered the base level of receipts in the last four months of 2008–09. Taking these effects into account, we estimate that growth in underlying receipts over the year to date would put VAT receipts on course to come in at £70.8 billion in 2009–10. As both our forecasting model and the PBR forecast suggest lower receipts than this, we forecast that VAT receipts will come in at £70.0 billion. This is still £2.8 billion higher than forecast in the PBR.

The IFS Green Budget baseline forecast is that NICs receipts in 2009–10 will be £95.9 billion, which is £1.1 billion higher than the £94.8 billion forecast by the Treasury in the PBR. The PBR forecast implied that NICs receipts would fall over the last five months of 2009–10 relative to the same months in 2008–09. However, in the two months of data that have been published since the PBR (relating to November and December 2009), they have actually risen slightly. Taking this into account – and also adjusting NICs receipts over the remainder of this financial year upwards to account for receipts of the bank payroll tax – we forecast that NICs receipts will come in higher than the Treasury

has forecast. (The Treasury has chosen to include the revenues from the bank payroll tax in NICs receipts; note that the introduction of this tax has a direct positive impact on receipts and also, to the extent to which bank bonuses are reduced, an indirect negative impact on employer and employee NICs.)

As discussed above, we assume that public sector current spending in 2009–10 will be £3.2 billion below the Treasury's forecast from the December 2009 PBR. This is because, so far this financial year, current spending by central government has not grown as quickly as the PBR forecast for the year as a whole. Over the first nine months of this financial year, central government spending has been running 5.8% above the level seen in the same months last year, while the PBR forecast implies an increase over last year's level of 7.4% for the year as a whole.[2] Were central government current spending to continue to grow at the rate seen so far this year, it would come in £8.7 billion below the 2009 PBR forecast. Therefore, our forecast of a £3.2 billion shortfall does assume some pick-up in spending growth in the final three months of 2009–10. It is also the case that the November 2008 PBR forecast for current spending in 2008–09 (which in last year's Green Budget we assumed would be accurate despite the fact that spending growth over the year to date had been relatively low) turned out to be an overestimate (as shown in Table 6.1).

We assume that the Treasury's PBR forecast for public sector net investment of £49.5 billion is accurate. Therefore we forecast that TME will be £672.5 billion, which is £3.2 billion lower than the PBR forecast of £675.7 billion.

Borrowing in 2010–11

The 2010 IFS Green Budget forecast for 2010–11 is also for lower borrowing and a smaller current budget deficit than forecast in the December 2009 PBR. However, the difference between the forecasts is smaller than for 2009–10. We forecast that receipts will be £537.1 billion, which is £6.8 billion higher than the PBR forecast (slightly smaller than the £7.2 billion higher receipts forecast for 2009–10), as shown in Table 6.4.

On the spending side, we assume that the government keeps to its plans for spending on public services and, since our baseline scenario is that the economy evolves as the PBR predicts, we assume that the PBR forecasts for spending on social security benefits and tax credits prove accurate. Since we are forecasting a lower level of borrowing in 2009–

Table 6.4. Comparison of forecasts for government borrowing, 2010–11

£ billion	PBR, December 2009	Green Budget, February 2010	Differences
Current receipts	530.3	537.1	+6.8
Current expenditure[a]	667.2	666.7	–0.5
Surplus on current budget	–136.8	–129.6	+7.2
Net investment	39.5	39.5	0.0
Total managed expenditure	706.6	706.2	–0.5
Public sector net borrowing	176.3	169.1	–7.2

a. In line with the National Accounts, depreciation has been included as current expenditure.
Sources: As for Table 6.2.

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[2] For IFS analysis of the monthly ONS/HM Treasury press releases on the public finances, see http://www.ifs.org.uk/publications/browse?type=pf.

10, we take this into account when forecasting debt interest payments and thus current spending is forecast to be £0.5 billion lower than the December 2009 PBR forecast, reflecting lower spending on debt service. As with 2009–10, we assume that the Treasury's forecast for public sector net investment is accurate.

Taken together, this leads to the IFS Green Budget forecasts for the current budget deficit and public sector net borrowing being £7.2 billion smaller than forecast in the PBR.

Receipts and spending in 2010–11

The December 2009 PBR revised up current receipts in 2010–11 by £1.8 billion relative to the forecast made in the April 2009 Budget. The Treasury revised upwards its estimate of receipts from taxes on capital and corporate profits – stamp duties, capital gains tax, inheritance tax and corporation tax – and revised down its estimate of revenues from NICs and some other more minor revenue sources, such as interest and dividends.

On the spending side, there was also a relatively small upwards revision to current expenditure of £2.2 billion between the April 2009 Budget and the December 2009 PBR. Within this, there was a £1.1 billion increase in the departmental reserve, a £1.4 billion reduction in estimated social security spending and a £1.5 billion increase in estimated debt interest costs. The PBR also revised up planned net investment spending by £3.3 billion to £39.5 billion, from the £36.2 billion that had been forecast in the Budget.

Overall, the change to forecasts of receipts (up by £1.8 billion) and spending (up by £4.9 billion) led to the forecast for total borrowing being increased by £3.1 billion. Further details of the changing outlook for the public finances between the April 2009 Budget and the December 2009 PBR can be found in Chapter 2.

Relative to the Treasury's forecast from the 2009 PBR, the 2010 Green Budget forecast for 2010–11 is that receipts will be £6.8 billion higher and spending £0.5 billion lower. The latter difference entirely reflects the lower debt interest payments that will be required to service the smaller borrowing that we forecast will be necessary in 2009–10 (discussed above).

As shown in Table 6.3, the five biggest discrepancies between the January 2010 Green Budget forecast and the December 2009 PBR forecast for receipts in 2010–11 are (in diminishing order of magnitude) for receipts of VAT, corporation tax, income tax, NICs and stamp duties.

We forecast that VAT revenues will be £7.4 billion above the PBR forecast, which arises from our model suggesting much higher growth in these receipts between 2009–10 and 2010–11 than the Treasury predicts (in 2009–10, our forecast is just £2.8 billion higher than the Treasury's PBR forecast). The Treasury's forecast of growth in cash receipts of just £7.0 billion between 2009–10 and 2010–11 (from £67.2 billion to £74.2 billion) looks particularly pessimistic given that its own estimate is that the temporary VAT cut will have depressed revenues by £7.8 billion in 2009–10 while having no direct impact on receipts in 2010–11.[3]

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[3] Source: Table A2 of Budget 2009. Another factor influencing VAT receipts in 2009–10 and 2010–11 is the Fleming judicial ruling. In Budget 2009, the Treasury included an allowance for repayments of £2.7 billion in 2009–10 and £2.1 billion in 2010–11. (Figures are from HM Treasury, *Impact on VAT Receipts of Fleming Judicial Ruling*, Response to Freedom of Information request, 28 July 2009, http://www.hm-treasury.gov.uk/foi_fleming_ruling.htm.) While the 2009 PBR states (in paragraph B67 on page 183) that the offset for 2010–11 is now greater than in 2009–10, this seems unlikely to explain the low growth in VAT receipts forecast by the PBR.

Our forecast for corporation tax receipts (which, due to the timing of tax payments, are dependent on both lagged and contemporaneous corporate profits) is on the basis that, in our baseline forecast, nominal-terms corporate profits are assumed to fall by 7.4% in 2009–10 and to grow by just 1.8% in 2010–11 (in line with Barclays' 'optimistic' forecast). Since this growth rate is below that implied by the Treasury's forecast for growth in underlying corporation tax receipts, the 2010 Green Budget baseline forecast for corporation tax receipts in 2010–11 is £34.4 billion, £5.7 billion below the 2009 PBR forecast. Further detail on the outlook for corporation tax receipts under our forecasts and the Treasury's forecast is given in Figure 6.2 below and the accompanying discussion.

As real-terms incomes grow between 2009–10 and 2010–11, the gap between our forecast for income tax receipts and the Treasury's grows from £3.3 billion in 2009–10 to £5.2 billion in 2010–11.

Though we have forecasted the same level of stamp duty revenues in 2009–10 as the PBR, we are £0.8 billion more optimistic about stamp duty revenues in 2010–11. This is based on the Treasury's assumption that house prices grow by 5% and share prices grow in line with money GDP. We further assume that the volume of property transactions increases by 37.5% during 2010–11.[4]

In contrast, we forecast that receipts of NICs will be £1.1 billion lower than the PBR forecast for 2010–11, with this being despite the fact that we predict that these receipts will be £1.1 billion higher in 2009–10 than the PBR forecast. The relatively low growth in cash NICs receipts between 2009–10 and 2010–11 forecast by both ourselves and the Treasury in part reflects the negative impact of the removal of the temporary bank payroll tax.

6.3 Medium-term prospects

Over the medium term, we expect the near-term gap between the PBR 2009 forecast and our Green Budget baseline forecast to narrow slightly (Tables 6.5 and 6.6). The Green Budget forecasts the current budget deficit will be £7.2 billion – or 0.5% of national income – smaller than the PBR in 2010–11. This gap reduces in nominal terms to £6 billion – or 0.3% of national income – in 2014–15. These differences are likely to be small relative to the uncertainties around both forecasts, judging from both past forecasting performance and also the fact that the current outlook is more uncertain than usual.

The Fiscal Responsibility Bill, once legislated, will commit the government to reducing public sector net borrowing every year from 2009–10 to 2015–16, to borrow at most half the 2009–10 level in 2013–14 and to have debt peaking as a share of national income no later than 2015–16. The subsidiary Fiscal Responsibility Order 2010 sets a target of borrowing no more than 5.5% of national income for 2013–14. These are all projected to be met under the Green Budget baseline (as they are in the PBR) – this is despite the fact that our forecast for lower borrowing this year makes the target for halving the deficit by 2013–14 slightly more onerous: it requires borrowing to be at most 5.9% of national income in 2013–14 rather than 6.3% of national income under the PBR forecasts.

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[4] This is based on authors' calculations using HMRC data available at http://www.houseprices.uk.net.

Over the coming five years, we expect the current budget balance to improve from a deficit of 8.8% of national income in 2010–11 to a deficit of 2.9% by 2014–15. Of this 5.9% of national income forecast improvement (£83 billion in today's terms), 4.4% of national income (£62 billion) comes from a forecast fall in current spending and 1.5% of national income (£21 billion) from a forecast increase in the tax burden. Over the same period, the PBR has the same reduction in current spending, and a 0.2% of national income (£3 billion) larger forecast increase in the tax burden.

We assume that current spending grows – after economy-wide inflation – at the same rate after 2010–11 as assumed in PBR 2009 – however, as mentioned in Section 6.2, from a slightly lower baseline in 2010–11. As a result, current spending is very marginally (just £0.5 billion, and therefore nearly always lost in the rounding of Table 6.5) lower in every future year under our baseline scenario than under the PBR 2009 forecasts. For public sector net investment, we assume that spending is the same in each year going forwards as forecast in PBR 2009. These assumptions (as is also the case with the Treasury's own forecasts from PBR 2009) lead to spending falling as a share of national income between 2010–11 and 2014–15. As described in Chapter 8, given realistic assumptions about social security, debt interest and other 'annually managed expenditure', these plans would necessitate real cuts to public service spending departments, in particular those areas that the government did not pledge to 'protect' in PBR 2009. The same is true of our baseline forecast.

Table 6.5. Medium-term public finance forecasts under Pre-Budget Report 2009 assumptions – £ billion

£ billion	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Green Budget forecasts						
Current budget						
Current receipts	505.2	537.1	580	618	658	699
Current expenditure[a]	623.0	666.7	687	708	730	752
Surplus on current budget	**–117.7**	**–129.6**	**–107**	**–89**	**–71**	**–53**
Capital budget						
Net investment	49.5	39.5	29	26	22	23
Public sector net borrowing	**167.2**	**169.1**	**136**	**115**	**93**	**76**
HM Treasury forecasts						
Current budget						
Current receipts	498.1	530.3	576	617	656	694
Current expenditure[a]	626.2	667.2	687	708	730	753
Surplus on current budget	**–128.1**	**–136.8**	**–111**	**–91**	**–74**	**–59**
Capital budget						
Net investment	49.5	39.5	29	26	22	23
Public sector net borrowing	**177.6**	**176.3**	**140**	**117**	**96**	**82**
Difference in borrowing forecasts (GB–PBR)	–10.4	–7.2	–4	–2	–3	–6

a. In line with the National Accounts, depreciation has been included as current expenditure.
Sources: Authors' calculations. Treasury forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm; this table is similar to table B13 on page 189.

Table 6.6. Medium-term public finance forecasts under Pre-Budget Report 2009 assumptions – % of national income

% of national income	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Green Budget forecasts						
Current budget						
Current receipts	35.9	36.5	37.6	37.8	37.9	38.0
Current expenditure[a]	44.2	45.3	44.5	43.3	42.0	40.9
Surplus on current budget	**–8.4**	**–8.8**	**–6.9**	**–5.4**	**–4.1**	**–2.9**
Capital budget						
Net investment	3.5	2.7	1.9	1.6	1.3	1.2
Public sector net borrowing	**11.9**	**11.5**	**8.8**	**7.0**	**5.4**	**4.1**
Public sector net debt	**54.9**	**64.2**	**70.3**	**74.0**	**75.6**	**76.0**
HM Treasury forecasts						
Current budget						
Current receipts	35.3	36.0	37.3	37.7	37.8	37.7
Current expenditure[a]	44.4	45.3	44.5	43.3	42.1	40.9
Surplus on current budget	**–9.1**	**–9.3**	**–7.2**	**–5.6**	**–4.3**	**–3.2**
Capital budget						
Net investment	3.5	2.7	1.9	1.6	1.3	1.3
Public sector net borrowing	**12.6**	**12.0**	**9.1**	**7.1**	**5.5**	**4.4**
Public sector net debt	**55.6**	**65.4**	**71.7**	**75.4**	**77.1**	**77.7**
Difference in borrowing forecasts (GB–PBR)	–0.7	–0.5	–0.3	–0.1	–0.1	–0.3

a. In line with the National Accounts, depreciation has been included as current expenditure.
Sources: Authors' calculations. Treasury forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm; this table is similar to table B14 on page 189.

On the receipts side, the Green Budget forecast is for receipts to grow slightly less quickly over the medium-term than forecast in the December 2009 PBR, although – as Section 6.2 outlined – from a slightly higher base. Over the period from 2009–10 to 2014–15, we forecast that in nominal terms receipts will grow by 6.7% a year on average; in contrast, the PBR forecasts that they will grow by 6.9% a year on average. This compares with assumed average annual growth in nominal national income of 5.5% a year. The next subsection discusses the composition of receipts in more detail.

Taking together our forecasts for total spending and receipts, we forecast that borrowing will be slightly lower in 2009–10 and 2010–11 than PBR 2009 forecast, but then fall less quickly than the PBR forecasts suggest. By 2014–15, we forecast that borrowing will be 0.3% of national income (or £4 billion in today's terms) lower than the PBR 2009 forecast.

As a result of slightly lower borrowing over the medium term, our baseline forecast is that public sector net debt will increase slightly less quickly than PBR 2009 suggested, reaching (and peaking at) 76.0% of national income in 2014–15, compared with the PBR 2009 forecast of it reaching a peak of 77.7% in 2014–15.

Breakdown of medium-term revenue projections

Figure 6.1 shows the average annual nominal growth rate for each major component of tax revenues under the Green Budget projection over the period from 2009–10 to 2014–15. These are compared with the Treasury's December 2009 projections.

Overall, the Green Budget projection is for slightly lower growth in tax (and non-tax) revenues from a slightly higher base (as detailed in Table 6.3). In terms of the major taxes, between 2009–10 and 2014–15 the Green Budget forecasts weaker growth in income tax and – in particular – fuel duties and corporation tax, somewhat offset by stronger growth in VAT than the PBR 2009 forecast. (In terms of the other 'major taxes', our model also forecasts that revenues from NICs, council tax and business rates will grow slightly less quickly than projected by the PBR.)

With other taxes, there are more significant differences in the average annual growth in tax receipts between that implied by our model and that forecast by the PBR. In particular, our model predicts much lower growth in revenues from stamp duties and much higher growth in revenues from alcohol duties, tobacco duties and vehicle excise duties. But these taxes make up a relatively small part of revenues – each of them individually is forecast by the Treasury and ourselves to raise less than 4% of total revenues in 2014–15 – and therefore these differences in growth rates are relatively unimportant in explaining differences in projections for overall receipts.

Figure 6.1. PBR and IFS forecasts for revenue growth, 2009–10 to 2014–15
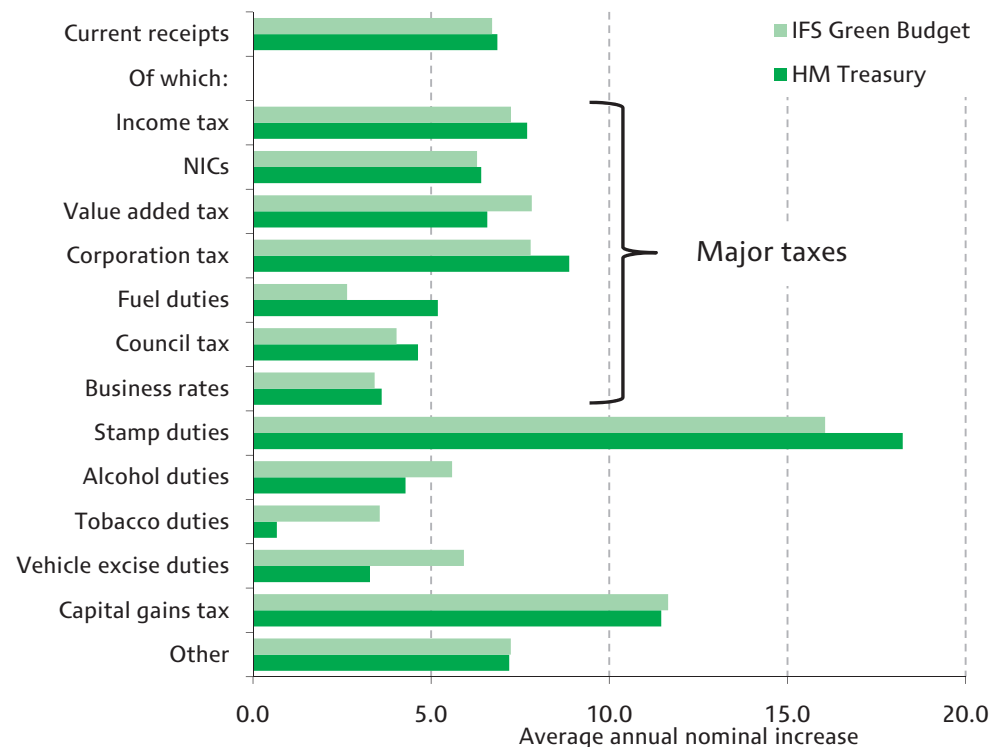
Notes: Income tax net of income tax credits; corporation tax net of company tax credits. Taxes ranked in descending order by amount that the December 2009 PBR forecasts they will raise in 2014–15, with all taxes that are forecast to raise less than capital gains tax (£4.3 billion in 2014–15) included in 'other'.
Sources: Authors' calculations. Treasury forecasts from HM Treasury, *2009 Pre-Budget Report: The Economy and Public Finances – Supplementary Material*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_chartstables.pdf.

Figure 6.2. Forecasts for corporation tax receipts under HM Treasury and Green Budget assumptions
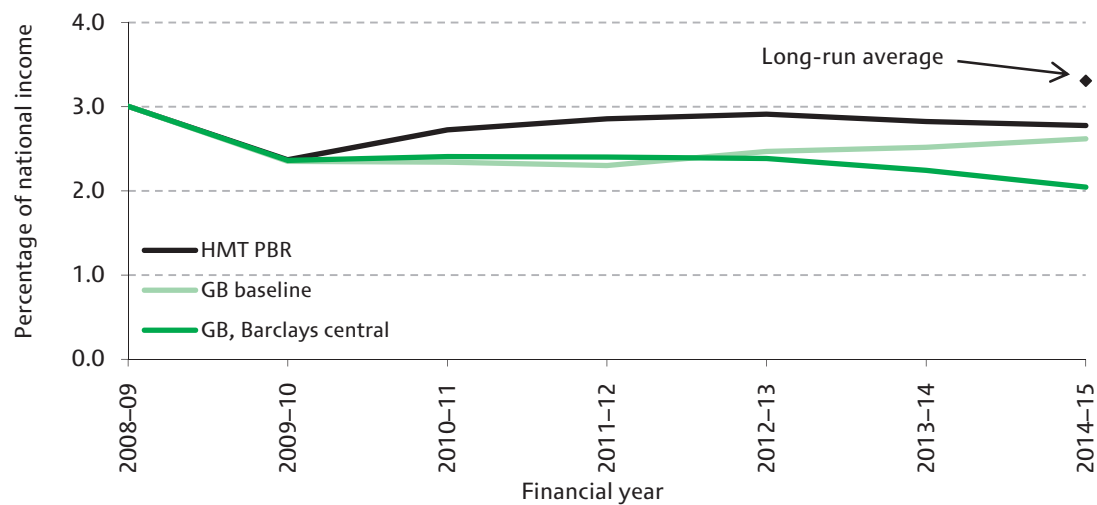
Notes: Corporation tax includes petroleum revenue tax. The Green Budget baseline forecast assumes that corporation tax receipts as a share of national income move back towards their long-run average level – equal to 3.3% of national income – and, if they continued on this path, would eventually reach this level by 2017–18. We have adjusted this average long-run level to include an assumption that the financial sector, which has traditionally paid relatively large amounts of corporation tax revenues compared with its share in national income, will decline by one-eighth as a share of total output. In addition, we have taken into account the decline in North Sea corporation tax revenues that is forecast in the PBR. The Barclays central scenario assumes that corporation tax revenues grow in line with corporate profitability, as forecast by Barclays.
Sources: Authors' calculations. Treasury forecasts from HM Treasury, *2009 Pre-Budget Report: The Economy and Public Finances – Supplementary Material*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_chartstables.pdf.

Figure 6.2 provides more detail on the differences in outlook for revenues from corporation tax over the medium term. The PBR forecasts that these receipts will fall from 3.0% of national income in 2008–09 to 2.4% of national income in 2009–10. After this, receipts are forecast to climb to 2.9% by 2011–12, before falling slightly to 2.8% of national income by 2014–15.

The IFS baseline forecast assumes instead that corporation tax revenues grow in line with Barclays' 'optimistic' forecast for corporate profits growth in 2010–11 and 2011–12, before moving back towards the long-run average level of corporate taxation as a share of national income, adjusted downward for the assumption that the financial sector (which, at least prior to the financial crisis, has tended to generate a relatively large share of revenues compared with its size[5]) will comprise a smaller share of national income going forwards. However, we assume that corporate taxation would still be somewhat below this long-term average in 2014–15, as under the PBR macroeconomic scenario the UK economy would still be operating below its productive potential at this point.

A more pessimistic view of the outlook for corporation tax receipts is shown by the Barclays central forecast (discussed in more detail in Section 6.4). This suggests that corporation tax revenues will remain at about 2.4% of national income until 2012–13, before falling as a share of national income as corporate profits growth fails to keep pace

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[5] Financial companies, excluding life assurance, paid 28% of mainstream corporation tax in 2007. Source: Table 11.2 of HMRC statistics, http://www.hmrc.gov.uk/stats/corporate_tax/menu.htm. Financial services were 7.6% of GDP in 2007. Source: ONS National Accounts Blue Book.

with growth in nominal national income. By the end of the medium-term forecast horizon, the forecast under the Barclays central scenario is for corporation tax receipts to be 0.7% of national income (or £10 billion in today's terms) lower than the PBR 2009 forecast.

Therefore a key risk to the PBR forecast for corporation tax revenues over the next two years is that they will not grow as quickly as the Treasury predicts, as is suggested by the IFS Green Budget baseline forecast. However, a further risk to the IFS Green Budget baseline forecast is that from 2012–13, revenues may not recover and that they may follow a similar path to that implied by the Barclays central forecast (which shows a similar trajectory for corporation tax receipts as a share of national income from 2011–12 to that implied by the PBR forecast).

Uncertainties around the baseline Green Budget forecast

Public finance forecasts are, by their nature, uncertain and it is important to acknowledge this uncertainty when presenting them, in particular when interpreting point estimates for future deficits and debt. The further ahead forecasts are made, the larger the degree of uncertainty. Figure 6.3 presents a probabilistic fan chart for the Green Budget forecast for the evolution of the current budget over the next four years, with the forecast for 2009–10 taken as given. The fan chart assumes that the current Green Budget forecasts are expected to be right on average and that they are as accurate as the Treasury's forecasts have been in the past, but ignoring the very large forecast errors that have arisen recently as a result of the financial crisis. If the Green Budget forecasts were less accurate than the Treasury's, the fan charts would be wider, while if they were more accurate then the fan charts would be narrower. In addition, if the current forecasting environment is more difficult than normal – which seems likely as we recover from a deep recession and a financial crisis – then the fan charts would also be wider.

The black line in Figure 6.3 shows the central Green Budget forecast – it is assumed that there is a 50% chance that the outcome will lie above this line and a 50% chance that it

Figure 6.3. Probabilities of current budget balance outcomes (Green Budget baseline)
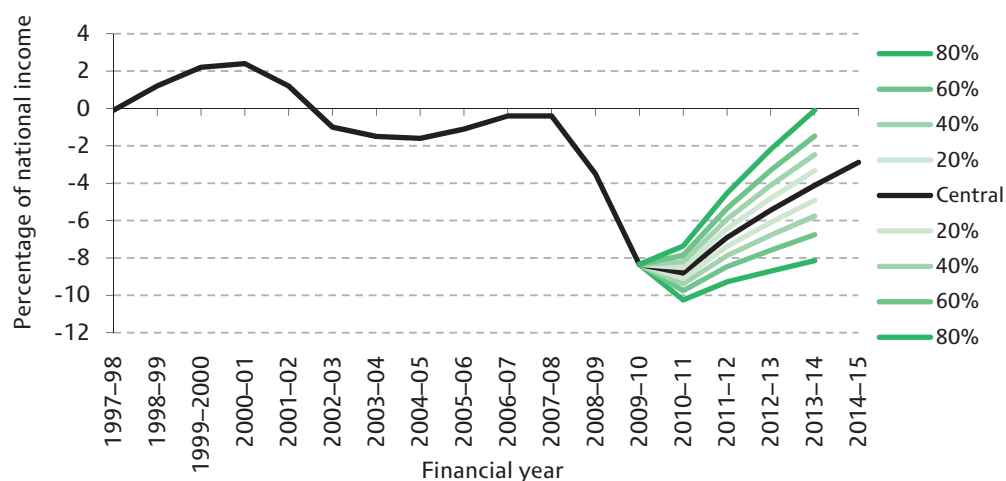
Notes: Central projections are taken from Table 6.6 and assume that the Green Budget projection for 2009–10 is correct. Methodology for computing fan charts taken from C. Emmerson, C. Frayne and S. Love, 'Updating the UK's Code for Fiscal Stability', IFS Working Paper W04/29, 2004, http://www.ifs.org.uk/publications.php?publication_id=3163.

will lie below, as the central forecasts are (by definition) assumed to be right on average. The darkest green lines on either side of the central forecast denote the range of outcomes within which there is a 20% probability that the outcomes will lie. As uncertainty increases with the time horizon, these lines fan out. To the extent that current economic circumstances make the outlook more uncertain than typical, the fans in this figure should be considered to be too narrow.

The central forecast for 2010–11 is for a current budget deficit of 8.8% of national income and Figure 6.3 indicates that there is a 20% probability that the actual outcome will be a deficit of between 8.5% and 9.1% of national income. In 2013–14, the central forecast is for a deficit of 4.1% of national income – but the greater uncertainties in forecasting four years in advance mean that we can only be 20% certain that the outcome will lie within the much larger range of –4.9% to –3.3% of national income.

The 40%, 60% and 80% lines bound the ranges within which there is a 40%, 60% or 80% probability that the outcome will eventually lie. Therefore, there is a 10% probability that the outcome will lie above the upper 80% line and a 10% probability that it will lie below the lower one. Under the Green Budget baseline forecast, there is an estimated 9% probability that, on unchanged policies, the current budget will be in surplus in 2013–14, but a 27% probability that it will be in deficit by more than 6% of national income.

A key conclusion of this analysis is that the difference between the central projections in the Green Budget and the PBR for budget balances and therefore for net debt is less significant than the uncertainty that lies around either, given past forecast performance.

6.4 Alternative macroeconomic assumptions

This section presents alternative forecasts under three different sets of macroeconomic assumptions from Barclays – a central scenario, an 'optimistic' scenario and a 'pessimistic' scenario.

Table 6.7 presents both the underlying economic growth and the assumed level of the economy relative to trend as well as public finance forecasts under the five sets of assumptions: the Treasury's PBR forecasts, the Green Budget baseline forecasts, the Green Budget forecasts under the Barclays central macro forecasts, the Green Budget forecasts under the Barclays 'optimistic' macro scenario, and the Green Budget forecasts under the Barclays 'pessimistic' macro scenario. More details on the three Barclays scenarios can be found in Chapter 4.

The Treasury forecasts that national income will shrink by 3½% in 2009–10. Positive growth returns in 2010–11, with growth forecast to be 2% in 2010–11 and then 3¼% in the following four years. Given the Treasury's estimate of the output gap, this path implies that the economy will not return to trend until well after the end of the forecast horizon in 2014–15.

The Green Budget baseline is largely based on the same underlying economic assumptions as the December 2009 PBR.

Under the first alternative Green Budget scenario (the Barclays central case), there is very slightly stronger real economic growth in 2009–10 and 2010–11. From 2011–12 onwards, the economy is forecast to grow less strongly, as it is estimated that the economy will already have returned to trend activity (and in fact would move slightly above trend in 2011–12).

Table 6.7. Public finance forecasts under various macroeconomic scenarios

	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Treasury Pre-Budget Report forecasts						
GDP growth (%)	–3½	2	3¼	3¼	3¼	3¼
Output gap (% of potential GDP)	–6.4	–5.3	–4.3	–3.4	–2.5	–1.6
Public finance forecasts (% of GDP)						
Current budget surplus	–9.1	–9.3	–7.2	–5.6	–4.3	–3.2
Cyclically adjusted current budget surplus	–5.5	–5.4	–3.9	–3	–2.3	–1.9
Net borrowing	12.6	12.0	9.1	7.1	5.5	4.4
Net debt	55.6	65.4	71.7	75.4	77.1	77.7
Green Budget baseline						
GDP growth (%)	–3½	2	3¼	3¼	3¼	3¼
Output gap (% of potential GDP)	–6.4	–5.3	–4.3	–3.4	–2.5	–1.6
Public finance forecasts (% of GDP)						
Current budget surplus	–8.4	–8.8	–6.9	–5.4	–4.1	–2.9
Cyclically adjusted current budget surplus	–4.8	–4.9	–3.7	–2.9	–2.2	–1.6
Net borrowing	11.9	11.5	8.8	7.0	5.4	4.1
Net debt	54.9	64.2	70.3	74.0	75.6	76.0
Barclays central case						
GDP growth (%)	–3¼	2¼	2¼	1¼	1½	1¾
Output gap (% of potential GDP)	–3.1	–1.0	0.2	0.0	0.0	0.0
Public finance forecasts (% of GDP)						
Current budget surplus	–8.2	–8.7	–7.5	–6.7	–5.9	–5.4
Cyclically adjusted current budget surplus	–6.6	–7.6	–7.4	–6.7	–5.9	–5.4
Net borrowing	11.7	11.3	9.4	8.3	7.2	6.7
Net debt	54.5	63.5	70.3	76.7	81.5	85.5
Barclays 'optimistic' case						
GDP growth (%)	–3¼	2¾	2¾	2¼	2¼	2¼
Output gap (% of potential GDP)	–3.4	–1.5	–0.2	0.0	0.1	0.1
Public finance forecasts (% of GDP)						
Current budget surplus	–8.2	–8.6	–7.0	–5.7	–4.5	–3.6
Cyclically adjusted current budget surplus	–6.5	–7.1	–6.6	–5.7	–4.6	–3.7
Net borrowing	11.7	11.2	8.9	7.3	5.8	4.9
Net debt	54.4	63.3	69.5	74.5	77.6	79.5
Barclays 'pessimistic' case						
GDP growth (%)	–3¼	1½	1½	1	1½	1¾
Output gap (% of potential GDP)	–2.8	–0.7	0.1	0.0	–0.1	0.0
Public finance forecasts (% of GDP)						
Current budget surplus	–8.2	–8.8	–8.0	–7.5	–7.0	–6.6
Cyclically adjusted current budget surplus	–6.8	–7.9	–7.9	–7.5	–6.9	–6.6
Net borrowing	11.7	11.5	9.9	9.1	8.2	7.8
Net debt	54.5	63.9	71.4	78.8	84.7	89.8

Sources: Authors' calculations; Barclays; Treasury forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm–treasury.gov.uk/prebud_pbr09_index.htm.

The second alternative Green Budget scenario (the Barclays 'optimistic' case) assumes that the economy shrinks by 3¼% in 2009–10 and then is able to grow by 2¾% before growth falls to 2¼% from 2012–13 onwards.

The final alternative Green Budget scenario (the Barclays 'pessimistic' case) assumes that the economy shrinks by 3¼% in 2009–10 and then grows by just 1½% in 2010–11 and 2011–12, with growth remaining below 2% thereafter.

The Green Budget public finance forecasts using the Barclays central scenario show a similar current budget deficit in 2009–10 to that under the Green Budget baseline scenario. However, because there is less estimated spare capacity in the Barclays central economic forecast than in the PBR 2009 economic forecast, this similar current budget deficit represents a greater cyclically-adjusted current budget deficit. From 2011–12 onwards, both the current budget and the cyclically-adjusted current budget remain further below the Green Budget baseline. Indeed, even once the economy is judged to be operating at its potential level, the current budget deficit is forecast to be 5.4% of national income in 2014–15, unless further policy measures were introduced.

Under the Barclays 'pessimistic' scenario, there is a larger current budget deficit from 2010–11 onwards than under the Barclays central scenario. By the end of the forecast period under this scenario, the current budget deficit is still running at 6.6% of national income, even though the economy is then judged to be operating at its potential level. Especially under this scenario, it is difficult to imagine there not being a policy response involving some combination of new tax-raising measures and deeper cuts to public spending being implemented before we get to the end of the current forecasting period.

Though somewhat more pleasing than the other Barclays scenarios, even their 'optimistic' scenario for the macroeconomy suggests a weaker outlook for the public finances than the PBR 2009 forecast or our baseline forecast. Though the Barclays 'optimistic' case sees the current budget balance reaching a similar level in 2014–15 to that forecast by the Treasury (3.6% of national income, compared to 3.2%), more of this deficit is thought to be structural under the Barclays 'optimistic' case. This is because,

Figure 6.4. Current budget balance forecasts
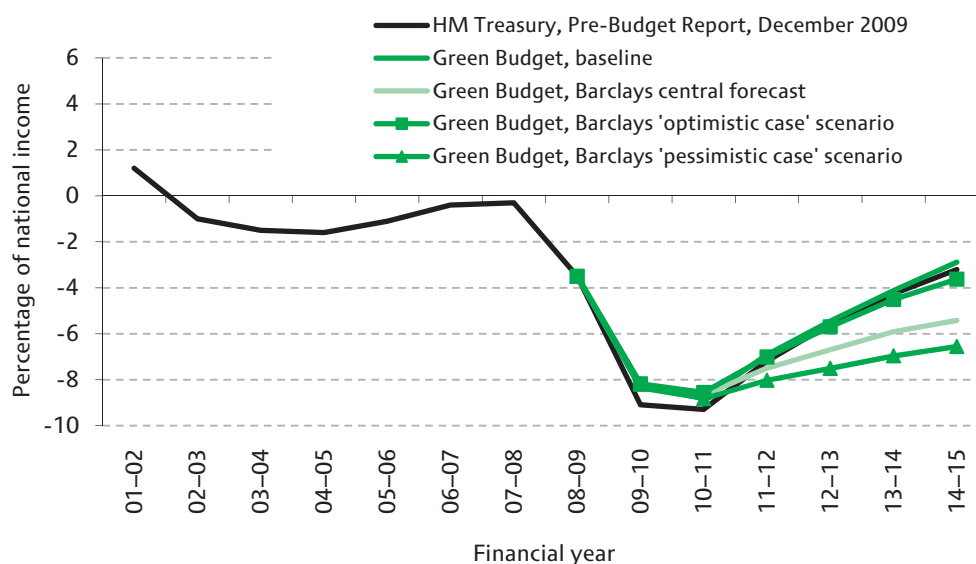
Sources: Authors' calculations; Barclays; Treasury forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm.

Figure 6.5. Public sector net debt forecasts
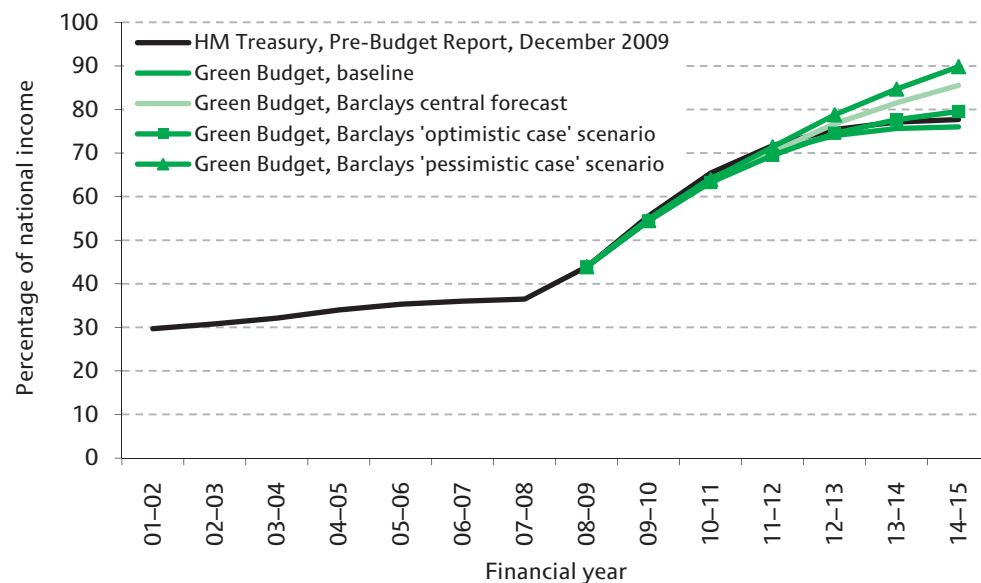
Sources: Authors' calculations; Barclays; Treasury forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm.

under this scenario, the economy would be operating closer to its productive potential at the end of the forecasting horizon than under the December 2009 PBR scenario. Looking at the cyclically-adjusted current budget shows that this will stand at 3.7% of national income in 2014–15 under the Barclays 'optimistic' case, compared with 1.9% under the Treasury's PBR forecast and 1.6% under the Green Budget baseline.

These forecasts for the current budget surplus are also compared in Figure 6.4.

Under the Barclays central scenario, net debt rises more quickly than under the Green Budget baseline scenario, reaching 85.5% of national income by 2014–15. Under the Barclays 'pessimistic' scenario, net debt is forecast to reach almost 90% of national income by 2014–15. Under either of these scenarios, the government would undoubtedly be forced to implement a combination of further tax increases and deeper spending cuts in order to stop investors fearing that debt is being allowed to develop along an explosive path. Under the Barclays 'optimistic' scenario, net debt is still forecast to be 3.5% of national income higher than under our baseline scenario by the end of the forecast horizon.

These forecasts are compared in Figure 6.5.

6.5 The Budget judgement

Introduction

Two key uncertainties dominate the policy judgements in this year's Budget (or Budgets): the scale of the fiscal tightening necessary to restore the public finances to a sustainable path, and the potential strength and resilience of the nascent economic recovery. The central challenge for fiscal policy this year is to set about repairing the public finances in a convincing and sustainable way, without putting the recovery at undue risk and potentially storing up even bigger fiscal problems for the future.

To that end, it would seem desirable to put in place a fiscal tightening somewhat more ambitious over the next Parliament than that set out in the December 2009 PBR – but one that does not involve significant additional net public spending cuts or tax increases in the coming year, 2010–11. The unwinding of the discretionary fiscal stimulus measures means that the current projected tightening is already front-loaded. To make it much more front-loaded would risk leaving an already very loose monetary policy bearing too much of the burden of supporting the recovery through its most vulnerable early phase. Given the distance that needs to be covered, repairing the public finances will be a marathon rather than a sprint, so it is more important to convince investors that you will last the course than it is to lead on the first bend.

The credibility of the Fiscal Consolidation Plan would be enhanced if official forecasts for the public finances were produced or overseen by a properly resourced independent body with access to the same information that Treasury forecasters currently enjoy (a detailed discussion of this issue can be found in Chapter 11). But, in any event, ministers should avoid returning to the 'conviction forecasting' that Gordon Brown engaged in as Chancellor prior to the financial crisis, and to which the inflexible targets in its Fiscal Responsibility Bill could well encourage a return. Credibility is best served not by insisting that the public finances will evolve as forecast (either by ministers or by an independent body), but by explaining how policy would respond in the highly likely event that things turn out differently. Specifically, the government should explain as clearly as it can how fiscal policy would respond: first, if the economic recovery were to turn out significantly stronger or weaker than expected; and second, if the scale of the necessary tightening were to look much larger or smaller than currently estimated.

What should we be aiming for?

The surges in public sector borrowing and indebtedness triggered by the financial crisis and the recession have forced the government to abandon the 'golden rule' (to borrow only to invest over the economic cycle) and the 'sustainable investment rule' (to keep debt below 40% of national income in every year) that underpinned its fiscal strategy from 1997. Our projections in Chapter 2 suggest that on existing policies, it would probably be more than 20 years before a future government would be in a position to re-adopt those rules, should it then wish to do so.

The new fiscal targets set out by the government under the Fiscal Responsibility Bill – and the alternative targets set out by the Conservatives – clearly do not reflect their view of the desirable steady state for the public finances. For example, neither sets out a long-term objective for the level of public sector net debt. Rather, they reflect a desire to reassure investors and voters that the public finances will be restored to a sustainable path as quickly as it is safe to do so, albeit a path to an as-yet undefined final destination within an as-yet undefined timescale.

The December 2009 PBR sets out an eight-year tightening that by 2017–18 would slightly more than eliminate the Treasury's current estimate of the additional structural budget deficit created by the crisis. It would be understandable if investors were sceptical of a promise to tighten policy over this timescale, as it would extend well beyond the next Parliament – hence the setting of targets for 2013–14 and 2015–16 in the Fiscal Responsibility Bill, and the Conservatives' decision to adopt targets for the end of the forecasting horizon. (The Conservatives have not specified the forecasting horizon they would use, but the current five-year horizon is the same length as a Parliament if the latter were to run to its maximum length.)

Given the uncertainty over the eventual tightening that will be necessary, and the difficulty of making convincing policy promises beyond the duration of a single Parliament, setting a goal for 2015–16 (as Labour has done, and the Conservatives appear to have done) looks sensible as it would reflect the outcome of policy measures implemented over the five fiscal years of a full Parliament running from 2010–11 to 2014–15. However, it also clearly makes sense to set out forecast projections to the point at which the government believes that the consolidation would be completed, and also the trajectory of public sector net debt on unchanged policies beyond this point. Were an independent forecasting body introduced, it could then, prior to an election in 2015, judge whether enough had been done in policy terms to have a reasonable expectation of meeting whichever goals had been set for the 2015–16 fiscal year.

The Fiscal Responsibility Bill, once legislated, will commit the government to reduce public sector net borrowing year-by-year until 2015–16 and to ensure it is reduced to no more than half the 2009–10 level by 2013–14; if the PBR forecast for this year is correct, this implies borrowing of no more than 6.3% of national income in 2013–14. The subsidiary Fiscal Responsibility Order 2010 sets a target of borrowing no more than 5.5% of national income for 2013–14, which is the Treasury's current central forecast for that year. (Placing this target in secondary legislation looks an odd thing to do, as it signals upfront that the government is less committed to this goal than to the less onerous one in the primary legislation.)

As we saw in Chapter 2, the current government's policy announcements in the 2008 PBR, the 2009 Budget and the 2009 PBR imply a significant fiscal tightening over the next few years relative to a world in which no announcements had been made since Budget 2008. In total, these policy announcements amount to a fiscal tightening of 4.1% of national income (an eventual £57 billion a year in today's terms) between 2010–11 and 2015–16. Adding in the unwinding of the fiscal stimulus package that has been in place in this financial year increases this to 5.7% of national income (an eventual £80 billion a year) between 2009–10 and 2015–16.

Turning to our baseline forecasts outlined in Section 6.3, Labour's goal of borrowing no more than 5.5% of national income in 2013–14 would in principle permit a very modest giveaway (i.e. a partial reversal of the planned tightening) of 0.1% of national income (£1 billion) by 2013–14 if the economy were to evolve as the PBR predicted and if the public finances were to respond to that outcome as we would expect. However, if the economy evolves as outlined in the three Barclays scenarios, which all assume lower real growth in national income from 2011–12 onwards than the PBR, then the government's planned real-terms growth in public spending will translate into a smaller fiscal tightening than the government is expecting. This, and lower fiscal drag on tax receipts, would lead to more fiscal tightening being required in order to reduce borrowing to 5.5% of national income in 2013–14. The government would need to announce an additional tightening of 0.2% of national income (£3 billion) if the economy were to evolve as in Barclays' 'optimistic' scenario, 1.6% of national income (£23 billion) under their central scenario and 2.7% of national income (£38 billion) under their 'pessimistic' scenario.

The Conservatives say that they want to balance the structural current budget (the difference between revenues and non-investment spending, adjusted for the temporary impact of the economy operating above or below its productive potential) at the end of the forecasting horizon. As we discuss in Chapter 2, if we were to assume that the Conservatives retain a five-year forecasting horizon and that the December 2009 PBR forecasts remain the best available, this implies the need to achieve an additional

tightening (on top of that already planned by the government) of 1.2% of national income (or £17 billion a year in 2009–10 terms) by 2015–16. Similarly, under our baseline forecast, we estimate that to achieve our interpretation of the Conservative target would require an additional tightening on top of that already planned by the government of 0.9% of national income (£13 billion) if the economy were to evolve as the PBR predicted, 3.0% of national income (£42 billion) under the Barclays 'optimistic' scenario, 4.7% of national income (£66 billion) under the Barclays central scenario and 5.9% of national income (£82 billion) under the Barclays 'pessimistic' scenario.[6]

These scenarios illustrate that there is considerable uncertainty regarding the tightening that would be necessary to achieve the different targets that the government and the Conservatives have set out. The difference between our forecast for the public finances and that of the Treasury for the same economic outlook is relatively modest. The key uncertainties appear to arise more from the considerable doubt that surrounds the likely evolution of the economy's productive potential and its actual growth rate. Predicting what policy settings would deliver the level of public sector net borrowing that the government wants to see in 2013–14 – or the balanced cyclically-adjusted current budget deficit that the Conservatives want to see in 2015–16 – is even harder now than it would normally be. It is not at all clear that either party could credibly promise to deliver its target, come what may, given the large uncertainties that lie around all fiscal forecasts in the current environment.

This suggests to us that it might be more credible and sensible to set out a challenging but achievable plan for fiscal tightening over the next five years and, at the same time, explain if and how that plan might need to change if the economy, the underlying health of the public finances or investor sentiment were to depart significantly from current expectations.

The Barclays scenarios suggest that the eventual tightening required to offset the fiscal impact of the financial crisis is more likely to be larger rather than smaller than the Treasury currently estimates. We also know that there will be upward pressure on large components of public spending over the next few decades as a result of demographic and other factors. And we know that investors and credit rating agencies are nervous about the pace of the current plans for tightening, against a backdrop in which the UK's public finances are deteriorating not just in absolute terms but also relative to almost all other industrial countries.

All these factors suggest that it would be wise to aim for a fiscal tightening somewhat more ambitious than that currently planned by the government, but not so large that it would be seen as politically unsustainable or would threaten economic recovery. Reasonable people could easily differ as to how big such an adjustment might be, but a sensible goal might be to aim for a total tightening eventually reaching around 5% of national income by 2015–16 (an eventual £70 billion a year in today's terms). The government should spell out as soon as it can how it intends to bring this tightening about. At a minimum, this might include setting out the contributions expected to be made by specific reforms (perhaps pre-announced) to taxes, tax credits and benefits (see Chapter 7) and how much it expects to make available to spend on public services in total (see Chapter 8).

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[6] All these scenarios assume that the current government plan is to implement a 0.7% of national income improvement in the structural current budget between 2014–15 and 2015–16, as outlined in chart 2.4 and paragraph 2.79 of the December 2009 PBR.

Tightening by 5% of national income over five years is more ambitious than the current plan to tighten by 4.1% over five years. It implies the need to find additional spending cuts or tax increases worth £13 billion in today's terms on top of the £57 billion that the PBR plans already require by 2015–16. This comes on top of the front-loaded tightening of 1.6% of national income (£23 billion) between 2009–10 and 2010–11 that is required to unwind the fiscal stimulus package. Indeed, we suggest that no significant additional tightening is implemented in 2010–11 on top of that already planned, in light of the likely fragility of the nascent recovery and the fact that monetary policy remains very loose.

A tightening of 5% of national income would be broadly in line with what we think would be necessary to achieve our interpretation of the Conservatives' target of balancing the structural current budget by the end of the forecasting horizon, as described in Section 2.4. If the Treasury is correct in its assessment of the deterioration in the structural budget balance arising from the crisis, then a tightening reaching 5% of national income over five years would mean that most of the work to reverse it would have been done within a Parliament – just 0.3% of national income (or £4 billion) of additional tightening would be required after 2015–16 to return the structural current budget to balance. If the economy were to evolve as outlined in the PBR, but the public finances were to evolve as we outline in our baseline forecast, then implementing the additional fiscal tightening that we suggest would generate a small structural current budget surplus (less than 0.1% of national income) in 2015–16.

However, as we mentioned above, if the economy evolves as outlined in the Barclays scenarios, the government's current plans for real-terms spending growth over the next four years will deliver less of a fiscal tightening than the Treasury expects and thus more work would be left to do, even if the government did implement the additional fiscal tightening we suggest (0.9% of national income) by 2015–16. Under the Barclays scenarios, the additional fiscal tightening required in a second Parliament would be an additional 2.0% of national income (£29 billion) under the 'optimistic' scenario, 3.7% of national income (£53 billion) under the central scenario and 4.9% of national income (£69 billion) under the 'pessimistic' scenario. If a future government became convinced that the necessary tightening was indeed much larger than the Treasury currently estimates, it is far from clear that concentrating the pain into a single Parliament would be politically feasible without the spur of severe market pressure such as that experienced in Ireland.

Due to their relatively pessimistic assessment of the long-term growth rate of productive potential in the UK, the Barclays scenarios also imply that once the consolidation has been completed, we would not be able to sustain as big a real increase in public spending each year thereafter as the Treasury thinks.

Other things being equal, if this or a future government adopted a more ambitious fiscal consolidation plan than that currently in place, monetary policy would likely be kept looser for longer. Given the gradual tightening in monetary policy expected over the next few years, an acceleration of the tightening of the sort suggested here would seem unlikely to place an undue additional burden on monetary policy in keeping inflation on course to hit the government's target.

To underpin the credibility of the tightening plan, the government should try to spell out as clearly as it can how things might have to change if the economic, fiscal or market environment were to depart significantly from current expectations:

- **The strength of the recovery.** The Governor of the Bank of England has sensibly argued that fiscal consolidation should be contingent on the state of the economy (and presumably on the room for manoeuvre that the Bank has to target inflation with monetary policy alone). One way to make this more concrete might be to say upfront that the government would only slow the consolidation plans (or implement offsetting temporary stimulus measures) if the Bank predicted in its *Inflation Report* that growth would slow to some particular sub-trend rate and/or if it felt that monetary policy alone could not be relied upon to restore inflation to target over an appropriate horizon without fiscal assistance. The government might feel able to accelerate the tightening if the economy performed more strongly than expected, although this is less likely to be necessary for the purposes of macroeconomic management as monetary policy is less constrained in how far it can tighten than in how far it can loosen.

- **The size of the necessary fiscal tightening.** As we illustrated in Chapter 2, we have already seen the Treasury's estimate of the deterioration in the structural budget deficit (and the tightening that would be necessary to reverse it) change significantly over its past three forecasts. This may very well happen again as we see how government borrowing evolves in practice, as asset markets move and as official forecasters refine their analysis of the path of productive potential. It would not be sensible to rewrite the fiscal consolidation plan every time this happens. But the government could state that it might have to make the plan more ambitious if the estimate of the structural deficit increased by more than a certain amount, or that it could make it less ambitious if the estimate shrank by more than a certain amount. Needless to say, investors and voters would be suspicious that a government might deliberately reduce its estimate of the structural deficit to pave the way for a looser policy. So this would only be plausible given independent production or scrutiny of fiscal forecasts.

- **Investor sentiment.** There is no robust analytical way of assessing the optimal pace of fiscal tightening in circumstances such as those currently confronting the UK. One important driver in practice will be investor sentiment and its consequences for the rate of interest at which the government can borrow. As Michael Dicks and Simon Hayes of Barclays discuss in Chapters 4 and 5, the UK government is currently able to borrow at historically low interest rates, but those rates are likely to rise – and disruptively and expensively so if investors do not believe that the government is sufficiently serious about repairing the public finances. Of course, we cannot be certain what pace of tightening would satisfy investors now, and what would satisfy them in the future. This would depend not just on how the UK's public finances evolve in absolute terms, but also on how they evolve relative to those of comparable debt-issuing countries. In practice, the government might have to intensify its consolidation efforts if borrowing rates rise significantly, as Ireland was forced to do. It should ensure that it is prepared to act quickly should such a scenario arise.

The composition of the tightening

In Green Budgets, we have traditionally avoided offering advice on the composition of any fiscal tightening or loosening that might be necessary or possible to achieve the fiscal goals of the government of the day. The choice between being a high-taxing and high-spending economy or a low-taxing and low-spending economy is at least as much a political or philosophical one as an economic one. Similarly, the form that a particular

fiscal loosening or tightening should take will depend on the government's distributional goals and wider objectives. We stick to that self-denying ordinance here, but simply make a few observations arising from our analysis:

- PBR 2009 set out a plan for a fiscal tightening to 2014–15 comprising two-thirds from cuts to spending (amounting to a reduction of 2.2% of national income, or £32 billion in today's terms) and one-third from increases in tax (amounting to 1.1% of national income, £16 billion). The PBR also stated that a further 0.7% of national income (£10 billion) tightening would be implemented between 2014–15 and 2015–16. The overall planned tightening between 2010–11 and 2015–16 amounts to 4.1% of national income (£57 billion); if it were all delivered on the basis of a 2:1 ratio of spending cuts to tax increases, then overall there would be a 2.7% of national income (£38 billion) cut to spending and a 1.3% (£19 billion) increase in tax.

  o Delivering, instead, a 5% of national income tightening by 2015–16, as we suggest, and retaining a 2:1 ratio of spending cuts to tax increases would require a further 0.3% of national income (£4 billion) to be raised by tax measures and 0.6% of national income (£9 billion) cuts to public spending. Doing two-thirds of the total tightening through spending cuts would return total spending to the level seen in 2004–05.

  o Alternatively, Budget 2009 set out a plan to 2013–14 comprising four-fifths cuts to spending and one-fifth increases in tax. Following this composition while delivering an overall tightening of 5% of national income by 2015–16 would allow a net tax cut of 0.3% of national income (£5 billion) relative to the PBR plans, but would necessitate a further 1.3% cut in spending as a share of national income (£18 billion). Doing four-fifths of the total tightening through spending cuts would return total spending to the level seen in 2003–04.

  o Aiming for the medium-term level of spending set out in Budget 2008 would require tax increases to account for over half of the total adjustment. In other words, this would require further tax rises of 1.4% of national income (£20 billion), combined with a 0.5% of national income (£7 billion) increase in spending relative to our PBR 2009 counterfactual.

- The sooner the government is able to make specific and concrete policy commitments to bring about the planned tightening, the more credible it will be. Given that it would be sensible, for reasons of macroeconomic management and political sustainability, to phase in the planned tightening over the course of the Parliament, this suggests that, where possible, concrete tax and spending measures or decisions should be pre-announced to take effect in future years. This will be easier in some cases than others and may affect what measures would be implemented and when.

- If the Conservatives are determined to implement an additional net tightening in 2010–11, then, given the limited amount of time they would have available, it would probably be more straightforward to do so in the form of tax increases or cuts in welfare spending than by cutting the budgets that public service providers will already be working to for that year. If they were to try to identify cuts in public services in a financial year that was already under way, the danger is that most sensible cuts would not be significant and most significant cuts would not be sensible. An incoming Conservative government would be well advised to invest its time and political capital in developing a sustainable plan for public services reform

over the 2010 Spending Review years than chasing symbolic savings that could be delivered in what would remain of 2010–11.

- A squeeze on the public sector pay bill is likely to be an important part of the fiscal tightening, whichever party wins office. Cutting the level of public sector pay relative to pay in the private sector is likely to be only a temporary source of savings, as history suggests that the public sector will eventually 'catch up' in order to maintain the quality of its workforce (see Chapter 9). Lasting savings are more likely to be delivered by cuts in the size of the public sector workforce, which would require either offsetting productivity improvements or a fall in the quality and/or quantity of public services delivered.

7. Options for fiscal tightening: tax increases and benefit cuts

Mike Brewer, James Browne, Andrew Leicester and Helen Miller (IFS)

Summary

- This chapter presents options, rather than advocating any of them. Which, if any, to pursue would depend on a government's distributional goals and wider priorities.

- From the big three taxes, 1% of national income (£15.4 billion in 2011–12 terms) could be raised by:
  – a 3 percentage point rise in the basic and higher rates of tax (to 23% and 43%);
  – a 3 percentage point rise in employee and self-employment National Insurance (NI) rates; or
  – a 3.5 percentage point rise in the standard rate of value added tax (VAT) (to 21%).

- These changes would weaken work incentives and hit the rich harder than the poor. The main differences are that the VAT rise would be less progressive than the others (as it would affect poor, non-income-tax-paying households) and that the retired and savers would not be affected by a rise in NI (which only taxes earnings).

- But significant amounts of revenue could also be raised from reforms that would simultaneously remove undesirable distortions in the tax system, such as:
  – charging the full rate of VAT on goods with a zero or reduced rate;
  – a comprehensive carbon tax;
  – increasing NI rates for the self-employed;
  – charging NI on employers' contributions to pension funds;
  – increasing the rate of small companies' corporation tax;
  – increasing the rate and cutting the allowance for capital gains tax.

- If cuts are desired in social security spending, then freezing the value of benefits and tax credits shares the pain over a large number of households. Freezing all benefits in April 2011 for one year would save £4.1 billion a year. A freeze over the next Parliament would save £24.6 billion a year by the fifth year (1.3% of national income in 2014–15), but would increase income inequality and measures of relative poverty.

- Removing benefits from better-off households would be less regressive, but would increase the scope of means-testing. Options include:
  – means-testing child benefit and the family element of the child tax credit (around £6.5 billion);
  – scrapping winter fuel payments and free TV licences and compensating pensioners on the pension credit (£1.4 billion);
  – abolishing carer's allowance (£0.5 billion);
  – time-limiting contributory incapacity benefit (IB) and employment and support allowance (ESA) (up to £2 billion).

- Fewer families could be means-tested by means-testing more aggressively, reversing the direction of reforms since 1999. This could cut £2 billion a year from benefits and tax credits for working-age households, and a similar amount from households with adults aged 60 or over. The impact on incentives would be mixed, but the losers will overwhelmingly be in the poorest half of the income distribution.

7.1 Introduction

The Treasury's plans imply that total public spending is to be broadly flat over the four years from 2011–12 to 2014–15 (inclusive) after economy-wide inflation. As set out in Chapter 8, debt interest spending will rise sharply and, under current policies, spending on social security would also increase, so the total plan for total spending implies deep cuts to spending on public services. If the government – or its successor – wished to keep to the total spending plans, while limiting the detrimental impact on public services, then it might look to implement reforms that would cut spending on social security benefits and tax credits.

> ## Box 7.1. Estimating the effect on government revenues of changes to taxes, social security benefits and tax credits
>
> This chapter mainly uses two methods for estimating the revenue raised by increasing taxes and the savings from cutting social security benefits and tax credits.
>
> Some estimates are based on government publications. For example, the Treasury publishes a document entitled *Tax Ready Reckoner and Structural Reliefs* (henceforth, 'the Ready Reckoner') alongside the Pre-Budget Report.[a] This provides estimates of the revenue raised by some of the tax rises we consider. In some cases, however, the Ready Reckoner ignores the possibility that behaviour may change in response to policy reforms. Any such behavioural response would tend to reduce the total amount of revenue raised from tax increases, and so in some cases we make our own estimate of the amount of revenue that would be raised given alternative assumptions about the level of behavioural response. Note that the Ready Reckoner only considers the direct impact of a tax change on the tax base on which the measure is being applied, or closely related bases. For example, this means that estimates of revenue raised by increases in income tax allow the behavioural response to the tax change to reduce the amount of taxable income, and the amount of National Insurance contributions paid, but not the total level of expenditure and indirect tax revenues. Additionally, estimates of the money saved by freezing the cash value of benefits (for example) are based in part upon an estimate of spending on benefits and tax credits in 2011–12; this is detailed in footnote 78.
>
> Other estimates are based on IFS's tax and benefit microsimulation model, TAXBEN, which calculates personal tax revenues and benefit and tax credit spending for 2011–12, and under various hypothetical reform systems. However, it is well known that such models can underestimate tax revenues, perhaps because incomes and expenditures are under-recorded in the underlying data. Similarly, they underestimate spending on some benefits (and therefore the savings from cutting them), perhaps because there are too few low-income households in the underlying data. On the other hand, they can also overestimate spending on other benefits if no adjustment is made for incomplete take-up of benefits or tax credits. The model's estimates do not account for behavioural responses. These might increase the revenue raised if, for example, more people choose to work in response to cuts in out-of-work benefits, and they might reduce it if, for example, people choose to work less in response to higher benefit withdrawal rates.
>
> When costing options, we assume that measures would be implemented in 2011–12, although this may be unrealistic for some of the more substantial changes (such as a carbon tax). In practice, the structural budget deficit need not be closed immediately, and it is likely that any large revenue-raising package will be spread across a number of taxes, as it was in the Conservative Budgets of 1993.
>
> a. The latest version is at http://www.hm-treasury.gov.uk/d/pbr09_taxreadyreckoner.pdf.

This chapter first considers options for raising tax revenues (Section 7.2) and then options for cutting spending on social security and tax credits (Section 7.3). We are presenting options rather than necessarily advocating any of them. In deciding which to include, we have tried to discuss those that have been proposed in policy debate, or that reverse changes made by the current government, or that seem (to the authors) to be obvious measures that ought to be considered. We have also tried to cover most of the main taxes, and most of the main benefits and tax credits, and have tended not to include measures that raise or save only small amounts. But we acknowledge that there is a degree of arbitrariness as to which reforms have been included and which excluded.

Box 7.1 contains some general background on how the costings have been made.

7.2 Options for increasing tax revenue

This section examines ways in which the government could increase tax revenue. For illustrative purposes, we assume that the next government would seek to raise around 1% of national income. Some of the options have previously been discussed in submissions to the Mirrlees Review (see Box 7.2). The section examines the following:

- changes to income tax rates and thresholds (some of which are linked to National Insurance (NI) thresholds);

- changes to the rates, thresholds and base of NI;

- changes to the rates and base of value added tax (VAT);

- changes to the taxation of pension income, contributions to pensions and pensioners;

- changes to the rates of corporation tax;

- environmental tax changes;

- taxation of wealth, including housing, inheritance tax and capital gains tax.

By way of background, Figure 7.1 shows how much revenue the government expects each existing tax to raise in 2010–11. The three largest taxes in terms of revenue raised are income tax, NI and VAT, which together provide three-fifths of all government revenues. Therefore, if the government is looking to raise substantial amounts of revenue, a natural starting point is to examine increasing these taxes.

> ### Box 7.2. The Mirrlees Review
>
> Chaired by Nobel Laureate Sir James Mirrlees, the Mirrlees Review has brought together researchers at IFS with a high-profile group of international experts to identify the characteristics of a good tax system for a developed open economy in the 21st century. It will assess how close the current UK tax system is to these ideals, and suggest reforms to move it in that direction, in a report due to be published later in 2010. In contrast, this chapter merely examines ways in which the existing tax system can be made to increase total government revenues. However, some of the reforms we consider would be desirable in themselves, even if the government did not need to raise extra revenue.

Figure 7.1. Sources of government revenue, 2010–11 projection
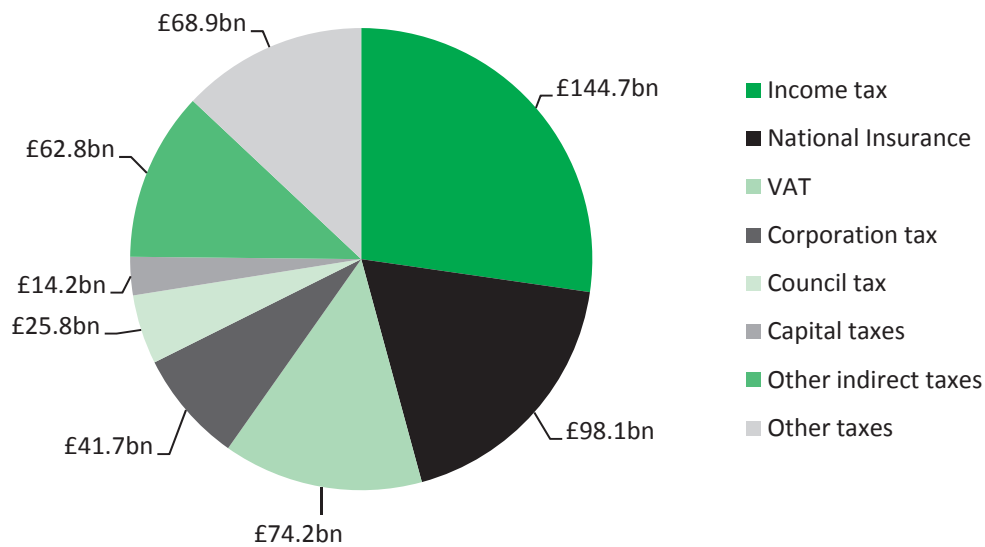
Source: Table B10 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

Income tax

Income tax is the largest tax in terms of the revenue raised for the government. In the December 2009 Pre-Budget Report (PBR), the Treasury forecast that it would raise £144.7 billion in 2010–11.[1] In this subsection, we discuss two substantial revenue-raising measures, and a number of smaller reforms. The large reforms are:

- increasing the 20% basic rate and/or 40% higher rate;

- cutting tax thresholds.

The smaller reforms are:

- abolishing the 10p tax rate on savings income (and replacing it with a 20p rate);

- removing additional tax allowances for pensioners (we look at this later, under the heading 'Taxation of pensions, contributions to pensions and pensioners').

We do not consider increasing the 50p 'additional' tax rate, which will apply above £150,000 from April 2010, as previous research has shown that, at best, very little additional revenue could be expected to be raised from doing so.[2]

Increasing income tax rates

If the government wished to increase tax revenues by 1% of national income, an obvious way would be to increase the basic rate of income tax. The Ready Reckoner estimates that raising the basic rate of income tax by 1 penny in the pound in April 2010 would raise

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[1] Source: Table B10 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

[2] See M. Brewer and J. Browne, 'Can more revenue be raised by increasing income tax rates for the very rich?', Briefing Note 84, Institute for Fiscal Studies, London 2009, http://www.ifs.org.uk/bns/bn84.pdf.

£4.05 billion in a full year, or just over 0.25% of national income.[3] Therefore, increasing the rate from 20p to 24p (a level last seen in 1996–97) would raise slightly more than 1% of national income.

Alternatively, slightly less than 1% of national income could be raised by increasing both the basic and higher rates of income tax by 3 pence in the pound.[4] Note that the Ready Reckoner's estimate for the revenue raised from increasing the higher income tax rate does not allow for any behavioural response, despite the fact that this group of taxpayers is likely to have a larger response than taxpayers on average. Assuming a relatively low level of behavioural response (a taxable income elasticity of 0.2[5]) for higher-rate taxpayers whose income is below £150,000, we estimate that raising the higher income tax rate to 43% would raise £2.3 billion in a full year (around 0.15% of national income), less than the £2.85 billion (around 0.18% of national income) the Ready Reckoner suggests.[6]

If the government did not want anyone with an income less than the higher-rate threshold (£43,875 in 2010–11) to be affected at all, it could instead increase the current 40p rate of income tax to match the 50p rate it intends to apply above £150,000. Again assuming a relatively low level of behavioural response (a taxable income elasticity of 0.2) for higher-rate taxpayers whose income is below £150,000, a 50% higher rate of income tax would raise around £7.4 billion (around 0.5% of national income), considerably less than the £9.5 billion (around 0.6% of national income) the Ready Reckoner suggests this would raise under the assumption of no behavioural response.[7] In these circumstances, the phase-out of the personal allowance from £100,000 (which would create a 75% marginal income tax rate for a small group of high-income individuals) would be even less desirable than it already is, and therefore should be abolished at the same time, reducing the amount of revenue raised to around £5.8 billion. This is around 0.4% of national income.

Figure 7.2 shows the distributional impact of these three measures.

Increasing the basic rate of income tax to 24% would be a fairly progressive tax rise, since higher income decile groups tend to lose proportionately more, but the richest tenth of the population would not lose as big a proportion of their income as those whose incomes are not quite as high. This is because all higher-rate taxpayers would lose the same cash amount (£1,496 per year if introduced in 2010–11) irrespective of how high their income is above the higher-rate threshold. Increasing the higher rate of income tax as well is therefore more progressive, as those with incomes above the higher-rate threshold also

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[3] This incorporates behavioural response, but any behavioural response is likely to be small – the behaviour of individuals paying the basic rate tends to be fairly insensitive to changes in their marginal tax rate and they may even choose to work more in response to recoup the lost income (economists call this an income effect).

[4] The Ready Reckoner estimates that increasing the higher rate of income tax would raise £950 million in a full year, but this assumes no behavioural response.

[5] The taxable income elasticity is a summary parameter which tells us how much taxable income falls when the effective marginal tax rate rises. A taxable income elasticity of 0.2 means that if the net-of-tax rate (one minus the tax rate) falls by 1%, taxable income falls by 0.2%. For example, if the net-of-tax rate was initially 50% and fell by 1% of its original value to 49.5% (i.e. the effective marginal tax rate increased from 50% to 50.5%), taxable income would fall by 0.2% among those affected. This is a considerably lower level of behavioural response than the taxable income elasticity of 0.35 used by the Treasury when calculating the revenue effects of the new 50% income tax rate that will apply above £150,000.

[6] Source: Authors' calculations using the 2006 Survey of Personal Incomes. The Survey of Personal Incomes is Crown Copyright material and has been used with the permission of the Controller of HMSO and the Queen's Printer for Scotland.

[7] Source: See footnote 6.

Figure 7.2. Distributional impact of increases in income tax rates
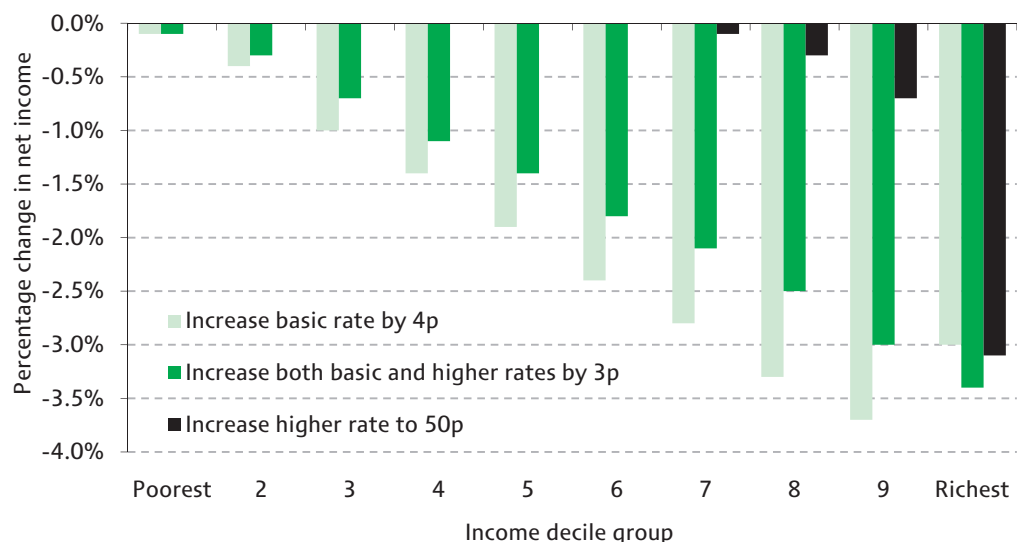
Notes: Income decile groups are derived by dividing all families into 10 equal-sized groups according to disposable income adjusted for family size using the McClements equivalence scale. Decile group 1 contains the poorest tenth of the population, decile group 2 the second poorest, and so on up to decile group 10, which contains the richest tenth.
Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on the 2006–07 Family Resources Survey.

lose more in cash terms the higher their income is above £43,875. Increasing solely the higher rate of income tax affects only the richest four-tenths of families, and the vast majority of the revenue raised is from the top decile of the income distribution.

Cutting income tax and National Insurance thresholds

The government has already announced that the basic-rate limit in income tax (the amount of income above the personal allowance that is taxed at the basic rate) will be frozen in nominal terms in 2011–12 and the higher-rate threshold (the point at which the 40% rate starts to be paid) will be frozen in nominal terms in 2012–13.[8] The announcements in the December 2009 PBR will also create the undesirable situation where the thresholds for paying income tax, employee NI and employer NI are close to each other, but all different, as shown in Table 7.1.

Table 7.1. Income tax and National Insurance thresholds, 2011–12

Threshold for paying	Annual amount
Income tax	£6,545
Employee National Insurance contributions	£7,124
Employer National Insurance contributions	£5,876

Note: Assumes 3% RPI inflation in September 2010 in accordance with economic assumptions made in PBR 2009, no further changes to pre-announced policy.

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[8] See table B4 of PBR 2009 and table B5 of PBR 2008. Note that since the higher-rate threshold is the sum of the income tax personal allowance and the basic-rate limit, to freeze the higher-rate threshold in nominal terms while increasing the personal allowance in line with inflation will require a nominal cut in the basic-rate limit in 2012–13. The default is for these thresholds to increase in line with the retail price index (RPI).

To correct this anomaly and raise revenue, the government could lower the income tax and employee NI thresholds to the level of the lower employer NI threshold.[9] Using TAXBEN, we estimate that this would raise £6.8 billion a year, or around 0.4% of national income. To raise a total of 1% of national income (although not until 2015–16), the government would then need to freeze all three thresholds at this level until 2015–16. We estimate that this would raise almost exactly 1% of national income by 2015–16, around the same as a 4p increase in the basic rate or a 3p increase in both basic and higher rates. However, the distributional effects of these policies are slightly different, as shown in Figure 7.3.

Figure 7.3. Distributional impact of increases in income tax rates and of cut in tax and NI thresholds
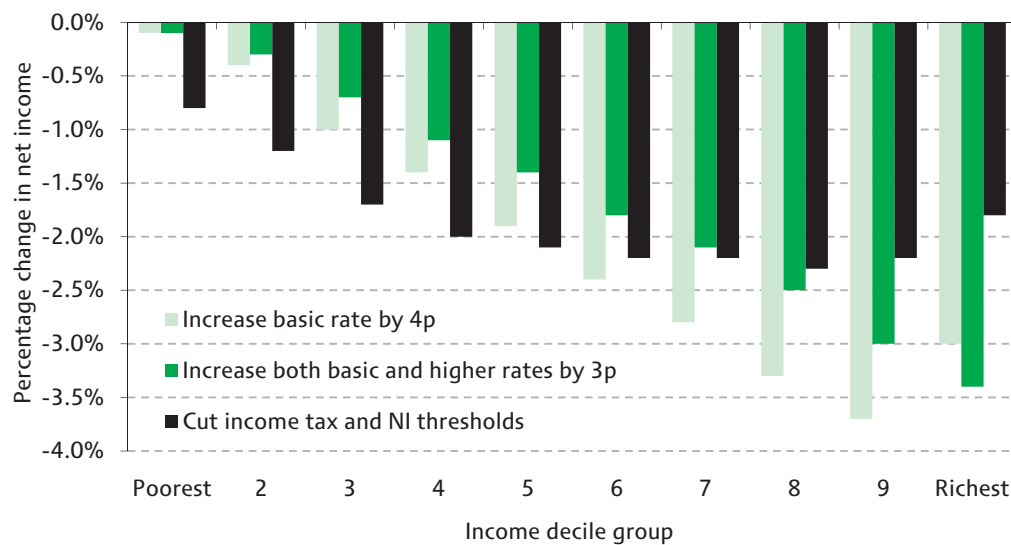
Notes: As for Figure 7.2.
Source: As for Figure 7.2.

It is clear that cutting tax thresholds is a less progressive tax increase than increasing income tax rates. This is because all basic-rate income taxpayers lose out by the same cash amount from a reduction in the income tax personal allowance, and all higher-rate taxpayers lose out by twice this amount (the personal allowance is worth twice as much to higher-rate taxpayers because their marginal income tax rate is 40% rather than 20%). Those with incomes greater than £112,870 would not lose out at all, however, as their personal allowance is, from April 2010 onwards, to be reduced to zero at this point. Similarly, all those with incomes above the higher-rate threshold lose out by the same cash amount from a reduction in the higher-rate threshold. Reducing the personal allowance would slightly weaken the incentive to work at all, particularly for low earners, and increasing the basic and higher rates would weaken the incentive for basic- and higher-rate taxpayers to increase their incomes, as well as slightly weakening the incentive to work at all.

If the government did not wish to reduce the personal allowance by so much, an alternative would be to increase it by 1.5 percentage points less than inflation in April 2011 to make up for the fact that the income tax threshold was not reduced in nominal

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[9] In the case of the employee NI threshold, this would in practice mean not going ahead with the increases announced in the PBRs of 2008 and 2009.

terms after inflation was –1.5% in September 2009. (The September RPI inflation figure is used to increase tax thresholds for the following April.) Using TAXBEN, this would raise around £0.6 billion a year. If, in addition to this, the government reversed the £600 increase in the personal allowance announced in May 2008, it could raise £4.5 billion in a full year, around 0.3% of national income. This would realign the income tax personal allowance with the employer NI threshold, but leave the employee NI threshold higher.

Restricting the personal allowance to the basic rate

From 2010–11, the government has announced that the personal allowance will be phased out from those with incomes greater than £100,000. This will create a small band of income in which the marginal income tax rate will be 60%. A way of raising more money by withdrawing the personal allowance from those lower down the income distribution would be to restrict the personal allowance to the basic rate. This policy would essentially involve lowering the point at which the 40p rate starts to be payable from £43,875 to £37,400 (the basic-rate limit in 2010–11). TAXBEN estimates that this would raise £4.1 billion in 2011–12, or approximately 0.25% of national income.

This policy is frequently advocated on the basis that it is 'unfair' that the personal allowance is worth twice as much to higher-rate taxpayers as to basic-rate taxpayers because their marginal income tax rate is double that of basic-rate taxpayers.[10] However, this argument is an artefact of the way the tax system is formally described – the point at which the 40p rate starts to be paid (the higher-rate threshold) is formally equal to the personal allowance plus the basic-rate limit. Therefore, a £1 increase in the personal allowance reduces income tax by 40p for a higher-rate taxpayer but only 20p for a basic-rate taxpayer. But this need not be the case – both would only benefit by 20p if the basic-rate limit were reduced by the £1 at the same time, leaving the effective threshold at which the 40p rate becomes payable unchanged. As McCrae (1997) argues,[11] the tax system would be much more understandable if the higher-rate threshold itself were specified as a parameter of the tax system, and it would remove this argument in favour of restricting the personal allowance to the 20p basic rate. Furthermore, he argues that describing a policy as restricting an allowance to a particular rate is itself unhelpful and likely to lead to confusion among those with a limited understanding of the tax system. The reform would create a short band of income (between £37,400 and £43,875) where the combined income tax and employee NI rate was 52% and make all those with income between £43,875 and £100,000 worse off by £1,295 each year.

Abolishing the 10p starting rate for savings income

Budget 2007 (in)famously abolished the 10p starting rate for non-savings income. This was a welcome simplification of the income tax system, but the 10p rate remains in place for savings income that falls into the first £2,440 of taxable income, and this is an undesirable complication to the structure of income tax (though see Box 7.3).[12] The Ready Reckoner estimates that increasing this rate to 20% would raise £0.1 billion in 2011–12, although the amount raised would increase if interest rates rose from their

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[10] See, for example, T. Horton and J. Gregory, *The Solidarity Society*, Fabian Society, London, 2009.

[11] J. McCrae, 'Simplifying the formal structure of UK income tax', *Fiscal Studies*, 1997, 18, 319–334.

[12] When calculating which tax band income sources fall into, dividend income is considered to be the top tranche of income, followed by savings income, followed by other income. This means that, in practice, very few people are affected by the 10p rate for savings income – TAXBEN estimates that fewer than 400,000 people could benefit from this rate in 2011–12. Even then, since it is necessary to claim back the excess tax that has been deducted at the 20% rate, even fewer take advantage of it.

Box 7.3. Should savings income be taxed differently?

Although the 10p rate on savings income seems an unwelcome complication of the income tax system, most economists think that the net rate of tax on the normal rate of return to saving should be zero (that is to say, one should not have to pay any more tax if one chooses to spend one's income in the future rather than now).[a] However, currently, income tax is levied on income from savings, dividends and rental income, which violates this principle. While matters have improved over the last 25 years with the introduction of PEPs, TESSAs, ISAs and personal pensions and the removal of MIRAS and life assurance premium relief, this is still a matter of concern.[b] However, since reforms to correct this problem would by themselves cost money, we do not consider them here, but this issue should be borne in mind when considering increasing the amount raised from income tax, as doing so would exacerbate the problem. The Mirrlees Review of the tax system, due to be published later this year, will discuss this issue in more detail and suggest solutions. In January 2009, the Conservative Party proposed not taxing savings income for all basic-rate taxpayers (but not those paying income tax at the higher rate), at an estimated cost of £2.6 billion per year, but has not committed to introducing this change if it formed the next government.[c]

a. This was one of the main conclusions of the Meade Review in 1978: Institute for Fiscal Studies, *The Structure and Reform of Direct Taxation*, George Allen and Unwin, London, 1978, http://www.ifs.org.uk/docs/meade.pdf. However, Meade proposed that more assets should be given the tax treatment currently given to pensions (i.e. where contributions and returns were exempt but withdrawals taxed), rather than ISA-style treatment (i.e. where saving is made out of taxed income, but the interest earned and withdrawals are not taxed).
b. Effective tax rates on different forms of investment are presented in M. Wakefield, *How Much Do We Tax the Return to Saving?*, Briefing Note 82, Institute for Fiscal Studies, London, 2009, http://www.ifs.org.uk/bns/bn82.pdf.
c. Source: Conservative Party press release, 5 January 2009, http://www.conservatives.com/News/News_stories/2009/01/Britains_economic_future.aspx.

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current historic lows. The Ready Reckoner published at the time of the 2008 PBR estimated that this measure would raise £0.2 billion in a full year.

National Insurance

Politicians have been much more willing to contemplate rises in NI rates than income tax rates over the last two decades, despite the similarity of the two taxes. Since National Insurance contributions (NICs) are only levied on earned income, it has the advantage that it does not impose a positive net rate of tax on interest from savings. However, the tax base for NI is arguably too narrow (and we suggest ways to expand it below). More generally, though, there is little economic rationale for the existence of NI as a separate tax: merging it with income tax would solve many of these problems, although there are various administrative and transition issues and policy decisions that would need to be tackled first.[13] Here, we confine ourselves to considering how revenue could be raised by increasing NI rates, and by extending NICs to cover other forms of income. We also discuss increasing the upper earnings limit (the point at which the employee NI rate currently falls from 11% to 1%); lowering the thresholds at which employee and

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[13] For more on these, see S. Adam and G. Loutzenhiser, 'Integrating income tax and National Insurance: an interim report', Institute for Fiscal Studies, Working Paper WP21/07, 2007, http://www.ifs.org.uk/wps/wp2107.pdf.

employer contributions start to be paid was discussed alongside cutting income tax thresholds in the previous subsection.

Increasing National Insurance rates

In both the 2008 and 2009 PBRs, the Chancellor announced rises of 0.5p in all NI rates (for employees, employers and the self-employed, above and below the upper earnings limit) to take effect from April 2011. To raise another 1% of national income, the rates for employees and the self-employed would need to increase by a further 3p.[14,15] The distributional impact of this change is shown in Figure 7.4. It is very similar to the distributional impact of increasing the basic and higher income tax rates by 3p (see Figure 7.2 above), with the main exception that the retired would be unaffected.

Figure 7.4. Distributional impact of 3p rise in employee and self-employed NI rates

Note: As for Figure 7.2.
Source: As for Figure 7.2.

Increasing the UEL to £100,000

Earlier, we discussed increasing the higher rate of income tax from 40% to 50%. A very similar reform would be to increase the UEL to £100,000: in both cases, the marginal tax rate between £43,875 and £100,000 is being increased by 10p. In this case, however, the higher marginal tax rate would only apply to earned income, and would increase the marginal rate of tax on earnings up to £100,000 rather than up to £150,000. Again,

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[14] Note that this rise would increase the marginal tax rate on earnings above £150,000. As we mentioned when discussing income tax rates, it is unlikely that increases in NI or income tax above this level would yield much revenue.

[15] Although the last two announced increases in NI rates have involved equal-sized increases in the employee, employer and self-employed rates, here we propose a rise only in the employee and self-employed rates, and no change in the employer rate. In the long run, the economic and distributional impact of changes to employee and employer NI should be identical, as they are essentially same tax: they both impose a wedge between the employer's cost of employing someone and the amount the employee actually receives. Therefore, if it is the case that rises in employee NICs are fully incident on employees (meaning that it is employees who ultimately bear the burden of the tax through lower net wages), then rises in employer NICs must also be fully incident on employees, but this time through lower gross wages in the long run. If this is the case, then a given percentage point rise in employer NI will lead to a smaller increase in tax revenues than a given percentage point rise in employee NI, as the former leads to lower wages, which would reduce revenues on income tax and NICs. The Ready Reckoner does not appear to make this distinction.

assuming relatively little behavioural response among those affected (a taxable income elasticity of 0.2), we estimate this would raise £4.2 billion in 2011–12 or around 0.3% of national income.

Increasing rates for the self-employed

The self-employed currently have a far more generous NI regime than employees – they do not have to pay employer NI contributions and their NI rates are lower than those for employees who contract out of the state second pension despite the fact that neither accrue entitlement to the state second pension.[16] To equalise the treatment of employees who contracted out and the self-employed, rates for the self-employed would need to rise to 18.6% below the UEL and 13.9% above it.[17] This would remove a distortion in favour of being self-employed rather than employed or incorporating. Assuming no behavioural response, this would raise £6.8 billion a year, around 0.4% of national income. However, it is likely that such a move would lead to a considerable change in behaviour (or at least in the amount of self-employment earnings individuals report to HMRC), which would reduce the revenue yield substantially.

Value added tax

One of the most striking features of tax reform over the last 30 years has been the increase in the share of government revenue coming from VAT. This is mainly due to two big increases in the standard rate of VAT: from 8% to 15% in 1979, and to 17.5% in 1991. The current government apparently considered increasing the standard VAT rate to 18.5% from April 2011 when preparing the 2008 PBR,[18] but a much larger increase – to around 21% – would be necessary to raise 1% of national income. One potential advantage with pre-announcing future increases in VAT is that it may encourage consumers to bring forward consumption and therefore have less of an adverse effect on a weak economy than other tax rises. Another possible advantage is that VAT also taxes income that has been earned but not yet spent, meaning it creates a capital levy that does not affect efficiency. However, this may be seen as unfair. Both of these issues are discussed in more detail in Chapter 3.

Another way to raise more revenue from VAT would be to extend VAT to goods that are currently zero rated or exempt, or increase the rate that applies to some or all of the goods that are currently subject to the reduced 5% rate. This would help resolve one of the main criticisms of VAT: that it distorts expenditure patterns towards goods that are more favourably treated.[19] In isolation, this would be a regressive tax increase, since poorer households tend to spend proportionally more than average on zero-rated items such as food and children's clothes. But it would be possible to provide some compensation for low-income households through other mechanisms – even without

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[16] Treating the self-employed exactly the same as employees would involve giving the self-employed a choice about whether to contract in or out of the state second pension. The government would raise more revenue in the short term from those who chose to contract in, but there would be additional costs in the longer term. To avoid having to estimate these additional costs, we assume that the self-employed would be forced to contract out or, equivalently, that they would all choose to do so.

[17] This is because the combined employee and employer NI rate as a percentage of employer cost is (0.104+0.101)/1.101 = 18.6% below the UEL and (0.02+0.138)/1.138 = 13.9% above it for an employee who is contracted out of the state second pension.

[18] See http://www.parliament.uk/commons/lib/research/briefings/snbt-00701.pdf.

[19] See I. Crawford, M. Keen and S. Smith, 'Value-added tax and excises', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/indirect.pdf.

resorting to means-testing – and still have revenue left over; this is because the biggest beneficiaries in cash terms from zero-rating are those on high incomes, since they spend more on these goods in cash terms than lower-income households. Therefore, in this subsection, we consider increasing the standard VAT rate to 21% and extending the standard rate to all items, with and without compensation for those on low incomes.

Note that both increasing the rate and broadening the base of VAT would weaken work incentives just as increases in income tax would. This is because the attractiveness of working, as opposed to not working, or working an extra hour presumably depends on the amount of goods and services that can be bought with the wage earned. In this way, a uniform income tax and a uniform consumption tax will have very similar effects.

Increasing the standard rate of VAT

It has been widely speculated that if either Labour or the Conservatives win the forthcoming general election, the standard rate of VAT will be raised to 20% from its current 17.5%.[20] The Ready Reckoner estimates that raising the standard rate by 1% would raise £4.5 billion in 2011–12,[21] so raising it to 20% would raise £11.25 billion, around ¾% of national income, and an increase to 21% would raise slightly more than 1% of national income for the government. The distributional impact of this last measure is shown in Figure 7.5.

Figure 7.5. Distributional impact of increasing the standard rate of VAT to 21%
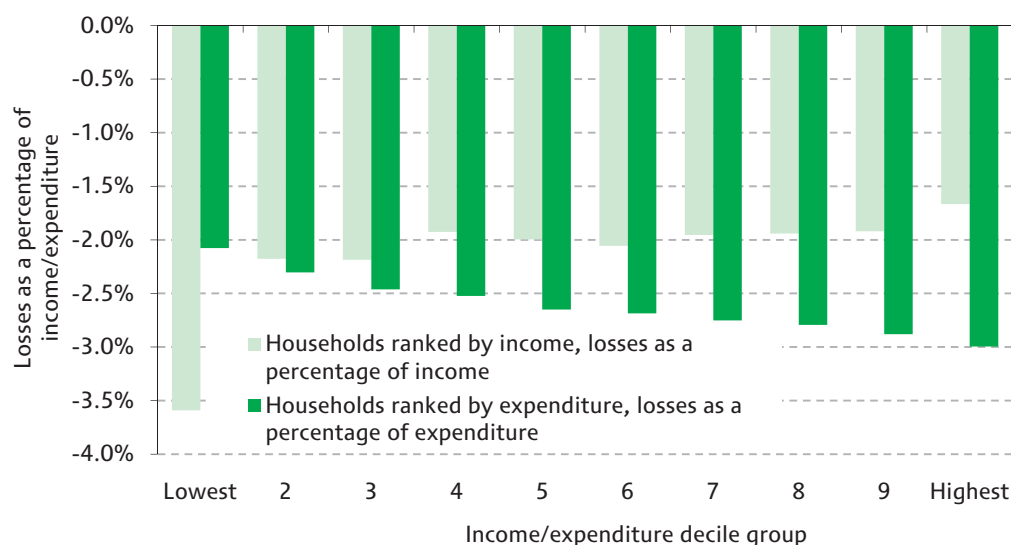
Notes: As for Figure 7.2. Expenditure decile groups are derived by dividing all households into 10 equal-sized groups according to total expenditure adjusted for family size using the McClements equivalence scale. Decile group 1 contains the lowest-spending tenth of the population, decile group 2 the second lowest-spending, and so on up to decile group 10, which contains the highest-spending tenth. Total expenditure and total VAT revenues scaled up to match National Accounts consumption.
Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN, run on the 2007 Expenditure and Food Survey.

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[20] See, for example, http://www.spectator.co.uk/coffeehouse/5252658/20-percent-vat-is-likely-whoever-wins-the-next-election.thtml.

[21] This estimate accounts for the effect of VAT in terms of shifting expenditure from VATable to non-VATable goods and services, but does not allow for total consumption to decrease in response to an increase in VAT. Since in reality households would consume less if VAT increased, this is an upper bound of the revenue raised by an increase in VAT.

Figure 7.5 suggests that increasing the standard rate of VAT is a regressive tax change when households are ranked by income and losses are expressed as a percentage of net income. However, this conclusion needs some qualification. VAT falls on those who spend a lot, and will therefore target those with high incomes less precisely than, say, income tax. But those with a low income at a particular point in time may not necessarily be those whose lifetime income is the lowest: while some people are persistently poor, others may have temporarily low incomes while they are studying, temporarily unemployed, living off savings in old age, taking time out of the labour market to raise children, etc. People's ability to borrow and save means that those with low incomes will, on average, have higher expenditure relative to their income, and those who have high expenditures but low incomes are not those who would generally be considered as 'poor'. Over a lifetime, income and expenditure must be equal (ignoring bequests and inheritances), and indeed annual expenditure is arguably a better guide to lifetime living standards than annual income. Dividing households into deciles according to annual expenditure, and expressing losses as a percentage of expenditure, gives us a different picture of the distributional impact of increasing the standard VAT rate (see Figure 7.5).

Broadening the VAT base

Another way for the government to increase VAT revenues would be to extend its scope to cover those items that are currently zero rated, including food, children's clothes, domestic passenger transport, books, newspapers, magazines, water and sewerage services, and prescription drugs. It could also tax those items that are currently taxed at the lower 5% rate (principally domestic fuel and power) at the standard rate. The Ready Reckoner estimates that extending the 17.5% rate to all these items would have raised £24.3 billion in 2008–09, or around 1.7% of national income.[22] The distributional impact of this change is shown in Figure 7.6.

Figure 7.6. Distributional impact of extending the standard rate of VAT to cover all items[a]
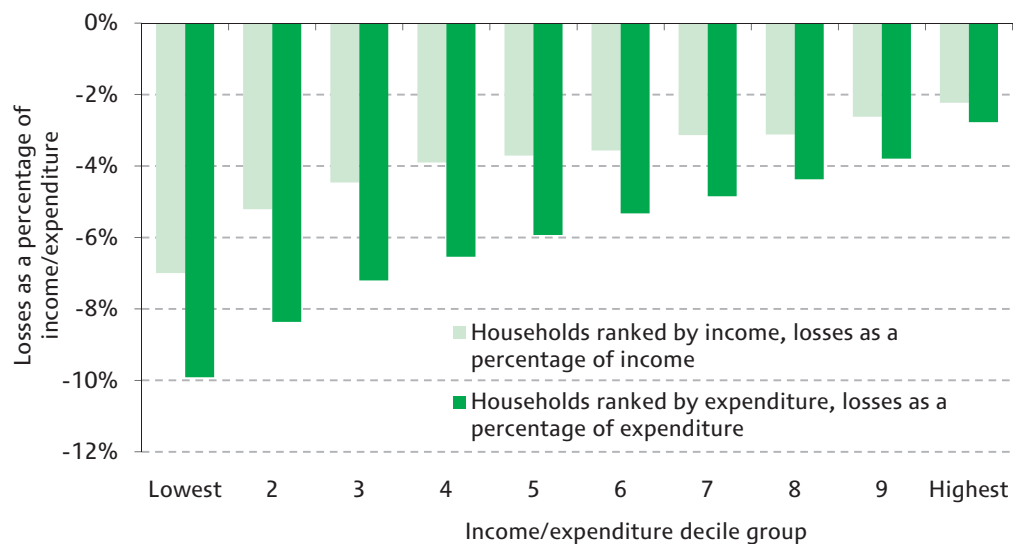
a. See footnote 22.   Notes: As for Figure 7.5.   Source: As for Figure 7.5.

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[22] Note that we do not consider extending the standard rate of VAT to new houses, the portion of international passenger transport that takes place in the UK, and ships and aircraft above a certain size. We consider imposing VAT on goods that are currently classified as exempt (such as insurance and financial services) later.

This is a regressive tax increase, whether households are ranked by expenditure or income. This is because both low-income and low-spending households are more likely to spend a higher proportion of their income or total budget on items that are zero rated, such as food.

Nevertheless, it is richer households which lose the most in cash terms: a lower proportion of their budget is spent on zero-rated items, but their budgets are sufficiently large that they still spend a greater absolute amount than the poorest on these items. This implies that it would be possible to use some of the revenue raised to compensate poorer households and still have revenue left over. Since this change would raise 1.7% of national income for the government, in order to raise 1% of national income a government could spend 0.7% of national income on increasing benefits and tax credits to ensure that the poorest did not lose disproportionately. Figure 7.7 shows the effects of the reform before and after a compensation package that involves a 10% increase in all income support, pension credit (PC) and child and working tax credit rates.[23] It shows that it is possible to raise 1% of national income by broadening the VAT base and ensuring that, on average, the poorest households lose out by a smaller fraction of their income than those higher up the income distribution (indeed, the lowest-spending tenth of households would gain significantly on average).

Figure 7.7. Distributional impact of extending the standard rate of VAT to cover all items,[a] with compensation for low-income households
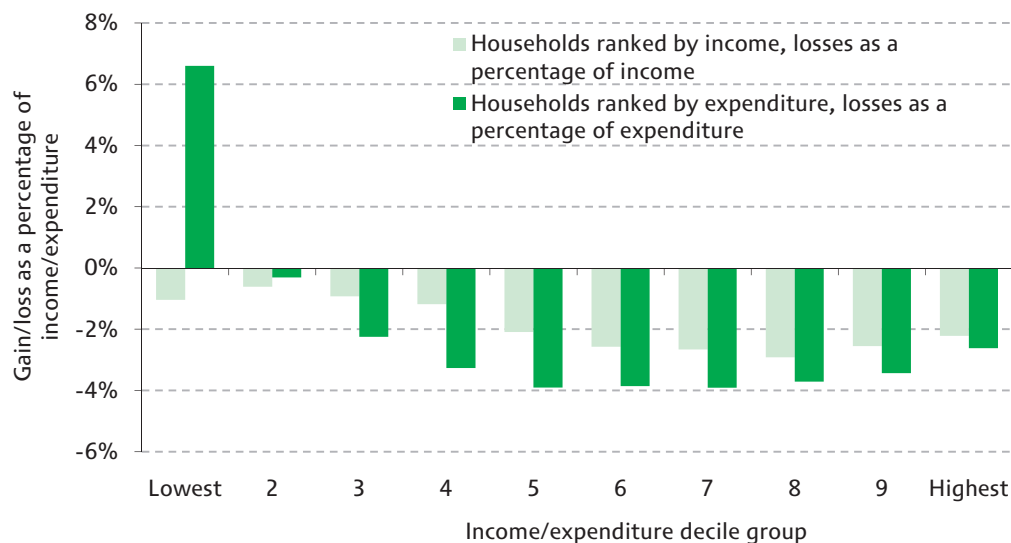
a. See footnote 22.
Notes: As for Figure 7.5.
Source: As for Figure 7.5.

[23] The associated housing benefit premiums are increased by the same amounts. The compensation package is intended to be illustrative – the government may wish to compensate particular groups more than others, and may wish to raise more or less than 1% of national income. A very heavily means-tested package such as this would also damage work incentives.

Imposing VAT on financial services

Financial services are currently exempt from VAT in the UK and most other countries.[24] This exemption is widely seen as undesirable for a number of reasons, including distortions that arise in the relative price of financial services.[25] There is currently discussion in the EU and IMF regarding the rationale and practicalities of introducing a VAT on financial services.[26] The removal of this VAT exemption would raise significant revenue: the Ready Reckoner estimates that the exemption of finance and insurance services has a cost of £2.8 billion in 2009–10.

The main reason for the exemption is the administrative difficulty of measuring value added in the financial sector. Put simply, value added is calculated as the value of sales minus the value of inputs. In terms of the value of sales, when a fee is charged for financial services it is conceptually straightforward to determine this value. This is not true, for example, in the case of bank loans where the interest received from the borrower reflects not only a return on the loan but also a risk premium. In addition, it is difficult to price financial capital, a major input in these services.[27]

While it may be infeasible to implement a comprehensive solution that would fully remove the exemption, there are proposed solutions that would move towards a VAT on financial services and, in doing so, remove distortions and likely raise significant revenue.[28] There are a number of implementation issues that would need to be ironed out but it would seem like a good time to address this issue.

Taxation of pensions, contributions to pensions and pensioners

This subsection discusses a number of related reforms that could be made to the taxation of pensions and pensioners. The government will introduce a reform that will restrict tax relief on pension contributions for those with very high incomes from 2011–12; an option that would raise more revenue would be to restrict tax relief to the basic rate for all higher-rate taxpayers. Other ways to reduce the generosity of the tax treatment of pensions would be to charge NICs on employer pension contributions and reduce or abolish the 25% tax-free lump sum. A way of taxing existing pensioners more would be to reduce or abolish the additional income tax allowances given to those aged 65 or over.

Restricting pensions tax relief to the basic rate

From April 2011, the government has announced that pension contributions will no longer be exempt from income tax for those whose gross incomes (i.e. taxable income plus individual pension contributions plus charitable donations) are above £130,000 and whose incomes plus the estimated value of employer pension contributions exceed

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[24] There are only a few countries that attempt to impose a regular VAT on a few specific financial services. Mexico levies VAT on bank accounts and on credit card interest, while New Zealand charges VAT on general and fire insurance through its goods and services tax. See H. Huizinga, 'A European VAT on financial services?', *Economic Policy*, 2002, 17, 497–534.

[25] See I. Crawford, M. Keen and S. Smith, 'Value-added tax and excises', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/indirect.pdf.

[26] See, among others, R. de la Feria and M. Walpole, 'Options for taxing financial supplies in value added tax: EU VAT and Australian GST models compared', *International and Comparative Law Quarterly*, 2009, 58, 897–932, and H. Huizinga, 'A European VAT on financial services?', *Economic Policy*, 2002, 17, 497–534.

[27] See H. Huizinga, 'A European VAT on financial services?', *Economic Policy*, 2002, 17, 497–534.

[28] An example of this is the cash-flow treatment of financial services. See I. Crawford, M. Keen and S. Smith, 'Value-added tax and excises', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/indirect.pdf.

£150,000; it expects this to raise £3.6 billion in a full year (just under 0.25% of national income).[29] Relief will gradually be reduced from 50% for those with incomes (including employer pension contributions) of £150,000 to the 20% basic rate for those with incomes (again including employer pension contributions) above £180,000. This in effect means that those with incomes above £180,000 will have to pay 30% income tax on all pension contributions above £150,000 and 20% income tax on any that take their income minus pension contributions to between £130,000 and £150,000. It also creates a potential large cliff-edge in the tax system at £130,000 of gross income, since an individual whose gross income is less than £130,000 is unaffected by the policy but someone whose gross income excluding employer pension contributions is over £130,000 and whose income including employer pension contributions is over £150,000 is affected by it. This means that someone whose employer makes a pension contribution of more than £20,000 on their behalf will have to pay tax on the whole of their pension contributions once their income (excluding employer pension contributions) increases above £130,000. This is likely to result in those in such a position entering into salary sacrifice arrangements to increase their employer pension contributions in order to keep their income excluding employer pension contributions below £130,000.[30]

A similar policy suggested by the Liberal Democrats is to restrict tax relief on pension contributions to 20% (the current basic rate) for all higher-rate taxpayers (meaning that they would have to pay 20% tax on pension contributions). The Liberal Democrats estimate that this would raise £4.6 billion a year or around 0.3% of national income.[31] However, this costing was made before the 2009 Pre-Budget Report in which the government announced that its policy of restricting pensions tax relief would cover more individuals (who would also be affected by the Liberal Democrat policy) and raise a further £0.5 billion per year from 2012–13. Therefore, we would now expect this policy to only raise a further £4.1 billion a year, since £0.5 billion of the revenue it would have raised before the PBR is now included in the baseline. But as with the government's decision to restrict tax relief for very rich individuals, it is hard to know how much this proposal would raise after allowing for behavioural responses. The Liberal Democrat proposal would have the advantage of avoiding the cliff-edges created by the government's policy, although clearly more individuals would be affected by the compliance costs mentioned later.

Restricting tax relief on pension contributions has been justified on the grounds of fairness, and as an anti-avoidance measure, since individuals can currently avoid paying higher rates of tax on their income by putting it into pensions and then only paying basic-rate tax on it in retirement. However, this argument supposes that all pensioners will have incomes below the higher-rate threshold. The government's current proposals target those who are most likely still to be higher-rate taxpayers in retirement. These

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[29] Sources: Table A1 of HM Treasury, *Budget 2009: Building Britain's Future*, April 2009, http://www.hm-treasury.gov.uk/bud_bud09_repindex.htm and table B4 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

[30] An extreme example would be someone whose gross income excluding employer pension contributions was £129,999 and whose employer made a pension contribution of £50,000 on their behalf. If their income excluding employer pension contributions increased by £1 to £130,000, they would only be eligible for tax relief at the 20p basic rate on the whole £50,000 contribution. This would mean that they would have to pay additional tax of £4,000 (20% of £20,000) on the part of their employer contribution between £130,000 and £150,000 plus £9,000 (30% of £30,000) on the part of their employer contribution above £150,000, a total of £13,000.

[31] Source: Liberal Democrats, 'Liberal Democrat tax plans', Briefing Document, http://www.libdems.org.uk/siteFiles/resources/PDF/Tax%20Plans%20-%20Briefing%20Document.pdf. It is unclear how they arrived at this estimate, so we are unable to say whether or not we agree with it.

very wealthy individuals will now pay tax at 30% when they make contributions to their pension and will then also pay tax at 40% on the same income in retirement. In this situation, a pension would be a very unattractive investment.

If tax relief on pensions is to be restricted to the basic rate, it would seem fairer, and less distortionary, for pension income only to be subject to tax at the basic rate also. While this could work theoretically, in practice individuals making a decision about whether to save in a pension today might not believe that they would only be taxed on their pension income at the basic rate of income tax when they retired: the government would always have an incentive to renege on a commitment to tax pension income only at the basic rate, as reneging would raise revenue at little cost in the short run in terms of efficiency.

Another disadvantage to restricting tax relief on pension contributions is the level of complexity it would introduce to the tax system. It is fairly simple to tax each individual's contribution to a defined contribution (DC) pension scheme at the appropriate rate, but it is far more difficult to tax contributions to defined benefit (DB) schemes. In order to tax these, it is necessary to calculate the value of pension benefits that have been accrued for each individual each year. To do this properly, one would typically need to know, among other things, what their final salary will be, when they will retire, how long they will live, the appropriate discount rate for valuing future pension entitlements, future inflation rates, the likelihood that the employer goes bankrupt in a period when there was also a deficit on the pension fund, and whether the individual will be married when they die. The government has published a consultation document running to over 100 pages which outlines how it is intending to value contributions to DB schemes.[32] However it chooses to do so, it is likely to involve significant compliance costs for scheme organisers and/or members as well as being a somewhat rough-and-ready measure, creating a distortion in terms of the choice between DB and DC schemes.

Removing exemption of employer pension contributions from NI

Contributions to a personal pension made by an employee are currently subject to NI, but those made by an employer are not. This makes pension contributions made by employers a particularly tax-favoured form of saving, since these pension contributions escape NICs altogether. It is surprising that more pension contributions are not made through employers – for example, through salary sacrifice arrangements – to take advantage of this.[33] The Treasury estimates that this exemption costs £8.3 billion or 0.6% of national income in 2009–10, but it is likely that a behavioural response to removing it would lower the yield.[34] Again, though, this would require a method of valuing contributions made by employers to DB schemes, with the associated complexity, compliance costs and distortions mentioned above. An alternative would be for the NI system to treat pension contributions in the same way as the income tax system, and exempt employee pension contributions from NICs also but charge NICs on pension payments in retirement. Moving to this system would clearly involve serious transition issues in order to deal with concerns about the fair treatment of those who had not

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[32] See HM Treasury and HM Revenue & Customs, *Implementing the Restriction of Pensions Tax Relief*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_consult_pensions.pdf.

[33] See M. Wakefield, *How Much Do We Tax the Return to Saving?*, Briefing Note 82, Institute for Fiscal Studies, London, 2009, http://www.ifs.org.uk/bns/bn82.pdf.

[34] Since NICs do not have to be made on pension income, imposing employer NI on contributions by employers would not create a positive net rate of tax on saving in a pension.

benefited from NICs relief on their contributions and those who had planned on the basis of the current system; these issues are discussed in Adam and Loutzenhiser (2007).[35]

Abolishing the 25% tax-free lump sum

It is currently possible for those who have invested in a private pension to take 25% of their pension fund as a tax-free lump sum, which can be as large as £437,500 given the total amount of tax-privileged pension saving over a lifetime that individuals are entitled to in 2009–10. This makes pensions a very attractive investment choice for most people: the effective tax rate on this lump sum is effectively negative.[36] A back-of-the-envelope calculation suggests that abolishing the 25% tax-free lump sum would have raised £3.2 billion in 2008–09, around 0.2% of national income.[37] However, if it were abolished, there would be less incentive for individuals to save in a private pension (particularly if tax relief on pension contributions were also restricted to the basic rate): an ISA would offer the same tax advantages while offering instant access to the accumulated funds. There is also no obligation for individuals to use the accumulated funds in an ISA to purchase an annuity when they reach a particular age. The government may see this as a disadvantage, though, if it wishes people to save for retirement in a vehicle where funds are not accessible until retirement and that involves compulsory annuitisation. Therefore, while abolishing the tax-free lump sum would probably not be desirable, reducing the proportion of the total pension pot that can be taken tax-free or capping the cash amount that can be taken would both be revenue-raising reforms that would not impose a positive rate of tax on saving or severely reduce the attractiveness of saving in a pension.

Abolishing additional tax allowances for pensioners

Currently, those aged 65 and over have higher tax allowances than younger people (and there is an additional allowance for married couples where one member is aged 75 or over). The additional tax allowance is then withdrawn once income is above a threshold (currently £22,900). The withdrawal creates a situation where the marginal income tax rate increases from 20% to 30% before falling to 20% again.

A higher allowance for older people might be justified on administrative grounds – taxing pensioners' income is harder than taxing the earnings of an employee – but there seems no obvious rationale for the odd marginal rate structure applying to pensioners that is created by the withdrawal of the extra allowance. We estimate that abolishing the additional personal allowances for pensioners and the married couple's allowance would save the government £2.8 billion a year or 0.2% of national income in 2011–12.

Corporation tax

Increasing the statutory corporation tax rate

The current UK statutory rate of corporation tax is 28%, making it the lowest in the G7 and mid-ranking among EU15 countries. In 2010–11, the government estimates that

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[35] S. Adam and G. Loutzenhiser, 'Integrating income tax and National Insurance: an interim report', Institute for Fiscal Studies, Working Paper WP21/07, 2007, http://www.ifs.org.uk/wps/wp2107.pdf.

[36] See tables 10 and 12 of S. Adam, J. Browne and C. Heady, 'Taxation in the UK', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/uktax.pdf.

[37] We calculate this using the fact that the amount of income tax raised from pension income was £9.5 billion in 2008–09 (see http://www.hmrc.gov.uk/stats/pensions/table7-9.xls) and assuming that everyone takes advantage of the 25% lump sum and that the marginal income tax rate for those affected equals the average tax rate on their pension income.

around 7.7% of total government receipts will come from corporation tax.[38] This percentage has been fairly constant across the previous decade.

The amount of revenue raised from taxes on corporate income both in terms of the proportion of national income and in terms of the proportion of total tax revenue is higher in the UK than in France, Germany or the US and is around the EU15 average.[39] The fact that the UK raises a greater proportion of taxes from the corporate sector despite the lower statutory rate is indicative that the UK has a larger tax base. This is likely to result from a combination of a larger and more profitable corporate sector in the UK and tax rules that define the base more broadly.

The Ready Reckoner estimates that an increase of 1 percentage point in the statutory rate of corporation tax would raise something like £0.8 billion a year, which is less than 0.1% of national income.

An increase in the statutory rate obviously leads to an increase in the amount of tax raised per pound of taxable profit. However, there is an accompanying incentive for firms to move the profits they earn offshore. Concerns about the impact of tax competition have been widely acknowledged in Europe and the OECD.[40] As a result, statutory rates have tended to fall in recent years across Europe. Therefore, it may be difficult to increase the UK's corporate tax rate without also losing revenue from firms moving taxable profits to lower-tax countries.

Increasing the small companies' rate

The UK currently levies a reduced rate of corporation tax – the small companies' rate – on businesses with profits below £300,000. The small companies' rate stands at 21% in 2010 and is due to increase to 22% in April 2011.[41] In 2007–08, 91% of companies paid tax at the small companies' rate. However, they represented only 20% of total chargeable profits.[42]

The Ready Reckoner estimates that an increase of 1 percentage point in the small companies' rate would raise around £0.4 billion a year. However, increasing the small companies' rate to the main statutory rate of 28% – a 7 percentage point increase – would be likely to raise a more substantial amount. The Ready Reckoner estimates that the cost of the reduced small companies' rate – i.e. of not taxing all corporate income at the statutory rate – was £3.2 billion in 2009–10, around 0.2% of national income.

Raising the small companies' rate to the level of the main statutory rate would also remove a distortion: the reduced rate incentivises individuals to incorporate for tax purposes.[43] However, one rationale for the reduced rate for small companies is that it

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[38] Source: TableB10 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_annexb.pdf.

[39] The EU15 average is pulled up by some of the smaller EU countries, such as Finland, that collect a large proportion of tax from corporations.

[40] See R. Griffith, J. Hines and P. B. Sørensen, 'International capital taxation', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/press_docs/international.pdf.

[41] The increase in the small companies' rate to 22% was originally planned for April 2009 but was deferred for one year in the 2008 PBR and for another year in PBR 2009 as part of packages aimed at supporting small companies during the recession.

[42] Authors' calculations from http://www.hmrc.gov.uk/stats/corporate_tax/11-3-corporation-tax.pdf.

[43] See C. Crawford and J. Freedman, 'Small business taxation', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008 http://www.ifs.org.uk/mirrleesreview/press_docs/small_businesses.pdf.

may play a role in encouraging entrepreneurial activity; individuals with a new idea are unable to capture the full returns to their efforts and as a result the optimal amount of risk-taking in society is higher than individuals will be prepared to undertake.[44] The incentives offered to entrepreneurs through the lower tax rate of the small companies' rate would be lost under a policy of alignment with the main rate.[45]

But it is not clear that a lower corporation tax rate for companies with relatively low profits is a particularly effective way to encourage innovation. The government has also put in place two tax credits for expenditure on research and development (see Chapter 10). These are designed to provide an explicit incentive for firms to undertake R&D activity in the presence of externalities that reduce the amount of activity produced by the market to below the socially optimal level. These currently cost around £0.7 billion a year.

Environmental taxes

In 2008 receipts from environmental taxes amounted to £38.5 billion, representing 7.1% of all tax receipts or 2.7% of national income.[46] Relative to total receipts and the size of the economy, green tax revenues in 2008 were at their lowest levels since comparable figures have been readily obtainable, in 1987.[47]

Both opposition parties have suggested that they would like to raise a greater share of revenues through environmental taxes, and the Liberal Democrats have proposed some specific policies such as reforms to air passenger duty (APD), vehicle excise duty (VED) and increases in fuel duties.[48]

In general, there should be a strong economic rationale for departing from uniform taxes on all commodities. External costs, such as those generated by pollution and greenhouse gas emissions, are one such example that justifies higher taxes on the activities that generate them. Unless there is evidence that current taxes on these activities are insufficient to cover the external costs they generate, it is better to raise revenue by increasing a uniform commodity tax such as VAT rather than increasing taxes on specific goods. Therefore, before looking at how much increases in existing environmental taxes or the introduction of new environmental taxes could raise, we consider whether there is an environmental justification for them.

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[44] In addition, recent work by the OECD has emphasised other reasons for favouring small and medium-sized enterprises (SMEs) in the tax system – for example, the possibility that a relatively high tax burden or disproportionately high compliance costs will impede SME creation and growth. See OECD, *Taxation of SME: Key Issues and Policy Considerations*, Tax Policy Study 8, 2009, http://www.oecd.org/document/15/0,3343,en_2649_34533_43890319_1_1_1_1,00.html.

[45] For further discussion on this trade-off, see D. Holtz-Eakin, 'Should small businesses be tax-favored?', *National Tax Journal*, 1995, 48, 387–395.

[46] Figures for 2008 revenues from environmental taxes in this section come from table 13.7 of Office for National Statistics, *United Kingdom National Accounts: The Blue Book – 2009 Edition*, 2009, http://www.statistics.gov.uk/downloads/theme_economy/BB09.pdf.

[47] In real terms, receipts peaked in 2000 at £40.9 billion, and as a share of national income the peak was 3.6% in 1999. Source: Authors' calculations using table 13.7 of Office for National Statistics, *United Kingdom National Accounts: The Blue Book – 2009 Edition*, 2009.

[48] See, for example, http://www.conservatives.com/News/Speeches/2007/09/David_Cameron_Meeting_economic_challenges_of_the_future.aspx and http://www.libdems.org.uk/siteFiles/resources/PDF/Tax%20Plans%20-%20Briefing%20Document.pdf.

Fuel duties

By far the largest single environmental tax is fuel duty, which in 2008 raised £24.8 billion (with an additional £4.3 billion from VAT charged on top of the duty).

On current plans, real fuel duty rates will have returned to just below their peak levels of 2000 by 2014. The Ready Reckoner estimates that a 1p/litre rise in the main rates of petrol and diesel duty raises approximately £500 million, including assumed behavioural responses.

To what extent is there a strong economic or environmental justification for further rises? Fullerton et al. (2008)[49] conclude that fuel duty rates are already at roughly the levels implied by the various external costs of motoring, such as climate change, noise, accidents, air pollution and, above all, congestion. Further increases could be justified by the very high costs of congestion in urban areas, but would be hard to justify in rural areas with low congestion costs. This highlights the fact that fuel duty is a particularly poor instrument to target congestion costs: from an economic efficiency perspective, it would be preferable to introduce a system of road or congestion pricing with an accompanying *reduction* in fuel duty that left overall revenues broadly unchanged. So the case for substantially higher fuel duties alone is fairly weak.

Aviation taxes

Air passenger duty – a tax on passengers on flights departing from most UK airports – raised around £1.9 billion in 2008. There are already plans to increase rates further in November 2010 (taking the most commonly paid rate from £11 to £12), but is there a rationale for further increases? To some extent, APD can be thought of as a proxy for a tax on aviation fuel, and to compensate for the fact that VAT is not levied on domestic aviation tickets.[50] From 2012, aviation will be included in the EU Emissions Trading Scheme (ETS), which limits (but does not eliminate) the rationale for a domestic carbon tax on aviation.[51] Other externalities (noise and non-carbon emissions, as well as congestion in the air and around airports), though, would provide ongoing justification for national aviation taxes beyond 2012, but it is not clear whether an environmental case can be made for further increases.

Other current green taxes

It is hard to see how large increases in revenues can come from the remaining green taxes:

- Vehicle excise duty, which raised around £5.5 billion in 2008, may well see changes in rates to sharpen the environmental incentives, but it is unlikely to raise significantly more revenue.

- The landfill tax is a tax on waste sent to landfill sites, with a standard rate (currently £40/tonne) applied to most waste and a reduced rate (£2.50/tonne) to inert waste such as building rubble. In 2008, it raised just under £1 billion. The standard rate of

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[49] D. Fullerton, A. Leicester and S. Smith, 'Environmental taxes', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/environment.pdf.

[50] The UK is one of only a small number of EU countries that zero rate domestic aviation tickets under VAT, though most other countries do not impose VAT at the full rate. It is not clear what the economic rationale for zero-rating aviation is.

[51] See http://www.decc.gov.uk/en/content/cms/what_we_do/change_energy/tackling_clima/emissions/eu_ets/aviation/aviation.aspx.

landfill tax is currently scheduled to increase by £8/year every year up to and including 2013–14, when the rate will reach £72/tonne. But the environmental case for even these increases already announced by the government is very weak: before the introduction of the tax, the marginal externality was estimated at around £7/tonne for most waste and £2/tonne for inert wastes.[52]

- The climate change levy (CCL), which raised £0.7 billion in 2008, is a tax on the commercial and business use of energy that varies according to the type of energy supplied. There may be scope to increase the rates, which are now lower in real terms than when the tax was introduced, but, as we discuss below, a more sensible reform would be a wider carbon tax that replaced the CCL.

- The aggregates levy is a tax on the extraction of aggregates (such as sand and gravel). It raised only £0.3 billion in 2008, and so the scope for it to contribute substantially more revenue is very limited.

A new tax on carbon

The most likely new green tax to raise significant sums would be a carbon tax. A carbon tax would be a way to price the external costs of greenhouse gas (GHG) emissions into those activities that generate them. The key benefits of using a tax rather than direct regulation to control emissions are that it provides incentives for those who can reduce emissions most cheaply to abate more than those whose costs are higher and that it generates revenue for the government.[53]

A uniformly-applied carbon tax (and equivalent auctioning of permits for firms already participating in the EU Emissions Trading Scheme) of £21/tonne of CO_2 – the Department of Energy and Climate Change (DECC)'s most recent assessment of the price of a tonne of emissions for firms in the ETS – would raise around £13.4 billion, ignoring any behavioural response.[54] This is just under 1% of national income.

But the net increase in revenue would be lower than this, for several reasons:

- A carbon tax would remove the environmental case for some existing taxes, such as hydrocarbon duties (especially on road fuels), APD and the CCL. For example, in 2007, GHG emissions from road transport were 123 $mtCO_2e$, so total tax revenues would be reduced by approximately £2.6 billion (almost 20%) if fuel duty were cut to offset a carbon tax, and by a further £0.7 billion a year after abolishing the CCL. In this case, the reform would raise £10.1 billion a year, or around $^2/_3$% of national income.

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[52] CSERGE, *Externalities from Landfill and Incineration*, Department of the Environment, London, 1993.

[53] Some issues in the design and implementation of a carbon tax can be found in D. Fullerton, A. Leicester and S. Smith, 'Environmental taxes', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/environment.pdf. A discussion of recent policy issues around carbon taxes in the UK and internationally can be found in L. Smith, *The Future for Green Taxes*, House of Commons Library Research Paper 09/86, 2009, http://www.parliament.uk/commons/lib/research/rp2009/rp09-086.pdf.

[54] In 2007, total emissions of GHGs in the UK were 636.2 million tonnes of CO_2 equivalent ($mtCO_2e$). Of these, around 40% (256.4 million) were emitted by firms operating under the ETS. Currently, almost all of the permits allocated to firms in the ETS are allocated for free ('grandfathered'). Data are taken from http://www.defra.gov.uk/evidence/statistics/environment/globatmos/download/xls/gatb05.xls. These figures exclude around 42.3 $mtCO_2e$ from international aviation and shipping based on refuelling in the UK. In practice, it would be very hard to apply a national carbon tax to these emissions and so we exclude them from our analysis. See also Department of Energy and Climate Change, *Carbon Valuation in UK Policy Appraisal: A Revised Approach*, 2009, http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/valuation/valuation.aspx for details of the pricing of carbon. We assume that auctioned permits for firms in the ETS would be sold for an average price of £21/tonne of CO_2 emissions and that an equivalent tax is applied to the non-traded sector to produce a common national carbon price.

- The tax should lead to a reduction in activities that lead to GHG emissions, and this would reduce revenues.

- There may be pressure to exempt the domestic sector from the carbon tax because of concerns over the regressive nature of a tax on energy, which makes up a much larger proportion of the budget of poorer households. If carbon taxes formally incident on power suppliers were passed on fully to the domestic sector, the total liability facing households would be approximately £3.1 billion, or around £120 per household on average (assuming a total of 26.1 million households). If these payments were exempt – which would clearly substantially limit the ability of the tax to reduce GHG emissions – the yield from the tax would fall by just under a quarter.

The distributional impacts of a widely-applied carbon tax are hard to estimate, since its indirect effect on goods' prices is uncertain. The largest impact would be on domestic energy prices. Fullerton et al. (2008)[55] show that poorer households spend around three times as much of their budget on energy as richer households (about 12% versus 4% in 2005). One possibility would be to use some of the revenues from the tax to compensate poor households, though Dresner and Ekins (2006)[56] suggest that it would be hard to target this support since there is so much variation in energy usage even for households with similar incomes.

The taxation of housing

Council tax is the main tax on residential property in England, Scotland and Wales. Rates are set by local authorities, rather than the central government, but central government has some influence over council tax rates through the level of grants it gives to local authorities and the responsibilities it places on them. The central government can also cap local authorities whose council tax levels or increases it deems excessive, which places another limitation on local authorities' financial autonomy. Reducing grants to local authorities could be one way in which the central government could choose to lower its budget deficit, and it is likely that local authorities would increase council tax in response to this. But council tax is only expected to raise 1.75% of national income in 2010–11, and so it is unlikely that increasing council tax could raise an additional 1% of national income on its own.[57]

The Liberal Democrats have recently proposed a so-called 'mansion tax' on properties worth more than £2 million. Owners of such properties would have to pay a levy of 1% of the amount by which the value exceeds £2 million. The Liberal Democrats estimate that this would raise £1.7 billion a year, or 0.1% of national income.[58] This is effectively an unbanded council tax set as a proportion of property values. This is similar to the new system of property taxation in Northern Ireland, although the Northern Irish system has a cap on property values that can be taxed, in direct contrast to this proposal.

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[55] D. Fullerton, A. Leicester and S. Smith, 'Environmental taxes', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/environment.pdf.

[56] S. Dresner and P. Ekins, 'Economic instruments to improve UK home energy efficiency without negative social impacts', *Fiscal Studies*, 2006, 27, 47–74.

[57] Source: Tables B1 and B10 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_annexb.pdf.

[58] Source: Liberal Democrats, 'Liberal Democrat tax plans', Briefing Document, http://www.libdems.org.uk/siteFiles/resources/PDF/Tax%20Plans%20-%20Briefing%20Document.pdf. It is unclear how they arrived at this estimate, so we are unable to say whether or not we agree with it.

If council tax is to continue, then levying it at a constant percentage of the property price would be more desirable than the current regressive structure. Ideally, it would also not have bands (although this might increase the administrative costs associated with the tax, as all householders would have an incentive to appeal their property valuations) and would be based on recent and regularly-updated property values (property bandings in England and Scotland are still assessed based on 1991 valuations). Such a reform could be designed to increase total revenue raised if this were thought desirable (but even if it were not, it would still be a sensible reform).

Inheritance tax

Despite the political controversy it causes, inheritance tax (IHT) raises relatively little revenue for the government (£2.3 billion is the estimate for 2010–11[59]). Therefore, it seems unlikely that there is much scope for raising significant further sums from IHT, at least in its current guise. Indeed, the Ready Reckoner estimates that increasing the current 40% rate by 1 percentage point would only raise £50 million in a full year. Similarly, the government's decision to freeze the IHT threshold at £325,000 in 2010–11, rather than increase it to £350,000 as previously announced, will only raise £170 million in 2011–12.[60]

However, there are some IHT reliefs which could be abolished that could raise some revenue. Agricultural and business property relief are poorly targeted and arbitrary in their effect.[61] But the Ready Reckoner estimates that abolishing both of these reliefs would only have raised £345 million in 2009–10. Similarly, abolishing the relief given to donations to charities would have raised £295 million in 2009–10.

If the government wished to raise more substantial sums from taxing wealth transfers, a more radical redesign of IHT would seem necessary. One reason IHT raises so little revenue, and a feature that makes it seem unfair to many people, is that the very wealthy can avoid it by passing on most of their wealth more than seven years before death, whereas those with more modest wealth are less able to do this because more of their wealth is tied up in their main home. A simple reform that would alleviate this problem to some extent is to extend the seven-year period before death during which transfers are taxed according to a sliding scale to, say, 15 years, as proposed by the Liberal Democrats in 2007.[62] More radically, (a renamed) inheritance tax could be applied to all lifetime gifts made by an individual above a threshold. An accompanying reform might be to make this tax donee-based rather than donor-based as IHT is at the moment, so that each individual could receive a certain value of gifts or bequests in their lifetime before they had to start paying it. If the motivation for having a wealth transfer tax at all were that the unequal distribution of large bequests is a source of inequality of opportunity, reforming the tax in this way would more clearly align the tax with its objective. Taxing lifetime gifts and hence removing the main avoidance mechanism in IHT would increase the total amount of revenue that could be raised from the taxation of wealth transfers. However, such a tax

[59] Source: Table B10 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_annexb.pdf.

[60] Source: Table B4 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_annexb.pdf.

[61] Currently, agricultural property relief is available to all those who own agricultural land; restricting it to those who are working farmers would seem a better way of targeting the relief on those who want to hand on a family business to the next generation, if this were considered a desirable policy aim.

[62] Source: Liberal Democrats, *Reducing the Burden*, Policy Paper 81, 2007.

would be administratively complex, as it would require records to be kept of all lifetime gifts. Furthermore, without a political consensus in favour of such a change, the tax might lead to individuals delaying gifts in the hope that the change might be reversed in the future, which would reduce the amount of revenue raised.[63]

Capital gains tax

Capital gains tax (CGT) has been substantially reformed on two occasions since 1997: in 1998, when indexation allowances (which existed to ensure that only real capital gains were taxed, not those that arose as a result of inflation) were abolished (for gains made after that point) and replaced with taper relief; and in 2008, when taper relief was itself abolished and replaced by a flat 18% rate (and an entrepreneur's relief was introduced that allows the first £1 million of capital gains on certain business assets to be taxed at 10% rather than 18%).

The current structure of CGT offers a considerable incentive for those whose income is greater than £43,875 (and would thus be subject either to the 40p higher rate of income tax or, from April 2010, the effective 60p rate or the 50p additional rate) to reclassify income as capital gains, as the rate of tax is significantly lower. We discuss below changes that would minimise this distortion, as well as some extensions of CGT.

Aligning CGT and income tax rates

A desirable feature of a tax system is that it should not discriminate between different forms of economic activity. However, by taxing capital gains more lightly than dividends (for higher-rate taxpayers) or employment income, the current system in the UK does favour certain types of activity over others. A particular controversy was caused over the treatment of 'carried interest' received by private equity fund managers, but the same principle applies to owners of small businesses, who are able to forgo some or all of their salary to increase the value of their business and then sell it on. They are then liable to pay CGT rather than income tax, which, as mentioned above, has a much lower flat rate. This also creates a distortion whereby individuals have an incentive to move into occupations in which remuneration can be taken in the form of capital gains. Therefore, there is a strong case that aligning income tax and CGT rates would be less distortionary than the current system and would raise revenue at the same time.[64] An obvious revenue-raising and anti-avoidance measure, therefore, is to align income tax and CGT rates; this has been proposed by the Liberal Democrats, and they estimate it would raise £3.2 billion a year or around 0.2% of national income.[65]

However, increasing CGT rates would discourage saving and investment, at least for higher-rate taxpayers. But there are better ways of ensuring that the tax system does not discourage saving and investment than having a blanket low rate of capital gains, as Adam (2008) discusses.[66]

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[63] For more on this issue, see R. Boadway, E. Chamberlain and C. Emmerson, 'Taxation of wealth and wealth transfers', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/wealth_transfers.pdf.

[64] Note that this would not completely resolve the situation, however, as income tax is not the only tax on earnings – NICs need to be taken into account also.

[65] Source: Liberal Democrats, 'Liberal Democrat tax plans', Briefing Document, http://www.libdems.org.uk/siteFiles/resources/PDF/Tax%20Plans%20-%20Briefing%20Document.pdf. It is unclear how they arrived at this estimate, so we are unable to say whether or not we agree with it.

[66] S. Adam, 'Capital gains tax', in R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget: January 2008*, Commentary 104, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/budgets/gb2008/08chap10.pdf.

Of particular concern is the continued absence of indexation allowances for inflation. Even with low rates of inflation, a tax on nominal capital gains corresponds to a much higher tax rate on real gains: for example, if inflation is 3%, a 40% tax rate on a 5% nominal return corresponds to a 100% tax on the real return. And it can generate tax liabilities even if no real capital gain has been made. There is no obvious reason to tax purely inflationary gains, and no reason to tax saving and investment more when inflation is higher. The reintroduction of indexation allowances, which existed from 1982 to 1998, would be an obvious way to deal with this issue, although this would limit the amount of revenue any rise in the CGT rate would raise. However, there are arguments against the reintroduction of indexation allowances: they would add a little complexity to the tax system and, since indexation allowances do not exist anywhere else in the tax system (for example, when taxing interest on savings accounts), they would distort saving decisions in favour of assets that accrued capital gains rather than earned interest income. Obviously, the ideal solution would be to introduce inflation indexation of capital income as well as capital gains. But if it were not possible to do this, it is not obvious that some indexation is better than none.

Reducing the capital gains exempt amount

There is no obvious rationale for a separate tax allowance for capital gains that cannot be offset against income: it provides an incentive for individuals to arrange their affairs in such a way that they have some income and realise some capital gains each year, rather than exclusively having one or the other. Reducing the exempt amount to a much lower level (it would be desirable to have some threshold to ensure that those realising trivial capital gains avoided the compliance cost of paying CGT) and aligning income and CGT rates (meaning that it would be possible to use the income tax personal allowance for capital gains if one did not have sufficient income to use it fully) would seem a sensible reform. The Liberal Democrats have suggested reducing the exempt amount of capital gains on which no CGT is chargeable to £2,000 from its current level of £10,100, which they estimate would raise a further £0.9 billion a year.[67]

Abolishing exemption of primary residence

CGT is not payable on gains in the value of an individual's primary residence. The Ready Reckoner estimates that the abolition of this exemption would have raised £3.7 billion (around 0.25% of national income) in 2009–10, but this is a year when there are relatively few property transactions; in 2008–09, abolishing the exemption would have raised £5 billion (around 0.35% of national income).

It is clearly desirable for the tax system to treat different types of asset equally, so it is undesirable for CGT to favour investment in the primary residence. Abolishing the exemption would reduce the distortion between investing in a primary residence and a rental property, for example, but would lead to investment in a primary residence being less favourably treated than, say, an ISA.[68]

From a political perspective, however, it is difficult to imagine that removing the exemption of primary residences from CGT would be easy. It might be feasible if it were

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[67] Source: Liberal Democrats, 'Liberal Democrat tax plans', Briefing Document, http://www.libdems.org.uk/siteFiles/resources/PDF/Tax%20Plans%20-%20Briefing%20Document.pdf. It is unclear how they arrived at this estimate, so we are unable to say whether or not we agree with it.

[68] Table 7 of M. Wakefield, *How Much Do We Tax the Return to Saving?*, Briefing Note 82, Institute for Fiscal Studies, London, 2009, http://www.ifs.org.uk/bns/bn82.pdf demonstrates this point. Capital gains made by ISA funds are exempt from CGT.

combined with a rollover relief that enabled individuals to defer payment of tax if they were reinvesting the money raised in a new primary residence. This would also prevent a distortion whereby homeowners would be reluctant to move because doing so would result in the realisation of a capital gain and hence a CGT liability.[69] Since most homeowners own a property until they die and capital gains are forgiven on death (meaning that there would be a strong incentive to own a primary residence until death), this would mean that the reform would not raise any significant revenues. This would change if CGT were levied at death, though, and it is to this question that we now turn.

Charging CGT at death

Forgiving CGT liability at death is often justified on the basis that estates are subject to inheritance tax, but this is not a particularly convincing argument. It is not clear why capital gains should not be taxed simply because of the existence of a wealth transfer tax: CGT exists to ensure that capital gains are taxed just like other forms of income, which will have been taxed as they accrue. All forms of wealth should then be subject to IHT as well. Imposing CGT at death would make the 'double taxation' imposed by IHT more obvious, which might make it politically difficult to maintain IHT. But double taxation is a feature of wealth transfer taxation itself, rather than being due to the taxation of capital gains.[70]

The Ready Reckoner estimates that removing this exemption would have cost the government £280 million in 2009–10. However, it is likely that it would raise significantly more revenue if CGT were also applied to primary homes with a rollover relief, as discussed above.

Summary

This section has discussed the scope for raising tax revenue. Table 7.2 summarises the measures mentioned and their likely yields, and gives a brief assessment of who would lose out. Please note that the yields should not be added together: many of the estimated yields interact with each other, and some of the options are mutually inconsistent.

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[69] Of course, the same argument applies for other capital gains on assets other than the primary residence. Taxing capital gains when they are realised, rather than when they accrue, effectively gives the taxpayer an interest-free loan on the tax liability from the point of accrual to the point of realisation, and creates an incentive for individuals to hold on to assets for longer than they otherwise would.

[70] Various arguments for and against wealth taxation are presented in R. Boadway, E. Chamberlain and C. Emmerson, 'Taxation of wealth and wealth transfers', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/reports/wealth_transfers.pdf.

Table 7.2. Summary of possible tax increases

Proposal	Revenue raised (in 2011–12)	Losers
Increase basic rate of income tax by 4p	£16.2 billion[a]	All basic-, higher- and additional-rate taxpayers
Increase basic and higher rates of income tax by 3p	£15.0 billion[a] £14.5 billion[a,c]	All basic-, higher- and additional-rate taxpayers
Increase higher rate of income tax to 50p	£9.5 billion[a,d,e] £7.4 billion[c,e]	All individuals with incomes greater than £43,875
Reduce personal allowance and employee NI threshold to level of employer NI threshold and freeze for 5 years	£15.3 billion (by 2015–16)[b]	All individuals liable to pay income tax or NI
Increase personal allowance by 1.5% less than inflation in April 2011	£0.6 billion[b]	All individuals liable to pay income tax or NI
Reduce personal allowance to level of employer NI threshold	£4.5 billion[b]	All individuals liable to pay income tax or NI
Restrict personal allowance to basic rate	£4.1 billion[b]	All individuals with incomes greater than £37,400
Abolish 10p starting rate for savings income	£0.1 billion[a]	Individuals with non-savings income below starting-rate limit and some savings income
Increase employee and self-employment NI rates by 3p	£16.8 billion[a]	All individuals liable to pay NI
Increase UEL to £100,000	£4.2 billion[c]	Those with earned income greater than £43,875
Increase self-employed NI rates to match those for employees	£6.8 billion[b]	Those with self-employment income greater than £5,715
Increase standard VAT rate to 21%	£15.75 billion[a]	All households, particularly high spending
Apply standard VAT rate to zero-rated and reduced-rated goods	£24.3 billion[a] (in 2009–10)	All households, particularly low income or spending
Impose VAT on financial services	£2.8 billion[a] (in 2009–10)	Users of financial services
Restrict pension tax relief to the basic rate	£4.1 billion[f,g]	Higher-rate taxpayers contributing to a pension
Abolish exemption of employer pension contributions from NI	£8.3 billion[a] (in 2009–10)	Employees whose employers make pension contributions on their behalf
Abolish 25% tax-free lump sum in private pensions	£3.2 billion[h] (in 2008–09)	Those with private pension funds
Abolish additional tax allowances for pensioners and married couple's allowance	£2.8 billion[b]	Those aged 65 or over with incomes greater than £6,475
Increase main corporation tax rate by 1p	£0.8 billion[a]	Shareholders
Increase small companies' corporation tax rate to 28%	£3.2 billion[a] (in 2009–10)	Shareholders in small companies
Increase fuel duty by 1%	£0.3 billion[a]	Motorists
Introduce a carbon tax of £21/tonne of CO_2	£13.4 billion[i,j]	Energy users
'Mansion tax' – levy of 1% of property value above £2 million	£1.7 billion[f]	Owners of properties worth more than £2 million
Increase inheritance tax rate by 1p	£0.05 billion[a]	Those inheriting from estates worth more than £325,000
Abolish agricultural and business property reliefs in inheritance tax	£0.345 billion[a] (in 2009–10)	Those inheriting agricultural or business property
Align capital gains and income tax rates	£3.2 billion[f]	Capital gains tax payers
Reduce capital gains tax exempt amount to £2,000	£0.9 billion[f]	Capital gains tax payers
Abolish capital gains tax exemption on primary residence	£3.7 billion[a] (in 2009–10)	Those realising capital gains on their primary residence
Charging capital gains tax at death	£0.28 billion[a] (in 2009–10)	Those inheriting estates on which unrealised capital gains had been made

Notes to Table 7.2

These yields are not additive. Many of the estimated yields interact with each other, and some of the options are mutually inconsistent.

a. Source: HM Treasury and HM Revenue & Customs, *Tax Ready Reckoner and Tax Reliefs*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_taxreadyreckoner.pdf.

b. Source: Authors' calculations using the IFS tax and benefit microsimulation model, TAXBEN.

c. Source: Authors' calculations using the 2006 Survey of Personal Incomes and assuming a taxable income elasticity of 0.2 for higher-rate taxpayers.

d. Ready Reckoner costing does not allow for behavioural response.

e. As explained in the text, retaining the withdrawal of the personal allowance above £100,000 would not be sensible in these circumstances. Abolishing it would reduce the revenue raised by £1.6 billion.

f. Source: Liberal Democrats, 'Liberal Democrat tax plans', Briefing Document, http://www.libdems.org.uk/siteFiles/resources/PDF/Tax%20Plans%20-%20Briefing%20Document.pdf. It is unclear how they arrived at these estimates, so we are unable to say whether or not we agree with them.

g. As explained in the text, the revenue that would be raised by this measure has been reduced by £0.5 billion as a result of the announcement in the 2009 PBR that more individuals would be affected by the government's plans to restrict pensions tax relief.

h. Authors' calculations using http://www.hmrc.gov.uk/stats/pensions/table7-9.xls and assumptions specified in the text.

i. Source: Department of Energy and Climate Change.

j. As explained in the text, it would be desirable to reduce fuel duty and abolish the climate change levy to offset the new carbon tax. This would reduce the revenue raised to £10.1 billion.

7.3 Cuts to social security benefits and tax credits

The average annual real growth rate in spending on social security benefits and tax credits between 1996–97 and 2010–11 is 3.2%, and, in 2011–12, spending on social security benefits and tax credits could reach £202 billion.[71] In this section, we consider options for saving money from the social security and tax credits budget.

The suggested savings come from reducing the real value of entitlements to benefits and tax credits, and removing some people's eligibility for benefits and tax credits, but not from measures to encourage benefit recipients to stop claiming benefits more quickly than they would otherwise have done so.[72] We discuss the amount of money that could be saved, characterise the sort of families who would lose out, and discuss any impacts on incentives to work or save; given the number of options, these discussions will be extremely brief, however.

The section considers the following sorts of reforms:

- freezing the rates of benefits and tax credits throughout the next Parliament;

- means-testing existing means-tested benefits and tax credits more aggressively;

- means-testing currently non-means-tested benefits;

- scaling-back contributory benefits;

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[71] See footnote 78 for derivation of 2011–12 total. Real growth rates based on table 4 of DWP Benefit Expenditure Tables, http://research.dwp.gov.uk/asd/asd4/medium_term.asp, plus the figures for child benefit and tax credit spending in 2010–11 described in the sources to Table 7.3. Includes all spending on tax credits, although some is counted by the government as negative tax revenues.

[72] We do not consider the extent to which money could be saved by tougher conditionality, or other measures to encourage people to leave benefits and move into paid work faster. There are considerable difficulties in costing such reforms, and in knowing to what extent any savings would be achieved under proposals that have already been announced and which have been, or are in the process of being, implemented. But decisions made by a future government about how strictly conditionality is enforced by Jobcentre Plus personal advisers could lead to lower spending on social security benefits.

Table 7.3. Forecast of social security and tax credit spending in 2010–11

Benefit or tax credit	Forecast spend in 2010–11 (£ million)	
Retirement pension	69,721	
Winter fuel payments	2,153	
Free TV licences	565	
Pension credit, of which	7,853	
Guarantee credit		*6,447*
Savings credit		*1,406*
Jobseeker's allowance,[a] of which	7,520	
Contributory		*1,390*
Means-tested		*6,130*
Employment and Support Allowance, of which	3,771	
Contributory		*1,583*
Means-tested		*2,188*
Incapacity benefit	5,325	
Income support (for under-60s)	6,773	
Attendance allowance	5,201	
Disability living allowance	11,740	
Carer's allowance	1,594	
Severe disablement allowance	847	
Child benefit	11,850	
Maternity allowance	359	
Statutory maternity pay	1,882	
Tax credits, of which	29,300	
Classified as social security spending		*22,800*
Classified as negative tax revenue		*6,500*
Housing benefit	20,878	
Council tax benefit	4,928	
Return-to-work and in-work credits	155	
Industrial injuries benefits	822	
Bereavement benefits	585	
Social Fund	511	
Other	753	
Total (excluding tax credits)	165,789	
Total (including tax credits that count as social security spending)	188,589	
Total (including all tax credits)	195,089	

a. Spending was considerably lower before the current recession.

Notes: Tax credit spending is consistent with the 2009 PBR. Child benefit forecast is consistent with the 2008 Budget. Other lines are consistent with the 2009 Budget. Spending on asset-based welfare is not included in this table, but is discussed later in this section. Footnote 78 describes how these numbers have been used to estimate the baseline of spending in 2011–12.

Sources: Table 3 of DWP Benefit Expenditure Tables, http://research.dwp.gov.uk/asd/asd4/medium_term.asp (consistent with Budget 2009); http://www.publications.parliament.uk/pa/cm200708/cmhansrd/cm080430/text/80430w0011.htm#0804301 29000036 (Answer to PQ, 30 April 2008, Col 472W) for child benefit; tables B10 and B15 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm for tax credits.

- unpicking parts of the post-Pensions Commission settlement on benefits for pensioners;

- restricting entitlements to benefits and tax credits;

- abolishing or scaling-back asset-based benefits.

As background, Table 7.3 reports the latest available detailed forecast of levels of benefit and tax credit spending in 2010–11.[73]

Reduce the value of benefits and tax credits

A simple way to reduce spending on social security benefits, and one which spreads the losses over as many families as possible, is to freeze their value in cash terms.[74] The present government usually uprates some benefits in line with growth in the RPI, some in line with growth in the ROSSI index (an alternative measure of inflation which ignores changes in housing costs and council tax, usually used to uprate means-tested benefits) and some in line with average earnings; others are usually frozen in cash terms. One large exception, which we discuss explicitly below, is that the basic state pension rises by the larger of RPI inflation and 2.5%.

The December 2009 PBR announced that some benefits that are usually increased in line with growth in the RPI would be increased by 1.5% in April 2010, even though RPI inflation to the previous September was –1.5%, and that the rise in April 2011 would be 1.5 percentage points below the value of inflation recorded in September 2010. The upshot of all this is that the real value of these benefits in 2010–11 will be 3% higher than if the nominal values had been changed by the rate of inflation in each April, and the real values will permanently be 1.5% higher from April 2011.[75]

Rather than increasing the value of these benefits in April 2011 by 1.5 percentage points less than RPI inflation, as the government plans, there is a case for increasing the value of these benefits in April 2011 by 3 percentage points less than RPI inflation, thereby entirely undoing the 3% real rise that will occur in April 2010. The government is currently predicting a value of RPI inflation of 3% for September 2010, and so such a policy could be brought about by freezing the cash value of all of these benefits. Such a policy should save the government around £0.7 billion a year from 2011–12.[76]

The current government had a policy of increasing the basic state pension by the greater of 2.5% or growth in the RPI. It is hard to see why this policy is justified over one that simply uprates the state pension in line with the RPI; its only justification seems to be

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[73] Except for tax credits, these are consistent with the 2009 Budget, but not necessarily with the 2009 PBR: at the time of writing, the DWP had not published its detailed forecast of benefit spending that is consistent with the 2009 PBR. PBR 2009 forecast social security spending in 2010–11 to be £1 billion lower than in Budget 2009, presumably because the fall in the Treasury's assumption about the level of unemployment (which saves the government money) more than offset the discretionary policy changes (which will increase spending on the RPI-indexed benefits): see paragraph B.80 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

[74] The rises take place in April, and are based on the inflation rate for the year to the previous September (or the earnings growth rate for the year to the previous May–July). There is no single definitive source on uprating practice. Some partial information is given in annex A of DWP, *The Abstract of Statistics for Benefits, National Insurance Contributions, and Indices of Prices and Earnings*, 2009, http://research.dwp.gov.uk/asd/asd1/abstract/Abstract2008.pdf.

[75] The underlying problem is that there is an asymmetry in the uprating rules, with benefits only ever rising in line with rises in prices, not falling in line with falls in prices: this was confirmed in box 5.1 of HM Treasury, *Pre-Budget Report 2008*, November 2008, http://www.hm-treasury.gov.uk/prebud_pbr08_repindex.htm.

[76] The estimate is based on the December 2009 PBR estimate of the cost of a 1.5% real rise in these benefits.

based on a form of money illusion, whereby the government is criticised for small rises in benefits for pensioners when inflation is low, but not criticised when it makes large increases in benefits when inflation is high, even when both have the same impact on pensioners' standard of living.[77] However, if growth in the RPI follows the government forecast and exceeds 2.5% throughout the next Parliament, then adopting a more sensible uprating rule would not save any money in the short run, but might in the long run.

Obviously, more money could be saved if more benefits were frozen for longer periods of time, but this would reduce their value below that of April 2009. For example, given the inflation forecasts in the December 2009 PBR, we estimate that freezing all benefits in April 2011 would save £4.1 billion a year (0.25% of national income).[78] Freezing all benefits for the lifetime of the Parliament could save £24.6 billion a year by the fifth year (1.3% of national income in 2014–15) relative to current policy.[79] Clearly, greater savings

Figure 7.8. Distributional impact of freezing benefits and tax credits throughout the next Parliament
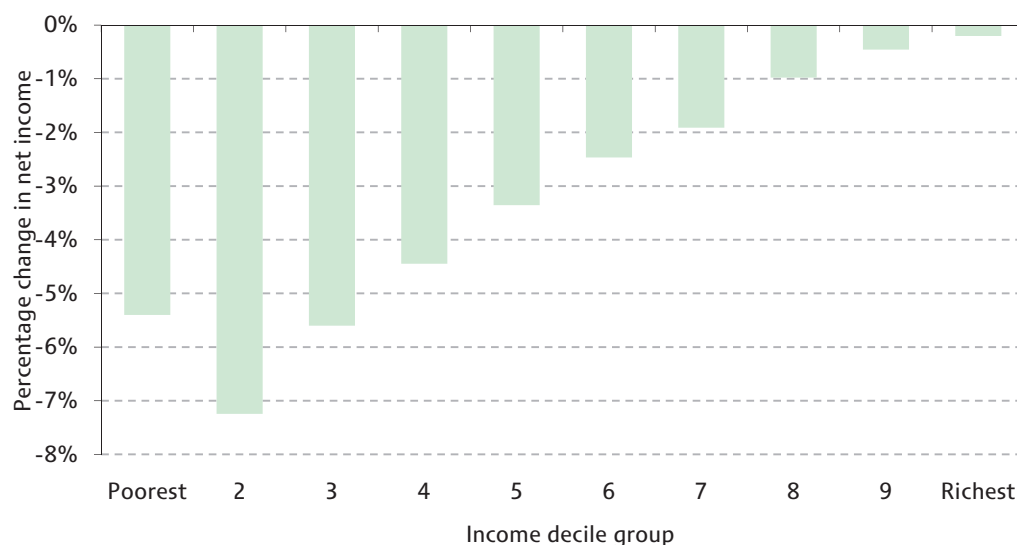
Notes: As for Figure 7.2. Assumes full take-up of all benefits and tax credits, which means that the losses are probably overstated amongst the poorest families.
Sources: As for Figure 7.2.

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[77] There was a political row following a rise in the state pension of 75p in April 2000, which was in line with the low rate of RPI inflation in the previous September, and this led to an above-inflation increase in April 2001 of £5 a week. But there was no similar increase for working-age recipients of benefits. There is a case for indexing the basic state pension to the average inflation rate experienced by pensioners, rather than to that of the whole economy, but the current uprating rules are a poor proxy for this.

[78] This calculation uses the IFS tax and benefit microsimulation model, TAXBEN, to estimate what fraction of social security and tax credit spending would be saved, and then applies these proportions to a projected level of spending in 2011–12. The fall comprises a 1.8% fall in benefit spending and a 3.1% fall in tax credit spending, and about 5% of the savings are offset by reduced tax revenues on the taxable benefits. The government has not published its estimate of social security and tax credit spending in 2011–12: we assume it to be £202 billion, including those parts of tax credits that count as negative tax: this is based on the 2010–11 values in Table 7.3 and an assumed 3.5% nominal growth between 2010–11 and 2011–12. The 3.5% growth rate is based on the growth rates in the leaked Treasury document from after Budget 2009, but updated to reflect the change in the outlook for inflation between Budget 2009 and PBR 2009. See Chapter 8 for more details.

[79] Freezing all benefits and tax credits for the lifetime of the Parliament would mean that benefits would be 13%, 9% and 17% lower than they would have been had they been uprated with RPI/ROSSI/AEI respectively. This policy would reduce total spending on social security and tax credits by 10.8% compared with a world where the current uprating rules were followed. This estimate uses the forecasts for RPI and ROSSI in the 2009 PBR, and assumes that earnings growth will be equal to RPI inflation in 2010–11 and 1 percentage point higher than RPI inflation in subsequent years.

could be made (or the savings made at a faster rate) were a government prepared to cut benefits and tax credits in cash terms.

The losers from such policies would be the recipients of the relevant benefits and tax credits. The distributional impact is shown in Figure 7.8, which confirms that such a policy would reduce incomes in proportionate terms more at the bottom of the income distribution than at the top, thereby acting to increase income inequality and relative poverty.[80]

Means-test more aggressively

It is obviously possible to save money by means-testing the existing means-tested benefits and tax credits more aggressively. In this subsection, we discuss the scope for saving money by means-testing tax credits, pension credit and housing benefit / council tax benefit more quickly than now. However, as we discuss below, such reforms will affect people's incentives to work and save, although the overall impact is complicated and would depend on the particular reform.

Tax credits

If there were no behavioural response, we estimate that increasing the main taper in tax credits from 39% to 44% would save £1.3 billion a year, and increasing it to 49% would save £2.3 billion a year. A rise to 49% would mean that the marginal effective tax rate (METR) faced by someone who was paying basic-rate income tax, employee NI (but ignoring employer NI) and facing a withdrawal of tax credits would be 80%, the same level as was faced by someone in 1997 who was paying basic-rate income tax, employee NI (but ignoring employer NI) and facing a withdrawal of family credit (the ancestor of the current tax credits), rather than the 70% that it is at present. Losers from this policy would be all families receiving tax credits and on the existing taper, which broadly corresponds to those with joint family pre-tax incomes above £6,500 and below £24,400 (plus some higher-income families with more than one child), some of whom would be in relative poverty on the current government's definition.

Cutting the threshold in tax credits – the point above which additional earnings reduce tax credit awards – would also save money. A reform which would help reduce some complexity would be to align the tax credit threshold with the income tax personal allowance. Based on the government's plans for the personal allowance, this would actually involve a slight *increase* in the threshold in 2011–12, which would cost around £0.1 billion a year, but if a future government adopted the policy discussed in Section 7.2 of aligning the income tax personal allowance with the (currently lower) employer NI threshold, and also aligned the tax credits threshold to it, then we estimate this would save £0.6 billion a year in 2011–12. A larger cut in the threshold, to a value corresponding to 16 hours of work a week at the national minimum wage, would save around £1.2 billion a year in 2011–12.[81] The losers would be very similar to those under the policy of increasing the taper rate.

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[80] Losses are smaller in the bottom decile group than in the second because the bottom decile group contains a disproportionate number of families reporting losses from self-employment, and such families are often not entitled to means-tested benefits. Losses in the top decile groups mostly reflect recipients of child benefit and the basic state pension.

[81] This was recommended in M. Brewer, E. Saez and A. Shephard, 'Means-testing and tax rates on earnings', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/press_docs/rates.pdf. To cost this reform, it was assumed the minimum wage would be £6 an hour in 2011–12.

Several organisations have suggested that better-off families with children should not be eligible for tax credits.[82] One way to do this would be to taper the family element of the child tax credit away at 39% immediately upon the exhaustion of the child element of the child tax credit, rather than at the existing threshold of £50,000. We estimate that this would raise around £0.9 billion a year[83] (rising to £6.5 billion a year were child benefit combined with what remained of the child tax credit). The potential losers from this would be families with children whose joint pre-tax annual income exceeded £24,400; these will mostly be in the richer half of families with children.[84] The Conservative Party has proposed reducing the threshold at which the family element is tapered away from £50,000 to £40,000: see Box 7.4. It is, though, worth noting that the decisions by successive Chancellors Gordon Brown and Alistair Darling to freeze the value of the family element at £545 since 2003 have meant that its real value was lower in 2009–10 than when it was introduced in 2003–04: had it kept pace with inflation, it would have been worth £670 a year in 2009–10, and the £50,000 threshold would have been £61,500.

Box 7.4. Conservative Party policy on the child tax credit

At its 2009 party conference, the Conservative Party proposed to start the withdrawal of the family element of the child tax credit at an annual family income of £40,000, rather than the current threshold of £50,000. An early estimate of the savings from this reform was produced by researchers at IFS and cited by the Conservative Party, and this was that the change could save £0.4 billion a year. However, the government has estimated that the threshold would have to be cut by more – to £31,000 a year – in order to save £0.4 billion.[a]

It is likely that the estimate from the government is more accurate, because the IFS estimate assumed full take-up of the child tax credit. Without access to HMRC's data, it is not possible for us to say precisely how much money would be raised by the Conservative Party's proposal having allowed for incomplete take-up, but it can be stated confidently that it would be less than £0.4 billion (because that would require lowering the threshold to £31,000), but more than £45 million (which is what would be raised if the threshold at £50,000 were replaced by a cliff-edge, as this is the total amount to which families with incomes exceeding £50,000 are entitled).

a. See *Hansard*, 9 December 2009, Col. 407W,
http://www.publications.parliament.uk/pa/cm200910/cmhansrd/cm091209/text/91209w0014.htm#column_406W.

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[82] Tapering away the family element of the child tax credit as soon as the child elements have been withdrawn has been suggested by organisations and individuals with a range of political backgrounds, including the think tank Reform, the Centre for Social Justice, Vince Cable and the Institute for Public Policy Research (IPPR), as well as in M. Brewer, E. Saez and A. Shephard, 'Means-testing and tax rates on earnings', submission to Mirrlees Review of the Tax System, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/mirrleesreview/press_docs/rates.pdf.

[83] Previous IFS work (R. Chote, R. Crawford, C. Emmerson and G. Tetlow, *Britain's Fiscal Squeeze: The Choices Ahead*, Briefing Note 87, 2009, http://www.ifs.org.uk/bns/bn87.pdf) estimated that this would save £1.3 billion a year, but this assumed full take-up. In 2007–08, families entitled for no more than the family element were entitled for £1.1 billion a year (http://www.hmrc.gov.uk/stats/personal-tax-credits/ctcw-tax-credit-final-may09.pdf), but the number of families receiving no more than the family element fell considerably in 2008–09 (http://www.hmrc.gov.uk/stats/personal-tax-credits/cwtc-apr09.pdf), and our revised estimate reflects this.

[84] The threshold for losing would rise by around £6,080 for each additional child, and also if anyone in the family is disabled, and with spending on formal childcare. The child tax credit is usually paid to mothers in couples.

Pension credit

The pension credit (PC) has a taper of 40% applied to income above a threshold. If there were no behavioural response, we estimate that raising this to 60% could save £1.2 billion a year, raising it to 80% could save £2.1 billion a year and raising it to 100% – which would return the PC to something like its predecessor, the Minimum Income Guarantee – could save £3.0 billion.[85] The losers would be low-income pensioners receiving the saving credit part of the PC.

Housing benefit and council tax benefit

There is not much scope for increasing the taper in housing benefit (HB) or council tax benefit (CTB), because their combined taper already reaches 85% of net income. However, if there were no behavioural response, increasing either the HB taper from 65% to 75% or the CTB taper from 20% to 30% could save around £0.6 billion (these reforms should not be done together, as that would take the combined HB/CTB taper over 100%. The most penal reform would be to merge HB and CTB with income support (IS) and income-based jobseeker's allowance (JSA), which would mean that they had a 100% taper, but this could not be done immediately).[86] Losers would be low-income households (but not those receiving out-of-work benefits) receiving HB and CTB.

The impact of more aggressive means-testing

Any change to the withdrawal rates or thresholds will also affect incentives to be in work, or to earn more or save more. However, the effects are complicated, and not all individuals will be affected in the same way. An increase in the withdrawal rate of tax credits, HB or CTB would have the following impact on the financial reward to work (compared with not working):

   i.   reduce the financial reward for some single people, and for the primary earner in some couple families;
   ii. increase the financial reward for secondary earners in some couple families.

And it would have the following impacts on marginal effective tax rates:

   iii. increase the number of people facing very high METRs;
   iv. reduce the number of people facing high (but not very high) METRs.

Impact (i) will tend to reduce the number of people in work, as some people would prefer to remain on benefits for longer, or look less hard for a job, or even stop working. But impact (ii) will tend to mean that more second earners decide to work. Impacts (iii) and (iv) also operate in opposite directions: anyone in work who sees their METR rise will have less incentive to increase their earnings, whether through working more hours or seeking a pay rise or better-paid job, but the opposite will apply for those who see their METR fall. For these two pairs of effects, the overall impact will depend on the details of the reform, the distribution of earnings and family income, and how responsive are the individuals affected by the reform.[87]

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[85] These could be overestimates of the savings, because the calculations do not reflect the low take-up rate of the PC by those on the taper, although this is offset to some extent because these estimated savings do not reflect savings from pensioners who do not live in private households, and therefore not covered by the Family Resources Survey.

[86] These estimates should be seen as tentative, because they ignore the low take-up rate of these benefits amongst those in work and pensioners, and they ignore the fact that estimated entitlement to HB in TAXBEN assuming full take-up is less than the amount spent by the government.

[87] A rise in the tax credit taper would undo part (but not all) of the change in incentives that came about when working families' tax credit (WFTC) was introduced, and research has shown that the introduction of WFTC led

Families who remain entitled to the means-tested benefit or tax credit even after it is means-tested more aggressively will, in general, experience the first and third of these, although some will also experience the second. Families who lose entitlement to the means-tested benefit or tax credit after it is means-tested more aggressively will, in general, experience the first and fourth of these, but may also experience the second. For example, a rise in the tax credit taper by 5 percentage points would mean that some people who currently face a 70% METR, because they are on the tax credit taper and pay basic-rate income tax and employee NI, would face a 75% METR (if they remained on the tax credit taper), and others would face a 31% METR (if they lost all entitlement to tax credits). If the people concerned were lone parents or primary earners, then they would also see their gain to work fall, but if they were second earners, they would see their gain to work rise.

Similarly, any increase in the withdrawal rate of the PC would weaken the incentive to save for those individuals who remain (or expect to remain) on the PC taper, but strengthen it for those who are (or expect to be) no longer eligible.[88]

Means-test the existing non-means-tested benefits

There is often pressure to target social security benefits more tightly on those with the lowest resources: such a move could reduce total spending on benefits but maintain the living standards of those in greatest need of state support. Other than child benefit and the basic state pension, the important non-means-tested benefits are disability living allowance (£11.7 billion a year in 2010–11), attendance allowance (£5.2 billion a year in 2010–11) and carer's allowance (£1.6 billion a year in 2010–11).[89] This subsection considers the scope for means-testing, or abolishing, benefits that are paid to all eligible families at a rate that does not depend upon the family's income.[90]

Child benefit

Currently, financial support for children is mostly delivered through the income-related child tax credit and the universal, non-means-tested child benefit.

One argument to justify child benefit not being means-tested is that it helps achieve horizontal redistribution (between those with and without children) and redistribution across the life cycle. If it is thought that better-off families with children should not be eligible for state support for their children, then this could justify removing not only the

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to a net increase in the number of workers (see M. Brewer and J. Browne, *The Effect of the Working Families' Tax Credit on Labour Market Participation*, IFS Briefing Note 69, 2006, http://www.ifs.org.uk/bns/bn69.pdf). Research that examined the impact of cutting the withdrawal rate in HB found that it would increase average METRs, so increasing the withdrawal rate (as suggested in this chapter) would probably lower average METRs (which must mean that impact (iv) is more significant than impact (iii)). It also suggests that increasing the withdrawal rate in HB would improve the incentive to have a job for nearly as many people (all of whom would be potential second earners in couples) as it would weaken the incentive to have a job. See S. Adam, M. Brewer and A. Shephard, *The Poverty Trade-Off*, Policy Press, Bristol, 2006.

[88] This ignores income effects, which will tend to reduce any adverse impacts on employment or saving.

[89] See Table 7.3 for details of estimated spending in 2010–11. We do not discuss cuts to the basic state pension, but we discuss the impact of delaying increasing it in line with earnings.

[90] The think tank Reform recently analysed the extent to which social security benefits are paid to families in the top half of the income distribution, and proposed that these be scaled back: see T. Cawston, A. Haldenby and P. Nolan, *The End of Entitlement*, Reform, London, 2009, http://www.reform.co.uk/LinkClick.aspx?fileticket=ECSzk1Mtle8%3d&tabid=118. However, George Osborne said that 'we will preserve child benefit, winter fuel payments and free TV licenses. They are valued by millions' in his speech to the 2009 Conservative Party Conference, http://www.conservatives.com/News/Speeches/2009/10/George_Osborne_We_will_lead_the_economy_out_of_crisis.aspx.

family element but also child benefit.[91] For example, if child benefit were combined with the child tax credit and subject to the same withdrawals, we estimate that £5.1 billion a year could be saved.[92] The potential losers from this would be families with children whose joint pre-tax annual income exceeded £24,400, most of whom will be among the richer half of families with children; losses amongst the losers would increase with the number of children.[93] Note that if this policy were implemented at the same time as tapering away the family element of child tax credit as soon as the child element of tax credits have been tapered away, then the total savings would be around £6.5 billion a year compared with the current regime. Roughly the same families would lose as above, but the average losses would be higher.

Winter fuel payments and free TV licenses for those aged 75 and over

Two universal benefits introduced by the current government are winter fuel payments (WFPs) for those aged 60 or over, and free TV licences for those aged 75 or over. It is unclear why these programmes need to exist when pensioners can also receive the (taxable) basic state pension and the (means-tested) PC. Scrapping these outright would save £2.7 billion a year;[94] scrapping them but with an offsetting rise in the PC to ensure there were no low-income losers could save around £1.4 billion a year.[95] The losers from the latter change would be better-off pensioners, plus some low-income pensioners who are not taking up the PC to which they are entitled.

Other non-means-tested benefits: AA, DLA and CA

Should a government desire, it would clearly be possible for other non-means-tested benefits to be means-tested in some way, or even abolished. For example, substantial reforms would include:

- scrapping carer's allowance (CA): if this did happen, many recipients would instead be entitled to claim income support, which is potentially more generous but is means-tested against any income of the carer and their partner;

- scrapping attendance allowance (AA) as a benefit in its own right but replacing it by higher premiums in PC, and HB/CTB;

- scrapping disability living allowance (DLA) as a benefit in its own right and replacing it with higher credits in tax credits and means-tested benefits (alternatively, a new means-test for DLA could be devised).

Although £1.6 billion is estimated to be spent on CA in 2010–11, we estimate that scrapping it would save only around £0.5 billion, as some of its recipients would be entitled to additional means-tested benefits or tax credits. The impact of abolishing AA

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[91] This policy has been suggested by, for example, Vince Cable MP (although he said that some compensation would be needed in the form of tax cuts) and the think tank Reform.

[92] Our estimate of the cost of this policy is based on abolishing child benefit, and increasing the child element of the child tax credit by an amount equal to the rate of child benefit for children beyond the first, and increasing the family element by an amount equal to the current first child premium in child benefit. We do not discuss any administrative complications that might arise.

[93] The threshold for losing would rise by around £6,080 for each additional child, and also if anyone in the family is disabled, and with spending on formal childcare. Child benefit is usually paid to mothers in couples.

[94] DWP, *The Abstract of Statistics for Benefits, National Insurance Contributions, and Indices of Prices and Earnings*, 2009, http://research.dwp.gov.uk/asd/asd1/abstract/Abstract2008.pdf.

[95] It has not been possible to estimate this precisely. Scrapping the WFP but with a compensating increase in the PC guarantee would save around half of the gross cost of the WFP, or around £1.0 billion a year. If the same ratio also applies to free TV licences, then scrapping both the WFP and the free TV licences for those aged 75 or over but with compensating increases in the PC guarantee would save around £1.4 billion a year.

and DLA would depend on how precisely it was implemented, but if recipients of means-tested benefits are to be protected, then the potential savings would be considerably lower than the gross cost of these benefits (£5.2 billion for AA and £11.7 billion for DLA in 2010–11).

The current design of these benefits leads them to be described as 'extra needs' or 'extra costs' benefits, designed to ensure fairness by offsetting the costs (i.e. a disability or a requirement to care for a disabled person) that some individuals face through no fault of their own, regardless of income. Scrapping CA, AA and DLA could be justified through a desire to focus state support on those who need it most, or a desire to have individuals rely more on private insurance products. A means-tested DLA, for example, would help offset the extra costs of having a disability only if the disabled person had a low income, and any partner had a low income, but would not help offset the extra costs of disabled individuals with high private incomes, or with partners with high incomes.[96] Abolishing or means-testing CA, AA and DLA would also increase the number of people facing a high marginal effective tax rate due to the withdrawal of a means-tested benefit, thus weakening work incentives.[97]

Making benefits taxable

A more generous alternative to means-testing the non-means-tested universal benefits is to make them taxable. The government estimates that, in 2009–10, taxing child benefit would raise, at best, £1.2 billion a year, taxing DLA would raise around £0.5 billion a year and taxing AA would raise £0.2 billion year; we estimate that taxing WFPs would raise £0.2 billion a year.[98] The losers from such policies would be the recipients of the relevant benefits and tax credits who have incomes high enough to be liable for income tax.

The arguments for and against taxing AA and DLA are very similar to those for scrapping or means-testing them. The arguments for taxing child benefit in the hands of its recipient are similar, but a policy of taxing child benefit in the hands of its recipient would mean that one-earner couples would usually not pay tax on child benefit, but two-earner couples with the same joint income would, which might be seen as unfair.[99] The case for taxing WFPs is perhaps the strongest, though, as there is no clear justification for having them free of income tax when the basic state pension is taxable.

Scale-back contributory benefits

Successive governments have eroded the contributory principle in the UK's social security system, thereby making it look less like a system of social insurance and more like a set of needs-based benefits.[100] But some elements of the contributory system

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[96] A separate argument can be made for abolishing CA and having its recipients claim IS, as this would ensure fairness between those who do not work because they care full-time for a disabled adult (who currently claim CA) and lone parents who do not work because they care full-time for children aged under 7 (who currently claim IS).

[97] Such people would include the partners of the benefit recipients where the abolition of one of these benefits led a family to be on a withdrawal of a means-tested benefit or a tax credit.

[98] Government estimates are from the Ready Reckoner. CA is already taxable. Equivalent estimates from TAXBEN are that taxing AA, DLA and child benefit would raise £0.3 billion, £0.7 billion and £1.2 billion a year respectively. We do not discuss the practical issues (i.e. administrative costs for DWP and HMRC, and compliance costs for individuals) that would be involved were these benefits to be taxable.

[99] For further discussion, see T. Clark and J. McCrae, *Taxing Child Benefit*, IFS Commentary 74, 1998, http://www.ifs.org.uk/publications/1948.

[100] J. Hills, 'Inclusion or insurance? National Insurance and the future of the contributory principle', CASEpaper 68, LSE, 2003.

remain. Those opposed to social insurance argue that, like the non-means-tested benefits discussed in the previous subsection, they direct government resources to those who may have little need of it. On the other hand, the Fabian Society has recently called for an expansion of the contributory principle.[101] An alternative approach, discussed in Box 7.5, would be to make greater use of compulsory accounts, similar to the forthcoming Personal Accounts, into which individuals (and perhaps the government and employers) would have to contribute, and which would be used to fund some existing benefits.

Box 7.5. Compulsory savings accounts, and making more use of private insurance

A more radical approach to spending less on social security benefits would be to make use of compulsory savings accounts, into which individuals (and perhaps the government and employers) would have to contribute, and which could be used to fund some benefits currently funded through general taxation. This is similar to the principle behind using Personal Accounts to fund income in retirement (although they are not compulsory), and it clearly could be extended to other benefits.

One approach to compulsory savings accounts is to use them to replace those benefits that are mostly about redistributing income across an individual's life cycle (as opposed to those that are about redistributing income from the lifetime rich to the lifetime poor, which would include most of the means-tested benefits). Benefits that might fall into this category include the state pension, child benefit and maternity pay, jobseeker's allowance (for short spells of unemployment) and statutory sick pay or employment and support allowance (for short spells of sickness/disability). Under a system of compulsory savings accounts, each working-age adult would have an account, into which mandatory contributions would be made (perhaps replacing some existing NI contributions). The benefits listed above would then be paid out of an individual's account, rather than from general taxation; note that account balances would be permitted to become negative. Upon reaching the state pension age, negative balances could be forgiven – to provide some form of redistribution – and positive balances annuitised (see Bovenberg et al. (2007) for an example of this proposal[a]). The advantages of such schemes derive from the fact that richer individuals would effectively fund their own benefits directly; this strengthens incentives for such individuals both to work and not to make use of those benefits, and it should therefore allow savings to be made at current levels of benefit entitlement.

Another approach to the benefit system is to make more use of private insurance for things such as disability and unemployment, thereby lowering the need for JSA and ESA (as suggested by Reform[b]). However, a fully private market for unemployment or disability insurance might lead to some people being unable to insure themselves, because of the usual problems of moral hazard and adverse selection (moral hazard would exist because whether someone is unemployed depends to some extent upon that person's actions; adverse selection would exist because the value to an individual of disability insurance depends on that person's health, and an individual may have a much better idea of his or her health than an insurer).

a. Bovenberg, A.L., M.I. Hansen and P.B. Sørensen, 'Individual accounts and the life cycle approach to social insurance', Working Paper, 2007,
http://www.econ.ku.dk/pbs/diversefiler/Paper%20version%20July%2007.pdf.
b. T. Cawston, A. Haldenby and P. Nolan, *The End of Entitlement*, Reform, London, 2009,
http://www.reform.co.uk/LinkClick.aspx?fileticket=ECSzk1Mtle8%3d&tabid=118.

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[101] T. Horton and J. Gregory, *The Solidarity Society*, Fabian Society, London, 2009.

The main remaining contributory benefits for working-age adults are jobseeker's allowance (JSA) and the employment and support allowance (ESA) (and its predecessor, incapacity benefit, IB). It would clearly be possible for these to be scaled back in some way. For example:

- contributory JSA could be limited to three months (rather than the current six), or abolished outright;

- IB and contributory ESA could be time-limited (say, to one or two years), or abolished outright.

Scrapping contributory JSA and IB/ESA saves less than the current spending on those benefits, as some recipients would be eligible for means-tested benefits instead. Our very tentative estimate is that scrapping contributory JSA could save around £0.3 billion a year (once the labour market has returned to its pre-recession state) and scrapping contributory IB/ESA could save around £2 billion a year.[102] Scrapping these benefits would clearly be a dramatic policy change, but less money could be saved by the less dramatic policy of time-limiting contributory IB/ESA to, say, one or two years. The losers from these reforms would be recipients of contributory JSA or IB/ESA who also have other private sources of income, or a partner with an income.

Finally, it would be possible to make savings from statutory maternity pay (estimated to cost £1.9 billion in 2010–11) either by freezing the basic amount for one or more years (although savings here were included in the estimated savings given in the previous paragraph) or by only cutting the amount paid in the first six weeks (currently 90% of earnings). However, the data available to us do not permit accurate costings of any of these measures.[103]

Unpick the Pensions Commission consensus

In 2006, the government published a major White Paper proposing changes to all aspects of the pensions system, following an independent review by the Pensions Commission.[104] The key proposals of the White Paper and the Pensions Act that followed were that:

- the basic state pension be indexed to earnings, beginning at some point in the next Parliament;

- the guarantee credit of the PC continue to be indexed to earnings, but the savings credit would be reformed so that it grew more slowly;

- entitlements to the basic state pension be increased, by relaxing the contribution conditions, but accruals of the state second pension to be reduced for higher earners;

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[102] These estimates are very tentative because such calculations require accurate data on which households are receiving JSA and/or IB/ESA, and whether they are receiving the contributory or income-related versions, and it is clear that the Family Resources Survey data, on which our estimates are based, are not perfectly accurate.

[103] There is also an inconsistency within the tax credit system, in that the first £100 a week of SMP does not count as earnings for the purpose of the tax credit means-test, even though the purpose of SMP is to replace forgone earnings. It would be sensible to correct this: if the government wished to increase the support for mothers of newborn children, then there are other instruments available to it. A mother receiving SMP who is on the tax credit taper would lose up to £1,521 if all of SMP were counted as earnings.

[104] Department for Work and Pensions, *Security in Retirement: Towards a New Pensions System*, Cm. 6841, The Stationery Office, London, 2006, http://www.dwp.gov.uk/policy/pensions-reform/security-in-retirement/white-paper/; Pensions Commission, *Implementing an Integrated Package of Pension Reforms: The Final Report of the Pensions Commission*, London, 2006.

- most employees be automatically enrolled by their employer into a private pension scheme, with a compulsory minimum employer contribution for those employees who do not choose to leave the scheme;

- the state pension age rise from 65 to 68 by 2046.

This subsection asks how much could be saved with a less generous settlement for pensioners. However, given that current policy on state pensions and on saving for retirement was the output of a careful, in-depth review by an independent commission, it would be preferable if a future government could continue to consider these policies as a whole, rather than seeking to unpick the post-Pensions Commission reforms in a piecemeal fashion.

The basic state pension

The current government has said that it hopes to restore the link between the basic state pension and earnings in April 2012.[105] The government could decide to push this back, not least as in 2006 it would have been difficult to imagine that the fiscal position could ever be as bad it is now. The government has previously estimated that each year in which the basic state pension is indexed to prices rather than earnings saves the government around £0.7 billion a year and so a postponement from 2012–13 to 2015–16 could save £2.1 billion a year in 2015–16.[106] Delaying the point at which the pension is indexed to earnings would be consistent with the current government's decision in the December 2009 PBR to delay the rolling-out of automatic employer enrolment, although the Pensions Commission's recommendation was that the link with earnings should begin in April 2010.[107] The losers would be pensioners who are not receiving the PC, most of whom will be better-off pensioners (with too much private income to be entitled to the PC) but some of whom will be low-income pensioners not claiming the PC to which they are entitled.

The pension credit

The current government is committed to increasing the PC guarantee in line with earnings, as it has done since 2003. But money could be saved if it were indexed in line with prices instead. The precise savings from adopting such a policy from 2012 would depend upon the future value of earnings growth and RPI inflation, but we estimate that each increase in the PC guarantee of 1.5 percentage points more than inflation (which would occur if average earnings were growing at 4% and the RPI growing at 2.5%) costs around £0.4 billion a year. Recipients of the PC would lose; most of them are towards the bottom of the income distribution of pensioners.

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[105] In the White Paper, the government stated: 'During the next Parliament, we will re-link the uprating of the basic State Pension to average earnings. Our objective, subject to affordability and the fiscal position, is to do this in 2012, but in any event by the end of the Parliament at the latest. We will make a statement on the precise date at the beginning of the next Parliament' (page 17 of Department for Work and Pensions, *Security in Retirement: Towards a New Pensions System*, Cm. 6841, The Stationery Office, London, 2006, http://www.dwp.gov.uk/policy/pensions-reform/security-in-retirement/white-paper/.

[106] The original source is table 1 of the Work and Pensions Committee's Fourth Report, HC 1068(i), 2005–06 Session, http://www.publications.parliament.uk/pa/cm200506/cmselect/cmworpen/1068/106807.htm#a35, but the amounts have been uprated to today's prices. However, the saving will depend in practice upon the difference between growth in average earnings and RPI inflation between 2012 and 2015.

[107] It would be possible to reduce spending on the basic state pension by tightening the contributory conditions – perhaps, for example, by reversing the changes in the 2006 Pensions Act (which, for those retiring from 2010, cut the years of contributions needed for a full BSP to 30 and scrapped the requirement to have contributed for a quarter of the working life to receive any BSP). It is also possible to reduce the generosity of the state second pension – perhaps, for example, by bringing forward the date after which all accrual will be flat-rate. The savings from both these measures would initially be small, but would build up over the long run.

The state pension age

The Conservative Party has proposed that the state pension age be increased at a faster rate than that proposed by the current government, rising from 65 to 66 for men from 2016 and rising from 65 to 66 for women after 2020 (the current government has stated that the age for both should rise to 66 by April 2026). The people made worse off by this reform would be men born between 1951 and 1959, and women born between 1955 and 1959.

We have produced estimates of the savings in benefit spending that would arise if the basic state pension age were increased today by one year (i.e. to 66 for men and 61 for women[108]), assuming no one altered their employment or savings patterns. Such a move is estimated to reduce spending on the basic state pension by around £2.7 billion a year, but a net increase in spending on other benefits, and reduced tax revenues (as income from the basic state pension is taxable and despite the one-year rise in which employee NI is payable), mean the total gain for the Exchequer would be around £2.2 billion a year. However, this will be an underestimate of the savings that would arise from the same reform if it took place in 2016 or 2020 even if no one altered their employment or savings patterns.[109]

The more substantial question, though, is to what extent a rise in the basic state pension age would affect people's decisions to work and save. If individuals work more in response to a rise in the state pension age, then the savings to the government would rise, as such individuals would contribute more in taxes and be entitled to less means-tested benefits. But if individuals saved more (by spending less), then the savings to the government would fall, at least in the short term.

The Conservative Party claimed that its reform would save £13 billion a year. It is unclear in what year the Conservatives were claiming the saving and in what year's prices, but the underlying research estimated the savings to be $^2/_3$% of GDP by 2023, which would amount to £10 billion in 2011–12. The savings will stop in 2024, at which point the state pension age is due to rise to 66 under current government plans. This estimated saving is almost certainly too large, because it was based on research that examined the impact on the public finances of everyone working for one more year.[110] It is very hard to imagine that all working-age adults will work another year in response to losing entitlement to the state pension for a year: there will almost certainly be some individuals who will not alter their behaviour at all if the state pension age is increased, such as those who are too ill to work or those who are so rich that they do not need to work. But we will soon have a better idea of how plausible this is from analysing the employment patterns of women affected by the rise in the basic state pension age from 60 to 65 from next April to 2020. It is likely, then, that the true savings from this reform lie somewhere between £2 billion and £13 billion a year.

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[108] With associated increases in the age at which people become entitled to the WFP, PC guarantee, PC savings credit, pensioner's tax allowance and attendance allowance, and at which they lose entitlement to IB/ESA. Our reformed system would remove the PC savings credit from women aged 65, but it would allow men aged 61–65 to claim the PC guarantee and WFPs.

[109] The underestimate of the savings arises because entitlements to SERPS and S2P amongst people reaching state pension age in 2016 or 2020 are likely to be greater than now, and more elderly people are likely to be in work then than now; these mean that the savings from not paying state pension for a year would be greater in real terms in 2016 than now, fewer 65-year-olds will be entitled for extra PC were the state pension to be removed, and the extra tax revenue from removing the older person's tax allowance from 65-year-olds will be greater in 2016/2020 than it is now.

[110] The costing is reported in http://news.bbc.co.uk/1/hi/uk_politics/8291835.stm. See NIESR press release of 6 October 2009, http://www.niesr.ac.uk/pubs/searchdetail.php?PublicationID=2406.

Reduce entitlements to benefits and tax credits

In principle, there are many ways to reduce entitlement to benefits and tax credits other than by a more aggressive means-test. For example, the number of recipients of ESA and DLA depends, in loose terms, on how unhealthy an individual has to be to receive them. Similarly, whether a lone parent can claim IS depends on whether her or his youngest child is under a certain age; and whether a person is entitled to claim CA depends on whether he or she spends more than a fixed number of hours caring. There are also numerous rent restrictions in HB (which limit the amount of rent that can be covered). All of these involve parameters or thresholds that could be altered, and which could cut the number of people entitled to claim benefits. But for many of them, it is very hard for us to know how much would be saved were the criteria to be altered, mostly because household surveys do not collect enough information to allow entitlements to be estimated under alternative conditions.

This subsection considers a mixed set of reforms which all reduce entitlement to benefits and tax credits by methods other than a more aggressive means-test.

Removing entitlement to benefits and tax credits in respect of dependent children aged 16 to 19

When the current government introduced the education maintenance allowance (EMA) – a payment to 16- to 19-year-olds in full-time further education means-tested against the income of their parent(s) – there was a suggestion that it could replace the benefits and tax credits that are paid to the parents of the EMA recipients.[111] However, this has not happened. A dramatic change would be not to pay extra benefits and tax credits in respect of dependent children aged 16 or over, and we estimate that this would save £3.0 billion a year. A significant drawback of this reform, though, is that it might discourage young people from staying on in education beyond the age of 16 and, to counter this, some of the savings might need to be put back into higher EMA payments. But even if, for example, only child benefit for 16- to 19-year-olds were scrapped and replaced by an equivalent rise in entitlements to EMA, then savings would be made, as the EMA is means-tested and child benefit is (currently) not; the losers would be families with dependent children aged 16 or over with incomes too high to be entitled to EMA.

Cutting the fraction of childcare costs that can be refunded through the childcare tax credit

Cutting the fraction of childcare costs that can be refunded through the childcare tax credit from 80% to 50% could save around £0.7 billion a year. But such a policy might mean that some parents use informal care rather than formal care, and some might decide that it is no longer worth working. Losers would be concentrated in the middle of the income distribution.[112]

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[111] For example, the 1997 Labour Party manifesto, *New Labour because Britain Deserves Better*, said that 'We are committed to retain universal Child Benefit where it is universal today – from birth to age 16 – and to uprate it at least in line with prices. We are reviewing educational finance and maintenance for those older than 16 to ensure higher staying-on rates at school and college, and that resources are used to support those in most need. This review will continue in government on the guidelines we have already laid down'. This clearly left open the prospect that child benefit for those aged 16 and over could be abolished.

[112] A distributional analysis of the childcare tax credit can be found in M. Brewer, C. Crawford and L. Dearden, 'Reforms to childcare policy', in R. Chote, C. Emmerson, D. Miles and Z. Oldfield (eds), *The IFS Green Budget 2005*, 2005, http://www.ifs.org.uk/budgets/gb2005/05chap9.pdf, and M. Brewer, 'Quality costs: funding options for high quality early childhood education and care', Daycare Trust, Working Paper 5, 2009, http://www.ifs.org.uk/docs/fundingoptions_wp.pdf.

Restricting the amount of council tax that can be rebated by council tax benefit

From 1998–99 to 2003–04, the amount of council tax benefit/rebate that a household could receive was limited to the tax due on a band E property. We estimate that restoring this restriction would save £0.6 billion a year, and a more substantial tightening, so that only the council tax due on a band C property could be rebated, would save £1.2 billion. The losers would be recipients of CTB in England and Scotland who live in houses in bands F to H (or D to H with the extra restriction) and in Wales who live in houses in bands F to I (or in bands D to I).

Asset-based benefits

Recently-introduced asset-based welfare policies – the Child Trust Fund and the planned nationwide roll-out of the Saving Gateway in 2010 – might also be seen as potential sources of savings.[113]

At present, all children have £250 paid by the government into their Child Trust Fund at birth, and when they are 7 years old, with children whose family is receiving certain means-tested benefits or has an income of below £16,040 (in 2009–10) getting an extra £250. The Liberal Democrats have said that they would abolish the Child Trust Fund, which would save around £0.5 billion a year. The Conservatives have proposed to scrap the payments for the better-off children (i.e. those children whose family does not receive certain means-tested benefits and has an income of above £16,040), which would probably save around 45% of the cost of the scheme (based on 37% of children continuing to be entitled to Child Trust Fund payments).

The Saving Gateway allows recipients of certain benefits to have contributions they make into a designated account (up to £25 a month) matched by the government after two years, at a rate of 50p for each £1 saved. The aim of such a policy is, presumably, to encourage saving. However, the evaluation of the second Saving Gateway pilots found mixed evidence on whether the accounts did increase saving.[114] It is also not clear why the government wants low-income individuals to save; such individuals might be better served through policies aimed at increasing their incomes. Abolition of the Saving Gateway would save an estimated £130 million in 2012–13, but the savings would fall gradually to just £60 million a year.[115]

Abolition of the Child Trust Fund would affect as-yet-unborn children in 18 years' time, with those from low-income families losing by more than those from higher-income families. The Conservative policy would mean that children from families that do not receive certain means-tested benefits and have an income of above £16,040 would lose

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[113] This draws on R. Chote, R. Crawford, C. Emmerson and G. Tetlow, *Britain's Fiscal Squeeze: The Choices Ahead*, Briefing Note 87, 2009, http://www.ifs.org.uk/bns/bn87.pdf. See also C. Emmerson, 'Should the Child Trust Fund be abolished?', IFS Observation, September 2009, http://www.ifs.org.uk/publications/4602, and C. Emmerson and M. Wakefield, *The Saving Gateway and the Child Trust Fund: Is Asset-Based Welfare 'Well Fair'?*, Commentary 85, Institute for Fiscal Studies, London, 2001, http://www.ifs.org.uk/comms/comm85.pdf.

[114] Higher-income account holders appeared to have financed their contributions into their accounts from reshuffling other assets, but there was some evidence that lower-income account holders did finance contributions through genuinely higher saving and lower spending. See P. Harvey, N. Pettigrew, R. Madden, C. Emmerson, G. Tetlow and M. Wakefield, *Final Evaluation of the Saving Gateway 2 Pilot: Main Report*, HM Treasury, London, May 2007, http://www.hm-treasury.gov.uk/d/savings_gateway_evaluation_report.pdf.

[115] Costing from paragraph 10.2 of HM Revenue and Customs, 'Explanatory memorandum to the Saving Gateway Accounts Regulations 2009', http://www.uk-legislation.hmso.gov.uk/si/si2009/draft/em/ukdsiem_9780111483404_en.pdf.

out (currently, around two-thirds of children would fall into this category[116]). Abolition of the Saving Gateway would affect those who would have qualified for and opened an account (who would be benefit recipients who are able to place funds in an account and therefore qualify for the government match).

Summary

This section has discussed the scope for saving money on social security and tax credits spending. Table 7.4 summarises the measures mentioned and their likely savings, and gives a brief assessment of who would lose out. Please note that the savings should not be added together: many of the estimated savings interact with each other, and some of the options are mutually inconsistent.

Notes to Table 7.4
a. This is the amount that would be saved in 2014–15 in 2014–15 prices.
BSP = basic state pension. CTC = child tax credit. SMP = statutory maternity pay. PCG = pension credit guarantee.
Notes: These savings are not additive. Some proposals are mutually incompatible, and some costings interact with each other.

[116] Table 4 of HM Revenue and Customs, *Child Trust Funds Statistics: Detailed Distributional Analysis*, October 2009, http://www.hmrc.gov.uk/stats/child_trust_funds/dda-2009.htm.

Table 7.4. Summary of possible savings to spending on social security and tax credits

Proposal	Savings (in 2011–12)	Losers
Freeze RPI-linked benefits and tax credits (except BSP) in April 2011	£0.7 billion	Recipients of RPI-linked benefits (except BSP)
Freeze all benefits and tax credits in April 2011	£4.1 billion	All benefit recipients
Freeze all benefits and tax credits for all of Parliament	£24.6 billion[a]	All benefit recipients
Increase withdrawal rate in tax credits	Up to £2.3 billion	Recipients of tax credits with incomes in excess of threshold, except those receiving only family element
Align tax credit and income tax thresholds with employer NI thresholds	£0.6 billion	Recipients of tax credits with incomes in excess of new threshold, except those receiving only family element
Taper family element of CTC immediately after child element of CTC	£0.9 billion	Those receiving only the family element of CTC
Increase withdrawal rate in PC	Up to £3.0 billion	Recipients of PC savings credit
Increase withdrawal rate of HB or CTB	£0.6 billion	Recipients of HB or CTB currently on the taper
Taper child benefit and family element of CTC after child element of CTC	£6.5 billion	Richer half of families with children
Abolish WFPs and free TV licenses	£2.7 billion	All aged 60 or over
As above with protection for those on PC	£1.4 billion	All aged 60 or over and not on PC
Scrap CA	£0.5 billion	Recipients of CA who would not be entitled for a means-tested benefit
Means-test AA	Up to £5.2 billion	Better-off recipients of AA
Means-test DLA	Up to £11.7 billion	Better-off recipients of DLA
Make more benefits taxable	£2.1 billion	Recipients of DLA, AA, child benefit and WFP with incomes high enough to pay income tax
Time-limit contributory ESA	Up to £2.0 billion	Recipients of ESA with own income or partner with own income
Scrap contributory JSA	Around £0.3 billion	Recipients of JSA with own income or partner with own income
Reduce generosity of SMP	Unknown	Recipients of SMP
Delay indexation of BSP to earnings	£2.1 billion (in 2015–16)	Recipients of BSP not also receiving PC
Index PCG to prices, not earnings	£0.4 billion for each year	Recipients of PC
Increase state pension age by a year	Between £2.2 billion and £10.0 billion	For the proposal made by the Conservatives: men born between 1951 and 1959, and women born between 1955 and 1959
Do not pay benefits in respect of dependent children aged 16–19	Up to £3.0 billion	Families with children aged 16–19 still in full-time education
Cut childcare tax credit	£0.7 billion	Recipients of childcare tax credit
Limit CTB to band E properties	£0.6 billion	CTB recipients with houses in bands F to I
Scrap or limit Child Trust Fund	Up to £0.5 billion	Current and future recipients of Child Trust Fund
Scrap Saving Gateway	£0.1 billion (in 2012–13)	Saving Gateway account holders (benefit recipients)

7.4 Conclusion

This chapter has highlighted several ways in which a future government could increase tax revenues and reduce spending on social security benefits.

On the tax side, there has been much speculation that the next government will increase VAT. A 3.5 percentage point rise in VAT (to 21%) would increase tax revenues by around 1% of national income, but the same amount of revenue can also be raised through a 3 percentage point rise in the basic and higher rates of tax (to 23% and 43% respectively) or a 3 percentage point rise in employee and self-employment rates of National Insurance. Despite appearances, these reforms would have fairly similar impacts to each other: the main downside of all three is that they weaken incentives to earn more (and, for income tax and VAT, save more), and the distributional impacts of the three measures are similar. Two important differences are that the VAT rise would be less progressive than the others, because it would affect poor, non-tax-paying households, and that pensioners and savers would not be directly affected by a rise in NI. VAT also taxes income that has been earned but not yet spent, meaning it creates a capital levy that does not affect efficiency but might be seen as unfair.

These measures would share the pain over a large number of households (especially the rise in VAT). At the other extreme, a government that wished to lower the incomes of only the richest 10% might contemplate a rise in the higher rate of tax from 40% to 50% (raising £5.8 billion[117]) or a rise in the UEL to £100,000 (raising £4.2 billion): both leave those with incomes below £43,875 unaffected.

But significant amounts of revenue could also be raised by reforms that would remove certain distortions in the tax system. For example:

- Extending the standard rate of VAT to goods and services that currently attract a zero or reduced rate would remove an unwarranted distortion of spending on these goods, and could raise 1% of national income even after a substantial increase in benefits and tax credits to offset the impact on the poorest households.

- If administratively possible, VAT should also be extended to financial services, raising £3 billion.

- A comprehensive carbon tax could raise up to £10 billion a year, after offsetting falls in existing environmental taxes.

- Rates of NI for the self-employed are much lower than their equivalents for employees, and equalisation could raise £6.8 billion assuming no behavioural change. This would remove a distortion in favour of being self-employed rather than employed or incorporating in the current tax system.

- Charging NI on employer contributions to pension funds would prevent a tax-induced distortion in favour of salary sacrifice arrangements and could raise up to £8 billion a year.

- An equalisation of the small and large companies' rates of corporation tax would reduce tax-driven incentives to incorporate and could raise around £3 billion a year.

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[117] As explained in Section 7.2, retaining the withdrawal of the personal allowance above £100,000 would not be sensible in these circumstances. Abolishing it would reduce the £7.4 billion revenue raised by £1.6 billion, leaving £5.8 billion.

- An increase in the rate of capital gains tax towards the higher rate of income tax (40%), and a cut in the CGT allowance, would both help reduce the favourable tax treatment of capital gains over income. The Liberal Democrats estimate that £4.1 billion a year could be raised in this way,[118] but any change ought to be accompanied by some form of allowance for inflation, which would lower the yield.

The chapter has also discussed many options for cutting spending on social security and tax credits. Unlike the tax rises, we have found it harder to highlight many of these as being more desirable (or less undesirable) than the others. The main consequences of the highlighted cuts are distributional – in that some recipients will be worse off – rather than economic. What can be said is that:

- Freezing the cash value of all benefits and tax credits in April 2011, and perhaps subsequent years, has the virtue of sharing the pain over a large number of households. A freeze over the entire next Parliament would save £24.6 billion a year by the fifth year (1.3% of national income in 2014–15). But such a change would be concentrated on fewer households than, say, a rise in VAT, and would act to increase income inequality and measures of relative poverty.

- A government that wanted to remove benefits from better-off households should consider saving £6.5 billion by means-testing the family element of the child tax credit and rolling child benefit into the tax credit system, £1.4 billion from scrapping winter fuel payments and free TV licences and compensating pensioners on the pension credit, £0.5 billion by abolishing carer's allowance, and perhaps up to £2 billion a year by time-limiting contributory IB and ESA. The main economic downside to all these is that they would increase the amount of means-testing in the benefits and tax credit system, which would tend to weaken incentives to work and save, and increase administrative and compliance costs.

- Measures that reduced the number of families affected by a means-test, by means-testing more aggressively – thereby reversing the direction of benefit reform since 1999 – could save up to £2 billion a year from benefits and tax credits for working-age households, and a similar amount from those households with adults aged 60 or over. The impact on incentives would be mixed, but the losers would almost certainly be in the bottom half of the income distribution.

Ultimately, for both the tax-raising and the benefit-cutting options, the next government will need to be clear on its wider objectives and distributional goals before deciding which, if any, to pursue. As the National Equality Panel concluded last week, 'the progressivity of taxes and the levels of benefits and tax credits relative to other incomes are central to overall inequalities. How the public finances are rebalanced will probably be the most important influence on how economic inequalities evolve'.[119]

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[118] Source: Liberal Democrats, 'Liberal Democrat tax plans', Briefing Document, http://www.libdems.org.uk/siteFiles/resources/PDF/Tax%20Plans%20-%20Briefing%20Document.pdf.

[119] The National Equality Panel, *An Anatomy of Economic Inequality in the UK*, Government Equalities Office and CASE.

8. Public services: deep cuts coming

Rowena Crawford, Carl Emmerson and Gemma Tetlow (IFS)

Summary

- The December 2009 Pre-Budget Report pencilled in a real freeze in total public spending over the four years from 2011–12 to 2014–15. But spending on debt interest, social security and other 'annually managed expenditure' is likely to grow in real terms. Keeping to these overall spending plans would therefore require deep cuts in 'departmental expenditure limits' (DELs) – Whitehall spending on public services and administration (although the government could also cut welfare bills).

- In the absence of new measures to reduce spending on benefits and tax credits, we estimate that spending on public services and administration would have to be cut in real terms by 3.0% a year on average in 2011–12 and 2012–13 and by 2.7% a year on average in 2013–14 and 2014–15. This would be a cumulative cut of 10.9% after four years, or £42.0 billion by 2014–15 (in 2009–10 prices). This would reverse almost all of the increase in DELs as a share of national income seen since Labour took office. If we include the 0.5% cut in DELs confirmed for 2010–11, the total real cut over the next five-year parliament would be 11.4% or £43.8 billion.

- On a historically comparable definition of public service spending, we estimate that the four years from 2011–12 would be the tightest for spending on public services since April 1976 to March 1980 and that the five years 2010–11 to 2014–15 would be the first five consecutive years of real cuts since data began in 1948–49.

- The government has promised to 'protect' spending on priority areas, including health, schools and overseas aid, in the years 2011–12 and 2012–13. The commitment to freeze NHS spending in real terms in 2011–12 and 2012–13 would still imply the tightest two-year squeeze for the health service in the last 60 years.

- Protecting large areas of spending from cuts means that the pain will be even more severe for the remaining areas of departmental spending. These other areas – including defence, higher education, transport and housing – would likely see their budgets cut by 12.9% on average over the two years or by £25.8 billion by 2012–13.

- Beyond 2012–13, the government has not promised to protect any area of spending except overseas aid. Were it to continue 'protecting' all its priority areas for a further two years, other budgets would have to be cut by a total of 23.8% (or £47.4 billion) by 2014–15 (including the £25.8 billion that would be required by 2012–13).

- The Conservative Party has promised to protect overseas aid (like Labour) and to increase NHS spending in real terms. Under Labour's plans for spending overall, this would imply £45.7 billion in cuts in unprotected areas by 2014–15. As the Conservatives propose to protect fewer services than Labour, the percentage cut required across other departments is substantially smaller, at 18.3%. However, if the Conservatives' plan to protect aid and the NHS were combined with the more ambitious tightening plan implied by their proposed fiscal targets, then the cuts in their unprotected areas could be more like 22.8% or £57.1 billion by 2014–15.

8.1 Introduction

The December 2009 Pre-Budget Report (PBR) forecast that public sector borrowing would be reduced from 12.6% of national income this year to 5.5% of national income by 2013–14 and to just 1.0% of national income by 2017–18. However, this desired narrowing of the budget deficit relies in large part on projections that total public spending will barely change in real (inflation-adjusted) terms over the four years from April 2011 to March 2015. This would be in sharp contrast to the real increases in public spending set to average 3.4% a year over the 14 years from April 1997 to March 2011.

Maintaining such tight control of public spending would at any time imply difficult choices over where to spend more and where to spend less, particularly as some public services may require real increases in spending simply to stand still (thanks to demographic pressures or the rising costs of recruiting and retaining appropriate staff, for example). However, as this chapter describes, hard-to-avoid increases in some items of spending – such as debt interest repayments and, at least under current policies, social security benefits – mean that the outlook for spending on public services over the next few years will be particularly difficult. Indeed, it is inevitable that some areas of public service delivery will have to be scaled back under the government's current plans.

Section 8.2 sets the scene for the forthcoming public spending squeeze by comparing the growth in overall spending implied by the plans set out in the December 2009 PBR with what has happened since Labour came to power in May 1997 and with what has happened over the longer term. Section 8.3 describes the trade-off that the current government – or its successor – would face in the next Spending Review between departmental spending and other areas of public spending if the projections for overall spending set out in the December 2009 PBR are to be adhered to. The current government has promised that, if re-elected, some areas of spending – including schools and the NHS – will not see their spending cut in real terms in 2011–12 or 2012–13, while spending on overseas aid will continue to be increased sharply. Section 8.4 looks at these pledges and assesses how generous they are. Section 8.5 then considers possible outcomes for departmental spending in the last two years of the government's current forecasting horizon, 2013–14 and 2014–15, and over the four-year period (2011–12 to 2014–15) as a whole. Section 8.6 concludes.

8.2 Trends in UK public spending

Total spending since 1948–49

The Treasury predicts that total managed expenditure (TME), the broadest measure of government expenditure, will be £675.7 billion in 2009–10. This equates to 48.0% of national income, or just under £11,280 for every person in the UK.

Figure 8.1 shows how public spending as a share of national income has varied since 1948–49. TME climbed from 37.1% of national income in 1948–49 to a peak of 49.7% in 1975–76. Spending on health, education and contributory benefits, such as the basic state pension, grew particularly quickly. Conversely, defence spending fell sharply after the end of the Korean War in 1953. Between 1975–76 and 1998–99, public spending fell as a share of national income, due initially to cuts in public sector net investment and then to cuts in current spending on public services (including education). Public spending fell particularly sharply during the late 1980s and late 1990s as a strong economy reduced

Figure 8.1. Composition of public spending since 1948–49
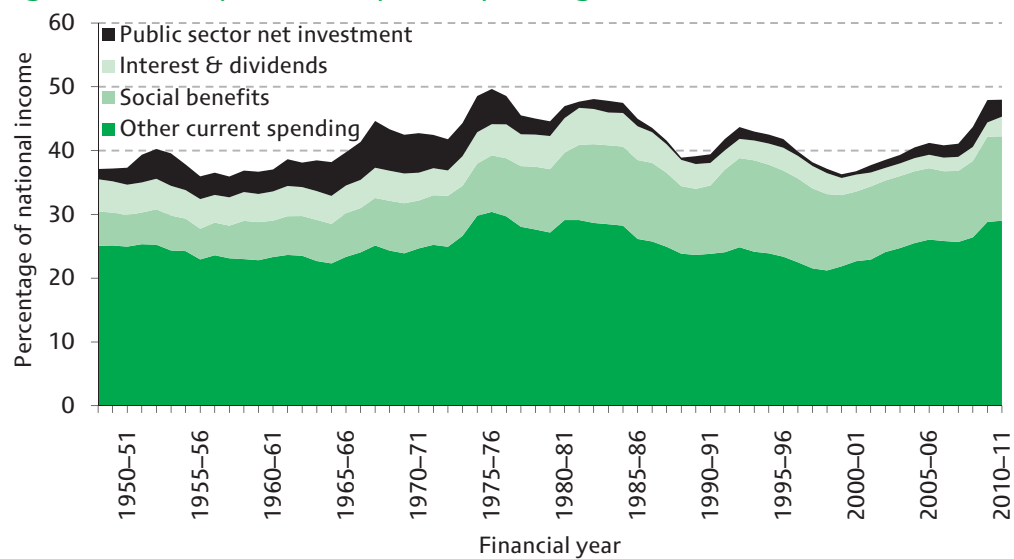
Notes: Projections are from the December 2009 PBR. Current expenditure includes depreciation.
Sources: Measures of public spending are ONS series ANLO, ANLT, ANLY, ANNW and ANNZ from table 2.3C of *Financial Statistics Freestanding Time Series Data*, http://www.statistics.gov.uk/statbase/tsdtimezone.asp.
GDP is ONS series BKTL from table A2 of *United Kingdom Economic Accounts*, http://www.statistics.gov.uk/statbase/tsdtimezone.asp. HM Treasury, *2009 Pre-Budget Report: The Economy and Public Finances – Supplementary Material*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_chartstables.pdf.

expenditure on social benefits and debt interest payments. Conversely, the early 1990s saw public expenditure increase as weak economic performance pushed up spending in these areas. Figure 8.1 shows that public spending has risen again as a share of national income since April 1999, with the current year (2009–10) forecast to see the highest level of public spending as a share of national income since 1982–83.

We now describe trends in spending under the current Labour government in more detail.[1]

Growth in public spending under Labour to date

In 1996–97 – the last full financial year before Labour came to power – total public spending stood at 39.9% of national income. As the solid line (measured on the left-hand axis) in Figure 8.2 shows, this had fallen to 36.3% of national income in 1999–2000. This decline reflected a combination of strong economic performance and low growth in spending on public services. Low growth in spending on public services in 1997–98 and 1998–99 had been planned by the previous Conservative government, and the incoming Labour government chose largely to continue to adhere to these plans once it came into office, in line with Labour's 1997 manifesto commitment to 'stick for two years within existing spending limits'.[2]

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[1] More details of trends in public spending, and how it is planned, can be found in R. Crawford, C. Emmerson and G. Tetlow, *A Survey of Public Spending in the UK*, Briefing Note 43, IFS, London, September 2009, http://www.ifs.org.uk/publications/1791.

[2] Labour Party general election manifesto, *New Labour because Britain Deserves Better*, 1997.

Figure 8.2. Total managed expenditure
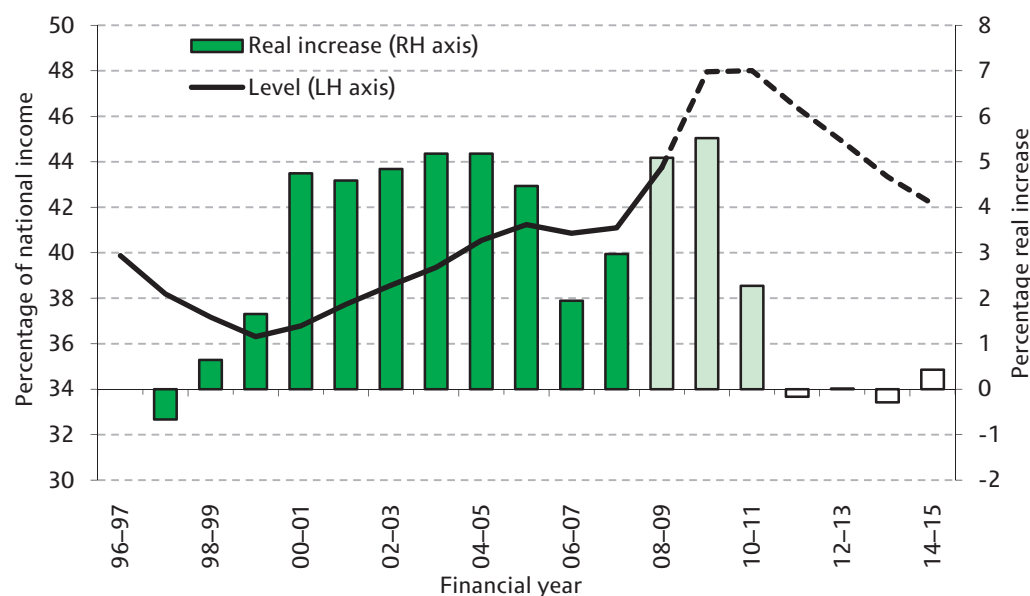
Notes: Light green bars represent the years covered by the CSR 2007. White bars are Treasury plans for years not yet covered by a Spending Review.
Sources: Figures for TME from 1996–97 to 2007–08 are from table B1 of HM Treasury, *Public Sector Finances Databank*, 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls, while figures for 2008–09 onwards are from tables B13 and B15 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm. Figures for the GDP deflator are from HM Treasury, http://www.hm-treasury.gov.uk/data_gdp_fig.htm.

In July 1998, the government presented the results of the first Comprehensive Spending Review (CSR), which set out departmental spending plans for 1999–2000, 2000–01 and 2001–02. Spending continued to fall as a share of national income in 1999–2000, as some departments underspent their budgets, but since then public spending has increased. It reached 41.2% of national income in 2005–06, due to increases in spending on public services (in particular, education and health) and large increases in the generosity of targeted support aimed at lower-income families with children and lower-income pensioners.

The bars in Figure 8.2 (and the right-hand axis) show the annual real[3] increase in spending since 1996–97. Relatively large real increases in spending were seen in each year from 2000–01 to 2005–06. Lower growth in public spending in 2006–07 and 2007–08 meant that public spending stabilised as a share of national income.

Cash departmental spending plans for the years 2008–09 to 2010–11 were set by the 2007 CSR. As we highlight later (see Table 8.1), the real-terms increases in spending that are now expected to occur over those years are significantly higher than had been envisaged in CSR 2007. This is because inflation has turned out to be lower than expected and additional spending has been required on, in particular, social security benefits and debt interest payments as a result of the recession. The increase in spending as a share of national income, above that expected in CSR 2007, is even more dramatic, as national

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[3] Throughout this chapter, we refer to changes in 'real' spending, by which we mean spending calculated by deflating spending with growth in the GDP deflator. While this might not be the appropriate deflator for the increase in the cost of goods and services purchased by public spending, it could be considered the most appropriate deflator when considering the cost to the taxpayer.

income is now much lower than was previously expected (reflecting both a shrinking real economy and low inflation). As a result, public spending is expected to total 48.0% of national income this year (2009–10) and next. Low real growth in spending and a rebound in nominal national income growth over the following four years are expected to return spending to 42.2% of national income by 2014–15.

Investment and non-investment spending

Total public spending can be split into investment and current (non-investment) spending. Figure 8.3 shows how each of these fared under the 18 years of Conservative governments from 1979–80 to 1996–97 and over the period from 1997–98 to 2010–11 (the last year for which we have detailed spending plans from the current government), as well as what the latest plans imply for the four-year period from 2011–12 to 2014–15.

Figure 8.3. Average growth in TME, current spending and investment spending
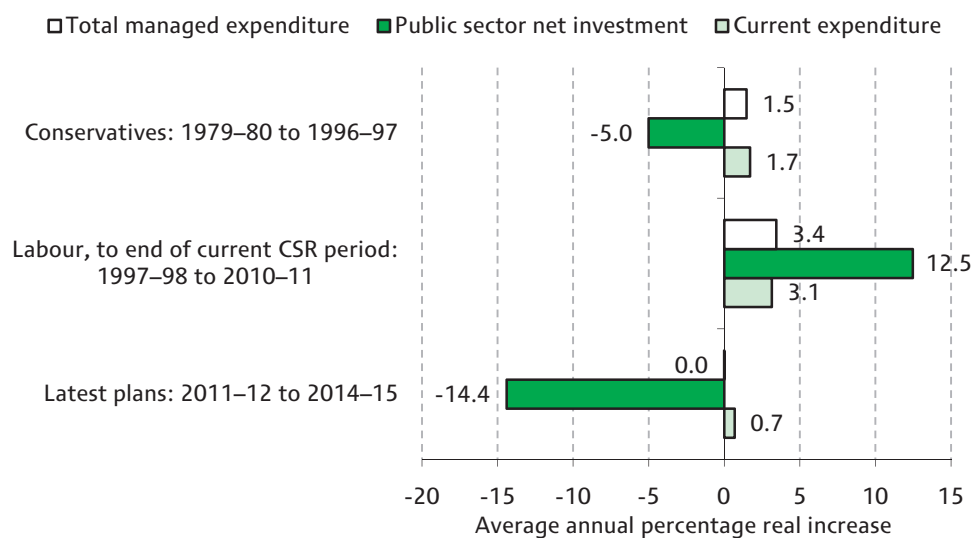
Note: Current spending includes depreciation.
Sources: Out-turn data from table B1 of HM Treasury, *Public Sector Finances Databank*, 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls. Forecasts from table B13 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm. Figures for GDP deflator from HM Treasury, http://www.hm-treasury.gov.uk/data_gdp_fig.htm.

While total public spending is (on present plans) set to be frozen in real terms over the four-year period from April 2011 to March 2015, there is a sharp difference in the growth rates for current and net investment spending. Current spending, which makes up the majority of spending (as shown in Figure 8.1), is to rise by an average of 0.7% a year in real terms, while net investment spending is forecast to fall by an average of just over 14% a year. This is in sharp contrast to the experience under Labour since 1997–98, with current spending growing by 3.1% a year while net investment spending grows by 12.5% a year in real terms. The government's future spending plans are considerably less generous on average even than those delivered over the 18 years of Conservative governments from 1979–80 to 1996–97.

The planned squeeze on investment spending is in conflict with the government's stated policy regarding investment. In its November 2000 document *Planning Sustainable Public*

Spending: Lessons from Previous Policy Experience, the Treasury criticised the investment spending decisions made by the previous Conservative governments, stating:

> *Lesson 5: Avoid a bias against capital investment*

> The previous framework made no distinction between capital and current spending, despite their different economic effects. Investment was not protected. As a result, capital programmes were cut as a way of meeting short term current pressures, with long term detrimental effects.[4]

In the November 2008 review of the government's fiscal framework, the Treasury claimed that capital spending would rightly continue to get favourable treatment:

> setting policies to balance the cyclically-adjusted current budget will continue to protect capital spending and support inter-generational fairness, maintaining investment now to support the long-term productivity and competitiveness of the economy.[5]

This stated objective of maintaining investment seems rather inconsistent with the plan to cut cash investment spending over the next Spending Review period, which was pencilled in by the December 2009 PBR. As shown in Figure 8.4, this cut in cash spending will lead to all of the increase in public sector net investment as a share of national income seen between 2001–02 and 2007–08 being reversed (figures for 2008–09 and 2009–10 are inflated by the recession, the decision to bring investment spending forward from 2010–11, and some temporary investment in the now nationalised banks). This will return public service investment spending to slightly below the level delivered in the early 1990s. It is hard, however, directly to compare the level of public investment spending under the current Labour government with the level in the 1980s, since the

Figure 8.4. Public investment to be cut back to early 1990s levels
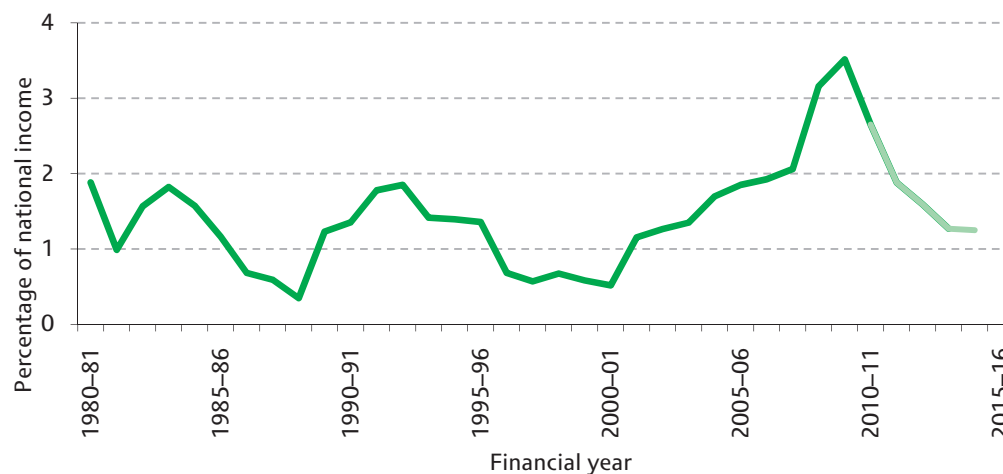
Sources: Figures shown are for public sector net investment. Figures to 2007–08 are from table B2 of HM Treasury, *Public Sector Finances Databank,* 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls. Figures for 2008–09 onwards are from table B14 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

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[4] http://www.hm-treasury.gov.uk/d/86.pdf.

[5] HM Treasury, *The Government's Fiscal Framework*, November 2008, http://www.hm-treasury.gov.uk/d/pbr08_fiscalframework_518.pdf.

public sector was involved in a far wider range of activities in the 1980s. Most notably, any investment in the state-owned industries and companies (which have now largely been privatised) counted as public sector investment at that time.

'Plannable' and other spending

For planning purposes, the current government splits TME into two components:

- **Departmental expenditure limits** (DELs) are yearly limits for departmental programme expenditure, which are formally set for three years at a time by Spending Reviews (although they can be, and often are, subsequently revised) and can be broadly thought of as the amount central government spends delivering and administering public services.

- **Annually managed expenditure** (AME) is expenditure that the government argues is not easily subject to firm limits set several years in advance, such as spending on social security benefits and debt interest (though Box 8.1 discusses some components of AME that arguably could be planned in advance, just like DELs).

Figure 8.5 shows how the past annual percentage real increases in total spending under the current Labour government have been distributed between growth in DEL and growth in AME. The bars for total expenditure are the same as those shown in Figure 8.2.

Although departmental spending growth has been somewhat lower in recent years, over the whole period from 1999–2000 to 2009–10 growth has been positive in every year. Particularly high growth in AME can be seen in 2004–05 and 2008–09. The former was the result of increases in the generosity of tax credits and the pension credit. High growth in 2008–09 predominantly reflects the costs of rising unemployment and payments made to rescue the banking sector. In 2010–11, departmental spending is forecast to be cut in real terms, although this was not what was envisaged at the time of the CSR 2007.

Box 8.1. Alternative ways of planning public spending

Some components of AME could reasonably be planned in advance, like DELs.

- **State pension:** The government determines the generosity of payments and the eligibility criteria. The number of recipients of the state pension and the value of their entitlements should be relatively easy to predict for the next few years, given the current National Insurance records of those approaching the state pension age. In June 2009, the Department for Work and Pensions forecast that spending on the basic state pension, the State Earnings-Related Pension Scheme (SERPS) and the state second pension (S2P) would account for £69 billion in 2010–11, which is over one-fifth of AME.

- **Child benefit:** The government determines the generosity of payments and the eligibility for child benefit. The number of recipients is relatively easy to predict and so spending on child benefit over the next few years could be planned in advance.

A broader method of planning public spending has existed in the past. Under the previous Conservative government, public spending was planned using a '[new] control total', which planned not just departmental spending for the subsequent three years, but also included all non-cyclical social security spending: so as well as including spending on the state pension and child benefit, payments to, for example, lone parents and those with disabilities were also included.

Figure 8.5. Growth in DELs and AME
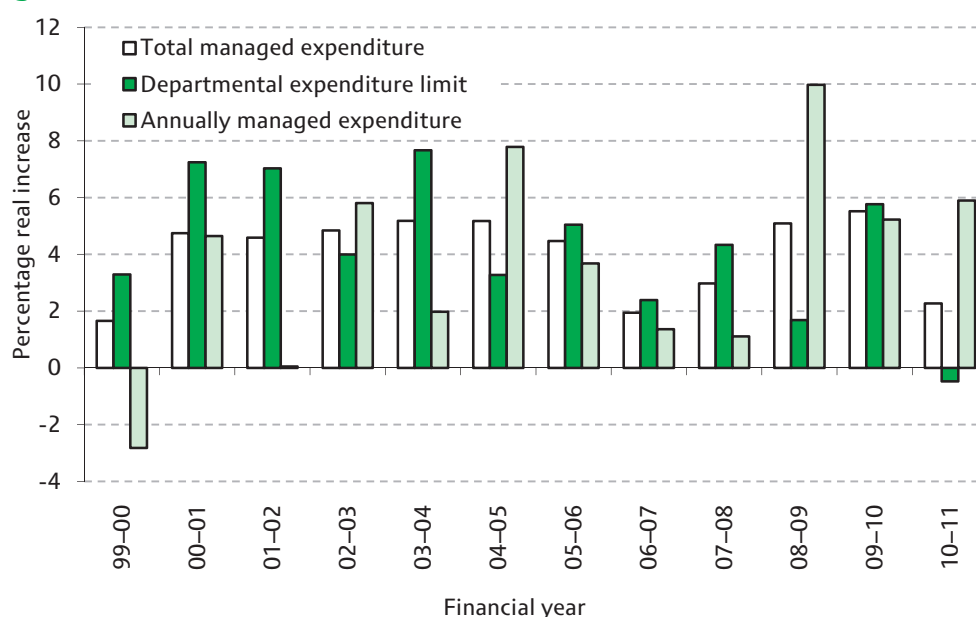
Sources: Figures for total spending as in Figure 8.2. Figures for DEL and AME from 1999–2000 to 2007–08 are from various editions of HM Treasury, *Public Expenditure Statistical Analyses*, http://www.hm-treasury.gov.uk/pespub_index.htm. Figures for DEL and AME in 2008–09 onwards are from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm and include spending by central government on the nationalised banks as part of AME.

Table 8.1 compares the original plans for spending over the CSR 2007 period with the latest forecast for out-turns and shows the relative generosity of CSR 2007 for the DEL and AME components. The first row shows the average real spending growth over the three years of the review implied by the Treasury's original cash plans and expected inflation at the time the plans were set. The second row shows the real growth that would have resulted if these cash plans had been adhered to, bearing in mind that inflation differed from the rates assumed by the Treasury when these plans were drawn up. The third row shows the actual average growth in real spending now forecast over the CSR 2007 period.

Table 8.1. Growth in TME, DELs and AME over the 2007 CSR period

Time period	TME	DELs	AME
April 2008 to March 2011			
Original plans	2.0	2.0	2.0
Adjusted for actual inflation	2.5	2.5	2.5
Latest forecast	4.3	2.3	7.0

Sources: HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm; HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, Cm. 7227, October 2007, http://www.hm-treasury.gov.uk/d/pbr_csr07_completereport_1546.pdf.

Table 8.1 shows that real spending is now expected to grow more than twice as fast over the period April 2008 to March 2011 as was envisaged at the time of the CSR 2007. The lower-than-expected inflation rates mean that the cash spending plans now imply much faster real growth over this period than was originally planned. There is also now projected to be much higher cash spending on AME than was originally planned, owing largely to rising debt interest and benefits payments during the recession. The growth in

DELs, by contrast, is projected to be similar to that planned in the CSR 2007. The latest forecast is actually for slightly lower growth than the inflation-adjusted CSR 2007 plans. This is the result of extra 'efficiency savings' identified for 2010–11 and the investment spending that was brought forwards from that year into 2008–09 and 2009–10. These both act to depress the apparent growth rate of departmental spending to 2010–11.

8.3 Overall outlook for Spending Review 2010

In the December 2009 PBR, the Treasury pencilled in a real freeze in TME for the four years 2011–12 to 2014–15. This would be the lowest average real increase in spending since the four-year period 1996–97 to 1999–2000. This implies that the next Spending Review, which will presumably be held in 2010 and could (but might not necessarily) cover the three years 2011–12 to 2013–14, is going to be tight and especially painful for departments which have become accustomed to the large budget increases they have seen in recent years. As we will discuss below, current plans suggest this could well be the lowest sustained period of growth in spending on public services since the late 1970s, following the last Labour government's request for a loan from the International Monetary Fund (IMF).

Figure 8.6 shows the latest forecast for the composition of TME in 2010–11. Departmental spending is expected to be slightly more than half (55.6%) of total spending. The largest component of AME is social security benefits, which make up almost a quarter of total spending. Debt interest payments are projected to be 6.4% of total government spending in 2010–11, leaving 'other AME' to contribute 14.0% to total spending.

Figure 8.6. Planned composition of TME in 2010–11
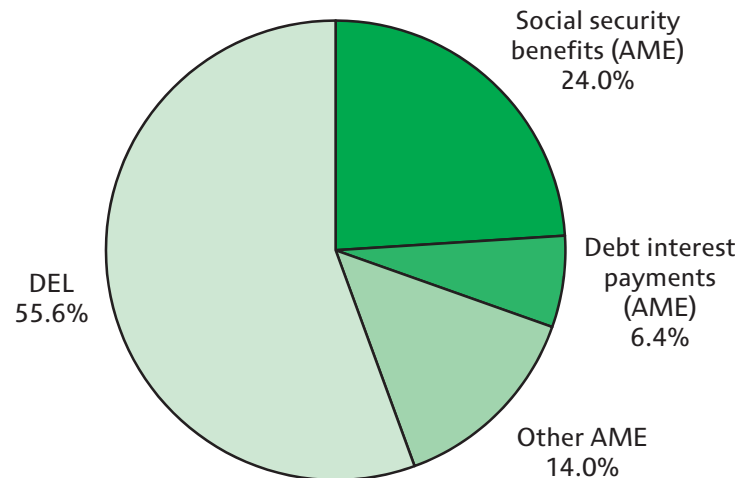
Note: These figures for TME include spending by central government on the financial sector.
Source: Table B15 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

In order to know exactly what DELs will be beyond the end of the current Spending Review period, we would need to know how much of TME is set to be spent on AME from 2011–12 onwards. Regrettably, the Treasury did not publish its forecasts for AME over the period 2011–12 to 2014–15 in the Pre-Budget Report and so there are no official published figures for the projected split of TME into AME and DEL after 2010–11. It is known, however, that the Treasury does (for internal use) produce such projections since

these were contained in a document from the Treasury (dated from the time of Budget 2009) that was leaked to the Conservatives and published in September 2009. Under questioning by the House of Commons Treasury Select Committee after the 2009 PBR, Chancellor Alistair Darling stated 'we cannot publish, because we have not done a Spending Review yet, our decisions in relation to [annually managed expenditure and the departmental total]' and 'what we publish are the Departmental Expenditure Limits when they are fixed, we publish the AME forecasts ... when they are fixed, what we do not do though is publish every assumption, every estimate because that is not an indication of what the government's policy is'.[6]

While there are no official figures for the projected split of TME into DEL and AME after 2010–11, it is possible to make some reasonable projections for the growth in components of AME under current policies. Subtracting these predictions from the growth in total expenditure that the government has pencilled in provides an indication of how tight spending growth would need to be for DELs. The remainder of this section sets out our assumptions about growth in AME over the four-year period from April 2011 to March 2015, and the implications for growth in total DELs over the same period. The subsequent two sections then discuss the implications of these plans for total DELs for individual spending areas.

Growth in annually managed expenditure, 2011–12 to 2014–15

Debt interest payments

As a result of the financial crisis and associated recession, public sector net debt is forecast to almost double – from just under 40% of national income in 2007–08 to just under 80% of national income in 2014–15. The implication of this is that interest payments on the accumulated national debt will increase rapidly over the next few years. Figures contained in the December 2009 PBR suggest that gross debt interest payments are forecast by the Treasury to grow by around 9.4% a year in real terms on average over the period from 2010–11 to 2014–15 (from £45 billion to £71 billion in cash terms, or from 3.1% of national income to 3.9% of national income).[7]

Social security spending

Future spending on social security, which accounts for more than half of AME, can also be estimated on the basis of current policies. While reforms could reduce spending growth in this area, they might take time to have a significant effect unless they involve reductions in benefit rates for existing recipients. Figures leaked from the Treasury to the Conservative Party and published in September 2009 provided forecasts made in April 2009 for spending on social security for 2011–12, 2012–13 and 2013–14. These implied that, on average, this spending was projected to grow in real terms (that is, after taking account of economy-wide inflation, as measured by the GDP deflator) by 1.4% a year over

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[6] 16 December 2009, http://www.publications.parliament.uk/pa/cm200910/cmselect/cmtreasy/uc180-iii/uc18002.htm.

[7] The December 2009 PBR contains figures for public sector gross debt interest spending up to, and including, 2010–11 in table 2.8 of HM Treasury, *2009 Pre-Budget Report: The Economy and Public Finances – Supplementary Material*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_chartstables.pdf. Figures for later years were calculated in the following way. First, 'public sector net debt interest payments' were computed by taking the difference between the primary balance (which is borrowing excluding net debt interest payments) and total borrowing, both measured as a share of national income, from table B2 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm. These were converted to £ billion using the PBR projections for GDP in table B1. To get gross debt interest payments, 'interest and dividends' received were added back in; these were taken from table 2.9 of the PBR *Supplementary Material*.

these three years. The expectation of above-inflation increases is unsurprising given that most benefits are uprated either in line with growth in prices or more quickly, and that the number of pensioners is increasing as longevity extends and the baby boomers start reaching the state pension age. While unemployment might well fall over this period – and therefore perhaps lead to an overall reduction in spending in real terms – the Treasury, by convention, makes the more cautious assumption that it will remain constant. Thus, in the Treasury's forecasts at least, this will not put downward pressure on social security spending.

As no similar figures for growth in social security spending were released by the Treasury with the December 2009 PBR, we simply adjust the previous projected growth rate for each individual year to take account of the fact that the Treasury now forecasts that the retail price index (RPI) will increase slightly faster, relative to economy-wide inflation – as defined by the GDP deflator – than it did at the time of the Budget. This is important, as overall spending beyond April 2011 is planned by the Treasury, and defined in this chapter, relative to economy-wide inflation, whereas a large proportion of social security spending is on benefits that are uprated in line with the RPI. This methodology gives an average annual real increase in social security spending of 1.5% a year over the three years 2011–12, 2012–13 and 2013–14. As the document leaked from the Treasury did not contain a forecast for growth in spending on social security in 2014–15, we simply assume that it will increase by a further 1.5% that year, i.e. in line with the average increase over the previous three years (and, by coincidence, the increase projected for 2013–14).

Other annually managed expenditure

Other AME includes areas of spending such as expenditure by local authorities that is financed via local taxes (mainly the council tax), spending on tax credits (as these are not covered by the Treasury's definition of social security used above), spending on providing pensions to retired former public servants (which has been increasing quite quickly in recent years) and the UK's net contribution to the European Union (which has been increasing very quickly in recent years). While locally financed spending could be reduced by central government through greater use of its powers to cap the council tax rises of individual councils, this would do little to help reduce government borrowing since spending cuts would be associated with (almost) equivalent reductions in council tax revenues.[8] Reductions in tax credit expenditure would, like reductions in social security spending, require reductions in generosity for existing claimants if significant savings were to be delivered quickly. However, some cuts in this area – albeit relatively small ones – have been proposed by the Conservatives and the Liberal Democrats and so it is perhaps less difficult to imagine further policy proposals aimed at reducing spending on tax credits (see Chapter 7). In contrast, it is difficult to imagine reductions in spending on the pensions of former public sector workers or on the UK's European commitments in the near term.

The leaked figures from the Treasury mentioned above provided estimates for total spending on these areas of 'other AME' in each of 2011–12, 2012–13 and 2013–14. These implied that, on average, this spending was projected to grow in real terms by 3.1% a year over these three years. For the following analysis, we simply assume that forecast real spending growth in each of these years will be the same as it was forecast to be in the

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[8] Overall, reductions in local authority self-financed expenditure and commensurate reductions in council tax would strengthen the public finances slightly through reductions in spending on council tax benefit.

leaked document. As the document does not contain a forecast of growth in spending on 'other AME' in 2014–15, we simply assume that it will increase by a further 3.1% in this year, i.e. in line with the average increase over the previous three years.

Implications for departmental spending, 2011–12 to 2014–15

Our assumed growth rates for each of these broad components of AME in the four years 2011–12, 2012–13, 2013–14 and 2014–15 are shown in Figure 8.7. Also shown are the forecasts for real increases in TME – from the December 2009 PBR – and the implication of the AME spending assumptions set out above for growth in overall DEL.

Figure 8.7. How much might be left for departments? (1)
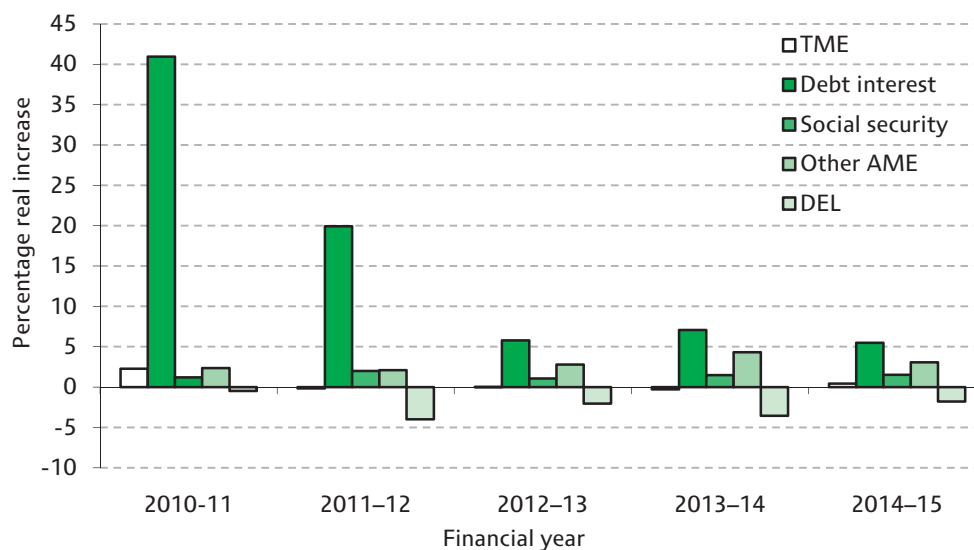
Sources: 2010–11 forecasts and forecasts for TME are from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm. Other projections are authors' calculations based on: the December 2009 PBR; HM Treasury, *2009 Pre-Budget Report: The Economy and Public Finances – Supplementary Material*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_chartstables.pdf; and internal HM Treasury forecasts for AME growth over the period 2011–12 to 2013–14.

Based on the assumptions for AME growth set out above, on current policies, real-terms DELs would need to be cut by 4.0% in 2011–12, 2.0% in 2012–13, 3.6% in 2013–14 and 1.8% in 2014–15 – or by 2.9% a year on average over the four years. This gives a cumulative real cut over the four years of 10.9% or £42.0 billion a year in 2009–10 prices by 2014–15. Taking into account the 0.5% cut in DELs the Treasury has confirmed for 2010–11, current plans imply DEL falling in real terms in every year of the next five-year parliament. The cumulative real cut over the five years is 11.4%, or £43.8 billion in 2009–10 prices. These real cuts in spending would be in sharp contrast to the increases seen over the years between 1999–2000 and 2009–10, as was shown in Figure 8.5.

As Figure 8.8 shows, under the above-outlined assumptions about growth in AME, by 2014–15 less than half of total public spending would be on DELs. This has not been seen in any of the years since 1998 when the government introduced the DEL and AME split used to plan public spending.

Figure 8.8. Composition of spending: DEL/AME split
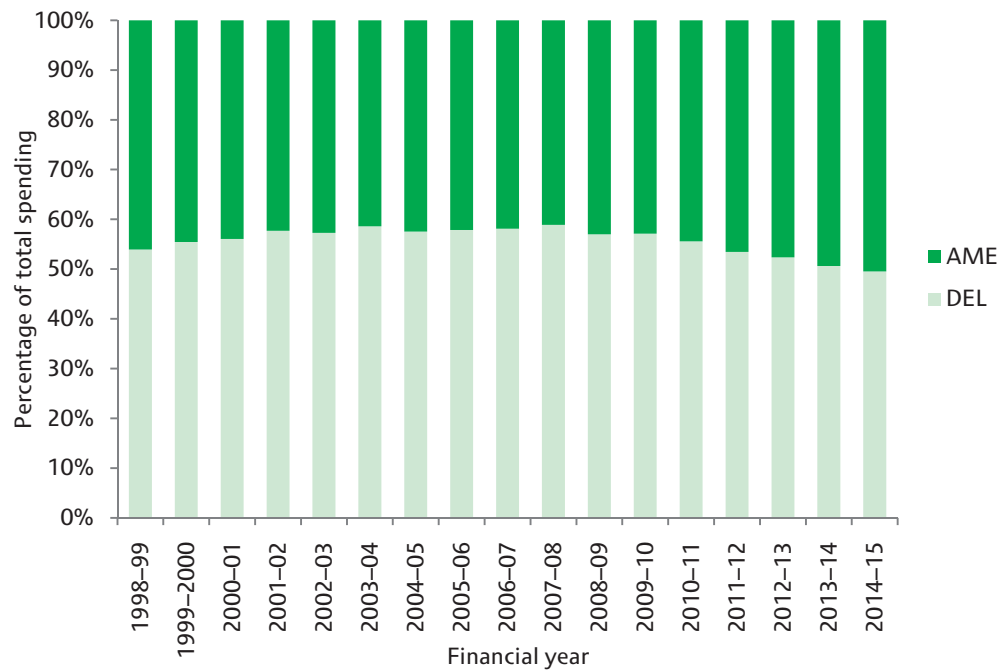
Sources: As for Figures 8.5 and 8.7.

Figure 8.9. Estimated spending on public services under current policies
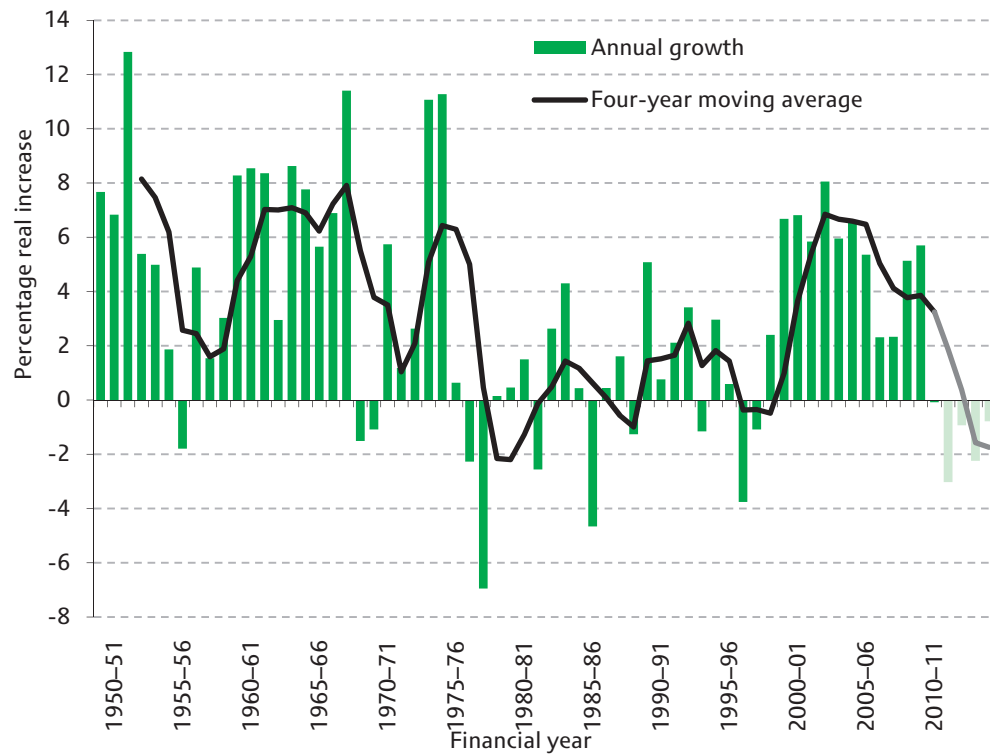
Note: Spending on public services defined as total public spending less both gross interest payments and welfare payments.
Sources: Historical data are from ONS series ANLY, ANLT, ANNW, ANNZ and ANLO from table 2.3C of *Financial Statistics Freestanding Time Series Data*, http://www.statistics.gov.uk/statbase/tsdtimezone.asp. Forecasts are from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm and HM Treasury, *2009 Pre-Budget Report: The Economy and Public Finances – Supplementary Material*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_chartstables.pdf. Forecast data are authors' calculations.

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Since the DEL and AME split was only introduced in 1998, direct comparisons with previous periods (for example, the spending squeeze implemented when New Labour first came to power) cannot be made using these definitions. However, Figure 8.9 compares future spending on public services with spending in previous decades using a slightly broader definition of spending on public services. Specifically, Figure 8.9 shows the annual real growth, and four-year moving average real growth rate, of total public spending less both gross interest payments and spending on welfare payments, using data from the Office for National Statistics that go back to 1948–49. This can be considered, broadly, to be a measure of spending on public services. This measure of spending is projected to be cut, in real terms, each year from 2010–11 to 2014–15 (inclusive). If this is delivered, it would be the first time there have been five consecutive years of real spending cuts on this measure since the data began in 1948–49. The average annual cut over the four years 2011–12 to 2014–15 is projected to be 1.7% a year, which would be the lowest average increase over a four-year period since the four years from April 1976 to March 1980 – the period following the UK's loan from the IMF.

The next Spending Review could cover the three years 2011–12, 2012–13 and 2013–14 – this would be in line with previous Spending Reviews, which have produced plans on a three-year horizon. However, the current government has now made specific spending commitments (discussed in Section 8.4) that cover only the first two of these years. This might suggest that the Spending Review, under a Labour government, would cover only a two-year horizon. This would also be consistent with the argument that Mr Darling, and others in the government, have made that the economic outlook is currently too uncertain for them to be able to set out detailed longer-term spending plans.[9]

We also do not know the time period for which a potential incoming Conservative government would set its spending plans. The Conservatives could continue Labour's practice of planning spending on a three-year basis, they could shorten the horizon to two years or plausibly they could extend it to a fourth year. Having a longer horizon would be consistent with the argument that a more detailed plan for cutting spending is required.

Given that we have figures for total public spending for four years (from 2011–12 to 2014–15) and that we have more specific spending commitments from the government for two years, we focus in the remainder of this chapter on the outlook for departmental spending over these two- and four-year horizons (rather than a three-year horizon, which would be more consistent with the Labour government's planning since 1998).

The outlook for departmental spending, 2011–12 to 2014–15

Table 8.2 shows the average real increases in TME, in each broad component of AME and therefore in DEL for (i) the two years 2011–12 and 2012–13, (ii) the following two years (2013–14 and 2014–15) and (iii) over all four years. As mentioned above, on average over these four years, DELs are – on current policies – estimated to be cut by 2.9% a year in real terms. In contrast, the October 2007 CSR – the least-generous Spending Review under Labour to date – planned for increases in DEL spending averaging 2.0% a year in

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[9] In his December 2009 PBR speech, Mr Darling said 'We have already set out clear and firm departmental budgets for the next financial year, but to try and fix each department's budget now, for the next five years, is neither necessary or sensible' (http://www.hm-treasury.gov.uk/prebud_pbr09_speech.htm). In evidence to the House of Commons Treasury Select Committee, he said 'I do not think it would be right to do a spending review now where you would say department by department this is what you are getting for the next few years, simply because of the uncertainty we have got'
(http://www.publications.parliament.uk/pa/cm200910/cmselect/cmtreasy/uc180-iii/uc18002.htm).

real terms. The average annual forecast cut in DELs amounts to 3.0% over the first two years (2011–12 and 2012–13) and 2.7% over the final two years (2013–14 and 2014–15).

At least since 1998–99, we can estimate the extent to which such tight spending plans for DELs would reverse the increases that have occurred under Labour to date. As shown in Figure 8.10 (the bars and the right-hand axis), in real terms DELs are forecast to be 65% higher in 2010–11 than they were in 1998–99. By 2014–15, the cuts that we estimate are implied by current policies would reverse almost a third of this increase – leaving DEL spending 47% higher than in 1998–99, or back to the level seen in 2006–07.

It might be more appropriate to look at spending not in real terms but instead as a share of national income; in particular, some of the costs of providing a given standard of public service (such as the public sector pay bill) might rise by more each year than economy-wide inflation. The green line in Figure 8.10 (and the left-hand axis) therefore shows DELs as a share of national income. However, looking at DELs as a share of contemporaneous national income is slightly misleading since in downturns, when nominal national income is low, departmental spending as a share of national income will be inflated by the denominator effect, whilst in a boom, when nominal national income is high, DELs as a share of national income will appear much lower. Therefore, the black line in Figure 8.10 shows DELs as a share of 'potential' national income (i.e. smoothing out the ups and downs of the economic cycle). These two series track one another closely during the early 2000s but the impact of the 'denominator effect' can be clearly seen in the current year – DELs are substantially larger as a share of actual national income than as a share of 'potential' national income. Looking at DELs as a share of 'potential' national income shows that the cuts over the four years from 2011–12 would be sufficient to reverse almost all of the increase seen since Labour came to power.

Table 8.2. How much might be left for departments? (2)

| | Average annual real growth (%) | | |
	First two years: 2011–12 and 2012–13 (i)	**Next two years: 2013–14 and 2014–15** (ii)	**All four years: 2011–12 to 2014–15** (iii)
Provisional spending plan			
TME	–0.1	+0.1	0.0
Memo: cumulative change	–0.2	+0.1	0.0
Memo: £/year by end year	–£1.1bn	+£1.0bn	–£0.1bn
Projections			
Debt interest	+12.6	+6.3	+9.4
Social security	+1.5	+1.5	+1.5
Other AME	+2.4	+3.7	+3.1
Total AME	+3.5	+3.0	+3.2
Residual: DEL	–3.0	–2.7	–2.9
Memo: cumulative change	–6.0	–5.3	–10.9
Memo: £/year by end year	–£22.9bn	–£19.1bn	–£42.0bn

Sources: As for Figure 8.7.

Figure 8.10. Labour's boost to spending on public services to be reversed?
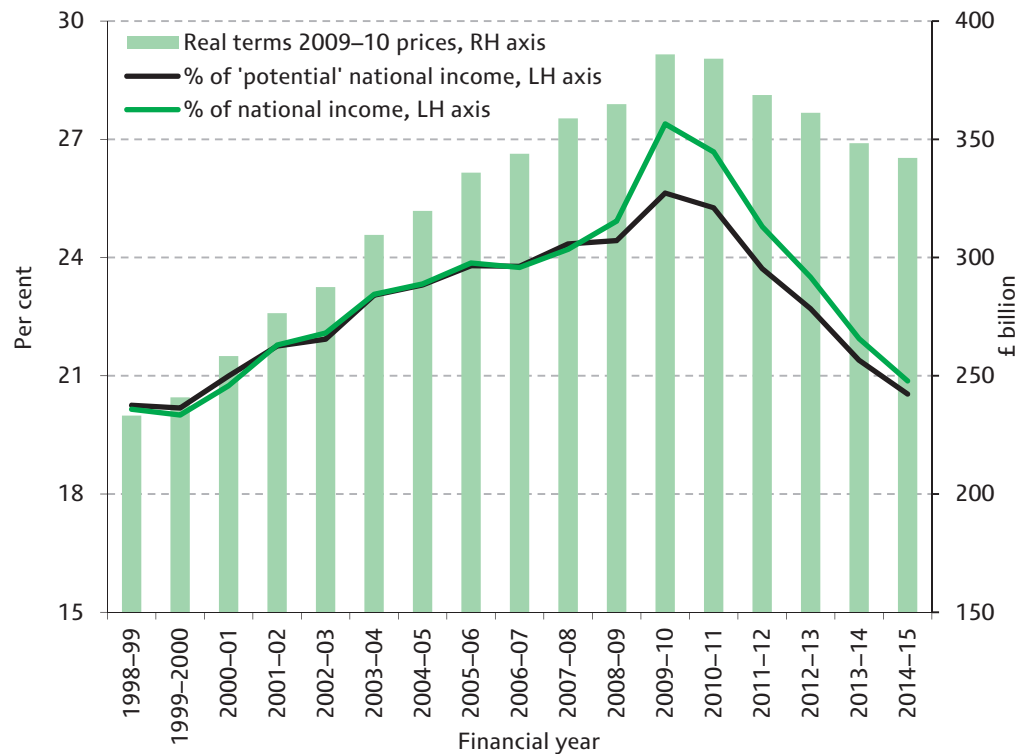
Sources: As for Figures 8.5 and 8.7. Historical data on national income and the output gap are from table A1 of HM Treasury, *Public Sector Finances Databank*, 4 January 2010, http://www.hm-treasury.gov.uk/d/public_finances_databank.xls. Forecasts for national income and the output gap are from tables B1 and B2 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

8.4 Departmental spending in 2011–12 and 2012–13: sharing the pain?

We now examine what the projected cuts to overall DELs, summarised in Table 8.2, and the specific pledges already made by the government in the December 2009 PBR might mean for various different areas of departmental spending in 2011–12 and 2012–13.

Present government spending plans

In the December 2009 PBR, the government set out some specific pledges to protect real-terms spending on various priority areas. The first column of Table 8.3 takes the 3.0% a year cut to DEL that our figures suggest would be required over the two years 2011–12 and 2012–13 (as shown in the first column of Table 8.2) and sees what would be left over once these spending commitments are taken into account.

The 3.0% a year cut in 2011–12 and 2012–13 cumulates to a 6.0% cut in DELs by the second year, or £22.9 billion in 2009–10 prices. However, with the government having committed not to cut spending in some areas and, indeed, to increase real spending in some other areas, even larger cuts will have to be found in the unprotected areas.

Table 8.3. Estimated average increases in DELs, before and after specific commitments

	Average real growth, 2011–12 and 2012–13 (%)	
	PBR planned fiscal tightening	**Faster fiscal tightening**
TME	**–0.1%**	**–0.7%**
Memo: cumulative change	–0.2%	–1.4%
Memo: cut £/year by end year	–£1.1bn	–£9.8bn
DEL	**–3.0%**	**–4.2%**
Memo: cumulative change	–6.0%	–8.2%
Memo: cut £/year by end year	–£22.9bn	–£31.6bn
Meet overseas aid (ODA) target	+11.3%	+11.3%
'Protect' front-line NHS	0.0%	0.0%
Residual: DEL less ODA & NHS	**–5.0%**	**–6.8%**
Memo: cumulative change	–9.7%	–13.1%
Memo: cut £/year by end year	–£25.0bn	–£33.7bn
'Protect' front-line schools	+0.7%	+0.7%
'Protect' front-line 16-to-19 education	+0.9%	+0.9%
'Protect' front-line Sure Start	0.0%	0.0%
Residual: DEL less ODA, NHS, schools & Sure Start	**–6.7%**	**–9.1%**
Memo: cumulative change	–12.9%	–17.3%
Memo: £/year by end year	–£25.8bn	–£34.5bn

Sources: Authors' calculations using HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm; HM Treasury, *Public Expenditure Statistical Analyses 2009*, July 2009, http://www.hm-treasury.gov.uk/pespub_pesa09.htm; Department for Children, Schools and Families, *Departmental Report 2009*, Cm. 7595, June 2009, http://publications.dcsf.gov.uk/eOrderingDownload/DCSF-Annual%20Report%202009-BKMK.PDF; House of Commons Library, *The UK & the 0.7% Aid Target, and the International Development (ODA Target) Bill*, SN/EP/3714, 18 January 2010, http://www.parliament.uk/commons/lib/research/briefings/snep-03714.pdf.

The 2005 Labour Party manifesto pledged to increase spending on overseas aid to 0.7% of gross national income (GNI), which is the long-standing United Nations (UN) recommended level for developed countries, by 2013.[10] The government reiterated its commitment to this target in the December 2009 PBR[11] and the Conservatives have also stated that, if elected, they would honour this commitment, with David Cameron saying 'We are today reaffirming our commitment to meet the internationally agreed goal: 0.7 per cent of Gross National Income spent on aid by 2013'.[12] The Liberal Democrats are also

[10] 'Now, for the first time ever the UK has a clear timetable – 2013 – for achieving the UN target of 0.7 per cent of national income devoted to development' (page 90 of *The Labour Party Manifesto 2005*).

[11] Paragraph 6.34 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

[12] Speech by David Cameron, 'One world conservatism', 13 July 2009, http://www.conservatives.com/News/Speeches/2009/07/David_Cameron_One_World_Conservatism.aspx.

committed to increasing overseas aid to this level.[13] Recent years have seen sharp increases in overseas aid, but further sharp increases (averaging 11.3% a year in real terms) would be required if this commitment is to be met in 2013.

In the December 2009 PBR, the government also said that spending on 'front-line' NHS services, by which it means non-investment spending in the NHS[14] (technically 'near-cash' spending), would not be cut over these two years but instead would be frozen in real terms. Here, the Conservatives have a similar, but slightly more generous, pledge than Labour. David Cameron has stated that 'the Conservatives will increase spending on the NHS every year so we can protect frontline services'.[15] The potential implications of the Conservative Party's pledge on NHS spending for other departmental spending is discussed in more detail in Box 8.2 at the end of Section 8.5.

Taking the government's commitments on overseas aid and the NHS into account leads to the average cut required across other DELs being 5.0% a year after inflation over 2011–12 and 2012–13. In other words, an average cut in other DELs of almost 10% will be required by the end of the second year, or £25.0 billion in 2009–10 prices.[16]

The Chancellor also committed in the December 2009 PBR to increase spending on 'front-line' schools (which we take again to mean non-investment schools spending) by 0.7% a year in real terms over these two years, and to boost non-investment spending on participation in education at ages 16 to 19 by 0.9% a year in real terms. In addition, non-investment spending on Sure Start is to be frozen in real terms. These commitments would increase the average real-terms cut required in other DELs (comprising areas such as defence, transport, housing and higher education) to 6.7% a year. In other words, by the end of the second year, spending on these other areas would need to have been cut by a cumulative 12.9%, or £25.8 billion in 2009–10 prices.[17]

So, to summarise, the government's plans imply, at least on our calculations, a £22.9 billion real cut in DELs, comparing 2012–13 to 2010–11. But it wants to spend £2.1 billion more on overseas aid and £800 million more on front-line schools and 16-to-19 education, while spending the same on the front-line NHS and Sure Start. This would leave cuts of £25.8 billion – or one pound in every seven – to be found from other areas of departmental spending.

Such tight plans for overall DELs, while protecting large parts of spending such as the NHS and schools from cuts, would lead to deep cuts to overall spending on other public services being required. This raises an important issue: if the overall DEL cuts are to be delivered, is it sensible to protect such large areas of government spending on public services from cuts? Since overall public spending is, in real terms, projected to be broadly flat under Labour's commitments, current spending on the NHS would continue to take up about 17p out of every £1 spent by the government, while current spending on

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[13] See pages 22 and 23 of Liberal Democrats, *Pocket Guide to Liberal Democrat Policies*, July 2009, http://www.libdems.org.uk/siteFiles/resources/PDF/Pocket%20Guide%20July%202009.pdf.

[14] Paragraph 6.24 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

[15] Speech by David Cameron, 'Our health priorities', 2 November 2009, http://www.conservatives.com/News/Speeches/2009/11/David_Cameron_Our_health_priorities.aspx.

[16] The £ billion figure has risen from £22.9 billion as £2.1 billion extra is needed to finance the additional real-terms spending on overseas aid.

[17] The £ billion figure has risen from £25.0 billion as £0.8 billion extra is needed to finance the additional real-terms spending on schools and 16-to-19 education.

schools, which is presently about 7p out of every £1 spent by the government, would see its budget share rise very slightly. However, as DELs overall are to be cut, spending on the 'protected' areas of public service spending would rise as a share of total DEL. This is shown for the two years 2011–12 and 2012–13 (and for the 2010–11 baseline) in Figure 8.11. The government has committed to protecting nearly half of 2010–11 DELs. Current NHS spending would rise as a share of DEL from 30.8% to 32.8%, current spending on schools, 16-to-19 education and Sure Start would rise from 14.9% to 16.1%, while overseas aid would rise from 2.3% to 3.1%. This would leave other DELs falling as a share of overall DEL from 51.9% to 48.1%. This squeeze would be across areas that include defence, transport, higher education and housing, as well as capital spending on the NHS and schools. In 2010–11, 29p out of every £1 spent by the government is projected to be spent on these areas, but this would fall to 26p per £1 by 2012–13.

Figure 8.11. 'Other DELs' set for a tight squeeze?
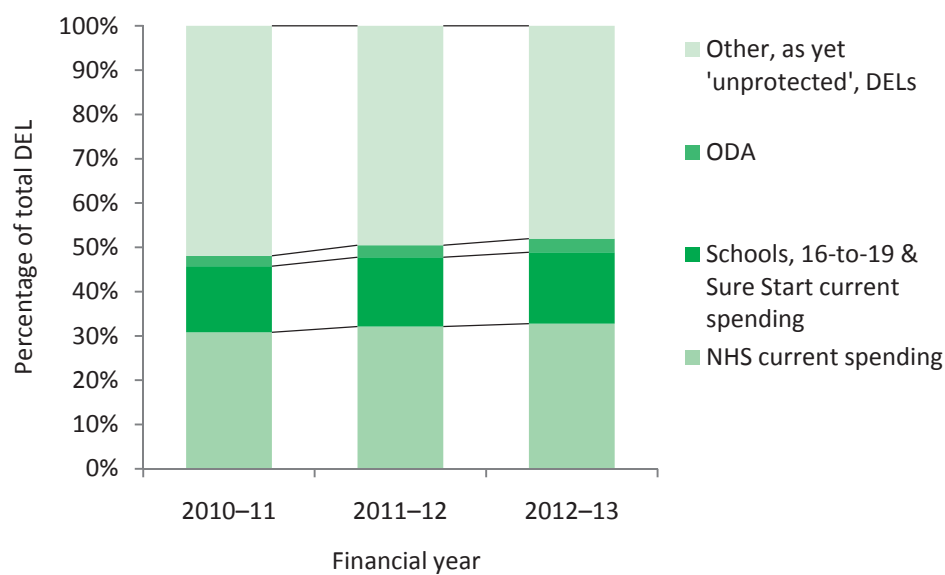
Notes: 'Other DELs' includes investment spending on the NHS, schools, 16-to-19 education and Sure Start, as well as all other departmental spending.
Sources: As for Table 8.3.

Reduce borrowing more quickly by cutting public service spending more

It is possible that after the election, whoever forms the new government might decide that they want to reduce borrowing more quickly than is currently planned. To deliver a faster reduction in borrowing, with at least some of this brought about by larger cuts to departmental spending, would obviously imply a tighter squeeze on departmental budgets. This subsection considers the outlook for DELs under the assumption that a government were to attempt to halve the deficit from its 2009–10 level by 2012–13, rather than by 2013–14 as the PBR 2009 plans suggest, with two-thirds of the additional fiscal tightening required to meet this target being delivered through cuts to DELs. (This is the policy scenario outlined in Section 2.4 of Chapter 2.)

The implications of halving the deficit in three years instead of four, with two-thirds of the extra reduction in borrowing coming from cuts to DELs, are shown in the right-hand column of Table 8.3. This shows that overall DELs would need to be cut by, on average, 4.2% a year in real terms in 2011–12 and 2012–13.

Taking into account the government's commitments on overseas aid, the NHS, schools, 16-to-19 education and Sure Start, this would require average real cuts in spending on other areas of 9.1% a year. This would cumulate to an average cut of 17.3% by the end of the second year, or £34.5 billion. This underlines the difficulty that would be faced if one wanted to cut borrowing more quickly, through cuts to public service spending, while also maintaining pledges to 'protect' real-terms spending on large parts of those public services. This argument is consistent with the fact that the Labour government and the Conservatives have both felt unable to commit to deeper cuts to public spending while at the same time promising not to cut spending on schools and hospitals.

Outlook for NHS spending

Notwithstanding talk of 'protecting' its budget, a real freeze in NHS spending (or at least in its non-investment spending) would be a much tougher environment than in the years of plenty. It would also come at a time of upward pressure on its budgets – for example, from the increasing number of older individuals. Recent analysis by researchers at the King's Fund and the Institute for Fiscal Studies has estimated that the changing age structure of the population will add an average 1.1% a year to the pressure on the NHS budget over the period from April 2011 to March 2017 (although this figure is slightly smaller for the first three years and slightly larger thereafter).[18]

On a historical basis, it is also the case that a two-year real freeze in its budget would not be a particularly generous settlement for the NHS. As shown in Figure 8.12, spending on the NHS has risen in real terms in every single year since 1977–78, and that it has only once had consecutive years without a real-terms budget increase; that was not long after its inception some 60 years ago.

Figure 8.12. NHS spending increases since 1948: freezing not protecting?
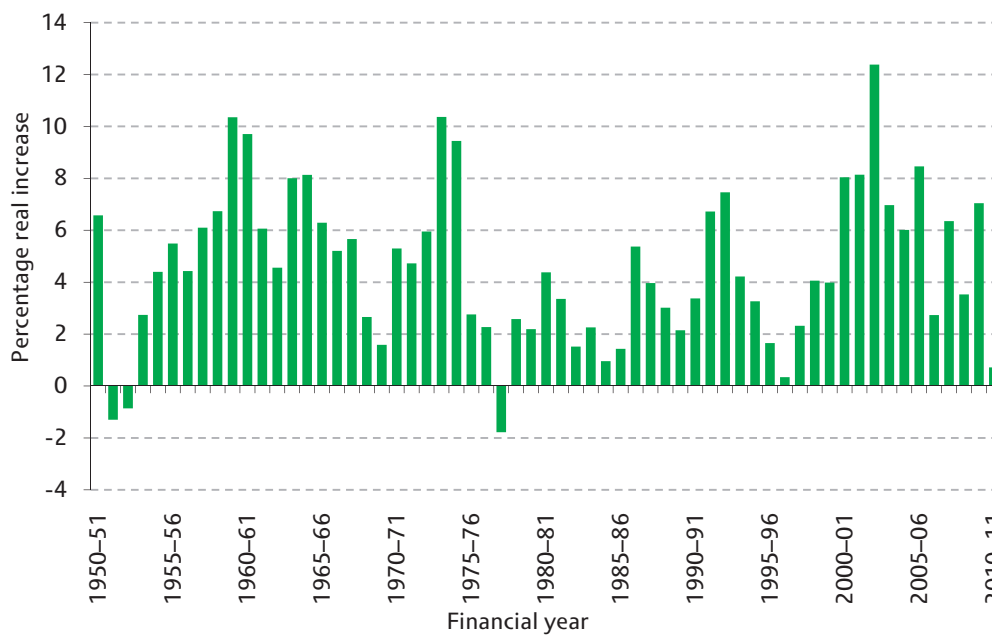
Source: Authors' calculations using HM Treasury, *Public Expenditure Statistical Analyses 2009*, July 2009, http://www.hm-treasury.gov.uk/pespub_pesa09.htm and Office of Health Economics.

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[18] See pages 16 and 17 of J. Appleby, R. Crawford and C. Emmerson¸ *How Cold Will It Be? Prospects for NHS Funding: 2011–17*, July 2009, Kings Fund, London, http://www.ifs.org.uk/publications/4567.

Outlook for spending on 'front-line' education

While the Labour government is keen to be seen to be protecting 'front-line' education services, the real increases in spending pledged in the December 2009 PBR may well still feel like a squeeze after the funding increases of recent years. The dark green bars in Figure 8.13 show the annual real increases since Labour came to power in the components of spending on schools, 16-to-19 education and Sure Start that the government has pledged to 'protect' (i.e. non-investment spending).

Figure 8.13. Protection for 'front-line' education?
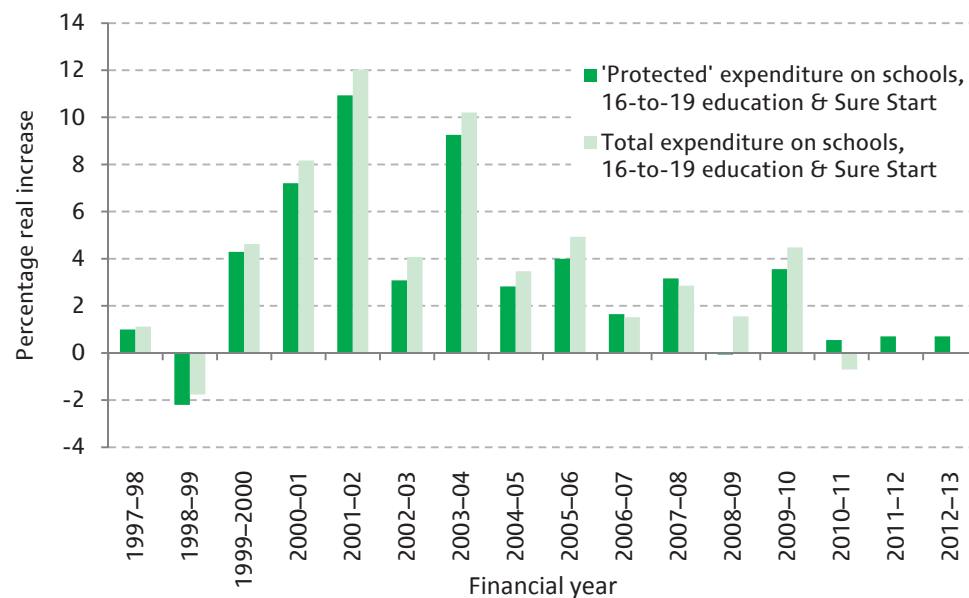
Note: 'Protected' expenditure is non-investment expenditure.
Sources: Authors' calculations based on tables 5.2 and 5.4 of HM Treasury, *Public Expenditure Statistical Analyses 2009*, July 2009, http://www.hm-treasury.gov.uk/pespub_pesa09.htm; previous PESAs, 2000–01 to 2008 (all available from http://www.hm-treasury.gov.uk/pespub_index.htm); HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

Particularly large increases in spending in these areas were seen during the early 2000s. While spending growth has slowed somewhat since, with the notable exception of 2008–09 growth has still tended to exceed the 0.7% a year average increase in spending across these areas[19] that is planned for 2011–12 and 2012–13. An average 0.7% a year growth will be the lowest two-year period of growth since the period 1997–98 to 1998–99. As acknowledged by Secretary of State for Children, Schools and Families, Ed Balls, in a recent interview with the *Financial Times*, the government's schools spending plans imply 'the toughest settlement for schools for the next three years since 1997, by far'.[20]

Figure 8.13 also shows the annual real increases in total spending on schools, 16-to-19 education and Sure Start since 1997–98. Growth in total spending was typically slightly higher than the growth in current spending over this period, as there have been large increases in capital spending under the Labour government. The real decrease in total spending on schools, 16-to-19 education and Sure Start in 2010–11 is caused by the

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[19] 0.7% for schools, 0.0% for Sure Start and 0.9% for 16-to-19 education averages to 0.7% a year across these areas.

[20] Source: 'Ed Balls: "I'm totally against a class war strategy"', *Financial Times*, 10 January 2010, http://www.ft.com/cms/s/0/2bda7132-fe1d-11de-9340-00144feab49a.html.

government bringing forwards some £800 million of investment in schools from 2010–11 into 2009–10 as part of its fiscal stimulus package. Similarly, this boosts the apparent real growth rate of total schools spending in 2009–10. Since the government has made no announcement on what settlement the 'unprotected' areas of spending on schools, 16-to-19 education and Sure Start (which comprise about 10% of their total budgets) can expect after 2010–11, the growth in total spending is unknown. However, if the 'unprotected' areas receive the same 6.7% a year cuts that we calculate will need to be experienced across 'unprotected' DELs as a whole, total spending on schools, 16-to-19 education and Sure Start would be approximately frozen in real terms over the two years 2011–12 and 2012–13.

Outlook for spending on overseas aid

Current commitments by the government – and the Conservatives – suggest that the only likely clear winner from the next Spending Review is overseas aid, notwithstanding the fact that voters tell the pollsters that it is one of the areas that they would be happiest to see cut.[21] As shown in Figure 8.14, Labour has increased the overseas aid budget quite dramatically since 1999, and it is now running at levels not seen since the last time Labour was in power, in the late 1970s. If the pledge made by both parties to boost spending to 0.7% of GNI is met and then maintained, this will be a much greater level of spending on overseas aid by the UK than has been seen at any point in the last 40 years.

Furthermore, after 2013, spending on overseas aid may increase further above this level. At the climate change conference in Copenhagen in December 2009, the government announced that it intends to spend additional amounts (over and above the 0.7% of GNI

Figure 8.14. Overseas aid spending to reach record levels?
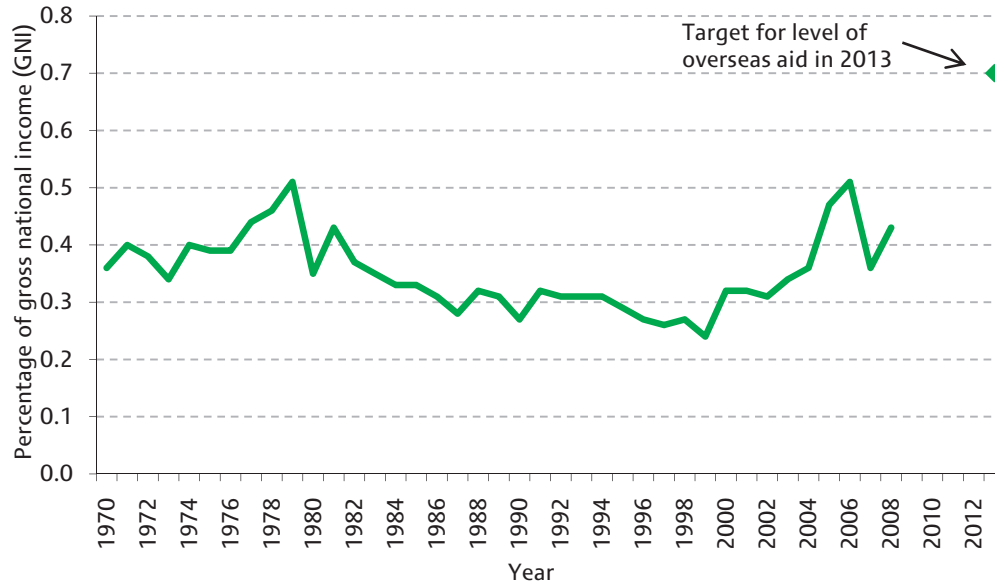
Sources: Table 7 of Department for International Development, *Statistics on International Development 2009*, http://www.dfid.gov.uk/Documents/publications/sid%202009/Table%207.xls; House of Commons Library, *The UK & the 0.7% Aid Target, and the International Development (ODA Target) Bill*, SN/EP/3714, 18 January 2010, http://www.parliament.uk/commons/lib/research/briefings/snep-03714.pdf.

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[21] Slide 15 of *Ipsos MORI Public Spending Index*, June 2009, http://www.ipsos-mori.com/Assets/Docs/poll-public-spending-charts-june-2009.pdf.

target) on overseas aid between 2013 and 2020 as part of the plans to combat global climate change.[22]

Outlook for spending on other DELs

As discussed above, starting with Labour's plans for total spending and taking account of its commitments on overseas aid and non-investment spending on the NHS, schools, 16-to-19 education and Sure Start leads to an average real cut of 6.7% a year being made across other DELs for the two years 2011–12 and 2012–13. Figure 8.15 compares this with the average growth seen over the 2007 CSR period, 2008–09 to 2010–11. Spending on these areas is forecast to be broadly flat over the three years to 2010–11, so average annual cuts of 6.7% a year will represent a sharp slowdown in spending growth. But this is also somewhat true of spending on the supposedly 'protected' areas of spending. These would, under the current government's commitments, see average increases in spending averaging 0.8% a year over the two years 2011–12 and 2012–13, but they have received an average increase of 3.4% a year over the three years to 2010–11.

Figure 8.15. A significant reduction in DEL growth: losers and losers?
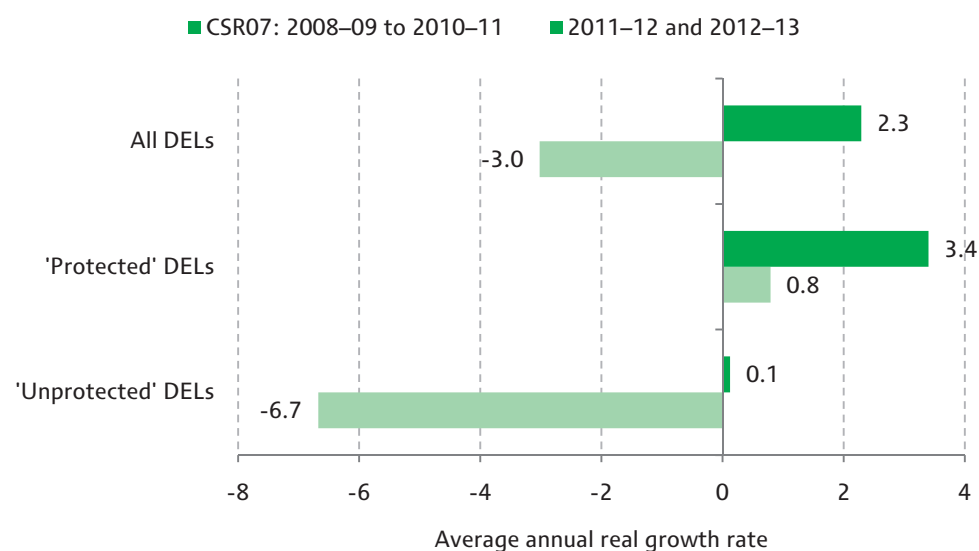
Notes: 'Protected' DELs include overseas aid and non-investment spending on the NHS, schools, 16-to-19 education and Sure Start. 'Unprotected' DELs include investment spending on the NHS, schools, 16-to-19 education and Sure Start, as well as all other departmental spending.
Sources: As for Table 8.3, plus HM Treasury, *2007 Pre-Budget Report and Comprehensive Spending Review*, Cm. 7227, October 2007, http://www.hm-treasury.gov.uk/d/pbr_csr07_completereport_1546.pdf.

We do not know which departments will bear the brunt of the cuts to spending in 'unprotected' areas. Figure 8.16 shows the planned composition of DEL spending in 2010–11 that is not 'protected' under Labour's spending plans for 2011–12 and 2012–13. There are a large number of small government departments which account for 37% of the 'unprotected' departmental spending. The largest single 'unprotected' departments are the Ministry of Defence (£36 billion in 2009–10 prices, or 16% of 'unprotected' DELs), the Local Government component of Communities and Local Government (£26 billion, or 12% of 'unprotected' DELs), the Department for Business,

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[22]14 December 2009, http://www.number10.gov.uk//Page21753.

Figure 8.16. Planned composition of 'unprotected' DEL spending in 2010–11
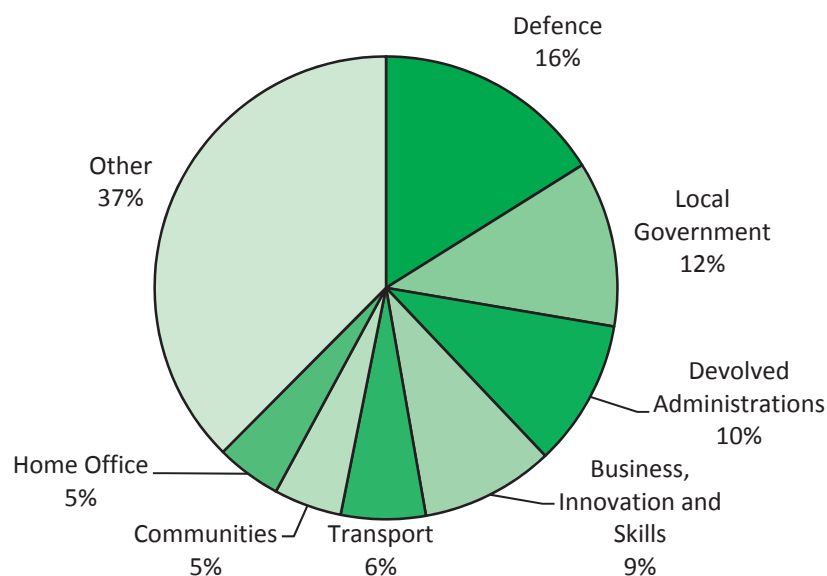
Notes: 'Devolved Administrations' includes the 'unprotected' portions of the budgets of Scotland, Wales and the Northern Ireland Executive. 'Other' includes the Department for Children, Schools and Families, the Home Office, Ministry of Justice, Department for Work and Pensions, the 'unprotected' portion of the budget of the Department of Health, the Chancellor's departments, the Department of Energy and Climate Change, the Department for Environment, Food and Rural Affairs, the Cabinet Office, the Foreign and Commonwealth Office, the Northern Ireland Office, independent bodies, the Law Officers' departments, modernisation funding and the DEL reserve.
Sources: As for Table 8.3, plus table B17 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

Innovation and Skills (£21 billion, or 9% of 'unprotected' DELs) and the Department for Transport (£13 billion, or 6% of 'unprotected' DELs).

Defence

The Ministry of Defence is the largest single 'unprotected' department, and so it is perhaps unlikely that it will be able to escape significant budget cuts. This would introduce painful constraints. Existing commitment spending on equipment is already coming under fire for being unaffordable: an independent review of defence acquisition published in October 2009 found that the total cost overrun of currently approved projects could be around £35 billion, and that 'the Ministry of Defence has a substantially overheated equipment programme, with too many types of equipment being ordered for too large a range of tasks at too high a specification. This programme is unaffordable on any likely projection of future budgets'.[23]

The Liberal Democrats' deputy leader and Treasury spokesman, Vince Cable, has suggested cuts to big-ticket programmes including, but not limited to, the Trident nuclear submarines,[24] but no firm plans for defence spending cuts for 2011–12 onwards have yet

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[23] Pages 16 and 6 of *Review of Acquisition for the Secretary of State for Defence: An Independent Report by Bernard Gray*, October 2009, http://www.mod.uk/NR/rdonlyres/78821960-14A0-429E-A90A-FA2A8C292C84/0/ReviewAcquisitionGrayreport.pdf.

[24] See pages 47–49 of V. Cable, *Tackling the Fiscal Crisis: A Recovery Plan for the UK*, Reform, London, September 2009, http://www.reform.co.uk/Research/ResearchArticles/tabid/82/smid/378/ArticleID/950/reftab/56/Default.aspx. Possible cuts to the defence budget are also discussed in M. Chalmers, 'Preparing for the lean years', Royal

been announced by the government. The government has said that it will conduct a root-and-branch defence review, which both the Conservatives and the Liberal Democrats have argued for.[25] However, it will not report until after this year's general election and so substantive questions about cuts to defence spending will likely remain unanswered until then.

Higher education

Higher education is another area where public spending cuts are likely to be felt. Some possible options for increasing the cost to future graduates in order to reduce the taxpayer burden without adversely affecting unit funding or the number of student places were discussed in last year's Green Budget.[26] For example, the rate of interest charged on student loans could be increased from the RPI to the Bank of England base rate of interest. The government launched, with the support of the Conservatives, the Independent Review of Higher Education and Student Finance in November 2009, with the task of advising the government on the future of fees policy and financial support for students, but this will also not report until after the general election.[27]

Housing and transport

As discussed in Section 8.2, the cuts to public spending over the next few years will be felt disproportionately on investment spending. Over the two years 2011–12 and 2012–13, while total public spending is projected to remain constant in real terms, public sector net investment spending is forecast to be cut in real terms by an average 20.0% a year. The cuts to 'unprotected' DELs are therefore likely to be severely felt by capital-intensive departments, such as the Communities part of Communities and Local Government, which is involved in housing, and the Department for Transport. These departments are each forecast to spend more than half of their DELs on capital in 2010–11, and together to account for almost one-quarter (23%) of all public sector gross investment. Capital spending by the Department of Health and the Department for Children, Schools and Families is also not to be 'protected' under the present Labour plans and, since together these are forecast to account for nearly a fifth of gross investment, cuts to capital spending by these departments are also likely.

8.5 Departmental spending after 2012–13

As shown in Table 8.2, the average annual real growth in DEL forecast for the two years 2013–14 and 2014–15 is –2.7%. While some parts of spending on the NHS, schools, 16-

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United Services Institute, Future Defence Review Working Paper 1 http://www.rusi.org/downloads/assets/FDR_Working_Paper_1.pdf and in C. Guthrie and A. Hull, 'Defence – a reality check', in C. Oppenheim and T. Dolphin (eds), *Opportunities in an Age of Austerity: Smart Ways of Dealing with the UK's Fiscal Deficit*, Institute for Public Policy Research, London, November 2009, http://www.ippr.org.uk/members/download.asp?f=/ecomm/files/age_of_austerity.pdf&a=skip.

[25] 'Ministers to start defence review', BBC website, 7 July 2009, http://news.bbc.co.uk/1/hi/uk_politics/8137934.stm. See also article by shadow secretary of state for defence, Liam Fox, 'There's a war on – someone tell Labour', 8 July 2009, http://www.conservatives.com/News/Articles/2009/07/Liam_Fox_Theres_a_war_on_-_someone_tell_Labour.aspx and V. Cable, *Tackling the Fiscal Crisis: A Recovery Plan for the UK*, Reform, London, September 2009, http://www.reform.co.uk/Research/ResearchArticles/tabid/82/smid/378/ArticleID/950/reftab/56/Default.aspx.

[26] Pages 189–191 of H. Chowdry, R. Crawford, C. Emmerson and G. Tetlow, 'Public spending: set for a squeeze', in R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget, January 2009*, IFS, London, January 2009, http://www.ifs.org.uk/budgets/gb2009/09chap9.pdf.

[27] For details, see http://hereview.independent.gov.uk/hereview/.

to-19 education and Sure Start are 'protected' over the previous two-year period, the Labour government has not indicated whether this protection would be continued after 2012–13. The only exception is spending on overseas aid, which is to be increased to the target level of 0.7% of GNI by 2013. Therefore, two possible scenarios could be considered for departmental spending in 2013–14 and 2014–15, assuming that total spending is set at the levels outlined in PBR 2009:

- First, that the 'protected' areas of DEL mentioned above (with the exception of overseas aid) are not 'protected' after 2012–13 and receive the same average real cut in growth rate as the 'unprotected' areas. We will refer to this as the 'two-year protection' scenario.

- Second, that the 'protected' areas of DEL (again with the exception of overseas aid) receive the same real growth rates over 2013–14 and 2014–15 as they will over the previous two years. We will refer to this as the 'four-year protection' scenario.

In both scenarios, it is assumed that spending on overseas aid is increased at the rate needed to meet the 0.7% of GNI target in 2013–14 and is maintained at that percentage of GNI in 2014–15. Figure 8.17 shows what these scenarios imply for the cumulative percentage real cuts required in DEL budgets after 2010–11 for the 'protected' and 'unprotected' components of DEL. Figure 8.18 shows the equivalent cumulative real £ billion changes.

Figure 8.17 shows that the cumulative real-terms cut in DEL by 2014–15 (compared with the 2010–11 baseline) is projected to be 10.9%, which, as Figure 8.18 shows, is equivalent to £42.0 billion in 2009–10 prices (both numbers were also shown in Table 8.2). If Labour's 'protected' areas of public spending were only 'protected' for the two years Labour has announced and then given the same average cut as all other DELs over 2013–14 and 2014–15 (with the aforementioned exception of overseas aid), then these

Figure 8.17. Scenarios for cumulative growth in 'protected' and 'unprotected' DELs, 2010–11 to 2014–15 (percentage change)
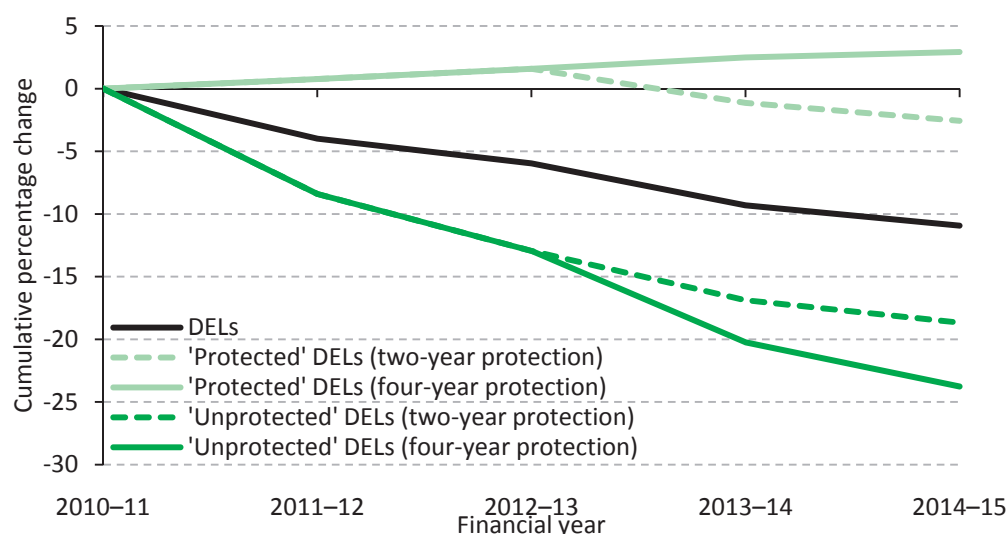
Notes: 'Protected' DELs include spending on overseas aid, and front-line (non-investment) spending on the NHS, schools, 16-to-19 education and Sure Start. 'Unprotected' DELs include investment spending on the NHS, schools, 16-to-19 education and Sure Start, as well as all other departmental spending.
Sources: As for Table 8.3.

Figure 8.18. Scenarios for cumulative growth in 'protected' and 'unprotected' DELs, 2010–11 to 2014–15 (real £ billion change)
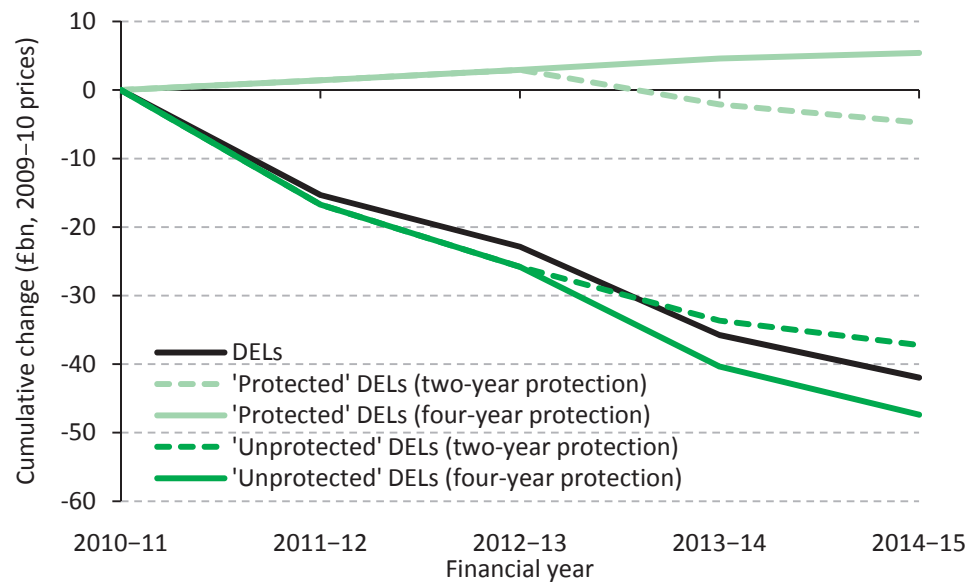
Notes: 'Protected' DELs include spending on overseas aid, and front-line (non-investment) spending on the NHS, schools, 16-to-19 education and Sure Start. 'Unprotected' DELs include all other departmental spending. Sources: As for Table 8.3.

areas would see a cumulative real-terms cut in their budgets of 2.6% by 2014–15. The 'unprotected' areas, on the other hand, would, under this scenario, see a cumulative real-terms cut in their budgets of 18.7% over the same period, or £37.2 billion in today's prices.

In the alternative scenario, where the protection Labour has planned over 2011–12 and 2012–13 is continued for a further two years, the 'protected' areas would see a cumulative real-terms increase in their budgets of 2.9% between 2010–11 and 2014–15, while the 'unprotected' areas would experience a real-terms cut of 23.8%, or £47.4 billion in today's prices.

However, if there is a change of government at the next election, the areas of spending that might be protected could change. Furthermore, plans for total spending (and hence the amount of money available to be shared among departments) might also change. Box 8.2 considers what the outlook for DELs might be under a Conservative government, assuming that the NHS is protected from cuts and that the target for overseas aid is met. We outline the implications under two scenarios for total spending growth: (i) that growth in total spending is as set out in PBR 2009 and (ii) that a Conservative government seeks to cut borrowing more quickly by cutting spending more aggressively (in the way outlined in Section 2.4 of Chapter 2).

Box 8.2. Scenarios for cumulative DEL growth under Conservative Party plans to protect the NHS and ODA over the next parliament

The Conservative Party has stated that, if elected in 2010, it would increase spending on overseas aid to meet the UN target by 2013 (like Labour), and increase spending on the NHS in real terms. David Cameron has stated that 'the Conservatives will increase spending on the NHS every year so we can protect frontline services'.[a] This suggests that the Conservative Party's pledge on NHS spending is potentially more generous than Labour's, for three reasons:

(a) The Conservatives would increase, rather than merely freeze, the NHS budget in real terms.
(b) The pledge presumably applies to a whole parliament (i.e. for the four years 2011–12 to 2014–15) rather than just the two years to which Labour has committed.
(c) It presumably applies to the entirety of the NHS budget, whereas the Labour commitment only applies to non-investment spending (although this comprises 95% of NHS spending).

Unlike Labour, the Conservatives have not promised to protect front-line schools spending, 16-to-19 education or Sure Start.

Figures 8.19 and 8.20 show what these spending commitments would imply for the cumulative change in spending on other DELs over the next parliament, in percentage and in real £ billion terms respectively, under two scenarios:

• first, the current PBR plans for total spending;
• second, a more ambitious six-year fiscal consolidation plan (which aims to halve the deficit in three years and return the structural current budget to balance in 2015–16, with two-thirds of the additional fiscal tightening delivered through cuts to public services). This scenario, consistent with current Conservative proposals to reduce borrowing more quickly, is set out in Section 2.4 of Chapter 2.

Figure 8.19. Scenarios for cumulative DEL growth if ODA and the NHS are 'protected' over the next parliament (percentage change)
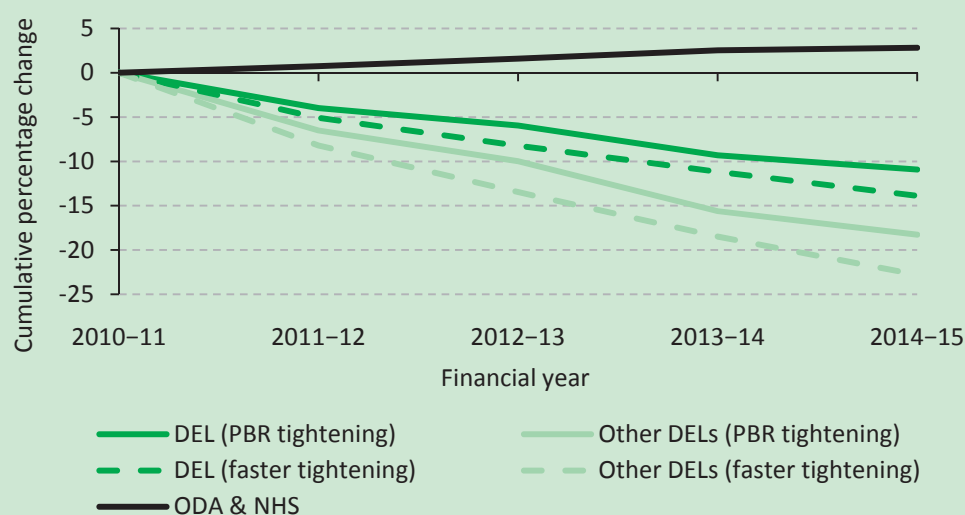
Sources: As for Table 8.3.

Figure 8.20. Scenarios for cumulative DEL growth if ODA and the NHS are 'protected' over the next parliament (real £ billion change)
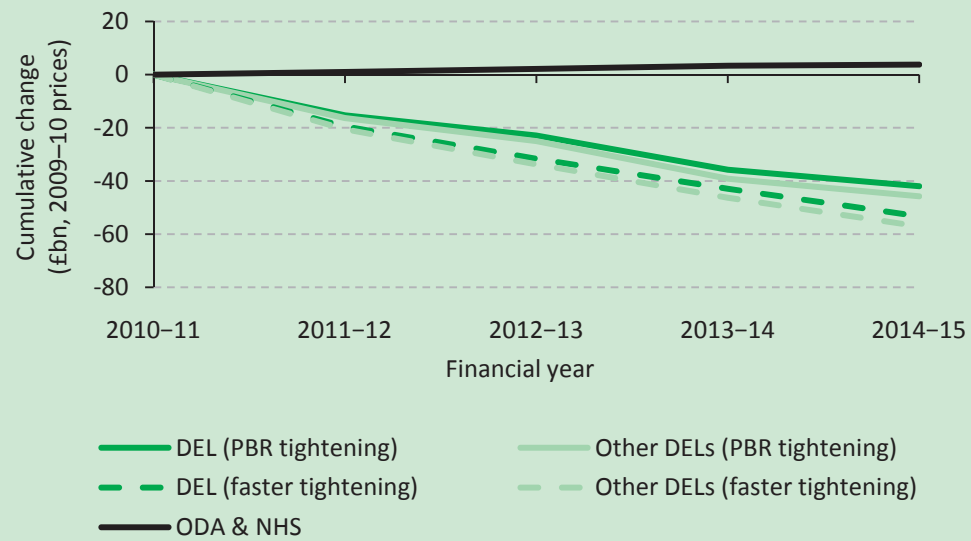
Sources: As for Table 8.3.

Under the PBR plans for total spending, protecting ODA and the NHS would require a cumulative cut in other DELs by 2014–15 (relative to their 2010–11 level) of 18.3%, or £45.7 billion in 2009–10 prices. If, however, protecting ODA and the NHS were combined with the tighter fiscal consolidation plan, this would imply cuts to other DELs of 22.8%, or £57.1 billion in 2009–10 prices.

a. Speech by David Cameron, 'Our health priorities', 2 November 2009, http://www.conservatives.com/News/Speeches/2009/11/David_Cameron_Our_health_priorities.aspx.

8.6 Conclusion

The financial crisis and recession have knocked a substantial hole in the government's finances. The majority of the government's plan for dealing with this relies on freezing real-terms public spending for the four years 2011–12 to 2014–15. Though the government has declined to conduct a detailed Spending Review or to publish its forecasts for spending on unchanged policies for the years beyond 2010–11, making reasonable assumptions we can deduce what this freeze in total spending might mean for spending on public services. Increases in real-terms spending on debt interest payments are unavoidable and spending on social security benefits and other areas of annually managed expenditure is also likely, in the absence of significant policy change, to increase in real terms.

As a result, our best estimate is that departmental expenditure limits would, under current policies, have to be cut by 3.0% a year on average in 2011–12 and 2012–13 and by 2.7% a year on average in 2013–14 and 2014–15 to keep to the Treasury's plans for total spending. This amounts to a cumulative cut in DELs of 10.9% (or £42.0 billion in 2009–10 prices) after four years. (Combined with the 0.5% cut in DELs already confirmed for 2010–11, this gives a total cut over a five-year parliament of 11.4%, or £43.8 billion in 2009–10 prices.) If delivered, this would be sufficiently deep to reverse almost all of the

increase in DELs as a share of 'potential' national income seen since Labour came to power. Looking further back, on a historically comparable slightly broader definition of public service spending, the period 2011–12 to 2014–15 would be the tightest four-year period for spending on public services since April 1976 to March 1980 and the five years 2010–11 to 2014–15 would be the first five consecutive years of real cuts since comparable data began in 1948–49.

The government has made specific commitments to 'protect' spending on some of its priority areas – including overseas aid, health and schools – in the years 2011–12 and 2012–13. The only winner from the next Spending Review is likely to be overseas aid, with Labour, the Conservatives and the Liberal Democrats signed up to large growth in its budget. In other supposedly 'protected' areas, pain would still be felt under Labour's plans. For example, a two-year freeze in the NHS budget would be the tightest two years for the NHS in 60 years.

Protecting large areas of spending from cuts means that the pain will be even more severe for all the other areas of departmental spending. These other areas – comprising, among others, defence, higher education, transport and housing – would, on our estimates, see their budgets cut by 12.9% (or £25.8 billion) by 2012–13. Aiming to halve the deficit one year earlier while maintaining the government's commitment to 'protect' spending in key areas would, under current policies, increase the required cuts in these areas to 17.3% (or £34.5 billion) by 2012–13.

Beyond 2012–13, the government has made no specific pledges to protect any areas of spending except overseas aid. Were it to continue 'protecting' all its priority areas for a further two years, the 'unprotected' budgets would have to be cut by a total of 23.8% (or £47.4 billion) by 2014–15 – this includes the £25.8 billion that would be required by 2012–13. To avoid imposing this level of pain on the 'unprotected' budgets, the government could choose instead to impose some cuts to the health and schools budgets after 2012–13.

The Conservative Party has promised to protect overseas aid (like Labour) and to increase NHS spending in real terms. Under Labour's plans for spending overall, this implies £45.7 billion in cuts in unprotected areas by 2014–15. As the Conservatives propose to protect a smaller share of total DELs than Labour, the percentage cut required across other departments is substantially smaller at 18.3%. However, if the Conservatives' plan to protect aid and the NHS were combined with the more ambitious tightening plan implied by their proposed fiscal targets (with the majority of this additional tightening delivered through cuts to public service spending rather than through tax rises or benefit cuts), then the cuts required in their unprotected areas would be 22.8% or £57.1 billion by 2014–15.

There are likely to be no easy choices for departmental spending over the next five years. The government has been keen to focus on the fact that, in real terms, current spending is forecast to grow over the next five years. However, the plans imply large cuts to investment spending. Furthermore, increasing demands for spending on debt interest and social security mean that the government's present plans for spending would also require deep cuts to departmental budgets beyond 2010–11.

9. Public sector pay and pensions

Antoine Bozio and Paul Johnson (IFS)

Summary

- Public sector pay cost £174 billion of public spending in 2008. The pay bill rose steadily as a share of national income from 2000 to 2005, partly because of increased employment and partly because of pay increases that were, on average, faster than those seen in the private sector. The pay bill has been cut modestly since then as a share of national income (although not yet in real terms). The fiscal retrenchment planned by the Treasury will soon require a tighter squeeze.

- Overall, pay levels in the public sector are probably not significantly out of line with those of similar workers in the private sector, once you take into account factors such as their age, education and qualifications. However, there are areas of divergence. In particular, there are gaps in favour of public sector workers in regions outside London and the South-East, which remains an area for reform in the long run.

- There is evidence that public sector workers have fared better than their private sector counterparts in the recession. A couple of years of pay freezes or other restraint could save significant money in the short run and, in current labour market conditions, would be unlikely to create recruitment problems. But, given the tendency for public sector workers to 'catch up' following periods of pay restraint, further cuts in the public sector workforce are more likely to deliver the lasting reductions in public spending as a share of national income sought by the Treasury.

- In the long run, a big anomaly remains the pension provision enjoyed by public sector workers. With salaries broadly in line with their private counterparts, the large pension advantage they enjoy translates into a total package that is substantially more generous. The only way to access this money in the short run would be to levy additional pension contributions on public sector workers.

9.1 Introduction

The public sector pay bill amounted to £174 billion in 2008, representing 30% of all government expenditure or 12% of national income.[1] Cuts to spending on public services will inevitably require cuts in the public pay bill in real terms. In part, this ought to come naturally if the size of the workforce falls in response to reductions in the scale of public services, although getting this to happen will not be straightforward. But the main question we focus on here is the extent to which there may, or may not, be scope to cut remuneration levels for public workers.

So far, public sector workers appear to have emerged relatively unscathed from the recession. They have suffered neither substantial job losses nor the cuts in earnings that many employees in the private sector have faced. As a result of the latter, average

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[1] ONS, *United Kingdom National Accounts: Blue Book*, 2009, http://www.statistics.gov.uk/statbase/tsdtables1.asp?vlnk=bb.

earnings have grown faster during the recession in the public sector than in the private sector.

Government and Opposition alike have recognised that savings could be made from freezing or cutting public sector pay. If it appears uncontroversial to suggest reducing the pay growth of public sector workers in the aftermath of the recession, important issues remain as to how and by how much to cut or freeze pay. The issues we consider are the following:

- Are public sector workers paid 'too much' relative to private sector comparators? By how much could public spending be reduced either by freezing or cutting public sector pay?

- With large regional variations in the public–private pay gap, would it make sense to apply any pay cuts selectively across the country?

- Are there reasons to target cuts towards higher earners?

- Given that pensions are a large part of the public sector remuneration package, should policymakers focus on total remuneration, not just on pay?

In this chapter, we start in Section 9.2 by setting out the size of the public sector pay bill and workforce and how this has changed in recent years. Section 9.3 compares public and private sector pay levels, accounting for differences in the composition of the two sectors. Section 9.4 shows how big a spending cut can be achieved through either cuts in pay or cuts in the number of jobs in the public sector. We then consider, in Section 9.5, public sector pensions and how they change the overall judgement on the public–private remuneration gap. Section 9.6 concludes.

9.2 The public sector pay bill

Figure 9.1 shows the long-term evolution of public sector compensation as a share of national income over the last 40 years. From a peak of 22% of national income in 1975, total public sector compensation (the two shaded areas combined) declined to a low in 1999 of 11%, in large part reflecting the privatisation of public corporations. Between 1999 and 2005, the pay bill grew steadily, but since then it has fallen back slightly (by 0.4 percentage points) such that the total in 2008 stood at 12% of national income. Turning to the general government pay bill (i.e. excluding public corporations), from a low of £109 billion (in 2008 prices) in 1998, it grew by 4–6% per annum in real terms up to 2006 to reach £157 billion. In the years 2007 and 2008, it grew at a much slower rate – below 1% per annum – reaching £160 billion in 2008.

These numbers do not fully incorporate the banks that have been nationalised during the height of the financial crisis. The Office for National Statistics (ONS) reclassified these corporations at the end of 2008 and they will appear in the public sector statistics for the year 2009 (see Box 9.1).

Changes in the public sector pay bill can be decomposed into changes in the size of the workforce and changes in the average wage cost per employee. Figure 9.2 shows the percentage increase in the public sector pay bill (in real terms) split between the increase in headcount and the increase in cost per head since 1980. Conservative governments from 1979 to 1997 reduced headcounts on average by 2.0% each year (in large part through privatisations) while increasing real cost per head by 1.4% a year. The Labour

government, on the other hand, has increased headcounts yearly by 1.0% as well as increasing cost per head by 2.3% a year over the period from 1997 to 2008. However, most of the increase in the public sector pay bill was concentrated during the period 2000–05, with costs per head rising by 3% per year in real terms over this period. Note that reductions in the public workforce started in 2006, before the financial crisis.

Figure 9.1. Public sector compensation
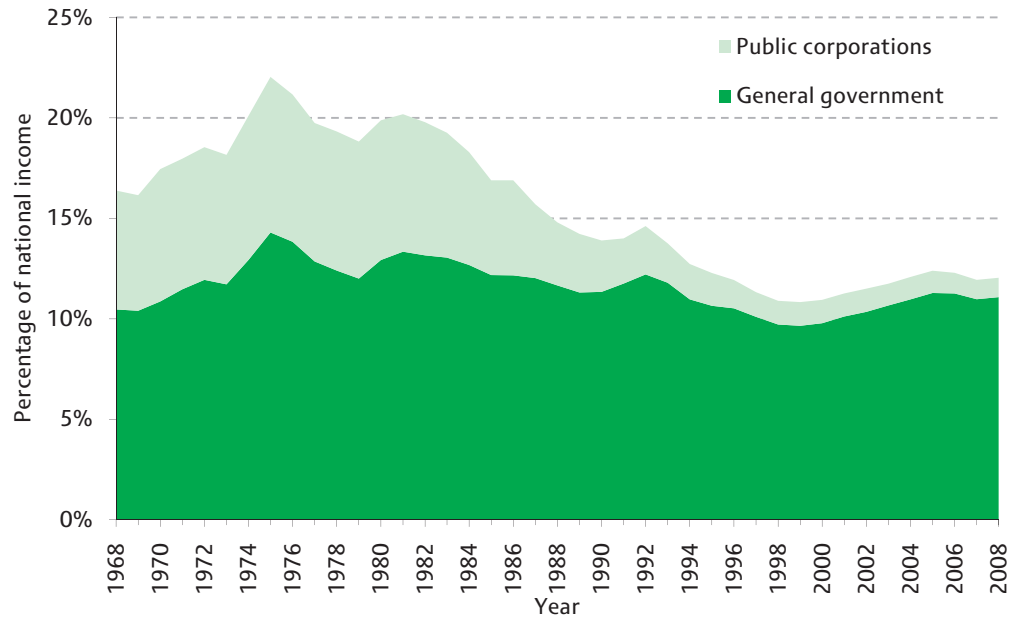
Source: ONS, *United Kingdom National Accounts: Blue Book*, 2009, http://www.statistics.gov.uk/statbase/tsdtables1.asp?vlnk=bb.

Figure 9.2. Changes in the public sector pay bill
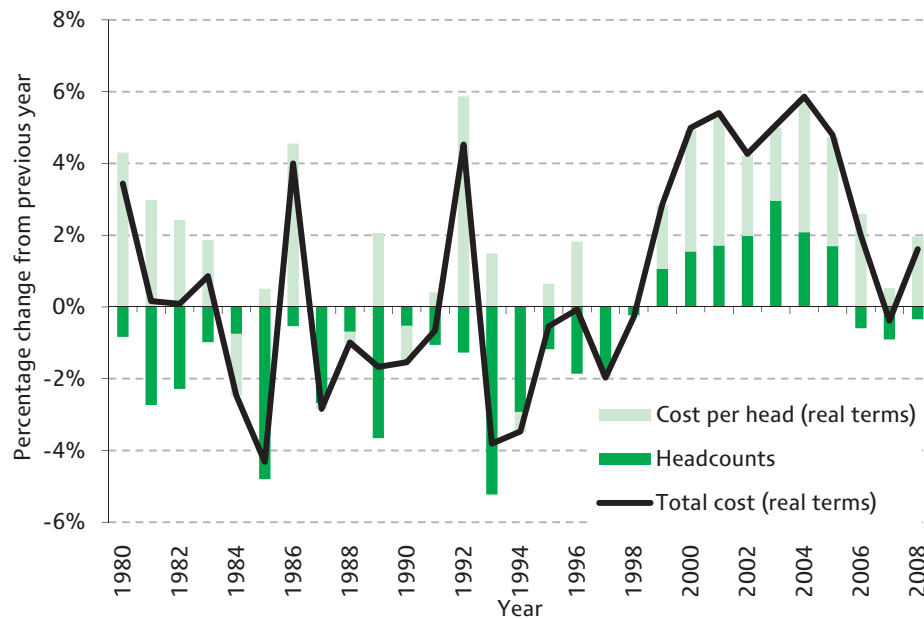
Sources: ONS, *United Kingdom National Accounts: Blue Book*, 2009, http://www.statistics.gov.uk/statbase/tsdtables1.asp?vlnk=bb; authors' calculations.

Box 9.1. Some new public sector workers

The ONS announced in February 2009 that Bradford and Bingley, the Royal Bank of Scotland and the Lloyds Banking Group were being reclassified as public corporations with effect from the last quarter of 2008. Northern Rock had already been reclassified as part of the public sector from October 2007.

These nationalisations have consequences for the picture official statistics paint of the public sector: they represent new public sector workers and also change the average earnings in the public sector by simple composition change. Figure 9.3 shows the increase in the number of employees of public sector corporations. In the last quarter of 2008, more than 228,000 workers joined the public sector as a result of bank nationalisations, representing a 71% increase in employment in public corporations and a 4% increase in the public sector workforce as a whole.

Figure 9.3. Employees in public corporations
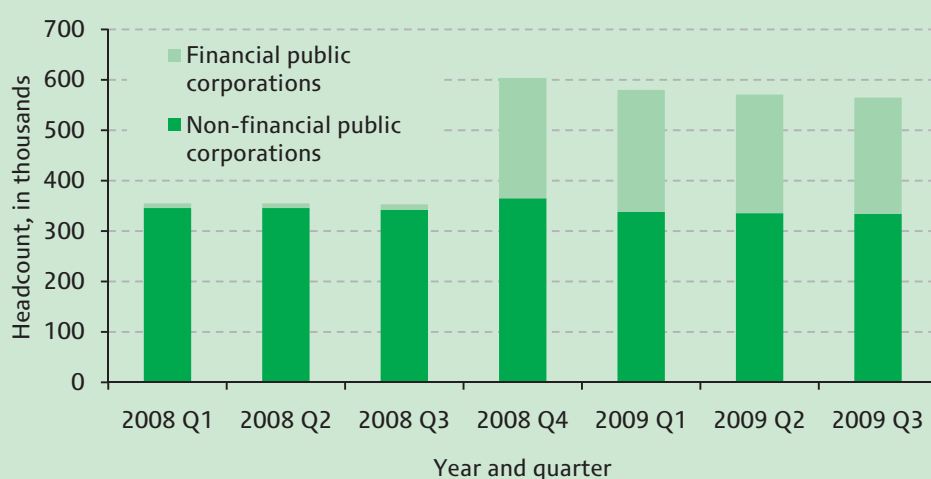
Source: ONS, 'Public sector employment', Statistical Bulletin, 16 December 2009, http://www.statistics.gov.uk/pdfdir/pse1209.pdf.

This increase in the size of the public sector is likely to be a temporary effect, as the government intends to return these organisations to private ownership.

The average earnings index (AEI) from ONS (used in Figures 9.4, 9.5 and 9.6) is so far only marginally affected by the reclassification of banks in the public sector from August 2009 onwards. The AEI series is an index number, so reflects growth in earnings (not its level). In calculating the index, employment weights are held fixed across consecutive periods so that compositional changes, such as the inclusion of large numbers of (presumably higher-paid) financial sector employees does not affect the index. Reclassification will only matter to the extent that future earnings *growth* among reclassified employees is different from that elsewhere in the public sector.

The new average weekly earnings (AWE) series is different, as the employment weights are updated monthly and will therefore reflect changes in the composition of both sectors. For instance, the latest publication from ONS[a] shows that the three-month-average AWE annual growth in November 2009 amounts to 3.8% in the public sector including financial services but only to 2.8% excluding them.

a. Table 15 of ONS, *Labour Market Statistics*, 20 January 2010, http://www.statistics.gov.uk/pdfdir/lmsuk0110.pdf.

Table 9.1. Public sector workforce in the UK

	1997	2008	% change, 1997–2008
National Health Service	1,190,000	1,510,000	+27%
Of which:			
Doctors (England)	*89,619*	*133,662*	*+49%*
Nurses (England)	*318,856*	*408,160*	*+28%*
Police	230,000	285,000	+24%
Of which:			
Police community support officers	*–*	*15,683*	*–*
Education	1,131,000	1,393,000	+23%
Of which:			
Teachers (England & Wales)	*437,980*	*476,410*	*+9%*
Teaching assistants (England)	*34,800*	*125,200*	*+260%*
Public administration	1,139,000	1,224,000	+7%
Of which:			
Civil service	*516,000*	*522,000*	*+1%*
Other public sector	708,000	738,000	+4%
HM Forces	220,000	193,000	–12%
Other health and social work	436,000	380,000	–13%
Construction	124,000	55,000	–56%
All public sector	**5,178,000**	**5,778,000**	**+12%**

Notes: Headcounts. These annual figures relate to the June quarter. The 1997 figures are not seasonally adjusted whereas the 2008 figures are.
Sources: ONS, *Public Sector Employment, Q3 2009*, http://www.statistics.gov.uk/pdfdir/pse1209.pdf; DCSF, *Statistical Evidence to School Teachers' Review Body (STRB) 2008* (available at http://www.teachernet.gov.uk/management/payandperformance/pay/2009/); NHS data from the Information Centre (available at http://www.ic.nhs.uk/statistics-and-data-collections/workforce); police workforce data from the Home Office Statistical Bulletin, http://police.homeoffice.gov.uk/publications/police-reform/Police-strength-Mar092835.pdf?view=Binary.

Changes in the size of the public sector workforce over the last decade have been far from evenly spread across professions. Table 9.1 sets out these changes for some of the key groups between 1997 and 2008. Compared with the rest of the public sector, the numbers of teaching assistants, police, doctors, nurses and NHS staff have risen relatively quickly. The number of public administrators – the famous faceless bureaucrats – has risen relatively slowly. In the civil service, recent reductions in numbers have almost entirely reversed the growth in the early years of the decade. Numbers in the armed services have fallen.

9.3 Cutting pay, shedding jobs or both?

Faced with the need for a sharp fiscal tightening, highlighted by Chapter 2, policymakers have embraced calls for 'tough choices on public sector pay'.[2]

Vince Cable, the Liberal Democrats' deputy leader and Treasury spokesman, said in September 2009: 'We must stop civil service bonuses and the culture of massively

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[2] Page 112 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

inflated salaries. A freeze in the total pay bill is better than cuts in services'.[3] The policy announced by the Liberal Democrats involves limiting wage increases in the public sector to £400 per person, implying an annual increase of 1.8% for the median public wage earners (earning £22,400) and 0.9% increase – or less – for the 10% highest earners of the public sector (earning above £44,200). George Osborne, the Shadow Chancellor of the Exchequer, announced for the Conservative Party: 'You will see that whoever wins the election is going to have to ask from 2011 each part of the public sector to accept a one year pay freeze. We shouldn't include public servants earning less than £18,000. … A pay freeze of the scale I'm talking about is the equivalent to saving 100,000 public sector jobs'.[4] The government, in its 2009 Pre-Budget Report (PBR) follows a similar line, announcing a 1% cap on public sector pay for 2011–12 and 2012–13 and a freeze in pay for senior staff.[5]

Box 9.2. How do you say 'public sector pay cuts' in Irish?

The words 'laghdú pá san earnáil phoiblí' will still be resonating in the heads of many Irish public sector workers. In February 2009, the government introduced a pension levy for public sector workers, reducing take-home pay by between 3% and 9% depending on earnings level. Then, in his 2010 Budget, the Finance Minister Brian Lenihan announced further public sector pay cuts ranging from 5% at earnings of €30,000 to 15% for high earners on €200,000. This announcement caused uproar among the public workforce and has resulted in industrial action. Has this Irish policy development any meaningful implications for policymakers in the UK?

Arguably, the main difference in the pressures on public sector workers between Ireland and the UK arises not because the fiscal hit in Ireland has been the more severe, but because public sector workers were paid relatively more generously in Ireland prior to the crisis. Research by the Economic and Social Research Institute (ESRI), based in Dublin, suggests that in Ireland the public–private sector pay gap had increased substantially in the years between 2003 and 2006, from 14% to 26% in favour of the public sector.[a] In contrast, work by researchers at IFS suggests that the overall public sector pay premium in the UK does not seem to depart strongly from zero.[b] Estimates based on 2006–09 data in this chapter (see Table 9.3), using a similar methodology to the Irish study, suggest wage premiums of 2% for men and 7% for women, much lower than the Irish numbers. So perhaps the Irish had much more scope to reduce public sector pay without endangering recruitment and retention of quality staff. This comparison is valid only for pay, however, and we come back to the issue of public sector pensions in Section 9.5.

a. E. Kelly, S. McGuinness and P. O'Connell, 'The public-private sector pay gap in Ireland: what lies beneath?', ESRI Working Paper 321, 2009, http://www.esri.ie/UserFiles/publications/20091102110232/WP321.pdf.
b. R. Disney and A. Gosling, 'Changing public sector wage differentials in the UK', IFS Working Paper WP08/02, 2008, http://www.ifs.org.uk/publications/4117.

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[3] Vince Cable's speech to the Liberal Democrat Conference, 21 September 2009, available at http://www.libdems.org.uk/speeches.aspx.

[4] Speech to the Conservative Party Conference, 6 October 2009, http://www.conservatives.com/News/Speeches/2009/10/George_Osborne_We_will_lead_the_economy_out_of_crisis.aspx.

[5] Government policy was also announced by the Chief Secretary to the Treasury, Liam Byrne, during the Conservative Party Conference, 6 October 2009.

Particularly by comparison with the large pay cuts announced in Ireland (see Box 9.2), and relative to the large public spending cuts the government is expected to need to find (see Chapter 8), these measures seem relatively modest, saving at most £3 billion a year. In fact, the cuts in Ireland are on a scale not seen or probably contemplated in the UK since the 1931 Budget, when a 10–20% public sector pay cut was implemented. This provoked widespread unrest, including the famous Invergordon mutiny of around 1,000 sailors in the Atlantic Fleet.[6] The deeply unpopular package of spending cuts unveiled in that year also helped to bring down the Labour government of Ramsay MacDonald and bring about his subsequent formation of a National Government.

What is striking about these pledges to get 'tough' with public sector pay is that they stress the advantage of pay cuts over cuts in the size of the public workforce. Perhaps this is because cuts in jobs must be assumed to go hand-in-hand with cuts in services in the absence of efficiency improvements on a scale that has proven elusive in the past.

With regard to public sector pay setting, one would usually expect the level of remuneration in the public sector to follow the trend for similarly-qualified workers in the private sector. If pay settlements happen to be lower in the public sector than in the private, it is likely to lead to recruitment problems and falls in staff quality and in the quality of services provided. We had reached that situation in some parts of the public sector by about the year 2000.[7] Conversely, if remuneration in the public sector is too high, then all else equal, it might lead to excessive crowding out of skills for the private sector, wage inflation and an inappropriately higher burden for the taxpayer. This may be a problem now, in particular in regions outside London and the South-East.

These comments relate primarily to the medium term: they do not rule out some short-term divergence. In particular, when a recession hits an economy, there is no need from a labour market point of view for a government to cut public sector pay and shed jobs to mimic the response of private firms to a drop in demand. It may make sense for government to maintain pay levels in the public sector during the recession and only implement lower pay increases (to allow the private sector to catch up) once the recovery is properly underway. Conversely, we would not expect the public sector to increase pay faster during private sector boom years.

This is why decisions on pay need to be informed by a sense of where we are relative to the 'correct' long-term level.

Pay trends in public and private sectors

Comparing public and private sector remuneration is always a tricky business. The two sectors are different. Public sector staff have, on average, higher qualifications than those in the private sector, as they provide services that are skill-intensive (health, education etc.). As a result, raw comparisons between the two sectors will overestimate the public sector pay premium. Examples of misuse of these raw statistics abound. They were

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[6] A. Ereira, *The Invergordon Mutiny*, Routledge, London, 1981.

[7] A. Bozio and P. Johnson, 'Public sector pay and pensions', in R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget, January 2008*, IFS, London, January 2008, http://www.ifs.org.uk/budgets/gb2008/08chap8.pdf.

recently underlined by Ben Goldacre's 'Bad Science' column in *The Guardian*, where he stressed how misleading comparing average public and private sector pay could be.[8]

That is why researchers take care to compare like with like, controlling for qualifications, age, experience and other characteristics likely to affect both wages and participation in the public workforce. Recent research by economists at IFS has improved this basic methodology (using data from the New Earnings Survey and the Annual Survey of Hours and Earnings), estimating public–private sector wage differentials and their changes over time.[9] The results from this careful study show that on average 'public sector pay differentials do not seem to depart strongly from zero'. Whereas the raw differential – not controlling for composition differences – suggests public sector premiums of 15% and 22%, respectively, for men and women in 2005–06, the more meaningful estimates are closer to 2% and 4%. Obviously, these are average figures that could easily hide groups of workers with large positive or negative wage differentials, but the overall finding – and the extent to which it is reduced by taking account of some observed differences in the composition of the public and private sector workforces – is nevertheless instructive.

These results are based on data gathered before the financial crisis and therefore might not reflect the latest changes. To gather more recent evidence, we present in Figure 9.4 the average monthly earnings growth in public and private sectors between January 2005 and October 2009. Before the crisis started, in 2006 and 2007, earnings growth in both sectors followed similar patterns, but in mid-2008 private sector earnings were hit by the recession, experiencing drops in average earnings of 2–3% for a couple of months – during the months when bonuses are usually paid – with a stabilisation thereafter. In contrast, average earnings in the public sector continued to grow at a similar rate to that before the crisis.

Figure 9.4. Growth in public and private sector pay since 2005
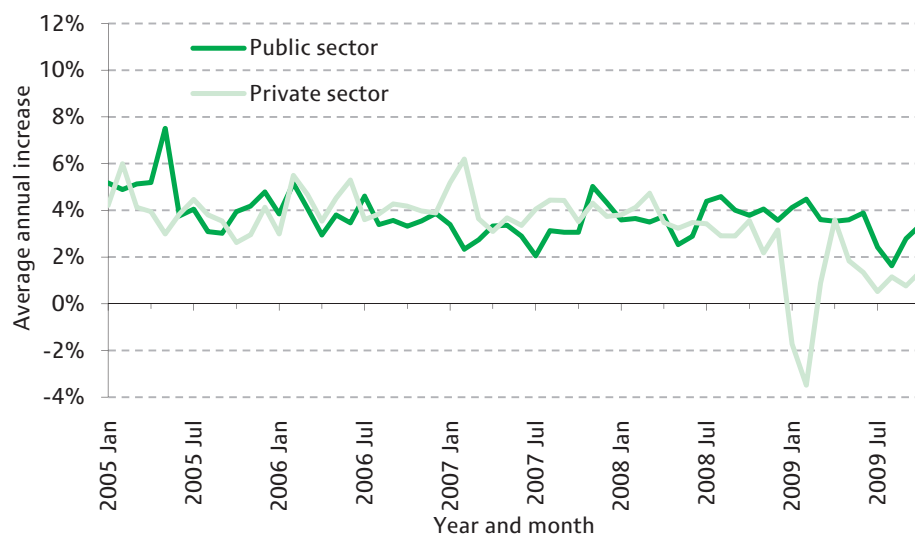
Source: ONS, http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=9537 average earnings indices (AEI) not seasonally adjusted and including bonuses (series LNNI for the public sector and LNKX for the private sector).

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[8] B. Goldacre, 'If you want to be trusted more: claim less', *The Guardian*, 8 January 2010, http://www.badscience.net/2010/01/if-you-want-to-be-trusted-more-claim-less/. The example for the misuse of the statistics was the article 'Public sector pay races ahead in recession', *Sunday Times*, 3 January 2010, http://business.timesonline.co.uk/tol/business/industry_sectors/public_sector/article6974029.ece.

[9] Page 13 of R. Disney and A. Gosling, 'Changing public sector wage differentials in the UK', IFS Working Paper WP08/02, 2008, http://www.ifs.org.uk/publications/4117.

Figure 9.5. Trends in public and private sector earnings since 2000
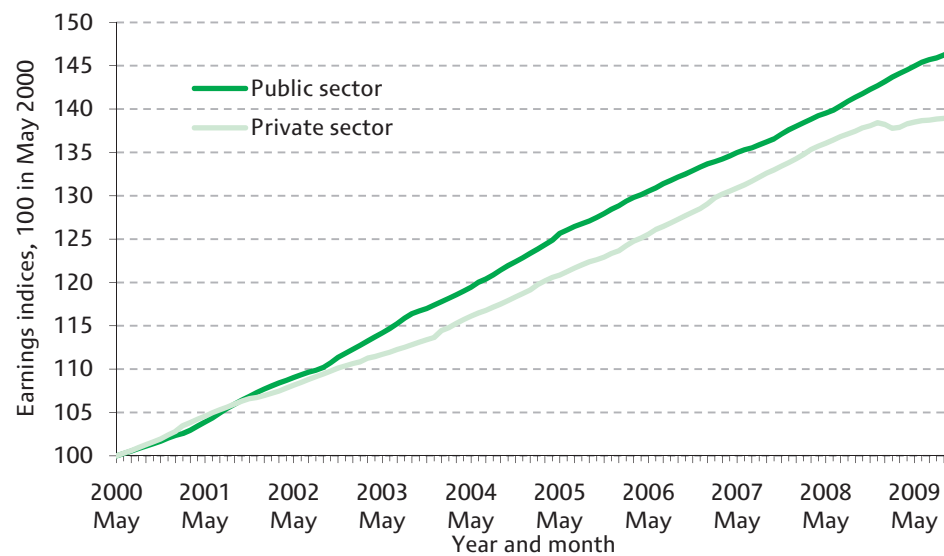
Note: The monthly indices have been smoothed by annual moving average in order to smooth the bonuses effect in the private sector at the end of the year.
Source: As for Figure 9.4.

Figure 9.6. Trends in public and private sector earnings since 1997
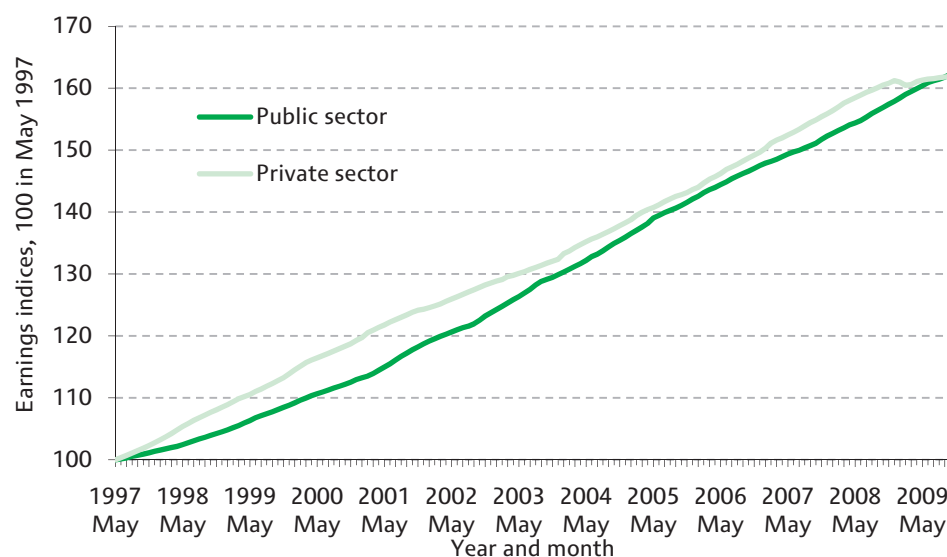
Note: As for Figure 9.5.
Source: As for Figure 9.4.

The differential impact of the crisis on public and private sector earnings is put in longer-term perspective in Figure 9.5, where we plot average earnings since May 2000 in both sectors. The cumulated earnings growth since 2000 in the public sector is more than 5% higher than that in the private sector in October 2009. This gap has arisen due to particularly fast growth in the public sector in 2002 and 2003 and particularly slow growth in the private sector in 2008 and 2009.

But when comparing average earnings growth in the public and private sectors, the reference point of comparison is very important: given that public sector earnings tend to be countercyclical, periods of low growth are followed by periods of catch-up, and conversely. As a comparison to Figure 9.5, we plot in Figure 9.6 the trends in public and

private sector pay since Labour took office in May 1997. This gives a distinctly different impression, with the drop in average earnings in the private sector during the financial crisis merely allowing the public sector to catch back up. By the end of 2009, cumulative average earnings growth since 1997 was slightly higher in the public sector than in the private sector for the first time.

Comparing public and private sector pay

These numbers are instructive but hide many other changes, including changes to the composition of the public and private sector workforces. Before comparing public and private sector pay levels, we first document these compositional changes.

Using data from the Labour Force Survey (LFS) up to September 2009, we compare in Figure 9.7 average nominal hourly wage growth from 1997 to 2009 in the public and private sectors by sex and education groups. The very similar average growths for the entire public and private sector (left-most bars) hides large variations across groups: male graduates have fared much better over the period in the public sector, whereas the opposite is true for female graduates, with those in the private sector having experienced an important catch-up in pay relative to their public sector counterparts. Amongst non-graduates, there has been higher wage growth for women in the public sector but almost no difference for men.

Figure 9.7. Average nominal hourly wage growth, 1997 to 2009
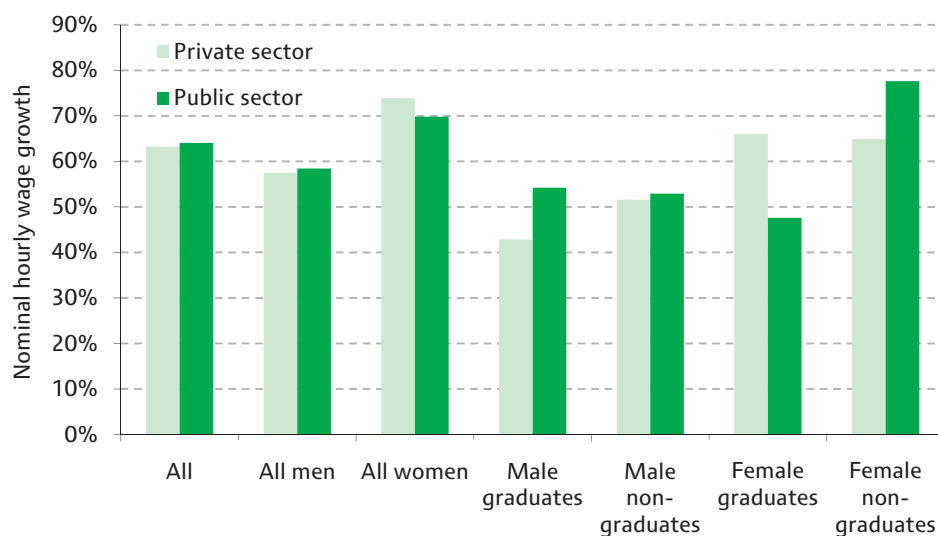
Source: Labour Force Survey, 1997 and 2009; authors' computations. We thank the UK Data Archive for providing the rights to use the Labour Force Survey (http://www.data-archive.ac.uk/).

These differences should be viewed in the context of large compositional changes in both sectors over the period, changes that are highlighted in Table 9.2. In 1997, workers in the public sector were already more likely to be women and graduates than in the private sector, but in the period up to 2009, the public sector has become even more female-dominated, especially with an increase in female graduates. The private sector has also attracted more graduates, but these are more likely to be men. These compositional changes are driven largely by the increase in numbers in health and education, where female graduates predominate.

Table 9.2. Changes in the composition of the public and private sectors, 1997 to 2009

	1997	2009	Difference (ppt)
All			
Male graduates	9.4%	13.4%	+4.0
Male non-graduates	41.7%	36.1%	−5.6
Female graduates	8.4%	12.9%	+4.5
Female non-graduates	40.5%	37.6%	−2.9
Public sector			
Male graduates	12.5%	15.1%	+2.6
Male non-graduates	25.5%	21.0%	−4.5
Female graduates	17.7%	23.8%	+6.1
Female non-graduates	44.3%	40.1%	−4.2
Private sector			
Male graduates	10.6%	17.3%	+6.6
Male non-graduates	48.5%	42.0%	−6.5
Female graduates	6.6%	11.3%	+4.7
Female non-graduates	34.3%	29.4%	−4.9

Source: As for Figure 9.7.

To give a better sense of how these composition changes affect our view of whether pay is higher or lower in the public sector, we present in Table 9.3 the results of a regression analysis which controls for the effects of sex, age, years of education and qualification on hourly wages. This is a simple procedure, which is not comparable to the much more sophisticated work of Disney and Gosling (2008) cited in Box 9.2. But it helps us see how the raw differential disappears when controlling for other characteristics.

The raw difference between average hourly wages in the two sectors is quite substantial and favours the public sector: on average, men working in the public sector have wages 19% higher than in the private sector, while women have 26% higher wages. Controlling only for years of education, these differentials are reduced to 12% and 17% respectively. This means that a large fraction of the raw differential is attributable to the fact that the public sector workforce tends to be more qualified than the average in the private sector,

Table 9.3. Estimating public sector wage differentials, 2006 to 2009

	Men	Women
Raw wage premium	+0.19 (0.008)	+0.26 (0.006)
Controlling for education	+0.12 (0.008)	*+0.17* (0.006)
Controlling for education, age and qualification	+0.02 (0.007)	+0.07 (0.006)

Notes: The wage differentials are estimated by ordinary least squares (OLS), regressing log hourly wages on control variables for public sector, age left full-time education, highest qualification, age, age squared and interactions between age and age squared with age left full-time education. Standard errors are reported in parentheses.
Source: Authors' calculations using data from the Labour Force Survey, 2006–09.

largely reflecting differences in the type of services produced. When we also include controls for the age and qualification of the workforce, the differential drops to 2% for men and 7% for women. Disney and Gosling (2008)[10] provide even lower estimates for 2006, as they are able to control for more differences in the characteristics of individuals between the two sectors, but the key results are unchanged: almost no wage premium for men and a small one for women. Interestingly, when we implemented the same procedure for data from 1997 to 2000, we got almost the same results – in other words, the changing composition of the sectors over time does not appear to have driven differences in differentials.

Public sector workforce is not homogeneous

Across different parts of the public sector workforce, recent pay experiences have been very different. Ideally, we would like to do the same exercise as in Table 9.3 for the different parts, but such an exercise would be very hard: there is no comparable labour market in the private sector for many of the groups in the public sector – there is no private sector army or police force, for example.

Figure 9.8 presents data from the LFS on specific public sector groups. Average earnings growth in the public sector has been very similar to that in the private sector, but this hides considerable variation, with NHS employees in particular having done very well in recent years. Again, these comparisons in terms of average earnings growth could well correspond to catch-up pay for groups where recruitment was difficult.

A particular feature of the aforementioned study by Disney and Gosling (2008) was that they actually used directly observable data on what jobs public sector works actually move into, if they move to the private sector. Figure 9.9 illustrates their results with the

Figure 9.8. Average increase in nominal earnings, 1997 to 2009
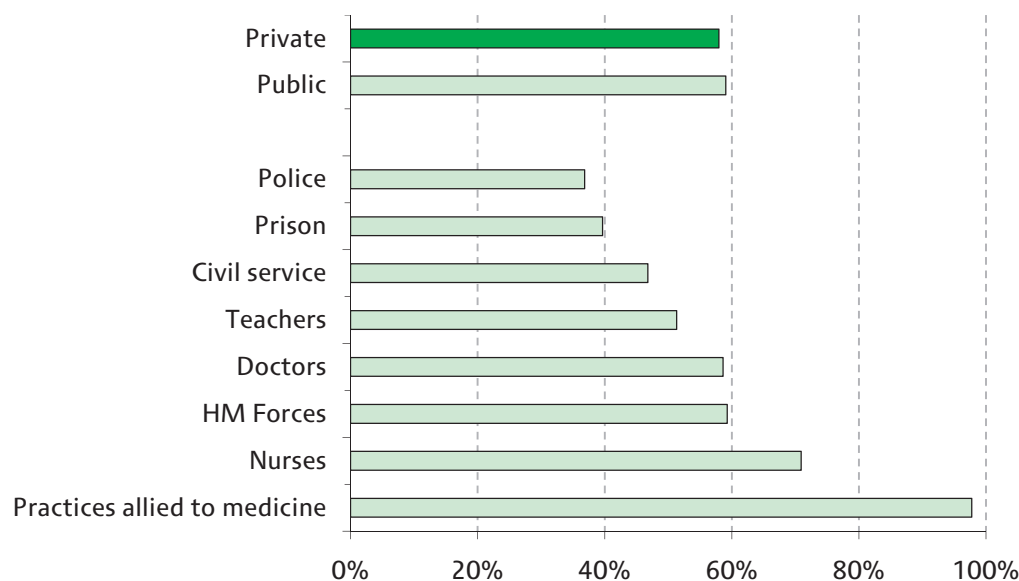
Notes: 'Practices allied to medicine' are occupations such as medical radiographers and physiotherapists. Public sector groups are identified using SOC occupations.
Sources: Authors' calculations using Labour Force Survey data from 1997 and 2009.

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[10] R. Disney and A. Gosling, 'Changing public sector wage differentials in the UK', IFS Working Paper WP08/02, 2008, http://www.ifs.org.uk/publications/4117.

Figure 9.9. Estimated wage premium for nurses
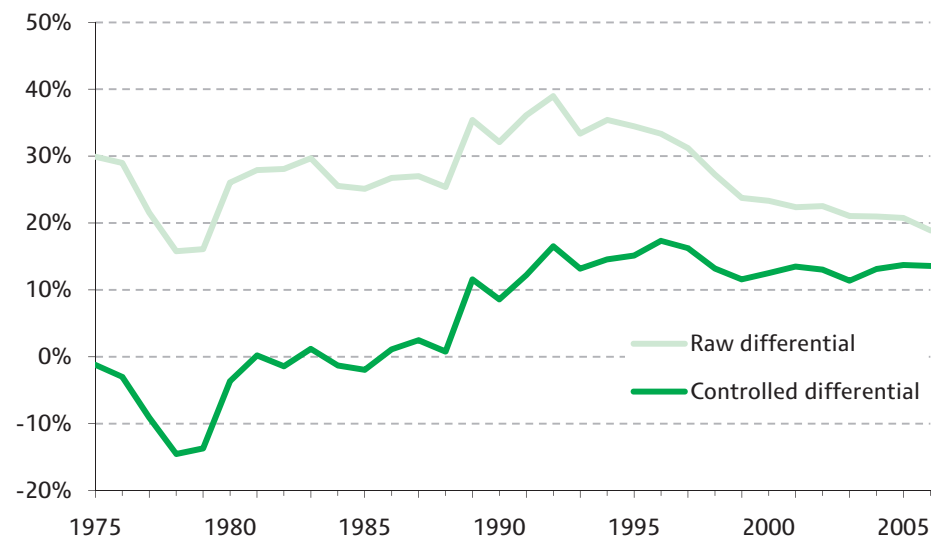
Note: The wage premium is estimated as the pay of nurses in the public sector relative to the pay of all workers who have ever been nurses.
Source: R. Disney and A. Gosling, 'Changing public sector wage differentials in the UK', IFS Working Paper WP08/02, 2008, http://www.ifs.org.uk/publications/4117.

case of nurses. The upper, light green line measures the raw differential between nurses' pay and the pay of former nurses who moved to the private sector. One can see a differential of 20% in favour of the public sector in 2006, down from around 30% in the early 1990s. The estimated wage premium for nurses in 2006 is closer to 10% when controlling for characteristics, as shown by the dark green line.

One interesting point that the authors underline is that there has been a decrease in the difference between the raw differential and the estimated wage premium, reflecting a change in the composition of public sector nurses in favour of higher-quality nurses, i.e. those with higher qualifications and more experience. So while the raw differential has fallen, the estimated premium has remained more stable, at least since the late 1980s. This highlights another margin of long-term response to variations in the public–private sector wage gap. If public sector pay remains too long at low levels compared with the private sector, the quality of staff that the public sector can attract is bound to fall. For instance, Nickell and Quintini (2002) have shown that the fall in relative wages for public sector teachers in the 1980s has led to a decline in average qualification of new entrants.[11] Conversely, if the public sector wage premium remains high for a long period, it will attract more qualified workers, at the expense of the private sector.

In addition, there have been contrasting practices in terms of recent pay settlements and the use of multi-year pay deals. Teachers and nurses, for instance, have had three-year deals from 2008–09 to 2010–11. What at first appeared to be relatively strict pay settlements now look more generous given the current economic situation. Headline pay increases are thus planned at 2.3% for teachers in 2010–11 and 2.25% for nurses,[12] far above the 1% cap in pay the government and opposition parties are suggesting. This will

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[11] S. Nickell and C. Quintini, 'The consequences of the decline in public sector pay in Britain: a little bit of evidence', *Economic Journal*, 2002, 112, F107–F118.

[12] School Teachers' Review Body, *Eighteenth Report 2009*, http://www.ome.uk.com/STRB_Reports.aspx; annex A of NHS Pay Review Body, *Report 2009/10*, http://www.ome.uk.com/NHSPRB_Reports.aspx.

open the question of whether the government will have to renege on the three-year deals or offer lower deals later if these plans are carried forward. This situation illustrates perfectly the dangers of using multi-year awards that can provide greater certainty for employees and government, but which are bound to create tensions if the economic situation happens to diverge significantly from expectations.

Regional disparity

Relativities between public and private sector pay differ across regions. Private sector workers appear, if anything, to do slightly better than their public sector counterparts in London and the South-East. But public sector wages are high relative to private labour markets in regions distant from London. Table 9.4 presents evidence on this public–private regional pay differential, following the same methodology as used for Table 9.3, i.e. controlling for education, age and qualification. Raw differentials are again very large, from 10% for men in London to 31% for women in Wales, Scotland and Northern Ireland. Once differences in characteristics are accounted for, these differentials disappear in London and the South-East, where the public sector workers appear to be slightly less well paid than private sector employees with similar characteristics (although the differences are not statistically different from zero). In contrast, in the rest of the country, on average, public sector workers enjoy a wage premium of roughly 5% for men and 11–13% for women.

Table 9.4. Estimating public sector wage differentials by region, 2006 to 2009

Region	Men		Women	
	Raw differential	**Estimated differential**	**Raw differential**	**Estimated differential**
London	+0.099 *(0.028)*	−0.026 *(0.025)*	+0.145 *(0.022)*	−0.014 *(0.020)*
South-East	+0.153 *(0.019)*	−0.028 *(0.017)*	+0.193 *(0.014)*	+0.006 *(0.013)*
South-West	+0.184 *(0.025)*	+0.051 *(0.022)*	+0.273 *(0.019)*	+0.108 *(0.019)*
East of England and Midlands	+0.239 *(0.017)*	+0.055 *(0.015)*	+0.309 *(0.013)*	+0.111 *(0.012)*
North of England	+0.235 *(0.015)*	+0.048 *(0.014)*	+0.307 *(0.011)*	+0.126 *(0.011)*
Wales, Scotland, Northern Ireland	+0.243 *(0.018)*	+0.053 *(0.016)*	+0.310 *(0.013)*	+0.123 *(0.012)*

Notes: As for Table 9.3.
Sources: As for Table 9.3.

9.4 Cutting pay?

How much can be saved by cutting pay?

Above, we estimated a public sector wage premium of 2% for men and 7% for women, giving a weighted average across the entire public sector of just over 5%. A cut in public sector pay across the board of 5% would represent a reduction in earnings paid of roughly £7.5 billion per year. If inflation is running at 2% a year, then a pay freeze for

two-and-a-half years would bring a similar real-terms pay cut and a similar reduction in the public sector wage bill, though delivered less quickly.[13] In the longer term, however, these pay cuts may need to be unwound in order to keep pace with renewed private sector earnings growth.

But note that so far we have been careful to describe a 'reduction in earnings' rather than a 'saving to government'. The government would not benefit from the full reduction in public sector remuneration because public sector workers pay taxes on earnings received and may also receive benefits or tax credits. Work at IFS using our tax and benefit model, TAXBEN, has estimated that for every £1 cut in public sector earnings, public spending is reduced by £1.19 but the government would save only 73 pence once loss of taxes and increased spending on benefits and tax credits are taken into account. So real savings from a 5% public sector pay cut are closer to £5.5 billion per year. (See Box 9.3 for details.) Conversely, the real drop in net income for public sector workers as a result of a 5% cut in pay is less than it might appear from the drop in gross earnings.

So when the Conservatives and Liberal Democrats talk about a pay freeze saving £3 billion annually, this is a gross figure. The net figure, after taking account of changes to taxes and benefits, is more likely to be closer to £1.9 billion a year. This also appears to be the status of the government claim that its announced cap on public pay increases at 1% a

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Box 9.3. The impact of public sector pay cuts on tax revenues
Mike Brewer, IFS

Almost all of the debate about the contribution that public sector pay restraint can make to solving the structural budget deficit overlooks the direct link between the level of public sector pay and tax revenues, and also the knock on impact on spending on means-tested benefits and tax credits. Quite simply, if public sector bodies pay their workers less, then they will pay less employers' national insurance, and their employees will pay less income tax and employees' national insurance, as well as possibly being entitled to larger amounts of tax credits or other means-tested benefits.

We have estimated the extent of this offset by combining data on public sector workers and their family circumstances from the LFS with the Institute's tax and benefit model, TAXBEN.[a] The estimates show that if all public sector workers had their pay cut by an illustrative 5%, then total gross wages would fall by £7.5 billion.[b] However, the families of public sector workers will see their disposable income fall by a total of just £4.7 billion. This means that, on average, public sector workers face a Marginal Effective Tax Rate (METR)[c] of 37%, and so 37% of the fall in the gross wage bill is offset by lower income tax and national insurance receipts, and by higher entitlements to means-tested tax credits and benefits.

If we include employer NI and public sector pensions, then an illustrative 5% cut in public sector workers' wages would mean that wages fell by £7.5 billion, and public spending would fall by £8.9 billion after allowing for lower payments of employer NI (assumed to be 9.1% of all salaries) and reduced contributions to public sector pensions (assumed to be 10% of all salaries). However, tax revenues would fall, and entitlement to means-tested tax credits and benefits would rise, and the net effect is that the actual benefit to the Exchequer is only £5.5 billion, or 62% of the fall in public spending.[d]

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[13] If one uses the CPI projections from the December 2009 PBR, the pay freeze would have to last three years, as the consumer price index is forecast to be below 2% in 2011–12 and 2012–13.

It is also possible to use these calculations to examine the impact of a fall in public sector pay on the distribution of income, and Figure 9.10 shows the average loss amongst working-age families in each decile group, having ranked families by their equivalised net income. It shows that the change would be roughly progressive, in that richer families would lose a greater share of their income than poorer families, on average, with the exception of the richest 10% of families. This reflects that public sector workers are more likely to be found in richer families than poorer families and that the tax and benefit system also compensates more for loss of earnings in lower deciles. The figure also shows the average METR faced by public sector workers in each decile group: it is highest (around 60%) in decile group 3, reflecting that workers in this decile group are particularly likely to be entitled to a means-tested tax credit or benefit.

Figure 9.10. Impact of illustrative 5% cut in public sector wages
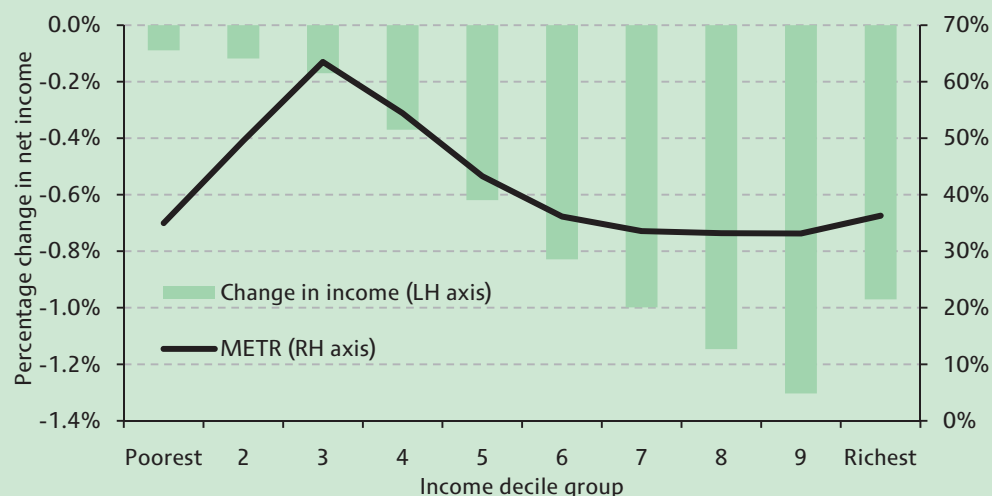
Notes: Working-age families only. Income decile groups are derived by dividing all families (including pensioners) into 10 equal-sized groups according to income adjusted for family size using the McClements equivalence scale. Decile group 1 contains the poorest tenth of the population, decile group 2 the second poorest, and so on up to decile group 10, which contains the richest tenth.
Sources: Author's calculations based on the Labour Force Survey (the four quarters corresponding to 2007–08) and TAXBEN run on the 2009–10 tax and benefit system. A report due to be published by the Low Pay Commission in Spring 2010 explains how the LFS data were used in conjunction with TAXBEN.

a. The extension of TAXBEN to the LFS was partly financed by an as-yet unpublished project commissioned by the Low Pay Commission. Variables that are not in the LFS but are needed to estimate liability to taxes and entitlement to benefits were imputed from another survey (the Family Resources Survey) using a regression-based approach.
b. This is consistent with total public sector wages of £150 billion, although this estimate excludes some families. Note that this is not the best estimate of the public sector pay bill, which comes from administrative data. Rather, it is the estimate that comes from the household sample data on which we model the changes.
c. The marginal effective tax rate measures how much extra (or less) income tax and National Insurance a worker pays, and how much less (or more) tax credits or means-tested benefits a worker is entitled to after a small rise (or fall) in earnings. For example, in 2010–11, the METR will be 31% for someone who is liable to basic-rate income tax and the main rate of NI, 41% for someone who is liable to higher-rate income tax and the main rate of NI, and 70% for someone who is liable to basic-rate income tax and the main rate of NI and is on the main taper of the child or working tax credit. METRs are usually measures of the disincentive to earn more imposed by the tax and benefit system, but they are also good measures of the extent to which the tax and benefit system cushions workers against small falls in earnings, with high METRs meaning a large cushion.
d. This is unlikely to be the overall impact on the Exchequer after allowing for behavioural change. For example, the reduced income of the public sector workers might depress indirect tax receipts, and some of the public sector workers might change jobs or stop working altogether.

year in 2011–12 and 2012–13 would save £3.4 billion a year by 2012–13.[14] The net saving is likely to be nearer £2.1 billion a year, and would be lower if the knock-on impact on indirect tax revenues were also included.

Cutting the pay bill by similar gross amount through job cuts would be expected to save the government more, as presumably more workers might be expected to be re-employed in the private sector and pay taxes than would enter unemployment and have to be paid benefits. The obvious difference is that it would imply clearer reductions in terms of public services (and hence be associated with other savings) than would be the case with public pay cuts.

In light of the evidence of the previous section, the wage premium enjoyed by public sector workers is overall rather small, at roughly 2% for men and 7% for women, giving a weighted average across the entire public sector of just over 5%. As such, there do not seem be huge margins to cut public spending through cuts in pay, though £5.5 billion is not to be dismissed if it could be raised at relatively little political cost.

Given the evidence highlighted in Table 9.4, it may make sense for policymakers to differentiate any pay squeeze by region, offering non-zero growth to regions where public sector pay tends to lag behind private sector levels. In Table 9.5, we suggest two possible policies with such regional differentiation, depending on the overall scale of the squeeze the government would like to achieve. With a small overall pay increase, it is difficult to offer many variations in pay without offering real pay cuts to some. On the face of it, correcting for regional disparities in pay might be a task for the 'good times' rather than the 'bad times'. On the other hand, if the government is going to have to annoy many public sector workers in any event, there may be a lower additional political cost to this desirable reform than there would be in normal times.

Table 9.5. Regional variations in public sector 'freeze': possible pay increases

Region	Share of the workforce	Policy 1	Policy 2
London	11.8%	2.0%	2.0%
South-East	17.8%	2.0%	2.0%
Rest of the country	70.4%	0.0%	0.5%
Total	100%	0.6%	0.9%

Sources: Authors' calculations using weights from the Labour Force Survey.

'Fat cats' in the public sector

There has been much recent debate about so-called 'fat cats' in the public sector, variously defined as those earning more than £100,000, £150,000 or more than the Prime Minister (about £200,000). We offer no strong views as to whether there is a group of highly-paid individuals in the public sector who are overpaid, or indeed underpaid, relative to their private sector counterparts. But we can offer some observations that may be relevant to the debate.

The distribution of wages in the public sector is significantly more compressed than that in the private sector. In general, there are fewer who are very poorly paid and fewer who

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[14] Page 112 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

are exceptionally well paid. The public sector worker at the 95th percentile of the public sector wage distribution (for full-time males) earns 3.8 times the amount earned by his colleague at the 10th percentile. The private sector relativity is 4.7 times.[15] This is a big difference between the sectors.

For those at the very top, representative data are hard to come by. But using data drawn from tax records in 2004–05,[16] it is possible to get some indication of the occupations of the very highest earners. This is illustrated in Table 9.6, which is taken from recent work by IFS researchers.[17] Nearly 70% of workers who are in the top 0.1% of taxpayers work in two sectors – 'financial intermediation' and 'real estate, renting and other business activities', neither of which is likely to include many public sector employees (ignoring

Table 9.6. Where do 'fat cats' work?

	All cats	Chubby cats	Fat cats	Obese cats
	All taxpayers	*Top 10–1%*	*Top 1–0.1%*	*Top 0.1%*
Company directors	3.4%	9.7%	24.2%	34.6%
Proportion who are:				
Pensioners	22.6%	13.2%	14.5%	15.8%
Non-pensioners	77.4%	86.8%	85.5%	84.2%
Working in following industries:				
Agriculture, forestry and fishing	1.1%	0.6%	0.7%	0.9%
Mining and quarrying	0.2%	0.4%	0.5%	0.3%
Manufacturing	13.1%	14.6%	9.6%	5.9%
Electric, water or gas supply	0.4%	0.8%	0.3%	0.1%
Construction	8.1%	7.8%	4.5%	4.0%
Wholesale and retail trade	15.0%	10.7%	10.1%	8.2%
Hotels and restaurants	3.7%	1.3%	1.3%	0.9%
Transport, storage and comms.	6.3%	6.1%	3.8%	1.9%
Financial intermediation	4.3%	7.2%	16.0%	30.2%
Real estate, renting and other business activities	15.6%	21.5%	30.5%	38.5%
Public admin. and defence	5.5%	7.2%	1.0%	0.3%
Education	10.7%	11.1%	1.8%	0.3%
Health and social work	10.2%	6.8%	15.5%	3.6%
Other services	4.4%	3.4%	3.5%	4.0%
Other	1.2%	0.5%	0.8%	0.9%

Notes: All data are presented at the adult level and for Great Britain only. There were 46.8 million adults in Great Britain in 2004–05, and the numbers of adults in the richest bands have been calculated assuming that adults not represented in the SPI have incomes below the income tax personal allowance. Figures for the top 0.1% exclude 'composite records'.
Source: Table 4 of M. Brewer, L. Sibieta and L. Wren-Lewis, *Racing Away? Income Inequality and the Evolution of High Incomes*, Briefing Note76, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/publications/4108.

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[15] Authors' calculations based on 2006 to 2009 Labour Force Survey.

[16] The Survey of Personal Incomes, SPI.

[17] M. Brewer, L. Sibieta and L. Wren-Lewis, *Racing Away? Income Inequality and the Evolution of High Incomes*, Briefing Note76, Institute for Fiscal Studies, London, 2008, http://www.ifs.org.uk/publications/4108.

the more recent nationalisation of some financial services). Just over 4% of this very richest group were employed in public administration, education and health (compared with more than a quarter of the working population). Clearly, very few of the fattest of the fat cats work in the public sector – you would have needed a pre-tax income of more than £350,000 in 2004–05 to be in this category.

The picture is a bit different if we look at the fat, but not obese, cats who are not in the top 0.1% of taxpayers but are in the top 1% (i.e. had taxable incomes over about £100,000 in our 2004–05 data). In this case, health workers are actually over-represented: 10% of working taxpayers work in health and social work, but they accounted for more than 15% of the workers in the highest 1% of taxpayers (excluding the top 0.1%). This will be largely accounted for by the relatively high pay of doctors and some senior health service managers. Those in public administration and education are still significantly under-represented in this group.

If we now consider those who are merely chubby cats – those in the top 10% but outside the top 1% – we find a different picture again. Here, workers in education and public administration are slightly *over*-represented.

There are large differences across different parts of the public sector in those with very high levels of pay. Public sector bodies responsible for the majority of six-figure salaries may well be those in most direct competition with the private sector for individuals with particular skills (e.g. the BBC and some regulators). How exactly to take that into account will in itself vary between these different organisations. The BBC, for example, is a big enough player in its industry that in can hardly be considered a pure 'price taker' – the wages it makes available may affect those offered elsewhere. A rational policy towards the highest-paid needs to take account of such factors, the degree of actual and potential competition with the private sector, and demand for specialised skills. An across-the-board pay policy for those earning above a certain amount is unlikely to be good policy, and is unlikely to stick in the long run.

A related issue is the way in which pay is set for high earners. This differs across the public sector. For many high earners – including senior civil servants, very senior members of the armed forces, judges, MPs and senior managers in the NHS – the Senior Salaries Review Body takes evidence and makes recommendations (which government is not bound to follow). Even for these groups, the level of direct control from central government varies from very direct (for senior civil servants and senior members of military) to more arm's length (in parts of the NHS). For many of the very highest earners in the public sector – in regulators, the BBC, the Bank of England, public corporations (such as Royal Mail and Channel 4) and local authorities – there is little or no real central oversight and control. These are in fact the areas where top salaries are highest, and have grown most quickly (as, among others, the Public Administration Committee has recognised[18]). These differences in pay-setting structures and pay levels have created some problems of comparability and recruitment even within the public sector itself – with, for example, differentials opening up between senior executives in regulators and local government on the one hand and senior civil servants on the other.

With regard to the public finances, if we define 'fat cats' as those earning more than £100,000 a year, the money raised by cutting their salaries is relatively limited. Press reports suggest that there are of the order of 300 individuals in the public sector earning

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[18] http://www.publications.parliament.uk/pa/cm/cmpubadm.htm.

more than £200,000.[19] Whatever the pros and cons of these salary levels, in the context of nearly 6 million public sector workers, 300 is a very small number indeed. A policy aimed at the highest-paid could only be worthwhile either if it were part of a longer-term restructuring of public sector pay in the face of evidence that top earners are paid more than necessary to recruit and retain those of appropriate quality, or as a way of making cuts or freezes for the majority of public sector workers more palatable. Either may be a plausible reason, though the evidence for the former is limited. (Indeed, such evidence as there is suggests that, for example, senior civil servants are paid rather less than those carrying out comparable jobs in the private sector.)[20] But proponents of such cuts should be clear about their reasons.

Finally, one area where most in the public sector, including higher earners, clearly do better than those in the private sector is in pension provision. Recent IFS work suggests that while over 80% of those in the public sector who are defined as being in social class 1 (professional and higher managerial workers) were members of defined benefit (DB) occupational schemes, this was true of only 40% of social class 1 private sector workers. (In fact, the proportionate difference is much bigger for lower-status workers, with coverage of 43% in the public sector and just 9% in the private sector for unskilled manual workers.)[21] The same study suggests that it is also in the highest educational and occupational groups where the value of pension accruals particularly favours public sector workers. On average, the value to male senior managers or professionals in the public sector of a pension is nearly 27% of their pay. For similar private sector workers who are members of DB pension schemes, the average value of the pension is 22% of pay.

The Conservatives have explicitly proposed to cap the amount of pension that public sector employees can be entitled to in retirement at £50,000 p.a.[22] Simply to impose a cap at the point at which that amount has been accrued would be odd. That is because it could mean that the value of a senior person's remuneration might fall in one year from say £200,000 (say pay of £160,000 plus pension accrual of £40,000) to £160,000 the next, if the £50,000 cap on pension value is reached. It makes more sense to reform public pensions more comprehensively, perhaps including a gradually reducing rate of accrual as salaries rise above a certain level.

In sum, there is no serious evidence that the very highest-paid employees in the public sector are overpaid relative to their private sector counterparts. Cutting their pay would have little immediate impact on the fiscal deficit. On the other hand, there are clearly considerable inconsistencies in the way pay is set, and the levels it has reached, in different parts of the public sector. There may be a case for clearer controls or oversight in some areas. It may also be that a wider policy of implementing public pay cuts or freezes would be made easier if the highest-paid were seen to be bearing their share of the pain. But we should be clear about the purpose of any such policy.

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[19] http://www.telegraph.co.uk/news/newstopics/politics/6721771/300-public-sector-workers-earned-more-than-Prime-Minister.html.

[20] See various evidence to, and reports of, the Senior Salaries Review Body, available at http://www.ome.uk.com/Senior_Salaries_Review_Body.aspx.

[21] R. Disney, C. Emmerson and G. Tetlow, 'What is a public sector pension worth?', *Economic Journal*, 2009, 119, issue 541, http://www.ifs.org.uk/publications/4666.

[22] George Osborne's speech to the Conservative Party Conference, 6 October 2009, http://www.conservatives.com/News/Speeches/2009/10/George_Osborne_We_will_lead_the_economy_out_of_crisis.aspx.

For pensions, on the other hand, the higher-paid in the public sector do fare well. But then, as we shall see in some detail in the next section, so do those in the rest of the public sector, and it makes more sense to see any policy through the lens of policy designed for public pensions as a whole rather than a particular group of the highest-paid.

9.5 Cutting pensions?

As we have seen in our discussion of the higher-paid, pensions play a very important part in the remuneration of workers in both the private and public sectors.

If, on average, pay is similar across public and private sectors, this is resoundingly not the case for pensions. Public sector workers:

- are much more likely than those in the private sector to enjoy membership of an occupational pension scheme, and particularly of a defined benefit pension scheme;

- have, on average, more generous pensions than those in the private sector who are members of a DB scheme;

- have seen the *relative* generosity of their pension provision improve over the past decade as private sector schemes have closed down and have seen their benefits cut.

The reduction in coverage of DB schemes in the private sector relative to the public sector is a long-term trend, which accelerated during the 2000s. This is illustrated in Figure 9.11.

Figure 9.11. Numbers of members of contracted-out defined benefit pension schemes by sector
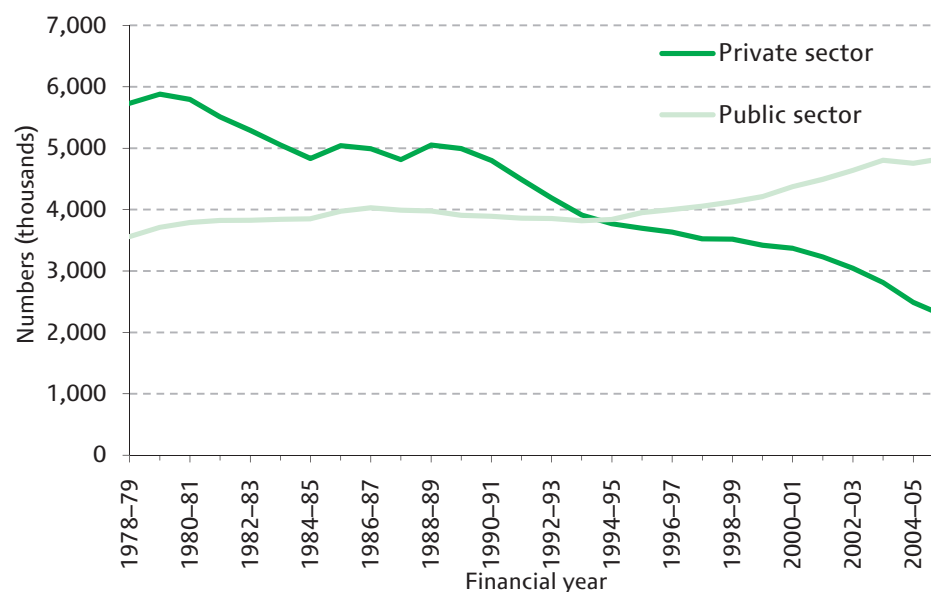
Sources: Department for Work and Pensions, *Second Tier Pension Statistics*, http://research.dwp.gov.uk/asd/tabtool.asp; R. Disney, C. Emmerson and G. Tetlow, 'What is a public sector pension worth?', *Economic Journal*, 2009, 119, issue 541, http://www.ifs.org.uk/publications/4666.

Researchers at IFS have recently estimated the advantage public sector workers enjoy with their pension arrangements over their counterparts in the private sector. This shows not only that the coverage of defined benefit pensions is more extensive in the public sector, but also that the generosity of these pension schemes is higher.[23]

Precise estimates of the coverage and value of pensions in public and private sectors vary. DWP data suggest[24] that in 2007:

- about 85% of public sector employees were members of an employer-sponsored pension scheme, 92% of whom were in DB schemes, so
  - 78% of all public sector workers were in a DB scheme;

- around 40% of private sector employees were members of an employer-sponsored pension scheme, of whom fewer than half were in a DB scheme, so
  - 15% of private sector workers were in a DB scheme.

Membership of private sector DB schemes continues to fall. Only 38% of schemes remain open to new members. Adair (now Lord) Turner's Pensions Commission took a gloomy view of the future of such provision in the private sector, concluding that membership of private sector DB schemes would fall towards 1.6 million (from 3.7 million in 2005) and that 'it is difficult to see private sector DB provision, certainly final salary in form, playing more than a minimal role in the future UK pension system'.[25] There is no similar fall in the proportion of public sector workers in DB schemes. Coverage is the biggest difference between public and private sectors but it is not the only difference. The value of public sector schemes is, on average, greater for members than is the value of private sector schemes. Based on 2001 data, IFS research has suggested that:[26]

- in the public sector, membership of a DB scheme was worth 26% of earnings, on average;

- in the private sector, membership of a DB scheme was worth 19% of earnings, on average.

There are two reasons for this difference in value. The first, naturally, is that scheme rules are different and, in particular, pensionable age remains lower in the public sector (at least for the majority who joined the sector before 2007). Secondly, and interestingly, the difference in part reflects different earnings trajectories in public and private sectors. Earnings tend to grow swiftly then tail off in the private sector whereas they tend to keep growing over the working life in public sector occupations, with the result that pension schemes based on the level of final salary are worth more in the public sector.

Putting these facts together, and taking account of differences in contributions, and the value of other pension contributions made into defined contribution schemes in the private sector, it is clear that the average value of pension provision in addition to salary

[23] R. Disney, C. Emmerson and G. Tetlow, 'What is a public sector pension worth?', *Economic Journal*, 2009, 119, issue 541, http://www.ifs.org.uk/publications/4666.

[24] Source: Pensions Policy Institute, *An Assessment of the Government's Reforms to Public Sector Pensions*, 2008, http://www.pensionspolicyinstitute.org.uk/default.asp?p=12&publication=05&.

[25] Page 48 of Pensions Commission, *A New Pension Settlement for the Twenty-First Century: The Second Report of the Pensions Commission*, November 2005, http://www.webarchive.org.uk/pan/16806/20070802/www.pensionscommission.org.uk/publications/2005/annrep/annrep-index.html.

[26] R. Disney, C. Emmerson and G. Tetlow, 'What is a public sector pension worth?', *Economic Journal*, 2009, 119, issue 541, http://www.ifs.org.uk/publications/4666.

is much greater in the public than in the private sector. This difference has been estimated to be at least 12% of earnings.[27]

Set against the small public–private wage differential, these are very big numbers. They suggest that on a like-for-like basis, taking account of pay and pensions, average remuneration in the public sector is at least 12% higher in the public sector than in the private sector.

Reforms

Limited reforms to the main public sector pension schemes – NHS, teachers, civil service and local government – were introduced variously in 2007 and 2008. The main effect of the reforms is to increase normal pension age from 60 to 65 in the first three of these, but *for new entrants only*. There were also changes limiting early retirement opportunities in the (funded) local government scheme (which already had a normal pension age of 65 but also an infamous *rule of 85* which allowed retirement with unreduced pensions from age 60 once age plus years of service summed to 85). The fact that for the three largest unfunded schemes only new entrants are affected means that there will still be 60-year-olds retiring from these schemes on full pensions well into the 2040s.

In addition, the civil service scheme is moving from a final salary to a career average basis – that is, pension will be calculated according to average salary rather than final salary.

Alongside a number of smaller changes – some improving benefit generosity – these reforms will reduce the generosity of these main public service schemes by, on average, about 3% of salary (for new joiners only) from about 23% of salary to 20% of salary. We should not forget also the smaller, but staggeringly generous, schemes covering the uniformed services – armed forces, police and fire – which even after reforms are worth a full 33% of salary for new joiners on average, and will continue to be worth 39% of salary to established members of the armed forces.[28]

Another change to public schemes was (re)announced in the December 2009 PBR – the introduction of 'cap and share' arrangements for the four big schemes. Under these arrangements, initial expected cost increases – resulting from higher-than-expected pay increases or improved longevity – will be shared between public sector employers and employees, through higher contributions. Beyond a cap, all additional costs will be borne by higher employee contributions. (Current employee contribution rates are close to 6% in health, teachers and NHS schemes, and 3.5% in the civil service scheme.) The Treasury estimates this will 'save' £1 billion annually from 2012–13.[29]

Going forward

All in all, these are very modest reforms which will, for new entrants only, close about half the gap between the average generosity of public and private sector schemes. They will not, of course, make any difference to the gap in coverage between public and private sector.

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[27] Figure calculated in A. Bozio and P. Johnson, 'Public sector pay and pensions', in R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget, January 2008*, IFS, London, January 2008, http://www.ifs.org.uk/budgets/gb2008/08chap8.pdf.

[28] Pages 15 and 16 of Pensions Policy Institute, *An Assessment of the Government's Reforms to Public Sector Pensions*, 2008, http://www.pensionspolicyinstitute.org.uk/default.asp?p=12&publication=05&.

[29] Of course, this is not a real saving to the public finances over the long run – rather, more money will be raised from employee contributions in the short run in recognition of the fact that long-run pension liabilities will have risen.

The last-mentioned reform – cost sharing – may, though, point to one possible way forward for a government anxious to save money in the shorter term. We have seen that public and private sector pay are broadly in line with each other, but that pensions in the public sector are much more generous, in large part because of greater coverage. Cutting the future value of unfunded public pensions will improve the real state of the public finances in the long term, but will do nothing for the current deficit. But there is one policy alternative worth considering in the current context – a policy implemented in February 2009 by the Irish government – which is to increase the contributions that employees make now in respect of their future pensions. In funded schemes, such as the local government scheme, this would lead to a one-for-one reduction in current employer spending on pension contributions. In unfunded schemes, this increase in employee pension contributions would not in fact fund future pension payments. It would be like cutting wages in that it would reduce take-home pay (though, unlike a *sustained* pay cut, would not reduce future pension payments). But it could have three, largely presentational, advantages as a policy:

- First, it would make it much more evident to employees what the value of their pension is.

- Second, it is at least possible that it would be longer lasting in its effect than a simple pay cut. From a presentational point of view, headline pay would remain the same. This is purely presentational. But because the remuneration would more closely reflect actual value of the component parts, and because headline pay would not change in terms of comparisons made, a one-off effective cut could be sustainable.

- Third, in the longer run, this might make it easier for government to change future pension arrangements for public sector workers – reducing these employee contributions when it reduces the generosity of pension promises.

The amount of money available here depends on how big and how fast the government is willing to make the cuts. Something on the scale of the Irish change, which introduced a 7.5% pension levy on public sector workers, could raise up to £9 billion a year.[30] But, of course, that is because it would be a big hit on the incomes of public sector workers.

More fundamentally, there is a great deal of unfinished business in dealing with public sector pension schemes. There is no terribly good reason why public sector workers should be remunerated in such a different way from those in the private sector.[31] It must be, at least in part, because the way we measure the state of the public finances simply does not take account of the cost of future promises made. They appear as a free good to government and employees alike.

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[30] Box 9.3 shows that a 5% cut in wages would lead to a £7½ billion fall in the annual wage bill and a £5½ billion saving after taking into account the effect of the tax and benefit system. Scaling up to a 7.5% cut in wages suggests an £8¼ billion saving. But raising employee pension contributions (rather than cutting wages) would increase the short-term saving as these do not attract relief from employee NI.

[31] One possibility is that public sector workers might be more risk averse than private sector workers and therefore the government could gain in paying public sector workers less in exchange for offering them higher pensions. But as set out above, the evidence suggests that public sector workers are paid similar amounts to their private sector counterparts.

9.6 Conclusion

Public sector pay, inevitably and rightly, accounts for a large proportion of public spending – about £174 billion a year in total including public corporations and £160 billion a year excluding them. It is inconceivable that fiscal retrenchment should not reduce the pay bill in real terms. The government could choose to achieve this by cutting the public sector workforce (and presumably delivering fewer or lower-quality services) or by paying public sector workers less (which, in time, would reduce their quality and thus, in time, the quality and/or quantity of services).

But there is also a question as to whether public employees are paid appropriately for the work they do now. At the aggregate level, public sector workers do not seem to be paid more than equivalent workers in the private sector. But average figures mask the fact that some groups do seem to be better-paid and have done particularly well in recent years and that the reverse is true for other groups. There is a strong case on efficiency grounds to sort out some of these anomalies, and in particular to deal with differences in the relative generosity of public sector pay in different regions of the country. But a careful and modulated approach is called for, certainly in the long run.

A short-term across-the-board pay freeze, or indeed cut, could save money in the short run and, in current labour market conditions, is unlikely to have detrimental effects. But history suggests that it would be unwound later and that reductions in the size of the public sector workforce are more likely to help deliver the sort of permanent reduction in public spending as a share of national income that the Treasury believes to be necessary to deliver the fiscal consolidation set out in the December 2009 Pre-Budget Report.

As regards public sector remuneration, what is actually required is a much clearer strategy to use the money spent on public sector pay and pensions more efficiently. There is still much to be done to iron out regional inconsistencies. But the most important anomaly remains the much greater value of pensions to public sector workers. Long-term reform needs to be embarked upon, but will not help the public finances in the short run. One alternative worthy of consideration would be an increase in employee pension contributions – but we should be clear that, in effect, this is just another way of implementing a pay cut.

10. Support for research and innovation

Rachel Griffith and Helen Miller (IFS)

Summary

- In the December 2009 Pre-Budget Report (PBR), the government announced its intention to introduce a 'patent box' – a new policy aimed at encouraging innovation in the UK by taxing income from patents granted after April 2013 at a reduced 10% rate of corporation tax.

- The proposed patent box would do little to address the market failures that typically justify government intervention in innovation markets. It is expensive even on the government's own costing (£1.3 billion a year), the bulk of the gains will accrue to a few large companies, and the money would be better spent supporting innovation by maintaining spending on the science base or other infrastructure investments.

- Spending cuts of £600 million have already been announced from the higher education and science and research budgets. This is likely to be followed by further cuts in these areas, as the government attempts to cut spending on public services.

- The PBR also announced minor reforms to the research and development tax credits to allow small and medium-sized companies to benefit from the scheme without the need to own the intellectual property resulting from the research. This is welcome.

10.1 Introduction

Many governments around the world subsidise investment in research and innovation. This support is delivered in a number of ways, including direct spending on science, research and universities, as well as market-based policies such as research and development (R&D) tax credits. The rationale for these policies is that markets fail to provide sufficient incentives for investment in research, because research activities generate benefits not only to the individuals and firms carrying them out but also to others. An additional source of market failure is the difficulty that exists in financing investments in research and innovation due to their risky and intangible nature (see Box 10.1).

In this chapter, we comment on:

- the proposed 'patent box' (Section 10.2);

- direct spending on science and universities (Section 10.3);

- the reforms to the R&D tax credits for small and medium-sized enterprises announced in the December 2009 Pre-Budget Report (PBR) (Section 10.4).

Section 10.5 concludes.

> **Box 10.1. Why governments support innovation**
>
> Research and innovation involve the creation of new ideas. These are intangible, and thus it is often difficult for the inventors to appropriate all the returns from their efforts. Some of the benefits from the inventions will 'spill over' to third parties (this is what economists call a positive externality). As a result, market incentives alone may provide too little incentive for research and innovation from society's point of view. This is one of the strongest justifications for government support of research and innovation: by lowering the private cost (or increasing the private gain), government can encourage the activities that generate spillovers.
>
> In addition, firms and individuals may be restricted in the extent to which they can respond to market incentives due to failures in financial markets, which make it difficult to secure external sources of finance for risky and intangible projects. This can also lead research and innovative activities to be underprovided.
>
> Other rationales for government intervention include coordination failures – where individuals and firms may face difficulty in acting collectively towards a common goal – and information failures, where firms are unaware of the existence of potential research partners or of a particular technology.
>
> The extent to which these market failures provide a justification for government intervention will vary according to the type of activity. The largest externalities (spillovers) arise in the area of basic science. Fundamental discoveries and general technologies will find the widest application and have the broadest impact. This type of research would be hard to secure private financing for and tends to have more uncertain returns. Much of this type of activity is conducted in (government-supported) universities or research labs. While firms do sometimes also contribute to basic science, more often they carry out applied research that has a particular application to a specific market and a more certain return. This generates fewer externalities and is likely to be easier to finance. Research and innovation that benefit an individual firm, but do not spill over to other firms, are beneficial to growth. But in this case the market provides the appropriate incentives for the firms to balance costs against benefits and so carry out the socially optimal amount of innovation, and government support is not warranted.

10.2 The patent box

In the December 2009 PBR, the government announced its intention to introduce a 'patent box' in April 2013, which will tax income from patents at a reduced rate of corporation tax. The stated aim of this policy is 'to strengthen the incentives to invest in innovative industries and ensure the UK remains an attractive location for innovation'.[1]

The government has given few details on how the policy will work in practice, although the PBR did suggest that the lower rate will apply only to income from patents 'granted after the legislation is passed' in 2013 and gave an estimated costing of the patent box of

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[1] See paragraph 4.40 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

£1.3 billion a year.[2] Consultation on how the scheme will work is due to happen before its introduction in the 2011 Finance Bill.

A patent is a legal document that grants an individual, institution or firm the exclusive rights to use (or license) a novel technology for a specified period of time. In exchange for these exclusive rights, the underlying technology describing how the innovation works must be disclosed so that, once the patent has expired, the information is freely available to others. The underlying technology can have been developed anywhere in the world; the inventors who created the invention are often distinct from the firm that holds the patent and can be located in a different country.

Patents are issued by national patent offices and provide monopoly rights to use a technology in that country.[3] For example, the UK Intellectual Property Office (UKIPO) issues patents in the UK. The patent office in which a patent is held indicates the country in which the intellectual property is protected, not the country in which the research was undertaken or the country in which the firm holding the patent is resident for tax purposes. Many foreign firms hold patents at the UKIPO, and many UK firms hold patents in foreign patent offices.

Patents that are granted usually represent the fruits of research that was undertaken many years prior to filing a patent application. In addition, the average length of time it takes to have a patent granted, after the initial filing, is five years.[4]

Is subsidising income from patents sensible?

A policy of subsidising income from patents is not well targeted at the market failures that typically justify government intervention in innovation markets. A patent box targets the *income* received from an innovation. However, the largest source of external benefit arises from the research activity itself – exploring new ideas allows others to learn from the experience – which may or may not result in large revenue streams. Although the commercial application of an idea (which generates revenue) can also lead to external benefits, the majority of benefits here are likely to be captured by the innovator.[5] In fact, the grant of a patent, by issuing monopoly rights over that technology, is designed to ensure that the owner can capture the returns to the invention. A policy targeted at patent income also only rewards successful research after the fact, but important external benefits may also arise from unsuccessful research: others can learn from mistakes.

In addition, there is a long lag between creating a patentable technology and generating a stream of income on which a reduced rate of corporation tax can be levied. A firm that has a new idea must carry out the research to create a patentable technology and then move through the processes of getting the patent granted and commercialising it. It is only once

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[2] Quote from paragraph 4.40 and estimate from table 1.2 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm. The estimate is a steady-state figure.

[3] Holding a patent in one national office may also give some degree of protection in other countries. There is also a European Patent Office (EPO); however, there is no such thing as a European patent: applications filed to the EPO designate the countries in which protection is sought, and patents will be granted by the relevant national offices.

[4] Figures for European Patent Office; see section 4.2 of OECD, *OECD Patent Statistics Manual*, 2009. The grant lag varies across offices.

[5] See, for example, H. L. Williams, 'Intellectual property rights and innovation: evidence from the human genome', 2009, http://www.people.fas.harvard.edu/~hlwill/papers/Williams_jmp.pdf, which suggests that patented innovations are the ones that have the least spillovers.

the idea generates income that the policy provides a reward, long after the initial finance will have been secured. However, financial market failures mean that innovators may be unable to secure external sources of finance for the initial investment into risky and intangible projects. This policy does not address this market failure.

Two issues that are likely to have a major effect on the impact of the policy are 'Which patents are eligible under the scheme?' and 'How is patent income defined?'.

Which patents will be eligible?

Implementation of a patent box will require a definition of which patents are eligible – something that is not at all obvious.

One approach would make all patents granted by the UKIPO eligible. This would exclude patents held by UK firms (firms that are resident in the UK for tax purposes) that are filed at other national patent offices, such as the US Patent and Trademark Office (USPTO), the Japan Patent Office (JPO) and other European national offices, and would encompass patents filed by foreign firms, many of which will not be resident in the UK for tax purposes. This would increase the incentive for firms paying corporation tax in the UK to file patents at the UKIPO, but would not change firms' incentives to create technology in the UK.

An alternative approach would be to define the group of patents as those that arose from UK research. In the first instance, it would be difficult to define which patents were created in the UK. Often, the technology underlying a patent is created by multiple inventors located in different countries, making it difficult to select those that were truly created in the UK. In addition, a policy that specified that research must be conducted in the UK would likely meet resistance from the EU Commission, since favouring research conducted in the UK over that conducted elsewhere is incompatible with the free movement of services in the EU. Ireland introduced an exemption for patent royalties in 1973 that attempts to target R&D conducted in Ireland, but it is due to reconsider this policy following a formal request from the EU Commission.[6]

The definition that is closest to that adopted in other countries (see Box 10.2) is all patents held by firms that are tax-resident in the UK. As discussed above, there is an important distinction between where intellectual property is held and where innovative activity takes place: while the firm holding the patent may be resident in the UK, some or all of the inventors who created the underlying technology may be located in other countries.

As an example, Ericsson Ltd is a UK subsidiary of a Swedish firm. In 2005, it filed a patent application at the European Patent Office (EPO) relating to the splitting of optical signals, which was based on the work of two inventors located in Italy.[7] This issue is common; looking at patent applications filed at the EPO in 2005:

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[6] For information about EU Commission actions and further references, see press release IP/07/408, available at http://europa.eu/press_room/index_en.htm. For information about the Irish exemption, see, for example, A&L Goodbody, 'The Irish patent exemption', http://www.hg.org/articles/article_1176.html.

[7] Publication number EP1762029, application title 'Wavelength division multiplex (WDM) optical demultiplexer'. This patent document can be viewed at https://data.epo.org/publication-server/search using the publication number and publication dates in 2007.

Box 10.2. Patent box systems in other countries

There are a number of European countries that have implemented some form of a patent box, including the Benelux countries (Belgium, the Netherlands and Luxembourg), Ireland and Spain. The systems in operation in these countries generally define eligible patents as those held by firms resident in the country for tax purposes, and include patents that have been created by offshore inventors. It seems unlikely that the UK would be able to operate a policy that restricts where research leading to the patent took place, given Ireland's current experience with the European Commission and other EU cases. See references in main text.

The relief comes in the form either of a reduced rate of corporation tax for the eligible income or an exemption from corporation tax for a percentage of the eligible income.

For example, in Belgium, a patent is eligible if it has been either developed by the firm or acquired or licensed and then further developed by the firm in Belgium. In the latter case, further development does not require additional patents. At no stage does the patent or further development have to take place in Belgium; the technology can be created in a foreign R&D centre. The basis for the tax deduction is the income that is derived directly from licensing the patents or from using the patents in the production process. In the latter case, the 'deemed income' is calculated as that which the company would have received had it licensed the patents to unrelated third parties. In both cases, the tax deduction is equal to 80% of the arm's-length income.

- one-fifth of those filed by UK applicants listed at least one inventor resident outside the UK;[8]

- one-quarter of those filed by subsidiaries of UK-headquartered firms were filed from an offshore applicant.[9]

This means that at least some of the activity subsidised would be conducted offshore.

Does it matter where innovative activity is conducted? In the case of patentable inventions, many of the external benefits are likely to arise from the inventors that create the new technologies; inventors hold tacit knowledge which is shared when they interact with others. There is some evidence to suggest that these benefits are largest to those who are geographically close.[10] Therefore, activities carried out offshore may have lower external benefits for the UK. On the other hand, if firms have chosen the optimal location for innovative activities, this may be in order to access the latest technologies or tap into specific skills. Some of the external benefits generated offshore may then be transmitted, through those firms, back to the UK.[11]

Under a definition that included all patents held by firms that are tax-resident in the UK, there would be additional issues to address – for example, would the patents that are held by a UK-headquartered firm in an offshore subsidiary be eligible? Also, would the

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[8] 20% of the inventors listed on patents filed by UK applicants were located outside the UK, 10% elsewhere in Europe and 6% in the US.

[9] Of these offshore applicants, a third were located in the US and a quarter were in each of Germany and Sweden.

[10] A. B. Jaffe and M. Trajtenberg, *Patents, Citations and Innovation: A Window on the Knowledge Economy*, MIT Press, Cambridge, MA, 2002.

[11] R. Griffith, R. Harrison, and J. Van Reenen, 'How special is the special relationship? Using the impact of US R&D spillovers on UK firms as a test of technology sourcing', *American Economic Review*, 2006, 76, 1859–75.

patents be eligible if they were being licensed to a UK-resident firm from another company?

The definition of which group of patents would be eligible for the patent box will have a very important effect on the incentives created by the policy and the extent to which it makes the UK a more attractive location for innovative activity or patent holding.

How is income attributed to a patent?

A further difficulty arises in attributing income to specific patents, and so identifying which income qualifies for the reduced rate of corporation tax.

If a firm licenses out a patented technology, then the income received can be clearly identified. However, the income is much harder to identify when the patented technology is used within the firm to generate income. For example, say that Ericsson used the technology described above to produce a new radio access networking product and sold it at a profit. While part of the income received is due to the patented technology, some of it will be due to other factors – for example, the success of the marketing department. How much income did the patent generate? Since the patented technology is not sold in the market, there is no observable price, and so it is difficult to identify the income stream that it generates; instead, this must be imputed.

Similar problems arise in other parts of the tax system – for example, the transfer pricing problem that occurs when inputs are transferred within a firm or across borders. The solution applied in transfer pricing, and in patent box systems in other countries (see Box 10.2), is to require firms to use the arm's-length principles to define the income, i.e. to determine a measure of how much a third-party firm would pay to license the patent in order to use it in the creation of goods or services. This can be a difficult calculation, particularly if income is generated using multiple patents, only some of which are eligible for the patent box. This is likely to be the case when the policy is introduced, since it will only apply to those patents granted after April 2013. Difficulty may also arise if the firm is using technology from multiple patents held by subsidiaries in different locations. The rules to deal with this are likely to be complex and open to abuse.

Impact of the policy

How effective will a patent box be at increasing incentives to invest in innovation in the UK? The precise answer will depend on the final workings of the policy. As discussed above, one key issue will be which patents are included in terms of where the research that went into producing the patent was carried out. Whatever the design, the policy will largely increase incentives to locate *income from patents* in the UK, and so is not well targeted towards encouraging additional innovative *activity* to take place in the UK. The policy is clearly not targeted at attracting tax revenue, as the government estimates a revenue cost of £1.3 billion a year.

The policy might be most effective at increasing research incentives for domestic firms that conduct all of their activity in the UK; these firms have less scope for income shifting. However, these firms are on average smaller, and are more likely to be financially constrained; for these firms, the time lag between carrying out the research and earning the income from a patent will be likely to matter a lot. For large multinational firms, the policy is likely to create an incentive to shift income from patents into the UK without necessarily any accompanying real innovative activity.

Therefore, a reduced rate of corporation tax on patent income seems unlikely to encourage much additional innovative activity in the UK either from domestic firms or from encouraging multinationals to locate innovative *activities* here.

Who will benefit most from the patent box? The distribution of patent holdings is highly skewed; the majority of patent applications are filed by a small group of firms. For example, if we look at patent applications made by UK-headquartered firms at the EPO in 2005 (the most recent year for which complete information is available), we see that the four firms with the largest number of patent applications (GlaxoSmithKline, AstraZeneca, Unilever PLC and BT Group PLC) accounted for over a fifth of all patent applications filed by UK firms – see Table 10.1. The 10 largest firms together, which represent only 1% of UK firms applying for a patent in 2005, accounted for one-third of patent applications. The share of patent income received by the largest firms is likely to be even bigger.

Table 10.1. The number and location of patent applications made by UK firms

	Number of patent applications (% of all patent applications made by UK firms)	Number of patent applications made by a UK subsidiary *Inventors' location*		Number of patent applications made by an offshore subsidiary *Inventors' location*	
		UK	*Some or all offshore*	*UK*	*Some or all offshore*
GlaxoSmithKline	222 (6.7%)	72	53	12	85
AstraZeneca	211 (6.3%)	75	136	0	0
Unilever PLC	195 (5.9%)	1	5	60	129
BT Group PLC	103 (3.1%)	52	51	0	0
Total	3,329 (100%)	1,954	628	82	665

Notes: Patent applications are those made to the EPO with an application priority date in 2005. We include all patents filed by the firms' European and US subsidiaries. Patent applications with inventors located in the UK are those applications where the residential address of all inventors was in the UK, and those with some or all offshore are patent applications where at least one inventor had a residential address outside the UK.
Source: Authors' calculations using the EPO Worldwide Patent Statistical Database, PATSTAT.

Another feature of the pattern of patent application and inventor location that we see in Table 10.1 is that it is often the case that a patent held by a UK firm was created by offshore inventors. The location of the inventors provides a better indicator of where the research activity was conducted than the location of the firm making the patent application. This means that by targeting patents, the policy will be subsidising not only research activity in the UK but also research activity carried out offshore.

Assuming that the income stream generated by these patents is similar across firms, and abstracting from any behavioural changes, the bulk of the benefits from this policy will accrue to a few large companies. However, the policy is likely to also lead firms to change their behaviour – for example, by:

- increasing the amount of innovative activity that leads to eligible patents;

- increasing the patenting of intellectual property that would otherwise have been unpatented;

- moving patent income into the UK from other locations for tax purposes;

- shifting income that was not previously defined as coming from patents into the patent box.

The changes in behaviour that involve shifting or reassigning income, without any change in real activity, will represent a deadweight cost of the policy; they will allow companies to reduce their tax bills without any increase in innovative activities. In addition, the tax reduction will be available to all new patents, including those that would have taken place without the policy, and as a result it will entail a further and large deadweight cost from subsidising existing investments. In fact, the largest revenue cost will result from those patents that generate the largest revenue streams. These are the projects that are the most likely to have been undertaken anyway, since they are the most profitable.

One final point is that the pre-announcement of this policy, with the government saying that it will not apply to patents that come in between now and the implementation date, will encourage firms to delay patents being granted until after the legislation is passed. In practice, this is likely to have only a small impact. A patent takes an average of five years to be granted, so most of the patents applied for today will not be granted until after the policy is in force. Where the procedure is quicker, firms may have an incentive to delay. In addition, some of the firms that have already applied for a patent will want to try to delay the grant date until after legislation. However, delaying the grant date of a patent has no effect on real activity, since patents can be used while still in the application stage.

10.3 Direct spending on science and universities

Direct government spending can address many of the market failures present in the innovation market. All developed economies spend substantial sums on supporting science and research. For example, President Barack Obama's American Recovery and Reinvestment Act included large increases in spending on science in the US.

Basic science creates fundamental discoveries and general technologies which will have wide applications and broad impact. This type of research is hard to secure private financing for, partly because it tends to have highly uncertain returns and partly because it is difficult to appropriate the returns. Most basic research activity is therefore carried out with direct government support, and it is often conducted in government-run research labs or universities.

Government spending can also foster conditions that support private sector innovation. For example, infrastructure investment can help create conditions that are conducive to research. These include not only world-class universities and research facilities, but also good transport networks, high-speed internet services and a host of other facilities.

UK government direct spending on the science base has grown over the past decade, and stands at a relatively high level.[12] On many measures, the UK has a strong science base.

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[12] The science budget more than doubled between 1997 and 2007. For more information, see Department for Innovation, Universities and Skills, *Innovation Nation – Background Analysis: Strengths and Weaknesses of the UK Innovation System*, 2008,
http://www.dius.gov.uk/reports_and_publications%20HIDDEN/~/media/publications/I/innovation_nation_background_analysis and
http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk//dius/science/science-funding/budget/page28923.html.

For example, with only 1% of the world's population, the UK produces 9% of all scientific papers and receives 12% of citations.[13]

But what are the prospects for government spending on science going forward? In the 2009 PBR, the government announced proposals for £600 million of cuts to come from higher education and science and research budgets before 2013. This was part of measures aimed at reducing government spending and is due to come from:

> a combination of changes to student support within existing arrangements; efficiency savings and prioritisation across universities, science and research; some switching of modes of study in higher education; and reductions in budgets that do not support student participation.[14]

It is likely that further cuts will follow in this area, as the government attempts to rein in public spending. Going forward, the government would, on the estimates produced in Chapter 8, need to make cuts totalling £42.0 billion, or 10.9%, to Whitehall spending on public services over the four years 2011–12 to 2014–15. For 2011–12 and 2012–13, the government has committed to protect some priority areas of spending, including the NHS and schools, and to continue to increase spending on overseas aid sharply. As a result, cuts will need to be made from the remaining unprotected departments, the largest of which are Transport, Defence, Housing and Higher Education. It seems likely that further cuts will be made to the higher education and research and science budgets, as well as to infrastructure more generally.

Cuts in spending on science and universities are likely to have important long-term consequences. They would lead not only to direct falls in innovative outputs, but also to indirect falls to the extent that the UK would become a less desirable place for firms to conduct research.[15] If the government's aim is 'to strengthen the incentives to invest in innovative industries and ensure the UK remains an attractive location for innovation', as was stated in the PBR, then the revenue loss expected from the patent box – £1.3 billion a year – would be better spent protecting the spending in this area. This would go a long way to shoring up the science budget, which for 2010–11 is £3.2 billion.[16]

10.4 R&D tax credits

The UK currently offers tax relief for R&D costs through two tax credits – one aimed at large firms and the other at small and medium-sized enterprises (SMEs)[17] – which

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[13] See Department for Business, Innovation and Skills, *International Comparative Performance of the UK Research Base*, 2009, http://www.dius.gov.uk/science/science_funding/science_budget/~/media/publications/I/ICPRUK09v1_4.

[14] See paragraph 6.46 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm. At this stage, there are no further details about what this will actually mean in practice.

[15] For the benefits of public R&D spending, see, for example, J. Haskel and G. Wallis, 'Public support for innovation, intangible investment and productivity growth in the UK market sector', 2009, http://www.coinvest.org.uk/pub/CERIBA/PublicSupportCeriba/innovation_JHGW_09Dec09.pdf, and D. King, 'The scientific impact of nations: what different countries get for their research spending', *Nature*, 2004, 430, 311–16, http://www.berr.gov.uk/files/file11959.pdf.

[16] See http://www.rcuk.ac.uk/aboutrcs/funding/scibudget.

[17] SMEs are defined as those with fewer than 500 employees and either an annual turnover not exceeding €100 million or a balance sheet not exceeding €86 million.

together cost approximately £600 million per year.[18] Tax credits reduce firms' costs by allowing them to deduct an amount greater than actual R&D expenditure from taxable profits, and thereby reduce their corporation tax bill. Tax credits are market-based policies which aim to increase the private rate of return to R&D, to bring it closer to the social rate of return. By subsidising research activity directly, this policy is reasonably well targeted at externality-generating activities (see Box 10.1).

For large companies, tax relief is given at 130%; that is, for each £100 of qualifying costs, a company can reduce the income on which corporation tax is paid by £130. For SMEs, the tax relief is 175%.[19] In addition, for SMEs, part of the credit is 'repayable': firms with insufficient taxable profits can claim a cash payment equal to 24% of eligible R&D expenditure. This makes the SME tax credit effective for small R&D-intensive start-ups that have not yet generated any taxable profits. However, at present, SMEs can only claim relief on intellectual property that they own themselves.

In PBR 2009, the government restated its commitment to the R&D tax credit as a mechanism for promoting innovation. In addition, it announced the 'removal of the condition that any IP [intellectual property] deriving from the research and development must be owned by the company making the claim'.[20] This is a small but welcome adjustment. Small firms might organise their investments in such a way that the intellectual property is held by another firm – for example, if a number of small firms conduct a research project jointly, allowing them to share both the high costs and the benefits.

10.5 Conclusion

The government is proposing to introduce a patent box – an expensive and poorly targeted policy – while at the same time likely making large cuts to the science budget, jeopardising the UK's strength in this area.

The government's stated aim in introducing the patent box, which will tax income from patents at a reduced rate of corporation tax, is to 'ensure the UK remains an attractive location for innovation'. This seems to be at odds with the likely outcome, since this policy gives increased incentives to hold patent *income*, not necessarily to conduct innovative activity, in the UK.

Part of the effect will be to encourage eligible patent income to shift into the UK. Income is not a good target for the innovative activity that is associated with the highest external benefits, and thus the patent box lacks the justification usually attributable to government support for innovation.

The policy may encourage additional innovative activity, but there is nothing to ensure that this will be located in the UK. It seems likely that much of the cost will be

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[18] See table 7 of HM Treasury and HM Revenue and Customs, *Tax Ready Reckoner and Tax Reliefs*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_taxreadyreckoner.pdf.

[19] In both cases, the relief is only available for companies spending at least £10,000 a year on qualifying R&D costs; for SMEs, there is also an upper limit of €7.5 million on the total amount of aid that can be received for any one R&D project. There are strict guidelines regarding what qualifies as an R&D project. Broadly, it must be a project that 'seeks to achieve an advance in overall knowledge or capability in a field of science or technology through the resolution of scientific or technological uncertainty' (http://www.hmrc.gov.uk/ct/forms-rates/claims/randd.htm).

[20] See paragraphs 4.41 and 4.42 of HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm.

deadweight, i.e. it will subsidise activity that would have taken place in the absence of the reduced corporate tax rate. For the policy to lead to increased innovation in the UK, there would need to be a strong link between where patents are held and where innovation takes place.

It is not clear that this policy will lead firms to increase the amount of innovation they undertake, since there is a long and uncertain lag between creating a patentable idea and earning the income on which the lower tax rate is levied.

If the patent box is unlikely to achieve its stated objectives, why might it have been introduced? Firms earning a lot of income from patents may have told the government that they would consider relocating if it failed to offer similar tax advantages to those available in countries that have already introduced patent boxes. By implementing the scheme, the government may reduce the likelihood of this happening, although it is hard to know how credible the threat of relocation would have been in the first place.

Unlike the patent box, there are clear rationales for spending on education, science, research and infrastructure. Government intervention in these areas can help to create an environment that is attractive for innovating firms. This government has a strong and welcome track record at increasing spending in these areas. It would be a shame to reverse this trend, especially at the cost of introducing a £1.3 billion a year patent box which provides tax relief for a few large companies.

11. Reforming UK fiscal institutions

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Summary

- Voters and investors need to be reassured that this or a future government will repair the damage to the public finances that has been created by the financial crisis. This creates a powerful case for institutional reform to increase people's confidence in official forecasts of the public finances.

- The Fiscal Responsibility Bill, which – once on the statute book – would place the government under a self-imposed legal obligation to deliver particular fiscal targets, is unlikely to achieve this. The government's existing Code for Fiscal Stability was enshrined in legislation in 1998, but this did not prevent the fiscal rules set out under it from losing their credibility once the then Chancellor Gordon Brown was widely thought to have 'moved the goalposts' to avoid a formal breach.

- The National Audit Office has a limited and inappropriate role in the current fiscal forecasting process, being required to audit a small number of assumptions chosen by the Treasury. The NAO could be given more power and an extended role, but it does not possess the expertise or resources to challenge the Treasury on a level playing field. It could be given those resources and expertise, but this would leave it with a combination of important responsibilities that would best be separated.

- Creating an independent Office for Budget Responsibility to produce or oversee official fiscal forecasts is a good idea, but such a body would require careful design. The key challenge is to provide independent and believable forecasts based on the information available, without losing the benefits of integrating fiscal forecasting and policy design. Taking fiscal forecasting out of the Treasury would threaten this synergy, while replicating the existing operation in the OBR would be expensive.

- The most promising route might be to have an independent Budget Responsibility Committee oversee, challenge and sign off forecasts by officials in the Treasury.

11.1 Introduction

This year, the UK is set to record its largest budget deficit since the Second World War and one of the largest in the industrial world. The financial crisis has significantly increased the structural budget deficit, which means that – in the absence of large spending cuts and tax increases – borrowing would remain high and public debt would rise to unsustainable levels (see Chapter 2). All three main UK political parties acknowledge that a big fiscal tightening is required over the coming years to bring the budget deficit back to appropriate levels, although they disagree about when it should start, how quickly it should be completed and what its composition should be.

Given the size and timescale of the necessary adjustment, the parties also accept that it is important to convince potential purchasers of government debt that the fiscal repair job will be carried through. Otherwise, those investors may charge the government more to

borrow from them and thereby make the fiscal problem even worse. The parties have proposed a variety of institutional reforms to try to offer this reassurance:

- The government has proposed, and is in the process of legislating for, a new Fiscal Responsibility Law that will make it a legal requirement for the government to set out and deliver a plan for sound public finances, with the plan initially having to be approved by Parliament. The government's first proposed plan (the Fiscal Consolidation Plan, FCP) sets three objectives in primary legislation:
  - o reduce the budget deficit each year between now and 2015–16;
  - o reduce the headline budget deficit by one-half by 2013–14 compared with its level in 2009–10;[1]
  - o have net debt falling as a proportion of GDP in 2015–16.

  The Act would also allow the government to impose further obligations relating to the period 2010–11 to 2015–16 by order. A draft *Fiscal Responsibility Order 2010* has been published, which includes the additional obligation to:
  - o reduce the headline deficit to 5.5% of national income or less in 2013–14.[2]

- The Liberal Democrats have proposed giving the National Audit Office (NAO) greater responsibility, asking it to audit the Treasury's assumptions and forecast and the forecast's compliance with the fiscal rules.

- The Conservatives have promised to set up a new independent body called the Office for Budget Responsibility (OBR). This body would produce fiscal forecasts and advise how big a tightening or loosening would be necessary to give the government a better than 50% probability of:
  - o having debt falling as a share of national income at the end of an as-yet unspecified forecasting horizon;[3]
  - o balancing the current budget (revenues minus non-investment spending) at the end of the forecasting horizon, after adjusting for the estimated impact of the economic cycle.

In this chapter, we examine these various proposals for institutional reform. (We discuss the choice of fiscal targets for the next few years in Chapter 6.) We begin by asking why institutional reform may be needed at all in Section 11.2. We then move on to discuss the Fiscal Responsibility Bill proposed by the government in Section 11.3. In Section 11.4, we assess the proposals from the Liberal Democrats for greater levels of fiscal transparency and audit by the NAO. In Section 11.5, we examine the Conservative proposal for the creation of an independent fiscal agency, the OBR, and how such an agency should be designed to achieve its objectives. Section 11.6 concludes.

11.2 The rationale for institutional reform

Looking back over recent decades, more often than not governments have not raised sufficient tax revenue to pay for all of their spending, and have borrowed to make up the

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[1] Borrowing in 2009–10 is forecast to be 12.6% of national income. If this proves correct, then it would need to be cut to 6.3% of national income, or lower, in 2013–14. However, the forecast for borrowing in 2013–14 from the December 2009 PBR (of 5.5%) shows that the government is currently aiming to over-achieve this target.

[2] Borrowing forecasts from the December 2009 PBR show that the government is currently aiming to hit this target exactly.

[3] The current government uses a five-year forecasting horizon in its Budgets and Pre-Budget Reports.

difference (primarily by issuing gilts, in effect government IOUs that pay interest). There are four main reasons why governments might wish to borrow to finance some spending:

1. **Intergenerational fairness.** The benefits of some forms of spending are spread across time, so it seems fair that the cost should also be spread over current and future generations. One obvious category is capital investment. Similar arguments could apply to the costs of wars (which historically have prompted the largest spikes in government borrowing and indebtedness) and investment in human capital – for example, the training of teachers or doctors. Firms and individuals often borrow for similar reasons – for example, when investing in a new factory or home or when undertaking education. In principle, one could also advocate borrowing to finance other spending on redistributive grounds – because future generations are likely to be richer than today's.

2. **Output stabilisation.** The public finances fluctuate with the strength of the economy: when economic activity is depressed, tax revenues fall, welfare costs rise and government borrowing increases (or budget surpluses decline). These 'automatic stabilisers' help smooth out fluctuations in national income. If the government responded to high borrowing during a recession by raising taxes or cutting spending to close the gap, this would withdraw spending power from the economy and, other things being equal, would make the downturn more severe. While the automatic stabilisers operate in the right direction, their strength reflects non-macroeconomic factors such as the size of the state and the progressivity of the tax and benefit system. So there is no reason to believe that the automatic stabilisers will be the 'right' size for the needs of the economy at any particular time. Governments may therefore choose to augment or offset them with discretionary measures. The case for using changes in government borrowing to help stabilise the economy is particularly powerful when monetary policy is constrained – for example, if nominal interest rates are close to zero or if the exchange rate is fixed and therefore unable to depreciate.

3. **Tax rate smoothing.** In the face of expected changes in government spending, governments may seek to smooth tax rates over time to avoid the welfare costs implied by continual changes in tax rates.[4] For example, a government may smooth tax rates in the face of an expected increase in spending needs arising from an ageing population (examples of which include the 'pre-funding' strategies in Australia and New Zealand) or an expected fall in resources arising from the depletion of a country's oil reserves (for example, Norway). There is also considerable uncertainty in forecasting the public finances from year to year, reflecting the fact that the budget balance is the difference between two large numbers (revenues and spending) that are in themselves difficult to forecast. This means that it would be hard to balance the budget every year even if one tried. However, if forecasts are unbiased, then the errors should balance out over time.

4. **Political expediency.** Politicians face pressure to increase spending or to reduce taxes (or to avoid spending cuts or tax increases) in the short run in order to gain electoral support, increasing the deficit and debt levels. Even though politicians may

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[4] For the original formulation of the tax smoothing hypothesis, see R. Barro, 'On the determination of public debt', *Journal of Political Economy*, 1979, 87, 940–949.

recognise the need for long-run fiscal sustainability, the immediate benefits of staying in office may outweigh any future costs of excessive short-term borrowing. Such an effect is known as a 'deficit bias'.

Of course, in a world of perfect information, far-sighted voters and investors should punish governments that exhibit such a 'deficit bias', or that, in the present context, put off a necessary fiscal tightening for inappropriate reasons. However, in reality, they lack the necessary information to assess with confidence the outlook for the public finances and the need for future policy changes to maintain sustainability. Governments are far from able to assess this perfectly either, but they can exploit the fact they have more relevant information on revenue and spending developments than outsiders do. This creates a temptation to produce optimistic borrowing forecasts, and to blame unforeseen events should actual borrowing exceed what was previously forecast. For example, Chancellor Gordon Brown published consistently over-optimistic fiscal forecasts from 2002, brushing away the concerns expressed in successive Green Budgets, and in other independent forecasts, and only taking offsetting action after the May 2005 general election.

In the December 2009 Pre-Budget Report (PBR), the government published fiscal forecasts showing a gradual policy tightening that would eliminate the extra structural deficit that the Treasury believes the crisis has caused by 2017–18. This is forecast to prevent public sector debt rising above 80% of national income and would put it on course to return to pre-crisis levels by the early 2030s (see Chapter 2 for detailed discussion of the Treasury's forecasts for borrowing and Chapter 6 for the Green Budget forecasts for borrowing under different scenarios for the macroeconomy). But how can the current (or any would-be) government persuade voters and investors that this outcome can reasonably be expected to come about, given the serial over-optimism shown by Budget and PBR forecasts over recent years? The parties' institutional reform proposals try to do this by increasing the political cost of under-achieving these forecasts *ex post* and/or by attempting to insulate the forecasts from any suspicion of political wishful thinking *ex ante*.

We now turn to the reforms that the three main parties have put on the table.

11.3 The Fiscal Responsibility Act

Alongside the December 2009 PBR, the government released details of a Fiscal Responsibility Bill, which has since been passed by the House of Commons and is due to have its second reading in the House of Lords on 10 February 2010.[5] Once legislated, the resulting Act will impose a statutory duty on the Treasury to set and meet specific targets for reducing government borrowing and debt. The government believes that this will demonstrate its commitment to ensuring the sustainability of the public finances.

Clause 1 of the Bill requires the Treasury to ensure that:

- public sector net borrowing as a percentage of national income in each financial year 2010–11 to 2015–16 is lower than the previous year;

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[5] For more details, see House of Commons Library, *Fiscal Responsibility Bill*, Research Paper 09/96, 22 December 2009, http://www.parliament.uk/commons/lib/research/rp2009/rp09-096.pdf. Details of the Bill's passage through Parliament can be found at http://services.parliament.uk/bills/2009-10/fiscalresponsibility.html.

- public sector net borrowing as a percentage of national income in 2013–14 is no more than half its 2009–10 level;

- public sector net debt as a percentage of national income in 2015–16 (at year end) is lower than its level in 2014–15 (at year end).

The Act would also allow the government to impose further obligations relating to the period 2010–11 to 2015–16 by order. A draft Fiscal Responsibility Order 2010 has been published, which includes the additional obligation that:

- public sector net borrowing should be 5.5% of national income or less in 2013–14.

Given the December 2009 PBR forecast for the budget deficit in 2009–10, this is a more ambitious goal than that set out in the second requirement of Clause 1 above (which, if the PBR forecast for borrowing in 2009–10 of 12.6% of national income is correct, would require the deficit to be reduced only to 6.3% of national income in 2015–16). The Treasury has presumably put the tougher target in secondary rather than primary legislation to make it less onerous to drop or amend than the other targets.

The Act will require the Treasury to make orders to secure sound public finances for the period after 2015–16, thereby requiring it always to have a fiscal duty laid down by legislation. It also requires the Treasury to report on progress towards, and compliance with, its targets in Budgets and PBRs. The government must provide an explanation where they have not been complied with. It will be held accountable for meeting the obligations through these reports, which must be laid before Parliament. But there is no legal sanction for failure other than the requirement to report to Parliament – the Act will be essentially declaratory or a high-profile public statement of intent.

The Act will also give Parliament a greater role in fiscal policy than it currently enjoys, by giving it the power to vote on the government's medium-term fiscal plans. Parliament currently approves public spending and taxation separately, through the Supply Estimates and the Finance Bill respectively. The Bill gives Parliament the power to vote on targets for government borrowing and debt directly. Furthermore, the Bill allows Parliament to vote on medium-term fiscal plans. This contrasts with the current Supply Estimates process and Finance Bills, which are generally of a more short-term nature.

The Fiscal Responsibility Bill is one of a number of pieces of recent legislation that seek to enshrine policy targets in law. Other examples include:[6]

- the Child Poverty Bill, which enshrines the 2020 child poverty target in legislation;

- the Climate Change Act 2008, which sets legally binding targets for carbon dioxide emissions in 2020 and 2050;

- the proposed International Development Spending Bill, whose purpose is to enshrine in law the commitment to spend 0.7% of gross national income on Official Development Assistance from 2013.

It is worth noting that all these pieces of legislation set down targets that cannot be judged hit or missed during the current Parliament. With the Labour Party behind in the opinion polls at the time the legislation was announced, there is a natural suspicion that

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[6] For more details of each of these see, respectively, http://services.parliament.uk/bills/2009-10/childpoverty.html, http://services.parliament.uk/bills/2007-08/climatechangehl.html and http://www.commonsleader.gov.uk/output/page2931.asp.

these Bills are designed less to convince people of the current Labour government's commitment than to inconvenience a future Conservative one.

As regards the Fiscal Responsibility Act, it is not immediately obvious why breaching the targets set out within it (or moving the goalposts so as to avoid a formal breach) should involve a greater political or reputational cost than breaching or finessing the fiscal rules set out under the Code for Fiscal Stability, which was enshrined in legislation in 1998. Independent economic observers had lost confidence in the fiscal rules as a meaningful constraint on government tax and spending decisions well before the recent crisis. In its 2007 New Year survey of the views of independent economists, the *Financial Times* concluded that 'Almost none use the chancellor's fiscal rules any more as an indication of the health of the public finances'.[7]

The credibility of the Fiscal Responsibility Act targets may also be undermined by the fact that they make no allowance for any potential deterioration in the fiscal outlook that might arise from a double-dip recession or another negative shock to the economy. In this event, the requirement to see the budget deficit fall year after year might well no longer be sensible – and no one would expect the government to implement a fiscal tightening under those circumstances simply because of the Act. Conversely, if the economy and/or the underlying health of the public finances were to improve much more rapidly than the Treasury expects, the goals set out in the Act might be thought too modest.

Even if the economy follows the path expected by the Treasury, revenues could still, of course, disappoint or spending come in higher than projected. In the November 1998 PBR, the Treasury estimated that the average absolute error forecasting borrowing one year in advance had been 1.2% of national income (£17 billion in 2009–10 terms) and that, even once the effect of errors in forecasting GDP were taken into account, the average error had been 1.0% of national income (£14 billion). Looking four years ahead, the figures were 4.1% of national income (£58 billion) and 2.4% of national income (£34 billion) respectively.[8]

The fact that the public finance outcomes have often been very different from those forecast by the Treasury – and others[9] – means that even a government genuinely aiming to comply with any fiscal target *ex ante* may find that *ex post* they have missed it. Let us assume that the current Treasury forecasts are a fair expectation of the likely strength of the public finances going forwards, and that they prove as accurate as the Treasury forecasts have been over the longer term up to, but not including, the large errors that have arisen due to the financial crisis. This would suggest that there is a four-in-ten chance that, without policy action, borrowing will be more than half its 2009–10 level in 2013–14 and the Fiscal Responsibility Act therefore broken. Even if the forecasts are accurate to 2012–13, there would still be a one-in-four chance of borrowing exceeding 6.3% of national income and the Fiscal Responsibility Act being broken – and in this case there would be only limited time to implement tax rises or spending cuts to avoid a breach of the new law. The additional obligation that borrowing is at most 5.5% of

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[7] 'Cut spending to reduce borrowing', *Financial Times*, 2 January 2007, http://www.ft.com/cms/s/683400d2-9a05-11db-8b6d-0000779e2340.html.

[8] Figures for forecast errors as a share of national income from paragraph B23 of HM Treasury, *Pre-Budget Report*, November 1998, http://www.hm-treasury.gov.uk/prebud_pbr98_repannexb.htm.

[9] For a comparison of the forecasts of different bodies, see C. Giles and J. Hall, 'Forecasting the PSBR outside government: the IFS perspective', *Fiscal Studies*, 1998, 19, 83–100, http://www.ifs.org.uk/publications/2250, and R. Barrell, S. Kirby and R. Metz, 'Forecast comparisons', *National Institute Economic Review*, 2005, no. 193, 70–74 (DOI: 10.1177/0027950105058557).

national income in 2013–14, which is the level of borrowing that the Treasury is currently forecasting, only has a 50:50 chance of success without a further fiscal tightening, given the assumption that the Treasury's forecast is as likely to be pessimistic as it is to be optimistic. The fact the Fiscal Responsibility Act would also be broken if borrowing were not reduced as a share of national income in every year to 2015–16, or if public sector net debt as a share of national income were not falling in 2015–16, increases still further the likelihood that this new law will end up being broken.

Like the current government's original fiscal rules, the Fiscal Responsibility Act fails to take explicit account of the uncertainty that lies around all fiscal forecasts. This uncertainty means that the government must, in effect, decide what probability of a breach it is willing to accept when setting out a policy path. Ducking this fact may encourage a return to the 'conviction forecasting' of the past – the government constantly insisting that it will meet its targets until it leaves itself too little time to make corrective policy action and thereby finds itself under pressure to finesse the targets to avoid an embarrassing breach.

11.4 An enhanced role for the National Audit Office

One reason that voters find it difficult directly to punish governments that borrow excessively in the short run is, as mentioned in Section 11.2, that they have access to less information on fiscal developments than the Treasury does. The government can then sideline the concerns of independent commentators about the accuracy of fiscal forecasts by asserting that it has superior information (which is true) that justifies the published forecasts (which may or may not be true). Voters and investors have good reason to be suspicious of such tactics in the light of the history of the last few years, so the opposition parties have both proposed ways to convince people that published official forecasts for the public finances are based on best professional judgement rather than politically-motivated wishful thinking.

As we noted in the introduction, and as we shall discuss in more detail in Section 11.5, the Conservatives propose to create an Office for Budget Responsibility that would undertake official but independent fiscal forecasts. But speaking in the Commons on 26 November 2009, Vince Cable, the Liberal Democrat Deputy Leader and Shadow Chancellor, said:

> There is a role for legislation to strengthen the fiscal framework. I am probably not too far from the Conservative spokesman in his belief that we need an additional independent element in fiscal policy, as we have in monetary policy with the Bank of England. However, my party's approach would be more modest. There is probably an argument for giving the National Audit Office a stronger role in auditing what the Government have done – not just their forecasts as at present. The NAO could make an assessment about whether the Government have delivered on their targets. We have already had some strengthening of the legislation regarding the independence of the statistics office. That was a step forward and there is an argument for an independent audit role – an Ofsted – on fiscal policy. I agree with that, although I should not create quite such an elaborate institution as the Conservative spokesman

proposes. None the less, there is a role for strengthening the institutional backbone of fiscal policy.[10]

The Treasury currently asks the National Audit Office to audit a number of economic assumptions used in its public finance forecasts – for example, the outlook for equity prices, oil prices and unemployment. But the NAO can only audit the assumptions that the Treasury asks it to. In evidence to the Treasury Select Committee, David Heald, Professor of Accountancy at Aberdeen University, argued that: 'This arrangement ("look only at what we ask you to look at") breaches the fundamental postulate of auditing, that there must be independence to investigate as well as independence to report. In my view, the NAO has allowed itself to be misused'.[11] What is more, the NAO is not asked to say whether these assumptions are the best available, but only whether they are 'reasonable'. For many of the assumptions concerned, this is not a particularly demanding yardstick and the difference between an assumption that was only just 'reasonable' and one that was the 'best available' could be considerable.

Even if the NAO was allowed to choose which assumptions to audit, this is not the same as auditing the forecast as a whole – a frequent misapprehension that Treasury ministers and advisers rarely seek to correct. Using the NAO to reassure people that the forecasts represent best professional judgement would require it to be given this broader role. But the organisation does not currently possess the expertise to undertake it. The NAO could, in principle, be given the expertise and resources to fill this role, but this would be a high-profile and important task very different from its core functions. For reasons of focus and public accountability, it is probably best that they are in separate institutions.

11.5 An Office for Budget Responsibility

The Conservatives propose to set up an independent OBR to prepare fiscal forecasts and to offer advice on the management of the public finances. As of early January 2010, their proposals were as follows[12]:

- The OBR will consist of a three-person Budget Responsibility Committee, plus a Secretariat. Appointments to the Committee will be made by the Chancellor, using the same procedure as appointments to the Monetary Policy Committee (MPC) of the Bank of England. They would serve single non-renewable terms (in contrast to the MPC, where terms can be renewed). Members will appear before the Treasury Select Committee.

- The OBR will publish medium-term fiscal forecasts twice a year, before Budgets and PBRs. These forecasts will take uncertainty explicitly into account, as the Bank of England's fan charts for inflation and economic growth do. The Treasury, the Department for Work and Pensions, HM Revenue & Customs and the Office for National Statistics will have a duty to cooperate with the OBR and provide it with internal data and forecasts. Once a year, the OBR will also produce an assessment of all government financial liabilities, including public sector pensions and PFI liabilities, and the long-term sustainability of the public finances.

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[10] http://www.publications.parliament.uk/pa/cm200910/cmhansrd/cm091126/debtext/91126-0012.htm.

[11] http://www.publications.parliament.uk/pa/cm200910/cmselect/cmtreasy/180/180.pdf, Ev 51, paragraph 6.

[12] http://www.publications.parliament.uk/pa/cm200910/cmbills/013/amend/pbc013200110a.392-396.html, plus briefing to journalists.

- Based on its forecasts, the OBR will recommend how big a fiscal tightening or loosening it thinks is necessary to have a better than 50% chance of meeting a mandate for the public finances set out by the Chancellor – but it will not recommend how any tightening or loosening should be split between tax and spending measures.

- The Conservatives have said that the mandate will be:
  - to have debt falling as a share of national income at the end of an (as-yet unspecified, but currently five-year) forecasting horizon;
  - to balance the current budget (revenues minus non-investment spending) at the end of the forecasting horizon, after adjusting for the estimated impact of the economic cycle.

As an OBR would not be up and running in time for the Budget that the Conservatives plan to hold within 50 days of taking office, should they win the general election, they plan to appoint an interim committee of independent figures to oversee the production of fiscal forecasts within the Treasury for publication with the Budget. Sir Alan Budd, former chief economic adviser of the Treasury and current chairman of the IFS Tax Law Review Committee, has been appointed to oversee this process.

The idea of injecting greater independence into the fiscal forecasting process is one that we have argued for in a number of recent Green Budgets.[13] The proposal for an OBR certainly seems an improvement on current practice in that light. The devil, of course, is in the detail, and we now discuss a few of the design issues that arise in thinking about how it might work. We end by discussing what such a body could realistically be expected to achieve in practice.[14]

The mandate of the OBR

Unlike monetary policy (where achieving low and stable inflation is a generally agreed target for policy), fiscal policy aims to achieve a variety of goals. Many are matters of political as much as economic judgement. While we may be able to outline some widely shared broad principles for good fiscal management, there is no consensus on what levels of borrowing or public sector indebtedness would be desirable or sustainable. Given that the MPC does not have responsibility for setting its own targets, it certainly seems sensible to leave the setting of fiscal targets to the government, rather than delegating them to an independent body. This is a feature common to all three parties' proposals, although Labour is going further than current practice as its Fiscal Responsibility Act will give Parliament the power to vote on targets for government borrowing and debt directly.

The Conservatives sensibly aim to give the OBR a tightly defined remit, limited to forecasting fiscal aggregates and assessing whether the government has complied or is on course to comply with pre-defined fiscal targets. However, even though the setting of fiscal targets is ultimately a political judgement, it would seem appropriate (and helpful for external credibility) if an OBR were to assess publicly whether it believes any changes to the rules it is tasked with policing are consistent with the ultimate objective of long-term sustainability. An OBR should not be tempted to offer advice on broader economic

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[13] See, in particular, R. Chote and C. Emmerson, 'Fiscal policy framework', in R. Chote, C. Emmerson, D. Miles and Z. Oldfield, *The IFS Green Budget 2005,* January 2005, http://www.ifs.org.uk/publications/3250.

[14] Much of the discussion that follows is drawn from Robert Chote's Scottish Economic Society Annual Lecture, delivered on 12 November 2009: http://www.ifs.org.uk/pr/obr_press_release.pdf.

policy issues, as some of its overseas counterparts do (for example, in Sweden). The cost of commenting on broader economic policy could be getting drawn unnecessarily into conflict with other parts of the policymaking process and thereby reducing the credibility of the OBR on its key function – the production of high-quality independent fiscal forecasts.

Forecasting

One problem with fiscal rules on their own is that ministers have an incentive to produce unduly optimistic forecasts, which show them meeting their targets, while external observers find it hard to challenge them as everyone knows they have inferior information. Creating an independent body to carry out forecasting with the same resources and information that are currently available to Treasury forecasters would sharply change the incentives that ministers face. Provided that there was a cross-party consensus in favour of keeping such a body in a particular form, an OBR would have no obvious stake in the incumbent government keeping office and thus would have no incentive to produce politically motivated forecasts.

The Conservatives clearly want to go further than having independent experts 'kick the tyres' of a ministerial forecast produced as now. One option would simply be to remove the existing fiscal forecasting function from the Treasury into the new organisation. However, former Treasury officials say that this has been considered before and ruled out as impractical. The main concern is that disentangling the Treasury's fiscal forecasting and policy development roles would be far from straightforward and could well weaken the Treasury's analytical capabilities in areas such as the design and maintenance of the tax and welfare systems. Critics have pointed, for example, to an undesirable weakening of the Treasury's analytical capacity in monetary and financial policy following the move to central bank independence and the creation of the Financial Services Authority in 1997.

An alternative would be to have an OBR in a position to produce the 'official' forecast, but with the Treasury retaining the capacity to carry out its own forecasts for ministers. But it is not clear then where the critical mass of expertise and resources would lie. It would certainly be odd if the primary official fiscal forecasting function in the OBR were less well resourced and less plugged in to the policymaking machine than the secondary one. The Conservatives need to avoid the trap of replacing the current well-resourced and well-organised fiscal forecasting operation in the Treasury (albeit one whose outputs have been undermined by unhelpful political pressure in the past[15]) with two less well-resourced and less well-organised operations in the Treasury and the OBR.

One option that would avoid this danger, as well as the cost of simply duplicating the Treasury's existing forecasting function, would be to have the forecasts carried out by the same officials who undertake them now, interacting with the rest of the Treasury as they do now, but with the process overseen and the end product signed off by the equivalent of the Conservatives' Budget Responsibility Committee, i.e. independent and publicly accountable figures from outside the civil service. (This would be a more arm's-length and visibly independent version of the system in New Zealand, where the Permanent Secretary of the Treasury states that the official fiscal forecasts have been prepared on

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[15] We should, though, remember that Budget and PBR forecasts are formally those of ministers, rather than officials, so under the current system they are within their rights to tell the officials what to forecast.

the Treasury's 'best professional judgement', with the Minister of Finance promising that he has advised officials of 'all Government decisions and other circumstances as at [date] of which I was aware and that had material economic or fiscal implications'.[16]) But such an approach might change the relationship between ministers and civil servants in an unhelpful way: if the fiscal forecasters were seen to owe their primary loyalty to the Budget Responsibility Committee, rather than to ministers, then this could give extra impetus to the use of political special advisers rather than the official machine.

Access to data and information

The Conservatives rightly point out that for the forecasts of an independent OBR to be credible, the body would need guaranteed access to the same information from HM Revenue & Customs, the Department for Work and Pensions and the Office for National Statistics that Treasury forecasters enjoy today. Indeed, this access should be guaranteed in legislation (and should probably also include the Debt Management Office and the Government Actuary's Department, since their data would be useful in projecting, respectively, net debt interest and public-service pension spending).

In an ideal world, this information would be made publicly available, creating a level playing field for all fiscal forecasters and helping the OBR to justify its conclusions. However, there may be some confidentiality issues that would prevent all such information being shared with non-official bodies. But it would be useful if the OBR were, by default, to make all of its data and models publicly available apart from in cases where it considered that confidentiality issues prevented it from doing so.

Forecast coverage

Fiscal forecasting has two elements. First, you need a macroeconomic forecast – that is, a forecast for how the UK economy will perform and, in particular, how key variables such as employment levels, earnings and corporate profitability will evolve. Second, given the macroeconomic outlook, you need to forecast how government revenues and spending (and consequently the budget balance and debt) will evolve. (The Treasury currently produces forecasts on what it describes as deliberately cautious assumptions – for example, regarding the trend growth rate of the economy. It would be better, and more transparent, for an OBR to publish forecasts that are its best assessment and leave the government to decide how cautious it wishes to be in deciding its policy settings.)

Providing a credible challenge to the government's fiscal forecasts does not, however, necessarily require an independent body to produce its own macroeconomic forecasts (for which the Treasury enjoys no obvious informational advantage). Indeed, it might be more sensible for an independent fiscal agency to focus its resources on fiscal forecasting, while simply using the best-regarded independent macro forecasts as the basis for its assessment. It could then provide some analysis of the sensitivity of its results to the macroeconomic assumptions used.

One obvious candidate would be the macroeconomic forecast underlying the Bank of England's *Inflation Reports*. This would have the virtue of ensuring that monetary policy decisions and the OBR's advice on fiscal policy were based on a consistent medium-term view of the economy. However, this would require the MPC to agree and to publish a rather more detailed breakdown of its macroeconomic forecasts than it currently provides. It would also require it to overcome its reluctance to say much in public about

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[16] http://www.treasury.govt.nz/budget/forecasts/befu2009/001.htm.

its estimates of the amount of spare capacity in the economy and what it sees as a sustainable medium-term growth rate for national income. An alternative would be to construct some average forecast from those provided by City and academic forecasters. This is the approach currently used by the Canadian Parliamentary Budget Office. However, aggregating disparate forecasts in a coherent way is not straightforward, given differences in coverage, methodology and timescales. Compiling an average forecast for different components of the economy is also likely to lead to a projection that is intrinsically inconsistent, although while this is not desirable it does not necessarily mean that a fiscal forecast using such a compiled average macroeconomic scenario would not be a reasonable one.

In addition to producing a fiscal forecast based either on its own macroeconomic forecast or on another independently produced forecast (such as one from the Bank of England or one compiled from the average of independent forecasters), it would also be sensible for an OBR to produce a fiscal forecast based on the latest Treasury macroeconomic forecast (perhaps immediately after each Budget and PBR). This would help to communicate clearly the extent to which differences in the forecast strength of the public finances were due to differences in the assumed path of the economy or other differences between the forecasts, such as differences in tax revenue elasticities.

Alternatively, under the lower-cost option of a Budget Responsibility Committee overseeing the Treasury forecasting team and signing off the Treasury forecast, there would be only one body producing public finance forecasts. Even in this arrangement, it would be sensible for sensitivity analysis around the central fiscal forecast to be published – for example, the impact on the forecasts for borrowing and debt from using different macroeconomic scenarios could be set out in a similar way to the Green Budget projections in Chapter 6.

Long-term forecasts

The Conservatives have also proposed that the OBR should regularly analyse the public sector balance sheet, including an assessment of the importance of and changes in off-balance-sheet and contingent liabilities. This could reduce any incentive for the government to structure its policies in a suboptimal way simply in order to avoid increasing the probability of breaching its rules – for example, by accumulating off-balance-sheet liabilities to avoid increases in the headline public sector debt measure. There was, for example, a suspicion that while the Labour government's sustainable investment rule was in operation, there was an inclination for the government to carry out investment projects using the Private Finance Initiative rather than conventional debt financing because the former had a smaller impact on headline measures of debt (at least in the short term). Similarly, going forwards, there may be a concern that the need to reduce the headline measure of public sector net borrowing leads to too much emphasis on cutting public sector wages rather than cutting public sector pensions (see Chapter 9).

Communication between the Treasury and the OBR

If a model is adopted in which both the OBR and the Treasury publish fiscal forecasts, one interesting question is the extent to which they should communicate with each other during the forecasting process. On the one hand, communication and regular exchange of views might be expected to improve the quality of both institutions' forecasts. On the other hand, such exchanges might be construed as an opportunity for collusion in avoiding presentationally awkward differences of opinion; people might suspect that

both institutions would be happier to be wrong together than to risk being seen as wrong on their own. But reasonable people are bound to differ in their fiscal forecasts and, at a minimum, an OBR and the Treasury should present their analysis in such a way that they can identify and explain the reasons for any differences in an agreed way – for example, whether they reflect different assumptions about the composition of growth or about tax revenue elasticities.

Costing individual policies

An OBR would need to forecast aggregate spending and revenue figures, but it is less clear-cut whether it should also comment specifically on the Treasury's estimates of the costs or revenues raised from individual (or even the combined set of) policies announced in each Budget and PBR. In recent times, the controversial introduction of the 50p income tax rate on high incomes is an obvious example where the Treasury costing of the measure has come under close external scrutiny. Were an independent office to assess each policy measure, this might provide useful discipline on ministers, but it would require significant additional resources and a widening of focus.

An obvious area in which this issue might arise under a Conservative government is if the party implements its plan to introduce a new charge of £25,000 for UK residents not paying tax on any overseas income as a result of being domiciled outside the UK for tax purposes. The party has argued, on the basis of advice from private sector tax advisers, that at the time it was announced (in September 2007) it would raise £3.5 billion a year, and that this fell to £2.8 billion after the impact of the changes that the government chose to implement in the October 2007 PBR was taken into account. However, the government claims, using costing produced by the Treasury, that these figures are unrealistically high, with its latest estimate suggesting that the revenue raised in 2012–13 would be just £50 million.[17] Given that HMRC has not in the past collected the information necessary to provide a firm estimate of the revenue that would be raised by this policy, an incoming Chancellor would have to decide on what basis to make a formal estimate and the OBR would doubtless be asked whether it thought that that estimate was the most appropriate one.

Costing opposition policies

In addition to forecasting the fiscal outlook under the policies of the government of the day, there might also be a case for allowing the OBR to forecast the outlook under the policies of the opposition parties (especially in the run-up to general elections). This would help inform public debate and act as a discipline on would-be governments. Arguably, with an incumbent party behind in the polls (as is currently the case in the UK), financial markets may be more concerned with whether the main opposition party's policies are consistent with long-term fiscal sustainability than whether those of the government are. One option might be to allow opposition parties to submit plans to the OBR for scrutiny if they wish. Bringing the OBR into the political arena in this way clearly poses dangers, but it would perhaps be preferable to the current situation in which Treasury officials produce private costings of opposition policies for ministers (although

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[17] The latest Treasury costing is that it would raise £350 million in 2009–10, falling to £50 million in 2012–13. This was provided in response to a parliamentary question by Lord Oakeshott. See *Hansard*, Col. WA101, 7 December 2009, http://www.publications.parliament.uk/pa/ld200910/ldhansrd/text/91207w0004.htm#09120728000527. For more details on the HMT costing done in 2007, see http://www.hm-treasury.gov.uk/foi_costing_2007.htm.

not for the opposition) and they subsequently become public through Freedom of Information requests. An alternative might be for the Treasury automatically to publish, on a regular basis, all of the costings that it has done on opposition policies.

What difference might an OBR have made in the past?

An OBR might have discouraged Gordon Brown and his advisers from 'sniffing round the forecasters' pockets' from 2002 onwards, as some mandarins have quaintly described it. Assuming that the OBR had taken a similar view to that of IFS researchers and other independent forecasters over this period, Mr Brown might have felt constrained to make his forecasts more realistic and to take steps to restrain government borrowing more quickly than he did as revenues fell short of his forecasts. This would have meant that, when the financial crisis hit, we would have had a somewhat smaller structural budget deficit and somewhat lower public debt. Perhaps more importantly, voters and investors may have seen the government's fiscal promises as more believable.

All that would have been welcome. But it would not have avoided the need for a severe fiscal tightening over the next few years. As in the early 1990s, the squeeze over the next few years is not simply a response to the puncturing of politically inflated tax revenue forecasts. In large part, it reflects the Treasury's judgement that the economy and people's wealth are going to be significantly and permanently smaller for the foreseeable future than it had previously thought (a mistake that was shared with many macroeconomic forecasters outside government; see Chapter 4). The proposed OBR would have been no better placed to foresee such an event than any other macroeconomic forecaster – indeed, if it had adopted an outside macro forecast as the baseline for its predictions, it would not necessarily even have tried to.

Whatever one might think of its actions either side of the financial crisis, the decision to make the Bank of England independent in 1997 is widely recognised as having taken the politics out of monetary policy in a way that the government's Code for Fiscal Stability and fiscal rules failed to take the politics out of fiscal policy. An independent OBR could help rectify that, although its formal role would be more similar to that played by the Bank between 1993 and 1997 – providing independent advice to the Chancellor – rather than having policy instruments in its own hands. But it would be unlikely to find its path as smooth in its early years as the Bank did.

For one thing, the Bank had the advantage that it became independent at a time when its task was to keep inflation broadly at its existing level, rather than to bring it down from a much higher one. What is more, inflation was more stable over subsequent years than almost anyone would have expected beforehand (and it was unlikely that this was because the Bank of England was made independent, as the same was true in almost all developed economies). This allowed the Bank to establish its credibility without coming under serious challenge for its forecasting record and without getting embroiled in debates over how quickly a significant deviation from the inflation target should be tackled, with all the pain that that would have implied.

In contrast, the OBR would likely come into being at a time when there will be considerable controversy over the appropriate pace of fiscal tightening and at a time when fiscal forecasting is likely to be even more difficult than usual (because of uncertainty surrounding the medium-term outlook for the economy and because of the prospect of significant tax and spending policy changes with uncertain effects on individual behaviour and, potentially, knock-on effects on the wider economy). There is a

relatively high probability that good advice *ex ante* may appear bad advice *ex post*, at least to the untutored eye. An opportunistic Chancellor might well be tempted to exploit such appearances if he wished to ignore subsequent advice.

11.6 Conclusion

At a time when it is necessary to reassure voters and investors that the significant damage to the public finances from the financial crisis will be repaired over an appropriate timescale, there is a powerful argument for institutional reforms to increase public confidence in official fiscal forecasts.

The Fiscal Responsibility Act is unlikely to achieve this. It is not clear why the government should be more deterred by the prospect of breaking this law than it was by the loss of credibility it suffered by publishing serially overoptimistic fiscal forecasts from 2002 onwards, by 'moving the goalposts' to reduce the chance of breaching its fiscal rules (that had been laid out under the legislated Code for Fiscal Stability) and by delaying corrective fiscal action until shortly after the 2005 general election.

Injecting greater independence and transparency into the fiscal forecasting process seems a more promising route. Expanding and intensifying the scrutiny function of the National Audit Office would help at the margin, but the NAO does not possess the expertise or the resources that would allow it in effect to forecast on a level playing field with the Treasury. It could be given those resources and expertise, but this would give the NAO a new and high-profile role that would sit oddly with its current core functions.

The Conservative proposal for an Office for Budget Responsibility has much to recommend it, but such a body would require careful design. The central challenge is to deliver truly and demonstrably independent forecasts, without losing the two-way flow of expertise and understanding between fiscal forecasting and policy development. Taking the fiscal forecasting function out of the Treasury would threaten this synergy, while fully replicating it would be expensive.

The most promising route might be to give the Conservatives' proposed independent Budget Responsibility Committee the task of overseeing, challenging and publicly signing off fiscal forecasts undertaken within the Treasury, but based on externally produced macroeconomic forecasts as well as internal ones. In seeking to achieve laudable objectives, if elected the Conservatives must avoid replacing an effective, well-organised and well-resourced fiscal forecasting operation within the Treasury – albeit one that has had to accommodate the views of its political masters – with two less well-organised and less well-resourced operations in the Treasury and the OBR.

Appendix A: Forecasting public finances

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This appendix looks at the techniques used for the Green Budget public finance forecasts. It starts by comparing the forecasts made for borrowing in 2008–09 in last year's Green Budget and in the November 2008 Pre-Budget Report (PBR) with the eventual out-turn. It then goes on to provide more background information to the short-term and medium-term public finance forecasts that are set out in Chapter 6.

A.1 The accuracy of our previous forecasts

The January 2009 Green Budget forecast was for a lower level of current receipts and the same level of current spending as those published by the Treasury in the November 2008 PBR. The out-turn for the public finances in 2008–09 was actually even weaker than either the 2008 PBR or the 2009 IFS Green Budget forecast. Though spending ended up being slightly lower than PBR 2008 had forecast, current receipts were much weaker.

The November 2008 PBR forecast that the current budget deficit in 2008–09 would be £41.2 billion, while the 2009 IFS Green Budget forecast that it would be £47.8 billion. The actual estimated out-turn from the 2009 PBR was a deficit of £50.1 billion, as shown in Table A.1. Slightly lower-than-forecast investment spending meant that the out-turn for net borrowing diverged slightly less from the earlier forecasts, with net borrowing in 2008–09 estimated in the December 2009 PBR to have been £85.5 billion, compared with the November 2008 PBR forecast of £77.6 billion and the January 2009 Green Budget forecast of £84.3 billion.

Table A.1. Comparison of forecasts for fiscal aggregates, 2008–09

£ billion	HM Treasury PBR forecast, November 2008	IFS Green Budget forecast, January 2009	Estimate, PBR, December 2009
Current receipts	545.5	538.9	532.4
Current expenditure[a]	586.7	586.7	582.5
Net investment	36.5	36.5	35.4
Total managed expenditure	623.2	623.2	617.9
Public sector net borrowing	77.6	84.3	85.5
Surplus on current budget	–41.2	–47.8	–50.1

a. Includes depreciation.
Notes: Figures for net investment and net borrowing in 2008–09 from PBR 2009 are shown net of the impact of various capital transactions between the nationalised banks and other parts of the public sector (which amounted to £9.9 billion in 2008–09). Furthermore, the figure for net borrowing excludes the income received by the public sector from private sector banks as a result of public sector interventions in the financial sector (amounting to £0.8 billion in 2008–09) – see table B18 of PBR 2009.
Sources: Out-turn figures for 2008–09 from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm. Forecasts from HM Treasury, *Pre-Budget Report 2008*, November 2008, http://www.hm-treasury.gov.uk/prebud_pbr08_index.htm, and table 6.2 of R. Chote, C. Emmerson, D. Miles and J. Shaw (eds), *The IFS Green Budget: January 2009*, IFS Commentary 107, http://www.ifs.org.uk/publications/4417.

Current receipts came in £13.1 billion weaker than forecast in the November 2008 PBR and £6.5 billion weaker than forecast in the January 2009 IFS Green Budget. Current spending (including depreciation) came in £4.2 billion lower than forecast by both the November 2008 PBR and the January 2009 IFS Green Budget. Public sector net investment was £1.1 billion lower than either of the previous forecasts suggested.

Table A.2 shows the breakdown of the errors in the forecasts for tax receipts contained in the November 2008 PBR and the January 2009 IFS Green Budget. Net taxes and National Insurance contributions were overestimated by the Treasury and, to a lesser extent, the Green Budget. The largest error, common to both forecasts for revenues, was in value added tax (VAT): the PBR 2008 forecast overestimated VAT revenues by £4.2 billion, while the January 2009 Green Budget forecast was £3.1 billion too high. Both forecasts also contained relatively small overestimates of corporation tax revenues and fuel duties.

Outside of net taxes and social security contributions, there was also an apparently large absolute error in both forecasts for non-tax receipts: the November 2008 PBR and the January 2009 Green Budget overestimated non-tax receipts by £4.2 billion and £4.1 billion, respectively.

Table A.2. IFS Green Budget and Treasury errors in forecasting tax receipts, 2008–09

£ billion	Pre-Budget Report, November 2008	IFS Green Budget, January 2009
Income tax (net of tax credits)	3.3	–0.8
National Insurance contributions	0.8	0.8
Value added tax	4.2	3.1
Corporation tax (net of tax credits)	1.8	1.9
Fuel duties	0.5	0.5
Stamp duties	0.3	–0.4
Other taxes	–2.0	–2.7
Net taxes & National Insurance contributions	8.9	2.4
Non-tax receipts[a]	4.2	4.1
Total current receipts	13.1	6.5

[a] Includes accruals adjustments on taxes, the tax credits adjustments, interest and dividends, gross operating surplus and rent; net of oil royalties and business rate payments by local authorities, the own resources contribution to the EU budget and public corporations' corporation tax payments.
Sources: As for Table A.1.

A.2 Techniques used in our forecasts

For the current financial year, three different sources of information are examined before coming to a judgement for each element of government revenue. In addition to the latest Treasury forecast from the December 2009 PBR, we use information from the revenues implied by a current receipts method, and the IFS modelled approach.[1]

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[1] For a more detailed explanation of both these techniques, see C. Giles and J. Hall, 'Forecasting the PSBR outside government: the IFS perspective', *Fiscal Studies*, 1998, 19, 83–100.

Information from current receipts

The current receipts method uses the information on receipts received in the current financial year compared with those received up to the same point in the previous financial year. An estimate for the whole of the current year's receipts is then calculated using the following formula:

2009–10 forecast = $\dfrac{\textit{Receipts received so far this year}}{\textit{Receipts received to the same point last year}}$ *× 2008–09 receipts*

While this is useful when forecasting revenues in the current financial year, it cannot provide projections for borrowing in future years. Also, particular caution must be used when revenues are cyclical or changes have been made that may affect the timing of payments. Both of these factors are likely to have significantly affected the timing of some tax payments in 2008–09 and 2009–10.

The IFS modelled receipts approach

This estimates growth in each of the taxes using forecasts for the growth in the tax base relevant to each tax, combined with an estimate of the elasticity of revenue with respect to the growth in the tax base. Information on the revenue effects of pre-announced tax changes from previous Budgets is then added in order to reach a forecast. Hence, modelled receipts can be summarised by the following formula:

2009–10 forecast = (*2008–09 receipts × Tax-base change × Elasticity*) *+ Tax changes*
This technique enables forecasts to be made for future years, given the expected structure of the tax system. It should be noted that these forecasts become considerably less accurate for later years, since forecasts for changes in tax bases, estimates of elasticities and the impact of tax changes all become less accurate.

The elasticities are largely estimated from TAXBEN, the IFS tax and benefit model. For fuel, an elasticity calculated from previous IFS research is used.[2] Elasticities for beer, spirits, wine and tobacco duties are taken from the median elasticity found in a range of UK studies.[3]

A.3 Forecasts for 2009–10

The Green Budget forecast is a judgement based on the Treasury's latest forecast contained in the December 2009 PBR, the current receipts method and the IFS modelled approach. Each of these is presented in Table A.3. For some taxes, we know there are significant changes in policy being brought in part-way through the year (such as the temporary cut in the main rate of VAT from 17½% to 15% that ran from 1 December 2008 to 31 December 2009, and the new bank payroll tax set to operate from 9 December 2009 to 5 April 2010). In these cases, we have also incorporated an estimate of the impact of these measures on the timing of receipts when coming to our judgement – this is discussed in more detail below.

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[2] L. Blow and I. Crawford, *The Distributional Effects of Taxes on Private Motoring*, IFS Commentary 65, 1997, http://www.ifs.org.uk/publications/1887.

[3] M. Chambers, 'Consumers' demand and excise duty receipts equations for alcohol, tobacco, petrol and DERV', Government Economic Service, Working Paper 138, August 1999.

Table A.3. Forecasts for government borrowing in 2009–10

£ billion	PBR Dec. 2009	Current receipts method	IFS forecasting model	IFS forecast judgement
HM Revenue and Customs				
Income tax (net of tax credits)	134.2	141.5[†]	144.8	137.5
National Insurance contributions[a]	94.8	94.9	99.5	95.9
Value added tax (VAT)	67.2	65.8	67.8	70.0
Corporation tax (net of tax credits)	33.4	33.1	40.1	33.1
Petroleum revenue tax	1.2	0.7	2.6	1.2
Fuel duties	26.4	26.2	26.3	26.4
Capital gains tax	2.5	n/a[†]	7.6	2.5
Inheritance tax	2.2	2.1	2.5	2.2
Stamp duties	7.4	6.5	7.4	7.4
Tobacco duties	8.8	8.9	8.3	8.8
Spirits duties	2.6	2.6	2.3	2.6
Wine duties	2.9	3.0	2.6	2.9
Beer and cider duties	3.5	3.6	3.9	3.5
Betting and gaming duties	1.4	1.4	1.5	1.4
Air passenger duty	1.9	1.7	2.1	1.9
Insurance premium tax	2.3	2.2	2.2	2.3
Landfill tax	0.9	0.8	1.2	0.9
Climate change levy	0.7	0.7	0.7	0.7
Aggregates levy	0.3	0.3	0.3	0.3
Customs duties and levies	2.6	2.7	2.8	2.6
Total HMRC	397.0	398.9	426.4	404.1
Vehicle excise duties	5.7	5.6	5.5	5.7
Business rates	23.7	23.7	21.6	23.7
Council tax[b]	24.8	24.8	24.8	24.8
Other taxes and royalties[c]	16.4	16.4	15.4	16.4
Net taxes and NI contributions[d]	467.6	469.4	493.8	474.7
Other adjustments[e]	30.6	30.6	30.6	30.6
Current receipts	498.1	500.0	524.4	505.2
Current spending	626.2	617.5	623.0	623.0
Current balance	−128.1	−117.5	−98.6	−117.7
Net investment	49.5	49.5	49.5	49.5
Public sector net borrowing	177.6	167.0	148.1	167.2

a. 2009–10 includes revenues from the bank payroll tax.

b. PBR figures are based on stylised assumptions rather than government forecasts.

c. Includes VAT refunds and money paid into the National Lottery Distribution Fund.

d. Includes VAT and the traditional 'own resources' contributions to the EU budget.

e. This line is a sum of accruals adjustments on taxes, tax credit adjustment, interest and dividends, and other receipts, less own resources contribution to EU budget and public corporations' corporation tax payments.

f. Current receipts estimate of income tax revenues includes capital gains tax.

Sources: PBR forecasts from HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm; this table is similar to table B10 on page 181. Authors' calculations.

Our forecast for total receipts in 2009–10 is £7.1 billion higher than that which the Treasury made in PBR 2009, as a result of more optimistic forecasts of revenues from income tax, National Insurance contributions and VAT, slightly offset by a less optimistic forecast for corporation tax revenues. We also forecast that spending will be £3.2 billion lower than forecast in PBR 2009, as a result of a small current underspend.

HM Revenue and Customs receipts

For **income tax** (net of tax credits), we forecast £137.5 billion. This is £3.3 billion above the Treasury forecast. This judgement is based principally on the growth in income tax receipts seen over the year to date, adjusted downwards for an estimate of the impact that the bank payroll tax will have on reducing the amount of income tax that will be paid. (The Treasury has chosen to score the revenue raised from the bank payroll tax as National Insurance contributions.) In making the adjustment for the bank payroll tax, we assume that the Treasury's PBR 2009 estimate of the net revenues gained (of £550 million) is correct and then calculate from this the implied reduction in income tax. This results in a £0.5 billion estimated reduction in income tax receipts.

Considerable uncertainties regarding income tax receipts this year remain, much of which should be resolved when receipts in January are known. This is because January is the month in which PAYE income tax on financial sector bonuses is typically paid and also because the deadline for self-assessment income tax payments for 2008–09 was Sunday 31 January. The former is likely to boost receipts relative to January 2009 (notwithstanding the impact of the bank payroll tax mentioned above), as many financial sector firms have been more profitable in 2009 than they were in 2008 when the financial crisis struck. However, self-assessment income tax payments are likely to depress receipts due to the impact of the recession in 2008–09 compared with 2007–08. (Details of receipts in January are scheduled to be published by the ONS on 18 February 2010.)

Our forecast for **National Insurance contributions**, of £95.9 billion, is £1.1 billion higher than the Treasury's estimate. Our forecast is based on the current receipts method (which suggests that NI receipts for the year as a whole will be £94.9 billion), adjusted upwards to account for the net positive impact (amounting to about £1.0 billion) of the bank payroll tax on NI receipts this year.

We forecast **VAT** receipts of £70.0 billion, which is £2.8 billion higher than the Treasury's forecast. This is based on the current receipts forecast, which suggests VAT revenues of £65.8 billion for the whole year. We have then adjusted this forecast upwards to account for the fact that the main rate of VAT will be higher over the remaining months of 2009–10 than it was earlier this financial year and at the end of 2008–09. The Treasury estimated in Budget 2009 that the temporary reduction in the main rate of VAT had a direct exchequer cost of £7.8 billion in 2009–10, which is a little under £0.9 billion for each of the nine months that it applied.

Our forecast for **corporation tax** (net of tax credits) is £33.1 billion. This is slightly (£0.3 billion) below the Treasury's forecast of £33.4 billion. This is based on the current receipts method. Until we have data on receipts in January 2010 (again due to be published on 18 February), when typically a large slice of corporation tax receipts is received each year, the outlook for these receipts is particularly uncertain.

Our forecast for receipts from **stamp duties** of £7.4 billion is the same as the Treasury's forecast. Though this is higher than the current receipts method suggests, stamp duty revenues are strongly affected not only by changes in asset prices but also by changes in

the volume of transactions. As the volume of housing transactions has been rising since the beginning of 2009–10, it seems not unreasonable to expect that stamp duty revenues will come in higher than suggested by the current receipts method. We therefore assume that the Treasury's PBR 2009 forecast is correct.

For **capital gains tax**, we simply take the Treasury's forecast. The IFS model is likely to be particularly inaccurate in this instance, as it does not properly account for the fact that reductions in the capital gains made may be substantially larger than average changes in asset prices. Monthly out-turns for receipts of capital gains tax are not available separately from income tax receipts. We do not, therefore, have a forecast for CGT revenues using the current receipts method.

We forecast that **fuel duties** will yield £26.4 billion, which is the same as the Treasury's projection and very similar to both the current receipts (£26.2 billion) and the IFS forecasting model (£26.3 billion).

Other government receipts

For all other receipts, we take the Treasury's forecasts for 2009–10.

Government expenditure

We forecast that **current spending** in 2009–10 will be £623.0 billion, which is £3.2 billion lower than the Treasury's forecast. So far this year, central government current spending has been growing less quickly than the PBR 2009 forecasts suggest for the year as a whole. If this trend continues, central government current spending would come in £8.7 billion below the PBR 2009 forecast.

We assume that the Treasury's forecast for £49.5 billion of **public sector net investment** in 2009–10 is accurate.[4]

Government borrowing

As a result of forecasting higher current receipts and lower current spending, we forecast a **deficit on the current budget** of £117.7 billion for 2009–10. This is £10.4 billion more optimistic than the £128.1 billion deficit forecast by the Treasury.

Since we forecast the same level of net investment in 2009–10 as the Treasury does, our forecast for **public sector net borrowing** (£167.2 billion) is also £10.4 billion lower than the Treasury forecast of £177.6 billion.

A.4 Medium-term forecasts

Any assessment of the fiscal stance should take into account the performance of the economy. Table A.4 presents the macroeconomic forecasts underlying the Green Budget forecasts for the public finances in each of the four economic scenarios used.

For the Green Budget baseline forecast, the Treasury's macroeconomic forecasts are used. These assume that national income will shrink by 3½% in 2009–10. After that, they project growth of 2% in 2010–11 and 3¼% a year thereafter. This path leads to the estimated output gap not being closed until well after the end of the forecast horizon in 2014–15.

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[4] This figure includes as public sector net investment approximately £1.8 billion of net capital transfers to the nationalised banks from other parts of the public sector.

11 and 2011–12, falling to 2¼% from 2012–13 onwards, once the economy is judged to have returned to trend activity.

The final alternative Green Budget scenario (the Barclays 'pessimistic' case) also assumes that the economy shrinks by 3¼% in 2009–10 but then by between 1% and 1¾% thereafter as the economy is judged to be operating at its trend level.

The outlook for the composition, level and growth of trend economic activity underlying the three Barclays scenarios is discussed in more detail in Chapter 4.

The Green Budget baseline scenario predominantly uses published Treasury forecasts for all macroeconomic assumptions, where these are available. The exceptions to this are that, as discussed in more detail in Chapter 6, we assume that corporation tax receipts over the near term are weaker than the Treasury has forecast.

Appendix B: Headline tax and benefit rates and thresholds

	2009–10 level	2010–11 level[a]
Income tax		
Personal allowance: under age 65	£6,475 p.a.	£6,475 p.a.
aged 65–74	£9,490 p.a.	£9,490 p.a.
aged 75 and over	£9,640 p.a.	£9,640 p.a.
Married couple's allowance, restricted to 10%:		
aged 75 or over	£6,965 p.a.	£6,965 p.a.
Basic rate	20%	20%
Higher rate	40%	40%
Additional rate	Not applicable	50%
Tax rates on interest income	10%, 20%, 40%	10%, 20%, 40%, 50%
Tax rates on dividend income	10%,[b] 32.5%[b]	10%,[b] 32.5%,[b] 42.5%[b]
Starting-rate limit	£2,440 p.a.	£2,440 p.a.
Basic-rate limit	£37,400 p.a.	£37,400 p.a.
Higher-rate limit	Not applicable	£150,000 p.a
Income limit for personal allowance	Not applicable	£100,000 p.a.
National Insurance		
Lower earnings limit (LEL)	£95 p.w.	£97 p.w.
Upper earnings limit (UEL)	£844 p.w.	£844 p.w.
Earnings threshold (employee and employer)	£110 p.w.	£110 p.w.
Class 1 contracted-in rate: employee – below UEL	11%	11%
– above UEL	1%	1%
employer – below UEL	12.8%	12.8%
– above UEL	12.8%	12.8%
Class 1 contracted-out rate: employee – below UEL	9.4%	9.4%
(salary-related schemes) – above UEL	1%	1%
employer – below UEL	9.1%	9.1%
– above UEL	12.8%	12.8%
Corporation tax		
Rates: small companies' rate	21%	21%
standard rate	28%	28%
Capital gains tax		
Annual exemption limit: individuals	£10,100 p.a.	£10,100 p.a.
trusts	£5,050 p.a.	£5,050 p.a.
Rate	18%	18%
Inheritance tax		
Threshold	£325,000	£325,000
Rate for transfer at or near death	40%	40%
Value added tax		
Registration threshold	£68,000 p.a.	£70,000 p.a.
Standard rate	17.5%[c]	17.5%
Reduced rate	5%	5%
Excise duties		
Beer (pint at 3.9% abv)	36p[d]	38p[d]
Wine (75cl bottle at 12% abv)	161p[d]	169p[d]
Spirits (70cl bottle at 40% abv)	633p[d]	666p[d]
20 cigarettes: specific duty	229p[d]	235p[d]
ad valorem (24% of retail price)	131p[d]	135p[d]
Ultra-low-sulphur petrol (litre)	56p[e]	59p
Ultra-low-sulphur diesel (litre)	56p[e]	59p
	Continues	*Continues*

Continued

	2009–10 level	2010–11 level[a]
Air passenger duty		
Band A (up to 2,000 miles): economy	£11[f]	£11[g]
club/first class	£22[f]	£22[g]
Band B (2,001–4,000 miles): economy	£45[f]	£45[g]
club/first class	£90[f]	£90[g]
Band C (4,001–6,000 miles): economy	£50[f]	£50[g]
club/first class	£100[f]	£100[g]
Band D (6,001 or more miles): economy	£55[f]	£55[g]
club/first class	£110[f]	£110[g]
Betting and gaming duty		
Gross profits tax	15–50%	15–50%
Spread betting rate: financial bets	3%	3%
other bets	10%	10%
Insurance premium tax		
Standard rate	5%	5%
Higher rate (for insurance sold accompanying certain goods and services)	17.5%	17.5%
Stamp duty		
Land and buildings:		
residential threshold	£125,000[h]	£125,000
non-residential threshold	£150,000	£150,000
rate: up to threshold	0%	0%
threshold–£250,000	1%	1%
£250,000–£500,000	3%	3%
above £500,000	4%	4%
Stocks and shares: rate	0.5%	0.5%
Vehicle excise duty		
Graduated system (for new cars from 1 March 2001)	£0–£405 p.a.[i]	£0–£435 p.a.[i]
Graduated system (first-year rate from April 2010)	Not applicable	£0–£950 p.a.[j]
Standard rate (for cars registered before March 2001)	£190 p.a.	£205 p.a.
Small-car rate (engines up to 1,549cc)	£125 p.a.	£125 p.a.
Heavy goods vehicles (varies according to vehicle type and weight)	£165–£1,850 p.a.	£170–£1,910 p.a.
Landfill tax		
Standard rate	£40 per tonne	£48 per tonne
Lower rate (inactive waste only)	£2.50 per tonne	£2.50 per tonne
Climate change levy		
Electricity	0.470p/kWh	0.470p/kWh
Natural gas	0.164p/kWh	0.164p/kWh
Coal	1.281p/kg	1.281p/kg
Liquefied petroleum gas	1.050p/kg	1.050p/kg
Business rates		
Rate applicable for low-value properties[k] in: England	48.1%	40.7%[l]
Scotland	48.1%	40.7%[l]
Wales	48.9%	40.9%[l]
Council tax		
Average rate band D council tax in England and Wales	£1,394	Councils to set
Income support / income-based jobseeker's allowance		
Single (aged 25 or over)	£64.30 p.w.	£65.45 p.w.
Couple (both aged 18 or over)	£100.95 p.w.	£102.75 p.w.
Basic state pension		
Single	£95.25 p.w.	£97.65 p.w.
Couple	£152.30 p.w.	£156.15 p.w.
Winter fuel payment: for those aged 60–79	£250	£200
for those aged 80 or over	£400	£300
	Continues	*Continues*

Continued

	2009–10 level	2010–11 level[a]
Pension credit		
Guarantee credit for those aged 60 or over: single	£130.00 p.w.	£132.60 p.w.
couple	£198.45 p.w.	£202.40 p.w.
Savings credit for those aged 65 or over:		
threshold – single	£96.00 p.w.	£98.40 p.w.
threshold – couple	£153.40 p.w.	£157.25 p.w.
maximum – single	£20.40 p.w.	£20.52 p.w.
maximum – couple	£27.03 p.w.	£27.09 p.w.
withdrawal rate	40%	40%
Child benefit		
First child	£20.00 p.w.	£20.30 p.w.
Other children	£13.20 p.w.	£13.40 p.w.
Child tax credit		
Family element (doubled for first year of a child's life)	£545 p.a.	£545 p.a.
Child element	£2,235 p.a.	£2,300 p.a.
Disabled child element	£2,670 p.a.	£2,715 p.a.
Working tax credit		
Basic element	£1,890 p.a.	£1,920 p.a.
Couples and lone-parent element	£1,860 p.a.	£1,890 p.a.
30-hour element	£775 p.a.	£790 p.a.
Disabled worker element	£2,530 p.a.	£2,570 p.a.
Childcare element:		
maximum eligible cost for one child	£175.00 p.w.	£175.00 p.w.
maximum eligible cost for two or more children	£300.00 p.w.	£300.00 p.w.
proportion of eligible costs covered	80%	80%
Features common to child and working tax credits		
First threshold	£6,420 p.a.	£6,420 p.a.
First threshold if entitled to child tax credit only	£16,040 p.a.	£16,190 p.a.
First withdrawal rate	39%	39%
Second threshold	£50,000 p.a.	£50,000 p.a.
Second withdrawal rate	1 in 15	1 in 15
Maternity benefits		
Sure Start maternity grant	£500	£500
Statutory maternity pay: weeks 1–6	90% earnings	90% earnings
weeks 7–33	£123.06 p.w., or 90% earnings if lower	£124.88 p.w., or 90% earnings if lower
Maternity allowance	£123.06 p.w.	£124.88 p.w.

a. 2010–11 figures take pre-announced values where available and estimated results of standard indexation otherwise.

b. Offsetting tax credit available, which reduces marginal effective tax rates to 0%, 25% and 36.11%.

c. Until 31 December 2009, the rate was 15%.

d. Assumes RPI inflation of 3% in September 2010 as per the 2009 Pre-Budget Report. Assumes pre-tax price of cigarettes rises by RPI.

e. Prior to September 2009, the rate was 54p per litre.

f. Prior to November 2009, there were two distance bands: EU and non-EU. For EU destinations, the duties were £10 and £20 (for economy and club/first, respectively); for non-EU destinations, they were £40 and £80.

g. From November 2010, the economy (reduced) rates will be increased to £12, £60, £75 and £85. The club/first class rates will be £24, £120, £150 and £170.

h. £150,000 in designated disadvantaged areas. A £175,000 threshold applied from 3 September 2008 to 31 December 2009.

i. Highest rate applies only to cars registered on or after 23 March 2006. For cars registered before this date, the highest rates are £215 and £245 for 2009–10 and 2010–11 respectively.

j. Higher first-year rates apply only for cars with emissions of 166g/km or greater (band H and above).

k. Applies where rateable values are less that £21,500 in Greater London, £15,000 in the rest of England, £29,000 in Scotland and £5,000 in Wales. In 2009–10, a supplement of 0.4% is payable on higher-value properties, increasing to 0.7% in 2010–11.

l. Non-domestic property has been revalued; in order to ensure business rates revenues increase in line with inflation, the poundage rates have been reduced.

Sources: Various HM Treasury and HM Revenue and Customs press releases, March 2008, November 2008, April 2009 and December 2009; HM Treasury, *Pre-Budget Report 2009*, December 2009, http://www.hm-treasury.gov.uk/prebud_pbr09_repindex.htm; HM Treasury, *Budget 2009*, April 2009, http://www.hm-treasury.gov.uk/bud_bud09_index.htm); http://www.hmrc.gov.uk; http://www.hm-treasury.gov.uk/prebud_pbr09_index.htm; http://www.dft.gov.uk/dvla/~/media/pdf/leaflets/v149.ashx; http://www.hm-treasury.gov.uk/d/pbr08_chapter7_159.pdf; http://www.2010.voa.gov.uk/rli/static/HelpPages/English/help/help022-about_the_business_rate_multiplier.html; http://www.scotland.gov.uk/Topics/Government/local-government/17999/11199; http://www.communities.gov.uk/publications/corporate/statistics/counciltax200910; http://wales.gov.uk/docs/statistics/2009/090325sdr412009en.pdf?lang=en.

For descriptions of the tax and benefit systems, see S. Adam and J. Browne, *A Survey of the UK Tax System*, IFS Briefing Note 9, 2009, http://www.ifs.org.uk/bns/bn09.pdf and P. Levell, R. May, C. O'Dea and D. Phillips, *A Survey of the UK Benefit System*, IFS Briefing Note 13, 2009, http://www.ifs.org.uk/bns/bn13.pdf respectively.

For a summary of the main tax measures introduced in each Budget and Pre-Budget Report since 1979, see http://www.ifs.org.uk/ff/budget_measures.xls.

For estimates of the effects of various illustrative tax changes on government revenues, see HM Treasury and HM Revenue & Customs, *Tax Ready Reckoner and Tax Reliefs*, December 2009, http://www.hm-treasury.gov.uk/d/pbr09_taxreadyreckoner.pdf.

Appendix C: Abbreviations

AA	attendance allowance
AEI	average earnings index
AME	annually managed expenditure
APD	air passenger duty
AWE	average weekly earnings
BBC	British Broadcasting Corporation
BSP	basic state pension
BT	British Telecom
CA	Carer's allowance
CB	child benefit
CBI	Confederation of British Industry
CCL	climate change levy
CES	constant elasticity of substitution
CGT	capital gains tax
CO_2	carbon dioxide
CPI	consumer price inflation
CSR	Comprehensive Spending Review
CTB	council tax benefit
CTC	child tax credit
CTF	Child Trust Fund
DB	defined benefit
DC	defined contribution / District of Columbia
DCSF	Department for Children, Schools and Families
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DEL	departmental expenditure limit
DfT	Department for Transport
DLA	disability living allowance
DMO	Debt Management Office
DWP	Department for Work and Pensions
ECB	European Central Bank
EIS	elasticity of intertemporal substitution
EMA	education maintenance allowance
EPO	European Patent Office
ERM	exchange rate mechanism
ESA	employment and support allowance
ESRI	Economic and Social Research Institute
ETS	Emissions Trading Scheme
EU	European Union
FCP	Fiscal Consolidation Plan
FRS	Family Resources Survey
FSA	Financial Services Authority
GB	Green Budget
GDP	gross domestic product

GHG	greenhouse gas
GNI	gross national income
HB	housing benefit
HMRC	Her Majesty's Revenue and Customs
HMT	Her Majesty's Treasury
HP filter	Hodrick–Prescott filter
HRT	higher-rate threshold
IB	incapacity benefit
IFS	Institute for Fiscal Studies
IHT	inheritance tax
IMF	International Monetary Fund
IP	intellectual property
IPPR	Institute for Public Policy Research
IS	income support
ISA	Individual Savings Account
JPO	Japan Patent Office
JSA	Jobseeker's allowance
LEL	lower earnings limit
LFS	Labour Force Survey
LGV	light goods vehicle
LIBOR	London Interbank Offered Rate
MA	Massachusetts
METR	marginal effective tax rate
MIRAS	mortgage interest relief at source
MORI	Market and Opinion Research International
MOT	Ministry of Transport
MP	Member of Parliament
MPC	Monetary Policy Committee
MTIC	missing trader intra-community
NAO	National Audit Office
NAWRU	non-accelerating wage rate of unemployment
NBER	National Bureau of Economic Research
NHS	National Health Service
NI	National Insurance
NICs	National Insurance contributions
NIESR	National Institute of Economic and Social Research
NJ	New Jersey
NTS	National Travel Survey
OBR	Office for Budget Responsibility
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
OG	output gap
OLS	ordinary least squares
ONS	Office for National Statistics
PA	personal allowance
PAYE	Pay-As-You-Earn
PBR	Pre-Budget Report
PC	pension credit / public corporation
PEP	Personal Equity Plan

PESA	Public Expenditure Statistical Analyses
PFI	Private Finance Initiative
PLC	public limited company
PQ	Parliamentary Question
PSBR	public sector borrowing requirement
PSNB	public sector net borrowing
PSNI	public sector net investment
QE	quantitative easing
RAC	Royal Automobile Club
ROSSI	retail price index excluding rent, mortgage interest, council tax and housing depreciation
RPI	retail price index
S2P	state second pension
SERPS	State Earnings-Related Pension Scheme
SMEs	small and medium-sized enterprises
SMMT	Society of Motor Manufacturers and Traders
SOC	Standard Occupational Classification
SPA	state pension age
SPI	Survey of Personal Incomes
STRB	School Teachers' Review Body
TAXBEN	IFS tax and benefits model
TC	tax credit
TESSA	Tax-Exempt Special Savings Account
TFP	total factor productivity
TME	total managed expenditure
UEL	upper earnings limit
UK	United Kingdom
UKIPO	United Kingdom Intellectual Property Office
UN	United Nations
US	United States
USPTO	US Patent and Trademark Office
VAT	value added tax
VED	vehicle excise duty
WFP	winter fuel payment